# Release Notes for Service Pack for ProLiant, v2021.05.1



## BIOS - System ROM

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Online ROM Flash Component for Linux - HPE ProLiant DL380 Gen9/DL360 Gen9 (P89) Servers

Version: 2.80_10-16-2020 **(Recommended)**

Filename: RPMS/i386/firmware-system-p89-2.80_2020_10_16-1.1.i386.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL360/DL380 Gen9 System ROM - P89

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL380 Gen9/DL360 Gen9 (P89) Servers

Version: 2.80_10-16-2020 **(Recommended)**

Filename: cp046145.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL360/DL380 Gen9 System ROM - P89

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Online ROM Flash Component for Linux - HPE Apollo 4200 Gen9/HPE ProLiant XL420 Gen9 (U19) Servers

Version: 2.80_10-16-2020 **(Recommended)**

Filename: RPMS/i386/firmware-system-u19-2.80_2020_10_16-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE Apollo 4200 Gen9/HPE ProLiant XL420 Gen9 System ROM - U19

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Linux - HPE ProLiant BL460c Gen9/WS460c Gen9 (I36) Servers

Version: 2.80_10-16-2020 **(Recommended)**

Filename: RPMS/i386/firmware-system-i36-2.80_2020_10_16-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant BL460c Gen9/WS460c Gen9 System ROM - I36

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Linux - HPE ProLiant BL660c Gen9 (I38) Servers

Version: 2.80_10-16-2020 **(Recommended)**

Filename: RPMS/i386/firmware-system-i38-2.80_2020_10_16-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant BL660c Gen9 System ROM - I38

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver” (CHIF) for Linux  which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Linux - HPE ProLiant DL120 Gen9 (P86) Servers

Version: 2.80_10-16-2020 **(Recommended)**

Filename: RPMS/i386/firmware-system-p86-2.80_2020_10_16-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant DL120 Gen9 System ROM - P86

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Linux - HPE ProLiant DL160 Gen9/DL180 Gen9 (U20) Servers

Version: 2.80_10-16-2020 **(Recommended)**

Filename: RPMS/i386/firmware-system-u20-2.80_2020_10_16-1.1.i386.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL160 Gen9/DL180 Gen9 System ROM - U20

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-

2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Linux - HPE ProLiant DL20 Gen9 (U22) Servers

Version: 2.90_11-27-2020 **(Recommended)**

Filename: RPMS/i386/firmware-system-u22-2.90_2020_11_27-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This revision of the System ROM includes the latest revision of Intel microcode.

**Deliverable Name:**

HPE ProLiant DL20 Gen9 System ROM - U22

**Release Version:**

2.90_11-27-2020

**Last Recommended or Critical Revision:**

2.90_11-27-2020

**Previous Revision:**

2.88_10-16-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode: 0x000000E2 (CPUID 506E3). This Intel microcode patch provide mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-8696 and CVE-2020-8698. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381. These issues are not unique to HPE servers.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This revision of the System ROM includes the latest revision of Intel microcode.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode: 0x000000E2 (CPUID 506E3). This Intel microcode patch provide mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-8696 and CVE-2020-8698. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381. These issues are not unique to HPE servers.

**Known Issues:**

None

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Online ROM Flash Component for Linux - HPE ProLiant DL560 Gen9 (P85) Servers

Version: 2.80_10-16-2020 **(Recommended)**

Filename: RPMS/i386/firmware-system-p85-2.80_2020_10_16-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant DL560 Gen9 System ROM - P85

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-

2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Linux - HPE ProLiant DL580 Gen9 (U17) Servers

Version: 2.80_10-16-2020 **(Recommended)**

Filename: RPMS/i386/firmware-system-u17-2.80_2020_10_16-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant DL580 Gen9 System ROM - U17

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000016 (CPUID 306F4) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000016 (CPUID 306F4) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Linux - HPE ProLiant DL60 Gen9/DL80 Gen9 (U15) Servers

Version: 2.80_10-16-2020 **(Recommended)**

Filename: RPMS/i386/firmware-system-u15-2.80_2020_10_16-1.1.i386.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL60 Gen9/ProLiant DL80 Gen9 System ROM - U15

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Online ROM Flash Component for Linux - HPE ProLiant EC200a (U26) Server/HPE ProLiant Thin Micro TM200 (U26) Server
Version: 2.66_07-19-2019 **(Recommended)**
Filename: RPMS/i386/firmware-system-u26-2.66_2019_07_19-1.1.i386.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant Thin Micro TM200 System ROM - U26

**Release Version:**

2.66_07-19-2019

**Last Recommended or Critical Revision:**

2.66_07-19-2019

**Previous Revision:**

2.62_02-20-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigation for an Intel sighting where the system may experience a machine check after updating to the latest System ROM which contained a fix for an Intel TSX (Transactional Synchronizations Extensions) sightings. The previous microcode was first introduced in the v2.62 System ROM. This issue only impacts systems configured with Intel Xeon® D-1500 processors. This issue is not unique to HPE servers.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigation for an Intel sighting where the system may experience a machine check after updating to the latest System ROM which contained a fix for an Intel TSX (Transactional Synchronizations Extensions) sightings. The previous microcode was first introduced in the v2.62 System ROM. This issue only impacts systems configured with Intel Xeon® D-1500 processors. This issue is not unique to HPE servers.

**Known Issues:**

None

**Enhancements**

None

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Online ROM Flash Component for Linux - HPE ProLiant ML110 Gen9 (P99) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: RPMS/i386/firmware-system-p99-2.80_2020_10_16-1.1.i386.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant ML110 Gen9 System ROM - P99

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Linux - HPE ProLiant ML150 Gen9 (P95) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: RPMS/i386/firmware-system-p95-2.80_2020_10_16-1.1.i386.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant ML150 Gen9 System ROM - P95

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Linux - HPE ProLiant ML30 Gen9 (U23) Servers
Version: 2.90_11-27-2020 **(Recommended)**
Filename: RPMS/i386/firmware-system-u23-2.90_2020_11_27-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This revision of the System ROM includes the latest revision of Intel microcode.

**Deliverable Name:**

HPE ProLiant ML30 Gen9 System ROM - U23

**Release Version:**

2.90_11-27-2020

**Last Recommended or Critical Revision:**

2.90_11-27-2020

**Previous Revision:**

2.88_10-16-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode: 0x000000E2 (CPUID 506E3). This Intel microcode patch provide mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-8696 and CVE-2020-8698. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381. These issues are not unique to HPE servers.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This revision of the System ROM includes the latest revision of Intel microcode.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode: 0x000000E2 (CPUID 506E3). This Intel microcode patch provide mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-8696 and CVE-2020-8698. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381. These issues are not unique to HPE servers.

**Known Issues:**

None

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Online ROM Flash Component for Linux - HPE ProLiant ML350 Gen9 (P92) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: RPMS/i386/firmware-system-p92-2.80_2020_10_16-1.1.i386.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant ML350 Gen9 System ROM - P92

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Linux - HPE ProLiant XL170r/XL190r Gen9 (U14) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: RPMS/i386/firmware-system-u14-2.80_2020_10_16-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant XL170r/XL190r Gen9 System ROM - U14

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Linux - HPE ProLiant XL230a/XL250a Gen9 (U13) Servers

Version: 2.80_10-16-2020 **(Recommended)**

Filename: RPMS/i386/firmware-system-u13-2.80_2020_10_16-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant XL230a/250a Gen9 System ROM - U13

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-

2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Linux - HPE ProLiant XL260a Gen9/XL2x260w (U24) Server

Version: 1.60_01-22-2018 (B) **(Critical)**

Filename: RPMS/i386/firmware-system-u24-1.60_2018_01_22-2.1.i386.rpm

**Important Note!**

**Important Notes:**

Ver. 1.60(B) contains updates to the component packaging and is functionally equivalent to ver. 1.60. It is not necessary to upgrade with Revision B if a previous component Revision was used to upgrade the firmware to version 1.60.

This revision of the System ROM includes the latest revision of the Intel microcode which, in combination with operating system updates, provides mitigation for Variant 2 of the Side Channel Analysis vulnerability, also known as Spectre. The revision of the microcode included in this System ROM does NOT have issues with more frequent reboots and unpredictable system behavior which impacted the previous Intel microcode which was part of the Spectre Variant 2 mitigation. Additional information is available from Intel's Security Exploit Newsroom, https://newsroom.intel.com/press-kits/security-exploits-intel-products/.

**Deliverable Name:**

HPE ProLiant XL260a Gen9/XL2x260w System ROM - U24

**Release Version:**

1.60_01-22-2018

**Last Recommended or Critical Revision:**

1.60_01-22-2018

**Previous Revision:**

1.50_09-25-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Updated the Intel processor microcode to the latest version.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

Ver. 1.60(B) contains updates to the component packaging and is functionally equivalent to ver. 1.60. It is not necessary to upgrade with Revision B if a previous component Revision was used to upgrade the firmware to version 1.60.

This revision of the System ROM includes the latest revision of the Intel microcode which, in combination with operating system updates, provides mitigation for Variant 2 of the Side Channel Analysis vulnerability, also known as Spectre. The revision of the microcode included in this System ROM does NOT have issues with more frequent reboots and unpredictable system behavior which impacted the previous Intel microcode which was part of the Spectre Variant 2 mitigation. Additional information is available from Intel's Security Exploit Newsroom, https://newsroom.intel.com/press-kits/security-exploits-intel-products/.

**Firmware Dependencies:**

None

**Problems Fixed:**

Updated the Intel processor microcode to the latest version.

**Known Issues:**

None

Online ROM Flash Component for Linux - HPE ProLiant XL270d (U25) Accelerator Tray

Version: 2.80_10-16-2020 **(Recommended)**

Filename: RPMS/i386/firmware-system-u25-2.80_2020_10_16-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant XL270d Accelerator Tray System ROM - U25

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Linux - HPE ProLiant XL450 Gen9 (U21) Servers

Version: 2.80_10-16-2020 **(Recommended)**

Filename: RPMS/i386/firmware-system-u21-2.80_2020_10_16-1.1.i386.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant XL450 Gen9 System ROM - U21

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Linux - HPE ProLiant XL730f/XL740f/XL750f Gen9 (U18) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: RPMS/i386/firmware-system-u18-2.80_2020_10_16-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant XL730f/XL740f/XL750f Gen9 System ROM - U18

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for VMware - HPE Apollo 4200 Gen9/HPE ProLiant XL420 Gen9 (U19) Servers
Version: 2.80_10-16-2020 (B) **(Recommended)**
Filename: CP047161.compsig; CP047161.zip

**Important Note!**

**Important Notes:**

Ver. 2.80_10-16-2020(B) contains updates to the component packaging and is functionally equivalent to ver. 2.80_10-16-2020. It is not necessary to upgrade with Revision (B) if a previous component revision was used to upgrade the firmware to 2.80_10-16-2020.

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE Apollo 4200 Gen9/HPE ProLiant XL420 Gen9 System ROM - U19

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

This component requires that the following HPE drivers be loaded before the component can run.

1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.

The minimum iLO version for ESXi 5.1, ESXi 5.5, ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.

2. The "Compaq ROM Utility Driver" (CRU) must be installed and running

The minimum CRU version for 5.1 is 5.0.3.9.

The minimum CRU version for 5.5 is 5.5.4.1.
The minimum CRU version for 6.0 is 6.0.8.
The minimum CRU version for 6.5 is 6.5.8.
The minimum CRU version for 6.7 is 6.7.10.
Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, 5.5, and 5.1 on vibsdepot.hpe.com.

## Fixes

**Important Notes:**

Ver. 2.80_10-16-2020(B) contains updates to the component packaging and is functionally equivalent to ver. 2.80_10-16-2020. It is not necessary to upgrade with Revision (B) if a previous component revision was used to upgrade the firmware to 2.80_10-16-2020.

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Enhancements

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Online ROM Flash Component for VMware - HPE ProLiant BL460c Gen9/WS460c Gen9 (I36) Servers
Version: 2.80_10-16-2020 (B) **(Recommended)**
Filename: CP047170.compsig; CP047170.zip

**Important Note!**

**Important Notes:**

Ver. 2.80_10-16-2020 (B) contains updates to the component packaging and is functionally equivalent to ver. 2.80_10-16-2020. It is not necessary to upgrade with Revision B if a previous component Revision was used to upgrade the system ROM to version 2.80_10-16-2020.

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant BL460c Gen9/WS460c Gen9 System ROM - I36

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

This component requires that the following HPE drivers be loaded before the component can run.
1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.
The minimum iLO version for ESXi 5.1, ESXi 5.5, ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.
2. The "Compaq ROM Utility Driver" (CRU) must be installed and running
The minimum CRU version for 5.1 is 5.0.3.9.
The minimum CRU version for 5.5 is 5.5.4.1.
The minimum CRU version for 6.0 is 6.0.8.
The minimum CRU version for 6.5 is 6.5.8.
The minimum CRU version for 6.7 is 6.7.10.
Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, 5.5, and 5.1 on vibsdepot.hpe.com.

## Fixes

**Important Notes:**

Ver. 2.80_10-16-2020 (B) contains updates to the component packaging and is functionally equivalent to ver. 2.80_10-16-2020. It is not necessary to upgrade with Revision B if a previous component Revision was used to upgrade the system ROM to version 2.80_10-16-2020.

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for VMware - HPE ProLiant BL660c Gen9 (I38) Servers
Version: 2.80_10-16-2020 (B) **(Recommended)**
Filename: CP047172.compsig; CP047172.zip

**Important Note!**

**Important Notes:**

Ver. 2.80_10-16-2020 (B) contains updates to the component packaging and is functionally equivalent to ver. 2.80_10-16-2020. It is not necessary to upgrade with Revision B if a previous component Revision was used to upgrade the system ROM to version 2.80_10-16-2020.

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant BL660c Gen9 System ROM - I38

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

This component requires that the following HPE drivers be loaded before the component can run.

1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.

The minimum iLO version for ESXi 5.1, ESXi 5.5, ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.

2. The "Compaq ROM Utility Driver" (CRU) must be installed and running

The minimum CRU version for 5.1 is 5.0.3.9.
The minimum CRU version for 5.5 is 5.5.4.1.
The minimum CRU version for 6.0 is 6.0.8.
The minimum CRU version for 6.5 is 6.5.8.
The minimum CRU version for 6.7 is 6.7.10.

Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, 5.5, and 5.1 on vibsdepot.hpe.com.

**Fixes**

**Important Notes:**

Ver. 2.80_10-16-2020 (B) contains updates to the component packaging and is functionally equivalent to ver. 2.80_10-16-2020. It is not necessary to upgrade with Revision B if a previous component Revision was used to upgrade the system ROM to version 2.80_10-16-2020.

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for VMware - HPE ProLiant DL120 Gen9 (P86) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: CP046142.compsig; CP046142.zip

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL120 Gen9 System ROM - P86

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

This component requires that the following HPE drivers be loaded before the component can run.

1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.

The minimum iLO version for ESXi 5.1, 5.5 and ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.

2. The "Compaq ROM Utility Driver" (CRU) must be installed and running

The minimum CRU version for ESXi 5.1 is 5.0.3.9.

The minimum CRU version for ESXi 5.5 is 5.5.4.1.

The minimum CRU version for ESXi 6.0 is 6.0.8.

The minimum CRU version for 6.5 is 6.5.8.

The minimum CRU version for 6.7 is 6.7.10.

Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, 5.5, and 5.1 on vibsdepot.hpe.com.

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for VMware - HPE ProLiant DL160 Gen9/DL180 Gen9 (U20) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: CP046155.compsig; CP046155.zip

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL160 Gen9/DL180 Gen9 System ROM - U20

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

This component requires that the following HPE drivers be loaded before the component can run.

1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.

The minimum iLO version for ESXi 5.1, ESXi 5.5, ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.

2. The "Compaq ROM Utility Driver" (CRU) must be installed and running

The minimum CRU version for 5.1 is 5.0.3.9.
The minimum CRU version for 5.5 is 5.5.4.1.
The minimum CRU version for 6.0 is 6.0.8.
The minimum CRU version for 6.5 is 6.5.8.
The minimum CRU version for 6.7 is 6.7.10.

Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, 5.5, and 5.1 on vibsdepot.hpe.com.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for VMware - HPE ProLiant DL20 Gen9 (U22) Servers
Version: 2.90_11-27-2020 **(Recommended)**
Filename: CP046428.compsig; CP046428.zip

**Important Note!**

**Important Notes:**

This revision of the System ROM includes the latest revision of Intel microcode.

**Deliverable Name:**

HPE ProLiant DL20 Gen9 System ROM - U22

**Release Version:**

2.90_11-27-2020

**Last Recommended or Critical Revision:**

2.90_11-27-2020

**Previous Revision:**

2.88_10-16-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode: 0x000000E2 (CPUID 506E3). This Intel microcode patch provide mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-8696 and CVE-2020-8698. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381. These issues are not unique to HPE servers.

**Known Issues:**

None

**Prerequisites**

This component requires that the following HPE drivers be loaded before the component can run.

1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.

The minimum iLO version for ESXi 5.5, ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.

2. The "Compaq ROM Utility Driver" (CRU) must be installed and running

The minimum CRU version for 5.5 is 5.5.4.1.
The minimum CRU version for 6.0 is 6.0.8.
The minimum CRU version for 6.5 is 6.5.8.

The minimum CRU version for 6.7 is 6.7.10.

Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, and 5.5 on vibsdepot.hpe.com.

**Fixes**

**Important Notes:**

This revision of the System ROM includes the latest revision of Intel microcode.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode: 0x000000E2 (CPUID 506E3). This Intel microcode patch provide mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-8696 and CVE-2020-8698. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381. These issues are not unique to HPE servers.

**Known Issues:**

None

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Online ROM Flash Component for VMware - HPE ProLiant DL380 Gen9/DL360 Gen9 (P89) Servers
Version: 2.80_10-16-2020 (B) **(Recommended)**
Filename: CP047163.compsig; CP047163.zip

**Important Note!**

**Important Notes:**

Ver. 2.80_10-16-2020(B) contains updates to the component packaging and is functionally equivalent to ver. 2.80_10-16-2020. It is not necessary to upgrade with Revision (B) if a previous component revision was used to upgrade the firmware to 2.80_10-16-2020.

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant DL360/DL380 Gen9 System ROM - P89

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

This component requires that the following HPE drivers be loaded before the component can run.

1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.

The minimum iLO version for ESXi 5.1, 5.5 and ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.

2. The "Compaq ROM Utility Driver" (CRU) must be installed and running

The minimum CRU version for ESXi 5.1 is 5.0.3.9.

The minimum CRU version for ESXi 5.5 is 5.5.4.1.

The minimum CRU version for ESXi 6.0 is 6.0.8.

The minimum CRU version for 6.5 is 6.5.8.

The minimum CRU version for 6.7 is 6.7.10.

Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, 5.5, and 5.1 on vibsdepot.hpe.com.

## Fixes

**Important Notes:**

Ver. 2.80_10-16-2020(B) contains updates to the component packaging and is functionally equivalent to ver. 2.80_10-16-2020. It is not necessary to upgrade with Revision (B) if a previous component revision was used to upgrade the firmware to 2.80_10-16-2020.

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Enhancements

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for VMware - HPE ProLiant DL560 Gen9 (P85) Servers
Version: 2.80_10-16-2020 (B) **(Recommended)**
Filename: CP047162.compsig; CP047162.zip

**Important Note!**

**Important Notes:**

Ver. 2.80_10-16-2020(B) contains updates to the component packaging and is functionally equivalent to ver. 2.80_10-16-2020. It is not necessary to upgrade with Revision (B) if a previous component revision was used to upgrade the firmware to 2.80_10-16-2020.

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant DL560 Gen9 System ROM - P85

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

This component requires that the following HPE drivers be loaded before the component can run.
1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.
The minimum iLO version for ESXi 5.1, ESXi 5.5, ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.
2. The "Compaq ROM Utility Driver" (CRU) must be installed and running
The minimum CRU version for 5.1 is 5.0.3.9.
The minimum CRU version for 5.5 is 5.5.4.1.
The minimum CRU version for 6.0 is 6.0.8.
The minimum CRU version for 6.5 is 6.5.8.
The minimum CRU version for 6.7 is 6.7.10.
Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, 5.5, and 5.1 on vibsdepot.hpe.com.

**Fixes**

**Important Notes:**

Ver. 2.80_10-16-2020(B) contains updates to the component packaging and is functionally equivalent to ver. 2.80_10-16-2020. It is not necessary to upgrade with Revision (B) if a previous component revision was used to upgrade the firmware to 2.80_10-16-2020.

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for VMware - HPE ProLiant DL580 Gen9 (U17) Servers
Version: 2.80_10-16-2020 (B) **(Recommended)**
Filename: CP047164.compsig; CP047164.zip

**Important Note!**

**Important Notes:**

Ver. 2.80_10-16-2020(B) contains updates to the component packaging and is functionally equivalent to ver. 2.80_10-16-2020. It is not necessary to upgrade with Revision (B) if a previous component revision was used to upgrade the firmware to 2.80_10-16-2020.

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant DL580 Gen9 System ROM - U17

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000016 (CPUID 306F4) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

This component requires that the following HPE drivers be loaded before the component can run.

1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.

The minimum iLO version for ESXi 5.5 and ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.

2. The "Compaq ROM Utility Driver" (CRU) must be installed and running

The minimum CRU version for ESXi 5.5 is 5.5.4.1.

The minimum CRU version for ESXi 6.0 is 6.0.8.

The minimum CRU version for 6.5 is 6.5.8.

The minimum CRU version for 6.7 is 6.7.10.

Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, 5.5 on vibsdepot.hpe.com.

## Fixes

**Important Notes:**

Ver. 2.80_10-16-2020(B) contains updates to the component packaging and is functionally equivalent to ver. 2.80_10-16-2020. It is not necessary to upgrade with Revision (B) if a previous component revision was used to upgrade the firmware to 2.80_10-16-2020.

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included ir this release are versions 0x00000016 (CPUID 306F4) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8764. These security vulnerabilitie are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Enhancements

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for VMware - HPE ProLiant DL60 Gen9/DL80 Gen9 (U15) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: CP046170.compsig; CP046170.zip

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL60 Gen9/ProLiant DL80 Gen9 System ROM - U15

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

This component requires that the following HPE drivers be loaded before the component can run.

1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.

The minimum iLO version for ESXi 5.1, 5.5 and ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.

2. The "Compaq ROM Utility Driver" (CRU) must be installed and running

The minimum CRU version for ESXi 5.1 is 5.0.3.9.

The minimum CRU version for ESXi 5.5 is 5.5.4.1.

The minimum CRU version for ESXi 6.0 is 6.0.8.

The minimum CRU version for 6.5 is 6.5.8.

The minimum CRU version for 6.7 is 6.7.10.

Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, 5.5, and 5.1 on vibsdepot.hpe.com.

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for VMware - HPE ProLiant EC200a (U26) Server/HPE ProLiant Thin Micro TM200 (U26) Server
Version: 2.66_07-19-2019 **(Recommended)**
Filename: CP040773.compsig; CP040773.zip

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant Thin Micro TM200 System ROM - U26

**Release Version:**

2.66_07-19-2019

**Last Recommended or Critical Revision:**

2.66_07-19-2019

**Previous Revision:**

2.62_02-20-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigation for an Intel sighting where the system may experience a machine check after updating to the latest System ROM which contained a fix for an Intel TSX (Transactional Synchronizations Extensions) sightings. The previous microcode was first introduced in the v2.62 System ROM. This issue only impacts systems configured with Intel Xeon® D-1500 processors. This issue is not unique to HPE servers.

**Known Issues:**

None

**Prerequisites**

This component requires that the following HPE drivers be loaded before the component can run.

1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.

The minimum iLO version for ESXi 5.5 and ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.

2. The "Compaq ROM Utility Driver" (CRU) must be installed and running

The minimum CRU version for ESXi 5.5 is 5.5.4.1.

The minimum CRU version for ESXi 6.0 is 6.0.8.

The minimum CRU version for 6.5 is 6.5.8.

The minimum CRU version for 6.7 is 6.7.10.

Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, 5.5 on vibsdepot.hpe.com.

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigation for an Intel sighting where the system may experience a machine check after updating to the latest System ROM which contained a fix for an Intel TSX (Transactional Synchronizations Extensions) sightings. The previous microcode was first introduced in the v2.62 System ROM. This issue only impacts systems configured with Intel Xeon® D-1500 processors. This issue is not unique to HPE servers.

**Known Issues:**

None

**Enhancements**

None

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Online ROM Flash Component for VMware - HPE ProLiant ML110 Gen9 (P99) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: CP046139.compsig; CP046139.zip

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant ML110 Gen9 System ROM - P99

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

This component requires that the following HPE drivers be loaded before the component can run.

1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.

The minimum iLO version for ESXi 5.1, ESXi 5.5, ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.

2. The "Compaq ROM Utility Driver" (CRU) must be installed and running

The minimum CRU version for 5.1 is 5.0.3.9.
The minimum CRU version for 5.5 is 5.5.4.1.
The minimum CRU version for 6.0 is 6.0.8.

The minimum CRU version for 6.5 is 6.5.8.
The minimum CRU version for 6.7 is 6.7.10.
Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, 5.5, and 5.1 on vibsdepot.hpe.com.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for VMware - HPE ProLiant ML150 Gen9 (P95) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: CP046162.compsig; CP046162.zip

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant ML150 Gen9 System ROM - P95

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

This component requires that the following HPE drivers be loaded before the component can run.

1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.

The minimum iLO version for ESXi 5.1, ESXi 5.5, ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.

2. The "Compaq ROM Utility Driver" (CRU) must be installed and running

The minimum CRU version for 5.1 is 5.0.3.9.
The minimum CRU version for 5.5 is 5.5.4.1.
The minimum CRU version for 6.0 is 6.0.8.
The minimum CRU version for 6.5 is 6.5.8.
The minimum CRU version for 6.7 is 6.7.10.
Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, 5.5, and 5.1 on vibsdepot.hpe.com.

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included ir this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for VMware - HPE ProLiant ML30 Gen9 (U23) Servers
Version: 2.90_11-27-2020 **(Recommended)**
Filename: CP046426.compsig; CP046426.zip

**Important Note!**

**Important Notes:**

This revision of the System ROM includes the latest revision of Intel microcode.

**Deliverable Name:**

HPE ProLiant ML30 Gen9 System ROM - U23

**Release Version:**

2.90_11-27-2020

**Last Recommended or Critical Revision:**

2.90_11-27-2020

**Previous Revision:**

2.88_10-16-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode: 0x000000E2 (CPUID 506E3). This Intel microcode patch provide mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-8696

and CVE-2020-8698. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381. These issues are not unique to HPE servers.

**Known Issues:**

None

**Prerequisites**

This component requires that the following HPE drivers be loaded before the component can run.
1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.
The minimum iLO version for ESXi 5.5, ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.
2. The "Compaq ROM Utility Driver" (CRU) must be installed and running
The minimum CRU version for 5.5 is 5.5.4.1.
The minimum CRU version for 6.0 is 6.0.8.
The minimum CRU version for 6.5 is 6.5.8.

The minimum CRU version for 6.7 is 6.7.10.

Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, and 5.5 on vibsdepot.hpe.com.

**Fixes**

**Important Notes:**

This revision of the System ROM includes the latest revision of Intel microcode.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode: 0x000000E2 (CPUID 506E3). This Intel microcode patch provide mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-8696 and CVE-2020-8698. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381. These issues are not unique to HPE servers.

**Known Issues:**

None

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**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant ML350 Gen9 System ROM - P92

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

This component requires that the following HPE drivers be loaded before the component can run.

1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.

The minimum iLO version for ESXi 5.1, ESXi 5.5, ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.

2. The "Compaq ROM Utility Driver" (CRU) must be installed and running

The minimum CRU version for 5.1 is 5.0.3.9.
The minimum CRU version for 5.5 is 5.5.4.1.
The minimum CRU version for 6.0 is 6.0.8.
The minimum CRU version for 6.5 is 6.5.8.
The minimum CRU version for 6.7 is 6.7.10.
Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, 5.5, and 5.1 on vibsdepot.hpe.com.

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for VMware - HPE ProLiant XL170r/XL190r Gen9 (U14) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: CP046133.compsig; CP046133.zip

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant XL170r/XL190r Gen9 System ROM - U14

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

This component requires that the following HPE drivers be loaded before the component can run.

1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.

The minimum iLO version for ESXi 5.1, 5.5 and ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.

2. The "Compaq ROM Utility Driver" (CRU) must be installed and running

The minimum CRU version for ESXi 5.1 is 5.0.3.9.

The minimum CRU version for ESXi 5.5 is 5.5.4.1.

The minimum CRU version for ESXi 6.0 is 6.0.8.

The minimum CRU version for 6.5 is 6.5.8.

The minimum CRU version for 6.7 is 6.7.10.

Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, 5.5, and 5.1 on vibsdepot.hpe.com.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for VMware - HPE ProLiant XL450 Gen9 (U21) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: CP046176.compsig; CP046176.zip

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant XL450 Gen9 System ROM - U21

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

This component requires that the following HPE drivers be loaded before the component can run.

1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.

The minimum iLO version for ESXi 5.1, ESXi 5.5, ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.

2. The "Compaq ROM Utility Driver" (CRU) must be installed and running

The minimum CRU version for 5.1 is 5.0.3.9.

The minimum CRU version for 5.5 is 5.5.4.1.
The minimum CRU version for 6.0 is 6.0.8.
The minimum CRU version for 6.5 is 6.5.8.
The minimum CRU version for 6.7 is 6.7.10.
Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, 5.5, and 5.1 on vibsdepot.hpe.com.

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Enhancements

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for VMware ESXi- HPE ProLiant XL230a/XL250a Gen9 (U13) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: CP046127.compsig; CP046127.zip

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant XL230a/250a Gen9 System ROM - U13

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

This component requires that the following HPE drivers be loaded before the component can run.
1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.
The minimum iLO version for ESXi 5.1, ESXi 5.5, ESXi 6.0 and ESXi 6.5 is 1.4. The minimum iLO version for ESXi 6.7 is 10.1.0.
2. The "Compaq ROM Utility Driver" (CRU) must be installed and running
The minimum CRU version for 5.1 is 5.0.3.9.
The minimum CRU version for 5.5 is 5.5.4.1.
The minimum CRU version for 6.0 is 6.0.8.
The minimum CRU version for 6.5 is 6.5.8.
The minimum CRU version for 6.7 is 6.7.10.
Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.7, 6.5, 6.0, 5.5, and 5.1 on vibsdepot.hpe.com.

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Online ROM Flash Component for Windows x64 - HPE Apollo 4200 Gen9/HPE ProLiant XL420 Gen9 (U19) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: cp046201.exe

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE Apollo 4200 Gen9/HPE ProLiant XL420 Gen9 System ROM - U19

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-

2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Windows x64 - HPE ProLiant BL460c Gen9/WS460c Gen9 (I36) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: cp046087.exe

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant BL460c Gen9/WS460c Gen9 System ROM - I36

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Windows x64 - HPE ProLiant BL660c Gen9 (I38) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: cp046093.exe

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant BL660c Gen9 System ROM - I38

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL120 Gen9 (P86) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: cp046140.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL120 Gen9 System ROM - P86

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL160 Gen9/DL180 Gen9 (U20) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: cp046153.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL160 Gen9/DL180 Gen9 System ROM - U20

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL20 Gen9 (U22) Servers
Version: 2.90_11-27-2020 **(Recommended)**
Filename: cp046424.exe

**Important Note!**

**Important Notes:**

This revision of the System ROM includes the latest revision of Intel microcode.

**Deliverable Name:**

HPE ProLiant DL20 Gen9 System ROM - U22

**Release Version:**

2.90_11-27-2020

**Last Recommended or Critical Revision:**

2.90_11-27-2020

**Previous Revision:**

2.88_10-16-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode: 0x000000E2 (CPUID 506E3). This Intel microcode patch provide mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-8696 and CVE-2020-8698. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381. These issues are not unique to HPE servers.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

This revision of the System ROM includes the latest revision of Intel microcode.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode: 0x000000E2 (CPUID 506E3). This Intel microcode patch provide mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-8696

and CVE-2020-8698. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381. These issues are not unique to HPE servers.

**Known Issues:**

None

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL560 Gen9 (P85) Servers
Version: 2.80_10-16-2020 (B) **(Recommended)**
Filename: cp046867.exe

**Important Note!**

**Important Notes:**

Ver. 2.80_10-16-2020(B) contains updates to the firmware packaging and is functionally equivalent to ver. 2.80_10-16-2020. It is not necessary to upgrade with Revision B if a previous component revision was used to upgrade the firmware to version 2.80_10-16-2020.

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant DL560 Gen9 System ROM - P85

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

Ver. 2.80_10-16-2020(B) contains updates to the firmware packaging and is functionally equivalent to ver. 2.80_10-16-2020. It is not necessary to upgrade with Revision B if a previous component revision was used to upgrade the firmware to version 2.80_10-16-2020.

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL580 Gen9 (U17) Servers
Version: 2.80_10-16-2020 (B) **(Recommended)**
Filename: cp046868.exe

**Important Note!**

**Important Notes:**

Ver. 2.80_10-16-2020(B) contains updates to the firmware packaging and is functionally equivalent to ver. 2.80_10-16-2020. It is not necessary to upgrade with Revision B if a previous component revision was used to upgrade the firmware to version 2.80_10-16-2020.

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant DL580 Gen9 System ROM - U17

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000016 (CPUID 306F4) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

Ver. 2.80_10-16-2020(B) contains updates to the firmware packaging and is functionally equivalent to ver. 2.80_10-16-2020. It is not necessary to upgrade with Revision B if a previous component revision was used to upgrade the firmware to version 2.80_10-16-2020.

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL60 Gen9/DL80 Gen9 (U15) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: cp046165.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL60 Gen9/ProLiant DL80 Gen9 System ROM - U15

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Windows x64 - HPE ProLiant EC200a (U26) Server/HPE ProLiant Thin Micro TM200 (U26) Server
Version: 2.66_07-19-2019 **(Recommended)**
Filename: cp040771.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant Thin Micro TM200 System ROM - U26

**Release Version:**

2.66_07-19-2019

**Last Recommended or Critical Revision:**

2.66_07-19-2019

**Previous Revision:**

2.62_02-20-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigation for an Intel sighting where the system may experience a machine check after updating to the latest System ROM which contained a fix for an Intel TSX (Transactional Synchronizations Extensions) sightings. The previous microcode was first introduced in the v2.62 System ROM. This issue only impacts systems configured with Intel Xeon® D-1500 processors. This issue is not unique to HPE servers.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigation for an Intel sighting where the system may experience a machine check after updating to the latest System ROM which contained a fix for an Intel TSX (Transactional Synchronizations Extensions) sightings. The previous microcode was first introduced in the v2.62 System ROM. This issue only impacts systems configured with Intel Xeon® D-1500 processors. This issue is not unique to HPE servers.

**Known Issues:**

None

**Enhancements**

None

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Online ROM Flash Component for Windows x64 - HPE ProLiant ML110 Gen9 (P99) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: cp046137.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant ML110 Gen9 System ROM - P99

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Windows x64 - HPE ProLiant ML150 Gen9 (P95) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: cp046160.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant ML150 Gen9 System ROM - P95

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Windows x64 - HPE ProLiant ML30 Gen9 (U23) Servers
Version: 2.90_11-27-2020 **(Recommended)**
Filename: cp046423.exe

**Important Note!**

**Important Notes:**

This revision of the System ROM includes the latest revision of Intel microcode.

**Deliverable Name:**

HPE ProLiant ML30 Gen9 System ROM - U23

**Release Version:**

2.90_11-27-2020

**Last Recommended or Critical Revision:**

2.90_11-27-2020

**Previous Revision:**

2.88_10-16-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode: 0x000000E2 (CPUID 506E3). This Intel microcode patch provide mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-8696 and CVE-2020-8698. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381. These issues are not unique to HPE servers.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

This revision of the System ROM includes the latest revision of Intel microcode.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode: 0x000000E2 (CPUID 506E3). This Intel microcode patch provide mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-8696

and CVE-2020-8698. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381. These issues are not unique to HPE servers.

**Known Issues:**

None

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Online ROM Flash Component for Windows x64 - HPE ProLiant ML350 Gen9 (P92) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: cp046143.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant ML350 Gen9 System ROM - P92

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Windows x64 - HPE ProLiant XL170r/XL190r Gen9 (U14) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: cp046131.exe

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant XL170r/XL190r Gen9 System ROM - U14

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Windows x64 - HPE ProLiant XL230a/XL250a Gen9 (U13) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: cp046125.exe

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant XL230a/250a Gen9 System ROM - U13

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Windows x64 - HPE ProLiant XL270d (U25) Accelerator Tray
Version: 2.80_10-16-2020 **(Recommended)**
Filename: cp046196.exe

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant XL270d Accelerator Tray System ROM - U25

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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Online ROM Flash Component for Windows x64 - HPE ProLiant XL450 Gen9 (U21) Servers
Version: 2.80_10-16-2020 **(Recommended)**
Filename: cp046174.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant XL450 Gen9 System ROM - U21

**Release Version:**

2.80_10-16-2020

**Last Recommended or Critical Revision:**

2.80_10-16-2020

**Previous Revision:**

2.76_10-21-2019

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of Intel microcode. The Intel microcode patches included in this release are versions 0x00000044 (CPUID 306F2) and 0x00B00003A (CPUID 406F1).

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0591 and CVE-2020-0592. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS platform code advisories and security vulnerabilities documented as CVE-2020-8738, CVE-2020-8740, and CVE-2020-8764. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00390. These issues are not unique to HPE servers.

This version of the System ROM contains an updated UEFI Driver for the SmartArray B140i SATA RAID controller. This update addresses an issue where the system may periodically experience an operating system boot issue such as experiencing a Linux kernel panic on boot.

**Known Issues:**

None

**Enhancements**

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

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**BIOS (Login Required) - System ROM** Top

Online ROM Flash Component for Linux - HPE Apollo 2000 Gen10/HPE ProLiant XL170r/XL190r Gen10 (U38) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: RPMS/x86_64/firmware-system-u38-2.42_2021_01_23-1.1.x86_64.compsig; RPMS/x86_64/firmware-system-u38-2.42_2021_01_23-1.1.x86_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 2000 Gen10/HPE ProLiant XL170r/XL190r Gen10 System ROM - U38

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

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Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Linux - HPE Apollo 4200 Gen10/HPE ProLiant XL420 Gen10 (U39) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: RPMS/x86_64/firmware-system-u39-2.42_2021_01_23-1.1.x86_64.compsig; RPMS/x86_64/firmware-system-u39-2.42_2021_01_23-1.1.x86_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 4200 Gen10/ProLiant XL420 Gen10 System ROM - U39

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

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Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Online ROM Flash Component for Linux - HPE Apollo 4510 Gen10/HPE ProLiant XL450 Gen10 (U40) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: RPMS/x86_64/firmware-system-u40-2.42_2021_01_23-1.1.x86_64.compsig; RPMS/x86_64/firmware-system-u40-2.42_2021_01_23-1.1.x86_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 4510 Gen10/ProLiant XL450 Gen10 System ROM - U40

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine

check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Linux - HPE Apollo 6500 Gen10 Plus/HPE ProLiant XL645d Gen10 Plus (A48) Servers
Version: 2.40_02-24-2021 **(Optional)**
Filename: RPMS/x86_64/firmware-system-a48-2.40_2021_02_24-1.1.x86_64.rpm; RPMS/x86_64/firmware-system-a48-2.40_2021_02_24-1.1.x86_64_part1.compsig; RPMS/x86_64/firmware-system-a48-2.40_2021_02_24-1.1.x86_64_part2.compsig

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 6500 Gen10 Plus/HPE ProLiant XL645d Gen10 Plus System ROM - A48

**Release Version:**

2.40_02-24-2021

**Last Recommended or Critical Revision:**

1.38_12-23-2020

**Previous Revision:**

1.38_12-23-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for AMD EPYC 7003 processors.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

**Known Issues:**

None

**Enhancements**

Added support for AMD EPYC 7003 processors.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

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Online ROM Flash Component for Linux - HPE Apollo 6500 Gen10 Plus/HPE ProLiant XL675d Gen10 Plus (A47) Servers
Version: 2.40_02-23-2021 **(Optional)**
Filename: RPMS/x86_64/firmware-system-a47-2.40_2021_02_23-1.1.x86_64.rpm; RPMS/x86_64/firmware-system-a47-2.40_2021_02_23-1.1.x86_64_part1.compsig; RPMS/x86_64/firmware-system-a47-2.40_2021_02_23-1.1.x86_64_part2.compsig

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 6500 Gen10 Plus/HPE ProLiant XL675d Gen10 Plus System ROM - A47

**Release Version:**

2.40_02-23-2021

**Last Recommended or Critical Revision:**

1.38_11-06-2020

**Previous Revision:**

1.38_11-06-2020

**Firmware Dependencies:**

HPE ProLiant XL675d Gen10Plus CPLD version 0F

HPE Apollo 6500 Gen10 Plus Chassis CPLD version 0909

**Enhancements/New Features:**

Added support for AMD EPYC 7003 processors.

Added support for Direct Liquid Cooling solution.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

HPE ProLiant XL675d Gen10Plus CPLD version 0F

HPE Apollo 6500 Gen10 Plus Chassis CPLD version 0909

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

**Known Issues:**

None

**Enhancements**

Added support for AMD EPYC 7003 processors.

Added support for Direct Liquid Cooling solution.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

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Online ROM Flash Component for Linux - HPE Apollo 6500 Gen10/HPE ProLiant XL270d Gen10 (U45) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: RPMS/x86_64/firmware-system-u45-2.42_2021_01_23-1.1.x86_64.compsig; RPMS/x86_64/firmware-system-u45-2.42_2021_01_23-1.1.x86_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 6500 Gen10/HPE ProLiant XL270d Gen10 System ROM - U45

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Filename: RPMS/x86_64/firmware-system-i41-2.42_2021_01_23-1.1.x86_64.compsig; RPMS/x86_64/firmware-system-i41-2.42_2021_01_23-1.1.x86_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant BL460c Gen10 System ROM - I41

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced

Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced

Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Linux - HPE ProLiant DL160 Gen10/DL180 Gen10 (U31) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: RPMS/x86_64/firmware-system-u31-2.42_2021_01_23-1.1.x86_64.compsig; RPMS/x86_64/firmware-system-u31-2.42_2021_01_23-1.1.x86_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL160 Gen10/DL180 Gen10 System ROM - U31

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Linux - HPE ProLiant DL20 Gen10 (U43) Servers
Version: 2.20_10-27-2020 **(Recommended)**
Filename: RPMS/x86_64/firmware-system-u43-2.20_2020_10_27-1.1.x86_64.compsig; RPMS/x86_64/firmware-system-u43-2.20_2020_10_27-1.1.x86_64.rpm

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant DL20 Gen10 System ROM - U43

**Release Version:**

2.20_10-27-2020

**Last Recommended or Critical Revision:**

2.20_10-27-2020

**Previous Revision:**

2.18_06-24-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

Addressed an issue where the "Minimum Processor Idle Power Package C-State" RBSU option was missing.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

Addressed an issue where the "Minimum Processor Idle Power Package C-State" RBSU option was missing.

**Known Issues:**

None

**Enhancements**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Linux - HPE ProLiant DL325 Gen10 (A41) Servers
Version: 2.44_11-13-2020 **(Recommended)**
Filename: RPMS/x86_64/firmware-system-a41-2.44_2020_11_13-1.1.x86_64.compsig; RPMS/x86_64/firmware-system-a41-2.44_2020_11_13-1.1.x86_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL325 Gen10 System ROM - A41

**Release Version:**

2.44_11-13-2020

**Last Recommended or Critical Revision:**

2.44_11-13-2020

**Previous Revision:**

2.42_07-17-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added a new BIOS/Platform Configuration (RBSU) for dual bifurcation (quadfurcation) of PCIe Adapters to the Advanced PCIe Configuration Options. This option will allow a x16 PCIe device to be bifurcated into four x4 devices. This option would only be used for PCIe Adapters that support his level of bifurcation.

Added support to increase the maximum amount of system memory to 8TB.

**Problems Fixed:**

Addressed a rare issue where the system may fail to boot after a warm reset.

Addressed an issue where the Advanced Options for Secure Boot failed to export all keys.

Addressed an issue where One-Button Secure Erase was not completed when SmartRAID SW RAID support is enabled.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed a rare issue where the system may fail to boot after a warm reset.

Addressed an issue where the Advanced Options for Secure Boot failed to export all keys.

Addressed an issue where One-Button Secure Erase was not completed when SmartRAID SW RAID support is enabled.

**Known Issues:**

None

**Enhancements**

Added a new BIOS/Platform Configuration (RBSU) for dual bifurcation (quadfurcation) of PCIe Adapters to the Advanced PCIe Configuration Options. This option will allow a x16 PCIe device to be bifurcated into four x4 devices. This option would only be used for PCIe Adapters that support his level of bifurcation.

Added support to increase the maximum amount of system memory to 8TB.

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Online ROM Flash Component for Linux - HPE ProLiant DL325/DL325 v2/DL345 Gen10 Plus (A43) Servers
Version: 2.40_02-23-2021 **(Optional)**
Filename: RPMS/x86_64/firmware-system-a43-2.40_2021_02_23-1.1.x86_64.rpm; RPMS/x86_64/firmware-system-a43-2.40_2021_02_23-1.1.x86_64_part1.compsig; RPMS/x86_64/firmware-system-a43-2.40_2021_02_23-1.1.x86_64_part2.compsig

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL325/DL325 v2/DL345 Gen10 Plus System ROM - A43

**Release Version:**

2.40_02-23-2021

**Last Recommended or Critical Revision:**

1.38_10-30-2020

**Previous Revision:**

1.38_10-30-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

Added driver and option to enable SmartRAID SW RAID support for direct attached NVMe drives.

Added a new BIOS/Platform Configuration (RBSU) option to Virtualization Options called AMD I/O Virtualization Technology. This option replaces the AMD IOMMU and AMD Virtualization Technology options in the prior BIOS release, and combines the functionality into a single setting. In previous releases, the system firmware only used the AMD IOMMU setting for controlling both IOMMU and VT due to operating system issues when these setting were controlled independently. The new setting removes the perception that the two settings are independent.

Changed the BIOS/Platform Configuration (RBSU) option called Infinity Fabric Performance State to be hidden unless Infinity Fabric Power Management is disabled. Also updated the performance state value from Disabled to Auto. Performance state set to Disabled is misleading, as the system behavior will still set the Infinity Fabric to a performance state instead of disabling it.

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the fan runs at a higher than expected speed after upgrading the firmware of HPE Smart Array E208i or E408i to version 3.0.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the fan runs at a higher than expected speed after upgrading the firmware of HPE Smart Array E208i or E408i to version 3.0.

**Known Issues:**

None

**Enhancements**

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

Added driver and option to enable SmartRAID SW RAID support for direct attached NVMe drives.

Added a new BIOS/Platform Configuration (RBSU) option to Virtualization Options called AMD I/O Virtualization Technology. This option replaces the AMD IOMMU and AMD Virtualization Technology options in the prior BIOS release, and combines the functionality into a single setting. In previous releases, the system firmware only used the AMD IOMMU setting for controlling both IOMMU and VT due to operating system issues when these setting were controlled independently. The new setting removes the perception that the two settings are independent.

Changed the BIOS/Platform Configuration (RBSU) option called Infinity Fabric Performance State to be hidden unless Infinity Fabric Power Management is disabled. Also updated the performance state value from Disabled to Auto. Performance state set to Disabled is misleading, as the system behavior will still set the Infinity Fabric to a performance state instead of disabling it.

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Online ROM Flash Component for Linux - HPE ProLiant DL360 Gen10 (U32) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: RPMS/x86_64/firmware-system-u32-2.42_2021_01_23-1.1.x86_64.compsig; RPMS/x86_64/firmware-system-u32-2.42_2021_01_23-1.1.x86_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL360 Gen10 System ROM - U32

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Linux - HPE ProLiant DL365/DL385/DL385 v2 Gen10 Plus (A42) Servers
Version: 2.40_02-23-2021 **(Optional)**
Filename: RPMS/x86_64/firmware-system-a42-2.40_2021_02_23-1.1.x86_64.rpm; RPMS/x86_64/firmware-system-a42-2.40_2021_02_23-1.1.x86_64_part1.compsig; RPMS/x86_64/firmware-system-a42-2.40_2021_02_23-1.1.x86_64_part2.compsig

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL365/DL385/DL385 v2 Gen10 Plus System ROM - A42

**Release Version:**

2.40_02-23-2021

**Last Recommended or Critical Revision:**

1.38_10-30-2020

**Previous Revision:**

1.38_10-30-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

Added driver and option to enable SmartRAID SW RAID support for direct attached NVMe drives.

Added a new BIOS/Platform Configuration (RBSU) option to Virtualization Options called AMD I/O Virtualization Technology. This option replaces the AMD IOMMU and AMD Virtualization Technology options in the prior BIOS release, and combines the functionality into a single setting. In previous releases, the system firmware only used the AMD IOMMU setting for controlling both IOMMU and VT due to operating system issues when these setting were controlled independently. The new setting removes the perception that the two settings are independent.

Changed the BIOS/Platform Configuration (RBSU) option called Infinity Fabric Performance State to be hidden unless Infinity Fabric Power Management is disabled. Also updated the performance state value from Disabled to Auto. Performance state set to Disabled is misleading, as the system behavior will still set the Infinity Fabric to a performance state instead of disabling it.

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the fan runs at a higher than expected speed after upgrading the firmware of HPE Smart Array E208i or E408i to version 3.0.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the fan runs at a higher than expected speed after upgrading the firmware of HPE Smart Array E208i or E408i to version 3.0.

**Known Issues:**

None

**Enhancements**

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

Added driver and option to enable SmartRAID SW RAID support for direct attached NVMe drives.

Added a new BIOS/Platform Configuration (RBSU) option to Virtualization Options called AMD I/O Virtualization Technology. This option replaces the AMD IOMMU and AMD Virtualization Technology options in the prior BIOS release, and combines the functionality into a single setting. In previous releases, the system firmware only used the AMD IOMMU setting for controlling both IOMMU and VT due to operating system issues when these setting were controlled independently. The new setting removes the perception that the two settings are independent.

Changed the BIOS/Platform Configuration (RBSU) option called Infinity Fabric Performance State to be hidden unless Infinity Fabric Power Management is disabled. Also updated the performance state value from Disabled to Auto. Performance state set to Disabled is misleading, as the system behavior will still set the Infinity Fabric to a performance state instead of disabling it.

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Online ROM Flash Component for Linux - HPE ProLiant DL380 Gen10 (U30) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: RPMS/x86_64/firmware-system-u30-2.42_2021_01_23-1.1.x86_64.compsig; RPMS/x86_64/firmware-system-u30-2.42_2021_01_23-1.1.x86_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL380 Gen10 System ROM - U30

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50567). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50567). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Linux - HPE ProLiant DL385 Gen10 (A40) Servers
Version: 2.44_10-29-2020 **(Recommended)**
Filename: RPMS/x86_64/firmware-system-a40-2.44_2020_10_29-1.1.x86_64.compsig; RPMS/x86_64/firmware-system-a40-2.44_2020_10_29-1.1.x86_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL385 Gen10 System ROM - A40

**Release Version:**

2.44_10-29-2020

**Last Recommended or Critical Revision:**

2.44_10-29-2020

**Previous Revision:**

2.42_07-17-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added a new BIOS/Platform Configuration (RBSU) for dual bifurcation (quadfurcation) of PCIe Adapters to the Advanced PCIe Configuration Options. This option will allow a x16 PCIe device to be bifurcated into four x4 devices. This option would only be used for PCIe Adapters that support his level of bifurcation.

Added support to increase the maximum amount of system memory to 8TB.

**Problems Fixed:**

Addressed a rare issue where the system may fail to boot after a warm reset.

Addressed an issue where the Advanced Options for Secure Boot failed to export all keys.

Addressed an issue where One-Button Secure Erase was not completed when SmartRAID SW RAID support is enabled.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system may hang during boot up after a warm reset from the OS.

Addressed an issue where the Advanced Options for Secure Boot failed to export all keys.

Addressed an issue where One-Button Secure Erase was not completed when SmartRAID SW RAID support is enabled.

**Known Issues:**

None

## Enhancements

Added a new BIOS/Platform Configuration (RBSU) for dual bifurcation (quadfurcation) of PCIe Adapters to the Advanced PCIe Configuration Options. This option will allow a x16 PCIe device to be bifurcated into four x4 devices. This option would only be used for PCIe Adapters that support his level of bifurcation.

Online ROM Flash Component for Linux - HPE ProLiant DL560 Gen10/DL580 Gen10 (U34) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: RPMS/x86_64/firmware-system-u34-2.42_2021_01_23-1.1.x86_64.compsig; RPMS/x86_64/firmware-system-u34-2.42_2021_01_23-1.1.x86_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL560 Gen10/DL580 Gen10 System ROM - U34

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine

check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and

0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Linux - HPE ProLiant MicroServer Gen10 Plus (U48) Servers
Version: 2.20_10-27-2020 **(Recommended)**
Filename: RPMS/x86_64/firmware-system-u48-2.20_2020_10_27-1.1.x86_64.compsig; RPMS/x86_64/firmware-system-u48-2.20_2020_10_27-1.1.x86_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant MicroServer Gen10 Plus System ROM - U48

**Release Version:**

2.20_10-27-2020

**Last Recommended or Critical Revision:**

2.20_10-27-2020

**Previous Revision:**

2.18_06-24-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

**Known Issues:**

None

**Enhancements**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Linux - HPE ProLiant ML110 Gen10 (U33) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: RPMS/x86_64/firmware-system-u33-2.42_2021_01_23-1.1.x86_64.compsig; RPMS/x86_64/firmware-system-u33-2.42_2021_01_23-1.1.x86_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant ML110 Gen10 System ROM - U33

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced

Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Online ROM Flash Component for Linux - HPE ProLiant ML30 Gen10 (U44) Servers
Version: 2.20_10-27-2020 **(Recommended)**
Filename: RPMS/x86_64/firmware-system-u44-2.20_2020_10_27-1.1.x86_64.compsig; RPMS/x86_64/firmware-system-u44-2.20_2020_10_27-1.1.x86_64.rpm

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant ML30 Gen10 System ROM - U44

**Release Version:**

2.20_10-27-2020

**Last Recommended or Critical Revision:**

2.20_10-27-2020

**Previous Revision:**

2.18_06-24-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

Addressed an issue where the "Minimum Processor Idle Power Package C-State" RBSU option was missing.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

Addressed an issue where the "Minimum Processor Idle Power Package C-State" RBSU option was missing.

**Known Issues:**

None

**Enhancements**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Linux - HPE ProLiant ML350 Gen10 (U41) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: RPMS/x86_64/firmware-system-u41-2.42_2021_01_23-1.1.x86_64.compsig; RPMS/x86_64/firmware-system-u41-2.42_2021_01_23-1.1.x86_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant ML350 Gen10 System ROM - U41

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

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Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Linux - HPE ProLiant XL225n Gen10 Plus (A46) Servers
Version: 2.42_02-23-2021 **(Optional)**
Filename: RPMS/x86_64/firmware-system-a46-2.42_2021_02_23-1.1.x86_64.rpm; RPMS/x86_64/firmware-system-a46-2.42_2021_02_23-1.1.x86_64_part1.compsig; RPMS/x86_64/firmware-system-a46-2.42_2021_02_23-1.1.x86_64_part2.compsig

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant XL225n Gen10 Plus System ROM - A46

**Release Version:**

2.42_02-23-2021

**Last Recommended or Critical Revision:**

1.38_11-06-2020

**Previous Revision:**

2.40_01-21-2021

**Firmware Dependencies:**

System Programable Logic CPLD version 34

**Enhancements/New Features:**

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

None

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Enhancements**

**Important Notes:**

None

**Firmware Dependencies:**

System Programable Logic CPLD version 34

**Enhancements/New Features:**

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Known Issues:**

None

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Online ROM Flash Component for Linux - HPE ProLiant XL230k Gen10 (U37) Server
Version: 2.42_01-23-2021 **(Recommended)**
Filename: RPMS/x86_64/firmware-system-u37-2.42_2021_01_23-1.1.x86_64.compsig; RPMS/x86_64/firmware-system-u37-2.42_2021_01_23-1.1.x86_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant XL230k Gen10 System ROM - U37

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

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Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Windows x64 - HPE Apollo 2000 Gen10/HPE ProLiant XL170r/XL190r Gen10 (U38) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: cp046684.compsig; cp046684.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 2000 Gen10/HPE ProLiant XL170r/XL190r Gen10 System ROM - U38

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

## Enhancements

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Windows x64 - HPE Apollo 4200 Gen10/HPE ProLiant XL420 Gen10 (U39) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: cp046641.compsig; cp046641.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 4200 Gen10/ProLiant XL420 Gen10 System ROM - U39

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID

50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

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Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID

50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Windows x64 - HPE Apollo 4510 Gen10/HPE ProLiant XL450 Gen10 (U40) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: cp046644.compsig; cp046644.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 4510 Gen10/ProLiant XL450 Gen10 System ROM - U40

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Online ROM Flash Component for Windows x64 - HPE Apollo 6500 Gen10 Plus/HPE ProLiant XL645d Gen10 Plus (A48) Servers
Version: 2.40_02-24-2021 **(Optional)**
Filename: cp046362.exe; cp046362_part1.compsig; cp046362_part2.compsig

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 6500 Gen10 Plus/HPE ProLiant XL645d Gen10 Plus System ROM - A48

**Release Version:**

2.40_02-24-2021

**Last Recommended or Critical Revision:**

1.38_12-23-2020

**Previous Revision:**

1.38_12-23-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for AMD EPYC 7003 processors.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

**Known Issues:**

None

## Enhancements

Added support for AMD EPYC 7003 processors.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

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Online ROM Flash Component for Windows x64 - HPE Apollo 6500 Gen10 Plus/HPE ProLiant XL675d Gen10 Plus (A47) Servers
Version: 2.40_02-23-2021 **(Optional)**
Filename: cp046228.exe; cp046228_part1.compsig; cp046228_part2.compsig

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 6500 Gen10 Plus/HPE ProLiant XL675d Gen10 Plus System ROM - A47

**Release Version:**

2.40_02-23-2021

**Last Recommended or Critical Revision:**

1.38_11-06-2020

**Previous Revision:**

1.38_11-06-2020

**Firmware Dependencies:**

HPE ProLiant XL675d Gen10Plus CPLD version 0F

HPE Apollo 6500 Gen10 Plus Chassis CPLD version 0909

**Enhancements/New Features:**

Added support for AMD EPYC 7003 processors.

Added support for Direct Liquid Cooling solution.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

HPE ProLiant XL675d Gen10Plus CPLD version 0F

HPE Apollo 6500 Gen10 Plus Chassis CPLD version 0909

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

**Known Issues:**

None

## Enhancements

Added support for AMD EPYC 7003 processors.

Added support for Direct Liquid Cooling solution.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

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Version: 2.42_01-23-2021 **(Recommended)**
Filename: cp046690.compsig; cp046690.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 6500 Gen10/HPE ProLiant XL270d Gen10 System ROM - U45

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced

Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

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Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Windows x64 - HPE ProLiant BL460c Gen10 (I41) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: cp046668.compsig; cp046668.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant BL460c Gen10 System ROM - I41

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

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Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

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Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Online ROM Flash Component for Windows x64 - HPE ProLiant DL160 Gen10/DL180 Gen10 (U31) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: cp046620.compsig; cp046620.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL160 Gen10/DL180 Gen10 System ROM - U31

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine

check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL20 Gen10 (U43) Servers
Version: 2.20_10-27-2020 **(Recommended)**
Filename: cp045749.compsig; cp045749.exe

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant DL20 Gen10 System ROM - U43

**Release Version:**

2.20_10-27-2020

**Last Recommended or Critical Revision:**

2.20_10-27-2020

**Previous Revision:**

2.18_06-24-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

Addressed an issue where the "Minimum Processor Idle Power Package C-State" RBSU option was missing.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

Addressed an issue where the "Minimum Processor Idle Power Package C-State" RBSU option was missing.

**Known Issues:**

None

**Enhancements**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Filename: cp046096.compsig; cp046096.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL325 Gen10 System ROM - A41

**Release Version:**

2.44_11-13-2020

**Last Recommended or Critical Revision:**

2.44_11-13-2020

**Previous Revision:**

2.42_07-17-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added a new BIOS/Platform Configuration (RBSU) for dual bifurcation (quadfurcation) of PCIe Adapters to the Advanced PCIe Configuration Options. This option will allow a x16 PCIe device to be bifurcated into four x4 devices. This option would only be used for PCIe Adapters that support his level of bifurcation.

Added support to increase the maximum amount of system memory to 8TB.

**Problems Fixed:**

Addressed a rare issue where the system may fail to boot after a warm reset.

Addressed an issue where the Advanced Options for Secure Boot failed to export all keys.

Addressed an issue where One-Button Secure Erase was not completed when SmartRAID SW RAID support is enabled.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed a rare issue where the system may fail to boot after a warm reset.

Addressed an issue where the Advanced Options for Secure Boot failed to export all keys.

Addressed an issue where One-Button Secure Erase was not completed when SmartRAID SW RAID support is enabled.

**Known Issues:**

None

**Enhancements**

Added a new BIOS/Platform Configuration (RBSU) for dual bifurcation (quadfurcation) of PCIe Adapters to the Advanced PCIe Configuration Options. This option will allow a x16 PCIe device to be bifurcated into four x4 devices. This option would only be used for PCIe Adapters that support his level of bifurcation.

Added support to increase the maximum amount of system memory to 8TB.

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL325/DL325 v2/DL345 Gen10 Plus (A43) Servers
Version: 2.40_02-23-2021 **(Optional)**
Filename: cp044523.exe; cp044523_part1.compsig; cp044523_part2.compsig

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL325/DL325 v2/DL345 Gen10 Plus System ROM - A43

**Release Version:**

2.40_02-23-2021

**Last Recommended or Critical Revision:**

1.38_10-30-2020

**Previous Revision:**

1.38_10-30-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

Added driver and option to enable SmartRAID SW RAID support for direct attached NVMe drives.

Added a new BIOS/Platform Configuration (RBSU) option to Virtualization Options called AMD I/O Virtualization Technology. This option replaces the AMD IOMMU and AMD Virtualization Technology options in the prior BIOS release, and combines the functionality into a single setting. In previous releases, the system firmware only used the AMD IOMMU setting for controlling both IOMMU and VT due to operating system issues when these setting were controlled independently. The new setting removes the perception that the two settings are independent.

Changed the BIOS/Platform Configuration (RBSU) option called Infinity Fabric Performance State to be hidden unless Infinity Fabric Power Management is disabled. Also updated the performance state value from Disabled to Auto. Performance state set to Disabled is misleading, as the system behavior will still set the Infinity Fabric to a performance state instead of disabling it.

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the fan runs at a higher than expected speed after upgrading the firmware of HPE Smart Array E208i or E408i to version 3.0.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the fan runs at a higher than expected speed after upgrading the firmware of HPE Smart Array E208i or E408i to version 3.0.

**Known Issues:**

None

## Enhancements

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

Added driver and option to enable SmartRAID SW RAID support for direct attached NVMe drives.

Added a new BIOS/Platform Configuration (RBSU) option to Virtualization Options called AMD I/O Virtualization Technology. This option replaces the AMD IOMMU and AMD Virtualization Technology options in the prior BIOS release, and combines the functionality into a single setting. In previous releases, the system firmware only used the AMD IOMMU setting for controlling both IOMMU and VT due to operating system issues when these setting were controlled independently. The new setting removes the perception that the two settings are independent.

Changed the BIOS/Platform Configuration (RBSU) option called Infinity Fabric Performance State to be hidden unless Infinity Fabric Power Management is disabled. Also updated the performance state value from Disabled to Auto. Performance state set to Disabled is misleading, as the system behavior will still set the Infinity Fabric to a performance state instead of disabling it.

Version: 2.42_01-23-2021 **(Recommended)**
Filename: cp046626.compsig; cp046626.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL360 Gen10 System ROM - U32

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced

Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced

Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL365/DL385/DL385 v2 Gen10 Plus (A42) Servers
Version: 2.40_02-23-2021 **(Optional)**
Filename: cp044529.exe; cp044529_part1.compsig; cp044529_part2.compsig

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL365/DL385/DL385 v2 Gen10 Plus System ROM - A42

**Release Version:**

2.40_02-23-2021

**Last Recommended or Critical Revision:**

1.38_10-30-2020

**Previous Revision:**

1.38_10-30-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

Added driver and option to enable SmartRAID SW RAID support for direct attached NVMe drives.

Added a new BIOS/Platform Configuration (RBSU) option to Virtualization Options called AMD I/O Virtualization Technology. This option replaces the AMD IOMMU and AMD Virtualization Technology options in the prior BIOS release, and combines the functionality into a single setting. In previous releases, the system firmware only used the AMD IOMMU setting for controlling both IOMMU and VT due to operating system issues when these setting were controlled independently. The new setting removes the perception that the two settings are independent.

Changed the BIOS/Platform Configuration (RBSU) option called Infinity Fabric Performance State to be hidden unless Infinity Fabric Power Management is disabled. Also updated the performance state value from Disabled to Auto. Performance state set to Disabled is misleading, as the system behavior will still set the Infinity Fabric to a performance state instead of disabling it.

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the fan runs at a higher than expected speed after upgrading the firmware of HPE Smart Array E208i or E408i to version 3.0.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the fan runs at a higher than expected speed after upgrading the firmware of HPE Smart Array E208i or E408i to version 3.0.

**Known Issues:**

None

**Enhancements**

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

Added driver and option to enable SmartRAID SW RAID support for direct attached NVMe drives.

Added a new BIOS/Platform Configuration (RBSU) option to Virtualization Options called AMD I/O Virtualization Technology. This option replaces the AMD IOMMU and AMD Virtualization Technology options in the prior BIOS release, and combines the functionality into a single setting. In previous releases, the system firmware only used the AMD IOMMU setting for controlling both IOMMU and VT due to operating system issues when these setting were controlled independently. The new setting removes the perception that the two settings are independent.

Changed the BIOS/Platform Configuration (RBSU) option called Infinity Fabric Performance State to be hidden unless Infinity Fabric Power Management is disabled. Also updated the performance state value from Disabled to Auto. Performance state set to Disabled is misleading, as the system behavior will still set the Infinity Fabric to a performance state instead of disabling it.

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL380 Gen10 (U30) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: cp046614.compsig; cp046614.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL380 Gen10 System ROM - U30

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50567). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50567). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL385 Gen10 (A40) Servers
Version: 2.44_10-29-2020 **(Recommended)**
Filename: cp046090.compsig; cp046090.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL385 Gen10 System ROM - A40

**Release Version:**

2.44_10-29-2020

**Last Recommended or Critical Revision:**

2.44_10-29-2020

**Previous Revision:**

2.42_07-17-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added a new BIOS/Platform Configuration (RBSU) for dual bifurcation (quadfurcation) of PCIe Adapters to the Advanced PCIe Configuration Options. This option will allow a x16 PCIe device to be bifurcated into four x4 devices. This option would only be used for PCIe Adapters that support his level of bifurcation.

Added support to increase the maximum amount of system memory to 8TB.

**Problems Fixed:**

Addressed a rare issue where the system may fail to boot after a warm reset.

Addressed an issue where the Advanced Options for Secure Boot failed to export all keys.

Addressed an issue where One-Button Secure Erase was not completed when SmartRAID SW RAID support is enabled.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system may hang during boot up after a warm reset from the OS.

Addressed an issue where the Advanced Options for Secure Boot failed to export all keys.

Addressed an issue where One-Button Secure Erase was not completed when SmartRAID SW RAID support is enabled.

**Known Issues:**

None

**Enhancements**

Added a new BIOS/Platform Configuration (RBSU) for dual bifurcation (quadfurcation) of PCIe Adapters to the Advanced PCIe Configuration Options. This option will allow a x16 PCIe device to be bifurcated into four x4 devices. This option would only be used for PCIe Adapters that support his level of bifurcation.

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL560 Gen10/DL580 Gen10 (U34) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: cp046635.compsig; cp046635.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL560 Gen10/DL580 Gen10 System ROM - U34

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check

exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Windows x64 - HPE ProLiant MicroServer Gen10 Plus (U48) Servers
Version: 2.20_10-27-2020 **(Recommended)**
Filename: cp045740.compsig; cp045740.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant MicroServer Gen10 Plus System ROM - U48

**Release Version:**

2.20_10-27-2020

**Last Recommended or Critical Revision:**

2.20_10-27-2020

**Previous Revision:**

2.18_06-24-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

**Known Issues:**

None

**Enhancements**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Version: 2.42_01-23-2021 **(Recommended)**
Filename: cp046632.compsig; cp046632.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant ML110 Gen10 System ROM - U33

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced

Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced

Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Windows x64 - HPE ProLiant ML30 Gen10 (U44) Servers
Version: 2.20_10-27-2020 **(Recommended)**
Filename: cp045752.compsig; cp045752.exe

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant ML30 Gen10 System ROM - U44

**Release Version:**

2.20_10-27-2020

**Last Recommended or Critical Revision:**

2.20_10-27-2020

**Previous Revision:**

2.18_06-24-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

Addressed an issue where the "Minimum Processor Idle Power Package C-State" RBSU option was missing.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

Addressed an issue where the "Minimum Processor Idle Power Package C-State" RBSU option was missing.

**Known Issues:**

None

**Enhancements**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Windows x64 - HPE ProLiant ML350 Gen10 (U41) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: cp046647.compsig; cp046647.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant ML350 Gen10 System ROM - U41

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

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Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Online ROM Flash Component for Windows x64 - HPE ProLiant XL225n Gen10 Plus (A46) Server
Version: 2.42_02-23-2021 **(Optional)**
Filename: cp046930.exe; cp046930_part1.compsig; cp046930_part2.compsig

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant XL225n Gen10 Plus System ROM - A46

**Release Version:**

2.42_02-23-2021

**Last Recommended or Critical Revision:**

1.38_11-06-2020

**Previous Revision:**

2.40_01-21-2021

**Firmware Dependencies:**

System Programable Logic CPLD version 34

**Enhancements/New Features:**

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

None

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Enhancements**

**Important Notes:**

None

**Firmware Dependencies:**

System Programable Logic CPLD version 34

**Enhancements/New Features:**

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Known Issues:**

None

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Online ROM Flash Component for Windows x64 - HPE ProLiant XL230k Gen10 (U37) Server
Version: 2.42_01-23-2021 **(Recommended)**
Filename: cp046681.compsig; cp046681.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant XL230k Gen10 System ROM - U37

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

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Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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ROM Flash Firmware Package - HPE Apollo 2000 Gen10/HPE ProLiant XL170r/XL190r Gen10 (U38) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: U38_2.42_01_23_2021.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 2000 Gen10/HPE ProLiant XL170r/XL190r Gen10 System ROM - U38

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

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Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

ROM Flash Firmware Package - HPE Apollo 4200 Gen10/HPE ProLiant XL420 Gen10 (U39) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: U39_2.42_01_23_2021.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 4200 Gen10/ProLiant XL420 Gen10 System ROM - U39

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and

0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

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Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

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Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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ROM Flash Firmware Package - HPE Apollo 4510 Gen10/HPE ProLiant XL450 Gen10 (U40) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: U40_2.42_01_23_2021.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 4510 Gen10/ProLiant XL450 Gen10 System ROM - U40

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

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Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

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Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

ROM Flash Firmware Package - HPE Apollo 6500 Gen10/HPE ProLiant XL270d Gen10 (U45) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: U45_2.42_01_23_2021.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 6500 Gen10/HPE ProLiant XL270d Gen10 System ROM - U45

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine

check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

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Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

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**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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ROM Flash Firmware Package - HPE ProLiant BL460c Gen10 (I41) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: I41_2.42_01_23_2021.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant BL460c Gen10 System ROM - I41

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

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**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

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**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

ROM Flash Firmware Package - HPE ProLiant DL160 Gen10/DL180 Gen10 (U31) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: U31_2.42_01_23_2021.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL160 Gen10/DL180 Gen10 System ROM - U31

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and

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**Known Issues:**

None

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

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Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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ROM Flash Firmware Package - HPE ProLiant DL20 Gen10 (U43) Servers
Version: 2.20_10-27-2020 **(Recommended)**
Filename: U43_2.20_10_27_2020.fwpkg

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant DL20 Gen10 System ROM - U43

**Release Version:**

2.20_10-27-2020

**Last Recommended or Critical Revision:**

2.20_10-27-2020

**Previous Revision:**

2.18_06-24-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

Addressed an issue where the "Minimum Processor Idle Power Package C-State" RBSU option was missing.

**Known Issues:**

None

## Fixes

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

Addressed an issue where the "Minimum Processor Idle Power Package C-State" RBSU option was missing.

**Known Issues:**

None

**Enhancements**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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ROM Flash Firmware Package - HPE ProLiant DL325 Gen10 (A41) Servers
Version: 2.44_11-13-2020 **(Recommended)**
Filename: A41_2.44_11_13_2020.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL325 Gen10 System ROM - A41

**Release Version:**

2.44_11-13-2020

**Last Recommended or Critical Revision:**

2.44_11-13-2020

**Previous Revision:**

2.42_07-17-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added a new BIOS/Platform Configuration (RBSU) for dual bifurcation (quadfurcation) of PCIe Adapters to the Advanced PCIe Configuration Options. This option will allow a x16 PCIe device to be bifurcated into four x4 devices. This option would only be used for PCIe Adapters that support his level of bifurcation.

Added support to increase the maximum amount of system memory to 8TB.

**Problems Fixed:**

Addressed a rare issue where the system may fail to boot after a warm reset.

Addressed an issue where the Advanced Options for Secure Boot failed to export all keys.

Addressed an issue where One-Button Secure Erase was not completed when SmartRAID SW RAID support is enabled.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed a rare issue where the system may fail to boot after a warm reset.

Addressed an issue where the Advanced Options for Secure Boot failed to export all keys.

Addressed an issue where One-Button Secure Erase was not completed when SmartRAID SW RAID support is enabled.

**Known Issues:**

None

**Enhancements**

Added a new BIOS/Platform Configuration (RBSU) for dual bifurcation (quadfurcation) of PCIe Adapters to the Advanced PCIe Configuration Options. This option will allow a x16 PCIe device to be bifurcated into four x4 devices. This option would only be used for PCIe Adapters that support his level of bifurcation.

Added support to increase the maximum amount of system memory to 8TB.

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ROM Flash Firmware Package - HPE ProLiant DL360 Gen10 (U32) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: U32_2.42_01_23_2021.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL360 Gen10 System ROM - U32

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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ROM Flash Firmware Package - HPE ProLiant DL380 Gen10 (U30) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: U30_2.42_01_23_2021.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL380 Gen10 System ROM - U30

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50567). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50567). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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ROM Flash Firmware Package - HPE ProLiant DL385 Gen10 (A40) Servers
Version: 2.44_10-29-2020 **(Recommended)**
Filename: A40_2.44_10_29_2020.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL385 Gen10 System ROM - A40

**Release Version:**

2.44_10-29-2020

**Last Recommended or Critical Revision:**

2.44_10-29-2020

**Previous Revision:**

2.42_07-17-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added a new BIOS/Platform Configuration (RBSU) for dual bifurcation (quadfurcation) of PCIe Adapters to the Advanced PCIe Configuration Options. This option will allow a x16 PCIe device to be bifurcated into four x4 devices. This option would only be used for PCIe Adapters that support his level of bifurcation.

Added support to increase the maximum amount of system memory to 8TB.

**Problems Fixed:**

Addressed a rare issue where the system may fail to boot after a warm reset.

Addressed an issue where the Advanced Options for Secure Boot failed to export all keys.

Addressed an issue where One-Button Secure Erase was not completed when SmartRAID SW RAID support is enabled.

**Known Issues:**

None

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system may hang during boot up after a warm reset from the OS.

Addressed an issue where the Advanced Options for Secure Boot failed to export all keys.

Addressed an issue where One-Button Secure Erase was not completed when SmartRAID SW RAID support is enabled.

**Known Issues:**

None

## Enhancements

Added a new BIOS/Platform Configuration (RBSU) for dual bifurcation (quadfurcation) of PCIe Adapters to the Advanced PCIe Configuration Options. This option will allow a x16 PCIe device to be bifurcated into four x4 devices. This option would only be used for PCIe Adapters that support his level of bifurcation.

ROM Flash Firmware Package - HPE ProLiant DL560 Gen10/DL580 Gen10 (U34) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: U34_2.42_01_23_2021.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL560 Gen10/DL580 Gen10 System ROM - U34

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel

microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

ROM Flash Firmware Package - HPE ProLiant MicroServer Gen10 Plus (U48) Servers
Version: 2.20_10-27-2020 **(Recommended)**
Filename: U48_2.20_10_27_2020.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant MicroServer Gen10 Plus System ROM - U48

**Release Version:**

2.20_10-27-2020

**Last Recommended or Critical Revision:**

2.20_10-27-2020

**Previous Revision:**

2.18_06-24-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

**Known Issues:**

None

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

**Known Issues:**

None

**Enhancements**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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ROM Flash Firmware Package - HPE ProLiant ML110 Gen10 (U33) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: U33_2.42_01_23_2021.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant ML110 Gen10 System ROM - U33

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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ROM Flash Firmware Package - HPE ProLiant ML30 Gen10 (U44) Servers
Version: 2.20_10-27-2020 **(Recommended)**
Filename: U44_2.20_10_27_2020.fwpkg

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE ProLiant ML30 Gen10 System ROM - U44

**Release Version:**

2.20_10-27-2020

**Last Recommended or Critical Revision:**

2.20_10-27-2020

**Previous Revision:**

2.18_06-24-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

Addressed an issue where the "Minimum Processor Idle Power Package C-State" RBSU option was missing.

**Known Issues:**

None

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for security vulnerabilities documented as CVE-2020-8696, CVE-2020-8694 and CVE-2020-8695. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00381 and INTEL-SA-00389. The Intel microcode patches included in this release are version 0x000000DE (CPUIDs 906ED, 906EC, 906EB and 906EA). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel Reference Code which provides mitigations for BIOS advisories and security vulnerabilities documented as CVE-2020-0593. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00358. These issues are not unique to HPE servers.

Addressed an issue where the "Minimum Processor Idle Power Package C-State" RBSU option was missing.

**Known Issues:**

None

**Enhancements**

Added a new BIOS/Platform Configuration (RBSU) option to Memory Options called Refresh Watermarks. When selecting the Low Watermark setting, the memory controller will help reduce susceptibility to a DDR4 RowHammer attack. It is expected that a memory performance impact will be seen when enabling the Low Watermark setting. The default operation of the system has not changed and customers wanting to provide additional RowHammer protection should enable this setting.

Added support to BIOS/Platform Configuration (RBSU) to allow importing and exporting Secure Boot signature lists as a signed binary file. This is useful to import the Microsoft revocation list binary file into the Secure Boot DBX as found on the UEFI forum at https://uefi.org/revocationlistfile.

Updated the System ROM support for One Button Secure Erase functionality with the latest HPE option devices.

Updated the RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

---

ROM Flash Firmware Package - HPE ProLiant ML350 Gen10 (U41) Servers
Version: 2.42_01-23-2021 **(Recommended)**
Filename: U41_2.42_01_23_2021.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant ML350 Gen10 System ROM - U41

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC 1). This support also requires the latest version of iLO Firmware, version 2.40 or later

ROM Flash Firmware Package - HPE ProLiant XL225n Gen10 Plus (A46) Servers

Version: 2.42_02-23-2021 **(Optional)**

Filename: A46_2.42_02_23_2021.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant XL225n Gen10 Plus System ROM - A46

**Release Version:**

2.42_02-23-2021

**Last Recommended or Critical Revision:**

1.38_11-06-2020

**Previous Revision:**

2.40_01-21-2021

**Firmware Dependencies:**

System Programable Logic CPLD version 34

**Enhancements/New Features:**

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

None

**Known Issues:**

None

**Enhancements**

**Important Notes:**

None

**Firmware Dependencies:**

System Programable Logic CPLD version 34

**Enhancements/New Features:**

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Known Issues:**

None

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ROM Flash Firmware Package - HPE ProLiant XL230k Gen10 (U37) Server

Version: 2.42_01-23-2021 **(Recommended)**

Filename: U37_2.42_01_23_2021.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant XL230k Gen10 System ROM - U37

**Release Version:**

2.42_01-23-2021

**Last Recommended or Critical Revision:**

2.42_01-23-2021

**Previous Revision:**

2.40_10-26-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception under heavy stress with short loops of instructions. This may result in a machine check exception in Bank 3 with MSCOD = 0080 and MCACOD = 0400h, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). This issue only impacts 2nd generation Intel Xeon Scalable Performance processors. This issue is not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides a fix for a potential machine check exception when high levels of posted interrupt traffic occurs on PCIe. This may result in a machine check exception in Bank 9, 10 or 11 with MSCOD = 000Ch, as logged in the Integrated Management Log (IML). The Intel microcode patches included in this release are versions 0x02006A09 (CPUID 50654), 0x04003005 (CPUID 50656) and 0x05003005 (CPUID 50657). As part of this change, a new BIOS/Platform Configuration (RBSU) option in Advanced Performance Options has been added to allow a customer to disable this mitigation. This issue is not unique to HPE servers.

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the Extended Memory Test is not run when configured in BIOS/Platform Configuration (RBSU) to Enabled. Note that this option is Disabled by default. This issue was introduced in the v2.40 revision of the System ROM.

Addressed an issue where the server system fans may run higher than anticipated when a server is configured with AHCI SATA drives.

Addressed an issue where a bad LRDIMM memory device could be mapped out but was not properly reported in the Integrated Memory Log (IML). This issue only impacted systems configured with LRDIMMs.

**Known Issues:**

None

**Enhancements**

Updated the support for Fast Fault Tolerant Memory Mode (ADDDC) to improve system uptime.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

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Version: 2.40_02-24-2021 **(Optional)**

Filename: A48_2.40_02_24_2021.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 6500 Gen10 Plus/HPE ProLiant XL645d Gen10 Plus System ROM - A48

**Release Version:**

2.40_02-24-2021

**Last Recommended or Critical Revision:**

1.38_12-23-2020

**Previous Revision:**

1.38_12-23-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for AMD EPYC 7003 processors.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

**Known Issues:**

None

**Enhancements**

Added support for AMD EPYC 7003 processors.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

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ROM Flash Universal Firmware Package - HPE Apollo 6500 Gen10 Plus/HPE ProLiant XL675d Gen10 Plus (A47) Servers

Version: 2.40_02-23-2021 **(Optional)**

Filename: A47_2.40_02_23_2021.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Apollo 6500 Gen10 Plus/HPE ProLiant XL675d Gen10 Plus System ROM - A47

**Release Version:**

2.40_02-23-2021

**Last Recommended or Critical Revision:**

1.38_11-06-2020

**Previous Revision:**

1.38_11-06-2020

**Firmware Dependencies:**

HPE ProLiant XL675d Gen10Plus CPLD version 0F

HPE Apollo 6500 Gen10 Plus Chassis CPLD version 0909

**Enhancements/New Features:**

Added support for AMD EPYC 7003 processors.

Added support for Direct Liquid Cooling solution.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

HPE ProLiant XL675d Gen10Plus CPLD version 0F

HPE Apollo 6500 Gen10 Plus Chassis CPLD version 0909

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

**Known Issues:**

None

**Enhancements**

Added support for AMD EPYC 7003 processors.

Added support for Direct Liquid Cooling solution.

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

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ROM Flash Universal Firmware Package - HPE ProLiant DL325/DL325 v2/DL345 Gen10 Plus (A43) Servers

Version: 2.40_02-23-2021 **(Optional)**

Filename: A43_2.40_02_23_2021.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL325/DL325 v2/DL345 Gen10 Plus System ROM - A43

**Release Version:**

2.40_02-23-2021

**Last Recommended or Critical Revision:**

1.38_10-30-2020

**Previous Revision:**

1.38_10-30-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

Added driver and option to enable SmartRAID SW RAID support for direct attached NVMe drives.

Added a new BIOS/Platform Configuration (RBSU) option to Virtualization Options called AMD I/O Virtualization Technology. This option replaces the AMD IOMMU and AMD Virtualization Technology options in the prior BIOS release, and combines the functionality into a single setting. In previous releases, the system firmware only used the AMD IOMMU setting for controlling both IOMMU and VT due to operating system issues when these setting were controlled independently. The new setting removes the perception that the two settings are independent.

Changed the BIOS/Platform Configuration (RBSU) option called Infinity Fabric Performance State to be hidden unless Infinity Fabric Power Management is disabled. Also updated the performance state value from Disabled to Auto. Performance state set to Disabled is misleading, as the system behavior will still set the Infinity Fabric to a performance state instead of disabling it.

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the fan runs at a higher than expected speed after upgrading the firmware of HPE Smart Array E208i or E408i to version 3.0.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the fan runs at a higher than expected speed after upgrading the firmware of HPE Smart Array E208i or E408i to version 3.0.

**Known Issues:**

None

**Enhancements**

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

Added driver and option to enable SmartRAID SW RAID support for direct attached NVMe drives.

Added a new BIOS/Platform Configuration (RBSU) option to Virtualization Options called AMD I/O Virtualization Technology. This option replaces the AMD IOMMU and AMD Virtualization Technology options in the prior BIOS release, and combines the functionality into a single setting. In previous releases, the system firmware only used the

AMD IOMMU setting for controlling both IOMMU and VT due to operating system issues when these setting were controlled independently. The new setting removes the perception that the two settings are independent.

Changed the BIOS/Platform Configuration (RBSU) option called Infinity Fabric Performance State to be hidden unless Infinity Fabric Power Management is disabled. Also updated the performance state value from Disabled to Auto. Performance state set to Disabled is misleading, as the system behavior will still set the Infinity Fabric to a performance state instead of disabling it.

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ROM Flash Universal Firmware Package - HPE ProLiant DL365/DL385/DL385 v2 Gen10 Plus (A42) Servers

Version: 2.40_02-23-2021 **(Optional)**

Filename: A42_2.40_02_23_2021.fwpkg

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL365/DL385/DL385 v2 Gen10 Plus System ROM - A42

**Release Version:**

2.40_02-23-2021

**Last Recommended or Critical Revision:**

1.38_10-30-2020

**Previous Revision:**

1.38_10-30-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

Added driver and option to enable SmartRAID SW RAID support for direct attached NVMe drives.

Added a new BIOS/Platform Configuration (RBSU) option to Virtualization Options called AMD I/O Virtualization Technology. This option replaces the AMD IOMMU and AMD Virtualization Technology options in the prior BIOS release, and combines the functionality into a single setting. In previous releases, the system firmware only used the AMD IOMMU setting for controlling both IOMMU and VT due to operating system issues when these setting were controlled independently. The new setting removes the perception that the two settings are independent.

Changed the BIOS/Platform Configuration (RBSU) option called Infinity Fabric Performance State to be hidden unless Infinity Fabric Power Management is disabled. Also updated the performance state value from Disabled to Auto. Performance state set to Disabled is misleading, as the system behavior will still set the Infinity Fabric to a performance state instead of disabling it.

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the fan runs at a higher than expected speed after upgrading the firmware of HPE Smart Array E208i or E408i to version 3.0.

**Known Issues:**

None

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an extremely rare issue where the Real Time Clock may become corrupted on a server boot. This was typically seen as an unexpected change to the RTC Year field but could impact other parts of the Date and Time. This issue is not unique to HPE servers.

Addressed an issue where the fan runs at a higher than expected speed after upgrading the firmware of HPE Smart Array E208i or E408i to version 3.0.

**Known Issues:**

None

**Enhancements**

Added support to the BIOS/Platform Configuration (RBSU) Time Zones to add Dublin/London (UTC+1). This support also requires the latest version of iLO Firmware, version 2.40 or later.

Added a new BIOS/Platform Configuration (RBSU) for Platform RAS Policy to control the Platform Resiliency and Serviceability (RAS) policy. This option controls whether platform firmware or the operating system has control of corrected error handling and reporting.

Added driver and option to enable SmartRAID SW RAID support for direct attached NVMe drives.

Added a new BIOS/Platform Configuration (RBSU) option to Virtualization Options called AMD I/O Virtualization Technology. This option replaces the AMD IOMMU and AMD Virtualization Technology options in the prior BIOS release, and combines the functionality into a single setting. In previous releases, the system firmware only used the AMD IOMMU setting for controlling both IOMMU and VT due to operating system issues when these setting were controlled independently. The new setting removes the perception that the two settings are independent.

Changed the BIOS/Platform Configuration (RBSU) option called Infinity Fabric Performance State to be hidden unless Infinity Fabric Power Management is disabled. Also updated the performance state value from Disabled to Auto. Performance state set to Disabled is misleading, as the system behavior will still set the Infinity Fabric to a performance state instead of disabling it.

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**Driver - Chipset** Top

Identifiers for AMD EPYC Processors for Microsoft Windows

Version: 3.1.0.0 **(Recommended)**

Filename: cp046033.compsig; cp046033.exe

**Enhancements**

- Updated AMD IOMMU device
- Added support for HPE ProLiant Gen10 Plus Snap4 Latent servers

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Identifiers for Intel Xeon E-2xxx Processor for Windows

Version: 10.1.18015.8142 **(Optional)**

Filename: cp039323.compsig; cp039323.exe

**Enhancements**

Add support for the HPE ProLiant MicroServer Gen10 Plus Server.

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Identifiers for Intel Xeon Scalable Processors (First and Second Generation) for Windows

Version: 10.1.18435.8224 **(Optional)**

Filename: cp044968.compsig; cp044968.exe

**Enhancements**

- Add support for Intel devices 201A, 201C, and 206F
- Add support for Superdome Flex 280

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Identifiers for Intel Xeon Scalable Processors (Third Generation) for Windows

Version: 10.1.18661.8255 **(Recommended)**

Filename: cp047086.compsig; cp047086.exe

**Enhancements**

- Removed device "VMD Registers – 28C0"

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## Driver - Lights-Out Management Top

HPE iLO Native Driver for ESXi 7.0

Version: 10.7.0 **(Recommended)**

Filename: ilo-driver_700.10.7.0.6-1OEM.700.1.0.15843807_17481969.zip

**Fixes**

Fixed PSOD when the iLO driver device initialization fails.

**Enhancements**

Supports VMware ESXi 7.0 U1 and ESXi 7.0 U2

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**Driver - Network** Top

Broadcom NetXtreme-E Driver for Windows Server 2016

Version: 218.0.32.0 **(Optional)**

Filename: cp045254.compsig; cp045254.exe

**Important Note!**

HPE recommends the firmware provided in *Broadcom NetXtreme-E Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Fixes**

- This product correct an issue where an system are freeze and reboot when system recovering after non-fatal error.
- This product correct an issue which fixes VF will not load on certain Virtual OS when Windows is host OS.
- This product correct an issue which fixes user mode RDMA blue screen of death (BSoD) caused by an IRP SystemBuffer access race condition
- This product corrects a Windows Stop Error blue screen of death (BSoD) seen when uninstalling the NDIS driver

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10/25Gb 2-port SFP28 BCM57414 OCP3 Adapter
- HPE Ethernet 10Gb 2-port BaseT BCM57416 Adapter
- HPE Ethernet 10Gb 2-port BaseT BCM57416 OCP3 Adapter
- HPE Ethernet 10Gb 2-port SFP+ BCM57412 Adapter
- HPE Ethernet 10Gb 2-port SFP+ BCM57412 OCP3 Adapter
- HPE Ethernet 10/25Gb 2-port SFP28 BCM57414 Adapter

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Broadcom NetXtreme-E Driver for Windows Server 2019

Version: 218.0.32.0 **(Optional)**

Filename: cp045255.compsig; cp045255.exe

**Important Note!**

4PE recommends the firmware provided in *Broadcom NetXtreme-E Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Fixes**

- This product correct an issue where an system are freeze and reboot when system recovering after non-fatal error.
- This product correct an issue which fixes BSOD observed after updating the inbox driver on Windows 2019.
- This product correct an issue which fixes VF will not load on certain Virtual OS when Windows is host OS.
- This product correct an issue which fixes user mode RDMA blue screen of death (BSoD) caused by an IRP SystemBuffer access race condition
- This product corrects a Windows Stop Error blue screen of death (BSoD) seen when uninstalling the NDIS driver.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10/25Gb 2-port SFP28 BCM57414 OCP3 Adapter
- HPE Ethernet 10Gb 2-port BaseT BCM57416 Adapter
- HPE Ethernet 10Gb 2-port BaseT BCM57416 OCP3 Adapter
- HPE Ethernet 10Gb 2-port SFP+ BCM57412 Adapter
- HPE Ethernet 10Gb 2-port SFP+ BCM57412 OCP3 Adapter
- HPE Ethernet 10/25Gb 2-port SFP28 BCM57414 Adapter

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HPE Blade Emulex 10/20GbE Driver for VMware vSphere 6.5

Version: 2020.03.09 **(Optional)**

Filename: cp042919.compsig; cp042919.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.5*, version 2019.12.01 or later, for use with this driver.

**Fixes**

This product corrects a vmnic flapping issue which impacts network connectivity.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

---

HPE Blade Emulex 10/20GbE Driver for VMware vSphere 6.7

Version: 2020.03.09 **(Optional)**

Filename: cp042920.compsig; cp042920.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.7*, version 2019.12.01 or later, for use with this driver.

**Fixes**

This product corrects a vmnic flapping issue which impacts network connectivity.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Blade Emulex 10/20GbE Driver for Windows Server 2012 R2

Version: 12.0.1195.0 **(Optional)**

Filename: cp039927.compsig; cp039927.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64),* version 2019.03.01 or later, for use with this driver.

**Enhancements**

Initial release.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Blade Emulex 10/20GbE Driver for Windows Server 2016

Version: 12.0.1195.0 **(Optional)**

Filename: cp039928.compsig; cp039928.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64),* version 2019.03.01 or later, for use with this driver.

**Enhancements**

Initial release.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Blade Emulex 10/20GbE Driver for Windows Server 2019

Version: 12.0.1195.0 **(Optional)**

Filename: cp039929.compsig; cp039929.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64),* version 2019.03.01 or later, for use with this driver.

**Enhancements**

Initial release.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Blade Emulex 10/20GbE Drivers for Red Hat Enterprise Linux 7

Version: 12.0.1342.0-1 **(Optional)**

Filename: kmod-be2net_bl-12.0.1342.0-1.rhel7u8.x86_64.compsig; kmod-be2net_bl-12.0.1342.0-1.rhel7u8.x86_64.rpm; kmod-be2net_bl-12.0.1342.0-1.rhel7u9.x86_64.compsig; kmod-be2net_bl-12.0.1342.0-1.rhel7u9.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Firmware Flash for Emulex Mezzanine Converged Network Adapters for Linux (x64)*, version 2021.02.01 for use with these drivers.

**Enhancements**

This product now supports Red Hat Enterprise Linux 7, Updates 8 and 9.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 20Gb 2-port 650FLB Adapter

- HPE FlexFabric 20Gb 2-port 650M Adapter

---

HPE Blade Emulex 10/20GbE Drivers for Red Hat Enterprise Linux 8

Version: 12.0.1342.0-1 **(Optional)**

Filename: kmod-be2net_bl-12.0.1342.0-1.rhel8u2.x86_64.compsig; kmod-be2net_bl-12.0.1342.0-1.rhel8u2.x86_64.rpm; kmod-be2net_bl-12.0.1342.0-1.rhel8u3.x86_64.compsig; kmod-be2net_bl-12.0.1342.0-1.rhel8u3.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Firmware Flash for Emulex Mezzanine Converged Network Adapters for Linux (x64)*, version 2021.02.01 for use with these drivers.

**Enhancements**

This product now supports Red Hat Enterprise Linux 8, Updates 2 and 3.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Blade Emulex 10/20GbE Drivers for SUSE Linux Enterprise Server 12

Version: 12.0.1342.0-1 **(Optional)**

Filename: be2net_bl-kmp-default-12.0.1342.0_k4.12.14_120-1.sles12sp5.x86_64.compsig; be2net_bl-kmp-default-12.0.1342.0_k4.12.14_120-1.sles12sp5.x86_64.rpm; be2net_bl-kmp-default-12.0.1342.0_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; be2net_bl-kmp-default-12.0.1342.0_k4.12.14_94.41-1.sles12sp4.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Firmware Flash for Emulex Mezzanine Converged Network Adapters for Linux (x64)*, version 2021.02.01 for use with these drivers.

**Fixes**

This product now supports SUSE Linux Enterprise Server 12 SP5.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Blade Emulex 10/20GbE Drivers for SUSE Linux Enterprise Server 15

Version: 12.0.1342.0-1 (B) **(Optional)**

Filename: be2net_bl-kmp-default-12.0.1342.0_k4.12.14_195-1.sles15sp1.x86_64.compsig; be2net_bl-kmp-default-12.0.1342.0_k4.12.14_195-1.sles15sp1.x86_64.rpm; be2net_bl-kmp-default-12.0.1342.0_k5.3.18_22-1.sles15sp2.x86_64.compsig; be2net_bl-kmp-default-12.0.1342.0_k5.3.18_22-1.sles15sp2.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Firmware Flash for Emulex Mezzanine Converged Network Adapters for Linux (x64)*, version 2021.02.01 for use with these drivers.

**Enhancements**

This product now supports SUSE Linux Enterprise Server 15 SP2.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Blade Emulex 10/20GbE iSCSI Driver for VMware vSphere 6.5

Version: 2019.12.20 **(Optional)**

Filename: cp039936.compsig; cp039936.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.5*, version 2019.03.01 or later, for use with this driver.

**Enhancements**

Initial release.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Blade Emulex 10/20GbE iSCSI Driver for VMware vSphere 6.7

Version: 2019.12.20 **(Optional)**

Filename: cp039935.compsig; cp039935.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.7*, version 2019.03.01 or later, for use with this driver.

**Enhancements**

Initial release.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

HPE Blade Emulex 10/20GbE iSCSI Driver for Windows Server 2012 R2

Version: 12.0.1171.0 **(Optional)**

Filename: cp039930.compsig; cp039930.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64),* version 2019.03.01 or later, for use with this driver.

**Enhancements**

Initial release.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Blade Emulex 10/20GbE iSCSI Driver for Windows Server 2016

Version: 12.0.1171.0 **(Optional)**

Filename: cp039931.compsig; cp039931.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64),* version 2019.03.01 or later, for use with this driver.

**Enhancements**

Initial release.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Blade Emulex 10/20GbE iSCSI Driver for Windows Server 2019

Version: 12.0.1171.0 **(Optional)**

Filename: cp039932.compsig; cp039932.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64),* version 2019.03.01 or later, for use with this driver.

**Enhancements**

Initial release.

**Supported Devices and Features**

This driver supports the following network adapters:

- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter

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HPE Blade Emulex 10/20GbE iSCSI Drivers for Red Hat Enterprise Linux 7

Version: 12.0.1342.0-1 **(Optional)**

Filename: kmod-be2iscsi_bl-12.0.1342.0-1.rhel7u8.x86_64.compsig; kmod-be2iscsi_bl-12.0.1342.0-1.rhel7u8.x86_64.rpm; kmod-be2iscsi_bl-12.0.1342.0-1.rhel7u9.x86_64.compsig; kmod-be2iscsi_bl-12.0.1342.0-1.rhel7u9.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Firmware Flash for Emulex Mezzanine Converged Network Adapters for Linux (x64)*, version 2021.02.01 for use with these drivers.

**Enhancements**

This product now supports Red Hat Enterprise Linux 7, Updates 8 and 9.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

HPE Blade Emulex 10/20GbE iSCSI Drivers for Red Hat Enterprise Linux 8
Version: 12.0.1342.0-1 **(Optional)**
Filename: kmod-be2iscsi_bl-12.0.1342.0-1.rhel8u2.x86_64.compsig; kmod-be2iscsi_bl-12.0.1342.0-1.rhel8u2.x86_64.rpm; kmod-be2iscsi_bl-12.0.1342.0-1.rhel8u3.x86_64.compsig; kmod-be2iscsi_bl-12.0.1342.0-1.rhel8u3.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Firmware Flash for Emulex Mezzanine Converged Network Adapters for Linux (x64)*, version 2021.02.01 for use with these drivers.

**Enhancements**

This product now supports Red Hat Enterprise Linux 8, Updates 2 and 3.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Blade Emulex 10/20GbE iSCSI Drivers for SUSE Linux Enterprise Server 12
Version: 12.0.1342.0-1 **(Optional)**
Filename: be2iscsi_bl-kmp-default-12.0.1342.0_k4.12.14_120-1.sles12sp5.x86_64.compsig; be2iscsi_bl-kmp-default-12.0.1342.0_k4.12.14_120-1.sles12sp5.x86_64.rpm; be2iscsi_bl-kmp-default-12.0.1342.0_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; be2iscsi_bl-kmp-default-12.0.1342.0_k4.12.14_94.41-1.sles12sp4.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Firmware Flash for Emulex Mezzanine Converged Network Adapters for Linux (x64)*, version 2021.02.01 for use with these drivers.

**Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP5.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Blade Emulex 10/20GbE iSCSI Drivers for SUSE Linux Enterprise Server 15
Version: 12.0.1342.0-1 (B) **(Optional)**
Filename: be2iscsi_bl-kmp-default-12.0.1342.0_k4.12.14_195-1.sles15sp1.x86_64.compsig; be2iscsi_bl-kmp-default-12.0.1342.0_k4.12.14_195-1.sles15sp1.x86_64.rpm; be2iscsi_bl-kmp-default-12.0.1342.0_k5.3.18_22-1.sles15sp2.x86_64.compsig; be2iscsi_bl-kmp-default-12.0.1342.0_k5.3.18_22-1.sles15sp2.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Firmware Flash for Emulex Mezzanine Converged Network Adapters for Linux (x64)*, version 2021.02.01 for use with these drivers.

**Enhancements**

This product now supports SUSE Linux Enterprise Server 15 SP2.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Blade Intel ixgbe Drivers for Red Hat Enterprise Linux 7
Version: 5.9.4-1 **(Optional)**
Filename: kmod-hp-ixgbe_bl-5.9.4-1.rhel7u8.x86_64.compsig; kmod-hp-ixgbe_bl-5.9.4-1.rhel7u8.x86_64.rpm; kmod-hp-ixgbe_bl-5.9.4-1.rhel7u9.x86_64.compsig; kmod-hp-ixgbe_bl-5.9.4-1.rhel7u9.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Intel Online Firmware Upgrade Utility for Linux*, version 1.2.3 or later, for use with these drivers.

**Enhancements**

This product now supports Red Hat Enterprise Linux 7, Updates 8 and 9.

**Supported Devices and Features**

These drivers support the following network adapters:

- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560M Adapter

HPE Blade Intel ixgbe Drivers for Red Hat Enterprise Linux 8
Version: 5.9.4-1 **(Optional)**
Filename: kmod-hp-ixgbe_bl-5.9.4-1.rhel8u2.x86_64.compsig; kmod-hp-ixgbe_bl-5.9.4-1.rhel8u2.x86_64.rpm; kmod-hp-ixgbe_bl-5.9.4-2.rhel8u3.x86_64.compsig; kmod-hp-ixgbe_bl-5.9.4-2.rhel8u3.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Intel Online Firmware Upgrade Utility for Linux*, version 1.2.3 or later, for use with these drivers.

**Enhancements**

This product now supports Red Hat Enterprise Linux 8, Updates 2 and 3.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Blade Intel ixgbe Drivers for SUSE Linux Enterprise Server 12
Version: 5.9.4-1 **(Optional)**
Filename: hp-ixgbe_bl-kmp-default-5.9.4_k4.12.14_120-1.sles12sp5.x86_64.compsig; hp-ixgbe_bl-kmp-default-5.9.4_k4.12.14_120-1.sles12sp5.x86_64.rpm; hp-ixgbe_bl-kmp-default-5.9.4_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; hp-ixgbe_bl-kmp-default-5.9.4_k4.12.14_94.41-1.sles12sp4.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Intel Online Firmware Upgrade Utility for Linux*, version 1.2.3 or later, for use with these drivers.

**Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP5.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Blade Intel ixgbe Drivers for SUSE Linux Enterprise Server 15
Version: 5.9.4-1 (B) **(Optional)**

Filename: hp-ixgbe_bl-kmp-default-5.9.4_k4.12.14_195-1.sles15sp1.x86_64.compsig; hp-ixgbe_bl-kmp-default-5.9.4_k4.12.14_195-1.sles15sp1.x86_64.rpm; hp-ixgbe_bl-kmp-default-5.9.4_k5.3.18_22-1.sles15sp2.x86_64.compsig; hp-ixgbe_bl-kmp-default-5.9.4_k5.3.18_22-1.sles15sp2.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Intel Online Firmware Upgrade Utility for Linux*, version 1.2.3 or later, for use with these drivers.

**Enhancements**

This product now supports SUSE Linux Enterprise Server 15 SP2.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Blade Intel ixgben Driver for VMware vSphere 6.5
Version: 2019.12.20 **(Optional)**
Filename: cp039952.compsig; cp039952.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Blade Intel Online Firmware Upgrade Utility for VMware*, version 1.0.7 or later, for use with this driver.

**Fixes**

This product corrects a recursion termination condition so that recursion correctly ends in the case of PCIe link down.

This product addresses an issue where the ixgben driver has high CPU overhead when an SFP+ module is absent.

**Enhancements**

Initial release.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

HPE Blade Intel ixgben Driver for VMware vSphere 6.7
Version: 2019.12.20 **(Optional)**
Filename: cp039953.compsig; cp039953.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Blade Intel Online Firmware Upgrade Utility for VMware*, version 1.0.7 or later, for use with this driver.

**Fixes**

This product corrects a recursion termination condition so that recursion correctly ends in the case of PCIe link down.

This product addresses an issue where the ixgben driver has high CPU overhead when an SFP+ module is absent.

**Enhancements**

Initial release.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Blade Intel ixgben Driver for VMware vSphere 7.0
Version: 2020.06.01 **(Optional)**
Filename: cp041435.compsig; cp041435.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Blade Intel Online Firmware Upgrade Utility for VMware*, version 1.1.2 or later, for use with this driver.

**Enhancements**

Initial release.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Blade Intel ixgbevf Drivers for Red Hat Enterprise Linux 7
Version: 4.9.3-1 **(Optional)**
Filename: kmod-hp-ixgbevf_bl-4.9.3-1.rhel7u8.x86_64.compsig; kmod-hp-ixgbevf_bl-4.9.3-1.rhel7u8.x86_64.rpm; kmod-hp-ixgbevf_bl-4.9.3-1.rhel7u9.x86_64.compsig; kmod-hp-ixgbevf_bl-4.9.3-1.rhel7u9.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Intel Online Firmware Upgrade Utility for Linux*, version 1.2.3 or later, for use with these drivers.

**Fixes**

This product corrects an issue seen when enabling SRIOV, where the VFs have the same, duplicated MAC address.

**Enhancements**

This product now supports Red Hat Enterprise Linux 7, Updates 8 and 9.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Blade Intel ixgbevf Drivers for Red Hat Enterprise Linux 8
Version: 4.9.3-1 **(Optional)**
Filename: kmod-hp-ixgbevf_bl-4.9.3-1.rhel8u2.x86_64.compsig; kmod-hp-ixgbevf_bl-4.9.3-1.rhel8u2.x86_64.rpm; kmod-hp-ixgbevf_bl-4.9.3-2.rhel8u3.x86_64.compsig; kmod-hp-ixgbevf_bl-4.9.3-2.rhel8u3.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Intel Online Firmware Upgrade Utility for Linux*, version 1.2.3 or later, for use with these drivers.

**Fixes**

This product corrects an issue seen when enabling SRIOV, where the VFs have the same, duplicated MAC address.

**Enhancements**

This product now supports Red Hat Enterprise Linux 8, Updates 2 and 3.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Blade Intel ixgbevf Drivers for SUSE Linux Enterprise Server 12
Version: 4.9.3-1 **(Optional)**
Filename: hp-ixgbevf_bl-kmp-default-4.9.3_k4.12.14_120-1.sles12sp5.x86_64.compsig; hp-ixgbevf_bl-kmp-default-4.9.3_k4.12.14_120-1.sles12sp5.x86_64.rpm; hp-ixgbevf_bl-kmp-default-4.9.3_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; hp-ixgbevf_bl-kmp-default-4.9.3_k4.12.14_94.41-1.sles12sp4.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Intel Online Firmware Upgrade Utility for Linux*, version 1.2.3 or later, for use with these drivers.

**Fixes**

This product corrects an issue seen when enabling SRIOV, where the VFs have the same, duplicated MAC address.

**Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP5.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Blade Intel ixgbevf Drivers for SUSE Linux Enterprise Server 15
Version: 4.9.3-1 (B) **(Optional)**
Filename: hp-ixgbevf_bl-kmp-default-4.9.3_k4.12.14_195-1.sles15sp1.x86_64.compsig; hp-ixgbevf_bl-kmp-default-4.9.3_k4.12.14_195-1.sles15sp1.x86_64.rpm; hp-ixgbevf_bl-kmp-default-4.9.3_k5.3.18_22-1.sles15sp2.x86_64.compsig; hp-ixgbevf_bl-kmp-default-4.9.3_k5.3.18_22-1.sles15sp2.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Intel Online Firmware Upgrade Utility for Linux*, version 1.2.3 or later, for use with these drivers.

**Fixes**

This product corrects an issue seen when enabling SRIOV, where the VFs have the same, duplicated MAC address.

**Enhancements**

This product now supports SUSE Linux Enterprise Server 15 SP2.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Blade Intel ixn Driver for Windows Server 2012 R2
Version: 3.14.214.0 **(Optional)**
Filename: cp045175.compsig; cp045175.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 1.0.2.3 or later, for use with this driver.

**Fixes**

This product is updated to maintain compatibility with updated Windows installation libraries, ixtmsg.dll, nicco5.dll, and nicinitx.dll.

**Supported Devices and Features**

This component supports the following HPE Intel ixn network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Blade Intel ixn Driver for Windows Server 2016
Version: 4.1.199.0 **(Optional)**
Filename: cp045176.compsig; cp045176.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 1.0.2.3 or later, for use with this driver.

**Fixes**

This product is updated to maintain compatibility with updated Windows installation libraries, ixtmsg.dll, nicco5.dll, and nicinitx.dll.

**Supported Devices and Features**

This component supports the following HPE Intel ixn network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Blade Intel ixn Driver for Windows Server 2019
Version: 4.1.197.0 **(Optional)**
Filename: cp045177.compsig; cp045177.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 1.0.2.3 or later, for use with this driver.

**Fixes**

This product is updated to maintain compatibility with updated Windows installation library ixtmsg.dll.

**Supported Devices and Features**

This component supports the following HPE Intel ixn network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Blade Intel vxn Driver for Windows Server 2012 R2
Version: 1.2.199.0 **(Optional)**
Filename: cp045178.compsig; cp045178.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 1.0.2.3 or later, for use with this driver.

**Prerequisites**

This driver requires host driver version 3.14.214.0 or later.

**Fixes**

This product is updated to maintain compatibility with updated Windows installation libraries, vxnmsg.dll, nicco5.dll, and nicinvxn.dll.

**Supported Devices and Features**

This component supports the following HPE Intel ixn network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Blade Intel vxn Driver for Windows Server 2016
Version: 2.1.192.0 **(Optional)**
Filename: cp045179.compsig; cp045179.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 1.0.2.3 or later, for use with this driver.

**Prerequisites**

This driver requires host driver version 4.1.199.0 or later.

**Fixes**

This product is updated to maintain compatibility with updated Windows installation libraries, vxnmsg.dll, nicco5.dll, and nicinvxn.dll.

**Supported Devices and Features**

This component supports the following HPE Intel ixn network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Blade Intel vxn Driver for Windows Server 2019
Version: 2.1.191.0 **(Optional)**
Filename: cp045180.compsig; cp045180.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Blade Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 1.0.2.3 or later, for use with this driver.

**Prerequisites**

This driver requires host driver version 4.1.197.0 or later.

**Fixes**

This product is updated to maintain compatibility with updated Windows installation library vxnmsg.dll.

**Supported Devices and Features**

This component supports the following HPE Intel ixn network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Blade QLogic NX2 10/20 GbE Multifunction Driver for VMware vSphere 6.5
Version: 2021.04.19 **(Optional)**
Filename: cp045168.compsig; cp045168.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hp.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Blade QLogic NX2 Online Firmware Upgrade Utility for VMware*, version 1.2.2 or later, for use with this driver.

**Enhancements**

This product now supports VMware vSphere 6.5 U3.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE FlexFabric 10Gb 2-port 534M Adapter
- HPE FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 20Gb 2-port 630FLB Adapter
- HPE FlexFabric 20Gb 2-port 630M Adapter

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HPE Blade QLogic NX2 10/20 GbE Multifunction Driver for VMware vSphere 6.7
Version: 2021.04.19 **(Optional)**
Filename: cp045167.compsig; cp045167.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hp.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Blade QLogic NX2 Online Firmware Upgrade Utility for VMware*, version 1.2.2 or later, for use with this driver.

**Fixes**

This product addresses a PSOD involving an encapsulated header.
This product addresses a PSOD seen during traffic scheduling.
This product corrects an incorrect MTU value displayed by the ESXCLI tool.
This product addresses a PSOD issue seen during Storage vMotion operation.
This product addresses PSODs seen during discovery timeout, transmit scheduling, and LUN reset scenarios.
This product addresses a PSOD seen on systems operating in a complicated VLAN environment.
This product addresses a PSOD seen during critical packet drop scenarios.

**Enhancements**

This product now supports VMware vShere 6.7 U3.
This product has improved handling of complex flooding and race condition issues.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE FlexFabric 10Gb 2-port 534M Adapter
- HPE FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 20Gb 2-port 630FLB Adapter
- HPE FlexFabric 20Gb 2-port 630M Adapter

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HPE Blade QLogic NX2 10/20 GbE Multifunction Driver for VMware vSphere 7.0
Version: 2021.04.19 **(Optional)**
Filename: cp045166.compsig; cp045166.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hp.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Blade QLogic NX2 Online Firmware Upgrade Utility for VMware*, version 1.2.2 or later, for use with this driver.

**Fixes**

This product addresses a PSOD involving an encapsulated header.
This product addresses a PSOD seen during traffic scheduling.
This product corrects an incorrect MTU value displayed by the ESXCLI tool.
This product addresses a PSOD issue seen during Storage vMotion operation.

This product addresses PSODs seen during discovery timeout, transmit scheduling, and LUN reset scenarios.
This product addresses a PSOD seen on systems operating in a complicated VLAN environment.
This product addresses a PSOD seen during critical packet drop scenarios.

**Enhancements**

This product now supports VMware vSphere 7.0 U1.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE FlexFabric 10Gb 2-port 534M Adapter
- HPE FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 20Gb 2-port 630FLB Adapter
- HPE FlexFabric 20Gb 2-port 630M Adapter

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HPE Blade QLogic NX2 10/20 GbE Multifunction Drivers for Red Hat Enterprise Linux 7
Version: 7.14.76-1 **(Optional)**
Filename: kmod-netxtreme2_bl-7.14.76-1.rhel7u8.x86_64.compsig; kmod-netxtreme2_bl-7.14.76-1.rhel7u8.x86_64.rpm; kmod-netxtreme2_bl-7.14.76-1.rhel7u9.x86_64.compsig; kmod-netxtreme2_bl-7.14.76-1.rhel7u9.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade QLogic NX2 Online Firmware Upgrade Utility for Linux,* version 1.2.3 or later, for use with these drivers.

**Fixes**

This product corrects an issue where the driver fails to load in NPAR mode when RoCE Data Center Quantized Congestion Notification (DCQCN) is enabled.
This product addresses a system crash seen when unloading and reloading the RoCE driver only.
This product addresses a system crash seen during multiple reboots of virtual machines using VFs and RDMA.
This product addresses a system crash seen when injecting a fw_assert on a NIC PF.
This product corrects an issue where a system fails to shutdown after reboots in iSCSI BFS.

**Enhancements**

This product now supports Red Hat Enterprise Linux 7, Updates 8 and 9.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE FlexFabric 10Gb 2-port 534M Adapter
- HPE FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 20Gb 2-port 630FLB Adapter
- HPE FlexFabric 20Gb 2-port 630M Adapter

HPE Blade QLogic NX2 10/20 GbE Multifunction Drivers for Red Hat Enterprise Linux 8
Version: 7.14.76-1 **(Optional)**
Filename: kmod-netxtreme2_bl-7.14.76-1.rhel8u2.x86_64.compsig; kmod-netxtreme2_bl-7.14.76-1.rhel8u2.x86_64.rpm; kmod-netxtreme2_bl-7.14.76-2.rhel8u3.x86_64.compsig; kmod-netxtreme2_bl-7.14.76-2.rhel8u3.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade QLogic NX2 Online Firmware Upgrade Utility for Linux,* version 1.2.3 or later, for use with these drivers.

**Enhancements**

This product now supports Red Hat Enterprise Linux 8, Updates 2 and 3.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE FlexFabric 10Gb 2-port 534M Adapter
- HPE FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 20Gb 2-port 630FLB Adapter
- HPE FlexFabric 20Gb 2-port 630M Adapter

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HPE Blade QLogic NX2 10/20 GbE Multifunction Drivers for SUSE Linux Enterprise Server 12
Version: 7.14.76-1 **(Optional)**
Filename: netxtreme2_bl-kmp-default-7.14.76_k4.12.14_120-1.sles12sp5.x86_64.compsig; netxtreme2_bl-kmp-default-7.14.76_k4.12.14_120-1.sles12sp5.x86_64.rpm; netxtreme2_bl-kmp-default-7.14.76_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; netxtreme2_bl-kmp-default-7.14.76_k4.12.14_94.41-1.sles12sp4.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade QLogic NX2 Online Firmware Upgrade Utility for Linux,* version 1.2.3 or later, for use with these drivers.

**Fixes**

This product corrects an issue where the driver fails to load in NPAR mode when RoCE Data Center Quantized Congestion Notification (DCQCN) is enabled.
This product addresses a system crash seen when unloading and reloading the RoCE driver only.
This product addresses a system crash seen during multiple reboots of virtual machines using VFs and RDMA.
This product addresses a system crash seen when injecting a fw_assert on a NIC PF.
This product corrects an issue where a system fails to shutdown after reboots in iSCSI BFS.

**Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP5.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE FlexFabric 10Gb 2-port 534M Adapter
- HPE FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 20Gb 2-port 630FLB Adapter
- HPE FlexFabric 20Gb 2-port 630M Adapter

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HPE Blade QLogic NX2 10/20 GbE Multifunction Drivers for SUSE Linux Enterprise Server 15
Version: 7.14.76-1 (B) **(Optional)**
Filename: netxtreme2_bl-kmp-default-7.14.76_k4.12.14_195-1.sles15sp1.x86_64.compsig; netxtreme2_bl-kmp-default-7.14.76_k4.12.14_195-1.sles15sp1.x86_64.rpm; netxtreme2_bl-kmp-default-7.14.76_k5.3.18_22-1.sles15sp2.x86_64.compsig; netxtreme2_bl-kmp-default-7.14.76_k5.3.18_22-1.sles15sp2.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade QLogic NX2 Online Firmware Upgrade Utility for Linux,* version 1.2.3 or later, for use with these drivers.

**Fixes**

This product corrects an issue where the driver fails to load in NPAR mode when RoCE Data Center Quantized Congestion Notification (DCQCN) is enabled.
This product addresses a system crash seen when unloading and reloading the RoCE driver only.
This product addresses a system crash seen during multiple reboots of virtual machines using VFs and RDMA.
This product addresses a system crash seen when injecting a fw_assert on a NIC PF.
This product corrects an issue where a system fails to shutdown after reboots in iSCSI BFS.

**Enhancements**

This product now supports SUSE Linux Enterprise Server 15 SP2.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE FlexFabric 10Gb 2-port 534M Adapter
- HPE FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 20Gb 2-port 630FLB Adapter
- HPE FlexFabric 20Gb 2-port 630M Adapter

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HPE Blade QLogic NX2 10/20 GbE Multifunction Drivers for Windows Server x64 Editions
Version: 7.13.196.0 **(Optional)**
Filename: cp045208.compsig; cp045208.exe

**Important Note!**

HP recommends the firmware provided in *HPE Blade QLogic NX2 Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 1.0.2.2 or later, for use with these drivers.

**Fixes**

This product corrects a Windows Stop Error (BSOD) seen when uninstalling the NDIS driver.
This product corrects a BSOD with error code 7E seen when a system is heavily loaded with network traffic.

**Enhancements**

This product now provides non-SRIOV NIC switch and UDP hash support for Windows Server 2016.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 534M Adapter
- HPE FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 20Gb 2-port 630FLB Adapter
- HPE FlexFabric 20Gb 2-port 630M Adapter

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HPE Blade QLogic NX2 iSCSI Offload IO Daemon for Red Hat Enterprise Linux 8 Update 0
Version: 2.11.5.13-3 (B) **(Optional)**
Filename: iscsiuio_bl-2.11.5.13-3.rhel8u0.x86_64.compsig; iscsiuio_bl-2.11.5.13-3.rhel8u0.x86_64.rpm

**Fixes**

This product has been recompiled with a build setting that allows SUM to identify them correctly for installation on systems they support.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE FlexFabric 10Gb 2-port 534M Adapter
- HPE FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 20Gb 2-port 630FLB Adapter
- HPE FlexFabric 20Gb 2-port 630M Adapter

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HPE Blade QLogic NX2 iSCSI Offload IO Daemon for SUSE Linux Enterprise Server 12 SP3
Version: 2.11.5.13-3 (B) **(Optional)**
Filename: iscsiuio_bl-2.11.5.13-3.sles12sp3.x86_64.compsig; iscsiuio_bl-2.11.5.13-3.sles12sp3.x86_64.rpm

**Fixes**

This product has been recompiled with a build setting that allows SUM to identify them correctly for installation on systems they support.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE FlexFabric 10Gb 2-port 534M Adapter
- HPE FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 20Gb 2-port 630FLB Adapter
- HPE FlexFabric 20Gb 2-port 630M Adapter

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HPE Blade QLogic NX2 iSCSI Offload IO Daemon for SUSE Linux Enterprise Server 12 SP4
Version: 2.11.5.13-3 (B) **(Optional)**
Filename: iscsiuio_bl-2.11.5.13-3.sles12sp4.x86_64.compsig; iscsiuio_bl-2.11.5.13-3.sles12sp4.x86_64.rpm

**Fixes**

This product has been recompiled with a build setting that allows SUM to identify them correctly for installation on systems they support.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE FlexFabric 10Gb 2-port 534M Adapter
- HPE FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 20Gb 2-port 630FLB Adapter
- HPE FlexFabric 20Gb 2-port 630M Adapter

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HPE Blade QLogic NX2 iSCSI Offload IO Daemon for SUSE Linux Enterprise Server 15 SP0
Version: 2.11.5.13-3 (B) **(Optional)**
Filename: iscsiuio_bl-2.11.5.13-3.sles15sp0.x86_64.compsig; iscsiuio_bl-2.11.5.13-3.sles15sp0.x86_64.rpm

**Fixes**

This product has been recompiled with a build setting that allows SUM to identify them correctly for installation on systems they support.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE FlexFabric 10Gb 2-port 534M Adapter
- HPE FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 20Gb 2-port 630FLB Adapter

- HPE FlexFabric 20Gb 2-port 630M Adapter

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HPE Blade QLogic NX2 iSCSI Offload IO Daemon for SUSE Linux Enterprise Server 15 SP1
Version: 2.11.5.13-3 (B) **(Optional)**
Filename: iscsiuio_bl-2.11.5.13-3.sles15sp1.x86_64.compsig; iscsiuio_bl-2.11.5.13-3.sles15sp1.x86_64.rpm

**Fixes**

This product has been recompiled with a build setting that allows SUM to identify them correctly for installation on systems they support.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE FlexFabric 10Gb 2-port 534M Adapter
- HPE FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 20Gb 2-port 630FLB Adapter
- HPE FlexFabric 20Gb 2-port 630M Adapter

HPE Broadcom NetXtreme-E Driver for Windows Server 2012 R2
Version: 214.0.247.1 **(Optional)**
Filename: cp041785.compsig; cp041785.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Broadcom NetXtreme-E Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.0.5 or later, for use with this driver.

**Fixes**

This product correct an issue which .max SRIOV VFs are not loading when Windows hypervisor and Windows VMs are used.
This product correct an issue which VF driver won't install on some devices.
This product correct an issue which FW hangs while allocating more PF-Vports
This product correct an issue which fail bono commands right away if HW is surprise removed
This product correct an issue which few VPORTS available in SF mode when SR-IOV is used.

**Enhancements**

This product now supports the following network adapters.

- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter

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HPE Broadcom NetXtreme-E Driver for Windows Server 2016
Version: 218.0.32.0 **(Optional)**
Filename: cp045020.compsig; cp045020.exe

**Important Note!**

HPE recommends the *HPE Broadcom NetXtreme-E Firmware Version,* 218.0.166000 or later, for use with this driver.

**Fixes**

- This product correct an Wake-on-LAN (WoL) function unavailable.
- This product correct an issue which fixes VF will not load on certain Virtual OS when Windows is host OS.
- This product correct an issue which fixes user mode RDMA blue screen of death (BSoD) caused by an IRP SystemBuffer access race condition
- This product corrects a Windows Stop Error blue screen of death (BSoD) seen when uninstalling the NDIS driver.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter

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HPE Broadcom NetXtreme-E Driver for Windows Server 2019
Version: 218.0.32.0 **(Optional)**
Filename: cp045021.compsig; cp045021.exe

**Important Note!**

HPE recommends the *HPE Broadcom NetXtreme-E Firmware Version,* 218.0.166000 or later, for use with this driver.

**Fixes**

- This product correct an issue where an system are freeze and reboot when system recovering after non-fatal error.
- This product correct an issue which fixes BSOD observed after updating the inbox driver on Windows 2019.
- This product correct an issue which fixes VF will not load on certain Virtual OS when Windows is host OS.
- This product correct an issue which fixes user mode RDMA blue screen of death (BSoD) caused by an IRP SystemBuffer access race condition
- This product corrects a Windows Stop Error blue screen of death (BSoD) seen when uninstalling the NDIS driver.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter

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HPE Broadcom NetXtreme-E Drivers for Red Hat Enterprise Linux 7
Version: 1.10.2-218.0.67.0 **(Optional)**
Filename: kmod-bnxt_en-1.10.2-218.0.67.0.rhel7u8.x86_64.compsig; kmod-bnxt_en-1.10.2-218.0.67.0.rhel7u8.x86_64.rpm; kmod-bnxt_en-1.10.2-218.0.67.0.rhel7u9.x86_64.compsig; kmod-bnxt_en-1.10.2-218.0.67.0.rhel7u9.x86_64.rpm; README

**Important Note!**

HPE recommends the *HPE Broadcom NetXtreme-E Firmware Version,* 218.0.138000 or later, for use with this driver.

**Fixes**

- This product addresses an issue where system crashed on doing driver unload load in loop when running broadcast traffic
- This product addresses an issue where bnxt_en module crashes with NULL pointer deference before ifup(bring up network interface)
- This product addresses an issue where kernel panic after PCIe AER(Advanced Error Reporting) device recovery successful
- This product addresses an issue where bnxt_en crashes with NULL pointer dereference when enabling SRIOV
- This product correct an error where ethtool -S tx_bytes and rx_bytes counter values far exceed actual values
- This product correct an error message when querying hwmon temperature on VF via sysfs

**Enhancements**

- This product now supports Red Hat Enterprise Linux 7 update 9

- This product now supports PAM4 speeds information in ethtool tools

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter

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HPE Broadcom NetXtreme-E Drivers for Red Hat Enterprise Linux 8
Version: 1.10.2-218.0.67.0 **(Optional)**
Filename: kmod-bnxt_en-1.10.2-218.0.67.0.rhel8u2.x86_64.compsig; kmod-bnxt_en-1.10.2-218.0.67.0.rhel8u2.x86_64.rpm; kmod-bnxt_en-1.10.2-218.0.67.0.rhel8u3.x86_64.compsig; kmod-bnxt_en-1.10.2-218.0.67.0.rhel8u3.x86_64.rpm; README

**Important Note!**

HPE recommends the *HPE Broadcom NetXtreme-E Firmware Version,* 218.0.166000 or later, for use with this driver.

**Fixes**

- This product addresses an issue where system crashed on doing driver unload load in loop when running broadcast traffic
- This product addresses an issue where bnxt_en module crashes with NULL pointer deference before ifup(bring up network interface)
- This product addresses an issue where kernel panic after PCIe AER(Advanced Error Reporting) device recovery successful
- This product addresses an issue where bnxt_en crashes with NULL pointer dereference when enabling SRIOV
- This product correct an error where ethtool -S tx_bytes and rx_bytes counter values far exceed actual values
- This product correct an error message when querying hwmon temperature on VF via sysfs

**Enhancements**

- This product now supports Red Hat Enterprise Linux 8 update 2 and Red Hat Enterprise Linux 8 update 3
- This product now supports PAM4 speeds information in ethtool tools

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter

- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter

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HPE Broadcom NetXtreme-E Drivers for SUSE Linux Enterprise Server 12 x86_64
Version: 1.10.2-218.0.67.0 **(Optional)**
Filename: bnxt_en-kmp-default-1.10.2_k4.12.14_120-218.0.67.0.sles12sp5.x86_64.compsig; bnxt_en-kmp-default-1.10.2_k4.12.14_120-218.0.67.0.sles12sp5.x86_64.rpm; bnxt_en-kmp-default-1.10.2_k4.12.14_94.41-218.0.67.0.sles12sp4.x86_64.compsig; bnxt_en-kmp-default-1.10.2_k4.12.14_94.41-218.0.67.0.sles12sp4.x86_64.rpm; README

**Important Note!**

HPE recommends the *HPE Broadcom NetXtreme-E Firmware Version,* 218.0.166000 or later, for use with this driver.

**Fixes**

- This product addresses an issue where system crashed on doing driver unload load in loop when running broadcast traffic
- This product addresses an issue where bnxt_en module crashes with NULL pointer deference before ifup(bring up network interface)
- This product addresses an issue where kernel panic after PCIe AER(Advanced Error Reporting) device recovery successful
- This product addresses an issue where bnxt_en crashes with NULL pointer dereference when enabling SRIOV
- This product correct an error where ethtool -S tx_bytes and rx_bytes counter values far exceed actual values
- This product correct an error message when querying hwmon temperature on VF via sysfs

**Enhancements**

This product now supports PAM4 speeds information in ethtool tools

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter

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HPE Broadcom NetXtreme-E Drivers for SUSE Linux Enterprise Server 15
Version: 1.10.2-218.0.67.0 **(Optional)**
Filename: bnxt_en-kmp-default-1.10.2_k4.12.14_195-218.0.67.0.sles15sp1.x86_64.compsig; bnxt_en-kmp-default-1.10.2_k4.12.14_195-218.0.67.0.sles15sp1.x86_64.rpm; bnxt_en-kmp-default-1.10.2_k5.3.18_22-218.0.67.0.sles15sp2.x86_64.compsig; bnxt_en-kmp-default-1.10.2_k5.3.18_22-218.0.67.0.sles15sp2.x86_64.rpm; README

**Important Note!**

HPE recommends the *HPE Broadcom NetXtreme-E Firmware Version,* 218.0.166000 or later, for use with this driver.

**Fixes**

- This product addresses an issue where system crashed on doing driver unload load in loop when running broadcast traffic
- This product addresses an issue where bnxt_en module crashes with NULL pointer deference before ifup(bring up network interface)
- This product addresses an issue where kernel panic after PCIe AER(Advanced Error Reporting) device recovery successful
- This product addresses an issue where bnxt_en crashes with NULL pointer dereference when enabling SRIOV
- This product correct an error where ethtool -S tx_bytes and rx_bytes counter values far exceed actual values
- This product correct an error message when querying hwmon temperature on VF via sysfs

**Enhancements**

- This product now supports SUSE Linux Enterprise Server 15 Service Pack 2
- This product now supports PAM4 speeds information in ethtool tools

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter

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HPE Broadcom NetXtreme-E Drivers for VMware vSphere 6.5
Version: 2021.04.05 **(Optional)**
Filename: cp045073.compsig; cp045073.zip

**Important Note!**

- This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.
- HPE recommends the *HPE Broadcom NetXtreme-E Firmware Version,* 218.0.166000 or later, for use with this driver.

**Fixes**

This product corrects an issue which Purple Screen Of Death (PSOD) while running Virtual SAN (vSAN) over Remote Direct Memory Access (RDMA) traffic due to invalid Completion Queue Element (CQEs)

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter

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HPE Broadcom NetXtreme-E Drivers for VMware vSphere 6.7
Version: 2021.04.05 **(Optional)**
Filename: cp045074.compsig; cp045074.zip

**Important Note!**

- This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.
- HPE recommends the *HPE Broadcom NetXtreme-E Firmware Version,* 218.0.166000 or later, for use with this driver.

**Fixes**

This product corrects an issue which Purple Screen Of Death (PSOD) while running Virtual SAN (vSAN) over Remote Direct Memory Access (RDMA) traffic due to invalid Completion Queue Element (CQEs)

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter

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HPE Broadcom NetXtreme-E Drivers for VMware vSphere 7.0
Version: 2021.04.05 **(Optional)**
Filename: cp045075.compsig; cp045075.zip

**Important Note!**

- This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.
- HPE recommends the *HPE Broadcom NetXtreme-E Firmware Version,* 218.0.166000 or later, for use with this driver.

**Fixes**

This product corrects an issue which Purple Screen Of Death (PSOD) while running Virtual SAN (vSAN) over Remote Direct Memory Access (RDMA) traffic due to invalid Completion Queue Element (CQEs)

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter

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HPE Broadcom NetXtreme-E RoCE Library for Red Hat Enterprise Linux 7 Update 8
Version: 218.0.7.0 **(Optional)**
Filename: libbnxt_re-218.0.7.0-rhel7u8.x86_64.compsig; libbnxt_re-218.0.7.0-rhel7u8.x86_64.rpm; README

**Prerequisites**

*HPE Broadcom NetXtreme-E Drivers for Red Hat Enterprise Linux 7*, version 1.10.2-218.0.65.0 or later, must be installed before installing this product.

The libibverb and rdma-core package must be installed on the target system prior to the installation of the RoCE library. If not already present, the packages can be obtained from the operating system installation media.

**Fixes**

This product now supports rdma-core v29(rdma user space application)

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter

- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter

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HPE Broadcom NetXtreme-E RoCE Library for Red Hat Enterprise Linux 7 Update 9
Version: 218.0.7.0 **(Optional)**
Filename: libbnxt_re-218.0.7.0-rhel7u9.x86_64.compsig; libbnxt_re-218.0.7.0-rhel7u9.x86_64.rpm; README

**Prerequisites**

*HPE Broadcom NetXtreme-E Drivers for Red Hat Enterprise Linux 7*, version 1.10.2-218.0.65.0 or later, must be installed before installing this product.

The libibverb and rdma-core package must be installed on the target system prior to the installation of the RoCE library. If not already present, the packages can be obtained from the operating system installation media.

**Enhancements**

Initial release

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter

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HPE Broadcom NetXtreme-E RoCE Library for Red Hat Enterprise Linux 8
Version: 216.0.88.3 **(Optional)**
Filename: libbnxt_re-216.0.88.3-rhel8u0.x86_64.compsig; libbnxt_re-216.0.88.3-rhel8u0.x86_64.rpm; README

**Prerequisites**

*HPE Broadcom NetXtreme-E Drivers for Red Hat Enterprise Linux 8*, version 1.10.1-216.0.169.4 or later, must be installed before installing this product.

The libibverb and rdma-core package must be installed on the target system prior to the installation of the RoCE library. If not already present, the packages can be obtained from the operating system installation media.

**Fixes**

- This product corrects an issue which RoCE bond is not getting created automatically after system reboot

- This product corrects an issue which errors/performance may degrades after hot plug operation is performed

**Enhancements**

- This product now disables loading RoCE driver on VFs when Link Aggregation is enabled
- This product now supports rdma-core v22

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter

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HPE Broadcom NetXtreme-E RoCE Library for Red Hat Enterprise Linux 8 Update 2.
Version: 218.0.7.0 **(Optional)**
Filename: libbnxt_re-218.0.7.0-rhel8u2.x86_64.compsig; libbnxt_re-218.0.7.0-rhel8u2.x86_64.rpm; README

**Prerequisites**

*HPE Broadcom NetXtreme-E Drivers for Red Hat Enterprise Linux 8*, version 1.10.2-218.0.65.0 or later, must be installed before installing this product.

The libibverb and rdma-core package must be installed on the target system prior to the installation of the RoCE library. If not already present, the packages can be obtained from the operating system installation media.

**Enhancements**

Initial release.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter

HPE Broadcom NetXtreme-E RoCE Library for Red Hat Enterprise Linux 8 Update 3.
Version: 218.0.7.0 **(Optional)**
Filename: libbnxt_re-218.0.7.0-rhel8u3.x86_64.compsig; libbnxt_re-218.0.7.0-rhel8u3.x86_64.rpm; README

**Prerequisites**

*HPE Broadcom NetXtreme-E Drivers for Red Hat Enterprise Linux 8*, version 1.10.2-218.0.65.0 or later, must be installed before installing this product.

The libibverb and rdma-core package must be installed on the target system prior to the installation of the RoCE library. If not already present, the packages can be obtained from the operating system installation media.

**Enhancements**

Initial release.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter

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HPE Broadcom NetXtreme-E RoCE Library for SUSE Linux Enterprise Server 12 SP4
Version: 218.0.7.0 **(Optional)**
Filename: libbnxt_re-218.0.7.0-sles12sp4.x86_64.compsig; libbnxt_re-218.0.7.0-sles12sp4.x86_64.rpm; README

**Prerequisites**

*HPE Broadcom NetXtreme-E Drivers for SUSE Linux Enterprise Server 12*, version 1.10.2-218.0.65.0 or later, must be installed before installing this product.

The libibverb and rdma-core package must be installed on the target system prior to the installation of the RoCE library. If not already present, the packages can be obtained from the operating system installation media.

**Fixes**

This product now supports rdma-core v29(rdma user space application)

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter

- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter

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HPE Broadcom NetXtreme-E RoCE Library for SUSE Linux Enterprise Server 12 SP5
Version: 218.0.7.0 **(Optional)**
Filename: libbnxt_re-218.0.7.0-sles12sp5.x86_64.compsig; libbnxt_re-218.0.7.0-sles12sp5.x86_64.rpm; README

**Prerequisites**

*HPE Broadcom NetXtreme-E Drivers for SUSE Linux Enterprise Server 12*, version 1.10.2-218.0.65.0 or later, must be installed before installing this product.

The libibverb and rdma-core package must be installed on the target system prior to the installation of the RoCE library. If not already present, the packages can be obtained from the operating system installation media.

**Fixes**

This product now supports rdma-core v29(rdma user space application)

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter

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HPE Broadcom NetXtreme-E RoCE Library for SUSE Linux Enterprise Server 15
Version: 216.0.88.3 **(Optional)**
Filename: libbnxt_re-216.0.88.3-sles15sp0.x86_64.compsig; libbnxt_re-216.0.88.3-sles15sp0.x86_64.rpm; README

**Prerequisites**

*HPE Broadcom NetXtreme-E Drivers for SUSE Linux Enterprise Server 15*, version 1.10.1-216.0.169.4 or later, must be installed before installing this product.

The libibverb and rdma-core package must be installed on the target system prior to the installation of the RoCE library. If not already present, the packages can be obtained from the operating system installation media.

**Fixes**

- This product corrects an issue which RoCE bond is not getting created automatically after system reboot.
- This product corrects an issue which errors/performance may degrades after hot plug operation is performed.

**Enhancements**

- This product now disables loading RoCE driver on VFs when Link Aggregation is enabled.
- This product now supports rdma-core v22.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter

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HPE Broadcom NetXtreme-E RoCE Library for SUSE Linux Enterprise Server 15 SP1
Version: 218.0.7.0 **(Optional)**
Filename: libbnxt_re-218.0.7.0-sles15sp1.x86_64.compsig; libbnxt_re-218.0.7.0-sles15sp1.x86_64.rpm; README

**Prerequisites**

*HPE Broadcom NetXtreme-E Drivers for SUSE Linux Enterprise Server 15*, version 1.10.2-218.0.65.0 or later, must be installed before installing this product.

The libibverb and rdma-core package must be installed on the target system prior to the installation of the RoCE library. If not already present, the packages can be obtained from the operating system installation media..

**Fixes**

This product now supports rdma-core v29(rdma user space application)

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter

HPE Broadcom NetXtreme-E RoCE Library for SUSE Linux Enterprise Server 15 SP2
Version: 218.0.7.0 **(Optional)**
Filename: libbnxt_re-218.0.7.0-sles15sp2.x86_64.compsig; libbnxt_re-218.0.7.0-sles15sp2.x86_64.rpm; README

**Prerequisites**

*HPE Broadcom NetXtreme-E Drivers for SUSE Linux Enterprise Server 15*, version 1.10.2-218.0.65.0 or later, must be installed before installing this product.

The libibverb and rdma-core package must be installed on the target system prior to the installation of the RoCE library. If not already present, the packages can be obtained from the operating system installation media..

**Enhancements**

Initial release

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter

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HPE Broadcom NX1 1Gb Driver for Windows Server x64 Editions
Version: 214.0.0.6 **(Optional)**
Filename: cp045019.compsig; cp045019.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Broadcom NX1 Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Fixes**

This product correct an issue which fixes Windows driver causes NMI/RSOD during OS shutdown.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE Ethernet 1Gb 2-port 330i Adapter (22BD)
- HPE Ethernet 1Gb 4-port 331i Adapter (22BE)
- HPE Ethernet 1Gb 4-port 331FLR Adapter

- HPE Ethernet 1Gb 4-port 331T Adapter
- HPE Ethernet 1Gb 2-port 332i Adapter (22E8)
- HPE Ethernet 1Gb 2-port 332T Adapter

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HPE Broadcom tg3 Ethernet Drivers for Red Hat Enterprise Linux 7 x86_64
Version: 3.139b-1 **(Optional)**
Filename: kmod-tg3-3.139b-1.rhel7u8.x86_64.compsig; kmod-tg3-3.139b-1.rhel7u8.x86_64.rpm; kmod-tg3-3.139b-1.rhel7u9.x86_64.compsig; kmod-tg3-3.139b-1.rhel7u9.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE NX1 Broadcom Online Firmware Upgrade Utility for Linux x86_64,* version 2.27.0 or later, for use with these drivers.

**Fixes**

The products fixes an a race condition issue where driver will still try to access the PHY(physical layer) although it was already brought down when the tg3 timer fires

**Enhancements**

This product now supports Red Hat Enterprise Linux 7 update 9

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 1Gb 2-port 330i Adapter (22BD)
- HPE Ethernet 1Gb 4-port 331i Adapter (22BE)
- HPE Ethernet 1Gb 4-port 331FLR Adapter
- HPE Ethernet 1Gb 4-port 331T Adapter
- HPE Ethernet 1Gb 2-port 332i Adapter (22E8)
- HPE Ethernet 1Gb 2-port 332T Adapter

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HPE Broadcom tg3 Ethernet Drivers for Red Hat Enterprise Linux 8
Version: 3.139b-1 **(Optional)**
Filename: kmod-tg3-3.139b-1.rhel8u2.x86_64.compsig; kmod-tg3-3.139b-1.rhel8u2.x86_64.rpm; kmod-tg3-3.139b-1.rhel8u3.x86_64.compsig; kmod-tg3-3.139b-1.rhel8u3.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE NX1 Broadcom Online Firmware Upgrade Utility for Linux x86_64,* version 2.27.0 or later, for use with these drivers.

**Fixes**

The products fixes an a race condition issue where driver will still try to access the PHY(physical layer) although it was already brought down when the tg3 timer fires

**Enhancements**

This product now supports Red Hat Enterprise Linux 8 update 2 and Red Hat Enterprise Linux 8 update 3

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 1Gb 2-port 330i Adapter (22BD)
- HPE Ethernet 1Gb 4-port 331i Adapter (22BE)
- HPE Ethernet 1Gb 4-port 331FLR Adapter
- HPE Ethernet 1Gb 4-port 331T Adapter
- HPE Ethernet 1Gb 2-port 332i Adapter (22E8)
- HPE Ethernet 1Gb 2-port 332T Adapter

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HPE Broadcom tg3 Ethernet Drivers for SUSE Linux Enterprise Server 12 x86_64
Version: 3.139b-2 **(Optional)**
Filename: README; tg3-kmp-default-3.139b_k4.12.14_120-2.sles12sp5.x86_64.compsig; tg3-kmp-default-3.139b_k4.12.14_120-2.sles12sp5.x86_64.rpm; tg3-kmp-default-3.139b_k4.12.14_94.41-2.sles12sp4.x86_64.compsig; tg3-kmp-default-3.139b_k4.12.14_94.41-2.sles12sp4.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE NX1 Broadcom Online Firmware Upgrade Utility for Linux x86_64,* version 2.27.0 or later, for use with these drivers.

**Fixes**

The products fixes an a race condition issue where driver will still try to access the PHY(physical layer) although it was already brought down when the tg3 timer fires

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 1Gb 2-port 330i Adapter (22BD)
- HPE Ethernet 1Gb 4-port 331i Adapter (22BE)
- HPE Ethernet 1Gb 4-port 331FLR Adapter
- HPE Ethernet 1Gb 4-port 331T Adapter
- HPE Ethernet 1Gb 2-port 332i Adapter (22E8)
- HPE Ethernet 1Gb 2-port 332T Adapter

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HPE Broadcom tg3 Ethernet Drivers for SUSE Linux Enterprise Server 15

Version: 3.139b-2 **(Optional)**
Filename: README; tg3-kmp-default-3.139b_k4.12.14_195-2.sles15sp1.x86_64.compsig; tg3-kmp-default-3.139b_k4.12.14_195-2.sles15sp1.x86_64.rpm; tg3-kmp-default-3.139b_k5.3.18_22-2.sles15sp2.x86_64.compsig; tg3-kmp-default-3.139b_k5.3.18_22-2.sles15sp2.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE NX1 Broadcom Online Firmware Upgrade Utility for Linux x86_64,* version 2.27.0 or later, for use with these drivers.

**Fixes**

The products fixes an a race condition issue where driver will still try to access the PHY(physical layer) although it was already brought down when the tg3 timer fires

**Enhancements**

This product now supports Suse Linux Enterprise Server 15 Service Pack 2

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 1Gb 2-port 330i Adapter (22BD)
- HPE Ethernet 1Gb 4-port 331i Adapter (22BE)
- HPE Ethernet 1Gb 4-port 331FLR Adapter
- HPE Ethernet 1Gb 4-port 331T Adapter
- HPE Ethernet 1Gb 2-port 332i Adapter (22E8)
- HPE Ethernet 1Gb 2-port 332T Adapter

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HPE Emulex 10/20 GbE Driver for VMware vSphere 6.5
Version: 2020.09.14 **(Optional)**
Filename: cp044545.compsig; cp044545.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.5*, version 2019.03.01 or later, for use with this driver.

**Enhancements**

This product now supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Adapter

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HPE Emulex 10/20 GbE Driver for VMware vSphere 6.7
Version: 2020.09.14 **(Optional)**
Filename: cp044546.compsig; cp044546.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.7*, version 2019.03.01 or later, for use with this driver.

**Enhancements**

This product now supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Adapter

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HPE Emulex 10/20 GbE Driver for Windows Server 2012 R2
Version: 12.0.1195.0 (C) **(Optional)**
Filename: cp044540.compsig; cp044540.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64),* version 2019.03.01 or later, for use with this driver.

**Enhancements**

This product now supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Adapter

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HPE Emulex 10/20 GbE Driver for Windows Server 2016
Version: 12.0.1195.0 (C) **(Optional)**
Filename: cp044541.compsig; cp044541.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64),* version 2019.03.01 or later, for use with this driver.

**Enhancements**

This product now supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Adapter

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HPE Emulex 10/20 GbE Driver for Windows Server 2019
Version: 12.0.1195.0 (C) **(Optional)**
Filename: cp044542.compsig; cp044542.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64),* version 2019.03.01 or later, for use with this driver.

**Enhancements**

This product now supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Adapter

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HPE Emulex 10/20 GbE iSCSI Driver for Windows Server 2012 R2
Version: 12.0.1171.0 (C) **(Optional)**
Filename: cp044560.compsig; cp044560.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64),* version 2019.03.01 or later, for use with this driver.

**Enhancements**

This product now supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Adapter

HPE Emulex 10/20 GbE iSCSI Driver for Windows Server 2016
Version: 12.0.1171.0 (C) **(Optional)**
Filename: cp044561.compsig; cp044561.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64),* version 2019.03.01 or later, for use with this driver.

**Enhancements**

This product now supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Adapter

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HPE Emulex 10/20 GbE iSCSI Driver for Windows Server 2019
Version: 12.0.1171.0 (C) **(Optional)**
Filename: cp044562.compsig; cp044562.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64),* version 2019.03.01 or later, for use with this driver.

**Enhancements**

This product now supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Adapter

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HPE Emulex 10/20GbE Drivers for Red Hat Enterprise Linux 7 x86_64
Version: 12.0.1342.0-1 **(Optional)**
Filename: kmod-be2net-12.0.1342.0-1.rhel7u8.x86_64.compsig; kmod-be2net-12.0.1342.0-1.rhel7u8.x86_64.rpm; kmod-be2net-12.0.1342.0-1.rhel7u9.x86_64.compsig; kmod-be2net-12.0.1342.0-1.rhel7u9.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2020.08.01 for use with these drivers.

**Enhancements**

This product now supports Red Hat Enterprise Linux 7 Update 8 and Red Hat Enterprise Linux 7 Update 9.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E 10Gb Converged Network Adapter
- HPE CN1200E 10GBASE-T Dual Port Converged Network Adapter

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HPE Emulex 10/20GbE Drivers for Red Hat Enterprise Linux 8
Version: 12.0.1342.0-1 **(Optional)**
Filename: kmod-be2net-12.0.1342.0-1.rhel8u2.x86_64.compsig; kmod-be2net-12.0.1342.0-1.rhel8u2.x86_64.rpm; kmod-be2net-12.0.1342.0-1.rhel8u3.x86_64.compsig; kmod-be2net-12.0.1342.0-1.rhel8u3.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2020.08.01 for use with these drivers.

**Enhancements**

- This product now supports Red Hat Enterprise Linux 8 Update 2 and Red Hat Enterprise Linux 8 Update 3
- This product now supports elx_net_install.sh installation script to install be2net driver on Red Hat Enterprise Linux 8 Update 1 or later.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E 10Gb Converged Network Adapter
- HPE CN1200E 10GBASE-T Dual Port Converged Network Adapter

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HPE Emulex 10/20GbE Drivers for SUSE Linux Enterprise Server 12 x86_64
Version: 12.0.1342.0-1 **(Optional)**
Filename: be2net-kmp-default-12.0.1342.0_k4.12.14_120-1.sles12sp5.x86_64.compsig; be2net-kmp-default-12.0.1342.0_k4.12.14_120-1.sles12sp5.x86_64.rpm; be2net-kmp-default-12.0.1342.0_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; be2net-kmp-default-12.0.1342.0_k4.12.14_94.41-1.sles12sp4.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2020.08.01 for use with these drivers.

**Enhancements**

This product now supports SUSE Linux Enterprise Server 12 Service Pack 5

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E 10Gb Converged Network Adapter
- HPE CN1200E 10GBASE-T Dual Port Converged Network Adapter

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HPE Emulex 10/20GbE Drivers for SUSE Linux Enterprise Server 15
Version: 12.0.1342.0-1 **(Optional)**
Filename: be2net-kmp-default-12.0.1342.0_k4.12.14_195-1.sles15sp1.x86_64.compsig; be2net-kmp-default-12.0.1342.0_k4.12.14_195-1.sles15sp1.x86_64.rpm; be2net-kmp-default-12.0.1342.0_k5.3.18_22-1.sles15sp2.x86_64.compsig; be2net-kmp-default-12.0.1342.0_k5.3.18_22-1.sles15sp2.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2019.12.01 for use with these drivers.

**Enhancements**

This product now supports SUSE Linux Enterprise Server 12 Service Pack 2

This product now supports elx_net_install.sh installation script to install be2net driver on SUSE Linux Enterprise Server 12 Service Pack 1 or later.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E 10Gb Converged Network Adapter
- HPE CN1200E 10GBASE-T Dual Port Converged Network Adapter

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HPE Emulex 10/20GbE iSCSI Driver for VMware vSphere 6.5
Version: 2020.09.14 **(Optional)**
Filename: cp044543.compsig; cp044543.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.5*, version 2019.03.01 or later, for use with this driver.

**Enhancements**

This product now supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Adapter

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HPE Emulex 10/20GbE iSCSI Driver for VMware vSphere 6.7
Version: 2020.09.14 **(Optional)**
Filename: cp044544.compsig; cp044544.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.7*, version 2019.03.01 or later, for use with this driver.

**Enhancements**

This product now supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Adapter

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HPE Emulex 10/20GbE iSCSI Drivers for Red Hat Enterprise Linux 7 x86_64
Version: 12.0.1342.0-1 **(Optional)**
Filename: kmod-be2iscsi-12.0.1342.0-1.rhel7u8.x86_64.compsig; kmod-be2iscsi-12.0.1342.0-1.rhel7u8.x86_64.rpm; kmod-be2iscsi-12.0.1342.0-1.rhel7u9.x86_64.compsig; kmod-be2iscsi-12.0.1342.0-1.rhel7u9.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2020.08.01 for use with these drivers.

**Enhancements**

This product now supports Red Hat Enterprise Linux 7 Update 8 and Red Hat Enterprise Linux 7 Update 9

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E 10Gb Converged Network Adapter
- HPE CN1200E 10GBASE-T Dual Port Converged Network Adapter

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HPE Emulex 10/20GbE iSCSI Drivers for Red Hat Enterprise Linux 8
Version: 12.0.1342.0-1 **(Optional)**
Filename: kmod-be2iscsi-12.0.1342.0-1.rhel8u2.x86_64.compsig; kmod-be2iscsi-12.0.1342.0-1.rhel8u2.x86_64.rpm; kmod-be2iscsi-12.0.1342.0-1.rhel8u3.x86_64.compsig; kmod-be2iscsi-12.0.1342.0-1.rhel8u3.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2020.08.01 for use with these drivers.

**Enhancements**

This product now supports Red Hat Enterprise Linux 8 Update 2 and Red Hat Enterprise Linux 8 Update 3

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E 10Gb Converged Network Adapter
- HPE CN1200E 10GBASE-T Dual Port Converged Network Adapter

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HPE Emulex 10/20GbE iSCSI Drivers for SUSE Linux Enterprise Server 12 x86_64
Version: 12.0.1342.0-1 **(Optional)**
Filename: be2iscsi-kmp-default-12.0.1342.0_k4.12.14_120-1.sles12sp5.x86_64.compsig; be2iscsi-kmp-default-12.0.1342.0_k4.12.14_120-1.sles12sp5.x86_64.rpm; be2iscsi-kmp-default-12.0.1342.0_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; be2iscsi-kmp-default-12.0.1342.0_k4.12.14_94.41-1.sles12sp4.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2020.08.01 for use with these drivers.

**Enhancements**

This product now supports SUSE Linux Enterprise Server 12 Service Pack 5

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E 10Gb Converged Network Adapter
- HPE CN1200E 10GBASE-T Dual Port Converged Network Adapter

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HPE Emulex 10/20GbE iSCSI Drivers for SUSE Linux Enterprise Server 15
Version: 12.0.1342.0-1 **(Optional)**
Filename: be2iscsi-kmp-default-12.0.1342.0_k4.12.14_195-1.sles15sp1.x86_64.compsig; be2iscsi-kmp-default-12.0.1342.0_k4.12.14_195-1.sles15sp1.x86_64.rpm; be2iscsi-kmp-default-12.0.1342.0_k5.3.18_22-1.sles15sp2.x86_64.compsig; be2iscsi-kmp-default-12.0.1342.0_k5.3.18_22-1.sles15sp2.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2020.08.01 for use with these drivers.

**Enhancements**

This product now supports SUSE Linux Enterprise Server 15 Service Pack 1 and SUSE Linux Enterprise Server 15 Service Pack 2

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE CN1200E 10Gb Converged Network Adapter
- HPE CN1200E 10GBASE-T Dual Port Converged Network Adapter

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HPE Intel E1R Driver for Windows Server 2012 R2
Version: 12.14.8.5 **(Optional)**
Filename: cp045119.compsig; cp045119.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Enhancements**

This product contains Windows system update supported improvements.

**Supported Devices and Features**

This driver supports the following HPE Intel E1R network adapters:

- HP Ethernet 1Gb 2-port 361i Adapter
- HP Ethernet 1Gb 2-port 361T Adapter
- HP Ethernet 1Gb 2-port 363i Adapter
- HP Ethernet 1Gb 4-port 366i Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HP Ethernet 1Gb 4-port 366FLR Adapter

- HPE Ethernet 1Gb 4-port 366T Adapter

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HPE Intel E1R Driver for Windows Server 2016
Version: 12.16.3.1 **(Optional)**
Filename: cp045120.compsig; cp045120.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Enhancements**

This product contains Windows system update supported improvements.

**Supported Devices and Features**

This driver supports the following HPE Intel E1R network adapters:

- HP Ethernet 1Gb 2-port 361i Adapter
- HPE Ethernet 1Gb 2-port 361T Adapter
- HP Ethernet 1Gb 2-port 363i Adapter
- HP Ethernet 1Gb 4-port 366i Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HPE Ethernet 1Gb 4-port 366FLR Adapter
- HPE Ethernet 1Gb 4-port 366T Adapter

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HPE Intel E1R Driver for Windows Server 2019
Version: 12.18.11.1 **(Optional)**
Filename: cp045121.compsig; cp045121.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Enhancements**

This product contains Windows system update supported improvements.

**Supported Devices and Features**

This driver supports the following HPE Intel E1R network adapters:

- HP Ethernet 1Gb 2-port 361i Adapter
- HPE Ethernet 1Gb 2-port 361T Adapter
- HP Ethernet 1Gb 2-port 363i Adapter

- HP Ethernet 1Gb 4-port 366i Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HPE Ethernet 1Gb 4-port 366FLR Adapter
- HPE Ethernet 1Gb 4-port 366T Adapter

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HPE Intel i40e Drivers for Red Hat Enterprise Linux 7 x86_64
Version: 2.13.10-1 **(Optional)**
Filename: kmod-hp-i40e-2.13.10-1.rhel7u8.x86_64.compsig; kmod-hp-i40e-2.13.10-1.rhel7u8.x86_64.rpm; kmod-hp-i40e-2.13.10-1.rhel7u9.x86_64.compsig; kmod-hp-i40e-2.13.10-1.rhel7u9.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.21.0 or later, for use with these drivers.

**Fixes**

- This product addresses an issue where server hungs after loading XDP(eXpress Data Path) program in case of LLDP(Link Layer Discovery Protocol) agent disabled
- This product addresses an issue where it is not possible to change MAC(Media Access Control) address on VF(Virtual Function) from VM(Virtual Machine) when VF is in trusted mode
- This product addresses an issue where it cannot create VF(Virtual Function) VLAN(Virtual Local Area Network) interface inside a namespace
- This product addresses an issue where system crash during removing driver when VSI(VIrtual Station Interface) is in reset recovery mode
- This product addresses an issue where VF(Virtual Function) receives unicast packets from other VF
- This product addresses an issue where using Intel nvmupdate utility never ending update
- Thips product addresses an issue where kernel crash in vf driver(iavf) reset when pf driver(i40e) is removing

**Enhancements**

- This product now supports Red Hat Enterprise Linux 7 update 9
- This product supports new feature called software DCB(Data Center Bridging) which allows using DCB without firmware LLDP(Link Layer Discovery Protocol) agent being turned on.
- This product supports new feature which allows user to specify VLAN(Virtual Local Area Network) field and add it to flow director via ethtool

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- HPE Ethernet 10Gb 2-port 563i Adapter

- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

HPE Intel i40e Drivers for Red Hat Enterprise Linux 8
Version: 2.13.10-1 **(Optional)**
Filename: kmod-hp-i40e-2.13.10-1.rhel8u2.x86_64.compsig; kmod-hp-i40e-2.13.10-1.rhel8u2.x86_64.rpm; kmod-hp-i40e-2.13.10-1.rhel8u3.x86_64.compsig; kmod-hp-i40e-2.13.10-1.rhel8u3.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.21.0 or later, for use with these drivers.

**Fixes**

- This product addresses an issue where server hungs after loading XDP(eXpress Data Path) program in case of LLDP(Link Layer Discovery Protocol) agent disabled
- This product addresses an issue where it is not possible to change MAC(Media Access Control) address on VF(Virtual Function) from VM(Virtual Machine) when VF is in trusted mode
- This product addresses an issue where it cannot create VF(Virtual Function) VLAN(Virtual Local Area Network) interface inside a namespace
- This product addresses an issue where system crash during removing driver when VSI(VIrtual Station Interface) is in reset recovery mode
- This product addresses an issue where VF(Virtual Function) receives unicast packets from other VF
- This product addresses an issue where using Intel nvmupdate utility never ending update
- Thips product addresses an issue where kernel crash in vf driver(iavf) reset when pf driver(i40e) is removing

**Enhancements**

- This product now supports Red Hat Enterprise Linux 8 update 2 and Red Hat Enterprise Linux 8 update 3
- This product supports new feature called software DCB(Data Center Bridging) which allows using DCB without firmware LLDP(Link Layer Discovery Protocol) agent being turned on.
- This product supports new feature which allows user to specify VLAN(Virtual Local Area Network) field and add it to flow director via ethtool

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- HPE Ethernet 10Gb 2-port 563i Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

HPE Intel i40e Drivers for SUSE Linux Enterprise Server 12 x86_64
Version: 2.13.10-1 **(Optional)**
Filename: hp-i40e-kmp-default-2.13.10_k4.12.14_120-1.sles12sp5.x86_64.compsig; hp-i40e-kmp-default-2.13.10_k4.12.14_120-1.sles12sp5.x86_64.rpm; hp-i40e-kmp-default-2.13.10_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; hp-i40e-kmp-default-2.13.10_k4.12.14_94.41-1.sles12sp4.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.21.0 or later, for use with these drivers.

**Fixes**

- This product addresses an issue where server hungs after loading XDP(eXpress Data Path) program in case of LLDP(Link Layer Discovery Protocol) agent disabled
- This product addresses an issue where it is not possible to change MAC(Media Access Control) address on VF(Virtual Function) from VM(Virtual Machine) when VF is in trusted mode
- This product addresses an issue where it cannot create VF(Virtual Function) VLAN(Virtual Local Area Network) interface inside a namespace
- This product addresses an issue where system crash during removing driver when VSI(VIrtual Station Interface) is in reset recovery mode
- This product addresses an issue where VF(Virtual Function) receives unicast packets from other VF
- This product addresses an issue where using Intel nvmupdate utility never ending update
- Thips product addresses an issue where kernel crash in vf driver(iavf) reset when pf driver(i40e) is removing

**Enhancements**

- This product supports new feature called software DCB(Data Center Bridging) which allows using DCB without firmware LLDP(Link Layer Discovery Protocol) agent being turned on.
- This product supports new feature which allows user to specify VLAN(Virtual Local Area Network) field and add it to flow director via ethtool

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- HPE Ethernet 10Gb 2-port 563i Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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HPE Intel i40e Drivers for SUSE Linux Enterprise Server 15

Version: 2.13.10-1 **(Optional)**
Filename: hp-i40e-kmp-default-2.13.10_k4.12.14_195-1.sles15sp1.x86_64.compsig; hp-i40e-kmp-default-2.13.10_k4.12.14_195-1.sles15sp1.x86_64.rpm; hp-i40e-kmp-default-2.13.10_k5.3.18_22-1.sles15sp2.x86_64.compsig; hp-i40e-kmp-default-2.13.10_k5.3.18_22-1.sles15sp2.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.21.0 or later, for use with these drivers.

**Fixes**

- This product addresses an issue where server hungs after loading XDP(eXpress Data Path) program in case of LLDP(Link Layer Discovery Protocol) agent disabled
- This product addresses an issue where it is not possible to change MAC(Media Access Control) address on VF(Virtual Function) from VM(Virtual Machine) when VF is in trusted mode
- This product addresses an issue where it cannot create VF(Virtual Function) VLAN(Virtual Local Area Network) interface inside a namespace
- This product addresses an issue where system crash during removing driver when VSI(VIrtual Station Interface) is in reset recovery mode
- This product addresses an issue where VF(Virtual Function) receives unicast packets from other VF
- This product addresses an issue where using Intel nvmupdate utility never ending update
- Thips product addresses an issue where kernel crash in vf driver(iavf) reset when pf driver(i40e) is removing

**Enhancements**

- This product now supports Suse Linux Enterprise Server 15 Service Pack 2
- This product supports new feature called software DCB(Data Center Bridging) which allows using DCB without firmware LLDP(Link Layer Discovery Protocol) agent being turned on.
- This product supports new feature which allows user to specify VLAN(Virtual Local Area Network) field and add it to flow director via ethtool

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- HPE Ethernet 10Gb 2-port 563i Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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HPE Intel i40ea Driver for Windows Server 2012 R2
Version: 1.13.104.0 **(Optional)**

Filename: cp045124.compsig; cp045124.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Fixes**

This product corrects an traffic packets making cert failure seen when packets transferred to VLAN after RDMA function enabled.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter

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HPE Intel i40ea Driver for Windows Server 2016
Version: 1.13.104.0 **(Optional)**
Filename: cp045125.compsig; cp045125.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Fixes**

This product corrects an traffic packets making cert failure seen when packets transferred to VLAN after RDMA function enabled.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter

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HPE Intel i40ea Driver for Windows Server 2019
Version: 1.13.104.0 **(Optional)**
Filename: cp045126.compsig; cp045126.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Fixes**

This product corrects an traffic packets making cert failure seen when packets transferred to VLAN after RDMA function enabled.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter

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HPE Intel i40eb Driver for Windows Server 2012 R2
Version: 1.13.104.0 **(Optional)**
Filename: cp045127.compsig; cp045127.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Fixes**

This product corrects an traffic packets making cert failure seen when packets transferred to VLAN after RDMA function enabled.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 568i Adapter
- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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HPE Intel i40eb Driver for Windows Server 2016
Version: 1.13.104.0 **(Optional)**
Filename: cp045128.compsig; cp045128.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Fixes**

This product corrects an traffic packets making cert failure seen when packets transferred to VLAN after RDMA function enabled.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 568i Adapter
- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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HPE Intel i40eb Driver for Windows Server 2019
Version: 1.13.104.0 **(Optional)**
Filename: cp045129.compsig; cp045129.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Fixes**

This product corrects an traffic packets making cert failure seen when packets transferred to VLAN after RDMA function enabled.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 568i Adapter
- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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HPE Intel i40en Driver for VMware vSphere 6.5
Version: 2020.09.14 **(Optional)**

Filename: cp042675.compsig; cp042675.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for VMware*, version 3.13.0 or later, for use with this driver.

**Fixes**

This product corrects an issue which PCI device information passing to intnetcli Command-Line Interface (Intel® ESXCLI Plug-In Managing tool ).

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- HPE Ethernet 10Gb 2-port 568i Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter

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HPE Intel i40en Driver for VMware vSphere 6.7
Version: 2021.04.05 **(Optional)**
Filename: cp045743.compsig; cp045743.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for VMware*, version 3.14.0 or later, for use with this driver.

**Fixes**

This product corrects an issue obtain PCI addresses information when execution intnet CLI tools.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter

- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- HPE Ethernet 10Gb 2-port 568i Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter

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HPE Intel i40en Driver for VMware vSphere 7.0
Version: 2020.05.29 **(Optional)**
Filename: cp041295.compsig; cp041295.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for VMware*, version 3.12.50 or later, for use with this driver.

**Enhancements**

Initial release.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- HPE Ethernet 10Gb 2-port 568i Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter

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HPE Intel iavf Driver for Windows Server 2012 R2
Version: 1.12.9.0 **(Optional)**
Filename: cp045116.compsig; cp045116.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Prerequisites**

This driver requires host driver version 1.13.104.0 or later.

**Enhancements**

This product is updated to maintain compatibility with updated Windows installation library iavfmsg.dll.

**Supported Devices and Features**

This product supports the following HPE Intel i40ea network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter

This product supports the following HPE Intel i40eb network adapters:

- HPE Ethernet 10Gb 2-port 568i Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter

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HPE Intel iavf Driver for Windows Server 2016
Version: 1.12.9.0 **(Optional)**
Filename: cp045011.compsig; cp045011.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Prerequisites**

This driver requires host driver version 1.13.104.0 or later.

**Enhancements**

This product is updated to maintain compatibility with updated Windows installation library iavfmsg.dll.

**Supported Devices and Features**

This product supports the following HPE Intel i40ea network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter

This product supports the following HPE Intel i40eb network adapters:

- HPE Ethernet 10Gb 2-port 568i Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter

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HPE Intel iavf Driver for Windows Server 2019
Version: 1.12.9.0 **(Optional)**
Filename: cp045010.compsig; cp045010.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Prerequisites**

This driver requires host driver version 1.13.104.0 or later.

**Enhancements**

This product is updated to maintain compatibility with updated Windows installation library iavfmsg.dll.

**Supported Devices and Features**

This product supports the following HPE Intel i40ea network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter

This product supports the following HPE Intel i40eb network adapters:

- HPE Ethernet 10Gb 2-port 568i Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter

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HPE Intel iavf Drivers for Red Hat Enterprise Linux 7 x86_64
Version: 4.0.2-1 **(Optional)**
Filename: kmod-hp-iavf-4.0.2-1.rhel7u8.x86_64.compsig; kmod-hp-iavf-4.0.2-1.rhel7u8.x86_64.rpm; kmod-hp-iavf-4.0.2-1.rhel7u9.x86_64.compsig; kmod-hp-iavf-4.0.2-1.rhel7u9.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.21.0 or later, for use with these drivers.

**Enhancements**

- This product now supports Red Hat Enterprise Linux 7 update 9
- This product now supports the following servers:

HPE Superdome Flex 280
HPE Superdome Flex Server
HPE Superdome Flex 2

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- HPE Ethernet 10Gb 2-port 563i Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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HPE Intel iavf Drivers for Red Hat Enterprise Linux 8
Version: 4.0.2-1 **(Optional)**
Filename: kmod-hp-iavf-4.0.2-1.rhel8u2.x86_64.compsig; kmod-hp-iavf-4.0.2-1.rhel8u2.x86_64.rpm; kmod-hp-iavf-4.0.2-1.rhel8u3.x86_64.compsig; kmod-hp-iavf-4.0.2-1.rhel8u3.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.21.0 or later, for use with these drivers.

**Enhancements**

- This product now supports Red Hat Enterprise Linux 8 update 2 and Red Hat Enterprise Linux 8 update 3
- This product now supports the following servers:

  HPE Superdome Flex 280
  HPE Superdome Flex Server
  HPE Superdome Flex 2

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- HPE Ethernet 10Gb 2-port 563i Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter

- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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HPE Intel iavf Drivers for SUSE Linux Enterprise Server 12 x86_64
Version: 4.0.2-1 **(Optional)**
Filename: hp-iavf-kmp-default-4.0.2_k4.12.14_120-1.sles12sp5.x86_64.compsig; hp-iavf-kmp-default-4.0.2_k4.12.14_120-1.sles12sp5.x86_64.rpm; hp-iavf-kmp-default-4.0.2_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; hp-iavf-kmp-default-4.0.2_k4.12.14_94.41-1.sles12sp4.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.21.0 or later, for use with these drivers.

**Enhancements**

- This product now supports the following servers:

  HPE Superdome Flex 280
  HPE Superdome Flex Server
  HPE Superdome Flex 2

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- HPE Ethernet 10Gb 2-port 563i Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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HPE Intel iavf Drivers for SUSE Linux Enterprise Server 15
Version: 4.0.2-1 **(Optional)**
Filename: hp-iavf-kmp-default-4.0.2_k4.12.14_195-1.sles15sp1.x86_64.compsig; hp-iavf-kmp-default-4.0.2_k4.12.14_195-1.sles15sp1.x86_64.rpm; hp-iavf-kmp-default-4.0.2_k5.3.18_22-1.sles15sp2.x86_64.compsig; hp-iavf-kmp-default-4.0.2_k5.3.18_22-1.sles15sp2.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.21.0 or later, for use with these drivers.

**Enhancements**

- This product now supports Suse Linux Enterprise Server 15 Service Pack 2
- This product now supports the following servers:

  HPE Superdome Flex 280
  HPE Superdome Flex Server
  HPE Superdome Flex 2

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- HPE Ethernet 10Gb 2-port 563i Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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HPE Intel igb Drivers for Red Hat Enterprise Linux 7 x86_64
Version: 6.2.5-1 **(Optional)**
Filename: kmod-hp-igb-6.2.5-1.rhel7u8.x86_64.compsig; kmod-hp-igb-6.2.5-1.rhel7u8.x86_64.rpm; kmod-hp-igb-6.2.5-1.rhel7u9.x86_64.compsig; kmod-hp-igb-6.2.5-1.rhel7u9.x86_64.rpm; README

**Enhancements**

- This product now support *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version (or later) to update firmware
- This product now supports Red Hat Enterprise Linux 7 update 9

**Supported Devices and Features**

These drivers support the following Intel network adapters:

- HPE Ethernet 1Gb 2-port 361i Adapter
- HPE Ethernet 1Gb 2-port 361T Adapter
- HPE Ethernet 1Gb 2-port 363i Adapter
- HPE Ethernet 1Gb 4-port 366FLR Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HPE Ethernet 1Gb 4-port 366T Adapter

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HPE Intel igb Drivers for Red Hat Enterprise Linux 8
Version: 6.2.5-1 **(Optional)**

Filename: kmod-hp-igb-6.2.5-1.rhel8u2.x86_64.compsig; kmod-hp-igb-6.2.5-1.rhel8u2.x86_64.rpm; kmod-hp-igb-6.2.5-1.rhel8u3.x86_64.compsig; kmod-hp-igb-6.2.5-1.rhel8u3.x86_64.rpm; README

**Enhancements**

- This product now support HPE Intel Online Firmware Upgrade Utility for Linux x86_64, version (or later) to update firmware
- This product now supports Red Hat Enterprise Linux 8 update 2 and Red Hat Enterprise Linux 8 update 3

**Supported Devices and Features**

These drivers support the following Intel network adapters:

- HPE Ethernet 1Gb 2-port 361i Adapter
- HPE Ethernet 1Gb 2-port 361T Adapter
- HPE Ethernet 1Gb 2-port 363i Adapter
- HPE Ethernet 1Gb 4-port 366FLR Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HPE Ethernet 1Gb 4-port 366T Adapter

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HPE Intel igb Drivers for SUSE Linux Enterprise Server 12 x86_64
Version: 6.2.5-1 **(Optional)**
Filename: hp-igb-kmp-default-6.2.5_k4.12.14_120-1.sles12sp5.x86_64.compsig; hp-igb-kmp-default-6.2.5_k4.12.14_120-1.sles12sp5.x86_64.rpm; hp-igb-kmp-default-6.2.5_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; hp-igb-kmp-default-6.2.5_k4.12.14_94.41-1.sles12sp4.x86_64.rpm; README

**Enhancements**

This product now support HPE Intel Online Firmware Upgrade Utility for Linux x86_64, version (or later) to update firmware

**Supported Devices and Features**

These drivers support the following Intel network adapters:

- HPE Ethernet 1Gb 2-port 361i Adapter
- HPE Ethernet 1Gb 2-port 361T Adapter
- HPE Ethernet 1Gb 2-port 363i Adapter
- HPE Ethernet 1Gb 4-port 366FLR Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HPE Ethernet 1Gb 4-port 366T Adapter

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HPE Intel igb Drivers for SUSE Linux Enterprise Server 15
Version: 6.2.5-1 **(Optional)**

Filename: hp-igb-kmp-default-6.2.5_k4.12.14_195-1.sles15sp1.x86_64.compsig; hp-igb-kmp-default-6.2.5_k4.12.14_195-1.sles15sp1.x86_64.rpm; hp-igb-kmp-default-6.2.5_k5.3.18_22-1.sles15sp2.x86_64.compsig; hp-igb-kmp-default-6.2.5_k5.3.18_22-1.sles15sp2.x86_64.rpm; README

**Enhancements**

- This product now support HPE Intel Online Firmware Upgrade Utility for Linux x86_64, version (or later) to update firmware
- This product now supports Suse Linux Enterprise Server 15 Service Pack 2

**Supported Devices and Features**

These drivers support the following Intel network adapters:

- HPE Ethernet 1Gb 2-port 361i Adapter
- HPE Ethernet 1Gb 2-port 361T Adapter
- HPE Ethernet 1Gb 2-port 363i Adapter
- HPE Ethernet 1Gb 4-port 366FLR Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HPE Ethernet 1Gb 4-port 366T Adapter

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HPE Intel igbn Driver for VMware vSphere 6.5
Version: 2021.04.05 **(Optional)**
Filename: cp042677.compsig; cp042677.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for VMware*, version 3.14.0 or later, for use with this driver.

**Fixes**

This product corrects an issue which handling duplex value passed of ESXi command.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 1Gb 2-port 361i Adapter
- HPE Ethernet 1Gb 2-port 361T Adapter
- HPE Ethernet 1Gb 2-port 363i Adapter
- HPE Ethernet 1Gb 4-port 366FLR Adapter
- HPE Ethernet 1Gb 4-port 366i Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board

- HPE Ethernet 1Gb 4-port 366T Adapter

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HPE Intel igbn Driver for VMware vSphere 6.7
Version: 2021.04.05 **(Optional)**
Filename: cp042678.compsig; cp042678.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for VMware*, version 3.14.0 or later, for use with this driver.

**Fixes**

This product corrects an issue which handling duplex value passed of ESXi command.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 1Gb 2-port 361i Adapter
- HPE Ethernet 1Gb 2-port 361T Adapter
- HPE Ethernet 1Gb 2-port 363i Adapter
- HPE Ethernet 1Gb 4-port 366FLR Adapter
- HPE Ethernet 1Gb 4-port 366i Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HPE Ethernet 1Gb 4-port 366T Adapter

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HPE Intel igbn Driver for VMware vSphere 7.0
Version: 2021.04.05 **(Optional)**
Filename: cp045339.compsig; cp045339.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for VMware*, version 3.14.0 or later, for use with this driver.

**Fixes**

This product corrects an issue which handling duplex value passed of ESXi command.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 1Gb 2-port 361i Adapter
- HPE Ethernet 1Gb 2-port 361T Adapter
- HPE Ethernet 1Gb 2-port 363i Adapter
- HPE Ethernet 1Gb 4-port 366FLR Adapter
- HPE Ethernet 1Gb 4-port 366i Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HPE Ethernet 1Gb 4-port 366T Adapter

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HPE Intel ixgbe Drivers for Red Hat Enterprise Linux 7 x86_64
Version: 5.9.4-1 **(Optional)**
Filename: kmod-hp-ixgbe-5.9.4-1.rhel7u8.x86_64.compsig; kmod-hp-ixgbe-5.9.4-1.rhel7u8.x86_64.rpm; kmod-hp-ixgbe-5.9.4-1.rhel7u9.x86_64.compsig; kmod-hp-ixgbe-5.9.4-1.rhel7u9.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.21.0 or later, for use with these drivers.

**Enhancements**

- This product now supports Red Hat Enterprise Linux 7 update 9
- This product enhances reliability via adding support for new mailbox communication between PF(Physical Function) and VF(Virtual Function) and remove its potential flaws that may lead to the undefined or faulty behavior
- This product enhances compatibility where new mailbox api implementation is alo compatible with old drivers

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter
- HPE Ethernet 10Gb 2-port 561FLR-T Adapter

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HPE Intel ixgbe Drivers for Red Hat Enterprise Linux 8
Version: 5.9.4-1 **(Optional)**
Filename: kmod-hp-ixgbe-5.9.4-1.rhel8u2.x86_64.compsig; kmod-hp-ixgbe-5.9.4-1.rhel8u2.x86_64.rpm; kmod-hp-ixgbe-5.9.4-1.rhel8u3.x86_64.compsig; kmod-hp-ixgbe-5.9.4-1.rhel8u3.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.21.0 or later, for use with these drivers.

**Enhancements**

- This product now supports Red Hat Enterprise Linux 8 update 2 and Red Hat Enterprise Linux 8 update 3
- This product enhances reliability via adding support for new mailbox communication between PF(Physical Function) and VF(Virtual Function) and remove its potential flaws that may lead to the undefined or faulty behavior
- This product enhances compatibility where new mailbox api implementation is alo compatible with old drivers

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

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HPE Intel ixgbe Drivers for SUSE Linux Enterprise Server 12 x86_64
Version: 5.9.4-1 **(Optional)**
Filename: hp-ixgbe-kmp-default-5.9.4_k4.12.14_120-1.sles12sp5.x86_64.compsig; hp-ixgbe-kmp-default-5.9.4_k4.12.14_120-1.sles12sp5.x86_64.rpm; hp-ixgbe-kmp-default-5.9.4_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; hp-ixgbe-kmp-default-5.9.4_k4.12.14_94.41-1.sles12sp4.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.21.0 or later, for use with these drivers.

**Enhancements**

- This product enhances reliability via adding support for new mailbox communication between PF(Physical Function) and VF(Virtual Function) and remove its potential flaws that may lead to the undefined or faulty behavior
- This product enhances compatibility where new mailbox api implementation is alo compatible with old drivers

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter
- HPE Ethernet 10Gb 2-port 561FLR-T Adapter

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HPE Intel ixgbe Drivers for SUSE Linux Enterprise Server 15
Version: 5.9.4-1 **(Optional)**
Filename: hp-ixgbe-kmp-default-5.9.4_k4.12.14_195-1.sles15sp1.x86_64.compsig; hp-ixgbe-kmp-default-5.9.4_k4.12.14_195-1.sles15sp1.x86_64.rpm; hp-ixgbe-kmp-default-5.9.4_k5.3.18_22-1.sles15sp2.x86_64.compsig; hp-ixgbe-kmp-default-5.9.4_k5.3.18_22-1.sles15sp2.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.21.0 or later, for use with these drivers.

**Enhancements**

- This product now supports Suse Linux Enterprise Server 15 Service Pack 2
- This product enhances reliability via adding support for new mailbox communication between PF(Physical Function) and VF(Virtual Function) and remove its potential flaws that may lead to the undefined or faulty behavior
- This product enhances compatibility where new mailbox api implementation is alo compatible with old drivers

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter
- HPE Ethernet 10Gb 2-port 561FLR-T Adapter

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HPE Intel ixgben Driver for VMware vSphere 6.5
Version: 2020.09.14 **(Optional)**
Filename: cp042679.compsig; cp042679.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for VMware*, version 3.13.0 or later, for use with this driver.

**Fixes**

This product corrects an issue which notification from Link Partner when executed Link Flow Control settings.

**Supported Devices and Features**

These drivers support the following network adapters:

- HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

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HPE Intel ixgben Driver for VMware vSphere 6.7
Version: 2020.09.14 **(Optional)**
Filename: cp042680.compsig; cp042680.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for VMware*, version 3.13.0 or later, for use with this driver.

**Fixes**

This product corrects an issue which notification from Link Partner when executed Link Flow Control settings.

**Supported Devices and Features**

These drivers support the following network adapters:

- HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

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HPE Intel ixgben Driver for VMware vSphere 7.0
Version: 2020.05.29 **(Optional)**

Filename: cp041297.compsig; cp041297.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for VMware*, version 3.12.50 or later, for use with this driver.

**Enhancements**

Initial release.

**Supported Devices and Features**

These drivers support the following network adapters:

- HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

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HPE Intel ixgbevf Drivers for Red Hat Enterprise Linux 7 x86_64
Version: 4.9.3-1 **(Optional)**
Filename: kmod-hp-ixgbevf-4.9.3-1.rhel7u8.x86_64.compsig; kmod-hp-ixgbevf-4.9.3-1.rhel7u8.x86_64.rpm; kmod-hp-ixgbevf-4.9.3-1.rhel7u9.x86_64.compsig; kmod-hp-ixgbevf-4.9.3-1.rhel7u9.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.21.0 or later, for use with these drivers.

**Enhancements**

- This product now supports Red Hat Enterprise Linux 7 update 9
- This product enhances reliability via adding support for new mailbox communication between PF(Physical Function) and VF(Virtual Function) and remove its potential flaws that may lead to the undefined or faulty behavior
- This product enhances compatibility where new mailbox api implementation is alo compatible with old drivers

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

- HPE Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter
- HPE Ethernet 10Gb 2-port 561FLR-T Adapter

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HPE Intel ixgbevf Drivers for Red Hat Enterprise Linux 8
Version: 4.9.3-1 **(Optional)**
Filename: kmod-hp-ixgbevf-4.9.3-1.rhel8u2.x86_64.compsig; kmod-hp-ixgbevf-4.9.3-1.rhel8u2.x86_64.rpm; kmod-hp-ixgbevf-4.9.3-1.rhel8u3.x86_64.compsig; kmod-hp-ixgbevf-4.9.3-1.rhel8u3.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.21.0 or later, for use with these drivers.

**Enhancements**

- This product now supports Red Hat Enterprise Linux 8 update 2 and Red Hat Enterprise Linux 8 update 3
- This product enhances reliability via adding support for new mailbox communication between PF(Physical Function) and VF(Virtual Function) and remove its potential flaws that may lead to the undefined or faulty behavior
- This product enhances compatibility where new mailbox api implementation is alo compatible with old drivers

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

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HPE Intel ixgbevf Drivers for SUSE Linux Enterprise Server 12 x86_64
Version: 4.9.3-1 **(Optional)**
Filename: hp-ixgbevf-kmp-default-4.9.3_k4.12.14_120-1.sles12sp5.x86_64.compsig; hp-ixgbevf-kmp-default-4.9.3_k4.12.14_120-1.sles12sp5.x86_64.rpm; hp-ixgbevf-kmp-default-4.9.3_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; hp-ixgbevf-kmp-default-4.9.3_k4.12.14_94.41-1.sles12sp4.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.21.0 or later, for use with these drivers.

**Enhancements**

- This product enhances reliability via adding support for new mailbox communication between PF(Physical Function) and VF(Virtual Function) and remove its potential flaws that may lead to the undefined or faulty behavior
- This product enhances compatibility where new mailbox api implementation is alo compatible with old drivers

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter
- HPE Ethernet 10Gb 2-port 561FLR-T Adapter

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HPE Intel ixgbevf Drivers for SUSE Linux Enterprise Server 15
Version: 4.9.3-1 **(Optional)**
Filename: hp-ixgbevf-kmp-default-4.9.3_k4.12.14_195-1.sles15sp1.x86_64.compsig; hp-ixgbevf-kmp-default-4.9.3_k4.12.14_195-1.sles15sp1.x86_64.rpm; hp-ixgbevf-kmp-default-4.9.3_k5.3.18_22-1.sles15sp2.x86_64.compsig; hp-ixgbevf-kmp-default-4.9.3_k5.3.18_22-1.sles15sp2.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.21.0 or later, for use with these drivers.

**Enhancements**

- This product now supports Suse Linux Enterprise Server 15 Service Pack 2
- This product enhances reliability via adding support for new mailbox communication between PF(Physical Function) and VF(Virtual Function) and remove its potential flaws that may lead to the undefined or faulty behavior
- This product enhances compatibility where new mailbox api implementation is alo compatible with old drivers

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter
- HPE Ethernet 10Gb 2-port 561FLR-T Adapter

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HPE Intel ixn Driver for Windows Server 2012 R2
Version: 3.14.214.0 **(Optional)**
Filename: cp042027.compsig; cp042027.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.3.0 or later, for use with this driver.

**Enhancements**

This product contains Windows system update supported improvements.

**Supported Devices and Features**

This component supports the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter

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HPE Intel ixn Driver for Windows Server 2016
Version: 4.1.199.0 **(Optional)**
Filename: cp042028.compsig; cp042028.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.3.0 or later, for use with this driver.

**Enhancements**

This product contains Windows system update supported improvements.

**Supported Devices and Features**

This component supports the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter

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HPE Intel ixn Driver for Windows Server 2019
Version: 4.1.197.0 (B) **(Optional)**
Filename: cp046115.compsig; cp046115.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Enhancements**

This product is updated to maintain compatibility with updated .cat file.

**Supported Devices and Features**

This component supports the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter

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HPE Intel ixs Driver for Windows Server 2012 R2
Version: 3.14.222.0 **(Optional)**
Filename: cp046116.compsig; cp046116.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Enhancements**

This product contains Windows system update supported improvements.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

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HPE Intel ixs Driver for Windows Server 2016
Version: 4.1.219.0 **(Optional)**
Filename: cp046117.compsig; cp046117.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Enhancements**

This product contains Windows system update supported improvements.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

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HPE Intel ixs Driver for Windows Server 2019
Version: 4.1.219.0 **(Optional)**
Filename: cp046118.compsig; cp046118.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Enhancements**

This product contains Windows system update supported improvements.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

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HPE Intel ixt Driver for Windows Server 2012 R2
Version: 3.14.214.0 **(Optional)**
Filename: cp045117.compsig; cp045117.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Enhancements**

This product now supports the following network adapters:

- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter

**Supported Devices and Features**

This component supports the following network adapters:

- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter

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HPE Intel ixt Driver for Windows Server 2016
Version: 4.1.199.0 **(Optional)**
Filename: cp045118.compsig; cp045118.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Enhancements**

This product now supports the following network adapters:

- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter

**Supported Devices and Features**

This component supports the following network adapters:

- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter

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HPE Intel ixt Driver for Windows Server 2019
Version: 4.1.197.0 **(Optional)**
Filename: cp045874.compsig; cp045874.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Enhancements**

Initial version

**Supported Devices and Features**

This component supports the following network adapters:

- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter

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HPE Intel vxn Driver for Windows Server 2012 R2
Version: 1.2.199.0 (B) **(Optional)**
Filename: cp045152.compsig; cp045152.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Prerequisites**

This driver requires host driver version 3.14.214.0 or later.

**Enhancements**

This product now supports the following the network adapters:

- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter

**Supported Devices and Features**

This component supports the following HPE Intel ixn network adapters:

- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter

This component supports the following HPE Intel ixt network adapters:

- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter

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HPE Intel vxn Driver for Windows Server 2016
Version: 2.1.192.0 (B) **(Optional)**

Filename: cp045153.compsig; cp045153.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Prerequisites**

This driver requires host driver version 4.1.199.0 or later.

**Enhancements**

This product now supports the following the network adapters:

- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter

**Supported Devices and Features**

This component supports the following HPE Intel ixn network adapters:

- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter

This component supports the following HPE Intel ixt network adapters:

- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter

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HPE Intel vxn Driver for Windows Server 2019
Version: 2.1.191.0 (B) **(Optional)**
Filename: cp046080.compsig; cp046080.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Prerequisites**

This driver requires host driver version 4.1.179.0 or later.

**Enhancements**

This product now supports the following the network adapters:

- HPE Ethernet 10Gb 2-port 561FLR-T Adapter

- HPE Ethernet 10Gb 2-port 561T Adapter

**Supported Devices and Features**

This component supports the following HPE Intel ixn network adapters:

- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter

This component supports the following HPE Intel ixt network adapters:

- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter

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HPE Intel vxs Driver for Windows Server 2012 R2
Version: 1.2.199.0 **(Optional)**
Filename: cp042036.compsig; cp042036.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.3.0 or later, for use with this driver.

**Prerequisites**

This driver requires host driver version 3.14.214.0 or later.

**Enhancements**

This product contains Windows system update supported improvements.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

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HPE Intel vxs Driver for Windows Server 2016
Version: 2.1.192.0 **(Optional)**
Filename: cp042037.compsig; cp042037.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.3.0 or later, for use with this driver.

**Prerequisites**

This driver requires host driver version 4.1.199.0 or later.

**Enhancements**

This product contains Windows system update supported improvements.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

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HPE Intel vxs Driver for Windows Server 2019
Version: 2.1.191.0 **(Optional)**
Filename: cp042038.compsig; cp042038.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.3.0 or later, for use with this driver.

**Prerequisites**

This driver requires host driver version 4.1.179.0 or later.

**Enhancements**

This product contains Windows system update supported improvements.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

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HPE Mellanox CX3 Driver for Windows Server 2012 R2
Version: 5.35.12978.0 (B) **(Optional)**
Filename: cp040882.compsig; cp040882.exe

**Enhancements**

This product now remove supports Synergy and Blade Server.

**Supported Devices and Features**

This driver supports the following HPE Mellanox CX3 network adapters:

- HP Ethernet 10Gb 2-port 546SFP+ Adapter
- HP Ethernet 10Gb 2-port 546FLR-SFP+ Adapter
- HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter

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HPE Mellanox CX3 Driver for Windows Server 2016
Version: 5.35.12978.0 (D) **(Optional)**
Filename: cp040866.compsig; cp040866.exe

**Enhancements**

This product now remove supports Synergy and Blade Server.

**Supported Devices and Features**

This driver supports the following HP Mellanox CX3 network adapters:

- HP Ethernet 10Gb 2-port 546SFP+ Adapter
- HP Ethernet 10Gb 2-port 546FLR-SFP+ Adapter
- HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter

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HPE Mellanox CX4LX and CX5 Driver for Microsoft Windows Server 2012 R2
Version: 2.60.23957.0 **(Optional)**
Filename: cp045130.compsig; cp045130.exe

**Fixes**

- This product addresses a Windows Stop Error (BSOD) seen when running Mellanox NdStat Utility (mlx5cmd -ndstat) while ND connections was closing.
- This product corrects driver loading failures seen due to incorrect INF file.
- This product correct an issue where the vSwitch unavailable to assign on WS2012R2.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE Ethernet 100Gb 1-port 842QSFP28 Adapter
- HPE Ethernet 25Gb 2-port 640SFP28 Adapter
- HPE Ethernet 25Gb 2-port 640 FLR-SFP28 Adapter
- HPE Ethernet 10Gb 2-port 548SFP+ Adapter
- HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter
- HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter

- HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter
- HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter

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HPE Mellanox CX4LX and CX5 Driver for Microsoft Windows Server 2016
Version: 2.60.23957.0 **(Optional)**
Filename: cp045131.compsig; cp045131.exe

**Fixes**

- This product addresses a Windows Stop Error (BSOD) seen when running Mellanox NdStat Utility (mlx5cmd -ndstat) while ND connections was closing.
- This product corrects driver loading failures seen due to incorrect INF file.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE Ethernet 100Gb 1-port 842QSFP28 Adapter
- HPE Ethernet 25Gb 2-port 640SFP28 Adapter
- HPE Ethernet 25Gb 2-port 640 FLR-SFP28 Adapter
- HPE Ethernet 10Gb 2-port 548SFP+ Adapter
- HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter
- HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter
- HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter
- HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter

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HPE Mellanox CX4LX and CX5 Driver for Microsoft Windows Server 2019
Version: 2.60.23957.0 **(Optional)**
Filename: cp045132.compsig; cp045132.exe

**Fixes**

- This product addresses a Windows Stop Error (BSOD) seen when running Mellanox NdStat Utility (mlx5cmd -ndstat) while ND connections was closing.
- This product corrects driver loading failures seen due to incorrect INF file.

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE Ethernet 100Gb 1-port 842QSFP28 Adapter
- HPE Ethernet 25Gb 2-port 640SFP28 Adapter
- HPE Ethernet 25Gb 2-port 640 FLR-SFP28 Adapter
- HPE Ethernet 10Gb 2-port 548SFP+ Adapter
- HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter

- HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter
- HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter
- HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter

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HPE Mellanox MFT Driver and Firmware Tools for Red Hat Enterprise Linux 7 Update 8 (x86_64)
Version: 4.16 **(Recommended)**
Filename: kmod-kernel-mft-mlnx-4.16.0-1.rhel7u8.x86_64.compsig; kmod-kernel-mft-mlnx-4.16.0-1.rhel7u8.x86_64.rpm; mft-4.16.0-105.rhel7u8.x86_64.compsig; mft-4.16.0-105.rhel7u8.x86_64.rpm

**Fixes**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Enhancements**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Supported Devices and Features**

**SUPPORTED KERNELS:**

The kernels of Red Hat Enterprise Linux 7 Update 8 (x86_64) supported by this binary rpm are:
3.10.0-1127.el7 - (x86_64) and future update kernels.

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HPE Mellanox MFT Driver and Firmware Tools for Red Hat Enterprise Linux 7 Update 9 (x86_64)
Version: 4.16 **(Recommended)**
Filename: kmod-kernel-mft-mlnx-4.16.0-1.rhel7u9.x86_64.compsig; kmod-kernel-mft-mlnx-4.16.0-1.rhel7u9.x86_64.rpm; mft-4.16.0-105.rhel7u9.x86_64.compsig; mft-4.16.0-105.rhel7u9.x86_64.rpm

**Fixes**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Enhancements**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Supported Devices and Features**

**SUPPORTED KERNELS:**

The kernels of Red Hat Enterprise Linux 7 Update 9 (x86_64) supported by this binary rpm are:
3.10.0-1160.el7 - (x86_64) and future update kernels.

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HPE Mellanox MFT Driver and Firmware Tools for Red Hat Enterprise Linux 8 Update 2 (x86_64)
Version: 4.16 **(Recommended)**
Filename: kmod-kernel-mft-mlnx-4.16.0-1.rhel8u2.x86_64.compsig; kmod-kernel-mft-mlnx-4.16.0-1.rhel8u2.x86_64.rpm; mft-4.16.0-105.rhel8u2.x86_64.compsig; mft-4.16.0-105.rhel8u2.x86_64.rpm

**Fixes**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Enhancements**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 8 update 2 (x86_64) supported by this binary rpm are:
4.18.0-147.el8 - (x86_64) and future update kernels.

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HPE Mellanox MFT Driver and Firmware Tools for Red Hat Enterprise Linux 8 Update 3 (x86_64)
Version: 4.16 **(Recommended)**
Filename: kmod-kernel-mft-mlnx-4.16.0-1.rhel8u3.x86_64.compsig; kmod-kernel-mft-mlnx-4.16.0-1.rhel8u3.x86_64.rpm; mft-4.16.0-105.rhel8u3.x86_64.compsig; mft-4.16.0-105.rhel8u3.x86_64.rpm

**Fixes**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Enhancements**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 8 update 3 (x86_64) supported by this binary rpm are:
4.18.0-240.el8 - (x86_64) and future update kernels.

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HPE Mellanox MFT Driver and Firmware Tools for SUSE Linux Enterprise Server 12 SP4 (AMD64/EM64T)
Version: 4.16 **(Recommended)**
Filename: kernel-mft-mlnx-kmp-default-4.16.0_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; kernel-mft-mlnx-kmp-default-4.16.0_k4.12.14_94.41-1.sles12sp4.x86_64.rpm; mft-4.16.0-105.sles12sp4.x86_64.compsig; mft-4.16.0-105.sles12sp4.x86_64.rpm

**Fixes**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Enhancements**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Supported Devices and Features**

**SUPPORTED KERNELS:**

The kernels of SUSE LINUX Enterprise Server 12 SP4 (AMD64/EM64T) supported by this binary rpm are: 4.12.14-94.41-default and future update kernels.

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HPE Mellanox MFT Driver and Firmware Tools for SUSE Linux Enterprise Server 12 SP5 (AMD64/EM64T)
Version: 4.16 **(Recommended)**
Filename: kernel-mft-mlnx-kmp-default-4.16.0_k4.12.14_120-1.sles12sp5.x86_64.compsig; kernel-mft-mlnx-kmp-default-4.16.0_k4.12.14_120-1.sles12sp5.x86_64.rpm; mft-4.16.0-105.sles12sp5.x86_64.compsig; mft-4.16.0-105.sles12sp5.x86_64.rpm

**Fixes**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Enhancements**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Supported Devices and Features**

**SUPPORTED KERNELS:**

The kernels of SUSE LINUX Enterprise Server 12 SP5 (AMD64/EM64T) supported by this binary rpm are: 4.12.14-120-default and future update kernels.

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HPE Mellanox MFT Driver and Firmware Tools for SUSE Linux Enterprise Server 15 SP1 (AMD64/EM64T)
Version: 4.16 **(Recommended)**
Filename: kernel-mft-mlnx-kmp-default-4.16.0_k4.12.14_195-1.sles15sp1.x86_64.compsig; kernel-mft-mlnx-kmp-default-4.16.0_k4.12.14_195-1.sles15sp1.x86_64.rpm; mft-4.16.0-105.sles15sp1.x86_64.compsig; mft-4.16.0-105.sles15sp1.x86_64.rpm

**Fixes**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Enhancements**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Supported Devices and Features**

**SUPPORTED KERNELS:**

The kernels of SUSE LINUX Enterprise Server 15 SP1 (AMD64/EM64T) supported by this binary rpm are: 4.12.14-195-default and future update kernels.

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HPE Mellanox MFT Driver and Firmware Tools for SUSE Linux Enterprise Server 15 SP2 (AMD64/EM64T)

Version: 4.16 **(Recommended)**
Filename: kernel-mft-mlnx-kmp-default-4.16.0_k5.3.18_22-1.sles15sp2.x86_64.compsig; kernel-mft-mlnx-kmp-default-4.16.0_k5.3.18_22-1.sles15sp2.x86_64.rpm; mft-4.16.0-105.sles15sp2.x86_64.compsig; mft-4.16.0-105.sles15sp2.x86_64.rpm

**Fixes**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Enhancements**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Supported Devices and Features**

**SUPPORTED KERNELS:**

The kernels of SUSE LINUX Enterprise Server 15 SP2 (AMD64/EM64T) supported by this binary rpm are: 4.12.14-195-default and future update kernels.

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HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for Mellanox ConnectX-4, ConnectX-5 and ConnectX-6 Adapters for Red Hat Enterprise Linux 7 Update 8 (x86_64)
Version: 5.2 **(Recommended)**
Filename: kmod-mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.rhel7u8.x86_64.compsig; kmod-mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.rhel7u8.x86_64.rpm; mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.rhel7u8.x86_64.compsig; mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.rhel7u8.x86_64.rpm

**Important Note!**

Mellanox Ethernet + RoCE Linux driver (mlnx-ofa_kernel RPMs) supports only Ethernet mode of operation for HPE Mellanox adapters. For customers requiring complete InfiniBand functionality or "InfiniBand + Ethernet" modes of operation on the same node, install MLNX-OFED drivers from "Mellanox OFED VPI Drivers and Utilities" Linux Software Delivery Repository (http://downloads.linux.hpe.com/SDR/repo/mlnx_ofed/).

**Prerequisites**

Following packages must be installed from the respective OS distributions prior to installing the driver component:

- Python version 2.7

**Fixes**

**The following issues have been fixed in version 5.2:**

- Clearing min_rate on all SR-IOV legacy VFs after setting min_rate to at least one of the VFs did not disable QoS min_rate.
- An empty /usr/src/mlnx-ofa_kernel/default is now no longer created.
- An issue where installing packages through a repository failed after generation of metapackages using --add-kernel-support. The failure occurred due to excessive and incorrect Obsolete headers in those

metapackages.Enabled installation of mlnx-ofa_kernel package to /bin/python3 instead of / usr/bin/python3 on RHEL 8.x systems.

- All IPoIB offload packets were wrongly counted as rx_csum_complete. These packets are now identified as rx_csum_unnecessary packets.
- mlx5dv_dr_rule_destroy segmentation fault could happen in rare cases with multiple rules on the same matcher with a different number of actions. This could happen after reusing an already deleted rule memory with less actions.
- An issue of moving to SwitchDev mode after configuring DSCP (Differentiated Service Code Point).
- Global traffic class configuration did not take effect on DC QPs (Dynamically Connected Queue Pairs).
- ib_send_bw traffic frequently dropped to zero when RDMA CM was used, because of incorrect min_rnr_timer setting on the responder side. The min_rnr_timer setting is now aligned with the setting in non-RDMA CM cases.
- Traffic did not pass over VFs with VST QinQ feature is enabled.
- When traffic was sent over Geneve VLAN with Tx VLAN offload enabled and TSO (TCP Segmentation Offload) or Tx csum enabled, traffic could be dropped and not sent to the wire.
- An issue that caused the firmware to restart upon installing mlnxofed-dpdk-upstream-libs package manually.
- Bad utility paths in rdma-core "dracut" hooks on SLES systems, which used to result in the following errors when running "dracut" with the "--add rdma" option. dracut-install:
  - ERROR: installing '/usr/libexec/mlx4-setup.sh' dracut: /usr/lib/dracut/dracut-install -D /var/tmp/dracut.UdCOSJ/ initramfs /usr/libexec/mlx4-setup.sh dracut-install: ERROR: installing '/usr/libexec/rdma-set-sriov-vf' dracut: /usr/lib/dracut/dracut-install -D /var/tmp/dracut.UdCOSJ/ initramfs /usr/libexec/rdma-set-sriov-vf
- Traffic class value was not updated in DCT when set via sysfs.
- A doorbell loss issue on AMD platforms with Secure Memory Encryption (SME).
- Registering memory using mlx5dv_devx_umem_reg while forking. Without this fix, applications which use fork() or similar syscalls while using a memory registered with umem_reg could hang due to incorrect physical page mapping. This fix requires setting the IBV_FORK_SAFE environment variable.
- When unbinding the device resulted in the following message being printed to the dmesg: "failed to disable DC tracer"
- Content of file /sys/class/net//statistics/ multicast might have been out of date and might have displayed values lower than the real values.
- ERSPAN (Encapsulated Remote SPAN) protocol was available only when turning off Tx checksum offload.
- A udev script issue which caused non-mellanox devices to be renamed.
- Missing representor statistics when using ifconfig.
- Fixed wrong value of skb mark of received packets on representors.
- An issue which caused second port representors to be named as first port representors.

**Enhancements**

**Changes and new features in HPE Mellanox RoCE driver version 5.2:**

**For ConnectX-5 Adapters and above:**

- Added support for the following features:
  - CQE compression support for Rx multi-strides packets.
  - Configuring QoS on a single QP or on a group of QPs.
  - Encap/decap hardware offload of IPv4 traffic over MPLS-over-UDP. This can be used in networks with MPLS routers to achieve more efficient routing.
  - Connection tracking rules on VFs to forward traffic from one VF to the other.
  - Offloading sFlow sampling rules.

**For ConnectX-5 Adapters and ConnectX-6 Dx Adapters:**

- Added support for the following features:
  - A locking mechanism to enable parallel insertion of rules into the software steering using the mlx5dv_dr API. The parallel insertion improves the insertion rate and takes place when adding Rx and Tx rules via the FDB domain.
  - Option to match mlx5dv_dr API on Geneve tunnel using a dynamic flex parser. The option header consists of class, type, length and data. The parser should be configured using devx command, after which a rule can be created to match on parser ID and data.
  - Geneve tunneling offload, including matching on extension header.
  - Parallel insertion and deletion of offloaded rules using multiple OVS threads.

**For ConnectX-6 Dx Adapters:**

- Added support for the following features:
  - [Beta] Modify GTP-U TEID. This support requires flex parser configuration.
  - [Beta] Improved performance of OVS Connection Tracking flows by enabling the merge of the multi-table flow matches and actions into one joint flow.

**For ConnectX-6 Dx Adapters and above:**

Added support for the following features:

- Transmitted packet timestamping accuracy can be improved when using a timestamp generated at the port level instead of a timestamp generated upon CQE creation. Tx port time-stamping better reflects the actual time of a packet's transmission. This feature is disabled by default. The feature can be enabled or disabled using the following command. ethtool --set-priv-flags tx_port_ts on / off.
- Offloading tunnel rules when the source interface is VF (in addition to uplink) in the Hypervisor.
- Using Mirroring Offload with Connection Tracking.
- ASO flow meter using the mlx5dv_dr API, which allows for monitoring the packet rate for specific flows. When a packet hits a flow that is connected to a flow meter, the rate of packets through this meter is evaluated, and the packet is marked with a color copied into one of the C registers, according to the current rate compared to the reference rate.
- ASO first hit using the mlx5dv_dr API, which allows for tracking rule hits by packets. When a packet hits a rule with the ASO first hit action, a flag is set indicating this event, and the original value of the flag is copied to one of the C registers.
- mlx5dv_dr API support for matching on a new field "gtpu_first_ext_dw_0". This field enables packet filtering based on the GTP-U first extension header (first dword only). To enable parsing of tunnel GTP-U extension header, run the following command. ./cloud_fw_reset.py FLEX_PARSER_PROFILE_ENABLE=3.

**For ConnectX-6 Lx Adapters and above:**

- Added support for the following features:
  - IPsec full offload support for extended sequence number, replay protection window and lifetime packet limit.

**For All HCA's:**

- Added support for the following features:

- New query GID API that allows for querying a single GID entry by its port and GID index, or querying for all GID tables of a specific device. This API works over ioctl instead of sysfs, which accelerates the querying process.
- Performing multi-host firmware reset in order to upgrade the device firmware. Firmware reset loads the new firmware in case it was burnt on the flash and was pending activation, and reload.
- [Alpha] Firmware live patching in the driver. Live patching updates the firmware without the need to perform firmware reset. However, it can only be applied in scenarios where the difference between the current and new firmware versions are minor, which is decided upon by the firmware itself.
- devlink tool for performing firmware reset in order to upgrade the device firmware. Firmware reset loads the new firmware in case it was burnt on the flash and was pending activation, and reloads the current firmware image from the flash in case no new firmware was pending. For further information, please refer to the the devlink man page.
- A resiliency mechanism for the driver to manually poll the command event queue (EQ) in case of a command timeout. In case the resiliency mechanism finds unhandled event queue entry (EQE) due to a lost interrupt, the driver will handle it, after which the command interface returns to a healthy state.
- Setting a sniffer private flag is deprecated and no longer required. In order to capture offloaded/RoCE traffic, tcpdump can now be run on the RDMA device.
- Added per-port reporters to devlink health to manage per-port health activities. Users can now access the devlink port reporters by specifying the port index in addition to the device devlink name through the devlink health commands API. This update was first introduced in iproute2 v5.8. As part of this feature, mlx5e Tx and Rx reporters are now redefined as devlink port reporters. For examples, please see devlink-health manpage
- Optimized memory consumption of memory registration in huge page systems. As an example, in a 2MB huge page system, 600 MB would be saved for 100 GB memory registration.
- mlx5dv API to modify the configured UDP source port for RoCE packets of a given RC/UC QP when QP is in RTS state.
- Accelerating Tx datapath by saving PCI bandwidth and CPU utilization. The savings are achieved by aggregating multiple packets into a single WQE. The feature is driven by xmit_more for certain traffic types, such as UDP.

**Supported Devices and Features**

**SUPPORTED KERNELS:**

The kernels of Red Hat Enterprise Linux 7 Update 8 (x86_64) supported by this binary rpm are:
3.10.0-1127.el7 - (x86_64) and future update kernels.

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HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for Mellanox ConnectX-4, ConnectX-5 and ConnectX-6 Adapters for Red Hat Enterprise Linux 7 Update 9 (x86_64)
Version: 5.2 **(Recommended)**
Filename: kmod-mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.rhel7u9.x86_64.compsig; kmod-mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.rhel7u9.x86_64.rpm; mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.rhel7u9.x86_64.compsig; mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.rhel7u9.x86_64.rpm

**Important Note!**

Mellanox Ethernet + RoCE Linux driver (mlnx-ofa_kernel RPMs) supports only Ethernet mode of operation for HPE Mellanox adapters. For customers requiring complete InfiniBand functionality or "InfiniBand + Ethernet" modes of

operation on the same node, install MLNX-OFED drivers from "Mellanox OFED VPI Drivers and Utilities" Linux Software Delivery Repository (http://downloads.linux.hpe.com/SDR/repo/mlnx_ofed/).

**Prerequisites**

Following packages must be installed from the respective OS distributions prior to installing the driver component:

- Python version 2.7

**Fixes**

**The following issues have been fixed in version 5.2:**

- Clearing min_rate on all SR-IOV legacy VFs after setting min_rate to at least one of the VFs did not disable QoS min_rate.
- An empty /usr/src/mlnx-ofa_kernel/default is now no longer created.
- An issue where installing packages through a repository failed after generation of metapackages using --add-kernel-support. The failure occurred due to excessive and incorrect Obsolete headers in those metapackages.Enabled installation of mlnx-ofa_kernel package to /bin/python3 instead of / usr/bin/python3 on RHEL 8.x systems.
- All IPoIB offload packets were wrongly counted as rx_csum_complete. These packets are now identified as rx_csum_unnecessary packets.
- mlx5dv_dr_rule_destroy segmentation fault could happen in rare cases with multiple rules on the same matcher with a different number of actions. This could happen after reusing an already deleted rule memory with less actions.
- An issue of moving to SwitchDev mode after configuring DSCP (Differentiated Service Code Point).
- Global traffic class configuration did not take effect on DC QPs (Dynamically Connected Queue Pairs).
- ib_send_bw traffic frequently dropped to zero when RDMA CM was used, because of incorrect min_rnr_timer setting on the responder side. The min_rnr_timer setting is now aligned with the setting in non-RDMA CM cases.
- Traffic did not pass over VFs with VST QinQ feature is enabled.
- When traffic was sent over Geneve VLAN with Tx VLAN offload enabled and TSO (TCP Segmentation Offload) or Tx csum enabled, traffic could be dropped and not sent to the wire.
- An issue that caused the firmware to restart upon installing mlnxofed-dpdk-upstream-libs package manually.
- Bad utility paths in rdma-core "dracut" hooks on SLES systems, which used to result in the following errors when running "dracut" with the "--add rdma" option. dracut-install:
  - ERROR: installing ‘/usr/libexec/mlx4-setup.sh’ dracut: /usr/lib/dracut/dracut-install -D /var/tmp/dracut.UdCOSJ/ initramfs /usr/libexec/mlx4-setup.sh dracut-install: ERROR: installing ‘/usr/libexec/rdma-set-sriov-vf’ dracut: /usr/lib/dracut/dracut-install -D /var/tmp/dracut.UdCOSJ/ initramfs /usr/libexec/rdma-set-sriov-vf
- Traffic class value was not updated in DCT when set via sysfs.
- A doorbell loss issue on AMD platforms with Secure Memory Encryption (SME).
- Registering memory using mlx5dv_devx_umem_reg while forking. Without this fix, applications which use fork() or similar syscalls while using a memory registered with umem_reg could hang due to incorrect physical page mapping. This fix requires setting the IBV_FORK_SAFE environment variable.
- When unbinding the device resulted in the following message being printed to the dmesg: "failed to disable DC tracer"
- Content of file /sys/class/net//statistics/ multicast might have been out of date and might have displayed values lower than the real values.
- ERSPAN (Encapsulated Remote SPAN) protocol was available only when turning off Tx checksum offload.
- A udev script issue which caused non-mellanox devices to be renamed.

- Missing representor statistics when using ifconfig.
- Fixed wrong value of skb mark of received packets on representors.
- An issue which caused second port representors to be named as first port representors.

**Enhancements**

**Changes and new features in HPE Mellanox RoCE driver version 5.2:**

**For ConnectX-5 Adapters and above:**

- Added support for the following features:
  - CQE compression support for Rx multi-strides packets.
  - Configuring QoS on a single QP or on a group of QPs.
  - Encap/decap hardware offload of IPv4 traffic over MPLS-over-UDP. This can be used in networks with MPLS routers to achieve more efficient routing.
  - Connection tracking rules on VFs to forward traffic from one VF to the other.
  - Offloading sFlow sampling rules.

**For ConnectX-5 Adapters and ConnectX-6 Dx Adapters:**

- Added support for the following features:
  - A locking mechanism to enable parallel insertion of rules into the software steering using the mlx5dv_dr API. The parallel insertion improves the insertion rate and takes place when adding Rx and Tx rules via the FDB domain.
  - Option to match mlx5dv_dr API on Geneve tunnel using a dynamic flex parser. The option header consists of class, type, length and data. The parser should be configured using devx command, after which a rule can be created to match on parser ID and data.
  - Geneve tunneling offload, including matching on extension header.
  - Parallel insertion and deletion of offloaded rules using multiple OVS threads.

**For ConnectX-6 Dx Adapters:**

- Added support for the following features:
  - [Beta] Modify GTP-U TEID. This support requires flex parser configuration.
  - [Beta] Improved performance of OVS Connection Tracking flows by enabling the merge of the multi-table flow matches and actions into one joint flow.

**For ConnectX-6 Dx Adapters and above:**

Added support for the following features:

- Transmitted packet timestamping accuracy can be improved when using a timestamp generated at the port level instead of a timestamp generated upon CQE creation. Tx port time-stamping better reflects the actual time of a packet's transmission. This feature is disabled by default. The feature can be enabled or disabled using the following command. ethtool --set-priv-flags tx_port_ts on / off.
- Offloading tunnel rules when the source interface is VF (in addition to uplink) in the Hypervisor.
- Using Mirroring Offload with Connection Tracking.
- ASO flow meter using the mlx5dv_dr API, which allows for monitoring the packet rate for specific flows. When a packet hits a flow that is connected to a flow meter, the rate of packets through this meter is evaluated, and

the packet is marked with a color copied into one of the C registers, according to the current rate compared to the reference rate.
- ASO first hit using the mlx5dv_dr API, which allows for tracking rule hits by packets. When a packet hits a rule with the ASO first hit action, a flag is set indicating this event, and the original value of the flag is copied to one of the C registers.
- mlx5dv_dr API support for matching on a new field "gtpu_first_ext_dw_0". This field enables packet filtering based on the GTP-U first extension header (first dword only). To enable parsing of tunnel GTP-U extension header, run the following command. ./cloud_fw_reset.py FLEX_PARSER_PROFILE_ENABLE=3.

**For ConnectX-6 Lx Adapters and above:**

- Added support for the following features:
  - IPsec full offload support for extended sequence number, replay protection window and lifetime packet limit.

**For All HCA's:**

- Added support for the following features:
  - New query GID API that allows for querying a single GID entry by its port and GID index, or querying for all GID tables of a specific device. This API works over ioctl instead of sysfs, which accelerates the querying process.
  - Performing multi-host firmware reset in order to upgrade the device firmware. Firmware reset loads the new firmware in case it was burnt on the flash and was pending activation, and reload.
  - [Alpha] Firmware live patching in the driver. Live patching updates the firmware without the need to perform firmware reset. However, it can only be applied in scenarios where the difference between the current and new firmware versions are minor, which is decided upon by the firmware itself.
  - devlink tool for performing firmware reset in order to upgrade the device firmware. Firmware reset loads the new firmware in case it was burnt on the flash and was pending activation, and reloads the current firmware image from the flash in case no new firmware was pending. For further information, please refer to the the devlink man page.
  - A resiliency mechanism for the driver to manually poll the command event queue (EQ) in case of a command timeout. In case the resiliency mechanism finds unhandled event queue entry (EQE) due to a lost interrupt, the driver will handle it, after which the command interface returns to a healthy state.
  - Setting a sniffer private flag is deprecated and no longer required. In order to capture offloaded/RoCE traffic, tcpdump can now be run on the RDMA device.
  - Added per-port reporters to devlink health to manage per-port health activities. Users can now access the devlink port reporters by specifying the port index in addition to the device devlink name through the devlink health commands API. This update was first introduced in iproute2 v5.8. As part of this feature, mlx5e Tx and Rx reporters are now redefined as devlink port reporters. For examples, please see devlink-health manpage
  - Optimized memory consumption of memory registration in huge page systems. As an example, in a 2MB huge page system, 600 MB would be saved for 100 GB memory registration.
  - mlx5dv API to modify the configured UDP source port for RoCE packets of a given RC/UC QP when QP is in RTS state.
  - Accelerating Tx datapath by saving PCI bandwidth and CPU utilization. The savings are achieved by aggregating multiple packets into a single WQE. The feature is driven by xmit_more for certain traffic types, such as UDP.

**Supported Devices and Features**

**SUPPORTED KERNELS:**

The kernels of Red Hat Enterprise Linux 7 Update 9 (x86_64) supported by this binary rpm are:
3.10.0-1160.el7 - (x86_64) and future update kernels.

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HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for Mellanox ConnectX-4, ConnectX-5 and ConnectX-6 Adapters for Red Hat Enterprise Linux 8 Update 2 (x86_64)

Version: 5.2 **(Recommended)**

Filename: kmod-mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.rhel8u2.x86_64.compsig; kmod-mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.rhel8u2.x86_64.rpm; mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.rhel8u2.x86_64.compsig; mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.rhel8u2.x86_64.rpm

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- All IPoIB offload packets were wrongly counted as rx_csum_complete. These packets are now identified as rx_csum_unnecessary packets.
- mlx5dv_dr_rule_destroy segmentation fault could happen in rare cases with multiple rules on the same matcher with a different number of actions. This could happen after reusing an already deleted rule memory with less actions.
- An issue of moving to SwitchDev mode after configuring DSCP (Differentiated Service Code Point).
- Global traffic class configuration did not take effect on DC QPs (Dynamically Connected Queue Pairs).

- ib_send_bw traffic frequently dropped to zero when RDMA CM was used, because of incorrect min_rnr_timer setting on the responder side. The min_rnr_timer setting is now aligned with the setting in non-RDMA CM cases.
- Traffic did not pass over VFs with VST QinQ feature is enabled.
- When traffic was sent over Geneve VLAN with Tx VLAN offload enabled and TSO (TCP Segmentation Offload) or Tx csum enabled, traffic could be dropped and not sent to the wire.
- An issue that caused the firmware to restart upon installing mlnxofed-dpdk-upstream-libs package manually.
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- Traffic class value was not updated in DCT when set via sysfs.
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    - IPsec full offload support for extended sequence number, replay protection window and lifetime packet limit.

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    - New query GID API that allows for querying a single GID entry by its port and GID index, or querying for all GID tables of a specific device. This API works over ioctl instead of sysfs, which accelerates the querying process.
    - Performing multi-host firmware reset in order to upgrade the device firmware. Firmware reset loads the new firmware in case it was burnt on the flash and was pending activation, and reload.
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**Supported Devices and Features**

**SUPPORTED KERNELS:**

The kernels of Red Hat Enterprise Linux 8 update 2(x86_64) supported by this binary rpm are:
4.18.0-193.el8 - (x86_64) and future update kernels.

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HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for Mellanox ConnectX-4, ConnectX-5 and ConnectX-6 Adapters for Red Hat Enterprise Linux 8 Update 3 (x86_64)

Version: 5.2 **(Recommended)**

Filename: kmod-mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.rhel8u3.x86_64.compsig; kmod-mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.rhel8u3.x86_64.rpm; mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.rhel8u3.x86_64.compsig; mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.rhel8u3.x86_64.rpm

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  - A resiliency mechanism for the driver to manually poll the command event queue (EQ) in case of a command timeout. In case the resiliency mechanism finds unhandled event queue entry (EQE) due to a lost interrupt, the driver will handle it, after which the command interface returns to a healthy state.
  - Setting a sniffer private flag is deprecated and no longer required. In order to capture offloaded/RoCE traffic, tcpdump can now be run on the RDMA device.
  - Added per-port reporters to devlink health to manage per-port health activities. Users can now access the devlink port reporters by specifying the port index in addition to the device devlink name through the devlink health commands API. This update was first introduced in iproute2 v5.8. As part of this feature, mlx5e Tx and Rx reporters are now redefined as devlink port reporters. For examples, please see devlink-health manpage
  - Optimized memory consumption of memory registration in huge page systems. As an example, in a 2MB huge page system, 600 MB would be saved for 100 GB memory registration.
  - mlx5dv API to modify the configured UDP source port for RoCE packets of a given RC/UC QP when QP is in RTS state.
  - Accelerating Tx datapath by saving PCI bandwidth and CPU utilization. The savings are achieved by aggregating multiple packets into a single WQE. The feature is driven by xmit_more for certain traffic types, such as UDP.

## Supported Devices and Features

**SUPPORTED KERNELS:**

The kernels of Red Hat Enterprise Linux 8 update 3(x86_64) supported by this binary rpm are:
4.18.0-240.el8 - (x86_64) and future update kernels.

HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for Mellanox ConnectX-4, ConnectX-5 and ConnectX-6 Adapters for SUSE LINUX Enterprise Server 12 SP4 (AMD64/EM64T)

Version: 5.2 **(Recommended)**

Filename: mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.sles12sp4.x86_64.compsig; mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.sles12sp4.x86_64.rpm; mlnx-ofa_kernel-kmp-default-5.2_k4.12.14_94.41-OFED.5.2.1.0.4.1.sles12sp4.x86_64.compsig; mlnx-ofa_kernel-kmp-default-5.2_k4.12.14_94.41-OFED.5.2.1.0.4.1.sles12sp4.x86_64.rpm

**Important Note!**

Mellanox Ethernet + RoCE Linux driver (mlnx-ofa_kernel RPMs) supports only Ethernet mode of operation for HPE Mellanox adapters. For customers requiring complete InfiniBand functionality or "InfiniBand + Ethernet" modes of operation on the same node, install MLNX-OFED drivers from "Mellanox OFED VPI Drivers and Utilities" Linux Software Delivery Repository (http://downloads.linux.hpe.com/SDR/repo/mlnx_ofed/).

**Prerequisites**

Following packages must be installed from the respective OS distributions prior to installing the driver component:

- Python version 2.7

**Fixes**

**The following issues have been fixed in version 5.2:**

- Clearing min_rate on all SR-IOV legacy VFs after setting min_rate to at least one of the VFs did not disable QoS min_rate.
- An empty /usr/src/mlnx-ofa_kernel/default is now no longer created.
- An issue where installing packages through a repository failed after generation of metapackages using --add-kernel-support. The failure occurred due to excessive and incorrect Obsolete headers in those metapackages.Enabled installation of mlnx-ofa_kernel package to /bin/python3 instead of / usr/bin/python3 on RHEL 8.x systems.
- All IPoIB offload packets were wrongly counted as rx_csum_complete. These packets are now identified as rx_csum_unnecessary packets.
- mlx5dv_dr_rule_destroy segmentation fault could happen in rare cases with multiple rules on the same matcher with a different number of actions. This could happen after reusing an already deleted rule memory with less actions.
- An issue of moving to SwitchDev mode after configuring DSCP (Differentiated Service Code Point).
- Global traffic class configuration did not take effect on DC QPs (Dynamically Connected Queue Pairs).
- ib_send_bw traffic frequently dropped to zero when RDMA CM was used, because of incorrect min_rnr_timer setting on the responder side. The min_rnr_timer setting is now aligned with the setting in non-RDMA CM cases.
- Traffic did not pass over VFs with VST QinQ feature is enabled.

- When traffic was sent over Geneve VLAN with Tx VLAN offload enabled and TSO (TCP Segmentation Offload) or Tx csum enabled, traffic could be dropped and not sent to the wire.
- An issue that caused the firmware to restart upon installing mlnxofed-dpdk-upstream-libs package manually.
- Bad utility paths in rdma-core "dracut" hooks on SLES systems, which used to result in the following errors when running "dracut" with the "--add rdma" option. dracut-install:
  - ERROR: installing '/usr/libexec/mlx4-setup.sh' dracut: /usr/lib/dracut/dracut-install -D /var/tmp/dracut.UdCOSJ/ initramfs /usr/libexec/mlx4-setup.sh dracut-install: ERROR: installing '/usr/libexec/rdma-set-sriov-vf' dracut: /usr/lib/dracut/dracut-install -D /var/tmp/dracut.UdCOSJ/ initramfs /usr/libexec/rdma-set-sriov-vf
- Traffic class value was not updated in DCT when set via sysfs.
- A doorbell loss issue on AMD platforms with Secure Memory Encryption (SME).
- Registering memory using mlx5dv_devx_umem_reg while forking. Without this fix, applications which use fork() or similar syscalls while using a memory registered with umem_reg could hang due to incorrect physical page mapping. This fix requires setting the IBV_FORK_SAFE environment variable.
- When unbinding the device resulted in the following message being printed to the dmesg: "failed to disable DC tracer"
- Content of file /sys/class/net//statistics/ multicast might have been out of date and might have displayed values lower than the real values.
- ERSPAN (Encapsulated Remote SPAN) protocol was available only when turning off Tx checksum offload.
- A udev script issue which caused non-mellanox devices to be renamed.
- Missing representor statistics when using ifconfig.
- Fixed wrong value of skb mark of received packets on representors.
- An issue which caused second port representors to be named as first port representors.

## Enhancements

**Changes and new features in HPE Mellanox RoCE driver version 5.2:**

**For ConnectX-5 Adapters and above:**

- Added support for the following features:
  - CQE compression support for Rx multi-strides packets.
  - Configuring QoS on a single QP or on a group of QPs.
  - Encap/decap hardware offload of IPv4 traffic over MPLS-over-UDP. This can be used in networks with MPLS routers to achieve more efficient routing.
  - Connection tracking rules on VFs to forward traffic from one VF to the other.
  - Offloading sFlow sampling rules.

**For ConnectX-5 Adapters and ConnectX-6 Dx Adapters:**

- Added support for the following features:
  - A locking mechanism to enable parallel insertion of rules into the software steering using the mlx5dv_dr API. The parallel insertion improves the insertion rate and takes place when adding Rx and Tx rules via the FDB domain.
  - Option to match mlx5dv_dr API on Geneve tunnel using a dynamic flex parser. The option header consists of class, type, length and data. The parser should be configured using devx command, after which a rule can be created to match on parser ID and data.
  - Geneve tunneling offload, including matching on extension header.
  - Parallel insertion and deletion of offloaded rules using multiple OVS threads.

**For ConnectX-6 Dx Adapters:**

- Added support for the following features:
  - [Beta] Modify GTP-U TEID. This support requires flex parser configuration.
  - [Beta] Improved performance of OVS Connection Tracking flows by enabling the merge of the multi-table flow matches and actions into one joint flow.

**For ConnectX-6 Dx Adapters and above:**

Added support for the following features:

- Transmitted packet timestamping accuracy can be improved when using a timestamp generated at the port level instead of a timestamp generated upon CQE creation. Tx port time-stamping better reflects the actual time of a packet's transmission. This feature is disabled by default. The feature can be enabled or disabled using the following command. ethtool --set-priv-flags tx_port_ts on / off.
- Offloading tunnel rules when the source interface is VF (in addition to uplink) in the Hypervisor.
- Using Mirroring Offload with Connection Tracking.
- ASO flow meter using the mlx5dv_dr API, which allows for monitoring the packet rate for specific flows. When a packet hits a flow that is connected to a flow meter, the rate of packets through this meter is evaluated, and the packet is marked with a color copied into one of the C registers, according to the current rate compared to the reference rate.
- ASO first hit using the mlx5dv_dr API, which allows for tracking rule hits by packets. When a packet hits a rule with the ASO first hit action, a flag is set indicating this event, and the original value of the flag is copied to one of the C registers.
- mlx5dv_dr API support for matching on a new field "gtpu_first_ext_dw_0". This field enables packet filtering based on the GTP-U first extension header (first dword only). To enable parsing of tunnel GTP-U extension header, run the following command. ./cloud_fw_reset.py FLEX_PARSER_PROFILE_ENABLE=3.

**For ConnectX-6 Lx Adapters and above:**

- Added support for the following features:
  - IPsec full offload support for extended sequence number, replay protection window and lifetime packet limit.

**For All HCA's:**

- Added support for the following features:
  - New query GID API that allows for querying a single GID entry by its port and GID index, or querying for all GID tables of a specific device. This API works over ioctl instead of sysfs, which accelerates the querying process.
  - Performing multi-host firmware reset in order to upgrade the device firmware. Firmware reset loads the new firmware in case it was burnt on the flash and was pending activation, and reload.
  - [Alpha] Firmware live patching in the driver. Live patching updates the firmware without the need to perform firmware reset. However, it can only be applied in scenarios where the difference between the current and new firmware versions are minor, which is decided upon by the firmware itself.
  - devlink tool for performing firmware reset in order to upgrade the device firmware. Firmware reset loads the new firmware in case it was burnt on the flash and was pending activation, and reloads the current firmware image from the flash in case no new firmware was pending. For further information, please refer to the the devlink man page.
  - A resiliency mechanism for the driver to manually poll the command event queue (EQ) in case of a command timeout. In case the resiliency mechanism finds unhandled event queue entry (EQE) due to

a lost interrupt, the driver will handle it, after which the command interface returns to a healthy state.

- Setting a sniffer private flag is deprecated and no longer required. In order to capture offloaded/RoCE traffic, tcpdump can now be run on the RDMA device.
- Added per-port reporters to devlink health to manage per-port health activities. Users can now access the devlink port reporters by specifying the port index in addition to the device devlink name through the devlink health commands API. This update was first introduced in iproute2 v5.8. As part of this feature, mlx5e Tx and Rx reporters are now redefined as devlink port reporters. For examples, please see devlink-health manpage
- Optimized memory consumption of memory registration in huge page systems. As an example, in a 2MB huge page system, 600 MB would be saved for 100 GB memory registration.
- mlx5dv API to modify the configured UDP source port for RoCE packets of a given RC/UC QP when QP is in RTS state.
- Accelerating Tx datapath by saving PCI bandwidth and CPU utilization. The savings are achieved by aggregating multiple packets into a single WQE. The feature is driven by xmit_more for certain traffic types, such as UDP.

**Supported Devices and Features**

**SUPPORTED KERNELS:**

The kernels of SUSE LINUX Enterprise Server 12 SP4 (AMD64/EM64T) supported by this binary rpm are:
4.12.14-94.41-default - (AMD64/EM64T) and future update kernels.

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HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for Mellanox ConnectX-4, ConnectX-5 and ConnectX-6 Adapters for SUSE LINUX Enterprise Server 12 SP5 (AMD64/EM64T)

Version: 5.2 **(Recommended)**

Filename: mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.sles12sp5.x86_64.compsig; mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.sles12sp5.x86_64.rpm; mlnx-ofa_kernel-kmp-default-5.2_k4.12.14_120-OFED.5.2.1.0.4.1.sles12sp5.x86_64.compsig; mlnx-ofa_kernel-kmp-default-5.2_k4.12.14_120-OFED.5.2.1.0.4.1.sles12sp5.x86_64.rpm

**Important Note!**

Mellanox Ethernet + RoCE Linux driver (mlnx-ofa_kernel RPMs) supports only Ethernet mode of operation for HPE Mellanox adapters. For customers requiring complete InfiniBand functionality or "InfiniBand + Ethernet" modes of operation on the same node, install MLNX-OFED drivers from "Mellanox OFED VPI Drivers and Utilities" Linux Software Delivery Repository (http://downloads.linux.hpe.com/SDR/repo/mlnx_ofed/).

**Prerequisites**

Following packages must be installed from the respective OS distributions prior to installing the driver component:

- Python version 2.7

## Fixes

**The following issues have been fixed in version 5.2:**

- Clearing min_rate on all SR-IOV legacy VFs after setting min_rate to at least one of the VFs did not disable QoS min_rate.
- An empty /usr/src/mlnx-ofa_kernel/default is now no longer created.
- An issue where installing packages through a repository failed after generation of metapackages using --add-kernel-support. The failure occurred due to excessive and incorrect Obsolete headers in those metapackages.Enabled installation of mlnx-ofa_kernel package to /bin/python3 instead of / usr/bin/python3 on RHEL 8.x systems.
- All IPoIB offload packets were wrongly counted as rx_csum_complete. These packets are now identified as rx_csum_unnecessary packets.
- mlx5dv_dr_rule_destroy segmentation fault could happen in rare cases with multiple rules on the same matcher with a different number of actions. This could happen after reusing an already deleted rule memory with less actions.
- An issue of moving to SwitchDev mode after configuring DSCP (Differentiated Service Code Point).
- Global traffic class configuration did not take effect on DC QPs (Dynamically Connected Queue Pairs).
- ib_send_bw traffic frequently dropped to zero when RDMA CM was used, because of incorrect min_rnr_timer setting on the responder side. The min_rnr_timer setting is now aligned with the setting in non-RDMA CM cases.
- Traffic did not pass over VFs with VST QinQ feature is enabled.
- When traffic was sent over Geneve VLAN with Tx VLAN offload enabled and TSO (TCP Segmentation Offload) or Tx csum enabled, traffic could be dropped and not sent to the wire.
- An issue that caused the firmware to restart upon installing mlnxofed-dpdk-upstream-libs package manually.
- Bad utility paths in rdma-core "dracut" hooks on SLES systems, which used to result in the following errors when running "dracut" with the "--add rdma" option. dracut-install:
    - ERROR: installing ‘/usr/libexec/mlx4-setup.sh’ dracut: /usr/lib/dracut/dracut-install -D /var/tmp/dracut.UdCOSJ/ initramfs /usr/libexec/mlx4-setup.sh dracut-install: ERROR: installing ‘/usr/libexec/rdma-set-sriov-vf’ dracut: /usr/lib/dracut/dracut-install -D /var/tmp/dracut.UdCOSJ/ initramfs /usr/libexec/rdma-set-sriov-vf
- Traffic class value was not updated in DCT when set via sysfs.
- A doorbell loss issue on AMD platforms with Secure Memory Encryption (SME).
- Registering memory using mlx5dv_devx_umem_reg while forking. Without this fix, applications which use fork() or similar syscalls while using a memory registered with umem_reg could hang due to incorrect physical page mapping. This fix requires setting the IBV_FORK_SAFE environment variable.
- When unbinding the device resulted in the following message being printed to the dmesg: "failed to disable DC tracer"
- Content of file /sys/class/net//statistics/ multicast might have been out of date and might have displayed values lower than the real values.
- ERSPAN (Encapsulated Remote SPAN) protocol was available only when turning off Tx checksum offload.
- A udev script issue which caused non-mellanox devices to be renamed.
- Missing representor statistics when using ifconfig.
- Fixed wrong value of skb mark of received packets on representors.
- An issue which caused second port representors to be named as first port representors.

## Enhancements

**Changes and new features in HPE Mellanox RoCE driver version 5.2:**

**For ConnectX-5 Adapters and above:**

- Added support for the following features:
  - CQE compression support for Rx multi-strides packets.
  - Configuring QoS on a single QP or on a group of QPs.
  - Encap/decap hardware offload of IPv4 traffic over MPLS-over-UDP. This can be used in networks with MPLS routers to achieve more efficient routing.
  - Connection tracking rules on VFs to forward traffic from one VF to the other.
  - Offloading sFlow sampling rules.

**For ConnectX-5 Adapters and ConnectX-6 Dx Adapters:**

- Added support for the following features:
  - A locking mechanism to enable parallel insertion of rules into the software steering using the mlx5dv_dr API. The parallel insertion improves the insertion rate and takes place when adding Rx and Tx rules via the FDB domain.
  - Option to match mlx5dv_dr API on Geneve tunnel using a dynamic flex parser. The option header consists of class, type, length and data. The parser should be configured using devx command, after which a rule can be created to match on parser ID and data.
  - Geneve tunneling offload, including matching on extension header.
  - Parallel insertion and deletion of offloaded rules using multiple OVS threads.

**For ConnectX-6 Dx Adapters:**

- Added support for the following features:
  - [Beta] Modify GTP-U TEID. This support requires flex parser configuration.
  - [Beta] Improved performance of OVS Connection Tracking flows by enabling the merge of the multi-table flow matches and actions into one joint flow.

**For ConnectX-6 Dx Adapters and above:**

Added support for the following features:

- Transmitted packet timestamping accuracy can be improved when using a timestamp generated at the port level instead of a timestamp generated upon CQE creation. Tx port time-stamping better reflects the actual time of a packet's transmission. This feature is disabled by default. The feature can be enabled or disabled using the following command. ethtool --set-priv-flags tx_port_ts on / off.
- Offloading tunnel rules when the source interface is VF (in addition to uplink) in the Hypervisor.
- Using Mirroring Offload with Connection Tracking.
- ASO flow meter using the mlx5dv_dr API, which allows for monitoring the packet rate for specific flows. When a packet hits a flow that is connected to a flow meter, the rate of packets through this meter is evaluated, and the packet is marked with a color copied into one of the C registers, according to the current rate compared to the reference rate.
- ASO first hit using the mlx5dv_dr API, which allows for tracking rule hits by packets. When a packet hits a rule with the ASO first hit action, a flag is set indicating this event, and the original value of the flag is copied to one of the C registers.

- mlx5dv_dr API support for matching on a new field "gtpu_first_ext_dw_0". This field enables packet filtering based on the GTP-U first extension header (first dword only). To enable parsing of tunnel GTP-U extension header, run the following command. ./cloud_fw_reset.py FLEX_PARSER_PROFILE_ENABLE=3.

**For ConnectX-6 Lx Adapters and above:**

- Added support for the following features:
  - IPsec full offload support for extended sequence number, replay protection window and lifetime packet limit.

**For All HCA's:**

- Added support for the following features:
  - New query GID API that allows for querying a single GID entry by its port and GID index, or querying for all GID tables of a specific device. This API works over ioctl instead of sysfs, which accelerates the querying process.
  - Performing multi-host firmware reset in order to upgrade the device firmware. Firmware reset loads the new firmware in case it was burnt on the flash and was pending activation, and reload.
  - [Alpha] Firmware live patching in the driver. Live patching updates the firmware without the need to perform firmware reset. However, it can only be applied in scenarios where the difference between the current and new firmware versions are minor, which is decided upon by the firmware itself.
  - devlink tool for performing firmware reset in order to upgrade the device firmware. Firmware reset loads the new firmware in case it was burnt on the flash and was pending activation, and reloads the current firmware image from the flash in case no new firmware was pending. For further information, please refer to the the devlink man page.
  - A resiliency mechanism for the driver to manually poll the command event queue (EQ) in case of a command timeout. In case the resiliency mechanism finds unhandled event queue entry (EQE) due to a lost interrupt, the driver will handle it, after which the command interface returns to a healthy state.
  - Setting a sniffer private flag is deprecated and no longer required. In order to capture offloaded/RoCE traffic, tcpdump can now be run on the RDMA device.
  - Added per-port reporters to devlink health to manage per-port health activities. Users can now access the devlink port reporters by specifying the port index in addition to the device devlink name through the devlink health commands API. This update was first introduced in iproute2 v5.8. As part of this feature, mlx5e Tx and Rx reporters are now redefined as devlink port reporters. For examples, please see devlink-health manpage
  - Optimized memory consumption of memory registration in huge page systems. As an example, in a 2MB huge page system, 600 MB would be saved for 100 GB memory registration.
  - mlx5dv API to modify the configured UDP source port for RoCE packets of a given RC/UC QP when QP is in RTS state.
  - Accelerating Tx datapath by saving PCI bandwidth and CPU utilization. The savings are achieved by aggregating multiple packets into a single WQE. The feature is driven by xmit_more for certain traffic types, such as UDP.

## Supported Devices and Features

**SUPPORTED KERNELS:**

The kernels of SUSE LINUX Enterprise Server 12 SP5 (AMD64/EM64T) supported by this binary rpm are:
4.12.14-120-default - (AMD64/EM64T) and future update kernels.

HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for Mellanox ConnectX-4, ConnectX-5 and ConnectX-6 Adapters for SUSE LINUX Enterprise Server 15 SP1 (AMD64/EM64T)

Version: 5.2 **(Recommended)**

Filename: mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.sles15sp1.x86_64.compsig; mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.sles15sp1.x86_64.rpm; mlnx-ofa_kernel-kmp-default-5.2_k4.12.14_195-OFED.5.2.1.0.4.1.sles15sp1.x86_64.compsig; mlnx-ofa_kernel-kmp-default-5.2_k4.12.14_195-OFED.5.2.1.0.4.1.sles15sp1.x86_64.rpm

**Important Note!**

Mellanox Ethernet + RoCE Linux driver (mlnx-ofa_kernel RPMs) supports only Ethernet mode of operation for HPE Mellanox adapters. For customers requiring complete InfiniBand functionality or "InfiniBand + Ethernet" modes of operation on the same node, install MLNX-OFED drivers from "Mellanox OFED VPI Drivers and Utilities" Linux Software Delivery Repository (http://downloads.linux.hpe.com/SDR/repo/mlnx_ofed/).

**Prerequisites**

Following packages must be installed from the respective OS distributions prior to installing the driver component:

- Python version 2.7

Please refer the following advisory for more details about the python dependency on SLES15SP1.
https://si.houston.hpecorp.net/si/DocumentationRequests/details.aspx?DRId=SID5293&slim=yes&offset=0

**Fixes**

**The following issues have been fixed in version 5.2:**

- Clearing min_rate on all SR-IOV legacy VFs after setting min_rate to at least one of the VFs did not disable QoS min_rate.
- An empty /usr/src/mlnx-ofa_kernel/default is now no longer created.
- An issue where installing packages through a repository failed after generation of metapackages using --add-kernel-support. The failure occurred due to excessive and incorrect Obsolete headers in those metapackages.Enabled installation of mlnx-ofa_kernel package to /bin/python3 instead of / usr/bin/python3 on RHEL 8.x systems.
- All IPoIB offload packets were wrongly counted as rx_csum_complete. These packets are now identified as rx_csum_unnecessary packets.
- mlx5dv_dr_rule_destroy segmentation fault could happen in rare cases with multiple rules on the same matcher with a different number of actions. This could happen after reusing an already deleted rule memory with less actions.
- An issue of moving to SwitchDev mode after configuring DSCP (Differentiated Service Code Point).
- Global traffic class configuration did not take effect on DC QPs (Dynamically Connected Queue Pairs).

- ib_send_bw traffic frequently dropped to zero when RDMA CM was used, because of incorrect min_rnr_timer setting on the responder side. The min_rnr_timer setting is now aligned with the setting in non-RDMA CM cases.
- Traffic did not pass over VFs with VST QinQ feature is enabled.
- When traffic was sent over Geneve VLAN with Tx VLAN offload enabled and TSO (TCP Segmentation Offload) or Tx csum enabled, traffic could be dropped and not sent to the wire.
- An issue that caused the firmware to restart upon installing mlnxofed-dpdk-upstream-libs package manually.
- Bad utility paths in rdma-core "dracut" hooks on SLES systems, which used to result in the following errors when running "dracut" with the "--add rdma" option. dracut-install:
  - ERROR: installing '/usr/libexec/mlx4-setup.sh' dracut: /usr/lib/dracut/dracut-install -D /var/tmp/dracut.UdCOSJ/ initramfs /usr/libexec/mlx4-setup.sh dracut-install: ERROR: installing '/usr/libexec/rdma-set-sriov-vf' dracut: /usr/lib/dracut/dracut-install -D /var/tmp/dracut.UdCOSJ/ initramfs /usr/libexec/rdma-set-sriov-vf
- Traffic class value was not updated in DCT when set via sysfs.
- A doorbell loss issue on AMD platforms with Secure Memory Encryption (SME).
- Registering memory using mlx5dv_devx_umem_reg while forking. Without this fix, applications which use fork() or similar syscalls while using a memory registered with umem_reg could hang due to incorrect physical page mapping. This fix requires setting the IBV_FORK_SAFE environment variable.
- When unbinding the device resulted in the following message being printed to the dmesg: "failed to disable DC tracer"
- Content of file /sys/class/net//statistics/ multicast might have been out of date and might have displayed values lower than the real values.
- ERSPAN (Encapsulated Remote SPAN) protocol was available only when turning off Tx checksum offload.
- A udev script issue which caused non-mellanox devices to be renamed.
- Missing representor statistics when using ifconfig.
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- An issue which caused second port representors to be named as first port representors.

## Enhancements

**Changes and new features in HPE Mellanox RoCE driver version 5.2:**

**For ConnectX-5 Adapters and above:**

- Added support for the following features:
  - CQE compression support for Rx multi-strides packets.
  - Configuring QoS on a single QP or on a group of QPs.
  - Encap/decap hardware offload of IPv4 traffic over MPLS-over-UDP. This can be used in networks with MPLS routers to achieve more efficient routing.
  - Connection tracking rules on VFs to forward traffic from one VF to the other.
  - Offloading sFlow sampling rules.

**For ConnectX-5 Adapters and ConnectX-6 Dx Adapters:**

- Added support for the following features:
  - A locking mechanism to enable parallel insertion of rules into the software steering using the mlx5dv_dr API. The parallel insertion improves the insertion rate and takes place when adding Rx and Tx rules via the FDB domain.
  - Option to match mlx5dv_dr API on Geneve tunnel using a dynamic flex parser. The option header consists of class, type, length and data. The parser should be configured using devx command, after which a rule can be created to match on parser ID and data.

        - Geneve tunneling offload, including matching on extension header.
        - Parallel insertion and deletion of offloaded rules using multiple OVS threads.

**For ConnectX-6 Dx Adapters:**

- Added support for the following features:
    - [Beta] Modify GTP-U TEID. This support requires flex parser configuration.
    - [Beta] Improved performance of OVS Connection Tracking flows by enabling the merge of the multi-table flow matches and actions into one joint flow.

**For ConnectX-6 Dx Adapters and above:**

Added support for the following features:

- Transmitted packet timestamping accuracy can be improved when using a timestamp generated at the port level instead of a timestamp generated upon CQE creation. Tx port time-stamping better reflects the actual time of a packet's transmission. This feature is disabled by default. The feature can be enabled or disabled using the following command. ethtool --set-priv-flags tx_port_ts on / off.
- Offloading tunnel rules when the source interface is VF (in addition to uplink) in the Hypervisor.
- Using Mirroring Offload with Connection Tracking.
- ASO flow meter using the mlx5dv_dr API, which allows for monitoring the packet rate for specific flows. When a packet hits a flow that is connected to a flow meter, the rate of packets through this meter is evaluated, and the packet is marked with a color copied into one of the C registers, according to the current rate compared to the reference rate.
- ASO first hit using the mlx5dv_dr API, which allows for tracking rule hits by packets. When a packet hits a rule with the ASO first hit action, a flag is set indicating this event, and the original value of the flag is copied to one of the C registers.
- mlx5dv_dr API support for matching on a new field "gtpu_first_ext_dw_0". This field enables packet filtering based on the GTP-U first extension header (first dword only). To enable parsing of tunnel GTP-U extension header, run the following command. ./cloud_fw_reset.py FLEX_PARSER_PROFILE_ENABLE=3.

**For ConnectX-6 Lx Adapters and above:**

- Added support for the following features:
    - IPsec full offload support for extended sequence number, replay protection window and lifetime packet limit.

**For All HCA's:**

- Added support for the following features:
    - New query GID API that allows for querying a single GID entry by its port and GID index, or querying for all GID tables of a specific device. This API works over ioctl instead of sysfs, which accelerates the querying process.
    - Performing multi-host firmware reset in order to upgrade the device firmware. Firmware reset loads the new firmware in case it was burnt on the flash and was pending activation, and reload.
    - [Alpha] Firmware live patching in the driver. Live patching updates the firmware without the need to perform firmware reset. However, it can only be applied in scenarios where the difference between the current and new firmware versions are minor, which is decided upon by the firmware itself.
    - devlink tool for performing firmware reset in order to upgrade the device firmware. Firmware reset loads the new firmware in case it was burnt on the flash and was pending activation, and reloads the

current firmware image from the flash in case no new firmware was pending. For further information, please refer to the the devlink man page.

- A resiliency mechanism for the driver to manually poll the command event queue (EQ) in case of a command timeout. In case the resiliency mechanism finds unhandled event queue entry (EQE) due to a lost interrupt, the driver will handle it, after which the command interface returns to a healthy state.
- Setting a sniffer private flag is deprecated and no longer required. In order to capture offloaded/RoCE traffic, tcpdump can now be run on the RDMA device.
- Added per-port reporters to devlink health to manage per-port health activities. Users can now access the devlink port reporters by specifying the port index in addition to the device devlink name through the devlink health commands API. This update was first introduced in iproute2 v5.8. As part of this feature, mlx5e Tx and Rx reporters are now redefined as devlink port reporters. For examples, please see devlink-health manpage
- Optimized memory consumption of memory registration in huge page systems. As an example, in a 2MB huge page system, 600 MB would be saved for 100 GB memory registration.
- mlx5dv API to modify the configured UDP source port for RoCE packets of a given RC/UC QP when QP is in RTS state.
- Accelerating Tx datapath by saving PCI bandwidth and CPU utilization. The savings are achieved by aggregating multiple packets into a single WQE. The feature is driven by xmit_more for certain traffic types, such as UDP.

**Supported Devices and Features**

**SUPPORTED KERNELS:**

The kernels of SUSE LINUX Enterprise Server 15 SP1 (AMD64/EM64T) supported by this binary rpm are:
4.12.14-195-default - (AMD64/EM64T) and future update kernels.

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HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for Mellanox ConnectX-4, ConnectX-5 and ConnectX-6 Adapters for SUSE LINUX Enterprise Server 15 SP2 (AMD64/EM64T)

Version: 5.2 **(Recommended)**

Filename: mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.sles15sp2.x86_64.compsig; mlnx-ofa_kernel-5.2-OFED.5.2.1.0.4.1.sles15sp2.x86_64.rpm; mlnx-ofa_kernel-kmp-default-5.2_k5.3.18_22-OFED.5.2.1.0.4.1.sles15sp2.x86_64.compsig; mlnx-ofa_kernel-kmp-default-5.2_k5.3.18_22-OFED.5.2.1.0.4.1.sles15sp2.x86_64.rpm

**Important Note!**

Mellanox Ethernet + RoCE Linux driver (mlnx-ofa_kernel RPMs) supports only Ethernet mode of operation for HPE Mellanox adapters. For customers requiring complete InfiniBand functionality or "InfiniBand + Ethernet" modes of operation on the same node, install MLNX-OFED drivers from "Mellanox OFED VPI Drivers and Utilities" Linux Software Delivery Repository (https://downloads.linux.hpe.com/SDR/project/mlnx_ofed/).

**Prerequisites**

Following packages must be installed from the respective OS distributions prior to installing the driver component:

- Python version 2.7

## Fixes

**The following issues have been fixed in version 5.2:**

- Clearing min_rate on all SR-IOV legacy VFs after setting min_rate to at least one of the VFs did not disable QoS min_rate.
- An empty /usr/src/mlnx-ofa_kernel/default is now no longer created.
- An issue where installing packages through a repository failed after generation of metapackages using --add-kernel-support. The failure occurred due to excessive and incorrect Obsolete headers in those metapackages.Enabled installation of mlnx-ofa_kernel package to /bin/python3 instead of / usr/bin/python3 on RHEL 8.x systems.
- All IPoIB offload packets were wrongly counted as rx_csum_complete. These packets are now identified as rx_csum_unnecessary packets.
- mlx5dv_dr_rule_destroy segmentation fault could happen in rare cases with multiple rules on the same matcher with a different number of actions. This could happen after reusing an already deleted rule memory with less actions.
- An issue of moving to SwitchDev mode after configuring DSCP (Differentiated Service Code Point).
- Global traffic class configuration did not take effect on DC QPs (Dynamically Connected Queue Pairs).
- ib_send_bw traffic frequently dropped to zero when RDMA CM was used, because of incorrect min_rnr_timer setting on the responder side. The min_rnr_timer setting is now aligned with the setting in non-RDMA CM cases.
- Traffic did not pass over VFs with VST QinQ feature is enabled.
- When traffic was sent over Geneve VLAN with Tx VLAN offload enabled and TSO (TCP Segmentation Offload) or Tx csum enabled, traffic could be dropped and not sent to the wire.
- An issue that caused the firmware to restart upon installing mlnxofed-dpdk-upstream-libs package manually.
- Bad utility paths in rdma-core "dracut" hooks on SLES systems, which used to result in the following errors when running "dracut" with the "--add rdma" option. dracut-install:
  - ERROR: installing ‘/usr/libexec/mlx4-setup.sh’ dracut: /usr/lib/dracut/dracut-install -D /var/tmp/dracut.UdCOSJ/ initramfs /usr/libexec/mlx4-setup.sh dracut-install: ERROR: installing ‘/usr/libexec/rdma-set-sriov-vf’ dracut: /usr/lib/dracut/dracut-install -D /var/tmp/dracut.UdCOSJ/ initramfs /usr/libexec/rdma-set-sriov-vf
- Traffic class value was not updated in DCT when set via sysfs.
- A doorbell loss issue on AMD platforms with Secure Memory Encryption (SME).
- Registering memory using mlx5dv_devx_umem_reg while forking. Without this fix, applications which use fork() or similar syscalls while using a memory registered with umem_reg could hang due to incorrect physical page mapping. This fix requires setting the IBV_FORK_SAFE environment variable.
- When unbinding the device resulted in the following message being printed to the dmesg: "failed to disable DC tracer"
- Content of file /sys/class/net//statistics/ multicast might have been out of date and might have displayed values lower than the real values.
- ERSPAN (Encapsulated Remote SPAN) protocol was available only when turning off Tx checksum offload.
- A udev script issue which caused non-mellanox devices to be renamed.
- Missing representor statistics when using ifconfig.
- Fixed wrong value of skb mark of received packets on representors.
- An issue which caused second port representors to be named as first port representors.

## Enhancements

**Changes and new features in HPE Mellanox RoCE driver version 5.2:**

**For ConnectX-5 Adapters and above:**

- Added support for the following features:
  - CQE compression support for Rx multi-strides packets.
  - Configuring QoS on a single QP or on a group of QPs.
  - Encap/decap hardware offload of IPv4 traffic over MPLS-over-UDP. This can be used in networks with MPLS routers to achieve more efficient routing.
  - Connection tracking rules on VFs to forward traffic from one VF to the other.
  - Offloading sFlow sampling rules.

**For ConnectX-5 Adapters and ConnectX-6 Dx Adapters:**

- Added support for the following features:
  - A locking mechanism to enable parallel insertion of rules into the software steering using the mlx5dv_dr API. The parallel insertion improves the insertion rate and takes place when adding Rx and Tx rules via the FDB domain.
  - Option to match mlx5dv_dr API on Geneve tunnel using a dynamic flex parser. The option header consists of class, type, length and data. The parser should be configured using devx command, after which a rule can be created to match on parser ID and data.
  - Geneve tunneling offload, including matching on extension header.
  - Parallel insertion and deletion of offloaded rules using multiple OVS threads.

**For ConnectX-6 Dx Adapters:**

- Added support for the following features:
  - [Beta] Modify GTP-U TEID. This support requires flex parser configuration.
  - [Beta] Improved performance of OVS Connection Tracking flows by enabling the merge of the multi-table flow matches and actions into one joint flow.

**For ConnectX-6 Dx Adapters and above:**

Added support for the following features:

- Transmitted packet timestamping accuracy can be improved when using a timestamp generated at the port level instead of a timestamp generated upon CQE creation. Tx port time-stamping better reflects the actual time of a packet's transmission. This feature is disabled by default. The feature can be enabled or disabled using the following command. ethtool --set-priv-flags tx_port_ts on / off.
- Offloading tunnel rules when the source interface is VF (in addition to uplink) in the Hypervisor.
- Using Mirroring Offload with Connection Tracking.
- ASO flow meter using the mlx5dv_dr API, which allows for monitoring the packet rate for specific flows. When a packet hits a flow that is connected to a flow meter, the rate of packets through this meter is evaluated, and the packet is marked with a color copied into one of the C registers, according to the current rate compared to the reference rate.
- ASO first hit using the mlx5dv_dr API, which allows for tracking rule hits by packets. When a packet hits a rule with the ASO first hit action, a flag is set indicating this event, and the original value of the flag is copied to one of the C registers.

- mlx5dv_dr API support for matching on a new field "gtpu_first_ext_dw_0". This field enables packet filtering based on the GTP-U first extension header (first dword only). To enable parsing of tunnel GTP-U extension header, run the following command. ./cloud_fw_reset.py FLEX_PARSER_PROFILE_ENABLE=3.

**For ConnectX-6 Lx Adapters and above:**

- Added support for the following features:
  - IPsec full offload support for extended sequence number, replay protection window and lifetime packet limit.

**For All HCA's:**

- Added support for the following features:
  - New query GID API that allows for querying a single GID entry by its port and GID index, or querying for all GID tables of a specific device. This API works over ioctl instead of sysfs, which accelerates the querying process.
  - Performing multi-host firmware reset in order to upgrade the device firmware. Firmware reset loads the new firmware in case it was burnt on the flash and was pending activation, and reload.
  - [Alpha] Firmware live patching in the driver. Live patching updates the firmware without the need to perform firmware reset. However, it can only be applied in scenarios where the difference between the current and new firmware versions are minor, which is decided upon by the firmware itself.
  - devlink tool for performing firmware reset in order to upgrade the device firmware. Firmware reset loads the new firmware in case it was burnt on the flash and was pending activation, and reloads the current firmware image from the flash in case no new firmware was pending. For further information, please refer to the the devlink man page.
  - A resiliency mechanism for the driver to manually poll the command event queue (EQ) in case of a command timeout. In case the resiliency mechanism finds unhandled event queue entry (EQE) due to a lost interrupt, the driver will handle it, after which the command interface returns to a healthy state.
  - Setting a sniffer private flag is deprecated and no longer required. In order to capture offloaded/RoCE traffic, tcpdump can now be run on the RDMA device.
  - Added per-port reporters to devlink health to manage per-port health activities. Users can now access the devlink port reporters by specifying the port index in addition to the device devlink name through the devlink health commands API. This update was first introduced in iproute2 v5.8. As part of this feature, mlx5e Tx and Rx reporters are now redefined as devlink port reporters. For examples, please see devlink-health manpage
  - Optimized memory consumption of memory registration in huge page systems. As an example, in a 2MB huge page system, 600 MB would be saved for 100 GB memory registration.
  - mlx5dv API to modify the configured UDP source port for RoCE packets of a given RC/UC QP when QP is in RTS state.
  - Accelerating Tx datapath by saving PCI bandwidth and CPU utilization. The savings are achieved by aggregating multiple packets into a single WQE. The feature is driven by xmit_more for certain traffic types, such as UDP.

## Supported Devices and Features

**SUPPORTED KERNELS:**

The kernels of SUSE LINUX Enterprise Server 15 SP2 (AMD64/EM64T) supported by this binary rpm are:
5.3.18-22-default - (AMD64/EM64T) and future update kernels.

HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for Red Hat Enterprise Linux 7 Update 8 (x86_64)

Version: 4.9 (A) **(Recommended)**

Filename: kmod-mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.rhel7u8.x86_64.compsig; kmod-mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.rhel7u8.x86_64.rpm; mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.1.rhel7u8.x86_64.compsig; mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.1.rhel7u8.x86_64.rpm

## Important Note!

Mellanox Ethernet + RoCE Linux driver (mlnx-ofa_kernel RPMs) supports only Ethernet mode of operation for HPE Mellanox adapters. For customers requiring complete InfiniBand functionality or "InfiniBand + Ethernet" modes of operation on the same node, install MLNX-OFED drivers from "Mellanox OFED VPI Drivers and Utilities" Linux Software Delivery Repository (https://downloads.linux.hpe.com/SDR/project/mlnx_ofed/).

## Prerequisites

Following packages must be installed from the respective OS distributions prior to installing the driver component:

- Python version 2.7

## Fixes

**The following issues have been fixed in version 4.9:**

- An issue where injecting EEH (Extended Error Handlng) may cause extra Kernel prints, such as: “EEH: Might be infinite loop in mlx5_core driver” was fixed.
- RPM-based OSs with non-default kernels, using repositories after re-creating the installer (using --add-kernel-support) were resulting in improper installation of the drivers.
- A typo in perftest package where help messages wrongly displayed the conversion result between Gb/s and MB/s (20^2 instead of 2^20).
- When one of the LAG slaves went down, LAG deactivation failed, ultimately causing bandwidth degradation.
- The mlx5 driver maintains a subdirectory for every open eth port in /sys/kernel/debug/. For the default network namespace, the sub-directory name is the name of the interface, like "eth8". The new convention for the network interfaces moved to the non-default network namespaces is the interfaces name followed by "@" and the port's PCI ID. For example: "eth8@0000:af:00.3".
- "openibd" script load used to fail when esp6_offload module did not load successfully.
- Added dependency of package mpi-selectors on perl-Getopt-Long system package. On minimal installs of RPM-based OSs, installing mpi-selectros will also install the required system package perl-Getopt-Long.
- During certain rare scenarios, due to Rx page not being replenished, the same page fragment mistakenly became assigned to two different Rx descriptors.
- Driver load issue existed with Errata-kernel on SLES15 SP1.
- An issue in the Hairpin feature which prevented adding hairpin flows using TC tool was fixed.
- WQ (Work Queue) queue flushing was not handled properly in the event of EEH.
- A rare kernel crash scenario when exiting an application that uses RMPP mads intensively.

- A possible kernel crash scenario when AER/slot reset in done in parallel to user space commands execution.
- Added missing ECN (Explicit Congestion Notification) configuration under sysfs for PFs in SwitchDev mode.
- When firmware response time to commands became very long, some commands failed upon timeout. The driver may have then triggered a timeout completion on the wrong entry, leading to a NULL pointer call trace.
- Added driver support for kernels with the old XDP_REDIRECT infrastructure that uses the following NetDev operations: .ndo_xdp_flush and .ndo_xdp_xmit.
- Usage of --excludedocs Open MPI RPM option resulted in the removal of non-documentation related files.
- Disabled automated loading of some modules through udev triggers to preserve the startup process of previous MLNX_OFED versions.
- Reference count (refcount) for RDMA connection ID (cm_id) was not incremented in rdma_resolve_addr() function, resulting in a cm_id use-after-free access. A fix was applied to increment the cm_id refcount
- A race condition which caused kernel panic when moving two ports to SwitchDev mode at the same time.
- Allowed accessing sysfs hardware counters in SwitchDev mode
- Function smp_processor_id() is called in the RX page recycle flow to determine the core to run on. This is intended to run in NAPI context. However, due to a bug in backporting, the RX page recycle was mistakenly called also in the RQ close flow when not needed.
- Port link state was automatically changed (without admin state involvement) to "UP" after reboot.
- ConnectX-3 adapter cards froze when running over SLES 11 OS.
- RDMA CM (Remote Direct Memory Access Communation Manager) connection failed when port space was small.
- Traffic mirroring with OVS (Open VSwitch)offload and non-offload over VxLAN interface is now supported. Note: For kernel 4.9, make sure to use a dedicated OVS version.
- When working with VF LAG while the bond device is in active-active mode, running fwreset would result in unequal traffic on both PFs, and PFs would not reach line rate.
- When bond was created over VF (Virtuaal Function) netdevices in SwitchDev mode, the VF netdevice would be treated as representor netdevice. This caused the mlx5_core driver to crash in case it received netdevice events related to bond device.
- An issue where following a bad affinity occurrence in VF LAG mode, traffic was sent after the port went up/down in the switch.
- Added support for VLAN (Virtual Local Area Network) header rewrite on CentOS 7.2 OS.

## Enhancements

**The following changes and new features are added in version 4.9:**

- **For ConnectX-5 Adapters and above**

**Added support for the following features:**

- Option to dump configuration space via the devlink tool in order to improve debug capabilities.
- The conventional TX descriptor (WQE or Work Queue Element) describes a single packet for transmission. Added driver support for the HW feature of multi-packet TX WQEs in XDP transmit flows. With this, the HW becomes capable of working with a new and improved WQE layout that describes several packets. In effect, this feature saves PCI bandwidth and transactions, and improves transmit packet rate.
- GENEVE encapsulation/decapsulation rules offload.
- Driver support for the hardware feature of multi-packet Tx to work with a new and improved WQE layout that describes several packets instead of a single packet for XDP transmission flows. This saves PCI bandwidth and transactions, and improves transmit packet rate.
- Updating CT (Connection Tracking) rules using the software steering mechanism.
- Updating remote mirroring rules using the software steering mechanism.

- **For ConnectX-4 Adapters and above**

**Added support for the following features:**

- Exposed rx_prio[p]_discards discard counters per priority that count the number of received packets dropped due to lack of buffers on the physical port.
- Reporting TSO and CSUM offload capabilities for MPLS tagged traffic and, allowed the kernel stack to use these offloads.
- mlx5e Max Combined Channels Increased the driver's maximal combined channels value from 64 to 128 (however, note that OOB value will not cross 64). 128 is the upper bound. Lower maximal value can be seen on the host, depending on the number of cores and MSIX's configured by the firmware.
- Added the following RoCE accelerator counters:
  - roce_adp_retrans - counts the number of adaptive retransmissions for RoCE traffic.
  - roce_adp_retrans_to - counts the number of times RoCE traffic reached timeout due to adaptive retransmission.
  - roce_slow_restart - counts the number of times RoCE slow restart was used.
  - roce_slow_restart_cnps - counts the number of times RoCE slow restart generated CNP packets roce_slow_restart_trans - counts the number of times RoCE slow restart changed state to slow restart.
- User to register memory regions with a relaxed ordering access flag through experimental verbs. This can enhance performance, depending on architecture and scenario.

- **For All HCA's**

**Added support for the following features:**

- Output ibdev2netdev tool output was changed such that the bonding device now points at the bond instead of the slave interface.
- Monitoring and recovering from errors that occur on the RX queue, such as cookie errors and timeout.
- Improved GSO (Generic Segmentation Offload) workload performance by decreasing doorbells usage to the minimum required.
- TX CQE (Completion Queue Element) compression. Saves on outgoing PCIe bandwidth by compressing CQEs together. Disabled by default. Configurable via private flags of ethtool.
- Firmware Versions Query via Devlink :Added the option to query for running and stored firmware versions using the devlink tool.
- Firmware Flash Update via Devlink :Added the option to update the firmware image in the flash using the devlink tool. Usage: devlink dev flash file .mfa2 For further information on how to perform this update, see "Updating Firmware Using ethtool/devlink and .mfa2 File" section in MFT User Manual.
- WQE (Work Queue Element) dump, triggered by an error on Rx/Tx reporters. In addition, some dumps (not triggered by an error) can be retrieved by the user via devlink health reporters.
- GENEVE tunneled hardware offloads of TSO, CSUM and RSS.
- TCP segmentation and checksum offload support for MPLS-tagged traffic.

## Supported Devices and Features

**SUPPORTED KERNELS:**

The kernels of Red Hat Enterprise Linux 7 Update 8 (x86_64) supported by this binary rpm are:
3.10.0-1127.el7 - (x86_64) and future update kernels.

HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for Red Hat Enterprise Linux 7 Update 9 (x86_64)

Version: 4.9 **(Recommended)**

Filename: kmod-mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.rhel7u9.x86_64.compsig; kmod-mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.rhel7u9.x86_64.rpm; mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.1.rhel7u9.x86_64.compsig; mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.1.rhel7u9.x86_64.rpm

**Important Note!**

Mellanox Ethernet + RoCE Linux driver (mlnx-ofa_kernel RPMs) supports only Ethernet mode of operation for HPE Mellanox adapters. For customers requiring complete InfiniBand functionality or "InfiniBand + Ethernet" modes of operation on the same node, install MLNX-OFED drivers from "Mellanox OFED VPI Drivers and Utilities" Linux Software Delivery Repository (https://downloads.linux.hpe.com/SDR/project/mlnx_ofed/).

**Prerequisites**

Following packages must be installed from the respective OS distributions prior to installing the driver component:

- Python version 2.7

**Fixes**

**The following issues have been fixed in version 4.9:**

- An issue where injecting EEH (Extended Error Handlng) may cause extra Kernel prints, such as: “EEH: Might be infinite loop in mlx5_core driver” was fixed.
- RPM-based OSs with non-default kernels, using repositories after re-creating the installer (using --add-kernel-support) were resulting in improper installation of the drivers.
- A typo in perftest package where help messages wrongly displayed the conversion result between Gb/s and MB/s (20^2 instead of 2^20).
- When one of the LAG slaves went down, LAG deactivation failed, ultimately causing bandwidth degradation.
- The mlx5 driver maintains a subdirectory for every open eth port in /sys/kernel/debug/. For the default network namespace, the sub-directory name is the name of the interface, like "eth8". The new convention for the network interfaces moved to the non-default network namespaces is the interfaces name followed by "@" and the port's PCI ID. For example: "eth8@0000:af:00.3".
- "openibd" script load used to fail when esp6_offload module did not load successfully.
- Added dependency of package mpi-selectors on perl-Getopt-Long system package. On minimal installs of RPM-based OSs, installing mpi-selectros will also install the required system package perl-Getopt-Long.
- During certain rare scenarios, due to Rx page not being replenished, the same page fragment mistakenly became assigned to two different Rx descriptors.
- Driver load issue existed with Errata-kernel on SLES15 SP1.
- An issue in the Hairpin feature which prevented adding hairpin flows using TC tool was fixed.
- WQ (Work Queue) queue flushing was not handled properly in the event of EEH.
- A rare kernel crash scenario when exiting an application that uses RMPP mads intensively.
- A possible kernel crash scenario when AER/slot reset in done in parallel to user space commands execution.
- Added missing ECN (Explicit Congestion Notification) configuration under sysfs for PFs in SwitchDev mode.

- When firmware response time to commands became very long, some commands failed upon timeout. The driver may have then triggered a timeout completion on the wrong entry, leading to a NULL pointer call trace.
- Added driver support for kernels with the old XDP_REDIRECT infrastructure that uses the following NetDev operations: .ndo_xdp_flush and .ndo_xdp_xmit.
- Usage of --excludedocs Open MPI RPM option resulted in the removal of non-documentation related files.
- Disabled automated loading of some modules through udev triggers to preserve the startup process of previous MLNX_OFED versions.
- Reference count (refcount) for RDMA connection ID (cm_id) was not incremented in rdma_resolve_addr() function, resulting in a cm_id use-after-free access. A fix was applied to increment the cm_id refcount
- A race condition which caused kernel panic when moving two ports to SwitchDev mode at the same time.
- Allowed accessing sysfs hardware counters in SwitchDev mode
- Function smp_processor_id() is called in the RX page recycle flow to determine the core to run on. This is intended to run in NAPI context. However, due to a bug in backporting, the RX page recycle was mistakenly called also in the RQ close flow when not needed.
- Port link state was automatically changed (without admin state involvement) to "UP" after reboot.
- ConnectX-3 adapter cards froze when running over SLES 11 OS.
- RDMA CM (Remote Direct Memory Access Communation Manager) connection failed when port space was small.
- Traffic mirroring with OVS (Open VSwitch)offload and non-offload over VxLAN interface is now supported. Note: For kernel 4.9, make sure to use a dedicated OVS version.
- When working with VF LAG while the bond device is in active-active mode, running fwreset would result in unequal traffic on both PFs, and PFs would not reach line rate.
- When bond was created over VF (Virtuaal Function) netdevices in SwitchDev mode, the VF netdevice would be treated as representor netdevice. This caused the mlx5_core driver to crash in case it received netdevice events related to bond device.
- An issue where following a bad affinity occurrence in VF LAG mode, traffic was sent after the port went up/down in the switch.
- Added support for VLAN (Virtual Local Area Network) header rewrite on CentOS 7.2 OS.

## Enhancements

**The following changes and new features are added in version 4.9:**

- **For ConnectX-5 Adapters and above**

**Added support for the following features:**

- Option to dump configuration space via the devlink tool in order to improve debug capabilities.
- The conventional TX descriptor (WQE or Work Queue Element) describes a single packet for transmission. Added driver support for the HW feature of multi-packet TX WQEs in XDP transmit flows. With this, the HW becomes capable of working with a new and improved WQE layout that describes several packets. In effect, this feature saves PCI bandwidth and transactions, and improves transmit packet rate.
- GENEVE encapsulation/decapsulation rules offload.
- Driver support for the hardware feature of multi-packet Tx to work with a new and improved WQE layout that describes several packets instead of a single packet for XDP transmission flows. This saves PCI bandwidth and transactions, and improves transmit packet rate.
- Updating CT (Connection Tracking) rules using the software steering mechanism.
- Updating remote mirroring rules using the software steering mechanism.

- **For ConnectX-4 Adapters and above**

**Added support for the following features:**

- Exposed rx_prio[p]_discards discard counters per priority that count the number of received packets dropped due to lack of buffers on the physical port.
- Reporting TSO and CSUM offload capabilities for MPLS tagged traffic and, allowed the kernel stack to use these offloads.
- mlx5e Max Combined Channels Increased the driver's maximal combined channels value from 64 to 128 (however, note that OOB value will not cross 64). 128 is the upper bound. Lower maximal value can be seen on the host, depending on the number of cores and MSIX's configured by the firmware.
- Added the following RoCE accelerator counters:
  - roce_adp_retrans - counts the number of adaptive retransmissions for RoCE traffic.
  - roce_adp_retrans_to - counts the number of times RoCE traffic reached timeout due to adaptive retransmission.
  - roce_slow_restart - counts the number of times RoCE slow restart was used.
  - roce_slow_restart_cnps - counts the number of times RoCE slow restart generated CNP packets roce_slow_restart_trans - counts the number of times RoCE slow restart changed state to slow restart.
- User to register memory regions with a relaxed ordering access flag through experimental verbs. This can enhance performance, depending on architecture and scenario.

- **For All HCA's**

**Added support for the following features:**

- Output ibdev2netdev tool output was changed such that the bonding device now points at the bond instead of the slave interface.
- Monitoring and recovering from errors that occur on the RX queue, such as cookie errors and timeout.
- Improved GSO (Generic Segmentation Offload) workload performance by decreasing doorbells usage to the minimum required.
- TX CQE (Completion Queue Element) compression. Saves on outgoing PCIe bandwidth by compressing CQEs together. Disabled by default. Configurable via private flags of ethtool.
- Firmware Versions Query via Devlink :Added the option to query for running and stored firmware versions using the devlink tool.
- Firmware Flash Update via Devlink :Added the option to update the firmware image in the flash using the devlink tool. Usage: devlink dev flash file .mfa2 For further information on how to perform this update, see "Updating Firmware Using ethtool/devlink and .mfa2 File" section in MFT User Manual.
- WQE (Work Queue Element) dump, triggered by an error on Rx/Tx reporters. In addition, some dumps (not triggered by an error) can be retrieved by the user via devlink health reporters.
- GENEVE tunneled hardware offloads of TSO, CSUM and RSS.
- TCP segmentation and checksum offload support for MPLS-tagged traffic.

## Supported Devices and Features

**SUPPORTED KERNELS:**

The kernels of Red Hat Enterprise Linux 7 Update 9 (x86_64) supported by this binary rpm are:
3.10.0-1160.el7 - (x86_64) and future update kernels.

---

HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for Red Hat Enterprise Linux 8 update 2 (x86_64)

Version: 4.9 (A) **(Recommended)**

Filename: kmod-mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.rhel8u2.x86_64.compsig; kmod-mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.rhel8u2.x86_64.rpm; mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.1.rhel8u2.x86_64.compsig; mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.1.rhel8u2.x86_64.rpm

## Important Note!

Mellanox Ethernet + RoCE Linux driver (mlnx-ofa_kernel RPMs) supports only Ethernet mode of operation for HPE Mellanox adapters. For customers requiring complete InfiniBand functionality or "InfiniBand + Ethernet" modes of operation on the same node, install MLNX-OFED drivers from "Mellanox OFED VPI Drivers and Utilities" Linux Software Delivery Repository (https://downloads.linux.hpe.com/SDR/project/mlnx_ofed/).

## Prerequisites

Following packages must be installed from the respective OS distributions prior to installing the driver component:

- Python version 2.7

## Fixes

**The following issues have been fixed in version 4.9:**

- An issue where injecting EEH (Extended Error Handlng) may cause extra Kernel prints, such as: “EEH: Might be infinite loop in mlx5_core driver” was fixed.
- RPM-based OSs with non-default kernels, using repositories after re-creating the installer (using --add-kernel-support) were resulting in improper installation of the drivers.
- A typo in perftest package where help messages wrongly displayed the conversion result between Gb/s and MB/s (20^2 instead of 2^20).
- When one of the LAG slaves went down, LAG deactivation failed, ultimately causing bandwidth degradation.
- The mlx5 driver maintains a subdirectory for every open eth port in /sys/kernel/debug/. For the default network namespace, the sub-directory name is the name of the interface, like "eth8". The new convention for the network interfaces moved to the non-default network namespaces is the interfaces name followed by "@" and the port's PCI ID. For example: "eth8@0000:af:00.3".
- "openibd" script load used to fail when esp6_offload module did not load successfully.
- Added dependency of package mpi-selectors on perl-Getopt-Long system package. On minimal installs of RPM-based OSs, installing mpi-selectros will also install the required system package perl-Getopt-Long.
- During certain rare scenarios, due to Rx page not being replenished, the same page fragment mistakenly became assigned to two different Rx descriptors.
- Driver load issue existed with Errata-kernel on SLES15 SP1.
- An issue in the Hairpin feature which prevented adding hairpin flows using TC tool was fixed.
- WQ (Work Queue) queue flushing was not handled properly in the event of EEH.
- A rare kernel crash scenario when exiting an application that uses RMPP mads intensively.
- A possible kernel crash scenario when AER/slot reset in done in parallel to user space commands execution.
- Added missing ECN (Explicit Congestion Notification) configuration under sysfs for PFs in SwitchDev mode.
- When firmware response time to commands became very long, some commands failed upon timeout. The driver may have then triggered a timeout completion on the wrong entry, leading to a NULL pointer call trace.

- Added driver support for kernels with the old XDP_REDIRECT infrastructure that uses the following NetDev operations: .ndo_xdp_flush and .ndo_xdp_xmit.
- Usage of --excludedocs Open MPI RPM option resulted in the removal of non-documentation related files.
- Disabled automated loading of some modules through udev triggers to preserve the startup process of previous MLNX_OFED versions.
- Reference count (refcount) for RDMA connection ID (cm_id) was not incremented in rdma_resolve_addr() function, resulting in a cm_id use-after-free access. A fix was applied to increment the cm_id refcount
- A race condition which caused kernel panic when moving two ports to SwitchDev mode at the same time.
- Allowed accessing sysfs hardware counters in SwitchDev mode
- Function smp_processor_id() is called in the RX page recycle flow to determine the core to run on. This is intended to run in NAPI context. However, due to a bug in backporting, the RX page recycle was mistakenly called also in the RQ close flow when not needed.
- Port link state was automatically changed (without admin state involvement) to "UP" after reboot.
- ConnectX-3 adapter cards froze when running over SLES 11 OS.
- RDMA CM (Remote Direct Memory Access Communation Manager) connection failed when port space was small.
- Traffic mirroring with OVS (Open VSwitch)offload and non-offload over VxLAN interface is now supported. Note: For kernel 4.9, make sure to use a dedicated OVS version.
- When working with VF LAG while the bond device is in active-active mode, running fwreset would result in unequal traffic on both PFs, and PFs would not reach line rate.
- When bond was created over VF (Virtuaal Function) netdevices in SwitchDev mode, the VF netdevice would be treated as representor netdevice. This caused the mlx5_core driver to crash in case it received netdevice events related to bond device.
- An issue where following a bad affinity occurrence in VF LAG mode, traffic was sent after the port went up/down in the switch.
- Added support for VLAN (Virtual Local Area Network) header rewrite on CentOS 7.2 OS.

## Enhancements

**The following changes and new features are added in version 4.9:**

- **For ConnectX-5 Adapters and above**

**Added support for the following features:**

- Option to dump configuration space via the devlink tool in order to improve debug capabilities.
- The conventional TX descriptor (WQE or Work Queue Element) describes a single packet for transmission. Added driver support for the HW feature of multi-packet TX WQEs in XDP transmit flows. With this, the HW becomes capable of working with a new and improved WQE layout that describes several packets. In effect, this feature saves PCI bandwidth and transactions, and improves transmit packet rate.
- GENEVE encapsulation/decapsulation rules offload.
- Driver support for the hardware feature of multi-packet Tx to work with a new and improved WQE layout that describes several packets instead of a single packet for XDP transmission flows. This saves PCI bandwidth and transactions, and improves transmit packet rate.
- Updating CT (Connection Tracking) rules using the software steering mechanism.
- Updating remote mirroring rules using the software steering mechanism.

- **For ConnectX-4 Adapters and above**

**Added support for the following features:**

- Exposed rx_prio[p]_discards discard counters per priority that count the number of received packets dropped due to lack of buffers on the physical port.
- Reporting TSO and CSUM offload capabilities for MPLS tagged traffic and, allowed the kernel stack to use these offloads.
- mlx5e Max Combined Channels Increased the driver's maximal combined channels value from 64 to 128 (however, note that OOB value will not cross 64). 128 is the upper bound. Lower maximal value can be seen on the host, depending on the number of cores and MSIX's configured by the firmware.
- Added the following RoCE accelerator counters:
  - roce_adp_retrans - counts the number of adaptive retransmissions for RoCE traffic.
  - roce_adp_retrans_to - counts the number of times RoCE traffic reached timeout due to adaptive retransmission.
  - roce_slow_restart - counts the number of times RoCE slow restart was used.
  - roce_slow_restart_cnps - counts the number of times RoCE slow restart generated CNP packets roce_slow_restart_trans - counts the number of times RoCE slow restart changed state to slow restart.
- User to register memory regions with a relaxed ordering access flag through experimental verbs. This can enhance performance, depending on architecture and scenario.

- **For All HCA's**

**Added support for the following features:**

- Output ibdev2netdev tool output was changed such that the bonding device now points at the bond instead of the slave interface.
- Monitoring and recovering from errors that occur on the RX queue, such as cookie errors and timeout.
- Improved GSO (Generic Segmentation Offload) workload performance by decreasing doorbells usage to the minimum required.
- TX CQE (Completion Queue Element) compression. Saves on outgoing PCIe bandwidth by compressing CQEs together. Disabled by default. Configurable via private flags of ethtool.
- Firmware Versions Query via Devlink :Added the option to query for running and stored firmware versions using the devlink tool.
- Firmware Flash Update via Devlink :Added the option to update the firmware image in the flash using the devlink tool. Usage: devlink dev flash file .mfa2 For further information on how to perform this update, see "Updating Firmware Using ethtool/devlink and .mfa2 File" section in MFT User Manual.
- WQE (Work Queue Element) dump, triggered by an error on Rx/Tx reporters. In addition, some dumps (not triggered by an error) can be retrieved by the user via devlink health reporters.
- GENEVE tunneled hardware offloads of TSO, CSUM and RSS.
- TCP segmentation and checksum offload support for MPLS-tagged traffic.

## Supported Devices and Features

**SUPPORTED KERNELS:**

The kernels of Red Hat Enterprise Linux 8 update 2 (x86_64) supported by this binary rpm are:
4.18.0-193.el8 - (x86_64) and future update kernels.

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HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for SUSE LINUX Enterprise Server 12 SP4 (AMD64/EM64T)

Version: 4.9 (A) **(Recommended)**

Filename: mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.1.sles12sp4.x86_64.compsig; mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.1.sles12sp4.x86_64.rpm; mlnx-ofa_kernel-kmp-default-4.9_k4.12.14_94.41-OFED.4.9.2.2.4.1.sles12sp4.x86_64.compsig; mlnx-ofa_kernel-kmp-default-4.9_k4.12.14_94.41-OFED.4.9.2.2.4.1.sles12sp4.x86_64.rpm

## Important Note!

Mellanox Ethernet + RoCE Linux driver (mlnx-ofa_kernel RPMs) supports only Ethernet mode of operation for HPE Mellanox adapters. For customers requiring complete InfiniBand functionality or "InfiniBand + Ethernet" modes of operation on the same node, install MLNX-OFED drivers from "Mellanox OFED VPI Drivers and Utilities" Linux Software Delivery Repository (https://downloads.linux.hpe.com/SDR/project/mlnx_ofed/).

## Prerequisites

Following packages must be installed from the respective OS distributions prior to installing the driver component:

- Python version 2.7

## Fixes

**The following issues have been fixed in version 4.9:**

- An issue where injecting EEH (Extended Error Handlng) may cause extra Kernel prints, such as: “EEH: Might be infinite loop in mlx5_core driver” was fixed.
- RPM-based OSs with non-default kernels, using repositories after re-creating the installer (using --add-kernel-support) were resulting in improper installation of the drivers.
- A typo in perftest package where help messages wrongly displayed the conversion result between Gb/s and MB/s (20^2 instead of 2^20).
- When one of the LAG slaves went down, LAG deactivation failed, ultimately causing bandwidth degradation.
- The mlx5 driver maintains a subdirectory for every open eth port in /sys/kernel/debug/. For the default network namespace, the sub-directory name is the name of the interface, like "eth8". The new convention for the network interfaces moved to the non-default network namespaces is the interfaces name followed by "@" and the port's PCI ID. For example: "eth8@0000:af:00.3".
- "openibd" script load used to fail when esp6_offload module did not load successfully.
- Added dependency of package mpi-selectors on perl-Getopt-Long system package. On minimal installs of RPM-based OSs, installing mpi-selectros will also install the required system package perl-Getopt-Long.
- During certain rare scenarios, due to Rx page not being replenished, the same page fragment mistakenly became assigned to two different Rx descriptors.
- Driver load issue existed with Errata-kernel on SLES15 SP1.
- An issue in the Hairpin feature which prevented adding hairpin flows using TC tool was fixed.
- WQ (Work Queue) queue flushing was not handled properly in the event of EEH.
- A rare kernel crash scenario when exiting an application that uses RMPP mads intensively.
- A possible kernel crash scenario when AER/slot reset in done in parallel to user space commands execution.
- Added missing ECN (Explicit Congestion Notification) configuration under sysfs for PFs in SwitchDev mode.

- When firmware response time to commands became very long, some commands failed upon timeout. The driver may have then triggered a timeout completion on the wrong entry, leading to a NULL pointer call trace.
- Added driver support for kernels with the old XDP_REDIRECT infrastructure that uses the following NetDev operations: .ndo_xdp_flush and .ndo_xdp_xmit.
- Usage of --excludedocs Open MPI RPM option resulted in the removal of non-documentation related files.
- Disabled automated loading of some modules through udev triggers to preserve the startup process of previous MLNX_OFED versions.
- Reference count (refcount) for RDMA connection ID (cm_id) was not incremented in rdma_resolve_addr() function, resulting in a cm_id use-after-free access. A fix was applied to increment the cm_id refcount
- A race condition which caused kernel panic when moving two ports to SwitchDev mode at the same time.
- Allowed accessing sysfs hardware counters in SwitchDev mode
- Function smp_processor_id() is called in the RX page recycle flow to determine the core to run on. This is intended to run in NAPI context. However, due to a bug in backporting, the RX page recycle was mistakenly called also in the RQ close flow when not needed.
- Port link state was automatically changed (without admin state involvement) to "UP" after reboot.
- ConnectX-3 adapter cards froze when running over SLES 11 OS.
- RDMA CM (Remote Direct Memory Access Communation Manager) connection failed when port space was small.
- Traffic mirroring with OVS (Open VSwitch)offload and non-offload over VxLAN interface is now supported. Note: For kernel 4.9, make sure to use a dedicated OVS version.
- When working with VF LAG while the bond device is in active-active mode, running fwreset would result in unequal traffic on both PFs, and PFs would not reach line rate.
- When bond was created over VF (Virtuaal Function) netdevices in SwitchDev mode, the VF netdevice would be treated as representor netdevice. This caused the mlx5_core driver to crash in case it received netdevice events related to bond device.
- An issue where following a bad affinity occurrence in VF LAG mode, traffic was sent after the port went up/down in the switch.
- Added support for VLAN (Virtual Local Area Network) header rewrite on CentOS 7.2 OS.

## Enhancements

**The following changes and new features are added in version 4.9:**

- **For ConnectX-5 Adapters and above**

**Added support for the following features:**

- Option to dump configuration space via the devlink tool in order to improve debug capabilities.
- The conventional TX descriptor (WQE or Work Queue Element) describes a single packet for transmission. Added driver support for the HW feature of multi-packet TX WQEs in XDP transmit flows. With this, the HW becomes capable of working with a new and improved WQE layout that describes several packets. In effect, this feature saves PCI bandwidth and transactions, and improves transmit packet rate.
- GENEVE encapsulation/decapsulation rules offload.
- Driver support for the hardware feature of multi-packet Tx to work with a new and improved WQE layout that describes several packets instead of a single packet for XDP transmission flows. This saves PCI bandwidth and transactions, and improves transmit packet rate.
- Updating CT (Connection Tracking) rules using the software steering mechanism.
- Updating remote mirroring rules using the software steering mechanism.

- **For ConnectX-4 Adapters and above**

**Added support for the following features:**

- Exposed rx_prio[p]_discards discard counters per priority that count the number of received packets dropped due to lack of buffers on the physical port.
- Reporting TSO and CSUM offload capabilities for MPLS tagged traffic and, allowed the kernel stack to use these offloads.
- mlx5e Max Combined Channels Increased the driver's maximal combined channels value from 64 to 128 (however, note that OOB value will not cross 64). 128 is the upper bound. Lower maximal value can be seen on the host, depending on the number of cores and MSIX's configured by the firmware.
- Added the following RoCE accelerator counters:
  - roce_adp_retrans - counts the number of adaptive retransmissions for RoCE traffic.
  - roce_adp_retrans_to - counts the number of times RoCE traffic reached timeout due to adaptive retransmission.
  - roce_slow_restart - counts the number of times RoCE slow restart was used.
  - roce_slow_restart_cnps - counts the number of times RoCE slow restart generated CNP packets roce_slow_restart_trans - counts the number of times RoCE slow restart changed state to slow restart.
- User to register memory regions with a relaxed ordering access flag through experimental verbs. This can enhance performance, depending on architecture and scenario.

- **For All HCA's**

**Added support for the following features:**

- Output ibdev2netdev tool output was changed such that the bonding device now points at the bond instead of the slave interface.
- Monitoring and recovering from errors that occur on the RX queue, such as cookie errors and timeout.
- Improved GSO (Generic Segmentation Offload) workload performance by decreasing doorbells usage to the minimum required.
- TX CQE (Completion Queue Element) compression. Saves on outgoing PCIe bandwidth by compressing CQEs together. Disabled by default. Configurable via private flags of ethtool.
- Firmware Versions Query via Devlink :Added the option to query for running and stored firmware versions using the devlink tool.
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- WQE (Work Queue Element) dump, triggered by an error on Rx/Tx reporters. In addition, some dumps (not triggered by an error) can be retrieved by the user via devlink health reporters.
- GENEVE tunneled hardware offloads of TSO, CSUM and RSS.
- TCP segmentation and checksum offload support for MPLS-tagged traffic.

## Supported Devices and Features

**SUPPORTED KERNELS:**

The kernels of SUSE LINUX Enterprise Server 12 SP4 (AMD64/EM64T) supported by this binary rpm are:
4.12.14-94.41-default - (AMD64/EM64T) and future update kernels.

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HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for SUSE LINUX Enterprise Server 12 SP5 (AMD64/EM64T)

Version: 4.9 (A) **(Recommended)**

Filename: mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.1.sles12sp5.x86_64.compsig; mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.1.sles12sp5.x86_64.rpm; mlnx-ofa_kernel-kmp-default-4.9_k4.12.14_120-OFED.4.9.2.2.4.1.sles12sp5.x86_64.compsig; mlnx-ofa_kernel-kmp-default-4.9_k4.12.14_120-OFED.4.9.2.2.4.1.sles12sp5.x86_64.rpm

## Important Note!

Mellanox Ethernet + RoCE Linux driver (mlnx-ofa_kernel RPMs) supports only Ethernet mode of operation for HPE Mellanox adapters. For customers requiring complete InfiniBand functionality or "InfiniBand + Ethernet" modes of operation on the same node, install MLNX-OFED drivers from "Mellanox OFED VPI Drivers and Utilities" Linux Software Delivery Repository (https://downloads.linux.hpe.com/SDR/project/mlnx_ofed/).

## Prerequisites

Following packages must be installed from the respective OS distributions prior to installing the driver component:

- Python version 2.7

## Fixes

**The following issues have been fixed in version 4.9:**

- An issue where injecting EEH (Extended Error Handlng) may cause extra Kernel prints, such as: “EEH: Might be infinite loop in mlx5_core driver” was fixed.
- RPM-based OSs with non-default kernels, using repositories after re-creating the installer (using --add-kernel-support) were resulting in improper installation of the drivers.
- A typo in perftest package where help messages wrongly displayed the conversion result between Gb/s and MB/s (20^2 instead of 2^20).
- When one of the LAG slaves went down, LAG deactivation failed, ultimately causing bandwidth degradation.
- The mlx5 driver maintains a subdirectory for every open eth port in /sys/kernel/debug/. For the default network namespace, the sub-directory name is the name of the interface, like "eth8". The new convention for the network interfaces moved to the non-default network namespaces is the interfaces name followed by "@" and the port's PCI ID. For example: "eth8@0000:af:00.3".
- "openibd" script load used to fail when esp6_offload module did not load successfully.
- Added dependency of package mpi-selectors on perl-Getopt-Long system package. On minimal installs of RPM-based OSs, installing mpi-selectros will also install the required system package perl-Getopt-Long.
- During certain rare scenarios, due to Rx page not being replenished, the same page fragment mistakenly became assigned to two different Rx descriptors.
- Driver load issue existed with Errata-kernel on SLES15 SP1.
- An issue in the Hairpin feature which prevented adding hairpin flows using TC tool was fixed.
- WQ (Work Queue) queue flushing was not handled properly in the event of EEH.
- A rare kernel crash scenario when exiting an application that uses RMPP mads intensively.
- A possible kernel crash scenario when AER/slot reset in done in parallel to user space commands execution.
- Added missing ECN (Explicit Congestion Notification) configuration under sysfs for PFs in SwitchDev mode.

- When firmware response time to commands became very long, some commands failed upon timeout. The driver may have then triggered a timeout completion on the wrong entry, leading to a NULL pointer call trace.
- Added driver support for kernels with the old XDP_REDIRECT infrastructure that uses the following NetDev operations: .ndo_xdp_flush and .ndo_xdp_xmit.
- Usage of --excludedocs Open MPI RPM option resulted in the removal of non-documentation related files.
- Disabled automated loading of some modules through udev triggers to preserve the startup process of previous MLNX_OFED versions.
- Reference count (refcount) for RDMA connection ID (cm_id) was not incremented in rdma_resolve_addr() function, resulting in a cm_id use-after-free access. A fix was applied to increment the cm_id refcount
- A race condition which caused kernel panic when moving two ports to SwitchDev mode at the same time.
- Allowed accessing sysfs hardware counters in SwitchDev mode
- Function smp_processor_id() is called in the RX page recycle flow to determine the core to run on. This is intended to run in NAPI context. However, due to a bug in backporting, the RX page recycle was mistakenly called also in the RQ close flow when not needed.
- Port link state was automatically changed (without admin state involvement) to "UP" after reboot.
- ConnectX-3 adapter cards froze when running over SLES 11 OS.
- RDMA CM (Remote Direct Memory Access Communation Manager) connection failed when port space was small.
- Traffic mirroring with OVS (Open VSwitch)offload and non-offload over VxLAN interface is now supported. Note: For kernel 4.9, make sure to use a dedicated OVS version.
- When working with VF LAG while the bond device is in active-active mode, running fwreset would result in unequal traffic on both PFs, and PFs would not reach line rate.
- When bond was created over VF (Virtuaal Function) netdevices in SwitchDev mode, the VF netdevice would be treated as representor netdevice. This caused the mlx5_core driver to crash in case it received netdevice events related to bond device.
- An issue where following a bad affinity occurrence in VF LAG mode, traffic was sent after the port went up/down in the switch.
- Added support for VLAN (Virtual Local Area Network) header rewrite on CentOS 7.2 OS.

## Enhancements

**The following changes and new features are added in version 4.9:**

- **For ConnectX-5 Adapters and above**

**Added support for the following features:**

- Option to dump configuration space via the devlink tool in order to improve debug capabilities.
- The conventional TX descriptor (WQE or Work Queue Element) describes a single packet for transmission. Added driver support for the HW feature of multi-packet TX WQEs in XDP transmit flows. With this, the HW becomes capable of working with a new and improved WQE layout that describes several packets. In effect, this feature saves PCI bandwidth and transactions, and improves transmit packet rate.
- GENEVE encapsulation/decapsulation rules offload.
- Driver support for the hardware feature of multi-packet Tx to work with a new and improved WQE layout that describes several packets instead of a single packet for XDP transmission flows. This saves PCI bandwidth and transactions, and improves transmit packet rate.
- Updating CT (Connection Tracking) rules using the software steering mechanism.
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- **For ConnectX-4 Adapters and above**

**Added support for the following features:**

- Exposed rx_prio[p]_discards discard counters per priority that count the number of received packets dropped due to lack of buffers on the physical port.
- Reporting TSO and CSUM offload capabilities for MPLS tagged traffic and, allowed the kernel stack to use these offloads.
- mlx5e Max Combined Channels Increased the driver's maximal combined channels value from 64 to 128 (however, note that OOB value will not cross 64). 128 is the upper bound. Lower maximal value can be seen on the host, depending on the number of cores and MSIX's configured by the firmware.
- Added the following RoCE accelerator counters:
  - roce_adp_retrans - counts the number of adaptive retransmissions for RoCE traffic.
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  - roce_slow_restart - counts the number of times RoCE slow restart was used.
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- User to register memory regions with a relaxed ordering access flag through experimental verbs. This can enhance performance, depending on architecture and scenario.

- **For All HCA's**

**Added support for the following features:**

- Output ibdev2netdev tool output was changed such that the bonding device now points at the bond instead of the slave interface.
- Monitoring and recovering from errors that occur on the RX queue, such as cookie errors and timeout.
- Improved GSO (Generic Segmentation Offload) workload performance by decreasing doorbells usage to the minimum required.
- TX CQE (Completion Queue Element) compression. Saves on outgoing PCIe bandwidth by compressing CQEs together. Disabled by default. Configurable via private flags of ethtool.
- Firmware Versions Query via Devlink :Added the option to query for running and stored firmware versions using the devlink tool.
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- WQE (Work Queue Element) dump, triggered by an error on Rx/Tx reporters. In addition, some dumps (not triggered by an error) can be retrieved by the user via devlink health reporters.
- GENEVE tunneled hardware offloads of TSO, CSUM and RSS.
- TCP segmentation and checksum offload support for MPLS-tagged traffic.

## Supported Devices and Features

**SUPPORTED KERNELS:**

The kernels of SUSE LINUX Enterprise Server 12 SP5 (AMD64/EM64T) supported by this binary rpm are:
4.12.14-120-default - (AMD64/EM64T) and future update kernels.

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HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for SUSE LINUX Enterprise Server 15 SP1 (AMD64/EM64T)

Version: 4.9 (A) **(Recommended)**

Filename: mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.1.sles15sp1.x86_64.compsig; mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.1.sles15sp1.x86_64.rpm; mlnx-ofa_kernel-kmp-default-4.9_k4.12.14_195-OFED.4.9.2.2.4.1.sles15sp1.x86_64.compsig; mlnx-ofa_kernel-kmp-default-4.9_k4.12.14_195-OFED.4.9.2.2.4.1.sles15sp1.x86_64.rpm

## Important Note!

Mellanox Ethernet + RoCE Linux driver (mlnx-ofa_kernel RPMs) supports only Ethernet mode of operation for HPE Mellanox adapters. For customers requiring complete InfiniBand functionality or "InfiniBand + Ethernet" modes of operation on the same node, install MLNX-OFED drivers from "Mellanox OFED VPI Drivers and Utilities" Linux Software Delivery Repository (https://downloads.linux.hpe.com/SDR/project/mlnx_ofed/).

## Prerequisites

Following packages must be installed from the respective OS distributions prior to installing the driver component:

- Python version 2.7

## Fixes

**The following issues have been fixed in version 4.9:**

- An issue where injecting EEH (Extended Error Handlng) may cause extra Kernel prints, such as: “EEH: Might be infinite loop in mlx5_core driver” was fixed.
- RPM-based OSs with non-default kernels, using repositories after re-creating the installer (using --add-kernel-support) were resulting in improper installation of the drivers.
- A typo in perftest package where help messages wrongly displayed the conversion result between Gb/s and MB/s (20^2 instead of 2^20).
- When one of the LAG slaves went down, LAG deactivation failed, ultimately causing bandwidth degradation.
- The mlx5 driver maintains a subdirectory for every open eth port in /sys/kernel/debug/. For the default network namespace, the sub-directory name is the name of the interface, like "eth8". The new convention for the network interfaces moved to the non-default network namespaces is the interfaces name followed by "@" and the port's PCI ID. For example: "eth8@0000:af:00.3".
- "openibd" script load used to fail when esp6_offload module did not load successfully.
- Added dependency of package mpi-selectors on perl-Getopt-Long system package. On minimal installs of RPM-based OSs, installing mpi-selectros will also install the required system package perl-Getopt-Long.
- During certain rare scenarios, due to Rx page not being replenished, the same page fragment mistakenly became assigned to two different Rx descriptors.
- Driver load issue existed with Errata-kernel on SLES15 SP1.
- An issue in the Hairpin feature which prevented adding hairpin flows using TC tool was fixed.
- WQ (Work Queue) queue flushing was not handled properly in the event of EEH.
- A rare kernel crash scenario when exiting an application that uses RMPP mads intensively.
- A possible kernel crash scenario when AER/slot reset in done in parallel to user space commands execution.
- Added missing ECN (Explicit Congestion Notification) configuration under sysfs for PFs in SwitchDev mode.

- When firmware response time to commands became very long, some commands failed upon timeout. The driver may have then triggered a timeout completion on the wrong entry, leading to a NULL pointer call trace.
- Added driver support for kernels with the old XDP_REDIRECT infrastructure that uses the following NetDev operations: .ndo_xdp_flush and .ndo_xdp_xmit.
- Usage of --excludedocs Open MPI RPM option resulted in the removal of non-documentation related files.
- Disabled automated loading of some modules through udev triggers to preserve the startup process of previous MLNX_OFED versions.
- Reference count (refcount) for RDMA connection ID (cm_id) was not incremented in rdma_resolve_addr() function, resulting in a cm_id use-after-free access. A fix was applied to increment the cm_id refcount
- A race condition which caused kernel panic when moving two ports to SwitchDev mode at the same time.
- Allowed accessing sysfs hardware counters in SwitchDev mode
- Function smp_processor_id() is called in the RX page recycle flow to determine the core to run on. This is intended to run in NAPI context. However, due to a bug in backporting, the RX page recycle was mistakenly called also in the RQ close flow when not needed.
- Port link state was automatically changed (without admin state involvement) to "UP" after reboot.
- ConnectX-3 adapter cards froze when running over SLES 11 OS.
- RDMA CM (Remote Direct Memory Access Communation Manager) connection failed when port space was small.
- Traffic mirroring with OVS (Open VSwitch)offload and non-offload over VxLAN interface is now supported. Note: For kernel 4.9, make sure to use a dedicated OVS version.
- When working with VF LAG while the bond device is in active-active mode, running fwreset would result in unequal traffic on both PFs, and PFs would not reach line rate.
- When bond was created over VF (Virtuaal Function) netdevices in SwitchDev mode, the VF netdevice would be treated as representor netdevice. This caused the mlx5_core driver to crash in case it received netdevice events related to bond device.
- An issue where following a bad affinity occurrence in VF LAG mode, traffic was sent after the port went up/down in the switch.
- Added support for VLAN (Virtual Local Area Network) header rewrite on CentOS 7.2 OS.

**Enhancements**

**The following changes and new features are added in version 4.9:**

- **For ConnectX-5 Adapters and above**

**Added support for the following features:**

- Option to dump configuration space via the devlink tool in order to improve debug capabilities.
- The conventional TX descriptor (WQE or Work Queue Element) describes a single packet for transmission. Added driver support for the HW feature of multi-packet TX WQEs in XDP transmit flows. With this, the HW becomes capable of working with a new and improved WQE layout that describes several packets. In effect, this feature saves PCI bandwidth and transactions, and improves transmit packet rate.
- GENEVE encapsulation/decapsulation rules offload.
- Driver support for the hardware feature of multi-packet Tx to work with a new and improved WQE layout that describes several packets instead of a single packet for XDP transmission flows. This saves PCI bandwidth and transactions, and improves transmit packet rate.
- Updating CT (Connection Tracking) rules using the software steering mechanism.
- Updating remote mirroring rules using the software steering mechanism.

- **For ConnectX-4 Adapters and above**

**Added support for the following features:**

- Exposed rx_prio[p]_discards discard counters per priority that count the number of received packets dropped due to lack of buffers on the physical port.
- Reporting TSO and CSUM offload capabilities for MPLS tagged traffic and, allowed the kernel stack to use these offloads.
- mlx5e Max Combined Channels Increased the driver's maximal combined channels value from 64 to 128 (however, note that OOB value will not cross 64). 128 is the upper bound. Lower maximal value can be seen on the host, depending on the number of cores and MSIX's configured by the firmware.
- Added the following RoCE accelerator counters:
  - roce_adp_retrans - counts the number of adaptive retransmissions for RoCE traffic.
  - roce_adp_retrans_to - counts the number of times RoCE traffic reached timeout due to adaptive retransmission.
  - roce_slow_restart - counts the number of times RoCE slow restart was used.
  - roce_slow_restart_cnps - counts the number of times RoCE slow restart generated CNP packets roce_slow_restart_trans - counts the number of times RoCE slow restart changed state to slow restart.
- User to register memory regions with a relaxed ordering access flag through experimental verbs. This can enhance performance, depending on architecture and scenario.

- **For All HCA's**

**Added support for the following features:**

- Output ibdev2netdev tool output was changed such that the bonding device now points at the bond instead of the slave interface.
- Monitoring and recovering from errors that occur on the RX queue, such as cookie errors and timeout.
- Improved GSO (Generic Segmentation Offload) workload performance by decreasing doorbells usage to the minimum required.
- TX CQE (Completion Queue Element) compression. Saves on outgoing PCIe bandwidth by compressing CQEs together. Disabled by default. Configurable via private flags of ethtool.
- Firmware Versions Query via Devlink :Added the option to query for running and stored firmware versions using the devlink tool.
- Firmware Flash Update via Devlink :Added the option to update the firmware image in the flash using the devlink tool. Usage: devlink dev flash file .mfa2 For further information on how to perform this update, see "Updating Firmware Using ethtool/devlink and .mfa2 File" section in MFT User Manual.
- WQE (Work Queue Element) dump, triggered by an error on Rx/Tx reporters. In addition, some dumps (not triggered by an error) can be retrieved by the user via devlink health reporters.
- GENEVE tunneled hardware offloads of TSO, CSUM and RSS.
- TCP segmentation and checksum offload support for MPLS-tagged traffic.

## Supported Devices and Features

**SUPPORTED KERNELS:**

The kernels of SUSE LINUX Enterprise Server 15 SP1 (AMD64/EM64T) supported by this binary rpm are:
4.12.14-195-default - (AMD64/EM64T) and future update kernels.

HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for SUSE LINUX Enterprise Server 15 SP2 (AMD64/EM64T)

Version: 4.9 **(Recommended)**

Filename: mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.1.sles15sp2.x86_64.compsig; mlnx-ofa_kernel-4.9-OFED.4.9.2.2.4.1.1.sles15sp2.x86_64.rpm; mlnx-ofa_kernel-kmp-default-4.9_k5.3.18_22-OFED.4.9.2.2.4.1.sles15sp2.x86_64.compsig; mlnx-ofa_kernel-kmp-default-4.9_k5.3.18_22-OFED.4.9.2.2.4.1.sles15sp2.x86_64.rpm

## Important Note!

Mellanox Ethernet + RoCE Linux driver (mlnx-ofa_kernel RPMs) supports only Ethernet mode of operation for HPE Mellanox adapters. For customers requiring complete InfiniBand functionality or "InfiniBand + Ethernet" modes of operation on the same node, install MLNX-OFED drivers from "Mellanox OFED VPI Drivers and Utilities" Linux Software Delivery Repository (https://downloads.linux.hpe.com/SDR/project/mlnx_ofed/).

## Prerequisites

Following packages must be installed from the respective OS distributions prior to installing the driver component:

- Python version 2.7

## Fixes

**The following issues have been fixed in version 4.9:**

- An issue where injecting EEH (Extended Error Handlng) may cause extra Kernel prints, such as: “EEH: Might be infinite loop in mlx5_core driver” was fixed.
- RPM-based OSs with non-default kernels, using repositories after re-creating the installer (using --add-kernel-support) were resulting in improper installation of the drivers.
- A typo in perftest package where help messages wrongly displayed the conversion result between Gb/s and MB/s (20^2 instead of 2^20).
- When one of the LAG slaves went down, LAG deactivation failed, ultimately causing bandwidth degradation.
- The mlx5 driver maintains a subdirectory for every open eth port in /sys/kernel/debug/. For the default network namespace, the sub-directory name is the name of the interface, like "eth8". The new convention for the network interfaces moved to the non-default network namespaces is the interfaces name followed by "@" and the port's PCI ID. For example: "eth8@0000:af:00.3".
- "openibd" script load used to fail when esp6_offload module did not load successfully.
- Added dependency of package mpi-selectors on perl-Getopt-Long system package. On minimal installs of RPM-based OSs, installing mpi-selectros will also install the required system package perl-Getopt-Long.
- During certain rare scenarios, due to Rx page not being replenished, the same page fragment mistakenly became assigned to two different Rx descriptors.
- Driver load issue existed with Errata-kernel on SLES15 SP1.
- An issue in the Hairpin feature which prevented adding hairpin flows using TC tool was fixed.
- WQ (Work Queue) queue flushing was not handled properly in the event of EEH.
- A rare kernel crash scenario when exiting an application that uses RMPP mads intensively.
- A possible kernel crash scenario when AER/slot reset in done in parallel to user space commands execution.
- Added missing ECN (Explicit Congestion Notification) configuration under sysfs for PFs in SwitchDev mode.

- When firmware response time to commands became very long, some commands failed upon timeout. The driver may have then triggered a timeout completion on the wrong entry, leading to a NULL pointer call trace.
- Added driver support for kernels with the old XDP_REDIRECT infrastructure that uses the following NetDev operations: .ndo_xdp_flush and .ndo_xdp_xmit.
- Usage of --excludedocs Open MPI RPM option resulted in the removal of non-documentation related files.
- Disabled automated loading of some modules through udev triggers to preserve the startup process of previous MLNX_OFED versions.
- Reference count (refcount) for RDMA connection ID (cm_id) was not incremented in rdma_resolve_addr() function, resulting in a cm_id use-after-free access. A fix was applied to increment the cm_id refcount
- A race condition which caused kernel panic when moving two ports to SwitchDev mode at the same time.
- Allowed accessing sysfs hardware counters in SwitchDev mode
- Function smp_processor_id() is called in the RX page recycle flow to determine the core to run on. This is intended to run in NAPI context. However, due to a bug in backporting, the RX page recycle was mistakenly called also in the RQ close flow when not needed.
- Port link state was automatically changed (without admin state involvement) to "UP" after reboot.
- ConnectX-3 adapter cards froze when running over SLES 11 OS.
- RDMA CM (Remote Direct Memory Access Communation Manager) connection failed when port space was small.
- Traffic mirroring with OVS (Open VSwitch)offload and non-offload over VxLAN interface is now supported. Note: For kernel 4.9, make sure to use a dedicated OVS version.
- When working with VF LAG while the bond device is in active-active mode, running fwreset would result in unequal traffic on both PFs, and PFs would not reach line rate.
- When bond was created over VF (Virtuaal Function) netdevices in SwitchDev mode, the VF netdevice would be treated as representor netdevice. This caused the mlx5_core driver to crash in case it received netdevice events related to bond device.
- An issue where following a bad affinity occurrence in VF LAG mode, traffic was sent after the port went up/down in the switch.
- Added support for VLAN (Virtual Local Area Network) header rewrite on CentOS 7.2 OS.

## Enhancements

**The following changes and new features are added in version 4.9:**

- **For ConnectX-5 Adapters and above**

**Added support for the following features:**

- Option to dump configuration space via the devlink tool in order to improve debug capabilities.
- The conventional TX descriptor (WQE or Work Queue Element) describes a single packet for transmission. Added driver support for the HW feature of multi-packet TX WQEs in XDP transmit flows. With this, the HW becomes capable of working with a new and improved WQE layout that describes several packets. In effect, this feature saves PCI bandwidth and transactions, and improves transmit packet rate.
- GENEVE encapsulation/decapsulation rules offload.
- Driver support for the hardware feature of multi-packet Tx to work with a new and improved WQE layout that describes several packets instead of a single packet for XDP transmission flows. This saves PCI bandwidth and transactions, and improves transmit packet rate.
- Updating CT (Connection Tracking) rules using the software steering mechanism.
- Updating remote mirroring rules using the software steering mechanism.

- **For ConnectX-4 Adapters and above**

**Added support for the following features:**

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- Reporting TSO and CSUM offload capabilities for MPLS tagged traffic and, allowed the kernel stack to use these offloads.
- mlx5e Max Combined Channels Increased the driver's maximal combined channels value from 64 to 128 (however, note that OOB value will not cross 64). 128 is the upper bound. Lower maximal value can be seen on the host, depending on the number of cores and MSIX's configured by the firmware.
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  - roce_slow_restart - counts the number of times RoCE slow restart was used.
  - roce_slow_restart_cnps - counts the number of times RoCE slow restart generated CNP packets roce_slow_restart_trans - counts the number of times RoCE slow restart changed state to slow restart.
- User to register memory regions with a relaxed ordering access flag through experimental verbs. This can enhance performance, depending on architecture and scenario.

- **For All HCA's**

**Added support for the following features:**

- Output ibdev2netdev tool output was changed such that the bonding device now points at the bond instead of the slave interface.
- Monitoring and recovering from errors that occur on the RX queue, such as cookie errors and timeout.
- Improved GSO (Generic Segmentation Offload) workload performance by decreasing doorbells usage to the minimum required.
- TX CQE (Completion Queue Element) compression. Saves on outgoing PCIe bandwidth by compressing CQEs together. Disabled by default. Configurable via private flags of ethtool.
- Firmware Versions Query via Devlink :Added the option to query for running and stored firmware versions using the devlink tool.
- Firmware Flash Update via Devlink :Added the option to update the firmware image in the flash using the devlink tool. Usage: devlink dev flash file .mfa2 For further information on how to perform this update, see "Updating Firmware Using ethtool/devlink and .mfa2 File" section in MFT User Manual.
- WQE (Work Queue Element) dump, triggered by an error on Rx/Tx reporters. In addition, some dumps (not triggered by an error) can be retrieved by the user via devlink health reporters.
- GENEVE tunneled hardware offloads of TSO, CSUM and RSS.
- TCP segmentation and checksum offload support for MPLS-tagged traffic.

## Supported Devices and Features

**SUPPORTED KERNELS:**

The kernels of SUSE LINUX Enterprise Server 15 SP2 (AMD64/EM64T) supported by this binary rpm are:
5.3.18-22-default - (AMD64/EM64T) and future update kernels.

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HPE QLogic FastLinQ 10/25/50 GbE Drivers for Red Hat Enterprise Linux 7 x86_64

Version: 8.55.5.0-1 **(Optional)**

Filename: kmod-qlgc-fastlinq-8.55.5.0-1.rhel7u8.x86_64.compsig; kmod-qlgc-fastlinq-8.55.5.0-1.rhel7u8.x86_64.rpm; kmod-qlgc-fastlinq-8.55.5.0-1.rhel7u9.x86_64.compsig; kmod-qlgc-fastlinq-8.55.5.0-1.rhel7u9.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in HPE QLogic FastLinQ Online Firmware Upgrade Utility for Linux x86_64, version 1.10.0 or later, for use with these drivers.

**Fixes**

- This product corrects an issue where the driver fails to load in NPAR mode when RoCE Data Center Quantized Congestion Notification (DCQCN) is enabled.
- This product corrects an issue ethernet data rate limiting unable on VFs.
- This product addresses a system crash seen when injecting a fw_assert on a NIC PF.
- This product addresses a system crash seen when limiting number of MSI-X interrupt vectors as requested for VFs
- This product addresses a system crash seen when unloading and reloading the RoCE driver only.
- This product addresses a system crash seen running burnin and iperf stress in Red Hat Enterprise Linux 7 update 9 environment
- This product addresses a system crash seen during multiple reboots of virtual machines using VFs and RDMA.
- This product addresses a the connection recover failed with heavy traffic

**Enhancements**

This product now supports Red Hat Enterprise Linux 7 update 9

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE StoreFabric CN1200R-T Converged Network Adapter
- HPE StoreFabric CN1300R Converged Network Adapter

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HPE QLogic FastLinQ 10/25/50 GbE Drivers for Red Hat Enterprise Linux 8

Version: 8.55.5.0-1 **(Optional)**

Filename: kmod-qlgc-fastlinq-8.55.5.0-1.rhel8u2.x86_64.compsig; kmod-qlgc-fastlinq-8.55.5.0-1.rhel8u2.x86_64.rpm; kmod-qlgc-fastlinq-8.55.5.0-2.rhel8u3.x86_64.compsig; kmod-qlgc-fastlinq-8.55.5.0-2.rhel8u3.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in HPE QLogic FastLinQ Online Firmware Upgrade Utility for Linux x86_64, version 1.10.0 or later, for use with these drivers.

**Fixes**

- This product corrects an issue where the driver fails to load in NPAR mode when RoCE Data Center Quantized Congestion Notification (DCQCN) is enabled.
- This product corrects an issue ethernet data rate limiting unable on VFs.
- This product addresses a system crash seen when injecting a fw_assert on a NIC PF.
- This product addresses a system crash seen when limiting number of MSI-X interrupt vectors as requested for VFs
- This product addresses a system crash seen when unloading and reloading the RoCE driver only.
- This product addresses a system crash seen during multiple reboots of virtual machines using VFs and RDMA.
- This product addresses a the connection recover failed with heavy traffic

**Enhancements**

This product now supports Red Hat Enterprise Linux 8 update 3 and 8 update 2

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE StoreFabric CN1200R-T Converged Network Adapter
- HPE StoreFabric CN1300R Converged Network Adapter

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HPE QLogic FastLinQ 10/25/50 GbE Drivers for SUSE Linux Enterprise Server 12 x86_64

Version: 8.55.5.0-1 **(Optional)**

Filename: qlgc-fastlinq-kmp-default-8.55.5.0_k4.12.14_120-1.sles12sp5.x86_64.compsig; qlgc-fastlinq-kmp-default-8.55.5.0_k4.12.14_120-1.sles12sp5.x86_64.rpm; qlgc-fastlinq-kmp-default-8.55.5.0_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; qlgc-fastlinq-kmp-default-8.55.5.0_k4.12.14_94.41-1.sles12sp4.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in HPE QLogic FastLinQ Online Firmware Upgrade Utility for Linux x86_64, version 1.10.0 or later, for use with these drivers.

**Fixes**

- This product corrects an issue where the driver fails to load in NPAR mode when RoCE Data Center Quantized Congestion Notification (DCQCN) is enabled.
- This product corrects an issue ethernet data rate limiting unable on VFs.
- This product addresses a system crash seen when injecting a fw_assert on a NIC PF.
- This product addresses a system crash seen when limiting number of MSI-X interrupt vectors as requested for VFs
- This product addresses a system crash seen when unloading and reloading the RoCE driver only.
- This product addresses a system crash seen during multiple reboots of virtual machines using VFs and RDMA.
- This product addresses a the connection recover failed with heavy traffic

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE StoreFabric CN1200R-T Converged Network Adapter
- HPE StoreFabric CN1300R Converged Network Adapter

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HPE QLogic FastLinQ 10/25/50 GbE Drivers for SUSE Linux Enterprise Server 15

Version: 8.55.5.0-1 **(Optional)**

Filename: qlgc-fastlinq-kmp-default-8.55.5.0_k4.12.14_195-1.sles15sp1.x86_64.compsig; qlgc-fastlinq-kmp-default-8.55.5.0_k4.12.14_195-1.sles15sp1.x86_64.rpm; qlgc-fastlinq-kmp-default-8.55.5.0_k5.3.18_22-1.sles15sp2.x86_64.compsig; qlgc-fastlinq-kmp-default-8.55.5.0_k5.3.18_22-1.sles15sp2.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in HPE QLogic FastLinQ Online Firmware Upgrade Utility for Linux x86_64, version 1.10.0 or later, for use with these drivers.

**Fixes**

- This product corrects an issue where the driver fails to load in NPAR mode when RoCE Data Center Quantized Congestion Notification (DCQCN) is enabled.

- This product corrects an issue ethernet data rate limiting unable on VFs.
- This product addresses a system crash seen when injecting a fw_assert on a NIC PF.
- This product addresses a system crash seen when limiting number of MSI-X interrupt vectors as requested for VFs
- This product addresses a system crash seen when unloading and reloading the RoCE driver only.
- This product addresses a system crash seen during multiple reboots of virtual machines using VFs and RDMA.
- This product addresses a the connection recover failed with heavy traffic

**Enhancements**

This product now supports Suse Linux Enterprise Server 15 Service Pack 2

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE StoreFabric CN1200R-T Converged Network Adapter
- HPE StoreFabric CN1300R Converged Network Adapter

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HPE QLogic FastLinQ 10/25/50 GbE Drivers for Windows Server x64 Editions

Version: 8.55.5.0 **(Optional)**

Filename: cp044990.compsig; cp044990.exe

**Important Note!**

HPE recommends the firmware provided in *HPE QLogic FastLinQ Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with these drivers.

**Fixes**

- This product correct an Wake-on-LAN (WoL) function unavailable.
- This product correct high CPU usage with Virtual Machine Multiple Queues (VMMQ).
- This product addresses a BSOD seen when using the netsh utility to configure global RSS.
- This product correct an issue which fixes BSOD in case of NicSwitch and send NBL has vport id which exceeds max vports capability.
- This product addresses a Windows Stop Error (BSOD) seen where an SR-IOV virtual function to assign while installing driver.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
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- HPE StoreFabric CN1300R Converged Network Adapter

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HPE QLogic FastLinQ 10/25/50 GbE Multifunction Driver for VMware vSphere 6.5

Version: 2021.04.05 **(Optional)**

Filename: cp046222.compsig; cp046222.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hp.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE QLogic FastLinQ Online Firmware Upgrade Utility for VMware*, version 4.13.0 or later, for use with this driver.

**Fixes**

This product corrects an issue runs out of MSI-X interrupt vectors caused what Purple Screen of Death (PSOD)

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE StoreFabric CN1200R-T Converged Network Adapter
- HPE StoreFabric CN1300R Converged Network Adapter

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HPE QLogic FastLinQ 10/25/50 GbE Multifunction Driver for VMware vSphere 6.7

Version: 2021.04.05 **(Optional)**

Filename: cp044977.compsig; cp044977.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hp.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE QLogic FastLinQ Online Firmware Upgrade Utility for VMware*, version 4.13.0 or later, for use with this driver.

**Fixes**

This product addresses a Purple Screen Of Death (PSOD) seen on systems operating in a complicated VLAN environment.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE StoreFabric CN1200R-T Converged Network Adapter
- HPE StoreFabric CN1300R Converged Network Adapter

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HPE QLogic FastLinQ 10/25/50 GbE Multifunction Driver for VMware vSphere 7.0

Version: 2021.04.05 **(Optional)**

Filename: cp044976.compsig; cp044976.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hp.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE QLogic FastLinQ Online Firmware Upgrade Utility for VMware*, version 4.13.0 or later, for use with this driver.

**Fixes**

This product addresses a Purple Screen Of Death (PSOD) seen on systems operating in a complicated VLAN environment.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE StoreFabric CN1200R-T Converged Network Adapter
- HPE StoreFabric CN1300R Converged Network Adapter

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HPE QLogic FastLinQ Open-iSCSI Driver for Red Hat Enterprise Linux 8 Update 0

Version: 2.0-873.113-1 **(Optional)**

Filename: qlgc-open-iscsi-2.0_873.113.rhel8u0-1.x86_64.compsig; qlgc-open-iscsi-2.0_873.113.rhel8u0-1.x86_64.rpm; README

**Enhancements**

Initial release.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE StoreFabric CN1200R-T Converged Network Adapter
- HPE StoreFabric CN1300R Converged Network Adapter

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HPE QLogic FastLinQ Open-iSCSI Driver for SUSE Linux Enterprise Server 12 SP4

Version: 2.0-873.113-1 (D) **(Optional)**

Filename: qlgc-open-iscsi-2.0_873.113.sles12sp4-1.x86_64.compsig; qlgc-open-iscsi-2.0_873.113.sles12sp4-1.x86_64.rpm; README

**Enhancements**

This product no longer supports Synergy servers and devices. Synergy servers and devices are now supported by the HPE Synergy QLogic FastLinQ Open-iSCSI Driver for SUSE Linux Enterprise Server 12 SP4.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE StoreFabric CN1200R-T Converged Network Adapter
- HPE StoreFabric CN1300R Converged Network Adapter

HPE QLogic FastLinQ Open-iSCSI Driver for SUSE Linux Enterprise Server 15 SP0

Version: 2.0-873.113-1 (D) **(Optional)**

Filename: qlgc-open-iscsi-2.0_873.113.sles15sp0-1.x86_64.compsig; qlgc-open-iscsi-2.0_873.113.sles15sp0-1.x86_64.rpm; README

**Enhancements**

This product no longer supports Synergy servers and devices. Synergy servers and devices are now supported by the HPE Synergy QLogic FastLinQ Open-iSCSI Driver for SUSE Linux Enterprise Server 15 SP0.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE StoreFabric CN1200R-T Converged Network Adapter
- HPE StoreFabric CN1300R Converged Network Adapter

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HPE QLogic FastLinQ Open-iSCSI Driver for SUSE Linux Enterprise Server 15 SP1

Version: 2.0-873.113-1 **(Optional)**

Filename: qlgc-open-iscsi-2.0_873.113.sles15sp1-1.x86_64.compsig; qlgc-open-iscsi-2.0_873.113.sles15sp1-1.x86_64.rpm; README

**Enhancements**

Initial release.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE StoreFabric CN1200R-T Converged Network Adapter
- HPE StoreFabric CN1300R Converged Network Adapter

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HPE QLogic iSCSI Offload IO Daemon for Red Hat Enterprise Linux 8 Update 0

Version: 2.11.5.13-3 **(Optional)**

Filename: iscsiuio-2.11.5.13-3.rhel8u0.x86_64.compsig; iscsiuio-2.11.5.13-3.rhel8u0.x86_64.rpm

**Enhancements**

Initial release.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP FlexFabric 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter

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HPE QLogic iSCSI Offload IO Daemon for SUSE Linux Enterprise Server 12 SP4

Version: 2.11.5.13-3 (B) **(Optional)**

Filename: iscsiuio-2.11.5.13-3.sles12sp4.x86_64.compsig; iscsiuio-2.11.5.13-3.sles12sp4.x86_64.rpm; README

**Fixes**

This product addresses an iSCSI discovery failure with VLAN.

**Enhancements**

This product no longer supports ProLiant Blade servers and devices. Blade servers and devices are now supported by the HPE Blade QLogic NX2 iSCSI Offload IO Daemon for SUSE Linux Enterprise Server 12 SP4.

This product no longer supports Synergy servers and devices. Synergy servers and devices are now supported by the HPE Synergy QLogic iSCSI Offload IO Daemon for SUSE Linux Enterprise Server 12 SP4.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP FlexFabric 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter

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HPE QLogic iSCSI Offload IO Daemon for SUSE Linux Enterprise Server 15 SP0

Version: 2.11.5.13-3 (B) **(Optional)**

Filename: iscsiuio-2.11.5.13-3.sles15sp0.x86_64.compsig; iscsiuio-2.11.5.13-3.sles15sp0.x86_64.rpm; README

**Fixes**

This product addresses an iSCSI discovery failure with VLAN.

**Enhancements**

This product no longer supports ProLiant Blade servers and devices. Blade servers and devices are now supported by the HPE Blade QLogic NX2 iSCSI Offload IO Daemon for SUSE Linux Enterprise Server 15 SP0.

This product no longer supports Synergy servers and devices. Synergy servers and devices are now supported by the HPE Synergy QLogic iSCSI Offload IO Daemon for SUSE Linux Enterprise Server 15 SP0.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP FlexFabric 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter

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HPE QLogic iSCSI Offload IO Daemon for SUSE Linux Enterprise Server 15 SP1

Version: 2.11.5.13-3 **(Optional)**

Filename: iscsiuio-2.11.5.13-3.sles15sp1.x86_64.compsig; iscsiuio-2.11.5.13-3.sles15sp1.x86_64.rpm

**Enhancements**

Initial release.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP FlexFabric 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter

- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter

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HPE QLogic NX2 10/20 GbE Multifunction Driver for VMware vSphere 6.5

Version: 2021.04.05 **(Optional)**

Filename: cp046404.compsig; cp046404.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hp.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for VMware*, version 1.28.0 or later, for use with this driver.

**Fixes**

This product corrects an incorrect MTU value displayed by the ESXCLI tool.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 530T Adapter
- HPE Ethernet 10Gb 2-port 530SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 533FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HPE StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R 10GBASE-T Dual Port Converged Network Adapter

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HPE QLogic NX2 10/20 GbE Multifunction Driver for VMware vSphere 6.7

Version: 2021.04.05 **(Optional)**

Filename: cp044987.compsig; cp044987.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hp.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for VMware*, version 1.28.0 or later, for use with this driver.

**Fixes**

This product addresses a Purple Screen Of Death (PSOD) seen during traffic scheduling.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 530T Adapter
- HPE Ethernet 10Gb 2-port 530SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 533FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HPE StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R 10GBASE-T Dual Port Converged Network Adapter

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HPE QLogic NX2 10/20 GbE Multifunction Driver for VMware vSphere 7.0

Version: 2021.04.05 **(Optional)**

Filename: cp045082.compsig; cp045082.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip file that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hp.com webpages, plus an HPE specific CP0xxxxx.xml file.

HPE recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for VMware*, version 1.28.0 or later, for use with this driver.

**Fixes**

This product addresses a Purple Screen Of Death (PSOD) seen during traffic scheduling.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 530T Adapter
- HPE Ethernet 10Gb 2-port 530SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 533FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HPE StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R 10GBASE-T Dual Port Converged Network Adapter

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HPE QLogic NX2 10/20 GbE Multifunction Drivers for Red Hat Enterprise Linux 7 x86_64

Version: 7.14.76-1 **(Optional)**

Filename: kmod-netxtreme2-7.14.76-1.rhel7u8.x86_64.compsig; kmod-netxtreme2-7.14.76-1.rhel7u8.x86_64.rpm; kmod-netxtreme2-7.14.76-1.rhel7u9.x86_64.compsig; kmod-netxtreme2-7.14.76-1.rhel7u9.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for Linux x86_64,* version 2.28.0 or later, for use with these drivers.

**Fixes**

This product corrects an issue obtain Medium Dependent Interface(MDI) and Medium Dependent Interface Crossover (MDIX) information when execution ethtool tools

**Enhancements**

This product now supports Red Hat Enterprise Linux 7 Update 9.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 530SFP+ Adapter
- HPE Ethernet 10Gb 2-port 530T Adapter
- HPE Ethernet 10Gb 2-port 533FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HPE StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter

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HPE QLogic NX2 10/20 GbE Multifunction Drivers for Red Hat Enterprise Linux 8

Version: 7.14.76-1 **(Optional)**

Filename: kmod-netxtreme2-7.14.76-1.rhel8u2.x86_64.compsig; kmod-netxtreme2-7.14.76-1.rhel8u2.x86_64.rpm; kmod-netxtreme2-7.14.76-1.rhel8u3.x86_64.compsig; kmod-netxtreme2-7.14.76-1.rhel8u3.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for Linux x86_64,* version 2.28.0 or later, for use with these drivers.

**Fixes**

This product corrects an issue obtain Medium Dependent Interface(MDI) and Medium Dependent Interface Crossover (MDIX) information when execution ethtool tools

**Enhancements**

This product now supports Red Hat Enterprise Linux 8, Updates 2 and 3.

**Supported Devices and Features**

These drivers support the following network adapters:

- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP Ethernet 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter

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HPE QLogic NX2 10/20 GbE Multifunction Drivers for SUSE Linux Enterprise Server 12 x86_64

Version: 7.14.76-1 **(Optional)**

Filename: netxtreme2-kmp-default-7.14.76_k4.12.14_120-1.sles12sp5.x86_64.compsig; netxtreme2-kmp-default-7.14.76_k4.12.14_120-1.sles12sp5.x86_64.rpm; netxtreme2-kmp-default-7.14.76_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; netxtreme2-kmp-default-7.14.76_k4.12.14_94.41-1.sles12sp4.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for Linux x86_64,* version 2.28.0 or later, for use with these drivers.

**Fixes**

This product corrects an issue obtain Medium Dependent Interface(MDI) and Medium Dependent Interface Crossover (MDIX) information when execution ethtool tools

**Supported Devices and Features**

These drivers support the following network adapters:

- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP Ethernet 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter

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HPE QLogic NX2 10/20 GbE Multifunction Drivers for SUSE Linux Enterprise Server 15

Version: 7.14.76-1 **(Optional)**

Filename: netxtreme2-kmp-default-7.14.76_k4.12.14_195-1.sles15sp1.x86_64.compsig; netxtreme2-kmp-default-7.14.76_k4.12.14_195-1.sles15sp1.x86_64.rpm; netxtreme2-kmp-default-7.14.76_k5.3.18_22-1.sles15sp2.x86_64.compsig; netxtreme2-kmp-default-7.14.76_k5.3.18_22-1.sles15sp2.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for Linux x86_64,* version 2.28.0 or later, for use with these drivers.

**Fixes**

This product corrects an issue obtain Medium Dependent Interface(MDI) and Medium Dependent Interface Crossover (MDIX) information when execution ethtool tools

**Enhancements**

This product now supports SUSE Linux Enterprise Server 15 Service Pack 2

**Supported Devices and Features**

These drivers support the following network adapters:

- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP Ethernet 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter

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HPE QLogic NX2 10/20 GbE Multifunction Drivers for Windows Server x64 Editions

Version: 7.13.196.0 **(Optional)**

Filename: cp044989.compsig; cp044989.exe

**Important Note!**

HP recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with these drivers.

**Fixes**

- This product correct an issue where the vSwitch unavailable to assign on WS2012R2.
- This product correct an issue which fixes One time system crash seen while uninstalling NDIS driver
- This product addresses an issue where an SR-IOV virtual function can't to start normaly.

**Supported Devices and Features**

This driver supports the following network adapters:

- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP Ethernet 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter

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Intel i350 Driver for Windows Server 2016

Version: 12.16.3.1 **(Optional)**

Filename: cp045122.compsig; cp045122.exe

**Important Note!**

HPE recommends the firmware provided in *Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Enhancements**

This product contains Windows system update supported improvements.

**Supported Devices and Features**

This driver supports the following HPE Intel Powerville network adapters:

- HPE Ethernet 1Gb 4-port BaseT I350-T4 Adapter
- HPE Ethernet 1Gb 4-port BaseT I350-T4 OCP3 Adapter
- Intel(R) I350 Gigabit Network Connection

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Intel i350 Driver for Windows Server 2019

Version: 12.18.11.1 **(Optional)**

Filename: cp045123.compsig; cp045123.exe

**Important Note!**

HPE recommends the firmware provided in *Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Enhancements**

This product contains Windows system update supported improvements.

**Supported Devices and Features**

This driver supports the following HPE Intel E1R network adapters:

- HPE Ethernet 1Gb 4-port BaseT I350-T4 Adapter
- HPE Ethernet 1Gb 4-port BaseT I350-T4 OCP3 Adapter
- Intel(R) I350 Gigabit Network Connection

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Intel i40ea Driver for Windows Server 2016

Version: 1.13.104.0 **(Optional)**

Filename: cp045319.compsig; cp045319.exe

**Important Note!**

HPE recommends the firmware provided in *Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Fixes**

This product corrects an traffic packets making cert failure seen when packets transferred to VLAN after RDMA function enabled.

**Supported Devices and Features**

This driver supports the following HPE Intel I40EA network adapters:

- HPE Ethernet 10Gb 2-port SFP+ X710-DA2 OCP3 Adapter
- HPE Ethernet 10Gb 2-port SFP+ X710-DA2 Adapter

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Intel i40ea Driver for Windows Server 2019

Version: 1.13.104.0 **(Optional)**

Filename: cp045320.compsig; cp045320.exe

**Important Note!**

HPE recommends the firmware provided in *Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Fixes**

This product corrects an traffic packets making cert failure seen when packets transferred to VLAN after RDMA function enabled.

**Supported Devices and Features**

This driver supports the following HPE Intel I40EA network adapters:

- Intel X710-DA2 Ethernet 10Gb 2-port SFP+ OCP3 Adapter for HPE
- Intel X710-DA2 Ethernet 10Gb 2-port SFP+ Adapter for HPE

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Intel iavf Driver for Windows Server 2016

Version: 1.12.9.0 **(Optional)**

Filename: cp045022.compsig; cp045022.exe

**Important Note!**

HPE recommends the firmware provided in *Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Prerequisites**

This driver requires host driver version 1.0.80.0 or later.

**Enhancements**

This product is updated to maintain compatibility with updated Windows installation library iavfmsg.dll.

**Supported Devices and Features**

This product supports the following Intel VF network adapters:

- HPE Ethernet 10Gb 2-port SFP+ OCP3 X710-DA2 Adapter
- HPE Ethernet 10Gb 2-port SFP+ X710-DA2 Adapter
- Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE
- Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE
- Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE
- Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE
- Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE

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Intel iavf Driver for Windows Server 2019

Version: 1.12.9.0 **(Optional)**

Filename: cp045023.compsig; cp045023.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with this driver.

**Prerequisites**

This driver requires host driver version 1.0.80.0 or later.

**Enhancements**

This product is updated to maintain compatibility with updated Windows installation library iavfmsg.dll.

**Supported Devices and Features**

This product supports the following Intel VFnetwork adapters:

- HPE Ethernet 10Gb 2-port SFP+ OCP3 X710-DA2 Adapter
- HPE Ethernet 10Gb 2-port SFP+ X710-DA2 Adapter
- Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE
- Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE
- Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE
- Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE
- Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE

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Intel icea Driver for Windows Server 2016

Version: 1.5.74.0 **(Optional)**

Filename: cp041200.compsig; cp041200.exe

**Important Note!**

HPE recommends the firmware provided in *Intel Firmware Package for Columbiaville* (FWPKG), version 2.2 or later, for use with this driver.

**Enhancements**

Initial release.

**Supported Devices and Features**

This driver supports the following HPE Intel ICEA network adapters:

- Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE
- Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE
- Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE
- Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE
- Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE

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Intel icea Driver for Windows Server 2019

Version: 1.5.74.0 **(Optional)**

Filename: cp041201.compsig; cp041201.exe

**Important Note!**

HPE recommends the firmware provided in *Intel Firmware Package for Columbiaville* (FWPKG), version 2.2 or later, for use with this driver.

**Enhancements**

Initial release.

**Supported Devices and Features**

This driver supports the following HPE Intel ICEA network adapters:

- Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE
- Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE
- Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE
- Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE
- Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE

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Linux Intel Drivers build bundle for Red Hat Enterprise Linux

Version: 1.0.4.0 **(Optional)**

Filename: hp-i40e-2.13.10-1.all.src.rpm; hp-iavf-4.0.2-1.all.src.rpm; hp-igb-6.2.5-1.all.src.rpm; hp-ixgbe-5.9.4-1.all.src.rpm; hp-ixgbevf-4.9.3-1.all.src.rpm; i40e-README; iavf-README; ice-1.2.1-1.all.src.rpm; ice-README; igb-README; irdma-1.2.21-1.all.src.rpm; irdma-README; ixgbe-README; ixgbevf-README; kmod-hp-i40e-2.13.10-1.rhel7u8.x86_64.rpm; kmod-hp-i40e-2.13.10-1.rhel7u9.x86_64.rpm; kmod-hp-i40e-2.13.10-1.rhel8u2.x86_64.rpm; kmod-hp-i40e-2.13.10-1.rhel8u3.x86_64.rpm; kmod-hp-iavf-4.0.2-1.rhel7u8.x86_64.rpm; kmod-hp-iavf-4.0.2-1.rhel7u9.x86_64.rpm; kmod-hp-iavf-4.0.2-1.rhel8u2.x86_64.rpm; kmod-hp-iavf-4.0.2-1.rhel8u3.x86_64.rpm; kmod-hp-igb-6.2.5-1.rhel7u8.x86_64.rpm; kmod-hp-igb-

6.2.5-1.rhel7u9.x86_64.rpm; kmod-hp-igb-6.2.5-1.rhel8u2.x86_64.rpm; kmod-hp-igb-6.2.5-1.rhel8u3.x86_64.rpm; kmod-hp-ixgbe-5.9.4-1.rhel7u8.x86_64.rpm; kmod-hp-ixgbe-5.9.4-1.rhel7u9.x86_64.rpm; kmod-hp-ixgbe-5.9.4-1.rhel8u2.x86_64.rpm; kmod-hp-ixgbe-5.9.4-1.rhel8u3.x86_64.rpm; kmod-hp-ixgbevf-4.9.3-1.rhel7u8.x86_64.rpm; kmod-hp-ixgbevf-4.9.3-1.rhel7u9.x86_64.rpm; kmod-hp-ixgbevf-4.9.3-1.rhel8u2.x86_64.rpm; kmod-hp-ixgbevf-4.9.3-1.rhel8u3.x86_64.rpm; kmod-ice-1.2.1-1.rhel7u8.x86_64.rpm; kmod-ice-1.2.1-1.rhel7u9.x86_64.rpm; kmod-ice-1.2.1-1.rhel8u2.x86_64.rpm; kmod-ice-1.2.1-1.rhel8u3.x86_64.rpm; kmod-irdma-1.2.21-1.rhel7u8.x86_64.rpm; kmod-irdma-1.2.21-1.rhel7u9.x86_64.rpm; kmod-irdma-1.2.21-1.rhel8u2.x86_64.rpm; kmod-irdma-1.2.21-1.rhel8u3.x86_64.rpm

**Enhancements**

Gen10PlusSnap4

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Linux Intel Drivers build bundle for SUSE Linux Enterprise Server

Version: 1.0.4.0 **(Optional)**

Filename: hp-i40e-2.13.10-1.all.src.rpm; hp-i40e-kmp-default-2.13.10_k4.12.14_120-1.sles12sp5.x86_64.rpm; hp-i40e-kmp-default-2.13.10_k4.12.14_195-1.sles15sp1.x86_64.rpm; hp-i40e-kmp-default-2.13.10_k4.12.14_94.41-1.sles12sp4.x86_64.rpm; hp-i40e-kmp-default-2.13.10_k5.3.18_22-1.sles15sp2.x86_64.rpm; hp-iavf-4.0.2-1.all.src.rpm; hp-iavf-kmp-default-4.0.2_k4.12.14_120-1.sles12sp5.x86_64.rpm; hp-iavf-kmp-default-4.0.2_k4.12.14_195-1.sles15sp1.x86_64.rpm; hp-iavf-kmp-default-4.0.2_k4.12.14_94.41-1.sles12sp4.x86_64.rpm; hp-iavf-kmp-default-4.0.2_k5.3.18_22-1.sles15sp2.x86_64.rpm; hp-igb-6.2.5-1.all.src.rpm; hp-igb-kmp-default-6.2.5_k4.12.14_120-1.sles12sp5.x86_64.rpm; hp-igb-kmp-default-6.2.5_k4.12.14_195-1.sles15sp1.x86_64.rpm; hp-igb-kmp-default-6.2.5_k4.12.14_94.41-1.sles12sp4.x86_64.rpm; hp-igb-kmp-default-6.2.5_k5.3.18_22-1.sles15sp2.x86_64.rpm; hp-ixgbe-5.9.4-1.all.src.rpm; hp-ixgbe-kmp-default-5.9.4_k4.12.14_120-1.sles12sp5.x86_64.rpm; hp-ixgbe-kmp-default-5.9.4_k4.12.14_195-1.sles15sp1.x86_64.rpm; hp-ixgbe-kmp-default-5.9.4_k4.12.14_94.41-1.sles12sp4.x86_64.rpm; hp-ixgbe-kmp-default-5.9.4_k5.3.18_22-1.sles15sp2.x86_64.rpm; hp-ixgbevf-4.9.3-1.all.src.rpm; hp-ixgbevf-kmp-default-4.9.3_k4.12.14_120-1.sles12sp5.x86_64.rpm; hp-ixgbevf-kmp-default-4.9.3_k4.12.14_195-1.sles15sp1.x86_64.rpm; hp-ixgbevf-kmp-default-4.9.3_k4.12.14_94.41-1.sles12sp4.x86_64.rpm; hp-ixgbevf-kmp-default-4.9.3_k5.3.18_22-1.sles15sp2.x86_64.rpm; i40e-README; iavf-README; ice-1.2.1-1.all.src.rpm; ice-kmp-default-1.2.1_k4.12.14_120-1.sles12sp5.x86_64.rpm; ice-kmp-default-1.2.1_k4.12.14_195-1.sles15sp1.x86_64.rpm; ice-kmp-default-1.2.1_k4.12.14_94.41-1.sles12sp4.x86_64.rpm; ice-kmp-default-1.2.1_k5.3.18_22-1.sles15sp2.x86_64.rpm; ice-README; igb-README; irdma-1.2.21-1.all.src.rpm; irdma-kmp-default-1.2.21_k4.12.14_120-1.sles12sp5.x86_64.rpm; irdma-kmp-default-1.2.21_k4.12.14_195-1.sles15sp1.x86_64.rpm; irdma-kmp-default-1.2.21_k4.12.14_94.41-1.sles12sp4.x86_64.rpm; irdma-kmp-default-1.2.21_k5.3.18_22-1.sles15sp2.x86_64.rpm; irdma-README; ixgbe-README; ixgbevf-README

**Enhancements**

Gen10PlusSnap4

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Marvell FastLinQ 10/25/50 GbE Drivers for Windows Server x64 Editions

Version: 8.55.5.0 **(Optional)**

Filename: cp044988.compsig; cp044988.exe

**Important Note!**

HPE recommends the firmware provided in *Marvell FastLinQ Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.4.0 or later, for use with these drivers.

**Fixes**

- This product correct an Wake-on-LAN (WoL) function unavailable.
- This product correct high CPU usage with Virtual Machine Multiple Queues (VMMQ).
- This product addresses a BSOD seen when using the netsh utility to configure global RSS.
- This product correct an issue which fixes BSOD in case of NicSwitch and send NBL has vport id which exceeds max vports capability.
- This product addresses a Windows Stop Error (BSOD) seen where an SR-IOV virtual function to assign while installing driver.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10/25Gb 2-port SFP28 QL41232HQCU OCP3 Adapter
- HPE Ethernet 10/25Gb 2-port SFP28 QL41232HLCU Adapter
- HPE Ethernet 10Gb 4-port SFP+ QL41134HLCU Adapter
- HPE Ethernet 10Gb 2-port BaseT QL41132HLRJ Adapter
- HPE Ethernet 10Gb 2-port BaseT QL41132HQRJ OCP3 Adapter
- HPE Ethernet 10Gb 2-port SFP+ QL41132HQCU OCP3 Adapter
- HPE Ethernet 10Gb 2-port SFP+ QL41132HLCU Adapter

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Mellanox CX5 and CX6DX Driver for Windows Server 2016

Version: 2.60.23957.0 **(Optional)**

Filename: cp043868.compsig; cp043868.exe

**Fixes**

- This product addresses a Windows Stop Error (BSOD) seen when running Mellanox NdStat Utility (mlx5cmd -ndstat) while ND connections was closing.
- This product corrects driver loading failures seen due to incorrect INF file.

**Enhancements**

This product now supports the following network adapters:

- Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE Ethernet 10Gb 2-port SFP+ MCX4621A-ACAB OCP3 Adapter
- HPE Ethernet 10/25Gb 2-port SFP28 MCX512F-ACAT Adapter
- HPE Ethernet 10/25Gb 2-port SFP28 MCX562A-ACAI OCP3 Adapter
- HPE Ethernet 10Gb 2-port SFP+ MCX4121A-XCAT Adapter
- HPE Ethernet 100Gb 2-Port QSFP28 MCX516A-CCAT Adapter
- HPE Ethernet 100Gb 2-Port QSFP56 MCX623436AS-CDAT Adapter
- HPE Ethernet 100Gb 2-Port QSFP56 MCX623106AS-CDAT Adapter

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Mellanox CX5 and CX6DX Driver for Windows Server 2019

Version: 2.60.23957.0 **(Optional)**

Filename: cp043869.compsig; cp043869.exe

**Fixes**

- This product addresses a Windows Stop Error (BSOD) seen when running Mellanox NdStat Utility (mlx5cmd -ndstat) while ND connections was closing.
- This product corrects driver loading failures seen due to incorrect INF file.

**Enhancements**

This product now supports the following network adapters:

- Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE

**Supported Devices and Features**

This driver supports the following network adapters:

- HPE Ethernet 10Gb 2-port SFP+ MCX4621A-ACAB OCP3 Adapter
- HPE Ethernet 10/25Gb 2-port SFP28 MCX512F-ACAT Adapter
- HPE Ethernet 10/25Gb 2-port SFP28 MCX562A-ACAI OCP3 Adapter
- HPE Ethernet 10Gb 2-port SFP+ MCX4121A-XCAT Adapter
- HPE Ethernet 100Gb 2-Port QSFP28 MCX516A-CCAT Adapter

- HPE Ethernet 100Gb 2-Port QSFP56 MCX623436AS-CDAT Adapter
- HPE Ethernet 100Gb 2-Port QSFP56 MCX623106AS-CDAT Adapter

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net-mst kernel module driver component for VMware ESXi 6.5 and 6.7

Version: 2020.11.11 **(Recommended)**

Filename: cp046337.compsig; cp046337.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the HPE vibsdepot.hpe.com webpage, plus an HPE specific CPXXXX.xml file.

**Prerequisites**

NA

**Enhancements**

NMST version 4.12.0.105:

This version adds support for the following adapters:

- HPE Ethernet 10Gb 2-port SFP+ MCX4121A-XCHT Adapter (Part Number: P21930-B21)
- HPE Ethernet 10Gb 2-port SFP+ MCX4621A-ACAB OCP3 Adapter (Part Number: P11341-B21)
- HPE Ethernet 10/25Gb 2-port SFP28 MCX512F-ACHT Adapter (Part Number: P13188-B21)
- HPE Ethernet 10/25Gb 2-port SFP28 MCX562A-ACAI OCP3 Adapter (Part Number: P10112-B21)
- HPE Ethernet 100Gb 2-port QSFP28 MCX516A-CCHT Adapter (Part Number: P21927-B21)
- HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 x16 Adapter (Part Number: P06154-B21)
- HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 x16 Adapter (Part Number: P06250-B21)
- HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 x16 Adapter (Part Number: P06251-B21)
- HPE InfiniBand HDR/Ethernet 200Gb 1-port MCX653105A-HDAT QSFP56 x16 Adapter (Part Number: P23664-B21)
- HPE InfiniBand HDR100/Ethernet 100Gb 1-port MCX653105A-ECAT QSFP56 x16 Adapter (Part Number: P23665-B21)
- HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX653106A-ECAT QSFP56 x16 Adapter (Part Number: P23666-B21)
- HPE Ethernet 100Gb 2-Port QSFP56 MCX623106AS-CDAT Adapter (Part Number: P25960-B21)

**Supported Devices and Features**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 764282-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter | HP_1350110023 |
| 764283-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter | HP_1360110017 |
| 764284-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter | HP_1370110017 |
| P24837-B21 | HPE Ethernet 10/25Gb 2-port 642SFP28 Adapter | HPE0000000054 |
| P11338-B21 | HPE Ethernet 10Gb 2-port 548SFP+ Adapter | HP_1200111023 |
| 764285-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter | HP_1380110017 |
| 764286-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter | HP_1390110023 |
| 825110-B21 | HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter | HP_2180110032 |
| 825111-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter | HP_2190110032 |
| 872726-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter | HPE0000000009 |
| 879482-B21 | HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter | HPE0000000022 |
| 868779-B21 | HPE Synergy 6410C 25/50Gb Ethernet Adapter | HPE0000000006 |
| 779793-B21 | HPE Ethernet 10Gb 2-port 546SFP+ Adapter | HP_1200111023 |
| 779799-B21 | HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter | HP_2240110004 |
| 817749-B21 | HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter | HP_2690110034 |
| 817753-B21 | HPE Ethernet 25Gb 2-port 640SFP28 Adapter | HP_2420110034 |
| P21927-B21 | HPE Ethernet 100Gb 2-port QSFP28 MCX516A-CCHT Adapter | MT_0000000417 |
| P10112-B21 | HPE Ethernet 10/25Gb 2-port SFP28 MCX562A-ACAI OCP3 Adapter | MT_0000000241 |
| P13188-B21 | HPE Ethernet 10/25Gb 2-port SFP28 MCX512F-ACHT Adapter | MT_0000000416 |
| P11341-B21 | HPE Ethernet 10Gb 2-port SFP+ MCX4621A-ACAB OCP3 Adapter | MT_0000000238 |
| P21930-B21 | HPE Ethernet 10Gb 2-port SFP+ MCX4121A-XCHT Adapter | MT_0000000414 |
| 874253-B21 | HPE Ethernet 100Gb 1-port 842QSFP28 Adapter | HPE0000000014 |
| P25960-B21 | HPE Ethernet 100Gb 2-Port QSFP56 MCX623106AS-CDAT Adapter | MT_0000000437 |
| P06154-B21 | HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 x16 Adapter | HPE0000000034 |

| | | |
|---|---|---|
| P06250-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 x16 Adapter | HPE0000000035 |
| P06251-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 x16 Adapter | HPE0000000036 |
| P23664-B21 | HPE InfiniBand HDR/Ethernet 200Gb 1-port MCX653105A-HDAT QSFP56 x16 Adapter | MT_0000000451 |
| P23665-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 1-port MCX653105A-ECAT QSFP56 x16 Adapter | MT_0000000452 |
| P23666-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX653106A-ECAT QSFP56 x16 Adapter | MT_0000000453 |
| P10180-B21 | Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE | MT_0000000435 |
| P31246-B21 | HPE Ethernet 100Gb 1-port QSFP28 PCIe3 x16 MCX515A-CCAT Adapter | MT_0000000591 |
| P31323-B21 | HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe4 x16 OCP3 MCX653435A-HDAI Adapter | MT_0000000592 |
| P31348-B21 | HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 OCP3 MCX653436A-HDAI Adapter | MT_0000000593 |
| P31324-B21 | HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 MCX653106A-HDAT Adapter | MT_0000000594 |

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net-mst kernel module driver component for VMware ESXi 7.0

Version: 2020.11.11 **(Recommended)**

Filename: cp046317.compsig; cp046317.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the HPE vibsdepot.hpe.com webpage, plus an HPE specific CPXXXX.xml file.

**Prerequisites**

NA

**Fixes**

NMST version 4.14.3.3

**Supported Devices and Features**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 764282-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter | HP_1350110023 |
| 764283-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter | HP_1360110017 |
| 764284-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter | HP_1370110017 |
| P24837-B21 | HPE Ethernet 10/25Gb 2-port 642SFP28 Adapter | HPE0000000054 |
| P11338-B21 | HPE Ethernet 10Gb 2-port 548SFP+ Adapter | HP_1200111023 |
| 764285-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter | HP_1380110017 |
| 764286-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter | HP_1390110023 |
| 825110-B21 | HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter | HP_2180110032 |
| 825111-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter | HP_2190110032 |
| 872726-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter | HPE0000000009 |
| 879482-B21 | HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter | HPE0000000022 |
| 868779-B21 | HPE Synergy 6410C 25/50Gb Ethernet Adapter | HPE0000000006 |
| 779793-B21 | HPE Ethernet 10Gb 2-port 546SFP+ Adapter | HP_1200111023 |
| 779799-B21 | HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter | HP_2240110004 |
| 817749-B21 | HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter | HP_2690110034 |
| 817753-B21 | HPE Ethernet 25Gb 2-port 640SFP28 Adapter | HP_2420110034 |
| P21927-B21 | HPE Ethernet 100Gb 2-port QSFP28 MCX516A-CCHT Adapter | MT_0000000417 |
| P10112-B21 | HPE Ethernet 10/25Gb 2-port SFP28 MCX562A-ACAI OCP3 Adapter | MT_0000000241 |
| P13188-B21 | HPE Ethernet 10/25Gb 2-port SFP28 MCX512F-ACHT Adapter | MT_0000000416 |
| P11341-B21 | HPE Ethernet 10Gb 2-port SFP+ MCX4621A-ACAB OCP3 Adapter | MT_0000000238 |
| P21930-B21 | HPE Ethernet 10Gb 2-port SFP+ MCX4121A-XCHT Adapter | MT_0000000414 |
| 874253-B21 | HPE Ethernet 100Gb 1-port 842QSFP28 Adapter | HPE0000000014 |
| P25960-B21 | HPE Ethernet 100Gb 2-Port QSFP56 MCX623106AS-CDAT Adapter | MT_0000000437 |
| P06154-B21 | HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 x16 Adapter | HPE0000000034 |

| | | |
|---|---|---|
| P06250-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 x16 Adapter | HPE0000000035 |
| P06251-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 x16 Adapter | HPE0000000036 |
| P23664-B21 | HPE InfiniBand HDR/Ethernet 200Gb 1-port MCX653105A-HDAT QSFP56 x16 Adapter | MT_0000000451 |
| P23665-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 1-port MCX653105A-ECAT QSFP56 x16 Adapter | MT_0000000452 |
| P23666-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX653106A-ECAT QSFP56 x16 Adapter | MT_0000000453 |
| P10180-B21 | Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE | MT_0000000435 |
| P31246-B21 | HPE Ethernet 100Gb 1-port QSFP28 PCIe3 x16 MCX515A-CCAT Adapter | MT_0000000591 |
| P31323-B21 | HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe4 x16 OCP3 MCX653435A-HDAI Adapter | MT_0000000592 |
| P31348-B21 | HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 OCP3 MCX653436A-HDAI Adapter | MT_0000000593 |
| P31324-B21 | HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 MCX653106A-HDAT Adapter | MT_0000000594 |

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nmlx4_en Driver Component for VMware 6.5

Version: 2020.11.11 **(Recommended)**

Filename: cp046261.compsig; cp046261.zip

**Important Note!**

**Known Issues:**

- ConnectX-3 Pro 10G adapter cards incorrectly report support for 40G speed when running the "esxcli network nic get" command.
- When the port is DOWN, the management interface "port type" field indicates one of the port types supported by the device, in the following order: TP, FIBER, DA, NONE. If the port supports several cable types, the first type in the list mentioned above will be printed.
- When the port is UP, the management interface port type field (nmlx_en_MgmtIFPortType) indicates which one of all possible supported types is currently connected.
- Managment interface port type field reports SFP-to-RJ45 cable as FIBER.
- Management interface auto negotiation field is equivalent to "esxcli network nic get -n vmnicX" field "Pause Autonegotiate".

For further information on the release notes for ESXi 6.5 Driver Version 3.16.11.10 follow the below link:
https://www.mellanox.com/page/products_dyn?product_family=29&mtag=vmware_driver

**Enhancements**

**Changes and New Features in version 3.16.70.2:**

- Resolved an issue that caused the network adapter traffic to stop.
- Fixed an internal multicast loopback issue that broke LACP(Link Aggregation Control Protocol) bonding protocol.

**Supported Devices and Features**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 764282-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter | HP_1350110023 |
| 764283-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter | HP_1360110017 |
| 764284-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter | HP_1370110017 |
| 764285-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter | HP_1380110017 |
| 764286-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter | HP_1390110023 |
| 779793-B21 | HPE Ethernet 10Gb 2-port 546SFP+ Adapter | HP_1200111023 |
| 779799-B21 | HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter | HP_2240110004 |

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nmlx4_en Driver Component for VMware 7.0

Version: 2020.11.11 **(Recommended)**

Filename: cp046345.compsig; cp046345.zip

**Important Note!**

**Known Issues:**

- ConnectX-3 Pro 10G adapter cards incorrectly report support for 40G speed when running the "esxcli network nic get" command.
- When the port is DOWN, the management interface "port type" field indicates one of the port types supported by the device, in the following order: TP, FIBER, DA, NONE. If the port supports several cable types, the first type in the list mentioned above will be printed.
- When the port is UP, the management interface port type field (nmlx_en_MgmtIFPortType) indicates which one of all possible supported types is currently connected.

- Managment interface port type field reports SFP-to-RJ45 cable as FIBER.
- Management interface auto negotiation field is equivalent to "esxcli network nic get -n vmnicX" field "Pause Autonegotiate".

For further information on the release notes for ESXi 6.5 Driver Version 3.16.11.10 follow the below link: https://www.mellanox.com/page/products_dyn?product_family=29&mtag=vmware_driver

**Enhancements**

**Changes and New Features in version 3.19.70.1:**

- Resolved an issue that caused the network adapter traffic to stop.
- Fixed an internal multicast loopback issue that broke LACP(Link Aggregation Control Protocol) bonding protocol.

**Supported Devices and Features**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 764282-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter | HP_1350110023 |
| 764283-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter | HP_1360110017 |
| 764284-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter | HP_1370110017 |
| 764285-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter | HP_1380110017 |
| 764286-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter | HP_1390110023 |
| 779793-B21 | HPE Ethernet 10Gb 2-port 546SFP+ Adapter | HP_1200111023 |
| 779799-B21 | HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter | HP_2240110004 |

nmlx4_en driver component for VMware ESXi 6.7

Version: 2020.11.11 **(Recommended)**

Filename: cp046262.compsig; cp046262.zip

**Important Note!**

**Known issues in version 3.17.70.1:**

- ConnectX-3 Pro 10G adapter cards wrongly report support for 40G speed when running the "esxcli network ni get" command.
- When the port is DOWN, the management interface port type field (nmlx_en_MgmtIFPortType) indicates one of the port types supported by the device, in the following order: TP, FIBER, DA, NONE. If the cable supports several types, the first type in the list mentioned above will be printed.

- When the port is UP, the management interface port type field (nmlx_en_MgmtIFPortType) indicates which one of all possible supported types is currently connected.
- Management interface port type field (nmlx_en_MgmtIFPortType) reports SFP-to-RJ45 cable as FIBER.
- Management interface auto negotiation field (nmlx_en_MgmtIFAutoNegMode) is equivalent to "esxcli network nic get -n vmnicX" field "Pause Autonegotiate"

**Enhancements**

**Changes and New features in version 3.17.70.1:**

- Adapter card's PSID is now displayed in the Privstats (Private statistics).

**Supported Devices and Features**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 764282-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter | HP_1350110023 |
| 764283-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter | HP_1360110017 |
| 764284-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter | HP_1370110017 |
| 764285-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter | HP_1380110017 |
| 764286-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter | HP_1390110023 |
| 779793-B21 | HPE Ethernet 10Gb 2-port 546SFP+ Adapter | HP_1200111023 |
| 779799-B21 | HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter | HP_2240110004 |

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nmlx5_en Driver Component for VMware 6.5

Version: 2020.11.11 **(Recommended)**

Filename: cp046263.compsig; cp046263.zip

**Important Note!**

**Known Issues in version 4.16.70.1:**

- The maximum number of established active RDMA connections (QPs) is currently 5000.
- Setting ETS value to 0 may cause WQE timeout.
- ECN tunable parameter initialAlphaValue for the Reaction Point protocol cannot be modified.

- ECN statistic counters accumulatorsPeriod and ecnMarkedRoce-Packets display wrong values and cannot be cleared.
- The hardware can offload only up to 256 Bytes of headers.
- The "esxcli network sriovnic vf stats" command is not supported.
- Traffic cannot be sent between PV and SR-IOV VF connected to different ports on the same HCA.
- Setting the "Allow Guest MTU Change" option in vSphere Client is currently not functional. Although guest MTU changes in SR-IOV are allowed, they do not affect the port's MTU and the guest's MTU remains the same as the PF MTU.
- Geneve options length support is limited to 56 Bytes. Received packets with options length bigger than 56 Bytes are dropped.
- Interaction with ConnectX-4/ConnectX-4 Lx older firmware versions might result in the following internal firmware errors:
  - Device health compromised
  - synd 0x1: firmware internal error
  - extSync 0x94ee
- The 'esxcli mellanox uplink link info -u <vmnic_name>' command reports the 'Auto negotiation' capability always as 'true'.
- Wake-on-LAN does not notify when invalid parameters are provided.
- Nested ESXi might not function properly.
- Device RSS fails to hash traffic to sufficient RX rings with Broadcast traffic.
- In stress condition ‘Watchdog’ may appear leading to link going up and down.
- VGT traffic over VXLAN interfaces is currently not supported.
- SMP MADs (ibnetdiscover, sminfo, iblinkinfo, smpdump, ibqueryerr, ibdiagnet and smpquery) are not supported on the VFs.
- Although the max_vfs module parameter range is "0-128", due to firmware limitations, the following are the supported VFs per single port:
  - ConnectX-4: up to 127
  - ConnectX-5: up to 63

**Fixes**

**The following issues have been fixed in version in 4.16.70.1:**

- The "esxcli network sriovnic vf stats" command was not supported. When running this command on a vmknic, a failure message was displayed.

**Enhancements**

**Changes and New Features in smart component version 2020.11.11:**

- Added support for the following adapters:
  - HPE Ethernet 200Gb 1-Port QSFP56 MCX623105AS-VDAT Adapter (HPE Part Number: P10180-B21)

**New features and changes in version 4.16.70.1:**

- An event will be sent to notify the administrator if the power required by the network adapter is higher than that available on the PCIe slot.
- Support for trusting Differentiated Services Code Point (DSCP) and setting default value for RoCE traffic.

- A new counter that enables the user to query per Virtual Function counters.
- RX out-of-buffer counter to indicate any lack of software receive buffers.
- Module parameter to enforce specific RoCE version.

**Supported Devices and Features**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 825110-B21 | HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter | HP_2180110032 |
| 825111-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter | HP_2190110032 |
| 872726-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter | HPE0000000009 |
| 879482-B21 | HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter | HPE0000000022 |
| 868779-B21 | HPE Synergy 6410C 25/50Gb Ethernet Adapter | HPE0000000006 |
| P11338-B21 | HPE Ethernet 10Gb 2-port 548SFP+ Adapter | HP_1200111023 |
| 817749-B21 | HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter | HP_2690110034 |
| 817753-B21 | HPE Ethernet 25Gb 2-port 640SFP28 Adapter | HP_2420110034 |
| P24837-B21 | HPE Ethernet 10/25Gb 2-port 642SFP28 Adapter | HPE0000000054 |
| 874253-B21 | HPE Ethernet 100Gb 1-port 842QSFP28 Adapter | HPE0000000014 |
| P06154-B21 | HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 x16 Adapter | HPE0000000034 |
| P06250-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 x16 Adapter | HPE0000000035 |
| P06251-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 x16 Adapter | HPE0000000036 |
| P10180-B21 | HPE Ethernet 200Gb 1-Port QSFP56 MCX623105AS-VDAT Adapter | MT_0000000435 |

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nmlx5_en Driver Component for VMware 6.7

Version: 2020.11.11 **(Recommended)**

Filename: cp046264.compsig; cp046264.zip

**Important Note!**

**Known Issues in version 4.17.70.1:**

- ECN tunable parameter initialAlphaValue for the Reaction Point protocol cannot be modified.

- SRI-OV is not supported while ENS is enabled.
- The maximum number of established active RDMA connections (QPs) is currently 5000.
- Enhanced Network Stack(ENS) is currently not supported in ConnectX-6 Dx adapter cards.
- Setting ETS value to 0 may cause WQE timeout.
- A PSOD may occur during vMotion over ENS VMK.
- During ENS uplink detachment from the ENS DVS, the below error message regarding the queue still being allocated or that the requested queue is not in use may appear.
- Live unload of the driver is not supported. Doing so may cause a PSOD if the max_vfs parameter is set.
- ECN statistic counters accumulatorsPeriod and ecnMarkedRoce-Packets display wrong values and cannot be cleared.
- The maximum value of RSS must be lower than the number of CPU cores.
- The hardware can offload only up to 256B of headers.
- The "esxcli network sriovnic vf stats" command is not supported. When running this command on a vmknic, a failure message is displayed.
- There is no traffic between PV and SR-IOV VF connected to different ports on the same HCA.
- Setting the "Allow Guest MTU Change" option in vSphere Client is currently not functional. Although guest MTU changes in SR-IOV are allowed, they do not affect the port's MTU and the guest's MTU remains the same as the PF MTU.
- When a guest is assigned an IB PCI passthru device or an IB VF, VMware Tools networking information for the guest may be incorrect. This affects how the guest networking information, such as interfaces and their IPs, is displayed in vCenter.
- Operations on vmnics which are in passthru mode are not supported.
- The 'esxcli mellanox uplink link info -u <vmnic_name>' command reports the 'Auto negotiation' capability always as 'true'.
- SMP MADs (ibnetdiscover, sminfo, iblinkinfo, smpdump, ibqueryerr, ibdiagnet and smpquery) are not supported on the VFs.
- Wake-on-LAN does not notify when invalid parameters are provided.
- Nested ESXi might not function properly.
- Device RSS fails to hash traffic to sufficient RX rings with Broadcast traffic.
- In stress condition ‘Watchdog’ may appear, leading to uplink going up and down.
- During ENS uplink detachment from the ENS DVS, the below error message regarding the queue still being allocated or that the requested queue is not in use may appear. *"Driver covers for OS issue and the messages are for information only."*
- Although the max_vfs module parameter range is "0-128", due to firmware limitations, the following are the supported VFs per single port devices:
  - ConnectX-4: up to 127
  - ConnectX-5: up to 127

For further information on the release notes for ESXi 6.7 Driver Version 4.17.70.1 follow the below link:
https://www.mellanox.com/page/products_dyn?product_family=29&mtag=vmware_driver

**Fixes**

**The following issues have been fixed in version in 4.17.70.1:**

- The "esxcli network sriovnic vf stats" command was not supported.When running this command on a "vmknic", a failure message was displayed.
- IPv6 as inner packet was not supported.

## Enhancements

**Changes and New Features in smart component version 2020.11.11:**

- Added support for the following adapters:
  - HPE Ethernet 200Gb 1-Port QSFP56 MCX623105AS-VDAT Adapter (HPE Part Number: P10180-B21)

**New features and changes in version 4.17.70.1:**

- Disabled the option of shutting down the link due to power limitation.
- Support for trusting Differentiated Services Code Point (DSCP) and setting default value for RoCE traffic.
- New counter that enables the user to query per Virtual Function counters.
- RX out-of-buffer counter to indicate any lack of software receive buffers.
- Module parameter to enforce specific RoCE version.

## Supported Devices and Features

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 825110-B21 | HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter | HP_2180110032 |
| 825111-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter | HP_2190110032 |
| 872726-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter | HPE0000000009 |
| 879482-B21 | HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter | HPE0000000022 |
| 868779-B21 | HPE Synergy 6410C 25/50Gb Ethernet Adapter | HPE0000000006 |
| P11338-B21 | HPE Ethernet 10Gb 2-port 548SFP+ Adapter | HP_1200111023 |
| 817749-B21 | HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter | HP_2690110034 |
| 817753-B21 | HPE Ethernet 25Gb 2-port 640SFP28 Adapter | HP_2420110034 |
| P24837-B21 | HPE Ethernet 10/25Gb 2-port 642SFP28 Adapter | HPE0000000054 |
| 874253-B21 | HPE Ethernet 100Gb 1-port 842QSFP28 Adapter | HPE0000000014 |
| P06154-B21 | HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 x16 Adapter | HPE0000000034 |
| P06250-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 x16 Adapter | HPE0000000035 |
| P06251-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 x16 Adapter | HPE0000000036 |
| P10180-B21 | HPE Ethernet 200Gb 1-Port QSFP56 MCX623105AS-VDAT Adapter | MT_0000000435 |

nmlx5_en Driver Component for VMware 7.0

Version: 2020.11.11 **(Recommended)**

Filename: cp046265.compsig; cp046265.zip

**Important Note!**

**Known Issues in version 4.19.70.1:**

- SR-IOV is not supported while ENS is enabled.
- Live unload of the driver is not supported. Doing so may cause a PSOD if the max_vfs parameter is set.
- The maximum number of established active RDMA connections (QPs) is currently 5000.
- ENS is currently not supported in ConnectX-6 Dx adapter cards.
  **Workaround**: Use non ENS DVS for ConnectX-6 Dx cards.
- Setting ETS value to 0 may cause WQE timeout.
  **Workaround**: Set ETS value of 1 instead of 0.
- The 'esxcli mellanox uplink link info -u <vmnic_name>' command reports the 'Auto negotiation' capability always as 'true'.
- SMP MADs (ibnetdiscover, sminfo, iblinkinfo, smpdump, ibqueryerr, ibdiagnet and smpquery) are not supported on the VFs.
- Although the max_vfs module parameter range is "0-128", due to firmware limitations, the following are the supported VFs per single port devices:
  - ConnectX-4 / ConnectX-5: up to 127

**Enhancements**

**Changes and New Features are included in smart component version 2020.11.11:**

- Added support for the following adapters:
  - HPE Ethernet 200Gb 1-Port QSFP56 MCX623105AS-VDAT Adapter (HPE Part Number: P10180-B21)

**New features and changes in version 4.19.70.1:**

- Disabled the option of shutting down the link due to power limitation.
- Support for trusting Differentiated Services Code Point (DSCP) and setting default value for RoCE traffic.
- New counter that enables the user to query per Virtual Function counters.
- RX out-of-buffer counter to indicate any lack of software receive buffers.
- support for Data Center Bridging Capability Exchange (DCBx) protocol.DCBX works with LLDP to allow switches to exchange information about their Data Center Bridging (DCB) capabilities and configuration and automatically

  negotiate common Priority-Based Flow Control (PFC) parameters.

- Module parameter to enforce specific RoCE version.
- Support for setting the minimal bandwidth guarantee for traffic classes (TCs).

**Supported Devices and Features**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 825110-B21 | HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter | HP_2180110032 |
| 825111-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter | HP_2190110032 |
| 872726-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter | HPE0000000009 |
| 879482-B21 | HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter | HPE0000000022 |
| 868779-B21 | HPE Synergy 6410C 25/50Gb Ethernet Adapter | HPE0000000006 |
| P11338-B21 | HPE Ethernet 10Gb 2-port 548SFP+ Adapter | HP_1200111023 |
| 817749-B21 | HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter | HP_2690110034 |
| 817753-B21 | HPE Ethernet 25Gb 2-port 640SFP28 Adapter | HP_2420110034 |
| P24837-B21 | HPE Ethernet 10/25Gb 2-port 642SFP28 Adapter | HPE0000000054 |
| 874253-B21 | HPE Ethernet 100Gb 1-port 842QSFP28 Adapter | HPE0000000014 |
| P06154-B21 | HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 x16 Adapter | HPE0000000034 |
| P06250-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 x16 Adapter | HPE0000000035 |
| P06251-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 x16 Adapter | HPE0000000036 |
| P10180-B21 | HPE Ethernet 200Gb 1-Port QSFP56 MCX623105AS-VDAT Adapter | MT_0000000435 |

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VMware ESXi 6.5 and 6.7 MST Drivers Offline Bundle for Mellanox Adapters

Version: 4.12.0.105 **(Recommended)**

Filename: MLNX-NMST-ESX-6.5.0-4.12.0.105.zip

**Prerequisites**

NA

**Enhancements**

VM65/67 nmst 4.12.0.105

VMware ESXi 7.0 MST Drivers Offline Bundle for Mellanox Adapters

Version: 4.14.3.3 **(Recommended)**

Filename: Mellanox-NATIVE-NMST_4.14.3.3-1OEM.700.1.0.15525992_16211416.zip

**Prerequisites**

NA

**Enhancements**

VM70 nmst 4.14.3.3

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**Driver - Storage** Top

Dynamic Smart Array B140i Controller Driver for 64-bit Microsoft Windows Server 2012/2012 R2/2016/2019 Editions

Version: 62.16.2.64 **(Recommended)**

Filename: cp042594.exe

**Fixes**

- Fix error handling of AHCI reported Fatal errors with NCQ and Non-NCQ commands in SATL potentially causing RAID stack timeouts and excessive read/write command timeouts leading to SCSI bus reset with M.2 SSD drives configured with SW RAID.

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HPE Smart Array S100i SR Gen10 SW RAID Driver for Windows Server 2012 R2, Windows Server 2016, and Windows Server 2019

Version: 106.12.6.0 **(Critical)**

Filename: cp043250.compsig; cp043250.exe

**Fixes**

Addressed an issue where the HPE Smart Array s100i Software RAID may experience potential data inconsistency during initial configuration or operation of a RAID volume configured in RAID 0/1/5/10 Fault Tolerant Modes.

This issue does not impact systems that have not enabled Smart Array s100i support.

- For additional information, reference Customer Bulletin a00097789en_us.

**IMPORTANT INFORMATION:**

- An array configured with a single RAID 0 logical drive is NOT affected.
- An array configured with a single RAID 1 logical drive is NOT affected.

**Enhancements**

Added support for AMD.

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HPE Smart Storage SR100i Gen10 Plus SW RAID Driver for Windows Server 2016, and Windows Server 2019

Version: 106.106.2.1229 **(Recommended)**

Filename: cp045150.compsig; cp045150.exe

**Enhancements**

Added the NVMe SW Raid support

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**Driver - Storage Controller** Top

HPE Dynamic Smart Array B140i Controller Driver for VMware vSphere 6.5 (Driver Component).

Version: 2019.05.01 **(Recommended)**

Filename: cp039786.compsig; cp039786.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

**Fixes**

Fixes an issue where the driver will not upgrade due to the AHCI driver taking priority.

This issue is only encounter when upgrading to version 2018.09.31 (5.5.0.66-1). All other versions are not affected.

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HPE Dynamic Smart Array B140i Controller Driver for VMware vSphere 6.7 (Driver Component).

Version: 2019.05.01 **(Recommended)**

Filename: cp039788.compsig; cp039788.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

**Fixes**

Fixes an issue where the driver will not upgrade due to the AHCI driver taking priority.

This issue is only encounter when upgrading to version 2018.09.31 (5.5.0.66-1). All other versions are not affected.

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HPE Dynamic Smart Array B140i SATA RAID Controller Driver for Red Hat Enterprise Linux 7 (64-bit)

Version: 1.2.10-184 **(Recommended)**

Filename: kmod-hpdsa-1.2.10-184.rhel7u8.x86_64.compsig; kmod-hpdsa-1.2.10-184.rhel7u8.x86_64.rpm; kmod-hpdsa-1.2.10-184.rhel7u9.x86_64.compsig; kmod-hpdsa-1.2.10-184.rhel7u9.x86_64.rpm

**Enhancements**

Add support for Red Hat Enterprise Linux 7 Update 9

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HPE Dynamic Smart Array B140i SATA RAID Controller Driver for Red Hat Enterprise Linux 8 (64-bit)

Version: 1.2.10-185 **(Recommended)**

Filename: kmod-hpdsa-1.2.10-185.rhel8u2.x86_64.compsig; kmod-hpdsa-1.2.10-185.rhel8u2.x86_64.rpm; kmod-hpdsa-1.2.10-185.rhel8u3.x86_64.compsig; kmod-hpdsa-1.2.10-185.rhel8u3.x86_64.rpm

**Enhancements**

Added Support for Red Hat Enterprise Linux 8.3

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HPE Dynamic Smart Array B140i SATA RAID Controller Driver for SUSE LINUX Enterprise Server 12 (64-bit)

Version: 1.2.10-176 (B) **(Recommended)**

Filename: hpdsa-kmp-default-1.2.10-176.sles12sp4.x86_64.compsig; hpdsa-kmp-default-1.2.10-176.sles12sp4.x86_64.rpm; hpdsa-kmp-default-1.2.10-176.sles12sp5.x86_64.compsig; hpdsa-kmp-default-1.2.10-176.sles12sp5.x86_64.rpm

**Fixes**

- Added PKCS signing process to fix the secure boot hang issue on Linux SLES12 SP5.
- Fix SATL error handling of AHCI reported Fatal errors with NCQ and Non-NCQ commands potentially causing RAID stack timeouts and excessive read/write command timeouts leading to SCSI bus reset with M.2 SSD drives configured with SW RAID.

**Enhancements**

Add support for SuSE Linux Enterprise Server 12 SP5

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 12 (64-bit) supported by this binary rpm are:
4.4.21-69-default - SUSE LINUX Enterprise Server 12 (64-bit) SP2 plus future errata.
- SUSE LINUX Enterprise Server 12 (64-bit) SP3 plus future errata.

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HPE Dynamic Smart Array B140i SATA RAID Controller Driver for SUSE LINUX Enterprise Server 15 (64-bit)

Version: 1.2.10-182 **(Recommended)**

Filename: hpdsa-kmp-default-1.2.10-182.sles15sp1.x86_64.compsig; hpdsa-kmp-default-1.2.10-182.sles15sp1.x86_64.rpm; hpdsa-kmp-default-1.2.10-182.sles15sp2.x86_64.compsig; hpdsa-kmp-default-1.2.10-182.sles15sp2.x86_64.rpm

**Enhancements**

Add support for SUSE Linux Enterprise Services 15 SP2

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 15 (64-bit) supported by this binary rpm are:
4.12.14-23 - SUSE LINUX Enterprise Server 15 (64-bit) SP0 plus future errata.

default - SUSE LINUX Enterprise Server 15 (64-bit) SP1 plus future errata

---

HPE Dynamic Smart Array Controller Driver for VMware vSphere 6.5 (Bundle file).

Version: 5.5.0.68-1 **(Recommended)**

Filename: hpdsa-5.5.0.68.zip

**Fixes**

Fixes an issue where the driver will not upgrade due to the AHCI driver taking priority.

This issue is only encounter when upgrading to version 2018.09.31 (5.5.0.66-1). All other versions are not affected.

---

HPE Dynamic Smart Array Controller Driver for VMware vSphere 6.7 (Bundle file).

Version: 5.5.0.68-1 **(Recommended)**

Filename: hpdsa-5.5.0.68.zip

**Fixes**

Fixes an issue where the driver will not upgrade due to the AHCI driver taking priority.

This issue is only encounter when upgrading to version 2018.09.31 (5.5.0.66-1). All other versions are not affected.

---

HPE H2xx SAS/SATA Host Bus Adapter (64-bit) Driver for vSphere 6.5

Version: 15.10.07.00-1 (A) **(Optional)**

Filename: mpt2sas-15.10.07.00-esxi5.5-4778920.zip

**Fixes**

**Change implemented in version 15.10.07.00-1(A):**

- Updated to support Service Pack for ProLiant version 2017.07.0.
  **Note:** If driver version 15.10.07.00-1 was previously installed, then it is not necessary to upgrade to version 15.10.07.00-1(A).

**Issues resolved in version 15.10.07.00-1:**

- Fixes minor installation issue with the driver on VMware vSphere 6.5.

**Supported Devices and Features**

NOTE: HPE H221 Host Bus Adapter does not support connection to D2600, D2700, and D6000 Disk Enclosures with Gen9 servers.

---

HPE H2xx SAS/SATA Host Bus Adapter (64-bit) Driver for vSphere 6.5 (Driver Component).

Version: 2017.01.20 (A) **(Optional)**

Filename: cp032277.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

**Fixes**

**Change implemented in version 2017.01.20(A)**:

- Updated to support Service Pack for ProLiant version 2017.07.0.
  **Note:** If component version 2017.01.20 was previously installed, then it is not necessary to upgrade to version 2017.01.20(A).

**Issues resolved in version 2017.01.20**:

- Fixes minor installation issue with the driver on VMware vSphere 6.5.

**Supported Devices and Features**

NOTE: HPE H221 Host Bus Adapter does not support connection to D2600, D2700, and D6000 Disk Enclosures with Gen9 servers.

---

HPE H2xx SAS/SATA Host Bus Adapter Driver for 64-bit Microsoft Windows Server 2016 Editions

Version: 2.68.64.2 (C) **(Recommended)**

Filename: cp037731.exe

**Important Note!**

This driver component supports Gen9 servers only with H221 controllers and the controller does not support connection to D2600, D2700, and D6000 Disk Enclosures with Gen9 servers.

**Enhancements**

- Improved integration with Smart Update Manager

**Supported Devices and Features**

This driver component supports Gen9 servers only with H221 controllers and the controller does not support connection to D2600, D2700, and D6000 Disk Enclosures with Gen9 servers

---

HPE H2xx SAS/SATA Host Bus Adapter Driver for Microsoft Windows Server 2012 R2 64-bit Editions

Version: 2.68.64.1 (B) **(Optional)**

Filename: cp032453.exe

**Enhancements**

**Change implemented in version 2.68.64.1(B)**:

- Updated to support Service Pack for ProLiant version 2017.07.0.
  **Note:** If driver version 2.68.64.1 was previously installed, then it is not necessary to upgrade to version 2.68.64.1(B).

**Enhancements/New Features implemented in version 2.68.64.1**:

- Added support for Windows 8.1 and Windows Server 2012R2 to the build scripts.
- Add build support for new Windows Event Logging.
- Add support for automatic selection of the default driver build parameters file during the build

**Supported Devices and Features**

This driver component supports Gen9 servers only with H221 controllers and the controller does not support connection to D2600, D2700, and D6000 Disk Enclosures with Gen9 servers.

---

HPE H2xx SAS/SATA Host Bus Adapter Driver for Red Hat Enterprise Linux 7 (64-bit)

Version: 15.10.09.00-2 **(Recommended)**

Filename: kmod-mpt2sas-15.10.07.00-3.rhel7u5.x86_64.compsig; kmod-mpt2sas-15.10.07.00-3.rhel7u5.x86_64.rpm; kmod-mpt2sas-15.10.09.00-2.rhel7u6.x86_64.compsig; kmod-mpt2sas-15.10.09.00-2.rhel7u6.x86_64.rpm

**Enhancements**

Added support for Red Hat Enterprise Linux 7 Update 6

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 7 (64-bit) supported by this binary rpm are:

3.10.0-693.el7- Red Hat Enterprise Linux 7 Update 4 (64-bit) and future errata kernels for update 4.
3.10.0-862.el7- Red Hat Enterprise Linux 7 Update 5 (64-bit) and future errata kernels for update 5.

**Note:** This driver component supports Gen9 servers only with H221 controllers and the controller does not support connection to D2600, D2700, and D6000 Disk Enclosures with Gen9 servers.

---

HPE H2xx SAS/SATA Host Bus Adapter Driver for SUSE LINUX Enterprise Server 12 (64-bit)

Version: 15.10.09.00-1 **(Recommended)**

Filename: lsi-mpt2sas-kmp-default-15.10.09.00-1.sles12sp4.x86_64.compsig; lsi-mpt2sas-kmp-default-15.10.09.00-1.sles12sp4.x86_64.rpm

**Enhancements**

Added support for SUSE Linux Enterprise Server 12 SP4

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 12 (64-bit) supported by this binary rpm are:
-SUSE LINUX Enterprise Server 12 (64-bit) SP4 plus future errata.

**Note:** This driver component supports Gen9 servers only with H221 controllers and the controller does not support connection to D2600, D2700, and D6000 Disk Enclosures with Gen9 servers.

---

HPE MR416i-a, MR416i-p, MR216i-a, MR216i-p controller (64-bit) Driver for vSphere 6.7

Version: 7.716.03.00 **(Recommended)**

Filename: Broadcom-lsi-mr3_7.716.03.00-1OEM.670.0.0.8169922-offline_bundle-17653784.zip

**Enhancements**

- Initial Release

---

HPE MR416i-a, MR416i-p, MR216i-a, MR216i-p controller (64-bit) Driver for vSphere 6.7 (Driver Component)

Version: 2021.04.01 **(Recommended)**

Filename: cp044905.compsig; cp044905.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

**Fixes**

Initial Release

---

HPE MR416i-a, MR416i-p, MR216i-a, MR216i-p controller (64-bit) Driver for vSphere 7.0

Version: 7.716.03.00 **(Recommended)**

Filename: Broadcom-lsi-mr3_7.716.03.00-1OEM.700.1.0.15843807_17632848.zip

**Enhancements**

- Initial Release

---

HPE MR416i-a, MR416i-p, MR216i-a, MR216i-p controller (64-bit) Driver for vSphere 7.0 (Driver Component)

Version: 2021.04.01 **(Recommended)**

Filename: cp044980.compsig; cp044980.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

**Enhancements**

**Initial release for the MR416i-p, MR216i-a, MR416-a, MR216i-p drivers**

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HPE MR416i-a, MR416i-p, MR216i-a, MR216i-p controller Driver for 64-bit Red Hat Enterprise Linux 7

Version: 07.716.02.00 **(Recommended)**

Filename: kmod-megaraid_sas-07.716.02.00_el7.8-1.x86_64.compsig; kmod-megaraid_sas-07.716.02.00_el7.8-1.x86_64.rpm; kmod-megaraid_sas-07.716.02.00_el7.9-1.x86_64.compsig; kmod-megaraid_sas-07.716.02.00_el7.9-1.x86_64.rpm

**Fixes**

Initial Release

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 7 (64-bit) supported by this binary rpm are:
3.10.0-693.el7 - Red Hat Enterprise Linux 7 Update 4 (64-bit) and future errata kernels for update 4.
3.10.0-862.el7- Red Hat Enterprise Linux 7 Update 5 (64-bit) and future errata kernels for update 5.

---

HPE MR416i-a, MR416i-p, MR216i-a, MR216i-p controller Driver for 64-bit Red Hat Enterprise Linux 8

Version: 07.716.02.00 **(Recommended)**

Filename: kmod-megaraid_sas-07.716.02.00_el8.2-1.x86_64.compsig; kmod-megaraid_sas-07.716.02.00_el8.2-1.x86_64.rpm; kmod-megaraid_sas-07.716.02.00_el8.3-1.x86_64.compsig; kmod-megaraid_sas-07.716.02.00_el8.3-1.x86_64.rpm

**Fixes**

Initial Release

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 8 (64-bit) supported by this binary rpm are:
4.18.0-193.el8- Red Hat Enterprise Linux 8 Update 2 (64-bit) and future errata kernels for update 2.

---

HPE MR416i-a, MR416i-p, MR216i-a, MR216i-p controller Driver for 64-bit SUSE LINUX Enterprise Server 15

Version: 07.716.02.00 **(Recommended)**

Filename: lsi-megaraid_sas-kmp-default-07.716.02.00_sles15-1.x86_64.compsig; lsi-megaraid_sas-kmp-default-07.716.02.00_sles15-1.x86_64.rpm; lsi-megaraid_sas-kmp-default-07.716.02.00_sles15sp1-1.x86_64.compsig; lsi-megaraid_sas-kmp-default-07.716.02.00_sles15sp1-1.x86_64.rpm; lsi-megaraid_sas-kmp-default-07.716.02.00_sles15sp2-1.x86_64.compsig; lsi-megaraid_sas-kmp-default-07.716.02.00_sles15sp2-1.x86_64.rpm

**Fixes**

Initial Release

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 15 (64-bit) supported by this binary rpm are:
4.12.14-23 - SUSE LINUX Enterprise Server 15 (64-bit) SP0 plus future errata.

4.12.14-195 - SUSE LINUX Enterprise Server 15 (64-bit) SP1 plus future errata.

5.3.18-22 - SUSE LINUX Enterprise Server 15 (64-bit) SP2 plus future errata.

---

HPE MR416i-p MR416i-a MR216i-p MR216i-a 64-bit controller driver for Microsoft Windows 2019 edition.

Version: 7.716.3.0 **(Recommended)**

Filename: cp044907.compsig; cp044907.exe

**Fixes**

Initial Release

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HPE MR416i-p, MR416i-a, MR216i-p, MR216i-a controller Driver for 64-bit SUSE LINUX Enterprise Server 12

Version: 07.716.02.00 **(Recommended)**

Filename: lsi-megaraid_sas-kmp-default-07.716.02.00_sles12sp4-1.x86_64.compsig; lsi-megaraid_sas-kmp-default-07.716.02.00_sles12sp4-1.x86_64.rpm; lsi-megaraid_sas-kmp-default-07.716.02.00_sles12sp5-1.x86_64.compsig; lsi-megaraid_sas-kmp-default-07.716.02.00_sles12sp5-1.x86_64.rpm

**Fixes**

Initial Release

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 12 (64-bit) supported by this binary rpm are:
4.12.14-94.41 - SUSE LINUX Enterprise Server 12 (64-bit) SP4 plus future errata.
4.12.14-120 - SUSE LINUX Enterprise Server 12 (64-bit) SP5 plus future errata.

---

HPE MR416i-p,MR416i-a, MR216i-p, MR216i-a 64-bit controller driver for Microsoft Windows 2016 edition.

Version: 7.716.3.0 **(Recommended)**

Filename: cp044906.compsig; cp044906.exe

**Fixes**

Initial Release

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HPE ProLiant Gen10 and Gen10Plus Smart Array Controller (64-bit) Driver for Red Hat Enterprise Linux 7 (64-bit)

Version: 2.1.8-040 **(Recommended)**

Filename: kmod-smartpqi-2.1.8-040.rhel7u8.x86_64.compsig; kmod-smartpqi-2.1.8-040.rhel7u8.x86_64.rpm; kmod-smartpqi-2.1.8-040.rhel7u9.x86_64.compsig; kmod-smartpqi-2.1.8-040.rhel7u9.x86_64.rpm

**Important Note!**

-

**Fixes**

- Firmware ASSERT issue might be observed when scsi-mid-layer sends requests that exceeded the exposed host queue depth. This issue might happen in Linux kernel version 5.5 and higher.
- following error message might be observed 'Synchronize Cache(10) failed: Result: hostbyte=DID_NO_CONNECT driverbyte=DRIVER_OK', when unloading driver with outstanding I/O on drive write cache enabled for HBA SAS/SATA disks.
- The SmartPath read I/O request might have access error and no data is returned, when I/O request hit UREs.

**Enhancements**

Added support to the HPE SR932i-p and SR416-a Gen10 Plus Controllers.

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux7 (64-bit) supported by this binary rpm are:
3.10.0-957.el7- Red Hat Enterprise Linux 7 Update 6 (64-bit) and future errata kernels for update 6.

---

HPE ProLiant Gen10 and Gen10Plus Smart Array Controller (64-bit) Driver for Red Hat Enterprise Linux 8 (64-bit)

Version: 2.1.8-040 **(Recommended)**

Filename: kmod-smartpqi-2.1.8-040.rhel8u2.x86_64.compsig; kmod-smartpqi-2.1.8-040.rhel8u2.x86_64.rpm; kmod-smartpqi-2.1.8-040.rhel8u3.x86_64.compsig; kmod-smartpqi-2.1.8-040.rhel8u3.x86_64.rpm

**Important Note!**

-

**Fixes**

- Firmware ASSERT issue might be observed when scsi-mid-layer sends requests that exceeded the exposed host queue depth. This issue might happen in Linux kernel version 5.5 and higher.
- following error message might be observed 'Synchronize Cache(10) failed: Result: hostbyte=DID_NO_CONNECT driverbyte=DRIVER_OK', when unloading driver with outstanding I/O on drive write cache enabled for HBA SAS/SATA disks.
- The SmartPath read I/O request might have access error and no data is returned, when I/O request hit UREs.

**Enhancements**

Added support to the HPE SR932i-p and SR416-a Gen10 Plus Controllers.

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux8 (64-bit) supported by this binary rpm are:
-default- Red Hat Enterprise Linux 8 Update 0 (64-bit).

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HPE ProLiant Gen10 and Gen10Plus Smart Array Controller (64-bit) Driver for SUSE LINUX Enterprise Server 12 (64-bit)

Version: 2.1.8-040 **(Recommended)**

Filename: smartpqi-kmp-default-2.1.8-040.sles12sp4.x86_64.compsig; smartpqi-kmp-default-2.1.8-040.sles12sp4.x86_64.rpm; smartpqi-kmp-default-2.1.8-040.sles12sp5.x86_64.compsig; smartpqi-kmp-default-2.1.8-040.sles12sp5.x86_64.rpm

**Fixes**

- Firmware ASSERT issue might be observed when scsi-mid-layer sends requests that exceeded the exposed host queue depth. This issue might happen in Linux kernel version 5.5 and higher.
- following error message might be observed 'Synchronize Cache(10) failed: Result: hostbyte=DID_NO_CONNECT driverbyte=DRIVER_OK', when unloading driver with outstanding I/O on drive write cache enabled for HBA SAS/SATA disks.

- The SmartPath read I/O request might have access error and no data is returned, when I/O request hit UREs.

**Enhancements**

Added support to the HPE SR932i-p and SR416-a Gen10 Plus Controllers.

**Supported Devices and Features**

SUPPORTED KERNELS:
4.12.14-94.41.1 - SUSE LINUX Enterprise Server 12 (64-bit) SP4 plus future errata.

---

HPE ProLiant Gen10 and Gen10Plus Smart Array Controller (64-bit) Driver for SUSE LINUX Enterprise Server 15 (64-bit)

Version: 2.1.8-040 **(Recommended)**

Filename: smartpqi-kmp-default-2.1.8-040.sles15sp1.x86_64.compsig; smartpqi-kmp-default-2.1.8-040.sles15sp1.x86_64.rpm; smartpqi-kmp-default-2.1.8-040.sles15sp2.x86_64.compsig; smartpqi-kmp-default-2.1.8-040.sles15sp2.x86_64.rpm

**Fixes**

- Firmware ASSERT issue might be observed when scsi-mid-layer sends requests that exceeded the exposed host queue depth. This issue might happen in Linux kernel version 5.5 and higher.
- following error message might be observed 'Synchronize Cache(10) failed: Result: hostbyte=DID_NO_CONNECT driverbyte=DRIVER_OK', when unloading driver with outstanding I/O on drive write cache enabled for HBA SAS/SATA disks.
- The SmartPath read I/O request might have access error and no data is returned, when I/O request hit UREs.

**Enhancements**

Added support to the HPE SR932i-p and SR416-a Gen10 Plus Controllers.

**Supported Devices and Features**

The kernels of SUSE LINUX Enterprise Server 15 (64-bit) supported by this driver diskette are:
-default - SUSE LINUX Enterprise Server 15 (64-bit) and future errata kernels

---

HPE ProLiant Smart Array Controller (64-bit) Driver for Red Hat Enterprise Linux 7 (64-bit)

Version: 3.4.20-202 **(Recommended)**

Filename: kmod-hpsa-3.4.20-202.rhel7u8.x86_64.compsig; kmod-hpsa-3.4.20-202.rhel7u8.x86_64.rpm; kmod-hpsa-3.4.20-202.rhel7u9.x86_64.compsig; kmod-hpsa-3.4.20-202.rhel7u9.x86_64.rpm

**Fixes**

Increase queue depth for PTRAID devices to 128 to fix the low random IO performance to the MSA Performance tier (SSD) in Linux environments

**Enhancements**

Add support for Red Hat Enterprise Linux 7 Update 9

---

HPE ProLiant Smart Array Controller (64-bit) Driver for Red Hat Enterprise Linux 8 (64-bit)

Version: 3.4.20-203 **(Recommended)**

Filename: kmod-hpsa-3.4.20-203.rhel8u2.x86_64.compsig; kmod-hpsa-3.4.20-203.rhel8u2.x86_64.rpm; kmod-hpsa-3.4.20-203.rhel8u3.x86_64.compsig; kmod-hpsa-3.4.20-203.rhel8u3.x86_64.rpm

**Enhancements**

Added support for Red Hat Enterprise Linux 8.3

---

HPE ProLiant Smart Array Controller (64-bit) Driver for SUSE LINUX Enterprise Server 12 (64-bit)

Version: 3.4.20-188 (B) **(Recommended)**

Filename: hpsa-kmp-default-3.4.20-188.sles12sp4.x86_64.compsig; hpsa-kmp-default-3.4.20-188.sles12sp4.x86_64.rpm; hpsa-kmp-default-3.4.20-188.sles12sp5.x86_64.compsig; hpsa-kmp-default-3.4.20-188.sles12sp5.x86_64.rpm

**Fixes**

- Add support for SuSE Linux Enterprise Server 12 SP5
- Added PKCS signing process to fix the secure boot hang issue on Linux SLES12 SP5

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 12 (64-bit) supported by this binary rpm are:

4.4.21-69-default - SUSE LINUX Enterprise Server 12 (64-bit) SP2 plus future errata.
4.4.73-5.1 - SUSE LINUX Enterprise Server 12 (64-bit) SP3 plus future errata.

---

HPE ProLiant Smart Array Controller (64-bit) Driver for SUSE LINUX Enterprise Server 15 (64-bit)

Version: 3.4.20-197 **(Recommended)**

Filename: hpsa-kmp-default-3.4.20-197.sles15sp1.x86_64.compsig; hpsa-kmp-default-3.4.20-197.sles15sp1.x86_64.rpm; hpsa-kmp-default-3.4.20-197.sles15sp2.x86_64.compsig; hpsa-kmp-default-3.4.20-197.sles15sp2.x86_64.rpm

**Enhancements**

Add support for SUSE Linux Enterprise Services 15 SP2

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 15 (64-bit) supported by this binary rpm are:
4.12.14-23 - SUSE LINUX Enterprise Server 15 (64-bit) SP0 plus future errata.

default - SUSE LINUX Enterprise Server 15 (64-bit) SP1 plus future errata.

---

HPE ProLiant Smart Array Controller Driver for VMware vSphere 6.5 (Bundle file)

Version: 0072.0.149 **(Recommended)**

Filename: VMW-ESX-6.5.0-nhpsa-65.0072.0.149-offline_bundle-17204132.zip

**Fixes**

This release provides the following fixes:

- Fix failed TUR cmds hung in queue
- Fix internal cmd reservation broken
- Update for new version number scheme
- Fix verbose error messages on common innocuous errors

- Failed logical volumes not being properly handled via offline state.
- Scsi sense and status returns are incorrect for some error conditions.
- Incorrect 'unavailable' status seen during hot-plug recovery.

- Displayed target ID is incorrect in some driver log messages.

---

HPE ProLiant Smart Array Controller Driver for VMware vSphere 6.5 (Driver Component).

Version: 2021.01.01 **(Recommended)**

Filename: cp042874.compsig; cp042874.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

**Fixes**

This release provides the following fixes:

- Fix failed TUR cmds hung in queue
- Fix internal cmd reservation broken
- Update for new version number scheme
- Fix verbose error messages on common innocuous errors

- Failed logical volumes not being properly handled via offline state.
- Scsi sense and status returns are incorrect for some error conditions.
- Incorrect 'unavailable' status seen during hot-plug recovery.
- Displayed target ID is incorrect in some driver log messages.

---

HPE ProLiant Smart Array Controller Driver for VMware vSphere 6.7 (Bundle file)

Version: 0072.0.149 **(Recommended)**

Filename: HPE-nhpsa_67.0072.0.149-1OEM.670.0.0.8169922-offline_bundle-17300270.zip

**Fixes**

This release provides the following fixes:

- Fix failed TUR cmds hung in queue
- Fix internal cmd reservation broken
- Update for new version number scheme
- Fix verbose error messages on common innocuous errors

- Failed logical volumes not being properly handled via offline state.

- Scsi sense and status returns are incorrect for some error conditions.
- Incorrect 'unavailable' status seen during hot-plug recovery.
- Displayed target ID is incorrect in some driver log messages.

---

HPE ProLiant Smart Array Controller Driver for VMware vSphere 6.7 (Driver Component).

Version: 2021.01.01 **(Recommended)**

Filename: cp042875.compsig; cp042875.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

**Fixes**

This release provides the following fixes:

- Fix failed TUR cmds hung in queue
- Fix internal cmd reservation broken
- Update for new version number scheme
- Fix verbose error messages on common innocuous errors

- Failed logical volumes not being properly handled via offline state.
- Scsi sense and status returns are incorrect for some error conditions.
- Incorrect 'unavailable' status seen during hot-plug recovery.
- Displayed target ID is incorrect in some driver log messages.

---

HPE ProLiant Smart Array HPCISSS3 Controller Driver for 64-bit Microsoft Windows Server 2012/2012 R2/2016/2019 Editions

Version: 106.26.0.64 **(Recommended)**

Filename: cp037982.exe

**Fixes**

System could potentially display a BSOD while executing a hot replace due to a memory aligment problem

---

HPE Smart Array Gen10 and Gen10Plus Controller Driver for Windows Server 2012 R2, Windows Server 2016, and Windows Server 2019

Version: 106.278.0.1043 **(Recommended)**

Filename: cp044563.compsig; cp044563.exe

**Fixes**

- A BSOD issue when disk has outstanding commands to the logical drive and delete the logical drive.
- Watchdog timeouts BSOD might be observed when waking up the controller from sleep states.
- Watchdog times BSOD might be observed when running large I/O with SATA drives connected behind expander.
- A BSOD issue after running heavy I/O and getting LUN resets

**Enhancements**

- Added support to the HPE SR932i-p and SR416-a Gen10 Plus Controllers.

---

HPE Smart Array P824i-p MR 64-bit controller driver for Microsoft Windows 2012 R2 edition.

Version: 6.714.18.0 **(Recommended)**

Filename: cp034410.compsig; cp034410.exe

**Enhancements**

- Added support for the Apollo 4510 system

---

HPE Smart Array P824i-p MR 64-bit controller driver for Microsoft Windows 2016 edition.

Version: 6.714.18.0 **(Recommended)**

Filename: cp034411.compsig; cp034411.exe

**Enhancements**

- Added support for the Apollo 4510 system

---

HPE Smart Array P824i-p MR 64-bit controller driver for Microsoft Windows 2019 edition.

Version: 6.714.18.0 **(Recommended)**

Filename: cp038009.compsig; cp038009.exe

**Enhancements**

Initial Microsoft Windows Server 2019 release

---

HPE Smart Array P824i-p MR controller (64-bit) Driver for vSphere 6.5

Version: 7.706.09.00 **(Recommended)**

Filename: Release_Notes_lsi-mr3-7.706.09.00-1OEM_6.5.txt; VMW-ESX-6.5.0-lsi_mr3-7.706.09.00-12102431.zip

**Fixes**

Addressed a vSAN Fault Tolerance test failure seen in JBOD mode.

---

HPE Smart Array P824i-p MR controller (64-bit) Driver for vSphere 6.5 (Driver Component)

Version: 2019.12.13 **(Recommended)**

Filename: cp042803.compsig; cp042803.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

**Fixes**

Addressed a vSAN Fault Tolerance test failure seen in JBOD mode.

---

HPE Smart Array P824i-p MR controller (64-bit) Driver for vSphere 6.7

Version: 7.706.09.00 **(Recommended)**

Filename: Release_Notes_lsi-mr3-7.706.09.00-1OEM.txt; VMW-ESX-6.7.0-lsi_mr3-7.706.09.00-offline_bundle-12095481.zip

**Fixes**

Addressed a vSAN Fault Tolerance test failure seen in JBOD mode.

---

HPE Smart Array P824i-p MR controller (64-bit) Driver for vSphere 6.7 (Driver Component)

Version: 2019.12.13 **(Recommended)**

Filename: cp042807.compsig; cp042807.zip

**Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

**Fixes**

Addressed a vSAN Fault Tolerance test failure seen in JBOD mode.

---

HPE Smart Array P824i-p MR controller Driver for 64-bit Red Hat Enterprise Linux 7

Version: 07.706.05.00-14 **(Recommended)**

Filename: kmod-megaraid_sas-07.706.05.00-14.rhel7u5.x86_64.compsig; kmod-megaraid_sas-07.706.05.00-14.rhel7u5.x86_64.rpm; kmod-megaraid_sas-07.706.05.00-14.rhel7u6.x86_64.compsig; kmod-megaraid_sas-07.706.05.00-14.rhel7u6.x86_64.rpm

**Enhancements**

Added ProLiant features support (Megacell status, AHS, Spade, Sanitize & Expander)

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 7 (64-bit) supported by this binary rpm are:
3.10.0-693.el7 - Red Hat Enterprise Linux 7 Update 4 (64-bit) and future errata kernels for update 4.
3.10.0-862.el7- Red Hat Enterprise Linux 7 Update 5 (64-bit) and future errata kernels for update 5.

HPE Smart Array P824i-p MR controller Driver for 64-bit SUSE LINUX Enterprise Server 12

Version: 07.706.05.00-14 **(Recommended)**

Filename: lsi-megaraid_sas-kmp-default-07.706.05.00-14.sles12sp3.x86_64.compsig; lsi-megaraid_sas-kmp-default-07.706.05.00-14.sles12sp3.x86_64.rpm; lsi-megaraid_sas-kmp-default-07.706.05.00-14.sles12sp4.x86_64.compsig; lsi-megaraid_sas-kmp-default-07.706.05.00-14.sles12sp4.x86_64.rpm

**Enhancements**

Added ProLiant features support (Megacell status, AHS, Spade, Sanitize and Expander)

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 12 (64-bit) supported by this binary rpm are:
4.4.21-69-default - SUSE LINUX Enterprise Server 12 (64-bit) SP2 plus future errata.
4.4.73-5.1 - SUSE LINUX Enterprise Server 12 (64-bit) SP3 plus future errata.

---

HPE Smart Array P824i-p MR controller Driver for 64-bit SUSE LINUX Enterprise Server 15

Version: 07.706.05.00-14 **(Recommended)**

Filename: lsi-megaraid_sas-kmp-default-07.706.05.00-14.sles15sp0.x86_64.compsig; lsi-megaraid_sas-kmp-default-07.706.05.00-14.sles15sp0.x86_64.rpm

**Enhancements**

Added ProLiant features support (Megacell status, AHS, Spade, Sanitize & Expander)

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 15 (64-bit) supported by this binary rpm are:
4.12.14-23 - SUSE LINUX Enterprise Server 15 (64-bit) SP0 plus future errata.

---

**Driver - Storage Fibre Channel and Fibre Channel Over Ethernet** Top

HPE Blade Storage mezzanine Fibre Channel Over Ethernet Adapter Kit for the x64 Emulex Storport Driver for Microsoft Windows Server 2012R2/2016

Version: 12.0.1192.0 **(Recommended)**

Filename: cp042241.compsig; cp042241.exe

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

Removed the raw driver file folder. The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

brcmdrvr-fcoe-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Broadcom\Drivers\FCoE-version

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Broadcom\Drivers\FCoE-version\x64\win2012

Updated to driver version 12.0.1192.0

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Enhancements**

Removed the raw driver file folder. The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

brcmdrvr-fcoe-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Broadcom\Drivers\FCoE-version

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Broadcom\Drivers\FCoE-version\x64\win2012

Updated to driver version 12.0.1192.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

---

HPE Blade Storage Mezzanine Fibre Channel Over Ethernet Adapter Kit for the x64 Emulex Storport Driver for Microsoft Windows Server 2019

Version: 12.0.1192.0 **(Recommended)**

Filename: cp042240.compsig; cp042240.exe

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

Removed the raw driver file folder. The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

brcmdrvr-fcoe-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Broadcom\Drivers\FCoE-version

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Broadcom\Drivers\FCoE-version\x64\win2012

Updated to driver version 12.0.1192.0

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Enhancements**

Removed the raw driver file folder. The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

brcmdrvr-fcoe-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Broadcom\Drivers\FCoE-version

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Broadcom\Drivers\FCoE-version\x64\win2012

Updated to driver version 12.0.1192.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Storage Fibre Channel Adapter Kit for the x64 Emulex Storport Driver for Microsoft Windows Server 2012R2

Version: 12.8.334.6 **(Recommended)**

Filename: cp044863.compsig; cp044863.exe

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

elxdrvr-fc-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version\x64\win2019

Updated to driver version 12.8.334.6

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Enhancements**

The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

elxdrvr-fc-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version\x64\win2019

Updated to driver version 12.8.334.6

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

- HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

- HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter

**32Gb FC Adapter:**

- HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE Storage Fibre Channel Adapter Kit for the x64 Emulex Storport Driver for Microsoft Windows Server 2016

Version: 12.8.334.6 **(Recommended)**

Filename: cp044734.compsig; cp044734.exe

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Enhancements:-**

The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

elxdrvr-fc-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version\x64\win2019

Updated to driver version 12.8.334.6

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

## Enhancements

The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

elxdrvr-fc-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version\x64\win2019

Updated to driver version 12.8.334.6

## Supported Devices and Features

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

- HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

- HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

- HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter

**32Gb FC Adapter:**

- HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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HPE Storage Fibre Channel Adapter Kit for the x64 Emulex Storport Driver for Microsoft Windows Server 2019

Version: 12.8.334.6 **(Recommended)**

Filename: cp044733.compsig; cp044733.exe

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

elxdrvr-fc-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version\x64\win2019

Updated to driver version 12.8.334.6

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Enhancements**

The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

elxdrvr-fc-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version\x64\win2019

Updated to driver version 12.8.334.6

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

- HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

- HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter

**32Gb FC Adapter:**

- HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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HPE Storage Fibre Channel Adapter Kit for the x64 QLogic Storport Driver for Microsoft Windows Server 2012 R2

Version: 9.4.1.20 (b) **(Recommended)**

Filename: cp044785.compsig; cp044785.exe

**Important Note!**

Release Notes:
HPE QLogic Adapters Release Notes

**Fixed the following:-**

- Fixed a behavior where Hyper-V Virtual Machines (VMs) may not see all paths to Logical Unit Numbers (LUNs)
- Fixed a behavior where an Fibre Channel (FC) Tape device configured for Target Persistent Binding would not be recognized after server reboot
- Fixed a behavior where Multipath I/O (MPIO) paths may not recover if left offline for more than 90 seconds
- Fixed a behavior where Input/Output (I/O) incompletions would be reported after extended periods of uptime in an Fibre Channel (FC) fabric doing Remote Desktop Protocol (RDP) requests

**Added the following:-**

- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to version 9.4.1.20

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

## Fixes

**Fixed the following:-**

- Fixed a behavior where Hyper-V Virtual Machines (VMs) may not see all paths to Logical Unit Numbers (LUNs)
- Fixed a behavior where an Fibre Channel (FC) Tape device configured for Target Persistent Binding would not be recognized after server reboot
- Fixed a behavior where Multipath I/O (MPIO) paths may not recover if left offline for more than 90 seconds
- Fixed a behavior where Input/Output (I/O) incompletions would be reported after extended periods of uptime in an Fibre Channel (FC) fabric doing Remote Desktop Protocol (RDP) requests

## Enhancements

**Added the following:-**

- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to version 9.4.1.20

## Supported Devices and Features

This driver supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

- HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

- HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter

- HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

**32Gb Fibre Channel Host Bus Adapter:**

- HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

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HPE Storage Fibre Channel Adapter Kit for the x64 QLogic Storport Driver for Microsoft Windows Server 2016

Version: 9.4.2.20 **(Recommended)**

Filename: cp044786.compsig; cp044786.exe

**Important Note!**

Release Notes:
HPE QLogic Adapters Release Notes

**Fixed the following:-**

- Fixed a behavior where Hyper-V Virtual Machines (VMs) may not see all paths to Logical Unit Numbers (LUNs)
- Fixed a behavior where an Fibre Channel (FC) Tape device configured for Target Persistent Binding would not be recognized after server reboot
- Fixed a behavior where Multipath I/O (MPIO) paths may not recover if left offline for more than 90 seconds
- Fixed a behavior where Input/Output (I/O) incompletions would be reported after extended periods of uptime in an Fibre Channel (FC) fabric doing Remote Desktop Protocol (RDP) requests

**Added the following:-**

- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to version 9.4.2.20

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Fixes**

**Fixed the following:-**

- Fixed a behavior where Hyper-V Virtual Machines (VMs) may not see all paths to Logical Unit Numbers (LUNs)
- Fixed a behavior where an Fibre Channel (FC) Tape device configured for Target Persistent Binding would not be recognized after server reboot
- Fixed a behavior where Multipath I/O (MPIO) paths may not recover if left offline for more than 90 seconds
- Fixed a behavior where Input/Output (I/O) incompletions would be reported after extended periods of uptime in an Fibre Channel (FC) fabric doing Remote Desktop Protocol (RDP) requests

## Enhancements

**Added the following:-**

- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to version 9.4.2.20

## Supported Devices and Features

This driver supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

- HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

- HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

**32Gb Fibre Channel Host Bus Adapter:**

- HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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HPE Storage Fibre Channel Adapter Kit for the x64 QLogic Storport Driver for Microsoft Windows Server 2019

Version: 9.4.2.20 **(Recommended)**

Filename: cp044787.compsig; cp044787.exe

**Important Note!**

Release Notes:
HPE QLogic Adapters Release Notes

**Fixed the following:-**

- Fixed a behavior where Hyper-V Virtual Machines (VMs) may not see all paths to Logical Unit Numbers (LUNs)
- Fixed a behavior where an Fibre Channel (FC) Tape device configured for Target Persistent Binding would not be recognized after server reboot
- Fixed a behavior where Multipath I/O (MPIO) paths may not recover if left offline for more than 90 seconds
- Fixed a behavior where Input/Output (I/O) incompletions would be reported after extended periods of uptime in an Fibre Channel (FC) fabric doing Remote Desktop Protocol (RDP) requests

**Added the following:-**

- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to version 9.4.2.20

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Fixes**

**Fixed the following:-**

- Fixed a behavior where Hyper-V Virtual Machines (VMs) may not see all paths to Logical Unit Numbers (LUNs)
- Fixed a behavior where an Fibre Channel (FC) Tape device configured for Target Persistent Binding would not be recognized after server reboot
- Fixed a behavior where Multipath I/O (MPIO) paths may not recover if left offline for more than 90 seconds
- Fixed a behavior where Input/Output (I/O) incompletions would be reported after extended periods of uptime in an Fibre Channel (FC) fabric doing Remote Desktop Protocol (RDP) requests

**Enhancements**

**Added the following:-**

- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to version 9.4.2.20

**Supported Devices and Features**

This driver supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

- HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

- HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

**32Gb Fibre Channel Host Bus Adapter:**

- HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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HPE Storage Fibre Channel Over Ethernet Adapter Kit for the x64 Emulex Storport Driver for Microsoft Windows Server 2012R2/2016

Version: 12.0.1192.0 (e) **(Recommended)**

Filename: cp042531.compsig; cp042531.exe

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

Removed the raw driver file folder. The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

brcmdrvr-fcoe-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Broadcom\Drivers\FCoE-version

Updated to driver version 12.0.1192.0

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Broadcom\Drivers\FCoE-version\x64\win2012

Updated to driver version 12.0.1192.0

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Enhancements**

Removed the raw driver file folder. The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

brcmdrvr-fcoe-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Broadcom\Drivers\FCoE-version

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Broadcom\Drivers\FCoE-version\x64\win2012

Updated to driver version 12.0.1192.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Dual Port Converged Network Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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HPE Storage Fibre Channel Over Ethernet Adapter Kit for the x64 Emulex Storport Driver for Microsoft Windows Server 2019

Version: 12.0.1192.0 (f) **(Recommended)**

Filename: cp042530.compsig; cp042530.exe

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals

2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

Removed the raw driver file folder. The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

brcmdrvr-fcoe-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Broadcom\Drivers\FCoE-version

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Broadcom\Drivers\FCoE-version\x64\win2012

Updated to driver version 12.0.1192.0

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Enhancements**

Removed the raw driver file folder. The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

brcmdrvr-fcoe-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Broadcom\Drivers\FCoE-version

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Broadcom\Drivers\FCoE-version\x64\win2012

Updated to driver version 12.0.1192.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Dual Port Converged Network Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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HPE Storage Mezzanine Fibre Channel Adapter Kit for the x64 Emulex Storport Driver for Microsoft Windows Server 2012R2/2016

Version: 12.8.334.6 **(Recommended)**

Filename: cp044768.compsig; cp044768.exe

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

elxdrvr-fc-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version\x64\win2019

Updated to driver version 12.8.334.6

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Enhancements**

The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

elxdrvr-fc-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version\x64\win2019

Updated to driver version 12.8.334.6

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**16Gb FC Adapter:**

- HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class

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HPE Storage Mezzanine Fibre Channel Adapter Kit for the x64 Emulex Storport Driver for Microsoft Windows Server 2019

Version: 12.8.334.6 **(Recommended)**

Filename: cp044767.compsig; cp044767.exe

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

elxdrvr-fc-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version\x64\win2019

Updated to driver version 12.8.334.6

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Enhancements**

The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

elxdrvr-fc-version.exe /q2 extract=2

The extracted files are located:

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version

Each kit folder has subsequent architecture folders with subsequent OS folders. For example,

C:\Users\Administrator\Documents\Emulex\Drivers\FC-version\x64\win2019

Updated to driver version 12.8.334.6

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**16Gb FC  Adapter:**

- HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class

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HPE Storage Mezzanine Fibre Channel Adapter Kit for the x64 QLogic Storport Driver for Microsoft Windows Server 2012 R2

Version: 9.4.1.20 (b) **(Recommended)**

Filename: cp044798.compsig; cp044798.exe

**Important Note!**

Release Notes:

HPE QLogic Adapters Release Notes

**Fixed the following:-**

- Fixed a behavior where Input/Output (I/O) incompletions would be reported after extended periods of uptime in an Fibre Channel (FC) fabric doing Remote Desktop Protocol (RDP) requests
- Fixed a behavior where Multipath I/O (MPIO) paths may not recover if left offline for more than 90 seconds
- Fixed a behavior where an Fibre Channel (FC) Tape device configured for Target Persistent Binding would not be recognized after server reboot
- Fixed a behavior where Hyper-V Virtual Machines (VMs) may not see all paths to Logical Unit Numbers (LUNs)

**Added the following:-**

- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to version 9.4.1.20

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Fixes**

**Fixed the following:-**

- Fixed a behavior where Input/Output (I/O) incompletions would be reported after extended periods of uptime in an Fibre Channel (FC) fabric doing Remote Desktop Protocol (RDP) requests
- Fixed a behavior where Multipath I/O (MPIO) paths may not recover if left offline for more than 90 seconds
- Fixed a behavior where an Fibre Channel (FC) Tape device configured for Target Persistent Binding would not be recognized after server reboot
- Fixed a behavior where Hyper-V Virtual Machines (VMs) may not see all paths to Logical Unit Numbers (LUNs)

**Enhancements**

**Added the following:-**

- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to version 9.4.1.20

**Supported Devices and Features**

This version of the enablement kit supports the following devices:

**16Gb Fibre Channel Host Bus Adapter:**

- HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

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HPE Storage Mezzanine Fibre Channel Adapter Kit for the x64 QLogic Storport Driver for Microsoft Windows Server 2016

Version: 9.4.2.20 **(Recommended)**

Filename: cp044799.compsig; cp044799.exe

**Important Note!**

Release Notes:

HPE QLogic Adapters Release Notes

**Fixed the following:-**

- Fixed a behavior where Input/Output (I/O) incompletions would be reported after extended periods of uptime in an Fibre Channel (FC) fabric doing Remote Desktop Protocol (RDP) requests
- Fixed a behavior where Multipath I/O (MPIO) paths may not recover if left offline for more than 90 seconds
- Fixed a behavior where an Fibre Channel (FC) Tape device configured for Target Persistent Binding would not be recognized after server reboot
- Fixed a behavior where Hyper-V Virtual Machines (VMs) may not see all paths to Logical Unit Numbers (LUNs)

**Added the following:-**

- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to version 9.4.2.20

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

## Fixes

**Fixed the following:-**

- Fixed a behavior where Input/Output (I/O) incompletions would be reported after extended periods of uptime in an Fibre Channel (FC) fabric doing Remote Desktop Protocol (RDP) requests
- Fixed a behavior where Multipath I/O (MPIO) paths may not recover if left offline for more than 90 seconds
- Fixed a behavior where an Fibre Channel (FC) Tape device configured for Target Persistent Binding would not be recognized after server reboot
- Fixed a behavior where Hyper-V Virtual Machines (VMs) may not see all paths to Logical Unit Numbers (LUNs)

## Enhancements

**Added the following:-**

- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to version 9.4.2.20

## Supported Devices and Features

This version of the enablement kit supports the following devices:

**16Gb Fibre Channel Host Bus Adapter:**

- HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

HPE Storage Mezzanine Fibre Channel Adapter Kit for the x64 QLogic Storport Driver for Microsoft Windows Server 2019

Version: 9.4.2.20 **(Recommended)**

Filename: cp044800.compsig; cp044800.exe

**Important Note!**

Release Notes:

HPE QLogic Adapters Release Notes

**Fixed the following:-**

- Fixed a behavior where Input/Output (I/O) incompletions would be reported after extended periods of uptime in an Fibre Channel (FC) fabric doing Remote Desktop Protocol (RDP) requests
- Fixed a behavior where Multipath I/O (MPIO) paths may not recover if left offline for more than 90 seconds
- Fixed a behavior where an Fibre Channel (FC) Tape device configured for Target Persistent Binding would not be recognized after server reboot
- Fixed a behavior where Hyper-V Virtual Machines (VMs) may not see all paths to Logical Unit Numbers (LUNs)

**Added the following:-**

- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to version 9.4.2.20

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Fixes**

**Fixed the following:-**

- Fixed a behavior where Input/Output (I/O) incompletions would be reported after extended periods of uptime in an Fibre Channel (FC) fabric doing Remote Desktop Protocol (RDP) requests
- Fixed a behavior where Multipath I/O (MPIO) paths may not recover if left offline for more than 90 seconds

- Fixed a behavior where an Fibre Channel (FC) Tape device configured for Target Persistent Binding would not be recognized after server reboot
- Fixed a behavior where Hyper-V Virtual Machines (VMs) may not see all paths to Logical Unit Numbers (LUNs)

**Enhancements**

**Added the following:-**

- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to version 9.4.2.20

**Supported Devices and Features**

This version of the enablement kit supports the following devices:

**16Gb Fibre Channel Host Bus Adapter:**

- HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

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Red Hat Enterprise Linux 7 Update 8 Server Fibre Channel Driver Kit for HPE Emulex Host Bus Adapters and Mezzanine Host Bus Adapters

Version: 12.8.352.11 **(Recommended)**

Filename: kmod-elx-lpfc-12.8.352.11-1.rhel7u8.x86_64.compsig; kmod-elx-lpfc-12.8.352.11-1.rhel7u8.x86_64.rpm

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to driver version 12.8.352.11

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE

Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Enhancements**

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to driver version 12.8.352.11

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

- HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

- HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter
- HPE Fibre Channel 16Gb LPe1605 Mezz

**32Gb FC Adapter:**

- HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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Red Hat Enterprise Linux 7 Update 8 Server Fibre Channel Driver Kit for HPE QLogic Host Bus Adapters and Mezzanine Host Bus Adapters

Version: 10.02.01.00.a14-k1 **(Recommended)**

Filename: kmod-qlgc-qla2xxx-10.02.01.00.a14_k1-1.rhel7u8.x86_64.compsig; kmod-qlgc-qla2xxx-10.02.01.00.a14_k1-1.rhel7u8.x86_64.rpm

**Important Note!**

Release Notes:

HPE QLogic Adapters Release Notes

NOTE:

1. The rpm base-name for the QLogic driver has been changed to "qlgc". Upgrades from the earlier "hpqlgc" driver are supported.

2. On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixed the following:-**

- Improve detection and recovery from conditions described in customer advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability
- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to driver version 10.02.01.00.a14-k1

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixes**

**Fixed the following:-**

- Improve detection and recovery from conditions described in customer advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

**Enhancements**

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability
- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to driver version 10.02.01.00.a14-k1

**Supported Devices and Features**

This driver supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

- HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

- HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter
- HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

**32Gb Fibre Channel Host Bus Adapter:**

- HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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Red Hat Enterprise Linux 7 Update 8 Server Fibre Channel over Ethernet (FCoE) Driver Kit for HPE Storage Emulex(BRCM) Converged Network and mezzanine Converged Network Adapters(CNAs)

Version: 12.0.1342.0 **(Recommended)**

Filename: kmod-brcmfcoe-12.0.1342.0-1.rhel7u8.x86_64.compsig; kmod-brcmfcoe-12.0.1342.0-1.rhel7u8.x86_64.rpm

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixed the following:-**

- Fixed a behavior where cluster nodes could be evicted during Fibre Channel over Ethernet (FCoE) multipath failover as described in https://access.redhat.com/solutions/3136041
- Fixed a behavior where Ethernet connections may not recover after a Virtual Connect (VC) interconnect module reboot

Updated to Driver verson 12.0.1342.0

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Fixes

**Fixed the following:-**

- Fixed a behavior where cluster nodes could be evicted during Fibre Channel over Ethernet (FCoE) multipath failover as described in https://access.redhat.com/solutions/3136041
- Fixed a behavior where Ethernet connections may not recover after a Virtual Connect (VC) interconnect module reboot

## Enhancements

Updated to Driver version 12.0.1342.0

## Supported Devices and Features

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Dual Port Converged Network Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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Red Hat Enterprise Linux 7 Update 9 Server Fibre Channel Driver Kit for HPE Emulex Host Bus Adapters and Mezzanine Host Bus Adapters

Version: 12.8.352.11 **(Recommended)**

Filename: kmod-elx-lpfc-12.8.352.11-1.rhel7u9.x86_64.compsig; kmod-elx-lpfc-12.8.352.11-1.rhel7u9.x86_64.rpm

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Added the following:-**

- Added support for RHEL 7.9
- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to driver version 12.8.352.11

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
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This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Enhancements

**Added the following:-**

- Added support for RHEL 7.9
- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to driver version 12.8.352.11

## Supported Devices and Features

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

- HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

- HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter
- HPE Fibre Channel 16Gb LPe1605 Mezz

**32Gb FC Adapter:**

- HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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Red Hat Enterprise Linux 7 Update 9 Server Fibre Channel Driver Kit for HPE QLogic Host Bus Adapters and Mezzanine Host Bus Adapters

Version: 10.02.01.00.a14-k1 **(Recommended)**

Filename: kmod-qlgc-qla2xxx-10.02.01.00.a14_k1-1.rhel7u9.x86_64.compsig; kmod-qlgc-qla2xxx-10.02.01.00.a14_k1-1.rhel7u9.x86_64.rpm

**Important Note!**

Release Notes:

HPE QLogic Adapters Release Notes

NOTE:

1. The rpm base-name for the QLogic driver has been changed to "qlgc". Upgrades from the earlier "hpqlgc" driver are supported.

2. On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE

Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixed the following:-**

- Improve detection and recovery from conditions described in customer advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability
- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to driver version 10.02.01.00.a14-k1

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Fixes

**Fixed the following:-**

- Improve detection and recovery from conditions described in customer advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

## Enhancements

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability
- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to driver version 10.02.01.00.a14-k1

**Supported Devices and Features**

This driver supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

- HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

- HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter
- HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

**32Gb Fibre Channel Host Bus Adapter:**

- HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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Red Hat Enterprise Linux 7 Update 9 Server Fibre Channel over Ethernet (FCoE) Driver Kit for HPE Storage Emulex(BRCM) Converged Network and mezzanine Converged Network Adapters(CNAs)

Version: 12.0.1342.0 **(Recommended)**

Filename: kmod-brcmfcoe-12.0.1342.0-1.rhel7u9.x86_64.compsig; kmod-brcmfcoe-12.0.1342.0-1.rhel7u9.x86_64.rpm

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals

2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixed the following:-**

- Fixed a behavior where cluster nodes could be evicted during Fibre Channel over Ethernet (FCoE) multipath failover as described in https://access.redhat.com/solutions/3136041
- Fixed a behavior where Ethernet connections may not recover after a Virtual Connect (VC) interconnect module reboot

**Enhancements:-**

- Added support for RHEL 7.9

Updated to Driver version 12.0.1342.0

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals

2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

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Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Fixes

**Fixed the following:-**

- Fixed a behavior where cluster nodes could be evicted during Fibre Channel over Ethernet (FCoE) multipath failover as described in https://access.redhat.com/solutions/3136041
- Fixed a behavior where Ethernet connections may not recover after a Virtual Connect (VC) interconnect module reboot

## Enhancements

**Added the following:-**

- Added support for RHEL 7.9

Updated to Driver version 12.0.1342.0

## Supported Devices and Features

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Dual Port Converged Network Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

Red Hat Enterprise Linux 8 Update 2 Server Fibre Channel Driver Kit for HPE Emulex Host Bus Adapters and Mezzanine Host Bus Adapters

Version: 12.8.352.11 **(Recommended)**

Filename: kmod-elx-lpfc-12.8.352.11-1.rhel8u2.x86_64.compsig; kmod-elx-lpfc-12.8.352.11-1.rhel8u2.x86_64.rpm

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to driver version 12.8.352.11

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Enhancements

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to driver version 12.8.352.11

## Supported Devices and Features

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

- HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

- HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter
- HPE Fibre Channel 16Gb LPe1605 Mezz

**32Gb FC Adapter:**

- HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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Red Hat Enterprise Linux 8 Update 2 Server Fibre Channel Driver Kit for HPE QLogic Host Bus Adapters and Mezzanine Host Bus Adapters

Version: 10.02.01.00.a14-k1 **(Recommended)**

Filename: kmod-qlgc-qla2xxx-10.02.01.00.a14_k1-1.rhel8u2.x86_64.compsig; kmod-qlgc-qla2xxx-10.02.01.00.a14_k1-1.rhel8u2.x86_64.rpm

**Important Note!**

Release Notes:

HPE QLogic Adapters Release Notes

NOTE:

1. The rpm base-name for the QLogic driver has been changed to "qlgc". Upgrades from the earlier "hpqlgc" driver are supported.

2. On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixed the following:-**

- Improve detection and recovery from conditions described in customer advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability
- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to driver version 10.02.01.00.a14-k1

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Fixes

**Fixed the following:-**

- Improve detection and recovery from conditions described in customer advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

## Enhancements

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability
- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to driver version 10.02.01.00.a14-k1

## Supported Devices and Features

This driver supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

- HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

- HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter
- HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

**32Gb Fibre Channel Host Bus Adapter:**

- HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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Red Hat Enterprise Linux 8 Update 2 Server Fibre Channel over Ethernet (FCoE) Driver Kit for HPE Storage Emulex(BRCM) Converged Network and mezzanine Converged Network Adapters(CNAs)

Version: 12.0.1342.0 **(Recommended)**

Filename: kmod-brcmfcoe-12.0.1342.0-1.rhel8u2.x86_64.compsig; kmod-brcmfcoe-12.0.1342.0-1.rhel8u2.x86_64.rpm

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixed the following:-**

- Fixed a behavior where cluster nodes could be evicted during Fibre Channel over Ethernet (FCoE) multipath failover as described in https://access.redhat.com/solutions/3136041
- Fixed a behavior where Ethernet connections may not recover after a Virtual Connect (VC) interconnect module reboot

Updated to Driver version 12.0.1342.0

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
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This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixes**

**Fixed the following:-**

- Fixed a behavior where cluster nodes could be evicted during Fibre Channel over Ethernet (FCoE) multipath failover as described in https://access.redhat.com/solutions/3136041
- Fixed a behavior where Ethernet connections may not recover after a Virtual Connect (VC) interconnect module reboot

**Enhancements**

Updated to Driver version 12.0.1342.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Dual Port Converged Network Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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Red Hat Enterprise Linux 8 Update 3 Server Fibre Channel Driver Kit for HPE Emulex Host Bus Adapters and Mezzanine Host Bus Adapters

Version: 12.8.352.11 **(Recommended)**

Filename: kmod-elx-lpfc-12.8.352.11-1.rhel8u3.x86_64.compsig; kmod-elx-lpfc-12.8.352.11-1.rhel8u3.x86_64.rpm

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Added the following:-**

- Added support for RHEL 8.3
- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to driver version 12.8.352.11

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals

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This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Enhancements

**Added the following:-**

- Added support for RHEL 8.3
- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to driver version 12.8.352.11

## Supported Devices and Features

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

- HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

- HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter
- HPE Fibre Channel 16Gb LPe1605 Mezz

**32Gb FC Adapter:**

- HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

- HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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Red Hat Enterprise Linux 8 Update 3 Server Fibre Channel Driver Kit for HPE QLogic Host Bus Adapters and Mezzanine Host Bus Adapters

Version: 10.02.01.00.a14-k1 **(Recommended)**

Filename: kmod-qlgc-qla2xxx-10.02.01.00.a14_k1-1.rhel8u3.x86_64.compsig; kmod-qlgc-qla2xxx-10.02.01.00.a14_k1-1.rhel8u3.x86_64.rpm

**Important Note!**

Release Notes:

HPE QLogic Adapters Release Notes

NOTE:

1. The rpm base-name for the QLogic driver has been changed to "qlgc". Upgrades from the earlier "hpqlgc" driver are supported.

2. On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixed the following:-**

- Improve detection and recovery from conditions described in customer advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability
- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to driver version 10.02.01.00.a14-k1

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Fixes

**Fixed the following:-**

- Improve detection and recovery from conditions described in customer advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

## Enhancements

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability
- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to driver version 10.02.01.00.a14-k1

## Supported Devices and Features

This driver supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

- HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

- HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter
- HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

**32Gb Fibre Channel Host Bus Adapter:**

- HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter

- HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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Red Hat Enterprise Linux 8 Update 3 Server Fibre Channel over Ethernet (FCoE) Driver Kit for HPE Storage Emulex(BRCM) Converged Network and mezzanine Converged Network Adapters(CNAs)

Version: 12.0.1342.0 **(Recommended)**

Filename: kmod-brcmfcoe-12.0.1342.0-1.rhel8u3.x86_64.compsig; kmod-brcmfcoe-12.0.1342.0-1.rhel8u3.x86_64.rpm

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixed the following:-**

- Fixed a behavior where cluster nodes could be evicted during Fibre Channel over Ethernet (FCoE) multipath failover as described in https://access.redhat.com/solutions/3136041
- Fixed a behavior where Ethernet connections may not recover after a Virtual Connect (VC) interconnect module reboot

**Enhancements:-**

- Added support for RHEL 8.3

Updated the Driver version 12.0.1342.0

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Fixes

**Fixed the following:-**

- Fixed a behavior where cluster nodes could be evicted during Fibre Channel over Ethernet (FCoE) multipath failover as described in https://access.redhat.com/solutions/3136041

- Fixed a behavior where Ethernet connections may not recover after a Virtual Connect (VC) interconnect module reboot

**Enhancements**

**Added the following:-**

- Added support for RHEL 8.3

Updated to Driver version 12.0.1342.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Dual Port Converged Network Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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SUSE Linux Enterprise Server 12 Service Pack 4 Fibre Channel Driver Kit for HPE Emulex Host Bus Adapters and Mezzanine Host Bus Adapters

Version: 12.8.352.11 **(Recommended)**

Filename: elx-lpfc-kmp-default-12.8.352.11_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; elx-lpfc-kmp-default-12.8.352.11_k4.12.14_94.41-1.sles12sp4.x86_64.rpm

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals

2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

Rewrite of same Driver version has to be performed using –reinstall option

Example: rpm –Uvh elx-lpfc-kmp-default-<version>.<OSupdate>.x86_64.rpm –reinstall

For more information please refer to the Knowledge Base at: https://www.suse.com/support/kb/doc/?id=000019640

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to driver version 12.8.352.11

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Enhancements

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to driver version 12.8.352.11

## Supported Devices and Features

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

- HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

- HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter
- HPE Fibre Channel 16Gb LPe1605 Mezz

**32Gb FC Adapter:**

- HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

SUSE Linux Enterprise Server 12 Service Pack 4 Fibre Channel Driver Kit for HPE QLogic Host Bus Adapters and Mezzanine Host Bus Adapters

Version: 10.02.01.00.a14-k1 **(Recommended)**

Filename: qlgc-qla2xxx-kmp-default-10.02.01.00.a14_k1_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; qlgc-qla2xxx-kmp-default-10.02.01.00.a14_k1_k4.12.14_94.41-1.sles12sp4.x86_64.rpm

**Important Note!**

Release Notes:

HPE QLogic Adapters Release Notes

NOTE:

1. The rpm base-name for the QLogic driver has been changed to "qlgc". Upgrades from the earlier "hpqlgc" driver are supported.

2. Rewrite of same Driver version has to be performed using –force or --replacepkgs with --nodeps option

Example: rpm –Uvh kmod-qla2xxx-<version>.<OSupdate>.x86_64.rpm –force --nodeps

rpm –Uvh kmod-qla2xxx-<version>.<OSupdate>.x86_64.rpm –replacepkgs --nodeps

For more information please refer to the Knowledge Base at: https://www.suse.com/support/kb/doc/?id=000019640

3. On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixed the following:-**

- Improve detection and recovery from conditions described in customer advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability
- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to driver version 10.02.01.00.a14-k1

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Fixes

**Fixed the following:-**

- Improve detection and recovery from conditions described in customer advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

## Enhancements

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability
- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to driver version 10.02.01.00.a14-k1

## Supported Devices and Features

This driver supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

- HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

- HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter
- HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

**32Gb Fibre Channel Host Bus Adapter:**

- HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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SUSE Linux Enterprise Server 12 Service Pack 4 Fibre Channel over Ethernet (FCoE) Driver Kit for HPE Storage Emulex(BRCM) Converged Network and mezzanine Converged Network Adapters(CNAs)

Version: 12.0.1342.0 **(Recommended)**

Filename: brcmfcoe-kmp-default-12.0.1342.0_k4.12.14_94.41-1.sles12sp4.x86_64.compsig; brcmfcoe-kmp-default-12.0.1342.0_k4.12.14_94.41-1.sles12sp4.x86_64.rpm

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixed the following:-**

- Fixed a behavior where cluster nodes could be evicted during Fibre Channel over Ethernet (FCoE) multipath failover as described in https://access.redhat.com/solutions/3136041
- Fixed a behavior where Ethernet connections may not recover after a Virtual Connect (VC) interconnect module reboot

Updated to Driver version 12.0.1342.0

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Fixes

**Fixed the following:-**

- Fixed a behavior where cluster nodes could be evicted during Fibre Channel over Ethernet (FCoE) multipath failover as described in https://access.redhat.com/solutions/3136041

- Fixed a behavior where Ethernet connections may not recover after a Virtual Connect (VC) interconnect module reboot

**Enhancements**

Updated to Driver version 12.0.1342.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Dual Port Converged Network Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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SUSE Linux Enterprise Server 12 Service Pack 5 Fibre Channel Driver Kit for HPE Emulex Host Bus Adapters and Mezzanine Host Bus Adapters

Version: 12.8.352.11 **(Recommended)**

Filename: elx-lpfc-kmp-default-12.8.352.11_k4.12.14_120-1.sles12sp5.x86_64.compsig; elx-lpfc-kmp-default-12.8.352.11_k4.12.14_120-1.sles12sp5.x86_64.rpm

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

Rewrite of same Driver version has to be performed using –reinstall option

Example: rpm –Uvh elx-lpfc-kmp-default-<version>.<OSupdate>.x86_64.rpm –reinstall

For more information please refer to the Knowledge Base at: https://www.suse.com/support/kb/doc/?id=000019640

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Added the following:-**

- Added support for SLES 12 SP5
- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to driver version 12.8.352.11

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Enhancements

**Added the following:-**

- Added support for SLES 12 SP5
- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to driver version 12.8.352.11

## Supported Devices and Features

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

- HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

- HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter
- HPE Fibre Channel 16Gb LPe1605 Mezz

**32Gb FC Adapter:**

- HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

SUSE Linux Enterprise Server 12 Service Pack 5 Fibre Channel Driver Kit for HPE QLogic Host Bus Adapters and Mezzanine Host Bus Adapters

Version: 10.02.01.00.a14-k1 **(Recommended)**

Filename: qlgc-qla2xxx-kmp-default-10.02.01.00.a14_k1_k4.12.14_120-1.sles12sp5.x86_64.compsig; qlgc-qla2xxx-kmp-default-10.02.01.00.a14_k1_k4.12.14_120-1.sles12sp5.x86_64.rpm

**Important Note!**

Release Notes:

HPE QLogic Adapters Release Notes

NOTE:

1. The rpm base-name for the QLogic driver has been changed to "qlgc". Upgrades from the earlier "hpqlgc" driver are supported.

2. Rewrite of same Driver version has to be performed using –force or --replacepkgs with --nodeps option

Example: rpm –Uvh kmod-qla2xxx-<version>.<OSupdate>.x86_64.rpm –force --nodeps

rpm –Uvh kmod-qla2xxx-<version>.<OSupdate>.x86_64.rpm –replacepkgs --nodeps

For more information please refer to the Knowledge Base at: https://www.suse.com/support/kb/doc/?id=000019640

3. On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixed the following:-**

- Improve detection and recovery from conditions described in customer advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability
- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to driver version 10.02.01.00.a14-k1

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Fixes

**Fixed the following:-**

- Improve detection and recovery from conditions described in customer advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

## Enhancements

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability
- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to driver version 10.02.01.00.a14-k1

## Supported Devices and Features

This driver supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

- HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

- HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter
- HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

**32Gb Fibre Channel Host Bus Adapter:**

- HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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SUSE Linux Enterprise Server 12 Service Pack 5 Fibre Channel over Ethernet (FCoE) Driver Kit for HPE Storage Emulex(BRCM) Converged Network and mezzanine Converged Network Adapters(CNAs)

Version: 12.0.1342.0 **(Recommended)**

Filename: brcmfcoe-kmp-default-12.0.1342.0_k4.12.14_120-1.sles12sp5.x86_64.compsig; brcmfcoe-kmp-default-12.0.1342.0_k4.12.14_120-1.sles12sp5.x86_64.rpm

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixed the following:-**

- Fixed a behavior where cluster nodes could be evicted during Fibre Channel over Ethernet (FCoE) multipath failover as described in https://access.redhat.com/solutions/3136041
- Fixed a behavior where Ethernet connections may not recover after a Virtual Connect (VC) interconnect module reboot

**Enhancements:-**

- Added support for SLES 12 SP5

Updated to Driver version 12.0.1342.0

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixes**

**Fixed the following:-**

- Fixed a behavior where cluster nodes could be evicted during Fibre Channel over Ethernet (FCoE) multipath failover as described in https://access.redhat.com/solutions/3136041
- Fixed a behavior where Ethernet connections may not recover after a Virtual Connect (VC) interconnect module reboot

**Enhancements**

**Added the following:-**

- Added support for SLES 12 SP5

Updated to Driver version 12.0.1342.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Dual Port Converged Network Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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SUSE Linux Enterprise Server 15 Service Pack 1 Fibre Channel Driver Kit for HPE Emulex Host Bus Adapters and Mezzanine Host Bus Adapters

Version: 12.8.352.11 **(Recommended)**

Filename: elx-lpfc-kmp-default-12.8.352.11_k4.12.14_195-1.sles15sp1.x86_64.compsig; elx-lpfc-kmp-default-12.8.352.11_k4.12.14_195-1.sles15sp1.x86_64.rpm

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

Rewrite of same Driver version has to be performed using –reinstall option

Example: rpm –Uvh elx-lpfc-kmp-default-<version>.<OSupdate>.x86_64.rpm –reinstall

For more information please refer to the Knowledge Base at: https://www.suse.com/support/kb/doc/?id=000019640

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to driver version 12.8.352.11

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Enhancements

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to driver version 12.8.352.11

## Supported Devices and Features

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

- HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

- HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter

- HPE Fibre Channel 16Gb LPe1605 Mezz

**32Gb FC Adapter:**

- HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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SUSE Linux Enterprise Server 15 Service Pack 1 Fibre Channel Driver Kit for HPE QLogic Host Bus Adapters and Mezzanine Host Bus Adapters

Version: 10.02.01.00.a14-k1 **(Recommended)**

Filename: qlgc-qla2xxx-kmp-default-10.02.01.00.a14_k1_k4.12.14_195-1.sles15sp1.x86_64.compsig; qlgc-qla2xxx-kmp-default-10.02.01.00.a14_k1_k4.12.14_195-1.sles15sp1.x86_64.rpm

**Important Note!**

Release Notes:

HPE QLogic Adapters Release Notes

NOTE:

1. The rpm base-name for the QLogic driver has been changed to "qlgc". Upgrades from the earlier "hpqlgc" driver are supported.

2. Rewrite of same Driver version has to be performed using –force or --replacepkgs with --nodeps option

Example: rpm –Uvh kmod-qla2xxx-<version>.<OSupdate>.x86_64.rpm –force --nodeps

rpm –Uvh kmod-qla2xxx-<version>.<OSupdate>.x86_64.rpm –replacepkgs --nodeps

For more information please refer to the Knowledge Base at: https://www.suse.com/support/kb/doc/?id=000019640

3. On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixed the following:-**

- Improve detection and recovery from conditions described in customer advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability
- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to driver version 10.02.01.00.a14-k1

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Fixes

**Fixed the following:-**

- Improve detection and recovery from conditions described in customer advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

## Enhancements

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability
- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to driver version 10.02.01.00.a14-k1

## Supported Devices and Features

This driver supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

- HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

- HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

- HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter
- HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

**32Gb Fibre Channel Host Bus Adapter:**

- HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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SUSE Linux Enterprise Server 15 Service Pack 1 Fibre Channel over Ethernet (FCoE) Driver Kit for HPE Storage Emulex(BRCM) Converged Network and mezzanine Converged Network Adapters(CNAs)

Version: 12.0.1342.0 **(Recommended)**

Filename: brcmfcoe-kmp-default-12.0.1342.0_k4.12.14_195-1.sles15sp1.x86_64.compsig; brcmfcoe-kmp-default-12.0.1342.0_k4.12.14_195-1.sles15sp1.x86_64.rpm

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixed the following:-**

- Fixed a behavior where cluster nodes could be evicted during Fibre Channel over Ethernet (FCoE) multipath failover as described in https://access.redhat.com/solutions/3136041
- Fixed a behavior where Ethernet connections may not recover after a Virtual Connect (VC) interconnect module reboot

Updated to Driver version 12.0.1342.0

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixes**

**Fixed the following:-**

- Fixed a behavior where cluster nodes could be evicted during Fibre Channel over Ethernet (FCoE) multipath failover as described in https://access.redhat.com/solutions/3136041
- Fixed a behavior where Ethernet connections may not recover after a Virtual Connect (VC) interconnect module reboot

**Enhancements**

Updated to Driver version 12.0.1342.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Dual Port Converged Network Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

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SUSE Linux Enterprise Server 15 Service Pack 2 Fibre Channel Driver Kit for HPE Emulex Host Bus Adapters and Mezzanine Host Bus Adapters

Version: 12.8.352.11 **(Recommended)**

Filename: elx-lpfc-kmp-default-12.8.352.11_k5.3.18_22-1.sles15sp2.x86_64.compsig; elx-lpfc-kmp-default-12.8.352.11_k5.3.18_22-1.sles15sp2.x86_64.rpm

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

Rewrite of same Driver version has to be performed using –reinstall option

Example: rpm –Uvh elx-lpfc-kmp-default-<version>.<OSupdate>.x86_64.rpm –reinstall

For more information please refer to the Knowledge Base at: https://www.suse.com/support/kb/doc/?id=000019640

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Added the following:-**

- Added support for SLES 15 SP2
- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to driver version 12.8.352.11

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Enhancements

**Added the following:-**

- Added support for SLES 15 SP2
- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to driver version 12.8.352.11

## Supported Devices and Features

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

- HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

- HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter

- HPE Fibre Channel 16Gb LPe1605 Mezz

**32Gb FC Adapter:**

- HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter
- HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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SUSE Linux Enterprise Server 15 Service Pack 2 Fibre Channel Driver Kit for HPE QLogic Host Bus Adapters and Mezzanine Host Bus Adapters

Version: 10.02.01.00.a14-k1 **(Recommended)**

Filename: qlgc-qla2xxx-kmp-default-10.02.01.00.a14_k1_k5.3.18_22-1.sles15sp2.x86_64.compsig; qlgc-qla2xxx-kmp-default-10.02.01.00.a14_k1_k5.3.18_22-1.sles15sp2.x86_64.rpm

**Important Note!**

Release Notes:

HPE QLogic Adapters Release Notes

NOTE:

1. The rpm base-name for the QLogic driver has been changed to "qlgc". Upgrades from the earlier "hpqlgc" driver are supported.

2. Rewrite of same Driver version has to be performed using –force or --replacepkgs with --nodeps option

Example: rpm –Uvh kmod-qla2xxx-<version>.<OSupdate>.x86_64.rpm –force --nodeps

rpm –Uvh kmod-qla2xxx-<version>.<OSupdate>.x86_64.rpm –replacepkgs --nodeps

For more information please refer to the Knowledge Base at: https://www.suse.com/support/kb/doc/?id=000019640

3. On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixed the following:-**

- Improve detection and recovery from conditions described in customer advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability
- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to driver version 10.02.01.00.a14-k1

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

## Fixes

**Fixed the following:-**

- Improve detection and recovery from conditions described in customer advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

## Enhancements

**Added the following:-**

- Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability
- Added support for Fabric Performance Impact Notifications (FPIN)

Updated to driver version 10.02.01.00.a14-k1

## Supported Devices and Features

This driver supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

- HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

- HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

- HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter
- HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

**32Gb Fibre Channel Host Bus Adapter:**

- HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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SUSE Linux Enterprise Server 15 Service Pack 2 Fibre Channel over Ethernet (FCoE) Driver Kit for HPE Storage Emulex(BRCM) Converged Network and mezzanine Converged Network Adapters(CNAs)

Version: 12.0.1342.0 **(Recommended)**

Filename: brcmfcoe-kmp-default-12.0.1342.0_k5.3.18_22-1.sles15sp2.x86_64.compsig; brcmfcoe-kmp-default-12.0.1342.0_k5.3.18_22-1.sles15sp2.x86_64.rpm

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixed the following:-**

- Fixed a behavior where cluster nodes could be evicted during Fibre Channel over Ethernet (FCoE) multipath failover as described in https://access.redhat.com/solutions/3136041
- Fixed a behavior where Ethernet connections may not recover after a Virtual Connect (VC) interconnect module reboot

**Enhancements:-**

- Added support for SLES15 SP2

Updated to Driver version 12.0.1342.0

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

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Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

NOTE:

On any HPE Gen 9 Servers running Linux with secure boot enabled, must install the HPE-DB-2016 secure-boot key in NVRAM in order to load this Driver. For more information please go through the support document with title "HPE Gen9 Servers with Secure Boot Enabled Must Install the New HPE Db Key to Update Drivers" available at the following link: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us.

**Fixes**

**Fixed the following:-**

- Fixed a behavior where cluster nodes could be evicted during Fibre Channel over Ethernet (FCoE) multipath failover as described in https://access.redhat.com/solutions/3136041
- Fixed a behavior where Ethernet connections may not recover after a Virtual Connect (VC) interconnect module reboot

**Enhancements**

**Added the following:-**

- Added support for SLES 15 SP2

Updated to Driver version 12.0.1342.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Dual Port Converged Network Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

---

**Driver - System** Top

HPE Non-Volatile Memory Drivers for Microsoft Windows Server 2012 R2 and 2016

Version: 3.0.2.0 **(Recommended)**

Filename: cp042922.compsig; cp042922.exe

**Important Note!**

This Smart Component version 3.0.2.0 contains the HPE NVM Bus Driver HpeNvmBus.sys version 3.0.2.0 and the HPE NVM Disk Driver HpeNvmDisk0101 version 3.0.2.0.

**Enhancements**

These Non-Volatile Memory drivers enable support for Persistent Memory technology on select HPE Servers running Microsoft Windows Server 2012 R2 and 2016.

- Added support for Microsoft virtual NVDIMMs (aka vNVDIMMs) presented by Hyper-V Server 2019, on WS2012R2 and WS2016 guests.
- Added support for HPE Persistent Memory devices (featuring Intel Optane DC Persistent Memory), on WS2012R2 and WS2016.
- Added support for HPE 16GB NVDIMM devices, on WS2012R2.
- Changed block sector size from 512B to 4096B. Old data won't be accessible and must be backed up first if it needs to be preserved.

For more information about Persistent Memory technology offered on HPE Servers, please consult the following links:

- https://www.hpe.com/us/en/servers/persistent-memory.html
- https://persistentmemory.hpe.com/windows/nvdimm

---

**Driver - System Management** Top

HPE CRU Native Driver for ESXi 7.0

Version: 7.0.10 **(Recommended)**

Filename: cru_driver_700.10.16_1OEM.700.0.0.14828939_signed_component_15675715.zip

**Enhancements**

Support for VMware ESXi 7.0

---

HPE ProLiant Gen9 Chipset Identifier for Windows Server 2012 R2 to Server 2019

Version: 10.1.17969.8134 **(Optional)**

Filename: cp040885.exe

**Enhancements**

- Updated to match the latest version available from Intel for the devices supported by this component.
- Removed Windows Server 2012 to align operating system support with the production Service Pack for ProLiant.

---

iLO 3/4 Channel Interface Driver for Windows Server 2008 to Server 2012 R2

Version: 3.30.0.0 **(Optional)**

Filename: cp029394.exe

**Important Note!**

The Channel Interface Driver was separated into its own component when the ProLiant Support Pack version 9.00 was released. Previously, the driver was a part of the *iLO 3 Management Controller Driver Package* component.

**Fixes**

Ensure that work items created by the driver are properly terminated if the driver has been restarted.

---

iLO 4 Channel Interface Driver for Windows Server 2012 and Server 2012 R2

Version: 4.0.0.0 **(Optional)**

Filename: cp035107.exe

**Important Note!**

The Channel Interface Driver was separated into its own component when the ProLiant Support Pack version 9.00 was released. Previously, the driver was a part of the *iLO 3 Management Controller Driver Package* component.

**Enhancements**

Aligned system and operating system support with the production Service Pack for ProLiant:

- Removed support for Windows Server 2008 and Windows Server 2008 R2.
- Removed support for iLO 3.
- Removed support for HP ProLiant G7 and HP ProLiant Gen8 systems.

---

iLO 4 Channel Interface Driver for Windows Server 2012 and Server 2012 R2

Version: 4.1.0.0 **(Recommended)**

Filename: cp039984.exe

**Important Note!**

The Channel Interface Driver was separated into its own component when the ProLiant Support Pack version 9.00 was released. Previously, the driver was a part of the *iLO 3 Management Controller Driver Package* component.

**Fixes**

Corrected a potential Windows bugcheck 0x50 (PAGE_FAULT_IN_NONPAGED_AREA) that could occur if Windows restarts the driver without unloading it.

---

iLO 4 Channel Interface Driver for Windows Server 2016 and Server 2019

Version: 4.0.0.0 **(Optional)**

Filename: cp035108.exe

**Enhancements**

Add support for Windows Server 2019.

---

iLO 4 Channel Interface Driver for Windows Server 2016 and Server 2019

Version: 4.1.0.0 **(Recommended)**

Filename: cp039985.exe

**Fixes**

Corrected a potential Windows bugcheck 0x50 (PAGE_FAULT_IN_NONPAGED_AREA) that could occur if Windows restarts the driver without unloading it.

---

iLO 4 Management Controller Driver Package for Windows Server 2012 and Server 2012 R2

Version: 4.0.0.0 **(Optional)**

Filename: cp035109.exe

**Prerequisites**

The *iLO 3/4 Channel Interface Driver for Windows Server 2008 to Server 2012 R2* (version 3.4.0.0 or later) must be installed prior to this component. The Channel Interface Driver was previously included within this component, but is now installed separately.

**Enhancements**

Aligned system and operating system support with the production Service Pack for ProLiant:

- Removed support for Windows Server 2008 and Windows Server 2008 R2.
- Removed support for iLO 3.
- Removed support for HP ProLiant G7 and HP ProLiant Gen8 systems.

---

iLO 4 Management Controller Driver Package for Windows Server 2016 and Server 2019

Version: 4.0.0.0 (B) **(Optional)**

Filename: cp037927.exe

**Prerequisites**

The *iLO 3/4 Channel Interface Driver for Windows Server 2016* must be installed prior to this component.

**Fixes**

Fixed a component installation failure (error message "The iLO 4 Core Driver must be installed before installing this package") when Windows Device Guard is enabled.

---

iLO 5 Automatic Server Recovery Driver for Microsoft Windows Server 2012 R2

Version: 4.7.1.0 **(Recommended)**

Filename: cp046491.compsig; cp046491.exe

**Important Note!**

Installing the iLO 5 Channel Interface Driver, version 4.1.0.0 or earlier, will overwrite this driver. To avoid the overwrite, use version 4.1.0.0(B) or later of the iLO 5 Channel Interface Driver.

**Fixes**

- Fixed branding issue

---

iLO 5 Automatic Server Recovery Driver for Microsoft Windows Server 2016 and Microsoft Windows Server 2019

Version: 4.7.1.0 **(Recommended)**

Filename: cp046492.compsig; cp046492.exe

**Important Note!**

Installing the iLO 5 Channel Interface Driver, version 4.1.0.0 or earlier, will overwrite this driver. To avoid the overwrite, use version 4.1.0.0(B) or later of the iLO 5 Channel Interface Driver.

**Fixes**

- Fixed branding issue

---

iLO 5 Channel Interface Driver for Microsoft Windows Server 2012 R2

Version: 4.7.1.0 **(Recommended)**

Filename: cp046356.compsig; cp046356.exe

**Fixes**

- Fixed branding issue

---

iLO 5 Channel Interface Driver for Microsoft Windows Server 2016 and Microsoft Windows Server 2019

Version: 4.7.1.0 **(Recommended)**

Filename: cp046333.compsig; cp046333.exe

**Fixes**

- Fixed branding issue

---

iLO 5 Channel Interface Driver for Windows Server 2012 R2

Version: 4.6.0.0 **(Optional)**

Filename: cp040013.compsig; cp040013.exe

**Enhancements**

Add support for iLO 5 version 2.x firmware.

---

iLO 5 Channel Interface Driver for Windows Server 2016 and Server 2019

Version: 4.6.0.0 (C) **(Optional)**

Filename: cp041932.compsig; cp041932.exe

**Enhancements**

TBD

---

Switchtec PCIe Switch Management Driver for Windows Server 2016 and Server 2019

Version: 12.52.0.676 **(Recommended)**

Filename: cp046195.compsig; cp046195.exe

**Enhancements**

- Support for Apollo 6500 Gen10 Plus XL675d and XL645d

**Supported Devices and Features**

Supported devices:

- Switchtec PFX 100xG4 Management EP
- Switchtec PFX 52xG4 Management EP

**Driver - Video** Top

Matrox G200eH Video Controller Driver for Windows Server 2012 and Server 2012 R2

Version: 9.15.1.224 **(Optional)**

Filename: cp038691.exe

**Fixes**

- Fix for random screen corruption when changing resolution that could occur with driver versions 9.15.1.184 and 9.15.1.218.
- Fix for a display freeze that could occur when running the Windows Display Diagnostics tool (dispdiag.exe).

---

Matrox G200eH Video Controller Driver for Windows Server 2016 and Server 2019

Version: 9.15.1.224 **(Optional)**

Filename: cp038692.exe

**Fixes**

- Fix for random screen corruption when changing resolution that could occur with driver versions 9.15.1.184 and 9.15.1.218.
- Fix for a display freeze that could occur when running the Windows Display Diagnostics tool (dispdiag.exe).

---

Matrox G200eH3 Video Controller Driver for Microsoft Windows Server 2016 and Microsoft Windows Server 2019

Version: 9.15.1.224 (C) **(Optional)**

Filename: cp041584.compsig; cp041584.exe

**Enhancements**

- Added support for Intel ICX platforms

---

Matrox G200eH3 Video Controller Driver for Windows Server 2012 R2

Version: 9.15.1.224 (B) **(Optional)**

Filename: cp040214.compsig; cp040214.exe

**Enhancements**

Add support for iLO 5 version 2.x firmware.

---

**Firmware - Blade Infrastructure** **Top**

HPE BladeSystem c-Class Virtual Connect Firmware, Ethernet plus 8Gb 20-port and 8/16Gb 24-port FC Edition Component for Windows

Version: 4.85 **(Recommended)**

Filename: cp043332.exe

**Prerequisites**

The 4.85 version of HPE Virtual Connect Release Notes contains the prerequisites and can also be found in the following URL: http://www.hpe.com/info/vc/manuals

**Fixes**

The list of issues resolved in 4.85 version can be found in the HPE Virtual Connect Release Notes at URL**:** http://www.hpe.com/info/vc/manuals

**Enhancements**

The list of enhancements in 4.85 version can be found in the HPE Virtual Connect Release Notes at URL**:** http://www.hpe.com/info/vc/manuals

**Supported Devices and Features**

HPE Virtual Connect FlexFabric 10Gb/24-port Module for c-Class BladeSystem

HPE Virtual Connect 8Gb 24-port Fibre Channel Module for c-Class BladeSystem

HPE Virtual Connect 8Gb 20-port Fibre Channel Module for c-Class BladeSystem

HPE Virtual Connect Flex-10/10D Module for c-Class BladeSystem

HPE Virtual Connect FlexFabric-20/40 F8 Module for HPE BladeSystem c-Class

HPE Virtual Connect 16Gb 24-port Fibre Channel Module for c-Class BladeSystem

---

HPE BladeSystem c-Class Virtual Connect Firmware, Ethernet plus 8Gb 20-port and 8/16Gb 24-port FC Edition Component for Linux

Version: 4.85 **(Recommended)**

Filename: RPMS/x86_64/firmware-vceth-4.85-1.1.x86_64.rpm

**Prerequisites**

The 4.85 version of HPE Virtual Connect Release Notes contains the prerequisites and can be found in the following URL: http://www.hpe.com/info/vc/manuals

**Fixes**

The list of issues resolved in 4.85 version can be found in the HPE Virtual Connect Release Notes at URL**:** http://www.hpe.com/info/vc/manuals

**Enhancements**

The list of enhancements in 4.85 version can be found in the HPE Virtual Connect Release Notes at URL**:** http://www.hpe.com/info/vc/manuals

**Supported Devices and Features**

HPE Virtual Connect FlexFabric 10Gb/24-port Module for c-Class BladeSystem

HPE Virtual Connect 8Gb 24-port Fibre Channel Module for c-Class BladeSystem

HPE Virtual Connect 8Gb 20-port Fibre Channel Module for c-Class BladeSystem

HPE Virtual Connect Flex-10/10D Module for c-Class BladeSystem

HPE Virtual Connect FlexFabric-20/40 F8 Module for HPE BladeSystem c-Class

HPE Virtual Connect 16Gb 24-port Fibre Channel Module for c-Class BladeSystem

---

Online HP 6Gb SAS BL Switch Firmware Smart Component for Linux (x86/x64)

Version: 4.3.6.0 (B) **(Optional)**

Filename: RPMS/i586/firmware-solex6gb-solex-4.3.6.0-2.1.i586.rpm

**Important Note!**

**Note:** If version 4.3.6.0 was previously installed, then it is not necessary to upgrade to version 4.3.6.0 (B).

**Enhancements**

- Added support for SUSE Linux Enterprise Server 15 OS

---

Online HPE 6Gb SAS BL Switch Firmware Smart Component for Windows (x86/x64)

Version: 4.3.6.0 (C) **(Optional)**

Filename: cp038273.exe

**Enhancements**

- Improved integration with Smart Update Manager

---

Online HPE BladeSystem c-Class Onboard Administrator Firmware Component for Linux

Version: 4.97 **(Recommended)**

Filename: RPMS/x86_64/firmware-oa-4.97-1.1.x86_64.rpm

**Important Note!**

**Important Notes**

- **Firmware Upgrade**
  - Starting OA 4.50 release, a standardized code signing and validation mechanism has been introduced to enhance the firmware image authenticity.
  - For customers using Firmware ROM image to upgrade OA:
    - For OAs with firmware version less than 3.50, first update to OA 3.50 and then continue updating to OA 4.50 or above.
  - For customers using Smart Components to upgrade OA:

        - OA firmware update mechanisms which rely on HPE Smart Components (example: EFM), will not be affected by this change. The Smart Component will automatically perform the intermediate upgrade to OA 3.50 before performing the OA 4.50 or above upgrade.
    - **EFM**
        - The OA only supports SPP ISO images that are less than 4 GB in size, whether hosted directly via the Enclosure DVD feature or an attached USB key, or mounted remotely via a specified URL. If an ISO image exceeds 4 GB, the CLI SHOW FIRMWARE MANAGEMENT command displays ISO URL Status as "Invalid URL."
        - If an SPP ISO image exceeds 4 GB, it is necessary to create a custom ISO image that excludes components unnecessary to the OA EFM blade firmware update process. At a minimum, the custom ISO must contain the firmware components for HPE ProLiant BL servers. (When using HPE SUM to create the custom ISO image, select Firmware as the Component Type, and select HPE ProLiant BL Series as the Server Type.) For information about creating a custom ISO image compatible for OA EFM functionality, see the *HPE BladeSystem Onboard Administrator User Guide*. More HPE SUM information can be found via HPE Smart Update Manager online help or at https://www.hpe.com/servers/hpsum/documentation.
    - **FIPS**
        - Onboard Administrator 4.71 is FIPS certified as referenced in the 140-2 In Process list located at http://csrc.nist.gov/groups/STM/cmvp/documents/140-1/140InProcess.pdf.
    - **IPv6**
        - When the Enable DHCPv6 or Enable SLAAC enclosure IPv6 settings are disabled on the Onboard Administrator, the respective DHCPv6 or SLAAC addresses of the iLOs in the enclosure are retained until these addresses expire automatically based on their respective configurations. A manual reset of the iLO releases these addresses immediately

## Prerequisites

To access the OA web interface, you must have the OA IP address and a compatible web browser. You must access the application through HTTPS (HTTP packets exchanged over an SSL/TLS-encrypted session).

The OA web interface requires an XSLT-enabled browser with support for JavaScript 1.3 or the equivalent.

Supported browsers include:

• Microsoft Internet Explorer 11

• Mozilla Firefox 67.0.4(64-bit)

• Google Chrome 77.0.3865.90 (Official Build) (64-bit)

## Fixes

### General

- Addressed an issue where running concurrent UPDATE ILO cli command from different SSH sessions cause few of the commands to end in operation failure.
- Fixed an issue in SET SERVER DVD CONNECT cli command usage in IPv6 environment.

- Addressed an issue where blade's ProductID update in System Rom RBSU is not reflected in the Onboard Administrator.
- Harnessed certificate read operation from flash to minimize certificate read failures.
- Fixed an issue in SNMP v3 protocol where EngineTime was not reset on increment of EngineBoot count.
- Addressed an issue related to blade discovery failure
- Fixed an issue in Smart Component where it fails to establish communication with Onboard Administrator using DHE ciphers.
- Addressed an issue related to ECDSA ciphers enable/disable feature.
- Added SSH cipher list to the configuration script
- Fixed an issue in Onboard Administrator GUI where IPv4 DynamicDNS could not be enabled when enclosure is configured for static IP configuration.
- Fixed help message display issues in CLI commands SET SSL_SESSION TIMEOUT and SET SECURESH.
- Addressed an issue in SNMP where EngineBoot count was incremented by two for add/delete of trap receiver.
- Fixed Online Help (OLH) pages display issue that occur when language pack is uploaded into Onboard Administrator.

**Security**

The following security vulnerabilities are fixed:

- Onboard Administrator's web server response is enhanced to include X-Content-Type-Options security header.
- CVE-2011-3026 - libpng: Heap buffer overflow
- CVE-2018-1000517 - BusyBox wget version contains a Buffer Overflow vulnerability
- CVE-2020-1971 - EDIPARTYNAME NULL pointer de-reference
- CVE-2020-15861 - Net-SNMP allows Escalation of Privileges
- CVE-2020-15862 - Net-SNMP provides the ability to run arbitrary commands as root.
- CVE-2019-20892 – SNMPv3 get bulk request issue

**Issues and workarounds**

**Browsers**

- OA GUI is not accessible in Chrome versions 43.0.2357.10 to 44.0.2383.The issue was caused by a "regression" in Chrome (or WebKit). Customers should use an alternative browser like Firefox or Internet Explorer or try a different version of Chrome.
- SSO-to-iLO connection from the OA using an iLO host name fails with Microsoft Internet Explorer11 on Windows 8. On a Windows 8 system with Internet Explorer 10 or Internet Explorer 11, if the OA web GUI session is loaded using a host name instead of an IP address, an attempt to open an iLO window using SSO from the OA web GUI might result in the iLO page loading in the OA web GUI window instead of the intended new window. This issue was determined to be a bug in Internet Explorer and is expected to be fixed in a future release or update for Internet Explorer. To work around this issue, either use an IP address to load the OA Web GUI, or turn off Protected Mode for the appropriate zone in Internet Explorer's settings. This issue occurs only on Internet Explorer browsers.

**FIPS**

Certificates smaller than 2048 bits in size are not compliant with FIPS requirements as enforced by the OA firmware starting with OA 4.20. When the OA running OA firmware version 4.40 or greater is operating in FIPS Mode ON/DEBUG and is configured with a 1024-bit LDAP certificate that was installed when running a previous version of OA firmware, FIPS Mode ON/DEBUG is considered to be operating in a degraded state due to the presence of the non-compliant certificate. While operating in this FIPS-Degraded Mode operational state, attempts to set FIPS Mode OFF from the OA GUI Network Access>FIPS tab will fail and show the error message The selected FIPS mode is already enabled. When the non-compliant certificate is removed, the FIPS-Degraded operational status is cleared, FIPS Mode can then be successfully set to OFF from the GUI interface. Note that the OA CLI command SET FIPS MODE OFF can be successfully used to set FIPS Mode OFF even with non-compliant 1024-bit LDAP certificates installed in the OA.

**IRC**

Unable to open .net IRC console for Gen10 Blades, Gen9 Blades also have the same issue. The Java applet and Webstart however, loads but the virtual media mounting fails. The work around is to launch the IRC through IRC Application (HPE Lights-Out Stand Alone Remote Console) which is installed on terminal client.

**EFM**

To use EFM on Gen 10 Blades, please select options/filters "*Make Bootable ISO file" and* "*Enclosure Firmware Management"* while creating custom SPP ISO on HPE SUM 8.0.0. Please refer to HPE SUM 8.0.0 User guide for further details.

**CAC**

- In the CAC mode SSH, Telnet and XML Reply protocols will be disabled.
- Linked enclosure login will not work if the linked enclosure in CAC mode.
- If accurate Service account details are not provided, LDAP user login with certificate will fail.
- It is highly recommended to establish a recovery plan before getting started with CAC. If something goes wrong with the OA configuration, the OA may be recovered through the serial port or Insight Display panel and USB KEY. Both methods require physical access to the OA. However, if an LCD PIN has been configured (and forgotten) and local accounts have been disabled or CAC has been incorrectly configured then, the only way to recover is through a serial port. The two most common situations where OA recovery is needed are when LDAP has been configured incorrectly with local accounts disabled or when CAC has been configured without certificate access.

**Configurable SSH Port Number**

If a Standby OA is running firmware version less than 4.85 and it is updated to firmware version greater than or equal to 4.85 using synchronize firmware feature from Active OA, after the firmware update and reboot of the Standby OA, SSH port will not open in the configured port number. The work around is to reboot the Standby OA and SSH port will open in the configured port in next boot. This issue will not occur in the case where SSH port is configured to default port 22 in the Active OA.

**Smart component**

When OA is in FIPS ON or FIPS TOP-SECRET mode and any of the ciphers that use Diffie-Hellman (DH) keys are enabled, firmware upgrade or downgrade using OA Smart Component 4.96 or earlier versions may fail with following error:

Error: 1013: Client cannot connect with the Onboard Administrator. Verify the target address is correct and can be accessed from your system.

FIPS ON

TLS_DHE_RSA_WITH_3DES_EDE_CBC_SHA
TLS_DHE_RSA_WITH_AES_128_GCM_SHA25
TLS_DHE_RSA_WITH_AES_256_GCM_SHA384
TLS_DHE_RSA_WITH_AES_128_CBC_SHA256
TLS_DHE_RSA_WITH_AES_256_CBC_SHA256

FIPS TOP-SECRET

TLS_DHE_RSA_WITH_AES_256_GCM_SHA384

Same error may occur when OA upgrade or downgrade is performed through Smart

Update Manager (SUM) resulting in the following error message in the SUM.

Component Package Deployment Status Log

---

cpC39063 Online HPE BladeSystem c-Class Onboard Administrator for Windows Update returned an error View Log

When this failure occurs, the following message can be seen in the OA Smart Component log file.

Error: 1013: Client cannot connect with the Onboard Administrator.

Verify The target address is correct and can be accessed from your system.

The work-around for this problem is to disable all the ciphers that use DH key and rerun the firmware upgrade or downgrade.

Disabling ciphers can be done using the CLI command DISABLE SSL CIPHER or through the GUI. The disabled ciphers can be re-enabled once the firmware upgrade or downgrade is completed.

**ILO5 Firmware Update**

The UPDATE ILO command is failing to update the iLO5 firmware versions 2.10 and later on OA version 4.90 and less than 4.90. This issue is caused by the introduction of new signature in the iLO5 firmware version 2.10

. The work-around is to update the OA firmware to 4.95 and then try the UPDATE ILO command. This issue will not occur with OA versions 4.95 and later.

## Enhancements

Onboard Administrator 4.97 provides support for the following enhancements:

**Hardware additions**

- None

Features**: additions and changes**

**General**

- A new feature is added to SNMP to support enable/disable options for v1/v2c protocols.
- New SNMP traps were added for emergency brake (e-brake) activated and deactivated events.
- Added support for firmware update of new NIDEC fans.
- Enhanced PowerPIC firmware update to support firmware version 1.8.
- In the Onboard Administrator GUI added support for iLO HTML5 IRC console.

**Security**

- A new feature is added in SSH to support enable/disable of Key Exchange (KEX) Algorithms.

Online HPE BladeSystem c-Class Onboard Administrator Firmware Component for Windows

Version: 4.97 **(Recommended)**

Filename: cp046217.exe

## Important Note!

### Important Notes

- **Firmware Upgrade**
  - Starting OA 4.50 release, a standardized code signing and validation mechanism has been introduced to enhance the firmware image authenticity.
  - For customers using Firmware ROM image to upgrade OA:
    - For OAs with firmware version less than 3.50, first update to OA 3.50 and then continue updating to OA 4.50 or above.
  - For customers using Smart Components to upgrade OA:
    - OA firmware update mechanisms which rely on HPE Smart Components (example: EFM), will not be affected by this change. The Smart Component will automatically perform the intermediate upgrade to OA 3.50 before performing the OA 4.50 or above upgrade.
- **EFM**
  - The OA only supports SPP ISO images that are less than 4 GB in size, whether hosted directly via the Enclosure DVD feature or an attached USB key, or mounted remotely via a specified URL. If an ISO image exceeds 4 GB, the CLI SHOW FIRMWARE MANAGEMENT command displays ISO URL Status as "Invalid URL."
  - If an SPP ISO image exceeds 4 GB, it is necessary to create a custom ISO image that excludes components unnecessary to the OA EFM blade firmware update process. At a minimum, the custom ISO must contain the firmware components for HPE ProLiant BL servers. (When using HPE SUM to create the custom ISO image, select Firmware as the Component Type, and select HPE ProLiant BL Series as the Server Type.) For information about creating a custom ISO image compatible for OA EFM functionality, see the *HPE BladeSystem Onboard Administrator User Guide*. More HPE SUM information can be found via HPE Smart Update Manager online help or at https://www.hpe.com/servers/hpsum/documentation.
- **FIPS**
  - Onboard Administrator 4.71 is FIPS certified as referenced in the 140-2 In Process list located at http://csrc.nist.gov/groups/STM/cmvp/documents/140-1/140InProcess.pdf.
- **IPv6**
  - When the Enable DHCPv6 or Enable SLAAC enclosure IPv6 settings are disabled on the Onboard Administrator, the respective DHCPv6 or SLAAC addresses of the iLOs in the enclosure are retained until these addresses expire automatically based on their respective configurations. A manual reset of the iLO releases these addresses immediately.

## Prerequisites

To access the OA web interface, you must have the OA IP address and a compatible web browser. You must access the application through HTTPS (HTTP packets exchanged over an SSL/TLS-encrypted session).

The OA web interface requires an XSLT-enabled browser with support for JavaScript 1.3 or the equivalent.

Supported browsers include:

• Microsoft Internet Explorer 11

• Mozilla Firefox 67.0.4(64-bit)

• Google Chrome 77.0.3865.90 (Official Build) (64-bit)

## Fixes

### General

- Addressed an issue where running concurrent UPDATE ILO cli command from different SSH sessions cause few of the commands to end in operation failure.
- Fixed an issue in SET SERVER DVD CONNECT cli command usage in IPv6 environment.
- Addressed an issue where blade's ProductID update in System Rom RBSU is not reflected in the Onboard Administrator.
- Harnessed certificate read operation from flash to minimize certificate read failures.
- Fixed an issue in SNMP v3 protocol where EngineTime was not reset on increment of EngineBoot count.
- Addressed an issue related to blade discovery failure
- Fixed an issue in Smart Component where it fails to establish communication with Onboard Administrator using DHE ciphers.
- Addressed an issue related to ECDSA ciphers enable/disable feature.
- Added SSH cipher list to the configuration script
- Fixed an issue in Onboard Administrator GUI where IPv4 DynamicDNS could not be enabled when enclosure is configured for static IP configuration.
- Fixed help message display issues in CLI commands SET SSL_SESSION TIMEOUT and SET SECURESH.
- Addressed an issue in SNMP where EngineBoot count was incremented by two for add/delete of trap receiver.
- Fixed Online Help (OLH) pages display issue that occur when language pack is uploaded into Onboard Administrator.

### Security

The following security vulnerabilities are fixed:

- Onboard Administrator's web server response is enhanced to include X-Content-Type-Options security header.
- CVE-2011-3026 - libpng: Heap buffer overflow
- CVE-2018-1000517 - BusyBox wget version contains a Buffer Overflow vulnerability
- CVE-2020-1971 - EDIPARTYNAME NULL pointer de-reference
- CVE-2020-15861 - Net-SNMP allows Escalation of Privileges
- CVE-2020-15862 - Net-SNMP provides the ability to run arbitrary commands as root.
- CVE-2019-20892 – SNMPv3 get bulk request issue

**Issues and workarounds**

**Browsers**

- OA GUI is not accessible in Chrome versions 43.0.2357.10 to 44.0.2383.The issue was caused by a "regression" in Chrome (or WebKit). Customers should use an alternative browser like Firefox or Internet Explorer or try a different version of Chrome.
- SSO-to-iLO connection from the OA using an iLO host name fails with Microsoft Internet Explorer11 on Windows 8. On a Windows 8 system with Internet Explorer 10 or Internet Explorer 11, if the OA web GUI session is loaded using a host name instead of an IP address, an attempt to open an iLO window using SSO from the OA web GUI might result in the iLO page loading in the OA web GUI window instead of the intended new window. This issue was determined to be a bug in Internet Explorer and is expected to be fixed in a future release or update for Internet Explorer. To work around this issue, either use an IP address to load the OA Web GUI, or turn off Protected Mode for the appropriate zone in Internet Explorer's settings. This issue occurs only on Internet Explorer browsers.

**FIPS**

Certificates smaller than 2048 bits in size are not compliant with FIPS requirements as enforced by the OA firmware starting with OA 4.20. When the OA running OA firmware version 4.40 or greater is operating in FIPS Mode ON/DEBUG and is configured with a 1024-bit LDAP certificate that was installed when running a previous version of OA firmware, FIPS Mode ON/DEBUG is considered to be operating in a degraded state due to the presence of the non-compliant certificate. While operating in this FIPS-Degraded Mode operational state, attempts to set FIPS Mode OFF from the OA GUI Network Access>FIPS tab will fail and show the error message The selected FIPS mode is already enabled. When the non-compliant certificate is removed, the FIPS-Degraded operational status is cleared, FIPS Mode can then be successfully set to OFF from the GUI interface. Note that the OA CLI command SET FIPS MODE OFF can be successfully used to set FIPS Mode OFF even with non-compliant 1024-bit LDAP certificates installed in the OA.

**IRC**

Unable to open .net IRC console for Gen10 Blades, Gen9 Blades also have the same issue. The Java applet and Webstart however, loads but the virtual media mounting fails. The work around is to launch the IRC through IRC Application (HPE Lights-Out Stand Alone Remote Console) which is installed on terminal client.

**EFM**

To use EFM on Gen 10 Blades, please select options/filters "*Make Bootable ISO file" and* "*Enclosure Firmware Management"* while creating custom SPP ISO on HPE SUM 8.0.0. Please refer to HPE SUM 8.0.0 User guide for further details.

**CAC**

- In the CAC mode SSH, Telnet and XML Reply protocols will be disabled.
- Linked enclosure login will not work if the linked enclosure in CAC mode.
- If accurate Service account details are not provided, LDAP user login with certificate will fail.
- It is highly recommended to establish a recovery plan before getting started with CAC. If something goes wrong with the OA configuration, the OA may be recovered through the serial port or Insight Display panel and USB KEY. Both methods require physical access to the OA. However, if an LCD PIN has been configured

(and forgotten) and local accounts have been disabled or CAC has been incorrectly configured then, the only way to recover is through a serial port. The two most common situations where OA recovery is needed are when LDAP has been configured incorrectly with local accounts disabled or when CAC has been configured without certificate access.

**Configurable SSH Port Number**

If a Standby OA is running firmware version less than 4.85 and it is updated to firmware version greater than or equal to 4.85 using synchronize firmware feature from Active OA, after the firmware update and reboot of the Standby OA, SSH port will not open in the configured port number. The work around is to reboot the Standby OA and SSH port will open in the configured port in next boot. This issue will not occur in the case where SSH port is configured to default port 22 in the Active OA.

**Smart component**

When OA is in FIPS ON or FIPS TOP-SECRET mode and any of the ciphers that use Diffie-Hellman (DH) keys are enabled, firmware upgrade or downgrade using OA Smart Component 4.96 or earlier versions may fail with following error:

Error: 1013: Client cannot connect with the Onboard Administrator. Verify the target address is correct and can be accessed from your system.

FIPS ON

TLS_DHE_RSA_WITH_3DES_EDE_CBC_SHA
TLS_DHE_RSA_WITH_AES_128_GCM_SHA25
TLS_DHE_RSA_WITH_AES_256_GCM_SHA384
TLS_DHE_RSA_WITH_AES_128_CBC_SHA256
TLS_DHE_RSA_WITH_AES_256_CBC_SHA256

FIPS TOP-SECRET

TLS_DHE_RSA_WITH_AES_256_GCM_SHA384

Same error may occur when OA upgrade or downgrade is performed through Smart

Update Manager (SUM) resulting in the following error message in the SUM.

Component Package Deployment Status Log

---

cpC39063 Online HPE BladeSystem c-Class Onboard Administrator for Windows Update returned an error View Log

When this failure occurs, the following message can be seen in the OA Smart Component log file.

Error: 1013: Client cannot connect with the Onboard Administrator.

Verify The target address is correct and can be accessed from your system.

The work-around for this problem is to disable all the ciphers that use DH key and rerun the firmware upgrade or downgrade.

Disabling ciphers can be done using the CLI command DISABLE SSL CIPHER or through the GUI. The disabled ciphers can be re-enabled once the firmware upgrade or downgrade is completed.

**ILO5 Firmware Update**

The UPDATE ILO command is failing to update the iLO5 firmware versions 2.10 and later on OA version 4.90 and less than 4.90. This issue is caused by the introduction of new signature in the iLO5 firmware version 2.10.

The work-around is to update the OA firmware to 4.95 and then try the UPDATE ILO command. This issue will not occur with OA versions 4.95 and later.

## Enhancements

Onboard Administrator 4.97 provides support for the following enhancements:

**Hardware additions**

- None

Features**: additions and changes**

**General**

- A new feature is added to SNMP to support enable/disable options for v1/v2c protocols.
- New SNMP traps were added for emergency brake (e-brake) activated and deactivated events.
- Added support for firmware update of new NIDEC fans.
- Enhanced PowerPIC firmware update to support firmware version 1.8.
- In the Onboard Administrator GUI added support for iLO HTML5 IRC console.

**Security**

- A new feature is added in SSH to support enable/disable of Key Exchange (KEX) Algorithms.

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**Firmware - Lights-Out Management** Top

Online ROM Flash Component for Linux - HPE Integrated Lights-Out 4

Version: 2.77 **(Recommended)**

Filename: CP046020.scexe; RPMS/i386/firmware-ilo4-2.77-1.1.i386.rpm

**Important Note!**

- Lowering the severity of the upgrade requirement to Recommended as per the HPE Product Security Policy. It is based on the CVE score for this security vulnerability (7.3), assessment of the impact and the probability of occurrence. So upgrade requirement has been revised to 'Recommended' upgrade.

IPv6 network communications - Dedicated network connection only

Supported Networking Features

IPv6 Static Address Assignment
IPv6 SLAAC Address Assignment
IPv6 Static Route Assignment
IPv6 Static Default Gateway Entry
DHCPv6 Stateful Address Assignment
DHCPv6 Stateless DNS, Domain Name, and NTP Configuration
Integrated Remote Console
OA Single Sign-On
HP-SIM Single Sign-On
Web Server
SSH Server
SNTP Client
DDNS Client
RIBCL over IPv6
SNMP
AlertMail

Remote Syslog
WinDBG Support
CPQLOCFG/HPLOMIG over an IPv6 connection
Scriptable Virtual Media
CLI/RIBCL Key Import over IPv6
Authentication using LDAP and Kerberos over IPv6
iLO Federation

Networking Features not supported by IPv6 in this release

IPv6 Over Shared Network Port Connections
IPMI
NETBIOS-WINS
Enterprise Secure Key Manager (ESKM) Support
Embedded Remote Support (ERS)

**Prerequisites**

Hewlett Packard Enterprise recommends the following or greater versions of iLO utilities for best performance:

- RESTful Interface Tool (iLOREST) 2.3
- HPQLOCFG v5.2
- Lights-Out XML Scripting Sample bundle 5.10.0
- HPONCFG Windows 5.3.0
- HPONCFG Linux 5.4.0
- LOCFG v5.10.0
- HPLOMIG 5.2.0

**Fixes**

- Potential vulnerabilities in network stack. Click here to know more about the Security Vulnerabilities.
- Active directory test may fail during LDAP authentication.

**Enhancements**

- Added support to display login banner SSH login

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Online ROM Flash Component for Linux - HPE Integrated Lights-Out 5

Version: 1.48 (a) **(Optional)**

Filename: RPMS/x86_64/firmware-ilo5-1.48-1.1.x86_64.compsig; RPMS/x86_64/firmware-ilo5-1.48-1.1.x86_64.rpm

**Important Note!**

IPv6 network communications - Dedicated network connection only

Supported Networking Features

- IPv6 Static Address Assignment
- IPv6 SLAAC Address Assignment
- IPv6 Static Route Assignment
- IPv6 Static Default Gateway Entry
- DHCPv6 Stateful Address Assignment
- DHCPv6 Stateless DNS, Domain Name, and NTP Configuration
- Integrated Remote Console
- OA Single Sign-On
- HP-SIM Single Sign-On
- Web Server
- SSH Server
- SNTP Client
- DDNS Client
- RIBCL over IPv6
- SNMP
- AlertMail
- Remote Syslog
- WinDBG Support
- HPONCFG/HPLOMIG over an IPv6 connection
- Scriptable Virtual Media
- CLI/RIBCL Key Import over IPv6
- Authentication using LDAP and Kerberos over IPv6
- iLO Federation

Networking Features not supported by IPv6 in this release

- IPv6 Over Shared Network Port Connections
- IPMI
- NETBIOS-WINS
- Enterprise Secure Key Manager (ESKM) Support
- Embedded Remote Support (ERS)

**Prerequisites**

Hewlett Packard Enterprise recommends the following or greater versions of iLO utilities for best performance:

- RESTful Interface Tool (iLOREST) 2.3
- HPQLOCFG v5.2
- Lights-Out XML Scripting Sample bundle 5.10.0
- HPONCFG Windows 5.2.0
- HPONCFG Linux 5.3.0
- LOCFG v5.10.0
- HPLOMIG 5.2.0

NOTE: Updated utilities and system libraries are required to support the iLO HighSecurity, FIPS, and CNSA security states. The HPONCFG Windows utility does not currently support the CNSA security state.

**Fixes**

- Implemented the set server info command for all the DCi supporting options in previous versions of iLO 5 which may reset NIC settings during iLO 5 update.

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Online ROM Flash Component for Linux - HPE Integrated Lights-Out 5

Version: 2.42 **(Optional)**

Filename: RPMS/x86_64/firmware-ilo5-2.42-1.1.x86_64.rpm; RPMS/x86_64/firmware-ilo5-2.42-1.1.x86_64_part1.compsig; RPMS/x86_64/firmware-ilo5-2.42-1.1.x86_64_part2.compsig

**Important Note!**

IPv6 network communications - Dedicated network connection only
Supported Networking Features
IPv6 Static Address Assignment
IPv6 SLAAC Address Assignment
IPv6 Static Route Assignment
IPv6 Static Default Gateway Entry
DHCPv6 Stateful Address Assignment
DHCPv6 Stateless DNS, Domain Name, and NTP Configuration
Integrated Remote Console
OA Single Sign-On
HP-SIM Single Sign-On
Web Server
SSH Server
SNTP Client
DDNS Client
RIBCL over IPv6
SNMP
AlertMail
Remote Syslog
WinDBG Support
HPONCFG/HPLOMIG over an IPv6 connection
Scriptable Virtual Media
CLI/RIBCL Key Import over IPv6
Authentication using LDAP and Kerberos over IPv6
iLO Federation
Networking Features not supported by IPv6 in this release
IPv6 Over Shared Network Port Connections
IPMI
NETBIOS-WINS
Enterprise Secure Key Manager (ESKM) Support
Embedded Remote Support (ERS)

**Prerequisites**

Hewlett Packard Enterprise recommends the following or greater versions of iLO utilities for best performance:

- RESTful Interface Tool (iLOREST) 2.3
- HPQLOCFG v5.2
- Lights-Out XML Scripting Sample bundle 5.10.0
- HPONCFG Windows 5.2.0
- HPONCFG Linux 5.3.0
- LOCFG v5.10.0
- HPLOMIG 5.2.0

NOTE: Updated utilities and system libraries are required to support the iLO HighSecurity, FIPS, and CNSA security states. The HPONCFG Windows utility does not currently support the CNSA security state.

**Fixes**

- Corrected Product Name listed under Device Inventory as "NVIDIA Quadro M3000SE", that was wrongly listed as "Synergy 75W MXM Mezzanine" with iLO firmware v2.16 and higher
- iLO stops monitoring the second Pensando card after the first one fails with a PCIe error

**Enhancements**

- Added Server Identity (iLO IDevID, iLO LDevID, System IDevID, System IAK and Platform certificates) capability to uniquely identify a server across networks that is cryptographically verifiable
- EAP-TLS based authentication for onboarding into an 802.1X access-controlled network
- Enabled support for Intel VROC

  - Device discovery and inventory of VROC SATA Controller and drives attached to it
  - Firmware inventory of Intel VROC(VMD NVMe RAID) and VROC SATA Controller

- Extend size for firmware versions supported to 48 bytes
- Liquid Cooling support for Apollo systems
- Server Platform Services Descriptor verification and recovery
- Enabled Discovery, Inventory and Thermal support for Pensando Cloud Adapters

  - P41849-B21: Pensando DSP DSC-25 Cld-SP 10/25Gb Card
  - P41852-B21: Pensando DSP DSC-100 Cld-SP 100Gb Card

- For Synergy, restricted the capability to change below settings.

Note : Changes to these settings can affect communication between One-view and iLO

  - iLO Web service
  - iLO Web service Non-SSL Port
  - Web server SSL Port
  - iLO RIBCL Interface

Online ROM Flash Component for VMware ESXi - HPE Integrated Lights-Out 4

Version: 2.77 (a) **(Recommended)**

Filename: CP046983.compsig; CP046983.zip

**Important Note!**

IPv6 network communications - Dedicated network connection only
- Supported Networking Features
  - IPv6 Static Address Assignment
  - IPv6 SLAAC Address Assignment
  - IPv6 Static Route Assignment
  - IPv6 Static Default Gateway Entry
  - DHCPv6 Stateful Address Assignment
  - DHCPv6 Stateless DNS, Domain Name, and NTP Configuration
  - Integrated Remote Console
  - OA Single Sign-On
  - HP-SIM Single Sign-On
  - Web Server
  - SSH Server
  - SNTP Client
  - DDNS Client
  - RIBCL over IPv6
  - SNMP
  - AlertMail
  - Remote Syslog
  - WinDBG Support
  - CPQLOCFG/HPLOMIG over an IPv6 connection
  - Scriptable Virtual Media
  - CLI/RIBCL Key Import over IPv6
  - Authentication using LDAP and Kerberos over IPv6
  - iLO Federation
- Networking Features not supported by IPv6 in this release
  - IPv6 Over Shared Network Port Connections
  - IPMI
  - NETBIOS-WINS
  - Enterprise Secure Key Manager (ESKM) Support
  - Embedded Remote Support (ERS)

**Prerequisites**

Hewlett Packard Enterprise recommends the following or greater versions of iLO utilities for best performance:

- RESTful Interface Tool (iLOREST) 2.3
- HPQLOCFG v5.2

- Lights-Out XML Scripting Sample bundle 5.10.0
- HPONCFG Windows 5.3.0
- HPONCFG Linux 5.4.0
- LOCFG v5.10.0
- HPLOMIG 5.2.0

**Fixes**

- Fail to deploy iLO Firmware from SPP on Gen9 servers running ESXi 7.x with an error "Update Returned an Error".

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Online ROM Flash Component for Windows x64 - HPE Integrated Lights-Out 4

Version: 2.77 **(Recommended)**

Filename: cp046022.exe

**Important Note!**

- Lowering the severity of the upgrade requirement to Recommended as per the HPE Product Security Policy. It is based on the CVE score for this security vulnerability (7.3), assessment of the impact and the probability of occurrence. So upgrade requirement has been revised to 'Recommended' upgrade.

IPv6 network communications - Dedicated network connection only
Supported Networking Features
IPv6 Static Address Assignment
IPv6 SLAAC Address Assignment
IPv6 Static Route Assignment
IPv6 Static Default Gateway Entry
DHCPv6 Stateful Address Assignment
DHCPv6 Stateless DNS, Domain Name, and NTP Configuration
Integrated Remote Console
OA Single Sign-On
HPE-SIM Single Sign-On
Web Server
SSH Server
SNTP Client
DDNS Client
RIBCL over IPv6
SNMP
AlertMail
Remote Syslog
WinDBG Support
CPQLOCFG/HPLOMIG over an IPv6 connection
Scriptable Virtual Media
CLI/RIBCL Key Import over IPv6
Authentication using LDAP and Kerberos over IPv6

iLO Federation

Networking Features not supported by IPv6 in this release

IPv6 Over Shared Network Port Connections
IPMI
NETBIOS-WINS
Enterprise Secure Key Manager (ESKM) Support
Embedded Remote Support (ERS)

**Prerequisites**

Hewlett Packard Enterprise recommends the following or greater versions of iLO utilities for best performance:

- RESTful Interface Tool (iLOREST) 2.3
- HPQLOCFG v5.2
- Lights-Out XML Scripting Sample bundle 5.10.0
- HPONCFG Windows 5.3.0
- HPONCFG Linux 5.4.0
- LOCFG v5.10.0
- HPLOMIG 5.2.0

**Fixes**

- Potential vulnerabilities in network stack. Click here to know more about the Security Vulnerabilities.
- Active directory test may fail during LDAP authentication.

**Enhancements**

- Added support to display login banner SSH login

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Online ROM Flash Component for Windows x64 - HPE Integrated Lights-Out 5

Version: 1.48 (a) **(Optional)**

Filename: cp044447.compsig; cp044447.exe

**Important Note!**

IPv6 network communications - Dedicated network connection only

Supported Networking Features

IPv6 Static Address Assignment
IPv6 SLAAC Address Assignment
IPv6 Static Route Assignment
IPv6 Static Default Gateway Entry

DHCPv6 Stateful Address Assignment
DHCPv6 Stateless DNS, Domain Name, and NTP Configuration
Integrated Remote Console
OA Single Sign-On
HP-SIM Single Sign-On
Web Server
SSH Server
SNTP Client
DDNS Client
RIBCL over IPv6
SNMP
AlertMail
Remote Syslog
WinDBG Support
HPONCFG/HPLOMIG over an IPv6 connection
Scriptable Virtual Media
CLI/RIBCL Key Import over IPv6
Authentication using LDAP and Kerberos over IPv6
iLO Federation

Networking Features not supported by IPv6 in this release

IPv6 Over Shared Network Port Connections
IPMI
NETBIOS-WINS
Enterprise Secure Key Manager (ESKM) Support
Embedded Remote Support (ERS)

**Prerequisites**

Hewlett Packard Enterprise recommends the following or greater versions of iLO utilities for best performance:

- RESTful Interface Tool (iLOREST) 2.3
- HPQLOCFG v5.2
- Lights-Out XML Scripting Sample bundle 5.10.0
- HPONCFG Windows 5.2.0
- HPONCFG Linux 5.3.0
- LOCFG v5.10.0
- HPLOMIG 5.2.0

NOTE: Updated utilities and system libraries are required to support the iLO HighSecurity, FIPS, and CNSA security states. The HPONCFG Windows utility does not currently support the CNSA security state.

**Fixes**

- Implemented the set server info command for all the DCi supporting options in previous versions of iLO 5 which may reset NIC settings during iLO 5 update.

Online ROM Flash Component for Windows x64 - HPE Integrated Lights-Out 5

Version: 2.42 **(Recommended)**

Filename: cp046458.exe; cp046458_part1.compsig; cp046458_part2.compsig

**Important Note!**

IPv6 network communications - Dedicated network connection only

Supported Networking Features

- IPv6 Static Address Assignment
- IPv6 SLAAC Address Assignment
- IPv6 Static Route Assignment
- IPv6 Static Default Gateway Entry
- DHCPv6 Stateful Address Assignment
- DHCPv6 Stateless DNS, Domain Name, and NTP Configuration
- Integrated Remote Console
- OA Single Sign-On
- HP-SIM Single Sign-On
- Web Server
- SSH Server
- SNTP Client
- DDNS Client
- RIBCL over IPv6
- SNMP
- AlertMail
- Remote Syslog
- WinDBG Support
- HPONCFG/HPLOMIG over an IPv6 connection
- Scriptable Virtual Media
- CLI/RIBCL Key Import over IPv6
- Authentication using LDAP and Kerberos over IPv6
- iLO Federation

Networking Features not supported by IPv6 in this release

- IPv6 Over Shared Network Port Connections
- IPMI
- NETBIOS-WINS
- Enterprise Secure Key Manager (ESKM) Support
- Embedded Remote Support (ERS)

**Prerequisites**

Hewlett Packard Enterprise recommends the following or greater versions of iLO utilities for best performance:

- RESTful Interface Tool (iLOREST) 2.3
- HPQLOCFG v5.2
- Lights-Out XML Scripting Sample bundle 5.10.0
- HPONCFG Windows 5.2.0

- HPONCFG Linux 5.3.0
- LOCFG v5.10.0
- HPLOMIG 5.2.0

NOTE: Updated utilities and system libraries are required to support the iLO HighSecurity, FIPS, and CNSA security states. The HPONCFG Windows utility does not currently support the CNSA security state.

**Fixes**

- Corrected Product Name listed under Device Inventory as "NVIDIA Quadro M3000SE", that was wrongly listed as "Synergy 75W MXM Mezzanine" with iLO firmware v2.16 and higher
- iLO stops monitoring the second Pensando card after the first one fails with a PCIe error

**Enhancements**

- Added Server Identity (iLO IDevID, iLO LDevID, System IDevID, System IAK and Platform certificates) capability to uniquely identify a server across networks that is cryptographically verifiable
- EAP-TLS based authentication for onboarding into an 802.1X access-controlled network
- Enabled support for Intel VROC

  - Device discovery and inventory of VROC SATA Controller and drives attached to it
  - Firmware inventory of Intel VROC(VMD NVMe RAID) and VROC SATA Controller

- Extend size for firmware versions supported to 48 bytes
- Liquid Cooling support for Apollo systems
- Server Platform Services Descriptor verification and recovery
- Enabled Discovery, Inventory and Thermal support for Pensando Cloud Adapters

  - P41849-B21: Pensando DSP DSC-25 Cld-SP 10/25Gb Card
  - P41852-B21: Pensando DSP DSC-100 Cld-SP 100Gb Card

- For Synergy, restricted the capability to change below settings.

  Note : Changes to these settings can affect communication between One-view and iLO

  - iLO Web service
  - iLO Web service Non-SSL Port
  - Web server SSL Port
  - iLO RIBCL Interface

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Online ROM Flash Firmware Package - HPE Integrated Lights-Out 5

Version: 1.48 (a) **(Optional)**

Filename: ilo5_148.fwpkg

**Important Note!**

IPv6 network communications - Dedicated network connection only
- Supported Networking Features
  - IPv6 Static Address Assignment
  - IPv6 SLAAC Address Assignment
  - IPv6 Static Route Assignment
  - IPv6 Static Default Gateway Entry
  - DHCPv6 Stateful Address Assignment
  - DHCPv6 Stateless DNS, Domain Name, and NTP Configuration
  - Integrated Remote Console
  - OA Single Sign-On
  - HP-SIM Single Sign-On
  - Web Server
  - SSH Server
  - SNTP Client
  - DDNS Client
  - RIBCL over IPv6
  - SNMP
  - AlertMail
  - Remote Syslog
  - WinDBG Support
  - HPONCFG/HPLOMIG over an IPv6 connection
  - Scriptable Virtual Media
  - CLI/RIBCL Key Import over IPv6
  - Authentication using LDAP and Kerberos over IPv6
  - iLO Federation
- Networking Features not supported by IPv6 in this release
  - IPv6 Over Shared Network Port Connections
  - IPMI
  - NETBIOS-WINS
  - Enterprise Secure Key Manager (ESKM) Support
  - Embedded Remote Support (ERS)

**Prerequisites**

Hewlett Packard Enterprise recommends the following or greater versions of iLO utilities for best performance:

- RESTful Interface Tool (iLOREST) 2.3
- HPQLOCFG v5.2
- Lights-Out XML Scripting Sample bundle 5.10.0
- HPONCFG Windows 5.2.0
- HPONCFG Linux 5.3.0
- LOCFG v5.10.0
- HPLOMIG 5.2.0

NOTE: Updated utilities and system libraries are required to support the iLO HighSecurity, FIPS, and CNSA security states. The HPONCFG Windows utility does not currently support the CNSA security state.

**Fixes**

- Implemented the set server info command for all the DCi supporting options in previous versions of iLO 5 which may reset NIC settings during iLO 5 update.

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Online ROM Flash Firmware Package - HPE Integrated Lights-Out 5

Version: 2.42 **(Recommended)**

Filename: ilo5_242.fwpkg

**Important Note!**

IPv6 network communications - Dedicated network connection only

Supported Networking Features

- IPv6 Static Address Assignment
- IPv6 SLAAC Address Assignment
- IPv6 Static Route Assignment
- IPv6 Static Default Gateway Entry
- DHCPv6 Stateful Address Assignment
- DHCPv6 Stateless DNS, Domain Name, and NTP Configuration
- Integrated Remote Console
- OA Single Sign-On
- HP-SIM Single Sign-On
- Web Server
- SSH Server
- SNTP Client
- DDNS Client
- RIBCL over IPv6
- SNMP
- AlertMail
- Remote Syslog
- WinDBG Support
- HPONCFG/HPLOMIG over an IPv6 connection
- Scriptable Virtual Media
- CLI/RIBCL Key Import over IPv6
- Authentication using LDAP and Kerberos over IPv6
- iLO Federation

Networking Features not supported by IPv6 in this release

- IPv6 Over Shared Network Port Connections
- IPMI
- NETBIOS-WINS

Enterprise Secure Key Manager (ESKM) Support
Embedded Remote Support (ERS)

**Prerequisites**

Hewlett Packard Enterprise recommends the following or greater versions of iLO utilities for best performance:

- RESTful Interface Tool (iLOREST) 2.3
- HPQLOCFG v5.2
- Lights-Out XML Scripting Sample bundle 5.10.0
- HPONCFG Windows 5.2.0
- HPONCFG Linux 5.3.0
- LOCFG v5.10.0
- HPLOMIG 5.2.0

NOTE: Updated utilities and system libraries are required to support the iLO HighSecurity, FIPS, and CNSA security states. The HPONCFG Windows utility does not currently support the CNSA security state.

**Fixes**

- Corrected Product Name listed under Device Inventory as "NVIDIA Quadro M3000SE", that was wrongly listed as "Synergy 75W MXM Mezzanine" with iLO firmware v2.16 and higher
- iLO stops monitoring the second Pensando card after the first one fails with a PCIe error

**Enhancements**

- Added Server Identity (iLO IDevID, iLO LDevID, System IDevID, System IAK and Platform certificates) capability to uniquely identify a server across networks that is cryptographically verifiable
- EAP-TLS based authentication for onboarding into an 802.1X access-controlled network
- Enabled support for Intel VROC

  - Device discovery and inventory of VROC SATA Controller and drives attached to it
  - Firmware inventory of Intel VROC(VMD NVMe RAID) and VROC SATA Controller

- Extend size for firmware versions supported to 48 bytes
- Liquid Cooling support for Apollo systems
- Server Platform Services Descriptor verification and recovery
- Enabled Discovery, Inventory and Thermal support for Pensando Cloud Adapters

  - P41849-B21: Pensando DSP DSC-25 Cld-SP 10/25Gb Card
  - P41852-B21: Pensando DSP DSC-100 Cld-SP 100Gb Card

- For Synergy, restricted the capability to change below settings.

Note : Changes to these settings can affect communication between One-view and iLO

- iLO Web service
- iLO Web service Non-SSL Port
- Web server SSL Port
- iLO RIBCL Interface

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**Firmware - Network** Top

Broadcom Firmware Package for BCM5741x adapters

Version: 218.0.166.0 **(Recommended)**

Filename: bcm218.0.166.0.pup.fwpkg

**Fixes**

- This product addresses a modification on help string of Family Firmware Version.
- This product addresses an issue about failing to detect firmware version while updating that under operation system.
- This product addresses an issue about connection lost under pre-OS environment after restart the system from OS.

**Enhancements**

- Initial version
- This product brings the support of Data Center Interconnect on supported devices.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port SFP+ BCM57412 Adapter
- HPE Ethernet 10Gb 2-port SFP+ BCM57412 OCP3 Adapter
- HPE Ethernet 10Gb 2-port BaseT BCM57416 Adapter
- HPE Ethernet 10Gb 2-port BaseT BCM57416 OCP3 Adapter
- HPE Ethernet 10/25Gb 2-port SFP28 BCM57414 Adapter
- HPE Ethernet 10/25Gb 2-port SFP28 BCM57414 OCP3 Adapter

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HPE Blade Firmware Flash for Emulex Mezzanine Converged Network Adapters for Linux (x64)

Version: 2021.02.01 **(Recommended)**

Filename: RPMS/x86_64/firmware-cna-mezz-emulex-2021.02.01-1.6.x86_64.rpm; RPMS/x86_64/firmware-cna-mezz-emulex-2021.02.01-1.6.x86_64_part1.compsig; RPMS/x86_64/firmware-cna-mezz-emulex-2021.02.01-1.6.x86_64_part2.compsig

**Important Note!**

Release Notes:

HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:**

- Fixed a behavior with internal engineering data displays

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE FlexFabric 20Gb 2-port 650FLB Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |
| HPE FlexFabric 20Gb 2-port 650M Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |

**Prerequisites**

Firmware updates may be accomplished using the inbox or Out of Box (OOB) drivers. Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The OOB NIC driver is available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download.

Additional requirements:

The target environment must have the libsysfs or sysfsutils package installed prior to the installation of the firmware update kit. If not already present, the libsysfs or sysfsutils package can be obtained from the operating system installation media.

Environment must have 32-bit netlink library (libnl.so) installed for component to be able to discover Emulex HBAs/CNAs
Environment must be running the syslog daemon for the flash engine to run

Note: To enable the FCoE/iSCSI protocol on devices that support it, please install the appropriate Emulex FCoE/iSCSI driver. The FCoE protocol also requires the HPE Emulex FCoE Enablement Kit be installed. The drivers and enablement kit are also available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download.

The Enablement Kit requires that the target environment have the libHBAAPI package installed from your OS installation media.

Install the FCoE Driver Kit, reboot, and then install the Enablement Kit.

**Fixes**

Fixed the following:

- Fixed a behavior with internal engineering data displays

**Enhancements**

We have separate components to update fibre channel and converged network adapters. This is a converged network adapter update component.

Updated CNA (XE100 series) firmware

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE FlexFabric 20Gb 2-port 650FLB Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |
| HPE FlexFabric 20Gb 2-port 650M Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

---

HPE Blade Firmware Flash for Emulex Mezzanine Converged Network Adapters for Microsoft Windows Server 2012R2/2016/2019(x64)

Version: 2021.02.01 **(Recommended)**

Filename: cp042239.compsig; cp042239.exe

**Important Note!**

Release Notes:

HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:**

- Fixed a behavior with internal engineering data displays

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE FlexFabric 20Gb 2-port 650FLB Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |
| HPE FlexFabric 20Gb 2-port 650M Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |

## Prerequisites

Firmware updates may be accomplished using the inbox or Out of Box (OOB) drivers. Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied Emulex NIC driver must be installed prior to this firmware component being identified by SUM for deployment. The latest driver is available on the HPE.com website at http://www.hpe.com/.

The FCoE/iSCSI OOB driver and FCoE enablement kit are available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download.

## Fixes

**Fixed the following:**

- Fixed a behavior with internal engineering data displays

## Enhancements

We have separate components to update fibre channel and converged network adapters. This is a converged network adapter update component.

Updated CNA (XE100 series) firmware

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE FlexFabric 20Gb 2-port 650FLB Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |
| HPE FlexFabric 20Gb 2-port 650M Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |

## Supported Devices and Features

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

---

HPE Blade Firmware Flash for Emulex Mezzanine Converged Network Adapters for VMware vSphere 6.5

Version: 2021.02.01 **(Recommended)**

Filename: CP042236.compsig; CP042236.zip

**Important Note!**

Release Notes:

HPE Emulex Adapter Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:**

- Fixed a behavior with internal engineering data displays

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE FlexFabric 20Gb 2-port 650FLB Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |
| HPE FlexFabric 20Gb 2-port 650M Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Fixes**

**Fixed the following:**

- Fixed a behavior with internal engineering data displays

**Enhancements**

Updated CNA (XE100 series) firmware

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE FlexFabric 20Gb 2-port 650FLB Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |
| HPE FlexFabric 20Gb 2-port 650M Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

---

HPE Blade Firmware Flash for Emulex Mezzanine Converged Network Adapters for VMware vSphere 6.7

Version: 2021.02.01 **(Recommended)**

Filename: CP042237.compsig; CP042237.zip

**Important Note!**

Release Notes:

HPE Emulex Adapter Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:**

- Fixed a behavior with internal engineering data displays

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE FlexFabric 20Gb 2-port 650FLB Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |
| HPE FlexFabric 20Gb 2-port 650M Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Fixes**

**Fixed the following:**

- Fixed a behavior with internal engineering data displays

**Enhancements**

Updated CNA (XE100 series) firmware

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE FlexFabric 20Gb 2-port 650FLB Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |
| HPE FlexFabric 20Gb 2-port 650M Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

---

HPE Blade Firmware Flash for Emulex Mezzanine Converged Network Adapters for VMware vSphere 7.0

Version: 2021.02.01 **(Recommended)**

Filename: CP042549.compsig; CP042549.zip

**Important Note!**

Release Notes:

HPE Emulex Adapter Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:**

- Fixed a behavior with internal engineering data displays

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE FlexFabric 20Gb 2-port 650FLB Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |
| HPE FlexFabric 20Gb 2-port 650M Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

## Fixes

**Fixed the following:**

- Fixed a behavior with internal engineering data displays

## Enhancements

Updated CNA (XE100 series) firmware

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE FlexFabric 20Gb 2-port 650FLB Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |
| HPE FlexFabric 20Gb 2-port 650M Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.1269.0 | 12.0.1171.0 |

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
- HPE FlexFabric 20Gb 2-port 650M Adapter

---

HPE Blade Intel Online Firmware Upgrade Utility for Linux

Version: 1.2.3 **(Optional)**

Filename: firmware-nic-intel-bl-1.2.3-1.1.x86_64.compsig; firmware-nic-intel-bl-1.2.3-1.1.x86_64.rpm

**Important Note!**

HPE recommends the *HPE Blade Intel ixgbe Drivers for Linux*, versions 5.9.4 or later, for use with this firmware.

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Enhancements**

This product now supports Red Hat Enterprise Linux 7, Updates 8 and 9.
This product now supports Red Hat Enterprise Linux 8, Updates 2 and 3.
This product now supports SUSE Linux Enterprise Server 12 SP5.
This product now supports SUSE Linux Enterprise Server 15 SP2.

**Supported Devices and Features**

This package supports the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

---

HPE Blade Intel Online Firmware Upgrade Utility for VMware

Version: 1.2.3 **(Optional)**

Filename: CP045076.compsig; CP045076.zip

**Important Note!**

HPE recommends the *HPE Blade Intel ixgben Driver for VMware,* version 2020.12.09 or later, for use with this firmware.

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Enhancements**

This product now supports VMware vSphere 7.0 U1.
This product now supports VMware vSphere 6.7 U3.
This product now supports VMware vSphere 6.5 U3.

**Supported Devices and Features**

This package supports the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Blade Intel Online Firmware Upgrade Utility for Windows Server x64 Editions

Version: 1.0.2.3 **(Optional)**

Filename: cp045079.compsig; cp045079.exe

**Important Note!**

HPE recommends one of the following drivers, as appropriate for your system, for use with this firmware:

- *HPE Blade Intel ixn Driver for Windows Server 2012 R2*, version 3.14.214.0 or later
- *HPE Blade Intel ixn Driver for Windows Server 2016*, version 4.1.199.0 or later
- *HPE Blade Intel ixn Driver for Windows Server 2019*, version 4.1.197.0 or later

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Enhancements**

This firmware is updated to maintain compatibility with the updated Windows ixn drivers.

**Supported Devices and Features**

This package supports the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Blade QLogic NX2 Online Firmware Upgrade Utility for Linux

Version: 1.2.3 **(Optional)**

Filename: firmware-nic-qlogic-nx2-bl-1.2.3-1.1.x86_64.compsig; firmware-nic-qlogic-nx2-bl-1.2.3-1.1.x86_64.rpm

**Important Note!**

HPE recommends *HPE Blade QLogic NX2 10/20GbE Multifunction Drivers for Linux*, versions 7.14.76-1 or later, for use with the firmware in this package.

**Prerequisites**

This package requires the appropriate driver for your network adapter be installed and all Ethernet ports brought up (*ifup ethX* or *ifconfig ethX up*) before firmware can be updated.

**Fixes**

This product addresses an issue where powering on the system with any I/O virtualization functionality (NPAR, SR-IOV, etc) enabled results in an Uncorrectable Machine Check Exception (UMCE).
This product addresses an issue where the WOL option is displayed on the Human Interface Infrastructure (HII) menu for 534M and 630M mezzanine devices, even though WOL is not supported on those devices.

**Enhancements**

This product now supports Red Hat Enterprise Linux 7, Updates 8 and 9.
This product now supports Red Hat Enterprise Linux 8, Updates 2 and 3.
This product now supports SUSE Linux Enterprise Server 12 SP5.
This product now supports SUSE Linux Enterprise Server 15 SP2.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 534M Adapter
- HPE FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 20Gb 2-port 630FLB Adapter
- HPE FlexFabric 20Gb 2-port 630M Adapter

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HPE Blade QLogic NX2 Online Firmware Upgrade Utility for VMware

Version: 1.2.2 **(Optional)**

Filename: CP045077.compsig; CP045077.zip

**Important Note!**

HPE recommends the *HPE Blade QLogic NX2 10/20 GbE Multifunction Driver for VMware*, version 2021.04.19 or later, for use with this firmware.

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Fixes**

This product addresses an issue where powering on the system with any I/O virtualization functionality (NPAR, SR-IOV, etc) enabled results in an Uncorrectable Machine Check Exception (UMCE).
This product addresses an issue where the WOL option is displayed on the Human Interface Infrastructure (HII) menu for 534M and 630M mezzanine devices, even though WOL is not supported on those devices.

**Enhancements**

This product now supports VMware vSphere 7.0 U1.
This product now supports VMware vSphere 6.7 U3.
This product now supports VMware vSphere 6.5 U3.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 534M Adapter
- HPE FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 20Gb 2-port 630FLB Adapter
- HPE FlexFabric 20Gb 2-port 630M Adapter

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HPE Blade QLogic NX2 Online Firmware Upgrade Utility for Windows Server x64 Editions

Version: 1.0.2.2 **(Optional)**

Filename: cp045080.compsig; cp045080.exe

**Important Note!**

HPE recommends *HPE Blade QLogic NX2 10/20GbE Multifunction Drivers for Windows Server x64 Editions*, version 7.13.195.0 or later, for use with this firmware.

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Fixes**

This product addresses an issue where powering on the system with any I/O virtualization functionality (NPAR, SR-IOV, etc) enabled results in an Uncorrectable Machine Check Exception (UMCE).
This product addresses an issue where the WOL option is displayed on the Human Interface Infrastructure (HII) menu for 534M and 630M mezzanine devices, even though WOL is not supported on those devices.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE FlexFabric 10Gb 2-port 534M Adapter
- HPE FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 20Gb 2-port 630FLB Adapter

- HPE FlexFabric 20Gb 2-port 630M Adapter

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HPE Broadcom NetXtreme-E Firmware Package for BCM5741x adapters

Version: 218.0.166000 **(Recommended)**

Filename: bcm218.0.166000.Optimized.pup.fwpkg

**Fixes**

- This product addresses a modification on help string of Family Firmware Version.
- This product addresses an enhancement on LLDP functional option naming under RBSU and the interactivity of DCB protocol option.
- This product addresses an issue about lack of MAC address while querying via RedFish.
- This product addresses an issue about failing to recognize the adapter firmware version under Microsoft Windows(R).
- This product addresses an issue for receiving PCIe errors while installing SUSE Linux Enterprise Server.
- This product addresses an issue for packets missing when UDP multicast application is started/stopped.
- This product addresses an issue for HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter not linking up during POST.

**Enhancements**

Initial version

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 537SFP+ Adapter
- HPE Ethernet 10Gb 2-port 537SFP+ FLR Adapter
- HPE Ethernet 10Gb 2-port 535T Adapter
- HPE Ethernet 10Gb 2-port 535FLR-T Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter

HPE Broadcom NX1 Online Firmware Upgrade Utility for Linux x86_64

Version: 2.27.6 **(Optional)**

Filename: firmware-nic-broadcom-2.27.6-1.1.x86_64.compsig; firmware-nic-broadcom-2.27.6-1.1.x86_64.rpm

**Important Note!**

HPE recommends *HPE Broadcom tg3 Ethernet Drivers*, versions 3.139b or later, for use with this firmware.

**Prerequisites**

This package requires the appropriate driver for your network adapter be installed an all Ethernet ports brought up(*ifup ethX or ifconfig ethX up or wicked ifup ethX*) before firmware can be updated.

If local system doesn't configure any network interface for the adapter that are necessary to create the network config file to bring up interface.
- For example in sles15sp1, To create ifcfg-ethX files under /etc/sysconfig/network/.

**Fixes**

- This product addresses an issue about lack of information under AHS log.
- This product addresses an RSOD issue which appeared intermittently during POST after having a warm reboot.
- This product addresses a modification on help string of Family Firmware Version.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 1Gb 2-port 330i Adapter (22BD)
- HPE Ethernet 1Gb 4-port 331i Adapter (22BE)
- HPE Ethernet 1Gb 4-port 331FLR Adapter
- HPE Ethernet 1Gb 4-port 331T Adapter
- HPE Ethernet 1Gb 2-port 332i Adapter (22E8)
- HPE Ethernet 1Gb 2-port 332T Adapter

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HPE Broadcom NX1 Online Firmware Upgrade Utility for VMware

Version: 1.28.6 **(Optional)**

Filename: CP045013.compsig; CP045013.zip

**Important Note!**

This software package contains combo image v20.18.31 with the following firmware versions:

| NIC | Boot Code Version | PXE Version | NCSI Version | UEFI Version | CCM Version |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| HPE Ethernet 1Gb 2-port 330i Adapter (22BD) | 2.10 | 21.6.0 | 1.5.27 | 21.6.12 | 218.0.10.0 |
| HPE Ethernet 1Gb 4-port 331i Adapter (22BE)<br>HPE Ethernet 1Gb 4-port 331FLR Adapter<br>HPE Ethernet 1Gb 4-port 331T Adapter | 1.46 | 21.6.0 | 1.5.27 | 21.6.12 | 218.0.10.0 |
| HPE Ethernet 1Gb 2-port 332i Adapter (22E8)<br>HPE Ethernet 1Gb 2-port 332T Adapter | 1.40 | 21.6.0 | 1.5.27 | 21.6.12 | 218.0.10.0 |

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Fixes**

- This product addresses an issue about lack of information under AHS log.
- This product addresses an RSOD issue which appeared intermittently during POST after having a warm reboot.
- This product addresses a modification on help string of Family Firmware Version.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 1Gb 2-port 330i Adapter (22BD)
- HPE Ethernet 1Gb 4-port 331i Adapter (22BE)
- HPE Ethernet 1Gb 4-port 331FLR Adapter
- HPE Ethernet 1Gb 4-port 331T Adapter
- HPE Ethernet 1Gb 2-port 332i Adapter (22E8)
- HPE Ethernet 1Gb 2-port 332T Adapter

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HPE Broadcom NX1 Online Firmware Upgrade Utility for Windows Server x64 Editions

Version: 5.2.4.0 **(Optional)**

Filename: cp045014.compsig; cp045014.exe

**Important Note!**

HPE recommends *HPE Broadcom NX1 1Gb Driver for Windows Server x64 Editions*, version 214.0.0.6 or later, for use with this firmware.

This software package contains combo image v20.18.31 with the following firmware versions:

| NIC | Boot Code Version | PXE Version | NCSI Version | UEFI Version | CCM Version |
|---|---|---|---|---|---|
| HPE Ethernet 1Gb 2-port 330i Adapter (22BD) | 2.10 | 21.6.0 | 1.5.27 | 21.6.12 | 218.0.10.0 |
| HPE Ethernet 1Gb 4-port 331i Adapter (22BE)<br>HPE Ethernet 1Gb 4-port 331FLR Adapter<br>HPE Ethernet 1Gb 4-port 331T Adapter | 1.46 | 21.6.0 | 1.5.27 | 21.6.12 | 218.0.10.0 |
| HPE Ethernet 1Gb 2-port 332i Adapter (22E8)<br>HPE Ethernet 1Gb 2-port 332T Adapter | 1.40 | 21.6.0 | 1.5.27 | 21.6.12 | 218.0.10.0 |

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Fixes**

- This product addresses an issue about lack of information under AHS log.
- This product addresses an RSOD issue which appeared intermittently during POST after having a warm reboot.
- This product addresses a modification on help string of Family Firmware Version.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 1Gb 2-port 330i Adapter (22BD)
- HPE Ethernet 1Gb 4-port 331i Adapter (22BE)
- HPE Ethernet 1Gb 4-port 331FLR Adapter
- HPE Ethernet 1Gb 4-port 331T Adapter
- HPE Ethernet 1Gb 2-port 332i Adapter (22E8)
- HPE Ethernet 1Gb 2-port 332T Adapter

HPE Firmware Flash for Emulex Converged Network Adapters for Linux (x64)

Version: 2021.02.01 **(Recommended)**

Filename: RPMS/x86_64/firmware-cna-emulex-2021.02.01-1.8.x86_64.compsig; RPMS/x86_64/firmware-cna-emulex-2021.02.01-1.8.x86_64.rpm

**Important Note!**

Release Notes:

HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:**

- Fixed a behavior with internal engineering data display

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UE |
|---|---|---|---|---|
| HPE FlexFabric 10Gb 2-port 556FLR-T Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE CN1200E Dual Port Converged Network Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |

| | | | | |
|---|---|---|---|---|
| HPE CN1200E-T Dual Port Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.12 |

**Prerequisites**

Firmware updates may be accomplished using the inbox or Out of Box (OOB) drivers. Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The OOB NIC driver is available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download.

Additional requirements:

The target environment must have the libsysfs or sysfsutils package installed prior to the installation of the firmware update kit. If not already present, the libsysfs or sysfsutils package can be obtained from the operating system installation media.

Environment must have 32-bit netlink library (libnl.so) installed for component to be able to discover Emulex HBAs/CNAs
Environment must be running the syslog daemon for the flash engine to run

Note: To enable the FCoE/iSCSI protocol on devices that support it, please install the appropriate Emulex FCoE/iSCSI driver. The FCoE protocol also requires the HPE Emulex FCoE Enablement Kit be installed. The drivers and enablement kit are also available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download.

The Enablement Kit requires that the target environment have the libHBAAPI package installed from your OS installation media.

Install the FCoE Driver Kit, reboot, and then install the Enablement Kit.

**Fixes**

**Fixed the following:**

- Fixed a behavior with internal engineering data display

**Enhancements**

Updated CNA (XE100 series) firmware

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UE |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| HPE FlexFabric 10Gb 2-port 556FLR-T Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.12 |
| HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.12 |
| HPE CN1200E Dual Port Converged Network Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.12 |
| HPE CN1200E-T Dual Port Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12.0.12 |

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Dual Port Converged Network Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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HPE Firmware Flash for Emulex Converged Network Adapters for Microsoft Windows Server 2012R2/2016/2019

Version: 2021.02.01 **(Recommended)**

Filename: cp042529.compsig; cp042529.exe

**Important Note!**

Release Notes:

HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:**

- Fixed a behavior with internal engineering data display

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UE |
|---|---|---|---|---|
| HPE FlexFabric 10Gb 2-port 556FLR-T Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE CN1200E Dual Port Converged Network Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE CN1200E-T Dual Port Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |

## Prerequisites

Firmware updates may be accomplished using the inbox or Out of Box (OOB) drivers. Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied Emulex NIC driver must be installed prior to this firmware component being identified by SUM for deployment. The latest driver is available on the HPE.com website at http://www.hpe.com/.

The FCoE/iSCSI OOB driver and FCoE enablement kit are available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download.

## Fixes

**Fixed the following:**

- Fixed a behavior with internal engineering data display

## Enhancements

Updated CNA (XE100 series) firmware

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UE |
|---|---|---|---|---|
| HPE FlexFabric 10Gb 2-port 556FLR-T Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE CN1200E Dual Port Converged Network Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE CN1200E-T Dual Port Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Dual Port Converged Network Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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HPE Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.5

Version: 2021.02.01 **(Recommended)**

Filename: CP042526.compsig; CP042526.zip

**Important Note!**

Release Notes:

HPE Emulex Adapter Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:-**

- Fixed a behavior with internal engineering data display

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UE |
|---|---|---|---|---|
| HPE FlexFabric 10Gb 2-port 556FLR-T Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE CN1200E Dual Port Converged Network Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE CN1200E-T Dual Port Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

## Fixes

**Fixed the following:-**

- Fixed a behavior with internal engineering data display

## Enhancements

Updated CNA (XE100 series) firmware

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UE |
|---|---|---|---|---|
| HPE FlexFabric 10Gb 2-port 556FLR-T Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE CN1200E Dual Port Converged Network Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE CN1200E-T Dual Port Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Dual Port Converged Network Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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HPE Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.7

Version: 2021.02.01 **(Recommended)**

Filename: CP042527.compsig; CP042527.zip

**Important Note!**

Release Notes:

HPE Emulex Adapter Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals

2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:**

- Fixed a behavior with internal engineering data display

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UE |
|---|---|---|---|---|
| HPE FlexFabric 10Gb 2-port 556FLR-T Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE CN1200E Dual Port Converged Network Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE CN1200E-T Dual Port Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

## Fixes

**Fixed the following:**

- Fixed a behavior with internal engineering data display

## Enhancements

Updated CNA (XE100 series) firmware

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UE |
|---|---|---|---|---|
| HPE FlexFabric 10Gb 2-port 556FLR-T Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE CN1200E Dual Port Converged Network Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE CN1200E-T Dual Port Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Dual Port Converged Network Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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HPE Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 7.0

Version: 2021.02.01 **(Recommended)**

Filename: CP042543.compsig; CP042543.zip

**Important Note!**

Release Notes:

HPE Emulex Adapter Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to http://www.hpe.com/support/manuals
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:**

- Fixed a behavior with internal engineering data display

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UE |
|---|---|---|---|---|
| HPE FlexFabric 10Gb 2-port 556FLR-T Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE CN1200E Dual Port Converged Network Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE CN1200E-T Dual Port Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

## Fixes

**Fixed the following:**

- Fixed a behavior with internal engineering data display

## Enhancements

Updated CNA (XE100 series) firmware

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UE |
|---|---|---|---|---|
| HPE FlexFabric 10Gb 2-port 556FLR-T Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter | 10Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE CN1200E Dual Port Converged Network Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |
| HPE CN1200E-T Dual Port Adapter | 20Gb | 12.0.1277.0 | 12.0.1336.0 | 12 |

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE CN1200E Dual Port Converged Network Adapter
- HPE CN1200E-T Dual Port Converged Network Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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HPE Intel Online Firmware Upgrade Utility for Linux x86_64

Version: 1.21.6 **(Optional)**

Filename: firmware-nic-intel-1.21.6-1.1.x86_64.compsig; firmware-nic-intel-1.21.6-1.1.x86_64.rpm

**Important Note!**

HPE recommends at least one of the following drivers, as appropriate for your device, for use with this firmware:

- HPE Intel igb Drivers for Linux, versions 6.2.5 or later
- HPE Intel ixgbe Drivers for Linux , versions 5.9.4 or later
- HPE Intel i40e Drivers for Linux, versions 2.13.10 or later

**Prerequisites**

This package requires the appropriate driver for your network adapter be installed an all Ethernet ports brought up(*ifup ethX or ifconfig ethX up or wicked ifup ethX*) before firmware can be updated.

If local system doesn't configure any network interface for the adapter that are necessary to create the network config file to bring up interface.

- For example in sles15sp1, To create ifcfg-ethX files under /etc/sysconfig/network/.

**Fixes**

This product addresses an issue where Systems Insight Display (SID) modul is green when there's no Network connection.

**Supported Devices and Features**

This package supports the following network adapters:

- HPE Ethernet 1Gb 2-port 361i Adapter
- HPE Ethernet 1Gb 2-port 361T Adapter
- HPE Ethernet 1Gb 2-port 363i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 4-port 366FLR Adapter
- HPE Ethernet 1Gb 4-port 366i Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HPE Ethernet 1Gb 4-port 366T Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter
- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568i Adapter

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HPE Intel Online Firmware Upgrade Utility for VMware

Version: 3.14.5 **(Optional)**

Filename: CP045036.compsig; CP045036.zip

**Important Note!**

This software package contains the following firmware versions for the below listed supported network adapters:

| NIC | EEPROM/NVM Version | OROM Version | Single NVM Version |
|---|---|---|---|
| HPE Ethernet 1Gb 2-port 361i Adapter | 8000106F | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 2-port 361T Adapter | 80000F91 | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 2-port 363i Adapter | 80000D00 | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 4-port 366i Communication Board | 80000EBF | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 4-port 366i Adapter | 8000105E | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 4-port 366FLR Adapter | 80001060 | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 4-port 366T Adapter | 8000105F | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 2-port 368i Adapter | 800027FA | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter | 800027F8 | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 4-port 369i Adapter | 800027FB | 1.2836.0 | N/A |
| HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter | 80000838 | 1.2836.0 | N/A |
| HPE Ethernet 10Gb 2-port 560SFP+ Adapter | 80000835 | 1.2836.0 | N/A |
| HPE Ethernet 10Gb 2-port 561T Adapter | 80000636 | 1.2836.0 | N/A |
| HPE Ethernet 10Gb 2-port 561FLR-T Adapter | 800005B6 | 1.2836.0 | N/A |
| HPE Ethernet 10Gb 2-port 568i Adapter | 800027FC | 1.2836.0 | N/A |
| HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter | 800027F8 | 1.2836.0 | N/A |
| HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter | 800027F8 | 1.2836.0 | N/A |
| HPE Ethernet 10Gb 2-port 563i Adapter | 800035C0 | 1.1375.0 | N/A |
| HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter | 80009655 | 1.2836.0 | 10.54.7 |
| HPE Ethernet 10Gb 2-port 562FLR-T Adapter | 8000137D | 1.2836.0 | 10.54.4 |
| HPE Ethernet 10Gb 2-port 562SFP+ Adapter | 800095AA | 1.2836.0 | 10.54.7 |
| HPE Ethernet 10Gb 2-port 562T Adapter | 8000137C | 1.2836.0 | 10.54.4 |

The combo image v1.2836.0 includes: Boot Agent: 1GbE - v1.5.88, 10GbE - v2.4.44, 40GbE - v1.1.18 & UEFI Drivers: 1GbE - v9.4.06, 10GbE - v7.8.13, 40GbE - v4.4.12

The combo image v1.1375.0 includes: Boot Agent: 1GbE - v1.5.72, 10GbE - v2.3.46, 40GbE - v1.0.21 & UEFI Drivers: 1GbE - v6.9.13, 10GbE - v5.0.20, 40GbE - v1.5.14

Single NVM Version is new firmware format which represent an unified version in place of the previously used EEPROM/NVM Version or OROM version.

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Fixes**

This product addresses an issue where Systems Insight Display (SID) modul is green when there's no Network connection.

**Supported Devices and Features**

This package supports the following network adapters:

- HPE Ethernet 1Gb 2-port 361i Adapter
- HPE Ethernet 1Gb 2-port 361T Adapter
- HPE Ethernet 1Gb 2-port 363i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 4-port 366FLR Adapter
- HPE Ethernet 1Gb 4-port 366i Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HPE Ethernet 1Gb 4-port 366T Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter
- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568i Adapter

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HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions

Version: 5.2.4.0 **(Optional)**

Filename: cp045037.compsig; cp045037.exe

**Important Note!**

This software package contains the following firmware versions for the below listed supported network adapters:

| NIC | EEPROM/NVM Version | OROM Version | Single NVM Version |
|---|---|---|---|
| HPE Ethernet 1Gb 2-port 361i Adapter | 8000106F | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 2-port 361T Adapter | 80000F91 | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 2-port 363i Adapter | 80000D00 | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 4-port 366i Communication Board | 80000EBF | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 4-port 366i Adapter | 8000105E | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 4-port 366FLR Adapter | 80001060 | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 4-port 366T Adapter | 8000105F | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 2-port 368i Adapter | 800027FA | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter | 800027F8 | 1.2836.0 | N/A |
| HPE Ethernet 1Gb 4-port 369i Adapter | 800027FB | 1.2836.0 | N/A |
| HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter | 80000838 | 1.2836.0 | N/A |
| HPE Ethernet 10Gb 2-port 560SFP+ Adapter | 80000835 | 1.2836.0 | N/A |
| HPE Ethernet 10Gb 2-port 561T Adapter | 80000636 | 1.2836.0 | N/A |
| HPE Ethernet 10Gb 2-port 561FLR-T Adapter | 800005B6 | 1.2836.0 | N/A |
| HPE Ethernet 10Gb 2-port 568i Adapter | 800027FC | 1.2836.0 | N/A |
| HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter | 800027F8 | 1.2836.0 | N/A |
| HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter | 800027F8 | 1.2836.0 | N/A |
| HPE Ethernet 10Gb 2-port 563i Adapter | 800035C0 | 1.1375.0 | N/A |
| HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter | 80009655 | 1.2836.0 | 10.54.7 |
| HPE Ethernet 10Gb 2-port 562FLR-T Adapter | 8000137D | 1.2836.0 | 10.54.4 |

| | | | |
|---|---|---|---|
| HPE Ethernet 10Gb 2-port 562SFP+ Adapter | 800095AA | 1.2836.0 | 10.54.7 |
| HPE Ethernet 10Gb 2-port 562T Adapter | 8000137C | 1.2836.0 | 10.54.4 |

The combo image v1.2836.0 includes: Boot Agent: 1GbE - v1.5.88, 10GbE - v2.4.44, 40GbE - v1.1.18 & UEFI Drivers: 1GbE - v9.4.06, 10GbE - v7.8.13, 40GbE - v4.4.12

The combo image v1.1375.0 includes: Boot Agent: 1GbE - v1.5.72, 10GbE - v2.3.46, 40GbE - v1.0.21 & UEFI Drivers: 1GbE - v6.9.13, 10GbE - v5.0.20, 40GbE - v1.5.14

Single NVM Version is new firmware format which represent an unified version in place of the previously used EEPROM/NVM Version or OROM version.

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Fixes**

This product addresses an issue where Systems Insight Display (SID) modul is green when there's no Network connection.

**Supported Devices and Features**

This package supports the following network adapters:

- HPE Ethernet 1Gb 2-port 361i Adapter
- HPE Ethernet 1Gb 2-port 361T Adapter
- HPE Ethernet 1Gb 2-port 363i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 4-port 366FLR Adapter
- HPE Ethernet 1Gb 4-port 366i Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HPE Ethernet 1Gb 4-port 366T Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter
- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter

- HPE Ethernet 10Gb 2-port 568i Adapter

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HPE QLogic FastLinQ Online Firmware Upgrade Utility for Linux x86_64

Version: 1.10.10 **(Optional)**

Filename: firmware-nic-qlogic-flq-1.10.10-1.1.x86_64.compsig; firmware-nic-qlogic-flq-1.10.10-1.1.x86_64.rpm

**Important Note!**

HPE recommends *HPE QLogic FastLinQ 10/25/50GbE Drivers for Linux,* versions 8.55.5.0-1 or later, for use with the firmware in this product.

**Prerequisites**

This package requires the appropriate driver for your network adapter be installed an all Ethernet ports brought up(*ifup ethX or ifconfig ethX up or wicked ifup ethX*) before firmware can be updated.

If local system doesn't configure any network interface for the adapter that are necessary to create the network config file to bring up interface.
- For example in sles15sp1, To create ifcfg-ethX files under /etc/sysconfig/network/.

**Fixes**

This product addresses a pause flood condition on switch when attempting iPXE boot.

**Enhancements**

This product contains support PLDM firmware upgrade base improvements.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE StoreFabric CN1200R-T Converged Network Adapter
- HPE StoreFabric CN1300R Converged Network Adapter

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HPE QLogic FastLinQ Online Firmware Upgrade Utility for VMware

Version: 4.13.50 **(Optional)**

Filename: CP046982.compsig; CP046982.zip

**Important Note!**

HPE recommends *HPE QLogic FastLinQ 10/25/50GbE Multifunction Drivers for VMware*, versions 2021.04.05 or later, for use with this firmware.

This software package contains combo image version v8.55.12 includes:

- Boot Code (MFW): 8.55.21.0
- UEFI: 4.1.11.2
- PXE: 2.0.19

The users will only see the combo image versions in the interactive mode firmware update or while using HPSUM/SPP to update the firmware on the supported adapters.

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Fixes**

This product addresses a pause flood condition on switch when attempting iPXE boot.

**Enhancements**

This product contains support PLDM firmware upgrade base improvements.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE StoreFabric CN1200R-T Converged Network Adapter
- HPE StoreFabric CN1300R Converged Network Adapter

HPE QLogic FastLinQ Online Firmware Upgrade Utility for Windows Server x64 Editions

Version: 5.2.4.0 **(Optional)**

Filename: cp044812.compsig; cp044812.exe

**Important Note!**

HPE recommends at least one of the following drivers, as appropriate for your device, for use with this firmware:

- *HPE QLogic FastLinQ 10/25/50GbE Driver for Windows Server x64 Editions*, versions 8.55.5.0

This combo image version v8.55.12 includes:

- Boot Code (MFW): 8.55.21.0
- UEFI: 4.1.11.2
- PXE: 2.0.19

The users will only see the combo image versions in the interactive mode firmware update or while using HPSUM/SPP to update the firmware on the supported adapters.

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Fixes**

This product addresses a pause flood condition on switch when attempting iPXE boot.

**Enhancements**

This product contains support PLDM firmware upgrade base improvements.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 524SFP+ Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE StoreFabric CN1200R-T Converged Network Adapter
- HPE StoreFabric CN1300R Converged Network Adapter

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HPE QLogic NX2 Online Firmware Upgrade Utility for Linux x86_64

Version: 2.28.6 **(Optional)**

Filename: firmware-nic-qlogic-nx2-2.28.6-1.1.x86_64.compsig; firmware-nic-qlogic-nx2-2.28.6-1.1.x86_64.rpm

**Important Note!**

HPE recommends *HPE QLogic NX2 10/20GbE Multifunction Drivers for Linux*, versions 7.14.76-1 or later, for use with the firmware in this package.

**Prerequisites**

This package requires the appropriate driver for your network adapter be installed an all Ethernet ports brought up(*ifup ethX or ifconfig ethX up or wicked ifup ethX*) before firmware can be updated.

If local system doesn't configure any network interface for the adapter that are necessary to create the network config file to bring up interface.
- For example in sles15sp1, To create ifcfg-ethX files under /etc/sysconfig/network/.

**Fixes**

This product addresses an issue that platform would be randomly waked up by WOL packet.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 530SFP+ Adapter
- HPE Ethernet 10Gb 2-port 530T Adapter
- HPE Ethernet 10Gb 2-port 533FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HPE StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter

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HPE QLogic NX2 Online Firmware Upgrade Utility for VMware

Version: 1.28.6 **(Optional)**

Filename: CP044814.compsig; CP044814.zip

**Important Note!**

HPE recommends HPE QLogic NX2 10/20GbE Multifunction Drivers for VMware, versions 2021.04.05 or later, for use with this firmware.

This software package contains combo image v7.18.80 with the following firmware versions:

| NIC | Boot Code Version | PXE Version | UEFI Version | iSCSI Version | FCoE Version | CCM Version | L2 Version |
|---|---|---|---|---|---|---|---|
| HPE Ethernet 10Gb 2-port 530SFP+ Adapter<br>HPE Ethernet 10Gb 2-port 530T Adapter | 7.16.03 | 7.14.13 | 8.8.2 | n/a | n/a | 7.14.4 | 7.12.25 |
| HPE Ethernet 10Gb 2-port 533FLR-T Adapter<br>HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter<br>HPE FlexFabric 10Gb 4-port 536FLR-T Adapter<br>HPE StoreFabric CN1100R Dual Port Converged Network Adapter<br>HPE StoreFabric CN1100R-T Converged Network Adapter | 7.16.03 | 7.14.13 | 8.8.2 | 7.14.0 | 7.14.3 | 7.14.4 | 7.12.25 |

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Fixes**

This product addresses an issue that platform would be randomly waked up by WOL packet.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 530SFP+ Adapter
- HPE Ethernet 10Gb 2-port 530T Adapter
- HPE Ethernet 10Gb 2-port 533FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HPE StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter

HPE QLogic NX2 Online Firmware Upgrade Utility for Windows Server x64 Editions

Version: 5.2.4.0 **(Optional)**

Filename: cp044815.compsig; cp044815.exe

**Important Note!**

HPE recommends at least one of the following drivers, as appropriate for your device, for use with this firmware:

- *HPE QLogic NX2 10/20GbE Multifunction Drivers for Windows Server x64 Editions*, version 7.13.196.0 or later

This software package contains combo image v7.18.80 with the following firmware versions:

| NIC | Boot Code Version | PXE Version | UEFI Version | iSCSI Version | FCoE Version | CCM Version | L2 Version |
|---|---|---|---|---|---|---|---|
| HP Ethernet 10Gb 2-port 530SFP+ Adapter<br>HP Ethernet 10Gb 2-port 530T Adapter | 7.16.03 | 7.14.13 | 8.8.2 | n/a | n/a | 7.14.4 | 7.12.25 |
| HP Ethernet 10Gb 2-port 533FLR-T Adapter<br>HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter<br>HPE FlexFabric 10Gb 4-port 536FLR-T Adapter<br>HP StoreFabric CN1100R Dual Port Converged Network Adapter<br>HPE StoreFabric CN1100R-T Converged Network Adapter | 7.16.03 | 7.14.13 | 8.8.2 | 7.14.0 | 7.14.3 | 7.14.4 | 7.12.25 |

The users will only see the combo image versions in the interactive mode firmware update or while using HPSUM/SPP to update the firmware on the supported adapters.

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Fixes**

This product addresses an issue that platform would be randomly waked up by WOL packet.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 530SFP+ Adapter
- HPE Ethernet 10Gb 2-port 530T Adapter
- HPE Ethernet 10Gb 2-port 533FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HPE StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter

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Intel Firmware Package For E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter

Version: 2.24 **(Recommended)**

Filename: HPE_E810_CQDA2_2p24_PLDMoMCTP_800059DB.fwpkg

**Enhancements**

Initial version

**Supported Devices and Features**

This product supports the following network adapters:

- Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 Adapter for HPE

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Intel Firmware Package For E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter

Version: 2.24 **(Recommended)**

Filename: HPE_E810_CQDA2_OCP_2p24_NCSIwPLDMoMCTP_800059D4.fwpkg

**Enhancements**

Initial version

**Supported Devices and Features**

This product supports the following network adapters:

- Intel E810-CQDA2 Ethernet 100Gb 2-port QSFP28 OCP3 Adapter for HPE

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Intel Firmware Package For E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter

Version: 2.24 **(Recommended)**

Filename: HPE_E810_XXVDA2_SD_2p24_PLDMoMCTP_800059DF.fwpkg

**Enhancements**

Initial version

**Supported Devices and Features**

This product supports the following network adapters:

- Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 Adapter for HPE

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Intel Firmware Package For E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter

Version: 2.24 **(Recommended)**

Filename: HPE_E810_XXVDA2_SD_OCP_2p24_NCSIwPLDMoMCTP_800059DE.fwpkg

**Enhancements**

Initial version

**Supported Devices and Features**

This product supports the following network adapters:

- Intel E810-XXVDA2 Ethernet 10/25Gb 2-port SFP28 OCP3 Adapter for HPE

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Intel Firmware Package For E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter

Version: 2.24 **(Recommended)**

Filename: HPE_E810_XXVDA4_FH_2p24_PLDMoMCTP_800059D9.fwpkg

**Enhancements**

Initial version

**Supported Devices and Features**

This product supports the following network adapters:

- Intel E810-XXVDA4 Ethernet 10/25Gb 4-port SFP28 Adapter for HPE

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Intel Online Firmware Upgrade Utility for Linux x86_64

Version: 1.22.11 **(Optional)**

Filename: firmware-nic-is-intel-1.22.11-1.1.x86_64.compsig; firmware-nic-is-intel-1.22.11-1.1.x86_64.rpm

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Enhancements**

- This product now supports SUSE Linux Enterprise Server 15 SP2.
- This product now supports Red Hat Enterprise Linux 8, Update 2 and Update 3.

**Supported Devices and Features**

This package supports the following network adapters:

- Intel(R) I350 Gigabit Network Connection (2-port)
- Intel(R) I350 Gigabit Network Connection (4-port)

- HPE Ethernet 1Gb 4-port BaseT I350-T4 Adapter
- HPE Ethernet 1Gb 4-port BaseT I350-T4 OCP3 Adapter
- HPE Ethernet 10Gb 2-port SFP+ X710-DA2 Adapter
- HPE Ethernet 10Gb 2-port SFP+ X710-DA2 OCP3 Adapter

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Intel Online Firmware Upgrade Utility for VMware

Version: 3.15.8 **(Optional)**

Filename: CP044896.compsig; CP044896.zip

**Important Note!**

This software package contains the following firmware versions for the below listed supported network adapters:

| NIC | EEPROM/NVM Version | OROM Version | NVM Version |
|---|---|---|---|
| HPE Ethernet 10Gb 2-port SFP+ OCP3 X710-DA2 Adapter | 80009837 | 1.2829.0 | 8.10 |
| HPE Ethernet 10Gb 2-port SFP+ X710-DA2 Adapter | 800093DD | 1.2829.0 | 8.10 |
| Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter | 80001099 | 1.2839.0 | N/A |
| Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter | 80001097 | 1.2839.0 | N/A |
| Intel(R) I350 Gigabit Network Connection (2-port) | 8000108E | 1.2839.0 | N/A |
| Intel(R) I350 Gigabit Network Connection (4-port) | 8000108F | 1.2839.0 | N/A |

The combo image v1.2829.0 includes: Boot Agent: I40E - v1.1.18& UEFI Drivers: 40GbE - v4.4.12.

The combo image v1.2839.0 includes: Boot Agent: 1GbE - v1.5.88 & UEFI Drivers: 1GbE - v9.4.06.

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Enhancements**

This product now supports VMware vSphere 7.0 U1.

**Supported Devices and Features**

This package supports the following network adapters:

- Intel(R) I350 Gigabit Network Connection (2-port)
- Intel(R) I350 Gigabit Network Connection (4-port)
- HPE Ethernet 1Gb 4-port BaseT I350-T4 Adapter
- HPE Ethernet 1Gb 4-port BaseT I350-T4 OCP3 Adapter
- HPE Ethernet 10Gb 2-port SFP+ X710-DA2 OCP3 Adapter
- HPE Ethernet 10Gb 2-port SFP+ X710-DA2 Adapter

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Intel Online Firmware Upgrade Utility for Windows Server x64 Editions

Version: 5.2.4.0 **(Optional)**

Filename: cp044897.compsig; cp044897.exe

**Important Note!**

This software package contains the following firmware versions for the below listed supported network adapters:

| NIC | EEPROM/NVM Version | OROM Version | NVM Version |
|---|---|---|---|
| HPE Ethernet 10Gb 2-port SFP+ OCP3 X710-DA2 Adapter | 80009837 | 1.2829.0 | 8.10 |
| HPE Ethernet 10Gb 2-port SFP+ X710-DA2 Adapter | 800093DD | 1.2829.0 | 8.10 |
| Intel I350-T4 Ethernet 1Gb 4-port BASE-T Adapter | 80001099 | 1.2839.0 | N/A |
| Intel I350-T4 Ethernet 1Gb 4-port BASE-T OCP3 Adapter | 80001097 | 1.2839.0 | N/A |
| Intel(R) I350 Gigabit Network Connection (2-port) | 8000108E | 1.2839.0 | N/A |
| Intel(R) I350 Gigabit Network Connection (4-port) | 8000108F | 1.2839.0 | N/A |

The combo image v1.2829.0 includes: Boot Agent: I40E - v1.1.18& UEFI Drivers: 40GbE - v4.4.12.

The combo image v1.2839.0 includes: Boot Agent: 1GbE - v1.5.88 & UEFI Drivers: 1GbE - v9.4.06.

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Fixes**

This product correct an issue which fixes OROM downgrade failed from older version with exit code 6

**Supported Devices and Features**

This package supports the following network adapters:

- Intel(R) I350 Gigabit Network Connection (2-port)
- Intel(R) I350 Gigabit Network Connection (4-port)
- HPE Ethernet 1Gb 4-port BaseT I350-T4 Adapter
- HPE Ethernet 1Gb 4-port BaseT I350-T4 OCP3 Adapter
- HPE Ethernet 10Gb 2-port SFP+ X710-DA2 OCP3 Adapter
- HPE Ethernet 10Gb 2-port SFP+ X710-DA2 Adapter

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Marvell FastLinQ Online Firmware Upgrade Utility for Linux x86_64

Version: 1.10.8 **(Optional)**

Filename: firmware-nic-is-marvell-flq-1.10.8-1.1.x86_64.compsig; firmware-nic-is-marvell-flq-1.10.8-1.1.x86_64.rpm

**Prerequisites**

This package requires the appropriate driver for your network adapter be installed and all Ethernet ports brought up (*ifup ethX* or *ifconfig ethX up*) before firmware can be updated.

**Fixes**

- This product contains support PLDM firmware upgrade base improvements.
- This product addresses an overheat issue on the network adapters as below,

  HPE Ethernet 10Gb 2-port BaseT QL41132HLRJ Adapter
  HPE Ethernet 10Gb 2-port BaseT QL41132HQRJ OCP3 Adapter

**Enhancements**

This product now supported NPAR enabling option.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10/25Gb 2-port SFP28 QL41232HQCU OCP3 Adapter
- HPE Ethernet 10/25Gb 2-port SFP28 QL41232HLCU Adapter
- HPE Ethernet 10Gb 4-port SFP+ QL41134HLCU Adapter
- HPE Ethernet 10Gb 2-port BaseT QL41132HLRJ Adapter

- HPE Ethernet 10Gb 2-port BaseT QL41132HQRJ OCP3 Adapter
- HPE Ethernet 10Gb 2-port SFP+ QL41132HQCU OCP3 Adapter
- HPE Ethernet 10Gb 2-port SFP+ QL41132HLCU Adapter

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Marvell FastLinQ Online Firmware Upgrade Utility for VMware

Version: 4.13.9 **(Optional)**

Filename: CP044970.compsig; CP044970.zip

**Important Note!**

This software package contains combo image v8.55.12. This combo image includes:

- PXE: 2.0.19
- Boot Code (MFW): 8.55.22.0
- UEFI: 6.1.8.2

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Fixes**

- This product contains support PLDM firmware upgrade base improvements.
- This product addresses an overheat issue on the network adapters as below,

  HPE Ethernet 10Gb 2-port BaseT QL41132HLRJ Adapter
  HPE Ethernet 10Gb 2-port BaseT QL41132HQRJ OCP3 Adapter

**Enhancements**

This product now supported NPAR enabling option.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10/25Gb 2-port SFP28 QL41232HQCU OCP3 Adapter
- HPE Ethernet 10/25Gb 2-port SFP28 QL41232HLCU Adapter
- HPE Ethernet 10Gb 4-port SFP+ QL41134HLCU Adapter
- HPE Ethernet 10Gb 2-port BaseT QL41132HLRJ Adapter
- HPE Ethernet 10Gb 2-port BaseT QL41132HQRJ OCP3 Adapter

- HPE Ethernet 10Gb 2-port SFP+ QL41132HQCU OCP3 Adapter
- HPE Ethernet 10Gb 2-port SFP+ QL41132HLCU Adapter

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Marvell FastLinQ Online Firmware Upgrade Utility for Windows Server x64 Editions

Version: 5.2.4.0 **(Optional)**

Filename: cp044971.compsig; cp044971.exe

**Important Note!**

HPE recommends *Marvell FastLinQ 10/25/50 GbE Drivers for Windows Server x64 Editions 8.55.5.0* or later, for use with the firmware in this product.

This software package contains combo image v8.55.12. This combo image includes:

- PXE: 2.0.19
- Boot Code (MFW): 8.55.22.0
- UEFI: 6.1.8.2

**Prerequisites**

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

**Fixes**

- This product contains support PLDM firmware upgrade base improvements.
- This product addresses an overheat issue on the network adapters as below,

  HPE Ethernet 10Gb 2-port BaseT QL41132HLRJ Adapter
  HPE Ethernet 10Gb 2-port BaseT QL41132HQRJ OCP3 Adapter

**Enhancements**

This product now supported NPAR enabling option.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10/25Gb 2-port SFP28 QL41232HQCU OCP3 Adapter
- HPE Ethernet 10/25Gb 2-port SFP28 QL41232HLCU Adapter
- HPE Ethernet 10Gb 4-port SFP+ QL41134HLCU Adapter

- HPE Ethernet 10Gb 2-port BaseT QL41132HLRJ Adapter
- HPE Ethernet 10Gb 2-port BaseT QL41132HQRJ OCP3 Adapter
- HPE Ethernet 10Gb 2-port SFP+ QL41132HQCU OCP3 Adapter
- HPE Ethernet 10Gb 2-port SFP+ QL41132HLCU Adapter

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Mellanox Firmware Package(FWPKG) for HPE Ethernet 100Gb 1-port QSFP28 MCX515A-CCAT PCIe3 x16 Adapter

Version: 16.29.1016 **(Recommended)**

Filename: 16_29_1016-MCX515A-CCA_HPE_Ax.pldm.fwpkg

**Important Note!**

**Known Issues with firmware version 16.29.1016:**

- Multi-APP QoS is not supported when LAG is configured.
- When Emulated PCIe Switch is enabled, and more than 8 PFs are enabled, the OS boot process might halt.
- When Emulated PCIe Switch is enabled, and the OS does resource reallocation, the OS boot process might halt.
- Unable to complete migration when virtio device is in high traffic load (20/20 MPPS) as although vDPA hardware offload solution can support higher speed than the software solution, it needs to enable QEMU auto-converge to complete migration.
- Using the Eye-Opening tool might cause degradation in the link speed or link down events.
- Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
- On systems with high PCIe latency (2us or above), lower bandwidth may be experienced. .

**Prerequisites**

FWPKG will work only if the firmware version flashed on the adapter is 16.27.1016 or later and iLO5 firmware version must be 2.30 or higher.

**Fixes**

**The following issues have been fixed in version 16.29.1016:**

- Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.
- An issue that prevented VXLAN packets with svlan/cvlan tag from being matched.
- The eth_wqe_too_small counter to count ODP (On-Demand Paging) page used to fail.
- An issue related to raising 100GbE link on ConnectX-6 VPI 100Gb/s adapter cards.
- When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.
- Low performance occurred after enabling the RoCE Accelerator capability.
- On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

**Enhancements**

**New Feature and Changes in Version 16.29.1016:**

- Ethernet wqe_too_small Mode**:** New counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.
- UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.
- PCIe Rx modifications to prevent the adapter cards from disappearing from the system.
- Hardware steering dump output used for debugging and troubleshooting.

**Added support for the following features:**

- HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compare to the FW Flow Metering.
- Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.
- Steering DP hash flow groups.
- ignore_flow_level is now enabled by the TRUST LEVEL access registry.
- The cq_overrun counter: The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.
- Enabled the capability to allow Virtual Functions to send Pause Frames packets. (Beta)
- Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.
- 2 new Mini CQE formats:
  - Responder Mini CQE With Flow Tag Layout.
  - Responder Mini CQE With l3_l4_info Layout.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P31246-B21 | HPE Ethernet 100Gb 1-port QSFP28 PCIe3 x16 MCX515A-CCAT Adapter | MT_0000000 |

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Mellanox Firmware Package(FWPKG) for HPE Ethernet 100Gb 2-Port QSFP56 MCX623106AS-CDAT Adapter
Version: 22.29.1016 **(Recommended)**
Filename: 22_29_1016-MCX623106AS-CDA_Ax.pldm.fwpkg

**Important Note!**

**Known Issues with firmware version 22.29.1016:**

- Multi-APP QoS is not supported when LAG is configured.
- When Emulated PCIe Switch is enabled, and more than 8 PFs are enabled, the OS boot process might halt.
- When Emulated PCIe Switch is enabled, and the OS does resource reallocation, the OS boot process might halt.
- Unable to complete migration when virtio device is in high traffic load (20/20 MPPS) as although vDPA hardware offload solution can support higher speed than the software solution, it needs to enable QEMU auto-converge to complete migration.
- Using the Eye-Opening tool might cause degradation in the link speed or link down events.
- Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.

- On systems with high PCIe latency (2us or above), lower bandwidth may be experienced. .

**Prerequisites**

FWPKG will work only if the firmware version flashed on the adapter is 22.27.1016 or later and iLO5 firmware version must be 2.30 or higher.

**Fixes**

**The following issues have been fixed in version 22.29.1016:**

- Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.
- An issue that prevented VXLAN packets with svlan/cvlan tag from being matched.
- The eth_wqe_too_small counter to count ODP (On-Demand Paging) page used to fail.
- An issue related to raising 100GbE link on ConnectX-6 VPI 100Gb/s adapter cards.
- When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.
- Low performance occurred after enabling the RoCE Accelerator capability.
- On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR
- "iperf3" and "iperf3 -l 512" issue fixed from having traffic for virtio hardware offload solution .

**Enhancements**

**New Features and Changes in Version 22.29.1016:**

- Improved NRZ link performance (RX algorithm).
- Improved NRZ link-up time (25G\50G\100G speeds).
- UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.
- Optimized vDPA performance for PPS in scalability of up to 127 devices per port.
- When using a Multi-Host device, the firmware can now discover who is the external SmartNIC host (the Embedded CPU PF (ECPF) ) with the highest index that is responsible for performing offload activities to the adapter card
- Hardware steering dump output used for debugging and troubleshooting.

**Added support for the following features:**

- Eye-Opening: supported only when using NRZ signal. (Beta)
- Option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.
- "InfiniBand" properties set to the Network Device Function Redfish object.
- Direct Packet Placement (DPP): DPP is a receive side transport service in which the Ethernet packets are scattered to the memory according to a packet sequence number (PSN) carried by the packet, and not by their arrival order. To enable DPP offload, the software should create a special RQ by using the CREATE_RQ command and set DPP relevant attributes.
- Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.
- Error statistics and reporting for vDPA.

- IPv6 TSO offload.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P25960-B21 | HPE Ethernet 100Gb 2-Port QSFP56 MCX623106AS-CDAT Adapter | MT_0000000437 |

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Mellanox Firmware Package(FWPKG) for HPE Ethernet 200Gb 1-port QSFP56 MCX623105AS-VDAT Adapter
Version: 22.29.1016 **(Recommended)**
Filename: 22_29_1016-MCX623105AS-VDA_Ax.pldm.fwpkg

**Important Note!**

**Known Issues with firmware version 22.29.1016:**

- Multi-APP QoS is not supported when LAG is configured.
- When Emulated PCIe Switch is enabled, and more than 8 PFs are enabled, the OS boot process might halt.
- When Emulated PCIe Switch is enabled, and the OS does resource reallocation, the OS boot process might halt.
- Unable to complete migration when virtio device is in high traffic load (20/20 MPPS) as although vDPA hardware offload solution can support higher speed than the software solution, it needs to enable QEMU auto-converge to complete migration.
- Using the Eye-Opening tool might cause degradation in the link speed or link down events.
- Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
- On systems with high PCIe latency (2us or above), lower bandwidth may be experienced. .

**Prerequisites**

FWPKG will work only if the firmware version flashed on the adapter is 22.27.1016 or later and iLO5 firmware version must be 2.30 or higher.

**Fixes**

**The following issues have been fixed in version 22.29.1016:**

- Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.
- An issue that prevented VXLAN packets with svlan/cvlan tag from being matched.
- The eth_wqe_too_small counter to count ODP (On-Demand Paging) page used to fail.
- An issue related to raising 100GbE link on ConnectX-6 VPI 100Gb/s adapter cards.

- When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.
- Low performance occurred after enabling the RoCE Accelerator capability.
- On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR
- "iperf3" and "iperf3 -l 512" issue fixed from having traffic for virtio hardware offload solution .

**Enhancements**

**New Features and Changes in Version 22.29.1016:**

- Improved NRZ link performance (RX algorithm).
- Improved NRZ link-up time (25G\50G\100G speeds).
- UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.
- Optimized vDPA performance for PPS in scalability of up to 127 devices per port.
- When using a Multi-Host device, the firmware can now discover who is the external SmartNIC host (the Embedded CPU PF (ECPF) ) with the highest index that is responsible for performing offload activities to the adapter card
- Hardware steering dump output used for debugging and troubleshooting.

**Added support for the following features:**

- Eye-Opening: supported only when using NRZ signal. (Beta)
- Option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.
- "InfiniBand" properties set to the Network Device Function Redfish object.
- Direct Packet Placement (DPP): DPP is a receive side transport service in which the Ethernet packets are scattered to the memory according to a packet sequence number (PSN) carried by the packet, and not by their arrival order. To enable DPP offload, the software should create a special RQ by using the CREATE_RQ command and set DPP relevant attributes.
- Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.
- Error statistics and reporting for vDPA.
- IPv6 TSO offload.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P10180-B21 | HPE Ethernet 200Gb 1-port QSFP56 MCX623105AS-VDAT Adapter | MT_0000000435 |

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Mellanox Firmware Package(FWPKG) for HPE InfiniBand HDR/Ethernet 200Gb 1-port MCX653105A-HDAT QSFP56 x16 Adapter
Version: 20.29.1016 **(Recommended)**
Filename: 20_29_1016-MCX653105A-HDA_HPE_Ax.pldm.fwpkg

## Prerequisites

FWPKG will work only if the firmware version flashed on the adapter is 20.27.1016 or later and iLO5 firmware version must be 2.30 or higher.

## Fixes

**The following issues have been fixed in version 20.29.1016:**

1. Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.
2. An issue that prevented VXLAN packets with svlan/cvlan tag from being matched.
3. The eth_wqe_too_small counter to count ODP (On-Demand Paging) page used to fail.
4. An issue related to raising 100GbE link on ConnectX-6 VPI 100Gb/s adapter cards.
5. When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.
6. Low performance occurred after enabling the RoCE Accelerator capability.
7. On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

## Enhancements

**New Features and Changes in Version 20.29.1016:**

Added support for following features:

- LinkX module burning via MFT toolset. The new capability enables direct firmware burning from the internal flash storage to reduce the bandwidth and accelerate the burning process, including burning several modules at a time.
- An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.
- Improved NRZ link performance (RX algorithm).
- Improved NRZ link-up time (25G\50G\100G speeds).
- Enabled the options to control different Tx sets for the same attribute when connecting a Mellanox-Mellanox vs Mellanox to 3rd party HCA.
- "InfiniBand" properties set to the Network Device Function Redfish object.
- Direct Packet Placement (DPP): DPP is a receive side transport service in which the Ethernet packets are scattered to the memory according to a packet sequence number (PSN) carried by the packet, and not by their arrival order.
- To enable DPP offload, the software should create a special RQ by using the CREATE_RQ command, and set DPP relevant attributes.
- Added trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.
- UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.
- Enhanced IB Congestion Control to support lower minimum rate. Now it uses destination-lid to classify flows to handle larger scale, and achieve better results in GPCNeT benchmark.
- Hardware steering dump output used for debugging and troubleshooting.

## Supported Devices and Features

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P23664-B21 | HPE InfiniBand HDR/Ethernet 200Gb 1-port MCX653105A-HDAT QSFP56 x16 Adapter | MT_0000000451 |

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Mellanox Firmware Package(FWPKG) for HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 MCX653435A-HDAI OCP3 PCIe4 x16 Adapter
Version: 20.29.1016 **(Recommended)**
Filename: 20_29_1016-MCX653435A-HDA_HPE_Ax.pldm.fwpkg

**Prerequisites**

FWPKG will work only if the firmware version flashed on the adapter is 20.27.1016 or later and iLO5 firmware version must be 2.30 or higher.

**Fixes**

**The following issues have been fixed in version 20.29.1016:**

1. Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.
2. An issue that prevented VXLAN packets with svlan/cvlan tag from being matched.
3. The eth_wqe_too_small counter to count ODP (On-Demand Paging) page used to fail.
4. An issue related to raising 100GbE link on ConnectX-6 VPI 100Gb/s adapter cards.
5. When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.
6. Low performance occurred after enabling the RoCE Accelerator capability.
7. On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

**Enhancements**

**New Features and Changes in Version 20.29.1016:**

Added support for following features:

- LinkX module burning via MFT toolset. The new capability enables direct firmware burning from the internal flash storage to reduce the bandwidth and accelerate the burning process, including burning several modules at a time.
- An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.
- Improved NRZ link performance (RX algorithm).
- Improved NRZ link-up time (25G\50G\100G speeds).

- Enabled the options to control different Tx sets for the same attribute when connecting a Mellanox-Mellanox vs Mellanox to 3rd party HCA.
- "InfiniBand" properties set to the Network Device Function Redfish object.
- Direct Packet Placement (DPP): DPP is a receive side transport service in which the Ethernet packets are scattered to the memory according to a packet sequence number (PSN) carried by the packet, and not by their arrival order.
- To enable DPP offload, the software should create a special RQ by using the CREATE_RQ command, and set DPP relevant attributes.
- Added trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.
- UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.
- Enhanced IB Congestion Control to support lower minimum rate. Now it uses destination-lid to classify flows to handle larger scale, and achieve better results in GPCNeT benchmark.
- Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P31323-B21 | HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe4 x16 OCP3 MCX653435A-HDAI Adapter | MT_0000000592 |

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Mellanox Firmware Package(FWPKG) for HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 MCX653106A-HDAT PCIe4 x16 Adapter
Version: 20.29.1016 **(Recommended)**
Filename: 20_29_1016-MCX653106A-HDA_HPE_Ax.pldm.fwpkg

**Important Note!**

**ConnectX-6 VPI supports having one port as InfiniBand and the other port as Ethernet according to the following matrix of combinations.**

| Port #2 - InfiniBand | | | | |
|---|---|---|---|---|
| **Port #1 – Ethernet** | **HDR/HDR100** | **EDR** | **FDR** | **QDR** |
| **50GbE** | supported | not supported | not supported | supported |
| **100GbE/25GbE** | supported | not supported | not supported | supported |
| **40GbE/10GbE** | supported | not supported | not supported | supported |
| **1GbE** | supported | not supported | not supported | supported |

| Port #2 - Ethernet | | | | |
|---|---|---|---|---|
| **Port #1 - InfiniBand** | **50GbE** | **100GbE/25GbE** | **40GbE/10GbE** | **1GbE** |
| **HDR / HDR100** | supported | supported | not supported | supported |

| | | | | |
|---|---|---|---|---|
| **EDR** | supported | supported | not supported | supported |
| **FDR** | not supported | not supported | not supported | not supported |
| **QDR/SDR** | supported | supported | not supported | supported |

**Prerequisites**

FWPKG will work only if the firmware version flashed on the adapter is 20.27.1016 or later and iLO5 firmware version must be 2.30 or higher.

**Fixes**

**The following issues have been fixed in version 20.29.1016:**

1. Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.
2. An issue that prevented VXLAN packets with svlan/cvlan tag from being matched.
3. The eth_wqe_too_small counter to count ODP (On-Demand Paging) page used to fail.
4. An issue related to raising 100GbE link on ConnectX-6 VPI 100Gb/s adapter cards.
5. When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.
6. Low performance occurred after enabling the RoCE Accelerator capability.
7. On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

**Enhancements**

**New Features and Changes in Version 20.29.1016:**

Added support for following features:

- LinkX module burning via MFT toolset. The new capability enables direct firmware burning from the internal flash storage to reduce the bandwidth and accelerate the burning process, including burning several modules at a time.
- An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.
- Improved NRZ link performance (RX algorithm).
- Improved NRZ link-up time (25G\50G\100G speeds).
- Enabled the options to control different Tx sets for the same attribute when connecting a Mellanox-Mellanox vs Mellanox to 3rd party HCA.
- "InfiniBand" properties set to the Network Device Function Redfish object.
- Direct Packet Placement (DPP): DPP is a receive side transport service in which the Ethernet packets are scattered to the memory according to a packet sequence number (PSN) carried by the packet, and not by their arrival order.
- To enable DPP offload, the software should create a special RQ by using the CREATE_RQ command, and set DPP relevant attributes.
- Added trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.
- UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.
- Enhanced IB Congestion Control to support lower minimum rate. Now it uses destination-lid to classify flows to handle larger scale, and achieve better results in GPCNeT benchmark.

- Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P31324-B21 | HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 MCX653106A-HDAT Adapter | MT_0000000594 |

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Mellanox Firmware Package(FWPKG) for HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 MCX653436A-HDAI OCP3 PCIe4 x16 Adapter
Version: 20.29.1016 **(Recommended)**
Filename: 20_29_1016-MCX653436A-HDA_HPE_Ax.pldm.fwpkg

**Important Note!**

**ConnectX-6 VPI supports having one port as InfiniBand and the other port as Ethernet according to the following matrix of combinations.**

| Port #2 - InfiniBand | | | | |
|---|---|---|---|---|
| **Port #1 – Ethernet** | **HDR/HDR100** | **EDR** | **FDR** | **QDR** |
| **50GbE** | supported | not supported | not supported | supported |
| **100GbE/25GbE** | supported | not supported | not supported | supported |
| **40GbE/10GbE** | supported | not supported | not supported | supported |
| **1GbE** | supported | not supported | not supported | supported |

| Port #2 - Ethernet | | | | |
|---|---|---|---|---|
| **Port #1 - InfiniBand** | **50GbE** | **100GbE/25GbE** | **40GbE/10GbE** | **1GbE** |
| **HDR / HDR100** | supported | supported | not supported | supported |
| **EDR** | supported | supported | not supported | supported |
| **FDR** | not supported | not supported | not supported | not supported |
| **QDR/SDR** | supported | supported | not supported | supported |

**Prerequisites**

FWPKG will work only if the firmware version flashed on the adapter is 20.27.1016 or later and iLO5 firmware version must be 2.30 or higher.

**Fixes**

**The following issues have been fixed in version 20.29.1016:**

1. Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.
2. An issue that prevented VXLAN packets with svlan/cvlan tag from being matched.
3. The eth_wqe_too_small counter to count ODP (On-Demand Paging) page used to fail.
4. An issue related to raising 100GbE link on ConnectX-6 VPI 100Gb/s adapter cards.
5. When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.
6. Low performance occurred after enabling the RoCE Accelerator capability.
7. On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

## Enhancements

**New Features and Changes in Version 20.29.1016:**

Added support for following features:

- LinkX module burning via MFT toolset. The new capability enables direct firmware burning from the internal flash storage to reduce the bandwidth and accelerate the burning process, including burning several modules at a time.
- An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.
- Improved NRZ link performance (RX algorithm).
- Improved NRZ link-up time (25G\50G\100G speeds).
- Enabled the options to control different Tx sets for the same attribute when connecting a Mellanox-Mellanox vs Mellanox to 3rd party HCA.
- "InfiniBand" properties set to the Network Device Function Redfish object.
- Direct Packet Placement (DPP): DPP is a receive side transport service in which the Ethernet packets are scattered to the memory according to a packet sequence number (PSN) carried by the packet, and not by their arrival order.
- To enable DPP offload, the software should create a special RQ by using the CREATE_RQ command, and set DPP relevant attributes.
- Added trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.
- UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.
- Enhanced IB Congestion Control to support lower minimum rate. Now it uses destination-lid to classify flows to handle larger scale, and achieve better results in GPCNeT benchmark.
- Hardware steering dump output used for debugging and troubleshooting.

## Supported Devices and Features

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P31348-B21 | HPE InfiniBand HDR/Ethernet 200Gb 2-port PCIe4 x16 OCP3 QSFP56 MCX653436A-HDAI Adapter | MT_0000000593 |

Mellanox Firmware Package(FWPKG) for HPE InfiniBand HDR100/Ethernet 100Gb 1-port MCX653105A-ECAT QSFP56 x16 Adapter
Version: 20.29.1016 **(Recommended)**
Filename: 20_29_1016-MCX653105A-ECA_HPE_Ax.pldm.fwpkg

**Prerequisites**

FWPKG will work only if the firmware version flashed on the adapter is 20.27.1016 or later and iLO5 firmware version must be 2.30 or higher.

**Fixes**

**The following issues have been fixed in version 20.29.1016:**

1. Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.
2. An issue that prevented VXLAN packets with svlan/cvlan tag from being matched.
3. The eth_wqe_too_small counter to count ODP (On-Demand Paging) page used to fail.
4. An issue related to raising 100GbE link on ConnectX-6 VPI 100Gb/s adapter cards.
5. When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.
6. Low performance occurred after enabling the RoCE Accelerator capability.
7. On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

**Enhancements**

**New Features and Changes in Version 20.29.1016:**

Added support for following features:

- LinkX module burning via MFT toolset. The new capability enables direct firmware burning from the internal flash storage to reduce the bandwidth and accelerate the burning process, including burning several modules at a time.
- An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.
- Improved NRZ link performance (RX algorithm).
- Improved NRZ link-up time (25G\50G\100G speeds).
- Enabled the options to control different Tx sets for the same attribute when connecting a Mellanox-Mellanox vs Mellanox to 3rd party HCA.
- "InfiniBand" properties set to the Network Device Function Redfish object.
- Direct Packet Placement (DPP): DPP is a receive side transport service in which the Ethernet packets are scattered to the memory according to a packet sequence number (PSN) carried by the packet, and not by their arrival order.
- To enable DPP offload, the software should create a special RQ by using the CREATE_RQ command, and set DPP relevant attributes.
- Added trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.
- UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.
- Enhanced IB Congestion Control to support lower minimum rate. Now it uses destination-lid to classify flows to handle larger scale, and achieve better results in GPCNeT benchmark.

- Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P23665-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 1-port MCX653105A-ECAT QSFP56 x16 Adapter | MT_0000000452 |

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Mellanox Firmware Package(FWPKG) for HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX653106A-ECAT QSFP56 x16 Adapter
Version: 20.29.1016 **(Recommended)**
Filename: 20_29_1016-MCX653106A-ECA_HPE_Ax.pldm.fwpkg

**Important Note!**

**ConnectX-6 VPI supports having one port as InfiniBand and the other port as Ethernet according to the following matrix of combinations.**

| Port #2 - InfiniBand | | | | |
|---|---|---|---|---|
| **Port #1 – Ethernet** | **HDR/HDR100** | **EDR** | **FDR** | **QDR** |
| **50GbE** | supported | not supported | not supported | supported |
| **100GbE/25GbE** | supported | not supported | not supported | supported |
| **40GbE/10GbE** | supported | not supported | not supported | supported |
| **1GbE** | supported | not supported | not supported | supported |

| Port #2 - Ethernet | | | | |
|---|---|---|---|---|
| **Port #1 - InfiniBand** | **50GbE** | **100GbE/25GbE** | **40GbE/10GbE** | **1GbE** |
| **HDR / HDR100** | supported | supported | not supported | supported |
| **EDR** | supported | supported | not supported | supported |
| **FDR** | not supported | not supported | not supported | not supported |
| **QDR/SDR** | supported | supported | not supported | supported |

**Prerequisites**

FWPKG will work only if the firmware version flashed on the adapter is 20.27.1016 or later and iLO5 firmware version must be 2.30 or higher.

## Fixes

**The following issues have been fixed in version 20.29.1016:**

1. Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.
2. An issue that prevented VXLAN packets with svlan/cvlan tag from being matched.
3. The eth_wqe_too_small counter to count ODP (On-Demand Paging) page used to fail.
4. An issue related to raising 100GbE link on ConnectX-6 VPI 100Gb/s adapter cards.
5. When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.
6. Low performance occurred after enabling the RoCE Accelerator capability.
7. On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

## Enhancements

**New Features and Changes in Version 20.29.1016:**

Added support for following features:

- LinkX module burning via MFT toolset. The new capability enables direct firmware burning from the internal flash storage to reduce the bandwidth and accelerate the burning process, including burning several modules at a time.
- An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.
- Improved NRZ link performance (RX algorithm).
- Improved NRZ link-up time (25G\50G\100G speeds).
- Enabled the options to control different Tx sets for the same attribute when connecting a Mellanox-Mellanox vs Mellanox to 3rd party HCA.
- "InfiniBand" properties set to the Network Device Function Redfish object.
- Direct Packet Placement (DPP): DPP is a receive side transport service in which the Ethernet packets are scattered to the memory according to a packet sequence number (PSN) carried by the packet, and not by their arrival order.
- To enable DPP offload, the software should create a special RQ by using the CREATE_RQ command, and set DPP relevant attributes.
- Added trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.
- UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.
- Enhanced IB Congestion Control to support lower minimum rate. Now it uses destination-lid to classify flows to handle larger scale, and achieve better results in GPCNeT benchmark.
- Hardware steering dump output used for debugging and troubleshooting.

## Supported Devices and Features

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|

| | | |
|---|---|---|
| P23666-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX653106A-ECAT QSFP56 x16 Adapter | MT_0000000453 |

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Online Firmware Upgrade Utility (ESXi 6.5) for HPE Ethernet 10Gb 2-port 548SFP+ Adapter
Version: 1.0.4 **(Recommended)**
Filename: CP045197.compsig; CP045197.zip

**Important Note!**

**No known issues were included in firmware version 14.29.1016:**

**Prerequisites**

Use iLO5 firmware version 2.30 or higher with ConnectX4 firmware version 14.28.1002. Thermal sensor reporting on the adapter will not be functional with older versions of iLO5 firmware.

**Fixes**

**Following issues have been fixed in version 14.29.1016:**

- An issue that caused the sent packet to hang while the device entered FLR mode.
- Enabled Bar configuration bytewise by applying the write_en bitmask.
- A rare case where the the device froze while running the sw reset flow under heavy stress and with many open resources.
- Low PXE performance while using the VSC to trigger the send_ring_doorbells.
- An error that prevented the completions (CQ) from being completed due to a race condition in the firmware transport error handlers, and the error stressors, where the error stressors would hang the firmware transport error handler flow.
- An issue that caused the fragmented IP packets to drop was fixed.

**Enhancements**

**Firmware for the following device is updated to 14.29.1016:**

P11338-B21 (HPE Ethernet 10Gb 2-port 548SFP+ Adapter)

**Following New features and Changes are included in version 14.29.1016:**

- Added mlxconfig support for power reduction: PCI CAP AUTO_POWER_SAVE_LINK_DOWN
  - PCI CAP
  - AUTO_POWER_SAVE_LINK_DOWN
- Added the following segments, as appeared in the PRM, to the Resource Dump:
  - PRM_QUERY_QP
  - PRM_QUERY_CQ
  - PRM_QUERY_MKEY
  - QUERY_VNIC_ENV

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P11338-B21 | HPE Ethernet 10Gb 2-port 548SFP+ Adapter | HPE0000000038 |

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Online Firmware Upgrade Utility (ESXi 6.5) for HPE Mellanox Ethernet only adapters
Version: 1.0.9 **(Recommended)**
Filename: CP045192.compsig; CP045192.zip

**Important Note!**

The Firmware Upgrade Utility has been split into 2 packages for Mellanox Ethernet Only NIC adpaters, one supporting Synergy platforms and the other supporting ProLiant and Apollo platforms. This package supports Mellanox Ethernet Only NIC adapters on ProLiant and Apollo servers.

**Known Issues for FW version 2.42.5044 :**

- When using the QSFP module RTXM320-581, and performing a driver restart for the firmware upgrade/downgrade to take effect, the link does not come up.
- Enabling/disabling cq_timestamp using mlxconfig is not supported.
- In a card with 2 separate LEDs scheme (a Phy LED and a logic LED) only the Phy LED will lit. Meaning, the orange LES will not be active while the ETH link is in an idle mode.
- In SR-IOV setup, using mlxconfig when the PF is passed through to a VM requires a reboot of the Hypervisor.
- Downgrade to previous GA requires server reboot.Downgrading from v2.30.8000 or later to an earlier version than 2.30.8000 requires server reboot. Reboot the server.
- On ConnectX-3 Ethernet adapter cards, there is a mismatch between the GUID value returned by firmware management tools and that returned by fabric/driver utilities that read the GUID via device firmware (e.g., using ibstat). Mlxburn/flint return 0xffff as GUID while the utilities return a value derived from the MAC address. For all driver/firmware/software purposes, the lattervalue should be used.
- SBR should be asserted for a minimum of 50 milliseconds for the ConnectX®-3 adapters
- On Pilot1 SL230, PCIe link occasionally does not come up at Gen3 speed
- RH6.3 Inbox driver causes kernel panic when SR-IOV is enabled on VPI cards due to driver compatibility issue.
- In advanced steering mode, side band management connectivity may be lost when having more than 8 QP per mcg.
- When SR-IOV is disabled in the system BIOS, a PCI issue is noticed in Ubuntu v12.04.3 with Linux kernel v3.8 which affects NICs of several manufacturers including Mellanox's, preventing them from operating.
- MFT tools might leave the flash semaphore locked if the tool operation is forced stopped. The locked semaphore prevents the firmware from accessing the flash and causes firmware hang.
- Cable Info MAD reports a wrong cable info when usingthe MC2210411-SR4 module
- Gen2 failure at temperature sweep up to 10C/min (for MT27518A1-FDIR-BV only).
- PCIe Gen2 link unstable at temperature sweep of 10C/min for MT27518A1-FDIR-BV
- Bloom filter is currently not supported.
- Firmware downgrade message When downgrading from firmware v2.11.0000 and using MFT 3.0.0-3
- RM#DMFS should not be enabled when working with InfiniBand on MLNX_OFED-2.0.3
- RM#VPD read-only fields are writable.

- Increasing SymbolErrorCounter When working in VPI mode with port1 FDR and port2 40G, error counters misbehave and increase rapidly
- Setting the device to 128Byte CQ/EQ stride will cause misbehavior of sideband management resulting in communication loss.
- CQ and EQ cannot be configured to different stride sizes.
- ConnectX-3 Pro VF device ID is presented the same as ConnectX-3 VF device ID due to driver limitations.
- RSOD while running PXE (legacy) on G9 servers. This occurs only when PXE boot fails and BIOS boots from HDD. Currently it is pending BIOS fix.
- Changing port protocol from ETH to IB on port with NCSI/IPMI enabled while the port is connected to ETH switch is not supported.
- RDP over IPv6 is currently not functional.
- Sniffer QP cannot be removed from the regular rule after adding the QP with insertion scheme equals to “push to that rule”
- Since only a single Boot Entry Vector (BEV) per PCI Physical Function is supported, disabling the first port causes the second port to disappear as well.
- The NIC does not notify the driver of a link-down incident when a cable is unplugged from a NIC port with 56GbE port link.
- 56GbE link is not raised when using 100GbE optic cables.
- When working with MLNX_OFED v3.3-1.0.0.0, server reboot could get stuck due to a kernel panic in mlx-4_en_get_drvinfo() that is called from asynchronous event handler.
- 832298:When running ibdump, loopback traffic is mirroring into the kernel driver.
- AHS reports wrong MTU size
- RM#846523: MAC address that are set from the OS using ifconfig are not reflected in the OCBB buffer

**Known Issues for FW version 14.29.1016 and 16.29.1016:**

- Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
  **Workaround:** Use full reset flow for firmware upgrade/downgrade.
- On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.
  **Workaround:** If such issue is observed:
  - 
  - Enable ZTT to overcome the high latency. Run: mlxconfig -d set ZERO_TOUCH_TUNING_ENABLE=1
  - Reset or power cycle the firmware for change to take effect
- The following are the Steering Dump limitations:
  - Supported only on ConnectX-5 adapter cards
  - Requires passing the version (FW/Stelib/MFT) and device type to stelib
  - Re-format is not supported
  - Advanced multi-port feature is not supported -LAG/ROCE_AFFILIATION/MPFS_LB/ESW_LB (only traffic vhca <-> wire)
    - Packet types supported:
    - Layer 2 Eth
    - Layer 3 IPv4/Ipv6/Grh
    - Layer 4 TCP/UDP/Bth/GreV0/GreV1
    - Tunneling VXLAN/Geneve/GREv0/Mpls
  - FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).
  - Compiles only on x86
- Congestion Control may not work properly if the card supports two ports and each PF for each port is not raised at the same time.

**Known Issues for FW version 14.29.1016:**

- Low performance might be experienced when upgrading from previous firmware version to 14.29.1000 when using “Fast FW Reset”.

**Known Issues for FW version 16.29.1016:**

- When PER_PF_NUM_SF=1 (per PF configurations are used for SFs), if the number of SFs configured for a PF is 0 (PF_TOTAL_SF=0), than the firmware wrongly opens BAR2 with size 128KB.
- Multi-APP QoS is not supported when LAG is configured.
- When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf’s ancestors. **Workaround:** To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share.
- Occasionally, Tag Matching RNDV and NVME emulation wasn’t behaving as expected.

## Prerequisites

Use iLO5 firmware version 2.30 or higher with ConnectX4/ConnectX5 firmware version 14.28.1002/16.28.1002 respectively. Thermal sensor reporting on the adapter will not be functional with older versions of iLO5 firmware.

## Fixes

**ixes submitted in version 2.42.5044 :**

- An issue that prevented the firmware from detecting a link_down event thus preventing the IB bond interface from going to a failover mode.

**Following issues have been fixed in firmware version 14.29.1016:**

- Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.
- An issue that caused packets to drop due to header size issues and/or failing checks. The issue was caused due to a Linux issue that caused VFs to set the wrong header size value in wqe_inline_header_mode input.
- When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs were configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.
- On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.
- An issue that caused the device to go to dead IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Following issues have been fixed in firmware version 16.29.1016:**

- Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.
- An issue that prevented VXLAN packets with svlan/ cvlan tag from being matched.
- The eth_wqe_too_small counter to count ODP page used to fail.
- When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.
- An issue that resulted in low performance after enabling the RoCE Accelerator capability.
- On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

- The chassis manager calculation for Multi-Host and Socket-Direct adapter cards to allow running NC-SI commands by the chassis manager BMC. Now the chassis manager is count as BMC with index 0, regardless of how many BMC there are.
- An issue that caused the device to go to dead IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Enhancements**

**Firmware for the following devices are updated to 2.42.5044 :**

779799-B21 (HPE Ethernet 10G 2-port 546FLR-SFP+ Adapter)
779793-B21 (HPE Ethernet 10G 2-port 546SFP+ Adapter)

**Firmware for the following devices are updated to 14.29.1016:**

817749-B21 (HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter)

**Firmware for the following devices are updated to 14.29.1016:**
817753-B21 (HPE Ethernet 25Gb 2-port 640SFP28 Adapter)

**Firmware for the following device is updated to 16.29.1016:**

874253-B21 (HPE Ethernet 100Gb 1-port 842QSFP28 Adapter)

**New features and changes in version 14.29.1016:**

Added support for the following features:

- A new counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.
- cq_overrun counter: This counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.
- Enabled the capability to allow Virtual Functions to send Pause Frames packets.
- Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.
- Hardware steering dump output used for debugging and troubleshooting.

**New features and changes in version 16.29.1016:**

Added support for following features:

- An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.
- "InfiniBand" properties set to the Network Device Function Redfish object.
- HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compare to the FW Flow Metering.
- Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.
- 2 new Mini CQE formats: Responder Mini CQE With Flow Tag Layout Responder Mini CQE With l3_l4_info Layout

- UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.
- Steering DP hash flow groups.
- A new counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.
- PCIe Rx modifications to prevent the adapter cards from disappearing from the system.
- ignore_flow_level is now enabled by the TRUST LEVEL access registry.
- cq_overrun counter. The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.
- [Beta] Enabled the capability to allow Virtual Functions to send Pause Frames packets.
- Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.
- Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| 779793-B21 | HPE Ethernet 10Gb 2-port 546SFP+ Adapter | HP_1200111023 |
| 779799-B21 | HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter | HP_2240110004 |
| 817749-B21 | HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter | HP_2690110034 |
| 817753-B21 | HPE Ethernet 25Gb 2-port 640SFP28 Adapter | HP_2420110034 |
| 874253-B21 | HPE Ethernet 100Gb 1-port 842QSFP28 Adapter | HPE0000000014 |

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Online Firmware Upgrade Utility (ESXi 6.5) for HPE Mellanox VPI (Ethernet and Infiniband mode) ConnectX4 and ConnectX5 devices on VMware ESXi 6.5
Version: 1.0.8 **(Recommended)**
Filename: CP045145.compsig; CP045145.zip

**Important Note!**

**Known Issues with firmware version 12.28.1002:**

- When MKEY_BY_NAME is enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

**Known Issues with firmware version 16.29.1016:**

- Multi-APP QoS is not supported when LAG is configured.
- Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
  **Workaround:** Use full reset flow for firmware upgrade/downgrade.
- On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.
  **Workaround:** If such issue is observed:
  - 
  - Enable ZTT to overcome the high latency. Run: mlxconfig -d set ZERO_TOUCH_TUNING_ENABLE=1
  - Reset or power cycle the firmware for change to take effect
- When PER_PF_NUM_SF=1 (per PF configurations are used for SFs), if the number of SFs configured for a PF is 0 (PF_TOTAL_SF=0), than the firmware wrongly opens BAR2 with size 128KB.
- The following are the Steering Dump limitations:

- Supported only on ConnectX-5 adapter cards
- Requires passing the version (FW/Stelib/MFT) and device type to stelib
- Re-format is not supported
- Advanced multi-port feature is not supported -LAG/ROCE_AFFILIATION/MPFS_LB/ESW_LB (only traffic vhca <-> wire)
  - Packet types supported:
  - Layer 2 Eth
  - Layer 3 IPv4/Ipv6/Grh
  - Layer 4 TCP/UDP/Bth/GreV0/GreV1
  - Tunneling VXLAN/Geneve/GREv0/Mpls
- FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).
- Compiles only on x86

- When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf's ancestors. **Workaround:** To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share.
- Occasionally, Tag Matching RNDV and NVME emulation wasn't behaving as expected.
- Congestion Control may not work properly if the card supports two ports and each PF for each port is not raised at the same time.

## Fixes

**Following issues have been fixed in firmware version 16.29.1016:**

- An issue that prevented VXLAN packets with svlan/ cvlan tag from being matched.
- An issue that caused the eth_wqe_too_small counter to count ODP (On-Demand Paging) page faults.
- When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.
- An issue that resulted in low performance after enabling the RoCE Accelerator capability. Note: The fix is available when all ports are set as Ethernet.
- On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.
- The chassis manager calculation for Multi-Host and Socket-Direct adapter cards to allow running NC-SI commands by the chassis manager BMC. Now the chassis manager is count as BMC with index 0, regardless of how many BMC there are.
- An issue that caused the device to go to down IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Following issues have been fixed in firmware version 12.28.1002:**

- An issue that caused the DCR to be destroyed before the retry option managed to work when the retry timeout is too big. In this case the DCR' time-to-live was increased, and the maximum retry timeout was decreased.
- Increased PHY power consumption limit to 1.5w.
- An issue that caused PortCounters.PortRcvErr / PPCNT.infiniband_counters.PortRcvErr not to report port icrc errors.

## Enhancements

**Firmware for the following devices are updated to 12.28.1002:**

825110-B21 (HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter)
825111-B21 (HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter)

**New Feature and Changes in Version 12.28.1002:**

- Increased the maximum XRQ number to 512.

**Firmware for the following devices are updated to 16.29.1016:**

879482-B21 (HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter)
872726-B21 (HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter)

**New Feature and Changes in Version 16.29.1016:**

Added support for the following features:

- Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.
- An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.
- "InfiniBand" properties set to the Network Device Function Redfish object.
- HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compared to the FW Flow Metering.
- Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.
- 2 new Mini CQE formats: Responder Mini CQE With Flow Tag Layout Responder Mini CQE With l3_l4_info Layout
- UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.
- Steering DP hash flow groups.
- A new counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.
- PCIe Rx modifications to prevent the adapter cards from disappearing from the system.
- ignore_flow_level is now enabled by the TRUST LEVEL access registry.
- cq_overrun counter. The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.
- [Beta] Enabled the capability to allow Virtual Functions to send Pause Frames packets.
- Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.
- Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 825110-B21 | HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter | HP_2180110032 |
| 825111-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter | HP_2190110032 |

| | | |
|---|---|---|
| 872726-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter | HPE0000000009 |
| 879482-B21 | HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter | HPE0000000022 |

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Online Firmware Upgrade Utility (ESXi 6.5) for HPE Mellanox VPI (Ethernet and Infiniband mode) ConnectX6 devices on VMware ESXi 6.5
Version: 1.0.1 **(Recommended)**
Filename: CP044869.compsig; CP044869.zip

**Important Note!**

**ConnectX-6 VPI supports having one port as InfiniBand and the other port as Ethernet according to the following matrix of combinations.**

| **Port #2 - InfiniBand** | | | | |
|---|---|---|---|---|
| **Port #1 – Ethernet** | **HDR/HDR100** | **EDR** | **FDR** | **QDR** |
| **50GbE** | supported | not supported | not supported | supported |
| **100GbE/25GbE** | supported | not supported | not supported | supported |
| **40GbE/10GbE** | supported | not supported | not supported | supported |
| **1GbE** | supported | not supported | not supported | supported |

| **Port #2 - Ethernet** | | | | |
|---|---|---|---|---|
| **Port #1 - InfiniBand** | **50GbE** | **100GbE/25GbE** | **40GbE/10GbE** | **1GbE** |
| **HDR / HDR100** | supported | supported | not supported | supported |
| **EDR** | supported | supported | not supported | supported |
| **FDR** | not supported | not supported | not supported | not supported |
| **QDR/SDR** | supported | supported | not supported | supported |

**Prerequisites**

Use iLO5 firmware version 2.30 or higher with ConnectX6 firmware version 20.27.6008. Thermal sensor reporting on the adapter will not be functional with older versions of iLO5 firmware.

**Fixes**

**The following issues have been fixed in version 20.29.1016:**

- Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.
- An issue that prevented VXLAN packets with svlan/cvlan tag from being matched.
- The eth_wqe_too_small counter to count ODP (On-Demand Paging) page used to fail.
- An issue related to raising 100GbE link on ConnectX-6 VPI 100Gb/s adapter cards.
- When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

- Low performance occurred after enabling the RoCE Accelerator capability.
- On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

**Enhancements**

**Firmware for the following devices are updated to 20.29.1016:**

HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 x16 Adapter - P06154-B21
HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 x16 Adapter - P06250-B21
HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 x16 Adapter - P06251-B21

**New Features and Changes in Version 20.29.1016:**

Added support for following features:

- LinkX module burning via MFT toolset. The new capability enables direct firmware burning from the internal flash storage to reduce the bandwidth and accelerate the burning process, including burning several modules at a time.
- An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.
- Improved NRZ link performance (RX algorithm).
- Improved NRZ link-up time (25G\50G\100G speeds).
- Enabled the options to control different Tx sets for the same attribute when connecting a Mellanox-Mellanox vs Mellanox to 3rd party HCA.
- "InfiniBand" properties set to the Network Device Function Redfish object.
- Direct Packet Placement (DPP): DPP is a receive side transport service in which the Ethernet packets are scattered to the memory according to a packet sequence number (PSN) carried by the packet, and not by their arrival order.
- To enable DPP offload, the software should create a special RQ by using the CREATE_RQ command, and set DPP relevant attributes.
- Added trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.
- UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.
- Enhanced IB Congestion Control to support lower minimum rate. Now it uses destination-lid to classify flows to handle larger scale, and achieve better results in GPCNeT benchmark.
- Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| P06154-B21 | HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 x16 Adapter | HPE0000000034 |
| P06250-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 x16 Adapter | HPE0000000035 |
| P06251-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 x16 Adapter | HPE0000000036 |

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Online Firmware Upgrade Utility (ESXi 6.5) for HPE Mellanox VPI (Ethernet and Infiniband mode) devices on VMware ESXi 6.5
Version: 1.0.7 **(Recommended)**
Filename: CP045902.compsig; CP045902.zip

**Important Note!**

**Known Issues in firmware 2.42.5000, 2.42.5056, 2.42.5700:**

- When using the Quad Small Form-factor Pluggable (QSFP) module RTXM320-581, and performing a driver restart for the firmware upgrade/downgrade to take effect, the link does not come up.
  **Workaround**: Reboot the server.
- Enabling/disabling cq_timestamp using mlxconfig is not supported.
- In a card with 2 separate LEDs scheme (a Phy LED and a logic LED) only the Phy LED will lit. Meaning, the orange LED will not be active while the ETH link is in an idle mode.
- In SR-IOV setup, using mlxconfig when the Packet Filter (PF) is passed through to a VM requires a reboot of the Hypervisor.
- Downgrading from v2.30.8000 or later to an earlier version than 2.30.8000 requires server reboot.
  **Workaround**: Reboot the server.
- On ConnectX-3 Ethernet adapter cards, there is a mismatch between the GUID value returned by firmware management tools and that returned by fabric/ driver utilities that read the GUID via device firmware (e.g., using ibstat). Mlxburn/flint return 0xffff as GUID while the utilities return a value derived from the MAC address. For all driver/firmware/software purposes, the latter value should be used.
  **Workaround**: Please use the GUID value returned by the fabric/driver utilities (not 0xffffff).
- SBR should be asserted for a minimum of 50 milliseconds for the ConnectX-3 adapters.
- On Pilot1 SL230, PCIe link occasionally does not come up at Gen3 speed.
- RHEL6.3 Inbox driver causes kernel panic when SRIOV is enabled on VPI cards due to driver compatibility issue.
- **Workaround**: Set the "do_- sense=false" parameter in the [IB_TAB] i.
- In advanced steering mode, side band management connectivity may be lost when having more than 8 QP per mcg.
- When SR-IOV is disabled in the system BIOS, a PCI issue is noticed in Ubuntu v12.04.3 with Linux kernel v3.8 which affects NICs of several manufacturers including Mellanox's, preventing them from operating.
  **Workaround**: Enable SR-IOV in the BIOS.
- Mellanox Firmware Tools (MFT) might leave the flash semaphore locked if the tool operation is forced stopped. The locked semaphore prevents the firmware from accessing the flash and causes firmware hang.
  **Workaround**: Clear the semaphore using MFT command: 'flint -clear_semaphore'
- Cable Info MAD reports a wrong cable info when using the MC2210411-SR4 module.
- Gen2 failure at temperature sweep up to 10C/min (for MT27518A1-FDIR-BV only)..
- PCIe Gen2 link unstable at temperature sweep of 10C/min for MT27518A1-FDIR-BV.
- Bloom filter is currently not supported.
- When downgrading from firmware v2.11.0000 and using MFT 3.0.0-3, the following message is displayed due to the mlxconfig tool: You are trying to override configurable FW by non-configurable FW. If you continue, old FW configurations will be cleared, do you want to continue ? (y/n) [n] : y You are trying to restore default configuration, do you want to continue ? (y/n) [n] : y.
- DMFS should not be enabled when working with InfiniBand on MLNX_OFED-2.0.3
- ConnectX®-3 Pro VF device ID is presented the same as ConnectX®-3 VF device ID due to driver limitations.
  **Workaround**: Use the physical function device ID to identify the device.
- Virtual Product Data (VPD) read-only fields are writable.
  **Workaround**: Do not write to read-only fields if you wish to preserve them.
- When working in Virtual Path Identifier (VPI) mode with port1 FDR and port2 40G, error counters misbehave and increase rapidly.
- Setting the device to 128Byte CQ/EQ stride will cause misbehavior of sideband management resulting in communication loss.
- CQ and EQ cannot be configured to different stride sizes.
- Changing port protocol from ETH to IB on port with NCSI/IPMI enabled while the port is connected to ETH switch is not supported.

**Workaround**: 1. Unplug the cable from the switch 2. Restart driver 3. Change the protocol via the appropriate tools.

- Adapter card MCX349A-XCCN may experience longer linkup times of a few seconds with specific switches.
- Adapter card MCX349A-XCCN does not respond to ethtool "identify" command (ethtool -p/--identify).
- Remote Desktop Protocol (RDP) over IPv6 is currently not functional.
  **Workaround**: Set the default RoCE mode in the software to RoCE v2 (also when not using RoCE)
- Sniffer QP cannot be removed from the regular rule after adding the QP with insertion scheme equals to "push to that rule".
- Since only a single Boot Entry Vector (BEV) per PCI Physical Function is supported, disabling the first port causes the second port to disappear as well.
- The NIC does not notify the driver of a link-down incident when a cable is unplugged from a NIC port with 56GbE port link.
- 56GbE link is not raised when using 100GbE optic cables.
- When working with MLNX_OFED v3.3-1.0.0.0, server reboot could get stuck due to a kernel panic in mlx4_en_get_drvinfo() that is called from asynchronous event handler.
- When running ibdump, loopback traffic is mirroring into the kernel driver.
- MAC address that are set from the OS using ifconfig are not reflected in the OCBB buffer.
- The adapter card cannot raise a 10G link vs. a 40GE capable switch port in C7000 enclosure. It can raise a 1G Link and only if the switch port allows it.
- MTUSB communication via I2C header on primary I2C bus is supported only in live-fish mode.

## Fixes

### Fixes in version 2.42.5000:

- PortRcvPkts counter was prevented from being cleared after resetting it.
- The system Timed Out on the configuration cycle of the Virtual Functions (VFs) when more than 10 Virtual Functions performed FLR and the completion Time Out value was configured to a range of less than 16 msec.
- The server hangs and results in NMI when running "mlxfwtop –d mt4103_pci_cr0" while restarting the driver in parallel (from a different thread). In this case, the downstream bridge over the device reported completion timeout error.
- In flow_steering, BMC could not receive a ping over IPV6 after running bmc_reboot.
- While closing the HCA, the RX packet caused bad access to resources that did not exist, and consequently caused the QPCGW or the irisc to get stuck.
- The master SMLID and the LID was either 0 or 0xFFFF when the port was neither active nor armed.
- ibdump could not capture all MADs packets.
- link did not go up after reboot.
- Fixed a rare issue that cause the PCIe configuration cycle that arrived during the time of sw_reset to generate 2 completions.
- Network Controller Sideband Interface (NC-SI) did not work when adding the disable_static_steering_ini field in the ini file, due to memory allocation issue for this field in the scratchpad.

### Fixes in version 2.42.5056:

- Fixed an issue that resulted in reading from invalid I/O address on handover from UEFI boot to OS boot, when a port was configured as InfiniBand on a VPI adapter device.

## Enhancements

**Firmware for the following devices are updated to 2.42.5000:**
764282-B21
764286-B21

**Firmware for the following devices are updated to 2.42.5056:**
764283-B21
764284-B21

**Firmware for the following device is updated to 2.42.5700:**
764285-B21

**New features in firmware version 2.42.5000:**

- Added support for the following features.
  - new TLV: CX3_GLOBAL_CONF to enable/disable timestamp on incoming packets through mlxconfig configuration.
  - User MAC configuration.
  - Automatically collecting mstdump before driver reset.
  - A mechanism to detect DEAD_IRISC (plastic) from TPT (iron) and raise an assert.
  - A new field is added to "set port" command which notifies the firmware what is the user_mtu size.
- Improved the debug ability for command timeout cases.

**New features and changes in firmware version 2.42.5700.**

- Modified the mlx_cmd_get_mlx_link_status command return value to return "Link Type = Ethernet" in Ethernet adapter cards.

**Supported Devices and Features**

**Supported Devices:**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 764282-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter | HPE_1350110023 |
| 764283-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter | HPE_1360110017 |
| 764284-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter | HPE_1370110017 |
| 764285-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter | HPE_1380110017 |
| 764286-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter | HPE_1390110023 |

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Online Firmware Upgrade Utility (ESXi 6.5) for Mellanox Open Ethernet cards
Version: 1.0.4 **(Recommended)**
Filename: CP045140.zip; CP045140_part1.compsig; CP045140_part2.compsig

**Important Note!**

**Known Issues in firmware 14.29.1016:**

- Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
  Workaround: Use full reset flow for firmware upgrade/downgrade.
- On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.
  Workaround: If such issue is observed:
- Enable ZTT to overcome the high latency. Run: mlxconfig -d <mst device> set ZERO_TOUCH_TUNING_ENABLE=1
- Reset or power cycle the firmware for change to take effect
- Low performance might be experienced when upgrading from previous firmware version to 14.29.1000 when using “Fast FW Reset”.
- The following are the Steering Dump limitations:
  - Supported only on ConnectX-5 adapter cards.
  - Requires passing the version (FW/Stelib/MFT) and device type to stelib.
  - Re-format is not supported
  - Advanced multi-port feature is not supported – LAG/ROCE_AFFILIATION/MPFS_LB/ ESW_LB (only traffic vhca <-> wire).
    - Packet types supported:
    - Layer 2 Eth
    - Layer 3 IPv4/Ipv6/Grh
    - Layer 4 TCP/UDP/Bth/GreV0/GreV1
    - Tunneling VXLAN/Geneve/GREv0/Mpls FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).
  - 
  - FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).
  - Compiles only on x86
- Congestion Control may not work properly if the card supports two ports and each PF for each port is not raised at the same time.

**Known Issues with firmware version 16.29.1016:**

- Multi-APP QoS is not supported when LAG is configured.
- When PER_PF_NUM_SF=1 (per PF configurations are used for SFs), if the number of SFs configured for a PF is 0 (PF_TOTAL_SF=0), than the firmware wrongly opens BAR2 with size 128KB.
  Workaround: N/A
- When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf’s ancestors.
  Workaround: To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share.
- Occasionally, Tag Matching RNDV and NVME emulation was not behaving as expected.
  Workaround: N/A

Note: On Adapter Firmware rewrite scenario, SUM will always discover the Mellanox Open adapter firmware smart component as applicable and select it for deployment If the server iLO5 firmware version is older than 2.30.

**Fixes**

**Following issues have been fixed in firmware version 14.29.1016 and 16.29.1016:**

- Changed the default value of DCQCN's NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.
- An issue that caused packets to drop due to header size issues and/or failing checks. This issue was caused due to a Linux issue that caused VFs to set the wrong header size value in wqe_inline_header_mode input.

- When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) might take longer than when MKEY_BY_NAME was disabled.
- In rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.
- An issue that caused the device to go to dead IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Following issues have been fixed in firmware version 16.29.1016:**

- An issue that caused the eth_wqe_too_small counter to count ODP page faults.
- A low performance was observed after enabling the RoCE Accelerator capability.

## Enhancements

**Firmware for the following devices is updated to 14.29.1016:**

P21930-B21 (HPE Ethernet 10Gb 2-port SFP+ MCX4121A-XCAT Adapter)
P11341-B21 (HPE Ethernet 10Gb 2-port SFP+ MCX4621A-ACAB OCP3 Adapter)

**Firmware for the following devices is updated to 16.29.1016:**

P13188-B21 (HPE Ethernet 10/25Gb 2-port SFP28 MCX512F-ACAT Adapter)
P21927-B21 (HPE Ethernet 100Gb 2-Port QSFP28 MCX516A-CCHT Adapter)
P10112-B21 (HPE Ethernet 10/25Gb 2-port SFP28 MCX562A-ACAI OCP3 Adapter)

**This release contains important reliability improvements and security hardening enhancements. Upgrade the firmware of the device to this release to improve the devices' firmware security and reliability.**

**New Feature and Changes in Version 14.29.1016 and 16.29.1016:**

- Ethernet wqe_too_small Mode: A per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause "CQE with Error" or "CQE_MOCK".
- Hardware steering dump output used for debugging and troubleshooting.

Added support for the following features:

- cq_overrun counter: The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.
- Enabled the capability to allow Virtual Functions to send Pause Frames packets. (Beta)
- Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

**New Feature and Changes in Version 16.29.1016:**

- Hardware steering dump output used for debugging and troubleshooting.

Added support for the following features:

- HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compare to the FW Flow Metering.

- Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.
- 2 new Mini CQE formats:
- Responder Mini CQE With Flow Tag Layout.
- Responder Mini CQE With l3_l4_info Layout.
- Steering DP hash flow groups.
- ignore_flow_level is now enabled by the TRUST LEVEL access registry.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P21930-B21 | HPE Ethernet 10Gb 2-port SFP+ MCX4121A-XCHT Adapter | MT_0000000414 |
| P11341-B21 | HPE Ethernet 10Gb 2-port SFP+ MCX4621A-ACAB OCP3 Adapter | MT_0000000238 |
| P13188-B21 | HPE Ethernet 10/25Gb 2-port SFP28 MCX512F-ACHT Adapter | MT_0000000416 |
| P10112-B21 | HPE Ethernet 10/25Gb 2-port SFP28 MCX562A-ACAI OCP3 Adapter | MT_0000000241 |
| P21927-B21 | HPE Ethernet 100Gb 2-port QSFP28 MCX516A-CCHT Adapter | MT_0000000417 |

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Online Firmware Upgrade Utility (ESXi 6.7) for HPE Ethernet 10Gb 2-port 548SFP+ Adapter
Version: 1.0.4 **(Recommended)**
Filename: CP045198.compsig; CP045198.zip

**Important Note!**

**No known issues were included in firmware version 14.29.1016:**

**Prerequisites**

Use iLO5 firmware version 2.30 or higher with ConnectX4 firmware version 14.28.1002. Thermal sensor reporting on the adapter will not be functional with older versions of iLO5 firmware.

**Fixes**

**Following issues have been fixed in version 14.29.1016:**

- An issue that caused the sent packet to hang while the device entered FLR mode.
- Enabled Bar configuration bytewise by applying the write_en bitmask.
- A rare case where the the device froze while running the sw reset flow under heavy stress and with many open resources.
- Low PXE performance while using the VSC to trigger the send_ring_doorbells.
- An error that prevented the completions (CQ) from being completed due to a race condition in the firmware transport error handlers, and the error stressors, where the error stressors would hang the firmware transport error handler flow.
- An issue that caused the fragmented IP packets to drop was fixed.

**Enhancements**

**Firmware for the following device is updated to 14.29.1016:**

P11338-B21 (HPE Ethernet 10Gb 2-port 548SFP+ Adapter)

**Following New features and Changes are included in version 14.29.1016:**

- Added mlxconfig support for power reduction: PCI CAP AUTO_POWER_SAVE_LINK_DOWN
  - PCI CAP
  - AUTO_POWER_SAVE_LINK_DOWN
- Added the following segments, as appeared in the PRM, to the Resource Dump:
  - PRM_QUERY_QP
  - PRM_QUERY_CQ
  - PRM_QUERY_MKEY
  - QUERY_VNIC_ENV

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P11338-B21 | HPE Ethernet 10Gb 2-port 548SFP+ Adapter | HPE0000000038 |

Online Firmware Upgrade Utility (ESXi 6.7) for HPE Mellanox Ethernet only adaptersVersion: 1.0.5 **(Recommended)**Filename: CP045193.compsig; CP045193.zip **Important Note!**

The Firmware Upgrade Utility has been split into 2 packages for Mellanox Ethernet Only NIC adpaters, one supporting Synergy platforms and the other supporting ProLiant and Apollo platforms. This package supports Mellanox Ethernet Only NIC adapters on ProLiant and Apollo servers.

**Known Issues for FW version 2.42.5044 :**

When using the QSFP module RTXM320-581, and performing a driver restart for the firmware upgrade/downgrade to take effect, the link does not come up.

Enabling/disabling cq_timestamp using mlxconfig is not supported.

In a card with 2 separate LEDs scheme (a Phy LED and a logic LED) only the Phy LED will lit. Meaning, the orange LES will not be active while the ETH link is in an idle mode.

In SR-IOV setup, using mlxconfig when the PF is passed through to a VM requires a reboot of the Hypervisor.

Downgrade to previous GA requires server reboot.Downgrading from v2.30.8000 or later to an earlier version than 2.30.8000 requires server reboot. Reboot the server.

On ConnectX-3 Ethernet adapter cards, there is a mismatch between the GUID value returned by firmware management tools and that returned by fabric/driver utilities that read the GUID via device firmware (e.g., using ibstat). Mlxburn/flint return 0xffff as GUID while the utilities return a value derived from the MAC address. For all driver/firmware/software purposes, the lattervalue should be used.

SBR should be asserted for a minimum of 50 milliseconds for the ConnectX®-3 adapters

On Pilot1 SL230, PCIe link occasionally does not come up at Gen3 speed

RH6.3 Inbox driver causes kernel panic when SR-IOV is enabled on VPI cards due to driver compatibility issue.

In advanced steering mode, side band management connectivity may be lost when having more than 8 QP per mcg.

When SR-IOV is disabled in the system BIOS, a PCI issue is noticed in Ubuntu v12.04.3 with Linux kernel v3.8 which affects NICs of several manufacturers including Mellanox's, preventing them from operating.

MFT tools might leave the flash semaphore locked if the tool operation is forced stopped. The locked semaphore prevents the firmware from accessing the flash and causes firmware hang.

Cable Info MAD reports a wrong cable info when usingthe MC2210411-SR4 module

Gen2 failure at temperature sweep up to 10C/min (for MT27518A1-FDIR-BV only).

PCIe Gen2 link unstable at temperature sweep of 10C/min for MT27518A1-FDIR-BV

Bloom filter is currently not supported.

Firmware downgrade message When downgrading from firmware v2.11.0000 and using MFT 3.0.0-3

RM#DMFS should not be enabled when working with InfiniBand on MLNX_OFED-2.0.3

RM#VPD read-only fields are writable.

Increasing SymbolErrorCounter When working in VPI mode with port1 FDR and port2 40G, error counters misbehave and increase rapidly

Setting the device to 128Byte CQ/EQ stride will cause misbehavior of sideband management resulting in communication loss.

CQ and EQ cannot be configured to different stride sizes.

ConnectX-3 Pro VF device ID is presented the same as ConnectX-3 VF device ID due to driver limitations.

RSOD while running PXE (legacy) on G9 servers. This occurs only when PXE boot fails and BIOS boots from HDD. Currently it is pending BIOS fix.

Changing port protocol from ETH to IB on port with NCSI/IPMI enabled while the port is connected to ETH switch is not supported.

RDP over IPv6 is currently not functional.

Sniffer QP cannot be removed from the regular rule after adding the QP with insertion scheme equals to “push to that rule”

Since only a single Boot Entry Vector (BEV) per PCI Physical Function is supported, disabling the first port causes the second port to disappear as well.

The NIC does not notify the driver of a link-down incident when a cable is unplugged from a NIC port with 56GbE port link.

56GbE link is not raised when using 100GbE optic cables.

When working with MLNX_OFED v3.3-1.0.0.0, server reboot could get stuck due to a kernel panic in mlx-4_en_get_drvinfo() that is called from asynchronous event handler.

832298:When running ibdump, loopback traffic is mirroring into the kernel driver.

AHS reports wrong MTU size

RM#846523: MAC address that are set from the OS using ifconfig are not reflected in the OCBB buffer

**Known Issues for FW version 14.29.1016 and 16.29.1016:**

Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
**Workaround:** Use full reset flow for firmware upgrade/downgrade.

On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.
**Workaround:** If such issue is observed:

Enable ZTT to overcome the high latency. Run: mlxconfig -d set ZERO_TOUCH_TUNING_ENABLE=1

Reset or power cycle the firmware for change to take effect

The following are the Steering Dump limitations:

Supported only on ConnectX-5 adapter cards

Requires passing the version (FW/Stelib/MFT) and device type to stelib

Re-format is not supported

Advanced multi-port feature is not supported -LAG/ROCE_AFFILIATION/MPFS_LB/ESW_LB (only traffic vhca <-> wire)

Packet types supported:

Layer 2 Eth

Layer 3 IPv4/Ipv6/Grh

Layer 4 TCP/UDP/Bth/GreV0/GreV1

Tunneling VXLAN/Geneve/GREv0/Mpls

FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86

Congestion Control may not work properly if the card supports two ports and each PF for each port is not raised at the same time.

**Known Issues for FW version 14.29.1016:**

Low performance might be experienced when upgrading from previous firmware version to 14.29.1000 when using “Fast FW Reset”.

**Known Issues for FW version 16.29.1016:**

When PER_PF_NUM_SF=1 (per PF configurations are used for SFs), if the number of SFs configured for a PF is 0 (PF_TOTAL_SF=0), than the firmware wrongly opens BAR2 with size 128KB.

Multi-APP QoS is not supported when LAG is configured.

When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf’s ancestors. **Workaround:** To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share.

Occasionally, Tag Matching RNDV and NVME emulation wasn’t behaving as expected.

**Prerequisites**

Use iLO5 firmware version 2.30 or higher with ConnectX4/ConnectX5 firmware version 14.28.1002/16.28.1002 respectively. Thermal sensor reporting on the adapter will not be functional with older versions of iLO5 firmware.

**Fixes**

**ixes submitted in version 2.42.5044 :**

An issue that prevented the firmware from detecting a link_down event thus preventing the IB bond interface from going to a failover mode.

**Following issues have been fixed in firmware version 14.29.1016:**

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An issue that caused packets to drop due to header size issues and/or failing checks. The issue was caused due to a Linux issue that caused VFs to set the wrong header size value in wqe_inline_header_mode input.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs were configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

An issue that caused the device to go to dead IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Following issues have been fixed in firmware version 16.29.1016:**

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An issue that prevented VXLAN packets with svlan/ cvlan tag from being matched.

The eth_wqe_too_small counter to count ODP page used to fail.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

An issue that resulted in low performance after enabling the RoCE Accelerator capability.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

The chassis manager calculation for Multi-Host and Socket-Direct adapter cards to allow running NC-SI commands by the chassis manager BMC. Now the chassis manager is count as BMC with index 0, regardless of how many BMC there are.

An issue that caused the device to go to dead IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Enhancements**

**Firmware for the following devices are updated to 2.42.5044 :**

779799-B21 (HPE Ethernet 10G 2-port 546FLR-SFP+ Adapter)
779793-B21 (HPE Ethernet 10G 2-port 546SFP+ Adapter)

**Firmware for the following devices are updated to 14.29.1016:**

817749-B21 (HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter)

**Firmware for the following devices are updated to 14.29.1016:**
817753-B21 (HPE Ethernet 25Gb 2-port 640SFP28 Adapter)

**Firmware for the following device is updated to 16.29.1016:**

874253-B21 (HPE Ethernet 100Gb 1-port 842QSFP28 Adapter)

**New features and changes in version 14.29.1016:**

Added support for the following features:

A new counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.

cq_overrun counter: This counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

Enabled the capability to allow Virtual Functions to send Pause Frames packets.

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

Hardware steering dump output used for debugging and troubleshooting.

**New features and changes in version 16.29.1016:**

Added support for following features:

An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.

"InfiniBand" properties set to the Network Device Function Redfish object.

HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compare to the FW Flow Metering.

Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

2 new Mini CQE formats: Responder Mini CQE With Flow Tag Layout Responder Mini CQE With l3_l4_info Layout

UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.

Steering DP hash flow groups.

A new counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.

PCIe Rx modifications to prevent the adapter cards from disappearing from the system.

ignore_flow_level is now enabled by the TRUST LEVEL access registry.

cq_overrun counter. The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

[Beta] Enabled the capability to allow Virtual Functions to send Pause Frames packets.

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| 779793-B21 | HPE Ethernet 10Gb 2-port 546SFP+ Adapter | HP_1200111023 |
| 779799-B21 | HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter | HP_2240110004 |
| 817749-B21 | HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter | HP_2690110034 |
| 817753-B21 | HPE Ethernet 25Gb 2-port 640SFP28 Adapter | HP_2420110034 |
| 874253-B21 | HPE Ethernet 100Gb 1-port 842QSFP28 Adapter | HPE0000000014 |

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Online Firmware Upgrade Utility (ESXi 6.7) for HPE Mellanox VPI (Ethernet and Infiniband mode) ConnectX4 and ConnectX5 devices on VMware ESXi 6.7Version: 1.0.4 **(Recommended)**Filename: CP045146.compsig; CP045146.zip **Important Note!**

**Known Issues with firmware version 12.28.1002:**

When MKEY_BY_NAME is enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

**Known Issues with firmware version 16.29.1016:**

Multi-APP QoS is not supported when LAG is configured.

Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
**Workaround:** Use full reset flow for firmware upgrade/downgrade.

On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.
**Workaround:** If such issue is observed:

Enable ZTT to overcome the high latency. Run: mlxconfig -d set ZERO_TOUCH_TUNING_ENABLE=1

Reset or power cycle the firmware for change to take effect

When PER_PF_NUM_SF=1 (per PF configurations are used for SFs), if the number of SFs configured for a PF is 0 (PF_TOTAL_SF=0), than the firmware wrongly opens BAR2 with size 128KB.

The following are the Steering Dump limitations:

Supported only on ConnectX-5 adapter cards

Requires passing the version (FW/Stelib/MFT) and device type to stelib

Re-format is not supported

Advanced multi-port feature is not supported -LAG/ROCE_AFFILIATION/MPFS_LB/ESW_LB (only traffic vhca <-> wire)

Packet types supported:

Layer 2 Eth

Layer 3 IPv4/Ipv6/Grh

Layer 4 TCP/UDP/Bth/GreV0/GreV1

Tunneling VXLAN/Geneve/GREv0/Mpls

FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86

When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf's ancestors. **Workaround:** To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share.

Occasionally, Tag Matching RNDV and NVME emulation wasn't behaving as expected.

Congestion Control may not work properly if the card supports two ports and each PF for each port is not raised at the same time.

**Fixes**

**Following issues have been fixed in firmware version 16.29.1016:**

An issue that prevented VXLAN packets with svlan/ cvlan tag from being matched.

An issue that caused the eth_wqe_too_small counter to count ODP (On-Demand Paging) page faults.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

An issue that resulted in low performance after enabling the RoCE Accelerator capability. Note: The fix is available when all ports are set as Ethernet.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

The chassis manager calculation for Multi-Host and Socket-Direct adapter cards to allow running NC-SI commands by the chassis manager BMC. Now the chassis manager is count as BMC with index 0, regardless of how many BMC there are.

An issue that caused the device to go to down IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Following issues have been fixed in firmware version 12.28.1002:**

An issue that caused the DCR to be destroyed before the retry option managed to work when the retry timeout is too big. In this case the DCR' time-to-live was increased, and the maximum retry timeout was decreased.

Increased PHY power consumption limit to 1.5w.

An issue that caused PortCounters.PortRcvErr / PPCNT.infiniband_counters.PortRcvErr not to report port icrc errors.

**Enhancements**

**Firmware for the following devices are updated to 12.28.1002:**

825110-B21 (HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter)
825111-B21 (HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter)

**New Feature and Changes in Version 12.28.1002:**

Increased the maximum XRQ number to 512.

**Firmware for the following devices are updated to 16.29.1016:**

879482-B21 (HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter)
872726-B21 (HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter)

**New Feature and Changes in Version 16.29.1016:**

Added support for the following features:

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.

"InfiniBand" properties set to the Network Device Function Redfish object.

HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compared to the FW Flow Metering.

Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

2 new Mini CQE formats: Responder Mini CQE With Flow Tag Layout Responder Mini CQE With l3_l4_info Layout

UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.

Steering DP hash flow groups.

A new counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.

PCIe Rx modifications to prevent the adapter cards from disappearing from the system.

ignore_flow_level is now enabled by the TRUST LEVEL access registry.

cq_overrun counter. The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

[Beta] Enabled the capability to allow Virtual Functions to send Pause Frames packets.

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 825110-B21 | HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter | HP_2180110032 |
| 825111-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter | HP_2190110032 |
| 872726-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter | HPE0000000009 |
| 879482-B21 | HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter | HPE0000000022 |

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Online Firmware Upgrade Utility (ESXi 6.7) for HPE Mellanox VPI (Ethernet and Infiniband mode) ConnectX6 devices on VMware ESXi 6.7Version: 1.0.1 **(Recommended)**Filename: CP044870.compsig; CP044870.zip **Important Note!**

**ConnectX-6 VPI supports having one port as InfiniBand and the other port as Ethernet according to the following matrix of combinations.**

| **Port #2 - InfiniBand** | | | | |
|---|---|---|---|---|
| **Port #1 – Ethernet** | **HDR/HDR100** | **EDR** | **FDR** | **QDR** |
| **50GbE** | supported | not supported | not supported | supported |
| **100GbE/25GbE** | supported | not supported | not supported | supported |
| **40GbE/10GbE** | supported | not supported | not supported | supported |
| **1GbE** | supported | not supported | not supported | supported |

| Port #2 - Ethernet | | | | |
|---|---|---|---|---|
| **Port #1 - InfiniBand** | **50GbE** | **100GbE/25GbE** | **40GbE/10GbE** | **1GbE** |
| **HDR / HDR100** | supported | supported | not supported | supported |
| **EDR** | supported | supported | not supported | supported |
| **FDR** | not supported | not supported | not supported | not supported |
| **QDR/SDR** | supported | supported | not supported | supported |

**Prerequisites**

Use iLO5 firmware version 2.30 or higher with ConnectX6 firmware version 20.27.6008. Thermal sensor reporting on the adapter will not be functional with older versions of iLO5 firmware.

**Fixes**

**The following issues have been fixed in version 20.29.1016:**

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An issue that prevented VXLAN packets with svlan/cvlan tag from being matched.

The eth_wqe_too_small counter to count ODP (On-Demand Paging) page used to fail.

An issue related to raising 100GbE link on ConnectX-6 VPI 100Gb/s adapter cards.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

Low performance occurred after enabling the RoCE Accelerator capability.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

**Enhancements**

**Firmware for the following devices are updated to 20.29.1016:**

HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 x16 Adapter - P06154-B21
HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 x16 Adapter - P06250-B21
HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 x16 Adapter - P06251-B21

**New Features and Changes in Version 20.29.1016:**

Added support for following features:

LinkX module burning via MFT toolset. The new capability enables direct firmware burning from the internal flash storage to reduce the bandwidth and accelerate the burning process, including burning several modules at a time.

An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.

Improved NRZ link performance (RX algorithm).

Improved NRZ link-up time (25G\50G\100G speeds).

Enabled the options to control different Tx sets for the same attribute when connecting a Mellanox-Mellanox vs Mellanox to 3rd party HCA.

"InfiniBand" properties set to the Network Device Function Redfish object.

Direct Packet Placement (DPP): DPP is a receive side transport service in which the Ethernet packets are scattered to the memory according to a packet sequence number (PSN) carried by the packet, and not by their arrival order.

To enable DPP offload, the software should create a special RQ by using the CREATE_RQ command, and set DPP relevant attributes.

Added trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.

Enhanced IB Congestion Control to support lower minimum rate. Now it uses destination-lid to classify flows to handle larger scale, and achieve better results in GPCNeT benchmark.

Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| P06154-B21 | HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 x16 Adapter | HPE0000000034 |
| P06250-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 x16 Adapter | HPE0000000035 |
| P06251-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 x16 Adapter | HPE0000000036 |

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Online Firmware Upgrade Utility (ESXi 6.7) for HPE Mellanox VPI (Ethernet and Infiniband mode) devices on VMware ESXi 6.7Version: 1.0.5 **(Recommended)**Filename: CP045903.compsig; CP045903.zip **Important Note!**

**Known Issues in firmware 2.42.5000, 2.42.5056, 2.42.5700:**

When using the Quad Small Form-factor Pluggable (QSFP) module RTXM320-581, and performing a driver restart for the firmware upgrade/downgrade to take effect, the link does not come up.
**Workaround**: Reboot the server.

Enabling/disabling cq_timestamp using mlxconfig is not supported.

In a card with 2 separate LEDs scheme (a Phy LED and a logic LED) only the Phy LED will lit. Meaning, the orange LED will not be active while the ETH link is in an idle mode.

In SR-IOV setup, using mlxconfig when the Packet Filter (PF) is passed through to a VM requires a reboot of the Hypervisor.

Downgrading from v2.30.8000 or later to an earlier version than 2.30.8000 requires server reboot.
**Workaround**: Reboot the server.

On ConnectX-3 Ethernet adapter cards, there is a mismatch between the GUID value returned by firmware management tools and that returned by fabric/ driver utilities that read the GUID via device firmware (e.g., using ibstat). Mlxburn/flint return 0xffff as GUID while the utilities return a value derived from the MAC address. For all driver/firmware/software purposes, the latter value should be used.
**Workaround**: Please use the GUID value returned by the fabric/driver utilities (not 0xffffff).

SBR should be asserted for a minimum of 50 milliseconds for the ConnectX-3 adapters.

On Pilot1 SL230, PCIe link occasionally does not come up at Gen3 speed.

RHEL6.3 Inbox driver causes kernel panic when SRIOV is enabled on VPI cards due to driver compatibility issue.

**Workaround**: Set the "do_- sense=false" parameter in the [IB_TAB] i.

In advanced steering mode, side band management connectivity may be lost when having more than 8 QP per mcg.

When SR-IOV is disabled in the system BIOS, a PCI issue is noticed in Ubuntu v12.04.3 with Linux kernel v3.8 which affects NICs of several manufacturers including Mellanox's, preventing them from operating.
**Workaround**: Enable SR-IOV in the BIOS.

Mellanox Firmware Tools (MFT) might leave the flash semaphore locked if the tool operation is forced stopped. The locked semaphore prevents the firmware from accessing the flash and causes firmware hang.
**Workaround**: Clear the semaphore using MFT command: 'flint -clear_semaphore'

Cable Info MAD reports a wrong cable info when using the MC2210411-SR4 module.

Gen2 failure at temperature sweep up to 10C/min (for MT27518A1-FDIR-BV only)..

PCIe Gen2 link unstable at temperature sweep of 10C/min for MT27518A1-FDIR-BV.

Bloom filter is currently not supported.

When downgrading from firmware v2.11.0000 and using MFT 3.0.0-3, the following message is displayed due to the mlxconfig tool: You are trying to override configurable FW by non-configurable FW. If you continue, old FW configurations will be cleared, do you want to continue ? (y/n) [n] : y You are trying to restore default configuration, do you want to continue ? (y/n) [n] : y.

DMFS should not be enabled when working with InfiniBand on MLNX_OFED-2.0.3

ConnectX®-3 Pro VF device ID is presented the same as ConnectX®-3 VF device ID due to driver limitations.
**Workaround**: Use the physical function device ID to identify the device.

Virtual Product Data (VPD) read-only fields are writable.
**Workaround**: Do not write to read-only fields if you wish to preserve them.

When working in Virtual Path Identifier (VPI) mode with port1 FDR and port2 40G, error counters misbehave and increase rapidly.

Setting the device to 128Byte CQ/EQ stride will cause misbehavior of sideband management resulting in communication loss.

CQ and EQ cannot be configured to different stride sizes.

Changing port protocol from ETH to IB on port with NCSI/IPMI enabled while the port is connected to ETH switch is not supported.
**Workaround**: 1. Unplug the cable from the switch 2. Restart driver 3. Change the protocol via the appropriate tools.

Adapter card MCX349A-XCCN may experience longer linkup times of a few seconds with specific switches.

Adapter card MCX349A-XCCN does not respond to ethtool “identify” command (ethtool -p/--identify).

Remote Desktop Protocol (RDP) over IPv6 is currently not functional.
**Workaround**: Set the default RoCE mode in the software to RoCE v2 (also when not using RoCE)

Sniffer QP cannot be removed from the regular rule after adding the QP with insertion scheme equals to “push to that rule”.

Since only a single Boot Entry Vector (BEV) per PCI Physical Function is supported, disabling the first port causes the second port to disappear as well.

The NIC does not notify the driver of a link-down incident when a cable is unplugged from a NIC port with 56GbE port link.

56GbE link is not raised when using 100GbE optic cables.

When working with MLNX_OFED v3.3-1.0.0.0, server reboot could get stuck due to a kernel panic in mlx4_en_get_drvinfo() that is called from asynchronous event handler.

When running ibdump, loopback traffic is mirroring into the kernel driver.

MAC address that are set from the OS using ifconfig are not reflected in the OCBB buffer.

The adapter card cannot raise a 10G link vs. a 40GE capable switch port in C7000 enclosure. It can raise a 1G Link and only if the switch port allows it.

MTUSB communication via I2C header on primary I2C bus is supported only in live-fish mode.

## Fixes

**Fixes in version 2.42.5000:**

PortRcvPkts counter was prevented from being cleared after resetting it.

The system Timed Out on the configuration cycle of the Virtual Functions (VFs) when more than 10 Virtual Functions performed FLR and the completion Time Out value was configured to a range of less than 16 msec.

The server hangs and results in NMI when running “mlxfwtop –d mt4103_pci_cr0” while restarting the driver in parallel (from a different thread). In this case, the downstream bridge over the device reported completion timeout error.

In flow_steering, BMC could not receive a ping over IPV6 after running bmc_reboot.

While closing the HCA, the RX packet caused bad access to resources that did not exist, and consequently caused the QPCGW or the irisc to get stuck.

The master SMLID and the LID was either 0 or 0xFFFF when the port was neither active nor armed.

ibdump could not capture all MADs packets.

link did not go up after reboot.

Fixed a rare issue that cause the PCIe configuration cycle that arrived during the time of sw_reset to generate 2 completions.

Network Controller Sideband Interface (NC-SI) did not work when adding the disable_static_steering_ini field in the ini file, due to memory allocation issue for this field in the scratchpad.

**Fixes in version 2.42.5056:**

Fixed an issue that resulted in reading from invalid I/O address on handover from UEFI boot to OS boot, when a port was configured as InfiniBand on a VPI adapter device.

**Enhancements**

**Firmware for the following devices are updated to 2.42.5000:**
764282-B21
764286-B21

**Firmware for the following devices are updated to 2.42.5056:**
764283-B21
764284-B21

**Firmware for the following device is updated to 2.42.5700:**
764285-B21

**New features in firmware version 2.42.5000:**

Added support for the following features.

new TLV: CX3_GLOBAL_CONF to enable/disable timestamp on incoming packets through mlxconfig configuration.

User MAC configuration.

Automatically collecting mstdump before driver reset.

A mechanism to detect DEAD_IRISC (plastic) from TPT (iron) and raise an assert.

A new field is added to "set port" command which notifies the firmware what is the user_mtu size.

Improved the debug ability for command timeout cases.

**New features and changes in firmware version 2.42.5700.**

Modified the mlx_cmd_get_mlx_link_status command return value to return "Link Type = Ethernet" in Ethernet adapter cards.

**Supported Devices and Features**

**Supported Devices:**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 764282-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter | HPE_1350110023 |
| 764283-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter | HPE_1360110017 |
| 764284-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter | HPE_1370110017 |
| 764285-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter | HPE_1380110017 |
| 764286-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter | HPE_1390110023 |

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Online Firmware Upgrade Utility (ESXi 6.7) for Mellanox Open Ethernet cardsVersion: 1.0.4 **(Recommended)**Filename: CP045141.zip; CP045141_part1.compsig; CP045141_part2.compsig **Important Note!**

**Known Issues in firmware 14.29.1016:**

Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
Workaround: Use full reset flow for firmware upgrade/downgrade.

On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.
Workaround: If such issue is observed:

Enable ZTT to overcome the high latency. Run: mlxconfig -d <mst device> set ZERO_TOUCH_TUNING_ENABLE=1

Reset or power cycle the firmware for change to take effect

Low performance might be experienced when upgrading from previous firmware version to 14.29.1000 when using “Fast FW Reset”.

The following are the Steering Dump limitations:

Supported only on ConnectX-5 adapter cards.

Requires passing the version (FW/Stelib/MFT) and device type to stelib.

Re-format is not supported

Advanced multi-port feature is not supported – LAG/ROCE_AFFILIATION/MPFS_LB/ ESW_LB (only traffic vhca <-> wire).

Packet types supported:

Layer 2 Eth

Layer 3 IPv4/Ipv6/Grh

Layer 4 TCP/UDP/Bth/GreV0/GreV1

Tunneling VXLAN/Geneve/GREv0/Mpls FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86

Congestion Control may not work properly if the card supports two ports and each PF for each port is not raised at the same time.

**Known Issues with firmware version 16.29.1016:**

Multi-APP QoS is not supported when LAG is configured.

When PER_PF_NUM_SF=1 (per PF configurations are used for SFs), if the number of SFs configured for a PF is 0 (PF_TOTAL_SF=0), than the firmware wrongly opens BAR2 with size 128KB.
Workaround: N/A

When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf’s ancestors.
Workaround: To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share.

Occasionally, Tag Matching RNDV and NVME emulation was not behaving as expected.
Workaround: N/A

Note: On Adapter Firmware rewrite scenario, SUM will always discover the Mellanox Open adapter firmware smart component as applicable and select it for deployment If the server iLO5 firmware version is older than 2.30.

**Fixes**

**Following issues have been fixed in firmware version 14.29.1016 and 16.29.1016:**

Changed the default value of DCQCN's NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An issue that caused packets to drop due to header size issues and/or failing checks. This issue was caused due to a Linux issue that caused VFs to set the wrong header size value in wqe_inline_header_mode input.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) might take longer than when MKEY_BY_NAME was disabled.

In rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

An issue that caused the device to go to dead IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Following issues have been fixed in firmware version 16.29.1016:**

An issue that caused the eth_wqe_too_small counter to count ODP page faults.

A low performance was observed after enabling the RoCE Accelerator capability.

**Enhancements**

**Firmware for the following devices is updated to 14.29.1016:**

P21930-B21 (HPE Ethernet 10Gb 2-port SFP+ MCX4121A-XCAT Adapter)
P11341-B21 (HPE Ethernet 10Gb 2-port SFP+ MCX4621A-ACAB OCP3 Adapter)

**Firmware for the following devices is updated to 16.29.1016:**

P13188-B21 (HPE Ethernet 10/25Gb 2-port SFP28 MCX512F-ACAT Adapter)
P21927-B21 (HPE Ethernet 100Gb 2-Port QSFP28 MCX516A-CCHT Adapter)
P10112-B21 (HPE Ethernet 10/25Gb 2-port SFP28 MCX562A-ACAI OCP3 Adapter)

**This release contains important reliability improvements and security hardening enhancements. Upgrade the firmware of the device to this release to improve the devices' firmware security and reliability.**

**New Feature and Changes in Version 14.29.1016 and 16.29.1016:**

Ethernet wqe_too_small Mode: A per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause "CQE with Error" or "CQE_MOCK".

Hardware steering dump output used for debugging and troubleshooting.

Added support for the following features:

cq_overrun counter: The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

Enabled the capability to allow Virtual Functions to send Pause Frames packets. (Beta)

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

**New Feature and Changes in Version 16.29.1016:**

Hardware steering dump output used for debugging and troubleshooting.

Added support for the following features:

HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compare to the FW Flow Metering.

Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

2 new Mini CQE formats:

Responder Mini CQE With Flow Tag Layout.

Responder Mini CQE With l3_l4_info Layout.

Steering DP hash flow groups.

ignore_flow_level is now enabled by the TRUST LEVEL access registry.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P21930-B21 | HPE Ethernet 10Gb 2-port SFP+ MCX4121A-XCHT Adapter | MT_0000000414 |
| P11341-B21 | HPE Ethernet 10Gb 2-port SFP+ MCX4621A-ACAB OCP3 Adapter | MT_0000000238 |
| P13188-B21 | HPE Ethernet 10/25Gb 2-port SFP28 MCX512F-ACHT Adapter | MT_0000000416 |
| P10112-B21 | HPE Ethernet 10/25Gb 2-port SFP28 MCX562A-ACAI OCP3 Adapter | MT_0000000241 |
| P21927-B21 | HPE Ethernet 100Gb 2-port QSFP28 MCX516A-CCHT Adapter | MT_0000000417 |

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Online Firmware Upgrade Utility (ESXi 7.0) for HPE Ethernet 10Gb 2-port 548SFP+ AdapterVersion: 1.0.1 **(Recommended)**Filename: CP045199.compsig; CP045199.zip **Important Note!**

**No known issues were included in firmware version 14.29.1016:**

**Prerequisites**

Use iLO5 firmware version 2.30 or higher with ConnectX4 firmware version 14.28.1002. Thermal sensor reporting on the adapter will not be functional with older versions of iLO5 firmware.

**Fixes**

**Following issues have been fixed in version 14.29.1016:**

An issue that caused the sent packet to hang while the device entered FLR mode.

Enabled Bar configuration bytewise by applying the write_en bitmask.

A rare case where the the device froze while running the sw reset flow under heavy stress and with many open resources.

Low PXE performance while using the VSC to trigger the send_ring_doorbells.

An error that prevented the completions (CQ) from being completed due to a race condition in the firmware transport error handlers, and the error stressors, where the error stressors would hang the firmware transport error handler flow.

An issue that caused the fragmented IP packets to drop was fixed.

**Enhancements**

**Firmware for the following device is updated to 14.29.1016:**

P11338-B21 (HPE Ethernet 10Gb 2-port 548SFP+ Adapter)

**Following New features and Changes are included in version 14.29.1016:**

Added mlxconfig support for power reduction: PCI CAP AUTO_POWER_SAVE_LINK_DOWN

PCI CAP

AUTO_POWER_SAVE_LINK_DOWN

Added the following segments, as appeared in the PRM, to the Resource Dump:

PRM_QUERY_QP

PRM_QUERY_CQ

PRM_QUERY_MKEY

QUERY_VNIC_ENV

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|

| | | |
|---|---|---|
| P11338-B21 | HPE Ethernet 10Gb 2-port 548SFP+ Adapter | HPE0000000038 |

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Online Firmware Upgrade Utility (ESXi 7.0) for HPE Mellanox Ethernet only adaptersVersion: 1.0.1 **(Recommended)**Filename: CP045194.compsig; CP045194.zip **Important Note!**

The Firmware Upgrade Utility has been split into 2 packages for Mellanox Ethernet Only NIC adpaters, one supporting Synergy platforms and the other supporting ProLiant and Apollo platforms. This package supports Mellanox Ethernet Only NIC adapters on ProLiant and Apollo servers.

**Known Issues for FW version 2.42.5044 :**

When using the QSFP module RTXM320-581, and performing a driver restart for the firmware upgrade/downgrade to take effect, the link does not come up.

Enabling/disabling cq_timestamp using mlxconfig is not supported.

In a card with 2 separate LEDs scheme (a Phy LED and a logic LED) only the Phy LED will lit. Meaning, the orange LES will not be active while the ETH link is in an idle mode.

In SR-IOV setup, using mlxconfig when the PF is passed through to a VM requires a reboot of the Hypervisor.

Downgrade to previous GA requires server reboot.Downgrading from v2.30.8000 or later to an earlier version than 2.30.8000 requires server reboot. Reboot the server.

On ConnectX-3 Ethernet adapter cards, there is a mismatch between the GUID value returned by firmware management tools and that returned by fabric/driver utilities that read the GUID via device firmware (e.g., using ibstat). Mlxburn/flint return 0xffff as GUID while the utilities return a value derived from the MAC address. For all driver/firmware/software purposes, the lattervalue should be used.

SBR should be asserted for a minimum of 50 milliseconds for the ConnectX®-3 adapters

On Pilot1 SL230, PCIe link occasionally does not come up at Gen3 speed

RH6.3 Inbox driver causes kernel panic when SR-IOV is enabled on VPI cards due to driver compatibility issue.

In advanced steering mode, side band management connectivity may be lost when having more than 8 QP per mcg.

When SR-IOV is disabled in the system BIOS, a PCI issue is noticed in Ubuntu v12.04.3 with Linux kernel v3.8 which affects NICs of several manufacturers including Mellanox's, preventing them from operating.

MFT tools might leave the flash semaphore locked if the tool operation is forced stopped. The locked semaphore prevents the firmware from accessing the flash and causes firmware hang.

Cable Info MAD reports a wrong cable info when usingthe MC2210411-SR4 module

Gen2 failure at temperature sweep up to 10C/min (for MT27518A1-FDIR-BV only).

PCIe Gen2 link unstable at temperature sweep of 10C/min for MT27518A1-FDIR-BV

Bloom filter is currently not supported.

Firmware downgrade message When downgrading from firmware v2.11.0000 and using MFT 3.0.0-3

RM#DMFS should not be enabled when working with InfiniBand on MLNX_OFED-2.0.3

RM#VPD read-only fields are writable.

Increasing SymbolErrorCounter When working in VPI mode with port1 FDR and port2 40G, error counters misbehave and increase rapidly

Setting the device to 128Byte CQ/EQ stride will cause misbehavior of sideband management resulting in communication loss.

CQ and EQ cannot be configured to different stride sizes.

ConnectX-3 Pro VF device ID is presented the same as ConnectX-3 VF device ID due to driver limitations.

RSOD while running PXE (legacy) on G9 servers. This occurs only when PXE boot fails and BIOS boots from HDD. Currently it is pending BIOS fix.

Changing port protocol from ETH to IB on port with NCSI/IPMI enabled while the port is connected to ETH switch is not supported.

RDP over IPv6 is currently not functional.

Sniffer QP cannot be removed from the regular rule after adding the QP with insertion scheme equals to “push to that rule”

Since only a single Boot Entry Vector (BEV) per PCI Physical Function is supported, disabling the first port causes the second port to disappear as well.

The NIC does not notify the driver of a link-down incident when a cable is unplugged from a NIC port with 56GbE port link.

56GbE link is not raised when using 100GbE optic cables.

When working with MLNX_OFED v3.3-1.0.0.0, server reboot could get stuck due to a kernel panic in mlx-4_en_get_drvinfo() that is called from asynchronous event handler.

832298:When running ibdump, loopback traffic is mirroring into the kernel driver.

AHS reports wrong MTU size

RM#846523: MAC address that are set from the OS using ifconfig are not reflected in the OCBB buffer

**Known Issues for FW version 14.29.1016 and 16.29.1016:**

Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
**Workaround:** Use full reset flow for firmware upgrade/downgrade.

On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.
**Workaround:** If such issue is observed:

Enable ZTT to overcome the high latency. Run: mlxconfig -d set ZERO_TOUCH_TUNING_ENABLE=1

Reset or power cycle the firmware for change to take effect

The following are the Steering Dump limitations:

Supported only on ConnectX-5 adapter cards

Requires passing the version (FW/Stelib/MFT) and device type to stelib

Re-format is not supported

Advanced multi-port feature is not supported -LAG/ROCE_AFFILIATION/MPFS_LB/ESW_LB (only traffic vhca <-> wire)

Packet types supported:

Layer 2 Eth

Layer 3 IPv4/Ipv6/Grh

Layer 4 TCP/UDP/Bth/GreV0/GreV1

Tunneling VXLAN/Geneve/GREv0/Mpls

FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86

Congestion Control may not work properly if the card supports two ports and each PF for each port is not raised at the same time.

**Known Issues for FW version 14.29.1016:**

Low performance might be experienced when upgrading from previous firmware version to 14.29.1000 when using “Fast FW Reset”.

**Known Issues for FW version 16.29.1016:**

When PER_PF_NUM_SF=1 (per PF configurations are used for SFs), if the number of SFs configured for a PF is 0 (PF_TOTAL_SF=0), than the firmware wrongly opens BAR2 with size 128KB.

Multi-APP QoS is not supported when LAG is configured.

When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf’s ancestors. **Workaround:** To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share.

Occasionally, Tag Matching RNDV and NVME emulation wasn’t behaving as expected.

**Prerequisites**

Use iLO5 firmware version 2.30 or higher with ConnectX4/ConnectX5 firmware version 14.28.1002/16.28.1002 respectively. Thermal sensor reporting on the adapter will not be functional with older versions of iLO5 firmware.

**Fixes**

**ixes submitted in version 2.42.5044 :**

An issue that prevented the firmware from detecting a link_down event thus preventing the IB bond interface from going to a failover mode.

**Following issues have been fixed in firmware version 14.29.1016:**

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An issue that caused packets to drop due to header size issues and/or failing checks. The issue was caused due to a Linux issue that caused VFs to set the wrong header size value in wqe_inline_header_mode input.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs were configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

An issue that caused the device to go to dead IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Following issues have been fixed in firmware version 16.29.1016:**

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An issue that prevented VXLAN packets with svlan/ cvlan tag from being matched.

The eth_wqe_too_small counter to count ODP page used to fail.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

An issue that resulted in low performance after enabling the RoCE Accelerator capability.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

The chassis manager calculation for Multi-Host and Socket-Direct adapter cards to allow running NC-SI commands by the chassis manager BMC. Now the chassis manager is count as BMC with index 0, regardless of how many BMC there are.

An issue that caused the device to go to dead IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Enhancements**

**Firmware for the following devices are updated to 2.42.5044 :**

779799-B21 (HPE Ethernet 10G 2-port 546FLR-SFP+ Adapter)
779793-B21 (HPE Ethernet 10G 2-port 546SFP+ Adapter)

**Firmware for the following devices are updated to 14.29.1016:**

817749-B21 (HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter)

**Firmware for the following devices are updated to 14.29.1016:**
817753-B21 (HPE Ethernet 25Gb 2-port 640SFP28 Adapter)

**Firmware for the following device is updated to 16.29.1016:**

874253-B21 (HPE Ethernet 100Gb 1-port 842QSFP28 Adapter)

**New features and changes in version 14.29.1016:**

Added support for the following features:

A new counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.

cq_overrun counter: This counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

Enabled the capability to allow Virtual Functions to send Pause Frames packets.

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

Hardware steering dump output used for debugging and troubleshooting.

**New features and changes in version 16.28.1016:**

Added support for following features:

An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.

"InfiniBand" properties set to the Network Device Function Redfish object.

HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compare to the FW Flow Metering.

Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

2 new Mini CQE formats: Responder Mini CQE With Flow Tag Layout Responder Mini CQE With l3_l4_info Layout

UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.

Steering DP hash flow groups.

A new counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.

PCIe Rx modifications to prevent the adapter cards from disappearing from the system.

ignore_flow_level is now enabled by the TRUST LEVEL access registry.

cq_overrun counter. The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

[Beta] Enabled the capability to allow Virtual Functions to send Pause Frames packets.

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| 779793-B21 | HPE Ethernet 10Gb 2-port 546SFP+ Adapter | HP_1200111023 |
| 779799-B21 | HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter | HP_2240110004 |
| 817749-B21 | HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter | HP_2690110034 |

| | | |
|---|---|---|
| 817753-B21 | HPE Ethernet 25Gb 2-port 640SFP28 Adapter | HP_2420110034 |
| 874253-B21 | HPE Ethernet 100Gb 1-port 842QSFP28 Adapter | HPE0000000014 |

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Online Firmware Upgrade Utility (ESXi 7.0) for HPE Mellanox VPI (Ethernet and Infiniband mode) ConnectX4 and ConnectX5 devices on VMware ESXi 7.0Version: 1.0.1 **(Recommended)**Filename: CP045147.compsig; CP045147.zip **Important Note!**

**Known Issues with firmware version 12.28.1002:**

When MKEY_BY_NAME is enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

**Known Issues with firmware version 16.29.1016:**

Multi-APP QoS is not supported when LAG is configured.

Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
**Workaround:** Use full reset flow for firmware upgrade/downgrade.

On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.
**Workaround:** If such issue is observed:

Enable ZTT to overcome the high latency. Run: mlxconfig -d set ZERO_TOUCH_TUNING_ENABLE=1

Reset or power cycle the firmware for change to take effect

When PER_PF_NUM_SF=1 (per PF configurations are used for SFs), if the number of SFs configured for a PF is 0 (PF_TOTAL_SF=0), than the firmware wrongly opens BAR2 with size 128KB.

The following are the Steering Dump limitations:

Supported only on ConnectX-5 adapter cards

Requires passing the version (FW/Stelib/MFT) and device type to stelib

Re-format is not supported

Advanced multi-port feature is not supported -LAG/ROCE_AFFILIATION/MPFS_LB/ESW_LB (only traffic vhca <-> wire)

Packet types supported:

Layer 2 Eth

Layer 3 IPv4/Ipv6/Grh

Layer 4 TCP/UDP/Bth/GreV0/GreV1

Tunneling VXLAN/Geneve/GREv0/Mpls

FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86

When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf's ancestors. **Workaround:** To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share.

Occasionally, Tag Matching RNDV and NVME emulation wasn't behaving as expected.

Congestion Control may not work properly if the card supports two ports and each PF for each port is not raised at the same time.

**Fixes**

**Following issues have been fixed in firmware version 16.29.1016:**

An issue that prevented VXLAN packets with svlan/ cvlan tag from being matched.

An issue that caused the eth_wqe_too_small counter to count ODP (On-Demand Paging) page faults.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

An issue that resulted in low performance after enabling the RoCE Accelerator capability. Note: The fix is available when all ports are set as Ethernet.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

The chassis manager calculation for Multi-Host and Socket-Direct adapter cards to allow running NC-SI commands by the chassis manager BMC. Now the chassis manager is count as BMC with index 0, regardless of how many BMC there are.

An issue that caused the device to go to down IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Following issues have been fixed in firmware version 12.28.1002:**

An issue that caused the DCR to be destroyed before the retry option managed to work when the retry timeout is too big. In this case the DCR' time-to-live was increased, and the maximum retry timeout was decreased.

Increased PHY power consumption limit to 1.5w.

An issue that caused PortCounters.PortRcvErr / PPCNT.infiniband_counters.PortRcvErr not to report port icrc errors.

**Enhancements**

**Firmware for the following devices are updated to 12.28.1002:**

825110-B21 (HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter)
825111-B21 (HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter)

**New Feature and Changes in Version 12.28.1002:**

Increased the maximum XRQ number to 512.

**Firmware for the following devices are updated to 16.29.1016:**

879482-B21 (HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter)
872726-B21 (HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter)

**New Feature and Changes in Version 16.29.1016:**

Added support for the following features:

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.

"InfiniBand" properties set to the Network Device Function Redfish object.

HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compared to the FW Flow Metering.

Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

2 new Mini CQE formats: Responder Mini CQE With Flow Tag Layout Responder Mini CQE With l3_l4_info Layout

UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.

Steering DP hash flow groups.

A new counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.

PCIe Rx modifications to prevent the adapter cards from disappearing from the system.

ignore_flow_level is now enabled by the TRUST LEVEL access registry.

cq_overrun counter. The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

[Beta] Enabled the capability to allow Virtual Functions to send Pause Frames packets.

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 825110-B21 | HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter | HP_2180110032 |
| 825111-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter | HP_2190110032 |
| 872726-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter | HPE0000000009 |
| 879482-B21 | HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter | HPE0000000022 |

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Online Firmware Upgrade Utility (ESXi 7.0) for HPE Mellanox VPI (Ethernet and Infiniband mode) ConnectX6 devices on VMware ESXi 7.0Version: 1.0.1 **(Recommended)**Filename: CP044871.compsig; CP044871.zip **Important Note!**

**ConnectX-6 VPI supports having one port as InfiniBand and the other port as Ethernet according to the following matrix of combinations.**

| **Port #2 - InfiniBand** | | | | |
|---|---|---|---|---|
| **Port #1 – Ethernet** | **HDR/HDR100** | **EDR** | **FDR** | **QDR** |
| **50GbE** | supported | not supported | not supported | supported |
| **100GbE/25GbE** | supported | not supported | not supported | supported |
| **40GbE/10GbE** | supported | not supported | not supported | supported |
| **1GbE** | supported | not supported | not supported | supported |

| **Port #2 - Ethernet** | | | | |
|---|---|---|---|---|
| **Port #1 - InfiniBand** | **50GbE** | **100GbE/25GbE** | **40GbE/10GbE** | **1GbE** |
| **HDR / HDR100** | supported | supported | not supported | supported |
| **EDR** | supported | supported | not supported | supported |
| **FDR** | not supported | not supported | not supported | not supported |
| **QDR/SDR** | supported | supported | not supported | supported |

**Prerequisites**

Use iLO5 firmware version 2.30 or higher with ConnectX6 firmware version 20.27.6008. Thermal sensor reporting on the adapter will not be functional with older versions of iLO5 firmware.

**Fixes**

**The following issues have been fixed in version 20.29.1016:**

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An issue that prevented VXLAN packets with svlan/cvlan tag from being matched.

The eth_wqe_too_small counter to count ODP (On-Demand Paging) page used to fail.

An issue related to raising 100GbE link on ConnectX-6 VPI 100Gb/s adapter cards.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

Low performance occurred after enabling the RoCE Accelerator capability.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

**Enhancements**

**Firmware for the following devices are updated to 20.29.1016:**

HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 x16 Adapter - P06154-B21
HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 x16 Adapter - P06250-B21
HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 x16 Adapter - P06251-B21

**New Features and Changes in Version 20.29.1016:**

Added support for following features:

LinkX module burning via MFT toolset. The new capability enables direct firmware burning from the internal flash storage to reduce the bandwidth and accelerate the burning process, including burning several modules at a time.

An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.

Improved NRZ link performance (RX algorithm).

Improved NRZ link-up time (25G\50G\100G speeds).

Enabled the options to control different Tx sets for the same attribute when connecting a Mellanox-Mellanox vs Mellanox to 3rd party HCA.

"InfiniBand" properties set to the Network Device Function Redfish object.

Direct Packet Placement (DPP): DPP is a receive side transport service in which the Ethernet packets are scattered to the memory according to a packet sequence number (PSN) carried by the packet, and not by their arrival order.

To enable DPP offload, the software should create a special RQ by using the CREATE_RQ command, and set DPP relevant attributes.

Added trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.

Enhanced IB Congestion Control to support lower minimum rate. Now it uses destination-lid to classify flows to handle larger scale, and achieve better results in GPCNeT benchmark.

Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| P06154-B21 | HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 x16 Adapter | HPE0000000034 |
| P06250-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 x16 Adapter | HPE0000000035 |
| P06251-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 x16 Adapter | HPE0000000036 |

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Online Firmware Upgrade Utility (ESXi 7.0) for HPE Mellanox VPI (Ethernet and Infiniband mode) devices on VMware ESXi 7.0Version: 1.0.1 **(Recommended)**Filename: CP045904.compsig; CP045904.zip **Important Note!**

**Known Issues in firmware 2.42.5000, 2.42.5056, 2.42.5700:**

When using the Quad Small Form-factor Pluggable (QSFP) module RTXM320-581, and performing a driver restart for the firmware upgrade/downgrade to take effect, the link does not come up.
**Workaround**: Reboot the server.

Enabling/disabling cq_timestamp using mlxconfig is not supported.

In a card with 2 separate LEDs scheme (a Phy LED and a logic LED) only the Phy LED will lit. Meaning, the orange LED will not be active while the ETH link is in an idle mode.

In SR-IOV setup, using mlxconfig when the Packet Filter (PF) is passed through to a VM requires a reboot of the Hypervisor.

Downgrading from v2.30.8000 or later to an earlier version than 2.30.8000 requires server reboot.
**Workaround**: Reboot the server.

On ConnectX-3 Ethernet adapter cards, there is a mismatch between the GUID value returned by firmware management tools and that returned by fabric/ driver utilities that read the GUID via device firmware (e.g., using ibstat). Mlxburn/flint return 0xffff as GUID while the utilities return a value derived from the MAC

address. For all driver/firmware/software purposes, the latter value should be used.
**Workaround**: Please use the GUID value returned by the fabric/driver utilities (not 0xfffff).

SBR should be asserted for a minimum of 50 milliseconds for the ConnectX-3 adapters.

On Pilot1 SL230, PCIe link occasionally does not come up at Gen3 speed.

RHEL6.3 Inbox driver causes kernel panic when SRIOV is enabled on VPI cards due to driver compatibility issue.

**Workaround**: Set the "do_- sense=false" parameter in the [IB_TAB] i.

In advanced steering mode, side band management connectivity may be lost when having more than 8 QP per mcg.

When SR-IOV is disabled in the system BIOS, a PCI issue is noticed in Ubuntu v12.04.3 with Linux kernel v3.8 which affects NICs of several manufacturers including Mellanox's, preventing them from operating.
**Workaround**: Enable SR-IOV in the BIOS.

Mellanox Firmware Tools (MFT) might leave the flash semaphore locked if the tool operation is forced stopped. The locked semaphore prevents the firmware from accessing the flash and causes firmware hang.
**Workaround**: Clear the semaphore using MFT command: 'flint -clear_semaphore'

Cable Info MAD reports a wrong cable info when using the MC2210411-SR4 module.

Gen2 failure at temperature sweep up to 10C/min (for MT27518A1-FDIR-BV only)..

PCIe Gen2 link unstable at temperature sweep of 10C/min for MT27518A1-FDIR-BV.

Bloom filter is currently not supported.

When downgrading from firmware v2.11.0000 and using MFT 3.0.0-3, the following message is displayed due to the mlxconfig tool: You are trying to override configurable FW by non-configurable FW. If you continue, old FW configurations will be cleared, do you want to continue ? (y/n) [n] : y You are trying to restore default configuration, do you want to continue ? (y/n) [n] : y.

DMFS should not be enabled when working with InfiniBand on MLNX_OFED-2.0.3

ConnectX®-3 Pro VF device ID is presented the same as ConnectX®-3 VF device ID due to driver limitations.
**Workaround**: Use the physical function device ID to identify the device.

Virtual Product Data (VPD) read-only fields are writable.
**Workaround**: Do not write to read-only fields if you wish to preserve them.

When working in Virtual Path Identifier (VPI) mode with port1 FDR and port2 40G, error counters misbehave and increase rapidly.

Setting the device to 128Byte CQ/EQ stride will cause misbehavior of sideband management resulting in communication loss.

CQ and EQ cannot be configured to different stride sizes.

Changing port protocol from ETH to IB on port with NCSI/IPMI enabled while the port is connected to ETH switch is not supported.
**Workaround**: 1. Unplug the cable from the switch 2. Restart driver 3. Change the protocol via the appropriate tools.

Adapter card MCX349A-XCCN may experience longer linkup times of a few seconds with specific switches.

Adapter card MCX349A-XCCN does not respond to ethtool “identify” command (ethtool -p/--identify).

Remote Desktop Protocol (RDP) over IPv6 is currently not functional.
**Workaround**: Set the default RoCE mode in the software to RoCE v2 (also when not using RoCE)

Sniffer QP cannot be removed from the regular rule after adding the QP with insertion scheme equals to “push to that rule”.

Since only a single Boot Entry Vector (BEV) per PCI Physical Function is supported, disabling the first port causes the second port to disappear as well.

The NIC does not notify the driver of a link-down incident when a cable is unplugged from a NIC port with 56GbE port link.

56GbE link is not raised when using 100GbE optic cables.

When working with MLNX_OFED v3.3-1.0.0.0, server reboot could get stuck due to a kernel panic in mlx4_en_get_drvinfo() that is called from asynchronous event handler.

When running ibdump, loopback traffic is mirroring into the kernel driver.

MAC address that are set from the OS using ifconfig are not reflected in the OCBB buffer.

The adapter card cannot raise a 10G link vs. a 40GE capable switch port in C7000 enclosure. It can raise a 1G Link and only if the switch port allows it.

MTUSB communication via I2C header on primary I2C bus is supported only in live-fish mode.

## Fixes

### Fixes in version 2.42.5000:

PortRcvPkts counter was prevented from being cleared after resetting it.

The system Timed Out on the configuration cycle of the Virtual Functions (VFs) when more than 10 Virtual Functions performed FLR and the completion Time Out value was configured to a range of less than 16 msec.

The server hangs and results in NMI when running “mlxfwtop –d mt4103_pci_cr0” while restarting the driver in parallel (from a different thread). In this case, the downstream bridge over the device reported completion timeout error.

In flow_steering, BMC could not receive a ping over IPV6 after running bmc_reboot.

While closing the HCA, the RX packet caused bad access to resources that did not exist, and consequently caused the QPCGW or the irisc to get stuck.

The master SMLID and the LID was either 0 or 0xFFFF when the port was neither active nor armed.

ibdump could not capture all MADs packets.

link did not go up after reboot.

Fixed a rare issue that cause the PCIe configuration cycle that arrived during the time of sw_reset to generate 2 completions.

Network Controller Sideband Interface (NC-SI) did not work when adding the disable_static_steering_ini field in the ini file, due to memory allocation issue for this field in the scratchpad.

**Fixes in version 2.42.5056:**

Fixed an issue that resulted in reading from invalid I/O address on handover from UEFI boot to OS boot, when a port was configured as InfiniBand on a VPI adapter device.

**Enhancements**

**Firmware for the following devices are updated to 2.42.5000:**
764282-B21
764286-B21

**Firmware for the following devices are updated to 2.42.5056:**
764283-B21
764284-B21

**Firmware for the following device is updated to 2.42.5700:**
764285-B21

**New features in firmware version 2.42.5000:**

Added support for the following features.

new TLV: CX3_GLOBAL_CONF to enable/disable timestamp on incoming packets through mlxconfig configuration.

User MAC configuration.

Automatically collecting mstdump before driver reset.

A mechanism to detect DEAD_IRISC (plastic) from TPT (iron) and raise an assert.

A new field is added to "set port" command which notifies the firmware what is the user_mtu size.

Improved the debug ability for command timeout cases.

**New features and changes in firmware version 2.42.5700.**

Modified the mlx_cmd_get_mlx_link_status command return value to return "Link Type = Ethernet" in Ethernet adapter cards.

**Supported Devices and Features**

**Supported Devices:**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 764282-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter | HPE_1350110023 |
| 764283-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter | HPE_1360110017 |
| 764284-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter | HPE_1370110017 |
| 764285-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter | HPE_1380110017 |
| 764286-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter | HPE_1390110023 |

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Online Firmware Upgrade Utility (ESXi 7.0) for Mellanox Open Ethernet cardsVersion: 1.0.1 **(Recommended)**Filename: CP045142.zip; CP045142_part1.compsig; CP045142_part2.compsig **Important Note!**

**Known Issues in firmware 14.29.1016:**

Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
Workaround: Use full reset flow for firmware upgrade/downgrade.

On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.
Workaround: If such issue is observed:

Enable ZTT to overcome the high latency. Run: mlxconfig -d <mst device> set ZERO_TOUCH_TUNING_ENABLE=1

Reset or power cycle the firmware for change to take effect

Low performance might be experienced when upgrading from previous firmware version to 14.29.1000 when using “Fast FW Reset”.

The following are the Steering Dump limitations:

Supported only on ConnectX-5 adapter cards.

Requires passing the version (FW/Stelib/MFT) and device type to stelib.

Re-format is not supported

Advanced multi-port feature is not supported – LAG/ROCE_AFFILIATION/MPFS_LB/ ESW_LB (only traffic vhca <-> wire).

Packet types supported:

Layer 2 Eth

Layer 3 IPv4/Ipv6/Grh

Layer 4 TCP/UDP/Bth/GreV0/GreV1

Tunneling VXLAN/Geneve/GREv0/Mpls FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86

Congestion Control may not work properly if the card supports two ports and each PF for each port is not raised at the same time.

**Known Issues with firmware version 16.29.1016:**

Multi-APP QoS is not supported when LAG is configured.

When PER_PF_NUM_SF=1 (per PF configurations are used for SFs), if the number of SFs configured for a PF is 0 (PF_TOTAL_SF=0), than the firmware wrongly opens BAR2 with size 128KB.
Workaround: N/A

When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf's ancestors.
Workaround: To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share.

Occasionally, Tag Matching RNDV and NVME emulation was not behaving as expected.
Workaround: N/A

Note: On Adapter Firmware rewrite scenario, SUM will always discover the Mellanox Open adapter firmware smart component as applicable and select it for deployment If the server iLO5 firmware version is older than 2.30.

**Fixes**

**Following issues have been fixed in firmware version 14.29.1016 and 16.29.1016:**

Changed the default value of DCQCN's NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An issue that caused packets to drop due to header size issues and/or failing checks. This issue was caused due to a Linux issue that caused VFs to set the wrong header size value in wqe_inline_header_mode input.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) might take longer than when MKEY_BY_NAME was disabled.

In rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

An issue that caused the device to go to dead IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Following issues have been fixed in firmware version 16.29.1016:**

An issue that caused the eth_wqe_too_small counter to count ODP page faults.

A low performance was observed after enabling the RoCE Accelerator capability.

**Enhancements**

**Firmware for the following devices is updated to 14.29.1016:**

P21930-B21 (HPE Ethernet 10Gb 2-port SFP+ MCX4121A-XCAT Adapter)
P11341-B21 (HPE Ethernet 10Gb 2-port SFP+ MCX4621A-ACAB OCP3 Adapter)

**Firmware for the following devices is updated to 16.29.1016:**

P13188-B21 (HPE Ethernet 10/25Gb 2-port SFP28 MCX512F-ACAT Adapter)
P21927-B21 (HPE Ethernet 100Gb 2-Port QSFP28 MCX516A-CCHT Adapter)
P10112-B21 (HPE Ethernet 10/25Gb 2-port SFP28 MCX562A-ACAI OCP3 Adapter)

**This release contains important reliability improvements and security hardening enhancements. Upgrade the firmware of the device to this release to improve the devices' firmware security and reliability.**

**New Feature and Changes in Version 14.29.1016 and 16.29.1016:**

Ethernet wqe_too_small Mode: A per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause "CQE with Error" or "CQE_MOCK".

Hardware steering dump output used for debugging and troubleshooting.

Added support for the following features:

cq_overrun counter: The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

Enabled the capability to allow Virtual Functions to send Pause Frames packets. (Beta)

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

**New Feature and Changes in Version 16.29.1016:**

Hardware steering dump output used for debugging and troubleshooting.

Added support for the following features:

HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compare to the FW Flow Metering.

Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

2 new Mini CQE formats:

Responder Mini CQE With Flow Tag Layout.

Responder Mini CQE With l3_l4_info Layout.

Steering DP hash flow groups.

ignore_flow_level is now enabled by the TRUST LEVEL access registry.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P21930-B21 | HPE Ethernet 10Gb 2-port SFP+ MCX4121A-XCHT Adapter | MT_0000000414 |
| P11341-B21 | HPE Ethernet 10Gb 2-port SFP+ MCX4621A-ACAB OCP3 Adapter | MT_0000000238 |
| P13188-B21 | HPE Ethernet 10/25Gb 2-port SFP28 MCX512F-ACHT Adapter | MT_0000000416 |
| P10112-B21 | HPE Ethernet 10/25Gb 2-port SFP28 MCX562A-ACAI OCP3 Adapter | MT_0000000241 |
| P21927-B21 | HPE Ethernet 100Gb 2-port QSFP28 MCX516A-CCHT Adapter | MT_0000000417 |

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Online Firmware Upgrade Utility (Linux x86_64) for HPE Ethernet 10Gb 2-port 548SFP+ AdapterVersion: 1.0.4 **(Recommended)**Filename: firmware-nic-mellanox-eth-only-mft-1.0.4-1.1.x86_64.compsig; firmware-nic-mellanox-eth-only-mft-1.0.4-1.1.x86_64.rpm **Important Note!**

**No known issues were included in firmware version 14.29.1016:**

**Prerequisites**

Use iLO5 firmware version 2.30 or higher with ConnectX4 firmware version 14.28.1002. Thermal sensor reporting on the adapter will not be functional with older versions of iLO5 firmware.

**Fixes**

**Following issues have been fixed in version 14.29.1016:**

An issue that caused the sent packet to hang while the device entered FLR mode.

Enabled Bar configuration bytewise by applying the write_en bitmask.

A rare case where the the device froze while running the sw reset flow under heavy stress and with many open resources.

Low PXE performance while using the VSC to trigger the send_ring_doorbells.

An error that prevented the completions (CQ) from being completed due to a race condition in the firmware transport error handlers, and the error stressors, where the error stressors would hang the firmware transport error handler flow.

An issue that caused the fragmented IP packets to drop was fixed.

**Enhancements**

**Firmware for the following device is updated to 14.29.1016:**

P11338-B21 (HPE Ethernet 10Gb 2-port 548SFP+ Adapter)

**Following New features and Changes are included in version 14.29.1016:**

Added mlxconfig support for power reduction: PCI CAP AUTO_POWER_SAVE_LINK_DOWN

PCI CAP

AUTO_POWER_SAVE_LINK_DOWN

Added the following segments, as appeared in the PRM, to the Resource Dump:

PRM_QUERY_QP

PRM_QUERY_CQ

PRM_QUERY_MKEY

QUERY_VNIC_ENV

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P11338-B21 | HPE Ethernet 10Gb 2-port 548SFP+ Adapter | HPE0000000038 |

Online Firmware Upgrade Utility (Linux x86_64) for HPE Intel OPA adaptersVersion: 1.9.2 **(Recommended)**Filename: firmware-nic-intel-opa-hfi-1.9.2-1.1.x86_64.compsig; firmware-nic-intel-opa-hfi-1.9.2-1.1.x86_64.rpm **Prerequisites**

The smart component requires Intel IFS or Basic software v10.9.2.0.9 to be installed as a prerequisite.

**Fixes**

**Following issues have been resolved in version 1.9.2:**

Due to a SLES 15 kernel setting, hfi1_eprom cannot work while the HFI driver is loaded. The tool and driver are mutually exclusive.

**Enhancements**

**Changes and New Features in version 1.9.2:**

Added hfi1_eprom **v10_9_2_0_0.**

Loader ROM **HfiPcieGen3Loader_1.9.2.0.0.rom** and driver EFI **HfiPcieGen3_1.9.2.0.0.efi** were added.

**Supported Devices and Features**

| HP Part Number | OPA HFI Adapter Type | SSID |
|---|---|---|
| 829334-B21 | HPE 100Gb 1-Port OP101 QSFP28 x8 OPA Adapter | E7 |
| 829335-B21 | HPE 100Gb 1-Port OP101 QSFP28 x16 OPA Adapter | E8 |
| 851226-B21 | HPE Apollo 100Gb 1-port Intel Omni-Path Architecture 860z Mezzanine FIO Adapter | 21C |

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Online Firmware Upgrade Utility (Linux x86_64) for HPE Mellanox Ethernet only adaptersVersion: 1.0.14 **(Recommended)**Filename: firmware-nic-mellanox-ethernet-only-1.0.14-1.1.x86_64.compsig; firmware-nic-mellanox-ethernet-only-1.0.14-1.1.x86_64.rpm **Important Note!**

The Firmware Upgrade Utility has been split into 2 packages for Mellanox Ethernet Only NIC adpaters, one supporting Synergy platforms and the other supporting ProLiant and Apollo platforms. This package supports Mellanox Ethernet Only NIC adapters on ProLiant and Apollo servers.

**Known Issues for FW version 2.42.5044 :**

When using the QSFP module RTXM320-581, and performing a driver restart for the firmware upgrade/downgrade to take effect, the link does not come up.

Enabling/disabling cq_timestamp using mlxconfig is not supported.

In a card with 2 separate LEDs scheme (a Phy LED and a logic LED) only the Phy LED will lit. Meaning, the orange LES will not be active while the ETH link is in an idle mode.

In SR-IOV setup, using mlxconfig when the PF is passed through to a VM requires a reboot of the Hypervisor.

Downgrade to previous GA requires server reboot.Downgrading from v2.30.8000 or later to an earlier version than 2.30.8000 requires server reboot. Reboot the server.

On ConnectX-3 Ethernet adapter cards, there is a mismatch between the GUID value returned by firmware management tools and that returned by fabric/driver utilities that read the GUID via device firmware (e.g., using ibstat). Mlxburn/flint return 0xffff as GUID while the utilities return a value derived from the MAC address. For all driver/firmware/software purposes, the lattervalue should be used.

SBR should be asserted for a minimum of 50 milliseconds for the ConnectX®-3 adapters

On Pilot1 SL230, PCIe link occasionally does not come up at Gen3 speed

RH6.3 Inbox driver causes kernel panic when SR-IOV is enabled on VPI cards due to driver compatibility issue.

In advanced steering mode, side band management connectivity may be lost when having more than 8 QP per mcg.

When SR-IOV is disabled in the system BIOS, a PCI issue is noticed in Ubuntu v12.04.3 with Linux kernel v3.8 which affects NICs of several manufacturers including Mellanox's, preventing them from operating.

MFT tools might leave the flash semaphore locked if the tool operation is forced stopped. The locked semaphore prevents the firmware from accessing the flash and causes firmware hang.

Cable Info MAD reports a wrong cable info when usingthe MC2210411-SR4 module

Gen2 failure at temperature sweep up to 10C/min (for MT27518A1-FDIR-BV only).

PCIe Gen2 link unstable at temperature sweep of 10C/min for MT27518A1-FDIR-BV

Bloom filter is currently not supported.

Firmware downgrade message When downgrading from firmware v2.11.0000 and using MFT 3.0.0-3

RM#DMFS should not be enabled when working with InfiniBand on MLNX_OFED-2.0.3

RM#VPD read-only fields are writable.

Increasing SymbolErrorCounter When working in VPI mode with port1 FDR and port2 40G, error counters misbehave and increase rapidly

Setting the device to 128Byte CQ/EQ stride will cause misbehavior of sideband management resulting in communication loss.

CQ and EQ cannot be configured to different stride sizes.

ConnectX-3 Pro VF device ID is presented the same as ConnectX-3 VF device ID due to driver limitations.

RSOD while running PXE (legacy) on G9 servers. This occurs only when PXE boot fails and BIOS boots from HDD. Currently it is pending BIOS fix.

Changing port protocol from ETH to IB on port with NCSI/IPMI enabled while the port is connected to ETH switch is not supported.

RDP over IPv6 is currently not functional.

Sniffer QP cannot be removed from the regular rule after adding the QP with insertion scheme equals to “push to that rule”

Since only a single Boot Entry Vector (BEV) per PCI Physical Function is supported, disabling the first port causes the second port to disappear as well.

The NIC does not notify the driver of a link-down incident when a cable is unplugged from a NIC port with 56GbE port link.

56GbE link is not raised when using 100GbE optic cables.

When working with MLNX_OFED v3.3-1.0.0.0, server reboot could get stuck due to a kernel panic in mlx-4_en_get_drvinfo() that is called from asynchronous event handler.

832298:When running ibdump, loopback traffic is mirroring into the kernel driver.

AHS reports wrong MTU size

RM#846523: MAC address that are set from the OS using ifconfig are not reflected in the OCBB buffer

**Known Issues for FW version 14.29.1016 and 16.29.1016:**

Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
**Workaround:** Use full reset flow for firmware upgrade/downgrade.

On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.
**Workaround:** If such issue is observed:

Enable ZTT to overcome the high latency. Run: mlxconfig -d set ZERO_TOUCH_TUNING_ENABLE=1

Reset or power cycle the firmware for change to take effect

The following are the Steering Dump limitations:

Supported only on ConnectX-5 adapter cards

Requires passing the version (FW/Stelib/MFT) and device type to stelib

Re-format is not supported

Advanced multi-port feature is not supported -LAG/ROCE_AFFILIATION/MPFS_LB/ESW_LB (only traffic vhca <-> wire)

Packet types supported:

Layer 2 Eth

Layer 3 IPv4/Ipv6/Grh

Layer 4 TCP/UDP/Bth/GreV0/GreV1

Tunneling VXLAN/Geneve/GREv0/Mpls

FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86

Congestion Control may not work properly if the card supports two ports and each PF for each port is not raised at the same time.

**Known Issues for FW version 14.29.1016:**

Low performance might be experienced when upgrading from previous firmware version to 14.29.1000 when using “Fast FW Reset”.

**Known Issues for FW version 16.29.1016:**

When PER_PF_NUM_SF=1 (per PF configurations are used for SFs), if the number of SFs configured for a PF is 0 (PF_TOTAL_SF=0), than the firmware wrongly opens BAR2 with size 128KB.

Multi-APP QoS is not supported when LAG is configured.

When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf’s ancestors. **Workaround:** To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share.

Occasionally, Tag Matching RNDV and NVME emulation wasn’t behaving as expected.

**Prerequisites**

Use iLO5 firmware version 2.30 or higher with ConnectX4/ConnectX5 firmware version 14.28.1002/16.28.1002 respectively. Thermal sensor reporting on the adapter will not be functional with older versions of iLO5 firmware.

**Fixes**

**ixes submitted in version 2.42.5044 :**

An issue that prevented the firmware from detecting a link_down event thus preventing the IB bond interface from going to a failover mode.

**Following issues have been fixed in firmware version 14.29.1016:**

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An issue that caused packets to drop due to header size issues and/or failing checks. The issue was caused due to a Linux issue that caused VFs to set the wrong header size value in wqe_inline_header_mode input.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs were configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

An issue that caused the device to go to dead IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Following issues have been fixed in firmware version 16.29.1016:**

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An issue that prevented VXLAN packets with svlan/ cvlan tag from being matched.

The eth_wqe_too_small counter to count ODP page used to fail.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

An issue that resulted in low performance after enabling the RoCE Accelerator capability.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

The chassis manager calculation for Multi-Host and Socket-Direct adapter cards to allow running NC-SI commands by the chassis manager BMC. Now the chassis manager is count as BMC with index 0, regardless of how many BMC there are.

An issue that caused the device to go to dead IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Enhancements**

**Firmware for the following devices are updated to 2.42.5044 :**

779799-B21 (HPE Ethernet 10G 2-port 546FLR-SFP+ Adapter)
779793-B21 (HPE Ethernet 10G 2-port 546SFP+ Adapter)

**Firmware for the following devices are updated to 14.29.1016:**

817749-B21 (HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter)

**Firmware for the following devices are updated to 14.29.1016:**
817753-B21 (HPE Ethernet 25Gb 2-port 640SFP28 Adapter)

**Firmware for the following device is updated to 16.29.1016:**

874253-B21 (HPE Ethernet 100Gb 1-port 842QSFP28 Adapter)

**New features and changes in version 14.29.1016:**

Added support for the following features:

A new counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.

cq_overrun counter: This counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

Enabled the capability to allow Virtual Functions to send Pause Frames packets.

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

Hardware steering dump output used for debugging and troubleshooting.

**New features and changes in version 16.29.1016:**

Added support for following features:

An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.

"InfiniBand" properties set to the Network Device Function Redfish object.

HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compare to the FW Flow Metering.

Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

2 new Mini CQE formats: Responder Mini CQE With Flow Tag Layout Responder Mini CQE With l3_l4_info Layout

UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.

Steering DP hash flow groups.

A new counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.

PCIe Rx modifications to prevent the adapter cards from disappearing from the system.

ignore_flow_level is now enabled by the TRUST LEVEL access registry.

cq_overrun counter. The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

[Beta] Enabled the capability to allow Virtual Functions to send Pause Frames packets.

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| 779793-B21 | HPE Ethernet 10Gb 2-port 546SFP+ Adapter | HP_1200111023 |
| 779799-B21 | HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter | HP_2240110004 |
| 817749-B21 | HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter | HP_2690110034 |
| 817753-B21 | HPE Ethernet 25Gb 2-port 640SFP28 Adapter | HP_2420110034 |
| 874253-B21 | HPE Ethernet 100Gb 1-port 842QSFP28 Adapter | HPE0000000014 |

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Online Firmware Upgrade Utility (Linux x86_64) for HPE Mellanox IB only ConnectX4 and ConnectX5 devices on Linux x86_64 platformVersion: 1.0.7 **(Recommended)**Filename: firmware-nic-mellanox-ib-cx4-cx5-1.0.7-1.1.x86_64.compsig; firmware-nic-mellanox-ib-cx4-cx5-1.0.7-1.1.x86_64.rpm **Important Note!**

**Known Issues with firmware version 12.28.1002:**

When MKEY_BY_NAME is enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

**Known Issues with firmware version 16.29.1016:**

Multi-APP QoS is not supported when LAG is configured.

Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
**Workaround:** Use full reset flow for firmware upgrade/downgrade.

On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.
**Workaround:** If such issue is observed:

Enable ZTT to overcome the high latency. Run: mlxconfig -d set ZERO_TOUCH_TUNING_ENABLE=1

Reset or power cycle the firmware for change to take effect

When PER_PF_NUM_SF=1 (per PF configurations are used for SFs), if the number of SFs configured for a PF is 0 (PF_TOTAL_SF=0), than the firmware wrongly opens BAR2 with size 128KB.

The following are the Steering Dump limitations:

Supported only on ConnectX-5 adapter cards

Requires passing the version (FW/Stelib/MFT) and device type to stelib

Re-format is not supported

Advanced multi-port feature is not supported -LAG/ROCE_AFFILIATION/MPFS_LB/ESW_LB (only traffic vhca <-> wire)

Packet types supported:

Layer 2 Eth

Layer 3 IPv4/Ipv6/Grh

Layer 4 TCP/UDP/Bth/GreV0/GreV1

Tunneling VXLAN/Geneve/GREv0/Mpls

FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86

When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf's ancestors. **Workaround:** To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share

Occasionally, Tag Matching RNDV and NVME emulation wasn't behaving as expected.

Congestion Control may not work properly if the card supports two ports and each PF for each port is not raised at the same time.

## Fixes

**Following issues have been fixed in firmware version 16.29.1016:**

An issue that prevented VXLAN packets with svlan/ cvlan tag from being matched.

An issue that caused the eth_wqe_too_small counter to count ODP (On-Demand Paging) page faults.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

Ani ssue that resulted in low performance after enabling the RoCE Accelerator capability. Note: The fix is available when all ports are set as Ethernet.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

The chassis manager calculation for Multi-Host and Socket-Direct adapter cards to allow running NC-SI commands by the chassis manager BMC. Now the chassis manager is count as BMC with index 0, regardless of how many BMC there are.

An issue that caused the device to go to down IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Following issues have been fixed in firmware version 12.28.1002:**

An issue that caused the DCR (DC Resources) to be destroyed before the retry option managed to work when the retry timeout is too big. in this case, the DCR' time-to-live was increased, and the maximum retry timeout was decreased.

Increased PHY power consumption limit to 1.5w.

An issue that caused PortCounters.PortRcvErr / PPCNT.infiniband_counters.PortRcvErr not to report port icrc errors.

**Enhancements**

**Firmware for the following devices are updated to 12.28.1002:**

843400-B21 (HPE Apollo A10 InfiniBand EDR (100Gb) 2-port Adapter)

**New Feature and Changes in Version 12.28.1002:**

Increased the maximum XRQ number to 512.

**Firmware for the following devices are updated to 16.29.1016:**

872723-B21 (HPE Apollo InfiniBand EDR 100Gb 2-port 841z Mezzanine Adapter)
872725-B21 (HPE InfiniBand EDR 100Gb 1-port 841QSFP28 Adapter)

**New Feature and Changes in Version 16.29.1016:**

Added support for following features:

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of the cluster.

An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.

"InfiniBand" properties set to the Network Device Function Redfish object.

HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compared to the FW Flow Metering.

Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

2 new Mini CQE formats: Responder Mini CQE With Flow Tag Layout Responder Mini CQE With l3_l4_info Layout

UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.

Steering DP hash flow groups.

A new counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.

PCIe Rx modifications to prevent the adapter cards from disappearing from the system.

ignore_flow_level is now enabled by the TRUST LEVEL access registry.

cq_overrun counter. The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

[Beta] Enabled the capability to allow Virtual Functions to send Pause Frames packets.

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

Hardware steering dump output used for debugging and troubleshooting.

## Supported Devices and Features

**Supported Devices:**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 843400-B21 | HPE Apollo A10 InfiniBand EDR (100Gb) 2-port Adapter | HPE2920111032 |
| 872723-B21 | HPE Apollo InfiniBand EDR 100Gb 2-port 841z Mezzanine Adapter | HPE0000000017 |
| 872725-B21 | HPE InfiniBand EDR 100Gb 1-port 841QSFP28 Adapter | HPE0000000008 |

Online Firmware Upgrade Utility (Linux x86_64) for HPE Mellanox VPI (Ethernet and Infiniband mode) ConnectX4 and ConnectX5 devices on Linux x86_64 platformVersion: 1.0.10 **(Recommended)**Filename: firmware-hca-mellanox-vpi-connectx4-1.0.10-1.1.x86_64.compsig; firmware-hca-mellanox-vpi-connectx4-1.0.10-1.1.x86_64.rpm **Important Note!**

**Known Issues with firmware version 12.28.1002:**

When MKEY_BY_NAME is enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

**Known Issues with firmware version 16.29.1016:**

Multi-APP QoS is not supported when LAG is configured.

Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
**Workaround:** Use full reset flow for firmware upgrade/downgrade.

On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.
**Workaround:** If such issue is observed:

Enable ZTT to overcome the high latency. Run: mlxconfig -d set ZERO_TOUCH_TUNING_ENABLE=1

Reset or power cycle the firmware for change to take effect

When PER_PF_NUM_SF=1 (per PF configurations are used for SFs), if the number of SFs configured for a PF is 0 (PF_TOTAL_SF=0), than the firmware wrongly opens BAR2 with size 128KB.

The following are the Steering Dump limitations:

Supported only on ConnectX-5 adapter cards

Requires passing the version (FW/Stelib/MFT) and device type to stelib

Re-format is not supported

Advanced multi-port feature is not supported -LAG/ROCE_AFFILIATION/MPFS_LB/ESW_LB (only traffic vhca <-> wire)

Packet types supported:

Layer 2 Eth

Layer 3 IPv4/Ipv6/Grh

Layer 4 TCP/UDP/Bth/GreV0/GreV1

Tunneling VXLAN/Geneve/GREv0/Mpls

FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86

When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf's ancestors. **Workaround:** To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share.

Occasionally, Tag Matching RNDV and NVME emulation wasn't behaving as expected.

Congestion Control may not work properly if the card supports two ports and each PF for each port is not raised at the same time.

**Fixes**

**Following issues have been fixed in firmware version 16.29.1016:**

An issue that prevented VXLAN packets with svlan/ cvlan tag from being matched.

An issue that caused the eth_wqe_too_small counter to count ODP (On-Demand Paging) page faults.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

An issue that resulted in low performance after enabling the RoCE Accelerator capability. Note: The fix is available when all ports are set as Ethernet.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

The chassis manager calculation for Multi-Host and Socket-Direct adapter cards to allow running NC-SI commands by the chassis manager BMC. Now the chassis manager is count as BMC with index 0, regardless of how many BMC there are.

An issue that caused the device to go to down IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Following issues have been fixed in firmware version 12.28.1002:**

An issue that caused the DCR to be destroyed before the retry option managed to work when the retry timeout is too big. In this case the DCR' time-to-live was increased, and the maximum retry timeout was decreased.

Increased PHY power consumption limit to 1.5w.

An issue that caused PortCounters.PortRcvErr / PPCNT.infiniband_counters.PortRcvErr not to report port icrc errors.

**Enhancements**

**Firmware for the following devices are updated to 12.28.1002:**

825110-B21 (HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter)
825111-B21 (HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter)

**New Feature and Changes in Version 12.28.1002:**

Increased the maximum XRQ number to 512.

**Firmware for the following devices are updated to 16.29.1016:**

879482-B21 (HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter)
872726-B21 (HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter)

**New Feature and Changes in Version 16.29.1016:**

Added support for the following features:

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.

"InfiniBand" properties set to the Network Device Function Redfish object.

HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compared to the FW Flow Metering.

Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

2 new Mini CQE formats: Responder Mini CQE With Flow Tag Layout Responder Mini CQE With l3_l4_info Layout

UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.

Steering DP hash flow groups.

A new counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.

PCIe Rx modifications to prevent the adapter cards from disappearing from the system.

ignore_flow_level is now enabled by the TRUST LEVEL access registry.

cq_overrun counter. The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

[Beta] Enabled the capability to allow Virtual Functions to send Pause Frames packets.

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 825110-B21 | HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter | HP_2180110032 |
| 825111-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter | HP_2190110032 |
| 872726-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter | HPE0000000009 |
| 879482-B21 | HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter | HPE0000000022 |

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Online Firmware Upgrade Utility (Linux x86_64) for HPE Mellanox VPI (Ethernet and Infiniband mode) ConnectX6 devices on Linux x86_64 platformVersion: 1.0.6 **(Recommended)**Filename: firmware-hca-mellanox-vpi-connectx6-mft-1.0.6-1.1.x86_64.compsig; firmware-hca-mellanox-vpi-connectx6-mft-1.0.6-1.1.x86_64.rpm **Important Note!**

**ConnectX-6 VPI supports having one port as InfiniBand and the other port as Ethernet according to the following matrix of combinations.**

| **Port #2 - InfiniBand** | | | | |
|---|---|---|---|---|
| **Port #1 – Ethernet** | **HDR/HDR100** | **EDR** | **FDR** | **QDR** |
| **50GbE** | supported | not supported | not supported | supported |
| **100GbE/25GbE** | supported | not supported | not supported | supported |
| **40GbE/10GbE** | supported | not supported | not supported | supported |
| **1GbE** | supported | not supported | not supported | supported |

| **Port #2 - Ethernet** | | | | |
|---|---|---|---|---|
| **Port #1 - InfiniBand** | **50GbE** | **100GbE/25GbE** | **40GbE/10GbE** | **1GbE** |
| **HDR / HDR100** | supported | supported | not supported | supported |
| **EDR** | supported | supported | not supported | supported |
| **FDR** | not supported | not supported | not supported | not supported |
| **QDR/SDR** | supported | supported | not supported | supported |

**Prerequisites**

Use iLO5 firmware version 2.30 or higher with ConnectX6 firmware version 20.27.6008. Thermal sensor reporting on the adapter will not be functional with older versions of iLO5 firmware.

**Fixes**

**The following issues have been fixed in version 20.29.1016:**

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An issue that prevented VXLAN packets with svlan/cvlan tag from being matched.

The eth_wqe_too_small counter to count ODP (On-Demand Paging) page used to fail.

An issue related to raising 100GbE link on ConnectX-6 VPI 100Gb/s adapter cards.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

Low performance occurred after enabling the RoCE Accelerator capability.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

**Enhancements**

**Firmware for the following devices are updated to 20.29.1016:**

HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 x16 Adapter - P06154-B21
HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 x16 Adapter - P06250-B21
HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 x16 Adapter - P06251-B21

**New Features and Changes in Version 20.29.1016:**

Added support for following features:

LinkX module burning via MFT toolset. The new capability enables direct firmware burning from the internal flash storage to reduce the bandwidth and accelerate the burning process, including burning several modules at a time.

An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.

Improved NRZ link performance (RX algorithm).

Improved NRZ link-up time (25G\50G\100G speeds).

Enabled the options to control different Tx sets for the same attribute when connecting a Mellanox-Mellanox vs Mellanox to 3rd party HCA.

"InfiniBand" properties set to the Network Device Function Redfish object.

Direct Packet Placement (DPP): DPP is a receive side transport service in which the Ethernet packets are scattered to the memory according to a packet sequence number (PSN) carried by the packet, and not by their arrival order.

To enable DPP offload, the software should create a special RQ by using the CREATE_RQ command, and set DPP relevant attributes.

Added trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.

Enhanced IB Congestion Control to support lower minimum rate. Now it uses destination-lid to classify flows to handle larger scale, and achieve better results in GPCNeT benchmark.

Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| P06154-B21 | HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 x16 Adapter | HPE0000000034 |
| P06250-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 x16 Adapter | HPE0000000035 |
| P06251-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 x16 Adapter | HPE0000000036 |

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Online Firmware Upgrade Utility (Linux x86_64) for HPE Mellanox VPI (Ethernet and Infiniband mode) devices on Linux x86_64 platformVersion: 1.0.12 **(Recommended)**Filename: firmware-hca-mellanox-vpi-eth-ib-1.0.12-1.1.x86_64.compsig; firmware-hca-mellanox-vpi-eth-ib-1.0.12-1.1.x86_64.rpm **Important Note!**

**Known Issues in firmware 2.42.5000, 2.42.5056, 2.42.5700:**

When using the Quad Small Form-factor Pluggable (QSFP) module RTXM320-581, and performing a driver restart for the firmware upgrade/downgrade to take effect, the link does not come up.
**Workaround**: Reboot the server.

Enabling/disabling cq_timestamp using mlxconfig is not supported.

In a card with 2 separate LEDs scheme (a Phy LED and a logic LED) only the Phy LED will lit. Meaning, the orange LED will not be active while the ETH link is in an idle mode.

In SR-IOV setup, using mlxconfig when the Packet Filter (PF) is passed through to a VM requires a reboot of the Hypervisor.

Downgrading from v2.30.8000 or later to an earlier version than 2.30.8000 requires server reboot.
**Workaround**: Reboot the server.

On ConnectX-3 Ethernet adapter cards, there is a mismatch between the GUID value returned by firmware management tools and that returned by fabric/ driver utilities that read the GUID via device firmware (e.g., using ibstat). Mlxburn/flint return 0xffff as GUID while the utilities return a value derived from the MAC address. For all driver/firmware/software purposes, the latter value should be used.
**Workaround**: Please use the GUID value returned by the fabric/driver utilities (not 0xffffff).

SBR should be asserted for a minimum of 50 milliseconds for the ConnectX-3 adapters.

On Pilot1 SL230, PCIe link occasionally does not come up at Gen3 speed.

RHEL6.3 Inbox driver causes kernel panic when SRIOV is enabled on VPI cards due to driver compatibility issue.

**Workaround**: Set the "do_- sense=false" parameter in the [IB_TAB] i.

In advanced steering mode, side band management connectivity may be lost when having more than 8 QP per mcg.

When SR-IOV is disabled in the system BIOS, a PCI issue is noticed in Ubuntu v12.04.3 with Linux kernel v3.8 which affects NICs of several manufacturers including Mellanox's, preventing them from operating.
**Workaround**: Enable SR-IOV in the BIOS.

Mellanox Firmware Tools (MFT) might leave the flash semaphore locked if the tool operation is forced stopped. The locked semaphore prevents the firmware from accessing the flash and causes firmware hang.
**Workaround**: Clear the semaphore using MFT command: 'flint -clear_semaphore'

Cable Info MAD reports a wrong cable info when using the MC2210411-SR4 module.

Gen2 failure at temperature sweep up to 10C/min (for MT27518A1-FDIR-BV only)..

PCIe Gen2 link unstable at temperature sweep of 10C/min for MT27518A1-FDIR-BV.

Bloom filter is currently not supported.

When downgrading from firmware v2.11.0000 and using MFT 3.0.0-3, the following message is displayed due to the mlxconfig tool: You are trying to override configurable FW by non-configurable FW. If you continue, old FW configurations will be cleared, do you want to continue ? (y/n) [n] : y You are trying to restore default configuration, do you want to continue ? (y/n) [n] : y.

DMFS should not be enabled when working with InfiniBand on MLNX_OFED-2.0.3

ConnectX®-3 Pro VF device ID is presented the same as ConnectX®-3 VF device ID due to driver limitations.
**Workaround**: Use the physical function device ID to identify the device.

Virtual Product Data (VPD) read-only fields are writable.
**Workaround**: Do not write to read-only fields if you wish to preserve them.

When working in Virtual Path Identifier (VPI) mode with port1 FDR and port2 40G, error counters misbehave and increase rapidly.

Setting the device to 128Byte CQ/EQ stride will cause misbehavior of sideband management resulting in communication loss.

CQ and EQ cannot be configured to different stride sizes.

Changing port protocol from ETH to IB on port with NCSI/IPMI enabled while the port is connected to ETH switch is not supported.

**Workaround**: 1. Unplug the cable from the switch 2. Restart driver 3. Change the protocol via the appropriate tools.

Adapter card MCX349A-XCCN may experience longer linkup times of a few seconds with specific switches.

Adapter card MCX349A-XCCN does not respond to ethtool “identify” command (ethtool -p/--identify).

Remote Desktop Protocol (RDP) over IPv6 is currently not functional.
**Workaround**: Set the default RoCE mode in the software to RoCE v2 (also when not using RoCE)

Sniffer QP cannot be removed from the regular rule after adding the QP with insertion scheme equals to “push to that rule”.

Since only a single Boot Entry Vector (BEV) per PCI Physical Function is supported, disabling the first port causes the second port to disappear as well.

The NIC does not notify the driver of a link-down incident when a cable is unplugged from a NIC port with 56GbE port link.

56GbE link is not raised when using 100GbE optic cables.

When working with MLNX_OFED v3.3-1.0.0.0, server reboot could get stuck due to a kernel panic in mlx4_en_get_drvinfo() that is called from asynchronous event handler.

When running ibdump, loopback traffic is mirroring into the kernel driver.

MAC address that are set from the OS using ifconfig are not reflected in the OCBB buffer.

The adapter card cannot raise a 10G link vs. a 40GE capable switch port in C7000 enclosure. It can raise a 1G Link and only if the switch port allows it.

MTUSB communication via I2C header on primary I2C bus is supported only in live-fish mode.

## Fixes

### Fixes in version 2.42.5000:

PortRcvPkts counter was prevented from being cleared after resetting it.

The system Timed Out on the configuration cycle of the Virtual Functions (VFs) when more than 10 Virtual Functions performed FLR and the completion Time Out value was configured to a range of less than 16 msec.

The server hangs and results in NMI when running “mlxfwtop –d mt4103_pci_cr0” while restarting the driver in parallel (from a different thread). In this case, the downstream bridge over the device reported completion timeout error.

In flow_steering, BMC could not receive a ping over IPV6 after running bmc_reboot.

While closing the HCA, the RX packet caused bad access to resources that did not exist, and consequently caused the QPCGW or the irisc to get stuck.

The master SMLID and the LID was either 0 or 0xFFFF when the port was neither active nor armed.

ibdump could not capture all MADs packets.

link did not go up after reboot.

Fixed a rare issue that cause the PCIe configuration cycle that arrived during the time of sw_reset to generate 2 completions.

Network Controller Sideband Interface (NC-SI) did not work when adding the disable_static_steering_ini field in the ini file, due to memory allocation issue for this field in the scratchpad.

**Fixes in version 2.42.5056:**

Fixed an issue that resulted in reading from invalid I/O address on handover from UEFI boot to OS boot, when a port was configured as InfiniBand on a VPI adapter device.

**Enhancements**

**Firmware for the following devices are updated to 2.42.5000:**
764282-B21
764286-B21

**Firmware for the following devices are updated to 2.42.5056:**
764283-B21
764284-B21

**Firmware for the following device is updated to 2.42.5700:**
764285-B21

**New features in firmware version 2.42.5000:**

Added support for the following features.

new TLV: CX3_GLOBAL_CONF to enable/disable timestamp on incoming packets through mlxconfig configuration.

User MAC configuration.

Automatically collecting mstdump before driver reset.

A mechanism to detect DEAD_IRISC (plastic) from TPT (iron) and raise an assert.

A new field is added to "set port" command which notifies the firmware what is the user_mtu size.

Improved the debug ability for command timeout cases.

**New features and changes in firmware version 2.42.5700.**

Modified the mlx_cmd_get_mlx_link_status command return value to return "Link Type = Ethernet" in Ethernet adapter cards.

**Supported Devices and Features**

**Supported Devices:**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 764282-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter | HPE_1350110023 |
| 764283-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter | HPE_1360110017 |
| 764284-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter | HPE_1370110017 |
| 764285-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter | HPE_1380110017 |
| 764286-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter | HPE_1390110023 |

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Online Firmware Upgrade Utility (Linux x86_64) for Mellanox ConnectX6Dx Open Ethernet cardsVersion: 1.0.3 **(Recommended)**Filename: firmware-nic-mellanox-nic-mft-1.0.3-1.1.x86_64.compsig; firmware-nic-mellanox-nic-mft-1.0.3-1.1.x86_64.rpm **Important Note!**

**Important Notes:**

Security Hardening Enhancements: This release contains important reliability improvements and security hardening enhancements. Mellanox recommends upgrading your devices firmware to this release to improve the devices' firmware security and reliability.

Single-root input/output virtualization (SR-IOV) - Virtual Functions (VF) per Port - The maximum Virtual Functions (VF) per port is 127.

It is recommended to enable the "above 4G decoding" BIOS setting for features that require large amount of PCIe resources. Such features are: Single-root input/output virtualization (SR-IOV) with numerous Virtual Functions (VFs), PCIe Emulated Switch, and Large BAR Requests.

**Known Issues:**

Multi-APP QoS is not supported when LAG is configured.

Workaround: N/A

When Emulated PCIe Switch is enabled, and more than 8 PFs are enabled, the OS boot process might halt.

Workaround: N/A

When Emulated PCIe Switch is enabled, and the OS does resource reallocation, the OS boot process might halt.

Workaround: N/A

Unable to complete migration when virtio device is in high traffic load (20/20 MPPS) as although vDPA hardware offload solution can support higher speed than the software solution, it needs to enable QEMU auto-converge to complete migration.

Workaround: Turn auto-converge on by adding "--auto-converge". For example: virsh migrate --verbose --live --persistent gen-l-vrt-295-005CentOS-7.4 qemu+ssh://gen-l-vrt-295/system --unsafe --auto-converge

Using the Eye-Opening tool might cause degradation in the link speed or link down events.

Workaround: N/A

Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.

Workaround: Use full reset flow for firmware upgrade/downgrade.

On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.

Workaround: If such issue is observed:

Enable ZTT to overcome the high latency. Run: mlxconfig -d <mst device> set ZERO_TOUCH_TUNING_ENABLE=1 .

Reset or power cycle the firmware for change to take effect .

Eye-opening can cause effective errors on the port.

Workaround: N/A

Connection to BMC is lost after applying Phyless reset following an AC-Cycle.

Workaround: N/A

Phyless Reset functionality is not supported when updating firmware from v22.28.4000 (and below) to v22.29.1000.

Workaround: N/A

The following are the Steering Dump limitations:

Supported only on ConnectX-5 adapter cards.

Requires passing the version (FW/Stelib/MFT) and device type to stelib.

Re-format is not supported Advanced multi-port feature is not supported – LAG/ROCE_AFFILIATION/MPFS_LB/ ESW_LB (only traffic vhca <-> wire).

Packet types supported:

Layer 2 Eth

Layer 3 IPv4/Ipv6/Grh

Layer 4 TCP/UDP/Bth/GreV0/GreV1

Tunneling VXLAN/Geneve/GREv0/Mpls FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86

FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86.

Workaround: N/A

When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf's ancestors.

Workaround: To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share

**Prerequisites**

Use iLO5 firmware version 2.30 or higher with ConnectX5/ConnectX6 firmware version 22.27.6008. Thermal sensor reporting on the adapter will not be functional with older versions of iLO5 firmware.

**Fixes**

**Following issues have been resolved in firmware version 22.29.1016:**

Traffic for virtio hardware offload solution was prevented from "iperf3" in Windows Operating System.

Traffic for virtio hardware offload solution was prevented from "iperf3 -i 512".

The struct virtio_net_hdr was not set properly by the virtio hardware offload solution. The following message appeared in dmesg during traffic: "bad gso: type xx, size: xx".

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs were configured, VM restart (VF/PF FLR) might had taken longer than that of when MKEY_BY_NAME was disabled.

TCP/IP traffic received by the guest kernel with version higher than 4.10 were unstable because of corrupted GSO header. The following message could be seen from dmegs: "bad gso: type: xx, size: xxxx".

Enabling the RoCE Accelerator capability resulted in low performance
Note: The fix is available when all ports are set as Ethernet.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

**Enhancements**

**Firmware for the following devices is updated to 22.29.1016:**

P25960-B21 (HPE Ethernet 100Gb 2-Port QSFP56 MCX623106AS-CDAT Adapter)

P10180-B21 (Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE)

**New features and changes in version 22.29.1016:**

Improved NRZ link performance (RX algorithm).

Improved NRZ link-up time (25G\50G\100G speeds).

UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.

Optimized vDPA performance for PPS in scalability of up to 127 devices per port.

When using a Multi-Host device, the firmware can now discover who is the external SmartNIC host (the Embedded CPU PF (ECPF) ) with the highest index that is responsible for performing offload activities to the adapter card.

Hardware steering dump output used for debugging and troubleshooting.

Changed the default value of DCQCN's NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

**Added support for the following features:**

Eye-Opening: supported only when using NRZ signal. (Beta)

Option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.

"InfiniBand" properties set to the Network Device Function Redfish object.

Direct Packet Placement (DPP): DPP is a receive side transport service in which the Ethernet packets are scattered to the memory according to a packet sequence number (PSN) carried by the packet, and not by their arrival order. To enable DPP offload, the software should create a special RQ by using the CREATE_RQ command and set DPP relevant attributes.

Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

Error statistics and reporting for vDPA.

IPv6 TSO offload.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P25960-B21 | HPE Ethernet 100Gb 2-Port QSFP56 MCX623106AS-CDAT Adapter | MT_0000000437 |
| P10180-B21 | Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE | MT_0000000435 |

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Online Firmware Upgrade Utility (Linux x86_64) for Mellanox Open Ethernet cardsVersion: 1.0.4 **(Recommended)**Filename: firmware-nic-open-mellanox-eth-mft-1.0.4-1.1.x86_64.compsig; firmware-nic-open-mellanox-eth-mft-1.0.4-1.1.x86_64.rpm **Important Note!**

**Known Issues in firmware 14.29.1016:**

Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
Workaround: Use full reset flow for firmware upgrade/downgrade.

On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.
Workaround: If such issue is observed:

Enable ZTT to overcome the high latency. Run: mlxconfig -d <mst device> set ZERO_TOUCH_TUNING_ENABLE=1

Reset or power cycle the firmware for change to take effect

Low performance might be experienced when upgrading from previous firmware version to 14.29.1000 when using “Fast FW Reset”.

The following are the Steering Dump limitations:

Supported only on ConnectX-5 adapter cards.

Requires passing the version (FW/Stelib/MFT) and device type to stelib.

Re-format is not supported

Advanced multi-port feature is not supported – LAG/ROCE_AFFILIATION/MPFS_LB/ ESW_LB (only traffic vhca <-> wire).

Packet types supported:

Layer 2 Eth

Layer 3 IPv4/Ipv6/Grh

Layer 4 TCP/UDP/Bth/GreV0/GreV1

Tunneling VXLAN/Geneve/GREv0/Mpls FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86

Congestion Control may not work properly if the card supports two ports and each PF for each port is not raised at the same time.

**Known Issues with firmware version 16.29.1016:**

Multi-APP QoS is not supported when LAG is configured.

When PER_PF_NUM_SF=1 (per PF configurations are used for SFs), if the number of SFs configured for a PF is 0 (PF_TOTAL_SF=0), than the firmware wrongly opens BAR2 with size 128KB.
Workaround: N/A

When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf's ancestors.
Workaround: To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share.

Occasionally, Tag Matching RNDV and NVME emulation was not behaving as expected.
Workaround: N/A

Note: On Adapter Firmware rewrite scenario, SUM will always discover the Mellanox Open adapter firmware smart component as applicable and select it for deployment If the server iLO5 firmware version is older than 2.30.

**Fixes**

**Following issues have been fixed in firmware version 14.29.1016 and 16.29.1016:**

Changed the default value of DCQCN's NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An issue that caused packets to drop due to header size issues and/or failing checks. This issue was caused due to a Linux issue that caused VFs to set the wrong header size value in wqe_inline_header_mode input.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) might take longer than when MKEY_BY_NAME was disabled.

In rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

An issue that caused the device to go to dead IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Following issues have been fixed in firmware version 16.29.1016:**

An issue that caused the eth_wqe_too_small counter to count ODP page faults.

A low performance was observed after enabling the RoCE Accelerator capability.

**Enhancements**

**Firmware for the following devices is updated to 14.29.1016:**

P21930-B21 (HPE Ethernet 10Gb 2-port SFP+ MCX4121A-XCAT Adapter)
P11341-B21 (HPE Ethernet 10Gb 2-port SFP+ MCX4621A-ACAB OCP3 Adapter)

**Firmware for the following devices is updated to 16.29.1016:**

P13188-B21 (HPE Ethernet 10/25Gb 2-port SFP28 MCX512F-ACAT Adapter)
P21927-B21 (HPE Ethernet 100Gb 2-Port QSFP28 MCX516A-CCHT Adapter)
P10112-B21 (HPE Ethernet 10/25Gb 2-port SFP28 MCX562A-ACAI OCP3 Adapter)

**This release contains important reliability improvements and security hardening enhancements. Upgrade the firmware of the device to this release to improve the devices' firmware security and reliability.**

**New Feature and Changes in Version 14.29.1016 and 16.29.1016:**

Ethernet wqe_too_small Mode: A per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause "CQE with Error" or "CQE_MOCK".

Hardware steering dump output used for debugging and troubleshooting.

Added support for the following features:

cq_overrun counter: The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

Enabled the capability to allow Virtual Functions to send Pause Frames packets. (Beta)

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

**New Feature and Changes in Version 16.29.1016:**

Hardware steering dump output used for debugging and troubleshooting.

Added support for the following features:

HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compare to the FW Flow Metering.

Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

2 new Mini CQE formats:

Responder Mini CQE With Flow Tag Layout.

Responder Mini CQE With l3_l4_info Layout.

Steering DP hash flow groups.

ignore_flow_level is now enabled by the TRUST LEVEL access registry.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P21930-B21 | HPE Ethernet 10Gb 2-port SFP+ MCX4121A-XCHT Adapter | MT_0000000414 |
| P11341-B21 | HPE Ethernet 10Gb 2-port SFP+ MCX4621A-ACAB OCP3 Adapter | MT_0000000238 |
| P13188-B21 | HPE Ethernet 10/25Gb 2-port SFP28 MCX512F-ACHT Adapter | MT_0000000416 |
| P10112-B21 | HPE Ethernet 10/25Gb 2-port SFP28 MCX562A-ACAI OCP3 Adapter | MT_0000000241 |
| P21927-B21 | HPE Ethernet 100Gb 2-port QSFP28 MCX516A-CCHT Adapter | MT_0000000417 |

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Online Firmware Upgrade Utility (Windows x64) for HPE Ethernet 10Gb 2-port 548SFP+ AdapterVersion: 1.0.0.4 **(Recommended)**Filename: cp045200.compsig; cp045200.exe **Important Note!**

**No known issues were included in firmware version 14.29.1016:**

**Prerequisites**

Use iLO5 firmware version 2.30 or higher with ConnectX4 firmware version 14.28.1002. Thermal sensor reporting on the adapter will not be functional with older versions of iLO5 firmware.

**Fixes**

**Following issues have been fixed in version 14.29.1016:**

An issue that caused the sent packet to hang while the device entered FLR mode.

Enabled Bar configuration bytewise by applying the write_en bitmask.

A rare case where the the device froze while running the sw reset flow under heavy stress and with many open resources.

Low PXE performance while using the VSC to trigger the send_ring_doorbells.

An error that prevented the completions (CQ) from being completed due to a race condition in the firmware transport error handlers, and the error stressors, where the error stressors would hang the firmware transport error handler flow.

An issue that caused the fragmented IP packets to drop was fixed.

**Enhancements**

**Firmware for the following device is updated to 14.29.1016:**

P11338-B21 (HPE Ethernet 10Gb 2-port 548SFP+ Adapter)

**Following New features and Changes are included in version 14.29.1016:**

Added mlxconfig support for power reduction: PCI CAP AUTO_POWER_SAVE_LINK_DOWN

PCI CAP

AUTO_POWER_SAVE_LINK_DOWN

Added the following segments, as appeared in the PRM, to the Resource Dump:

PRM_QUERY_QP

PRM_QUERY_CQ

PRM_QUERY_MKEY

QUERY_VNIC_ENV

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P11338-B21 | HPE Ethernet 10Gb 2-port 548SFP+ Adapter | HPE0000000038 |

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Online Firmware Upgrade Utility (Windows x64) for HPE Mellanox Ethernet only adaptersVersion: 1.0.0.14 **(Recommended)**Filename: cp045195.compsig; cp045195.exe **Important Note!**

The Firmware Upgrade Utility has been split into 2 packages for Mellanox Ethernet Only NIC adpaters, one supporting Synergy platforms and the other supporting ProLiant and Apollo platforms. This package supports Mellanox Ethernet Only NIC adapters on ProLiant and Apollo servers.

**Known Issues for FW version 2.42.5044 :**

When using the QSFP module RTXM320-581, and performing a driver restart for the firmware upgrade/downgrade to take effect, the link does not come up.

Enabling/disabling cq_timestamp using mlxconfig is not supported.

In a card with 2 separate LEDs scheme (a Phy LED and a logic LED) only the Phy LED will lit. Meaning, the orange LES will not be active while the ETH link is in an idle mode.

In SR-IOV setup, using mlxconfig when the PF is passed through to a VM requires a reboot of the Hypervisor.

Downgrade to previous GA requires server reboot.Downgrading from v2.30.8000 or later to an earlier version than 2.30.8000 requires server reboot. Reboot the server.

On ConnectX-3 Ethernet adapter cards, there is a mismatch between the GUID value returned by firmware management tools and that returned by fabric/driver utilities that read the GUID via device firmware (e.g., using ibstat). Mlxburn/flint return 0xffff as GUID while the utilities return a value derived from the MAC address. For all driver/firmware/software purposes, the lattervalue should be used.

SBR should be asserted for a minimum of 50 milliseconds for the ConnectX®-3 adapters

On Pilot1 SL230, PCIe link occasionally does not come up at Gen3 speed

RH6.3 Inbox driver causes kernel panic when SR-IOV is enabled on VPI cards due to driver compatibility issue.

In advanced steering mode, side band management connectivity may be lost when having more than 8 QP per mcg.

When SR-IOV is disabled in the system BIOS, a PCI issue is noticed in Ubuntu v12.04.3 with Linux kernel v3.8 which affects NICs of several manufacturers including Mellanox's, preventing them from operating.

MFT tools might leave the flash semaphore locked if the tool operation is forced stopped. The locked semaphore prevents the firmware from accessing the flash and causes firmware hang.

Cable Info MAD reports a wrong cable info when usingthe MC2210411-SR4 module

Gen2 failure at temperature sweep up to 10C/min (for MT27518A1-FDIR-BV only).

PCIe Gen2 link unstable at temperature sweep of 10C/min for MT27518A1-FDIR-BV

Bloom filter is currently not supported.

Firmware downgrade message When downgrading from firmware v2.11.0000 and using MFT 3.0.0-3

RM#DMFS should not be enabled when working with InfiniBand on MLNX_OFED-2.0.3

RM#VPD read-only fields are writable.

Increasing SymbolErrorCounter When working in VPI mode with port1 FDR and port2 40G, error counters misbehave and increase rapidly

Setting the device to 128Byte CQ/EQ stride will cause misbehavior of sideband management resulting in communication loss.

CQ and EQ cannot be configured to different stride sizes.

ConnectX-3 Pro VF device ID is presented the same as ConnectX-3 VF device ID due to driver limitations.

RSOD while running PXE (legacy) on G9 servers. This occurs only when PXE boot fails and BIOS boots from HDD. Currently it is pending BIOS fix.

Changing port protocol from ETH to IB on port with NCSI/IPMI enabled while the port is connected to ETH switch is not supported.

RDP over IPv6 is currently not functional.

Sniffer QP cannot be removed from the regular rule after adding the QP with insertion scheme equals to “push to that rule”

Since only a single Boot Entry Vector (BEV) per PCI Physical Function is supported, disabling the first port causes the second port to disappear as well.

The NIC does not notify the driver of a link-down incident when a cable is unplugged from a NIC port with 56GbE port link.

56GbE link is not raised when using 100GbE optic cables.

When working with MLNX_OFED v3.3-1.0.0.0, server reboot could get stuck due to a kernel panic in mlx-4_en_get_drvinfo() that is called from asynchronous event handler.

832298:When running ibdump, loopback traffic is mirroring into the kernel driver.

AHS reports wrong MTU size

RM#846523: MAC address that are set from the OS using ifconfig are not reflected in the OCBB buffer

**Known Issues for FW version 14.29.1016 and 16.29.1016:**

Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
**Workaround:** Use full reset flow for firmware upgrade/downgrade.

On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.
**Workaround:** If such issue is observed:

Enable ZTT to overcome the high latency. Run: mlxconfig -d set ZERO_TOUCH_TUNING_ENABLE=1

Reset or power cycle the firmware for change to take effect

The following are the Steering Dump limitations:

Supported only on ConnectX-5 adapter cards

Requires passing the version (FW/Stelib/MFT) and device type to stelib

Re-format is not supported

Advanced multi-port feature is not supported -LAG/ROCE_AFFILIATION/MPFS_LB/ESW_LB (only traffic vhca <-> wire)

Packet types supported:

Layer 2 Eth

Layer 3 IPv4/Ipv6/Grh

Layer 4 TCP/UDP/Bth/GreV0/GreV1

Tunneling VXLAN/Geneve/GREv0/Mpls

FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86

Congestion Control may not work properly if the card supports two ports and each PF for each port is not raised at the same time.

**Known Issues for FW version 14.29.1016:**

Low performance might be experienced when upgrading from previous firmware version to 14.29.1000 when using “Fast FW Reset”.

**Known Issues for FW version 16.29.1016:**

When PER_PF_NUM_SF=1 (per PF configurations are used for SFs), if the number of SFs configured for a PF is 0 (PF_TOTAL_SF=0), than the firmware wrongly opens BAR2 with size 128KB.

Multi-APP QoS is not supported when LAG is configured.

When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf’s ancestors. **Workaround:** To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share.

Occasionally, Tag Matching RNDV and NVME emulation wasn’t behaving as expected.

**Prerequisites**

Use iLO5 firmware version 2.30 or higher with ConnectX4/ConnectX5 firmware version 14.28.1002/16.28.1002 respectively. Thermal sensor reporting on the adapter will not be functional with older versions of iLO5 firmware.

**Fixes**

**ixes submitted in version 2.42.5044 :**

An issue that prevented the firmware from detecting a link_down event thus preventing the IB bond interface from going to a failover mode.

**Following issues have been fixed in firmware version 14.29.1016:**

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An issue that caused packets to drop due to header size issues and/or failing checks. The issue was caused due to a Linux issue that caused VFs to set the wrong header size value in wqe_inline_header_mode input.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs were configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

An issue that caused the device to go to dead IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Following issues have been fixed in firmware version 16.29.1016:**

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An issue that prevented VXLAN packets with svlan/ cvlan tag from being matched.

The eth_wqe_too_small counter to count ODP page used to fail.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

An issue that resulted in low performance after enabling the RoCE Accelerator capability.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

The chassis manager calculation for Multi-Host and Socket-Direct adapter cards to allow running NC-SI commands by the chassis manager BMC. Now the chassis manager is count as BMC with index 0, regardless of how many BMC there are.

An issue that caused the device to go to dead IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Enhancements**

**Firmware for the following devices are updated to 2.42.5044 :**

779799-B21 (HPE Ethernet 10G 2-port 546FLR-SFP+ Adapter)
779793-B21 (HPE Ethernet 10G 2-port 546SFP+ Adapter)

**Firmware for the following devices are updated to 14.29.1016:**

817749-B21 (HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter)

**Firmware for the following devices are updated to 14.29.1016:**
817753-B21 (HPE Ethernet 25Gb 2-port 640SFP28 Adapter)

**Firmware for the following device is updated to 16.29.1016:**

874253-B21 (HPE Ethernet 100Gb 1-port 842QSFP28 Adapter)

**New features and changes in version 14.29.1016:**

Added support for the following features:

A new counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.

cq_overrun counter: This counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

Enabled the capability to allow Virtual Functions to send Pause Frames packets.

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

Hardware steering dump output used for debugging and troubleshooting.

**New features and changes in version 16.29.1016:**

Added support for following features:

An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.

"InfiniBand" properties set to the Network Device Function Redfish object.

HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compare to the FW Flow Metering.

Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

2 new Mini CQE formats: Responder Mini CQE With Flow Tag Layout Responder Mini CQE With l3_l4_info Layout

UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.

Steering DP hash flow groups.

A new counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.

PCIe Rx modifications to prevent the adapter cards from disappearing from the system.

ignore_flow_level is now enabled by the TRUST LEVEL access registry.

cq_overrun counter. The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

[Beta] Enabled the capability to allow Virtual Functions to send Pause Frames packets.

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| 779793-B21 | HPE Ethernet 10Gb 2-port 546SFP+ Adapter | HP_1200111023 |
| 779799-B21 | HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter | HP_2240110004 |
| 817749-B21 | HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter | HP_2690110034 |
| 817753-B21 | HPE Ethernet 25Gb 2-port 640SFP28 Adapter | HP_2420110034 |
| 874253-B21 | HPE Ethernet 100Gb 1-port 842QSFP28 Adapter | HPE0000000014 |

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Online Firmware Upgrade Utility (Windows x64) for HPE Mellanox IB only ConnectX4 and ConnectX5 devices on Windows x86_64 platformVersion: 1.0.0.7 **(Recommended)**Filename: cp045138.compsig; cp045138.exe **Important Note!**

**Known Issues with firmware version 12.28.1002:**

When MKEY_BY_NAME is enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

**Known Issues with firmware version 16.29.1016:**

Multi-APP QoS is not supported when LAG is configured.

Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
**Workaround:** Use full reset flow for firmware upgrade/downgrade.

On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.
**Workaround:** If such issue is observed:

Enable ZTT to overcome the high latency. Run: mlxconfig -d set ZERO_TOUCH_TUNING_ENABLE=1

Reset or power cycle the firmware for change to take effect

When PER_PF_NUM_SF=1 (per PF configurations are used for SFs), if the number of SFs configured for a PF is 0 (PF_TOTAL_SF=0), than the firmware wrongly opens BAR2 with size 128KB.

The following are the Steering Dump limitations:

Supported only on ConnectX-5 adapter cards

Requires passing the version (FW/Stelib/MFT) and device type to stelib

Re-format is not supported

Advanced multi-port feature is not supported -LAG/ROCE_AFFILIATION/MPFS_LB/ESW_LB (only traffic vhca <-> wire)

Packet types supported:

Layer 2 Eth

Layer 3 IPv4/Ipv6/Grh

Layer 4 TCP/UDP/Bth/GreV0/GreV1

Tunneling VXLAN/Geneve/GREv0/Mpls

FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86

When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf's ancestors.
**Workaround:** To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share

Occasionally, Tag Matching RNDV and NVME emulation wasn't behaving as expected.

Congestion Control may not work properly if the card supports two ports and each PF for each port is not raised at the same time.

**Fixes**

**Following issues have been fixed in firmware version 16.29.1016:**

An issue that prevented VXLAN packets with svlan/ cvlan tag from being matched.

An issue that caused the eth_wqe_too_small counter to count ODP (On-Demand Paging) page faults.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

Ani ssue that resulted in low performance after enabling the RoCE Accelerator capability. Note: The fix is available when all ports are set as Ethernet.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

The chassis manager calculation for Multi-Host and Socket-Direct adapter cards to allow running NC-SI commands by the chassis manager BMC. Now the chassis manager is count as BMC with index 0, regardless of how many BMC there are.

An issue that caused the device to go to down IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Following issues have been fixed in firmware version 12.28.1002:**

An issue that caused the DCR (DC Resources) to be destroyed before the retry option managed to work when the retry timeout is too big. in this case, the DCR' time-to-live was increased, and the maximum retry timeout was decreased.

Increased PHY power consumption limit to 1.5w.

An issue that caused PortCounters.PortRcvErr / PPCNT.infiniband_counters.PortRcvErr not to report port icrc errors.

**Enhancements**

**Firmware for the following devices are updated to 12.28.1002:**

843400-B21 (HPE Apollo A10 InfiniBand EDR (100Gb) 2-port Adapter)

**New Feature and Changes in Version 12.28.1002:**

Increased the maximum XRQ number to 512.

**Firmware for the following devices are updated to 16.29.1016:**

872723-B21 (HPE Apollo InfiniBand EDR 100Gb 2-port 841z Mezzanine Adapter)
872725-B21 (HPE InfiniBand EDR 100Gb 1-port 841QSFP28 Adapter)

**New Feature and Changes in Version 16.29.1016:**

Added support for following features:

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of the cluster.

An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.

"InfiniBand" properties set to the Network Device Function Redfish object.

HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compared to the FW Flow Metering.

Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

2 new Mini CQE formats: Responder Mini CQE With Flow Tag Layout Responder Mini CQE With l3_l4_info Layout

UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.

Steering DP hash flow groups.

A new counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.

PCIe Rx modifications to prevent the adapter cards from disappearing from the system.

ignore_flow_level is now enabled by the TRUST LEVEL access registry.

cq_overrun counter. The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

[Beta] Enabled the capability to allow Virtual Functions to send Pause Frames packets.

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

**Supported Devices:**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 843400-B21 | HPE Apollo A10 InfiniBand EDR (100Gb) 2-port Adapter | HPE2920111032 |
| 872723-B21 | HPE Apollo InfiniBand EDR 100Gb 2-port 841z Mezzanine Adapter | HPE0000000017 |
| 872725-B21 | HPE InfiniBand EDR 100Gb 1-port 841QSFP28 Adapter | HPE0000000008 |

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Online Firmware Upgrade Utility (Windows x64) for HPE Mellanox VPI (Ethernet and Infiniband mode) ConnectX4 and ConnectX5 devices on Windows x86_64 platformVersion: 1.0.0.9 **(Recommended)**Filename: cp045148.compsig; cp045148.exe **Important Note!**

**Known Issues with firmware version 12.28.1002:**

When MKEY_BY_NAME is enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

**Known Issues with firmware version 16.29.1016:**

Multi-APP QoS is not supported when LAG is configured.

Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
**Workaround:** Use full reset flow for firmware upgrade/downgrade.

On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.
**Workaround:** If such issue is observed:

Enable ZTT to overcome the high latency. Run: mlxconfig -d set ZERO_TOUCH_TUNING_ENABLE=1

Reset or power cycle the firmware for change to take effect

When PER_PF_NUM_SF=1 (per PF configurations are used for SFs), if the number of SFs configured for a PF is 0 (PF_TOTAL_SF=0), than the firmware wrongly opens BAR2 with size 128KB.

The following are the Steering Dump limitations:

Supported only on ConnectX-5 adapter cards

Requires passing the version (FW/Stelib/MFT) and device type to stelib

Re-format is not supported

Advanced multi-port feature is not supported -LAG/ROCE_AFFILIATION/MPFS_LB/ESW_LB (only traffic vhca <-> wire)

Packet types supported:

Layer 2 Eth

Layer 3 IPv4/Ipv6/Grh

Layer 4 TCP/UDP/Bth/GreV0/GreV1

Tunneling VXLAN/Geneve/GREv0/Mpls

FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86

When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf's ancestors. **Workaround:** To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share.

Occasionally, Tag Matching RNDV and NVME emulation wasn't behaving as expected.

Congestion Control may not work properly if the card supports two ports and each PF for each port is not raised at the same time.

**Fixes**

**Following issues have been fixed in firmware version 16.29.1016:**

An issue that prevented VXLAN packets with svlan/ cvlan tag from being matched.

An issue that caused the eth_wqe_too_small counter to count ODP (On-Demand Paging) page faults.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

An issue that resulted in low performance after enabling the RoCE Accelerator capability. Note: The fix is available when all ports are set as Ethernet.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

The chassis manager calculation for Multi-Host and Socket-Direct adapter cards to allow running NC-SI commands by the chassis manager BMC. Now the chassis manager is count as BMC with index 0, regardless of how many BMC there are.

An issue that caused the device to go to down IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Following issues have been fixed in firmware version 12.28.1002:**

An issue that caused the DCR to be destroyed before the retry option managed to work when the retry timeout is too big. In this case the DCR' time-to-live was increased, and the maximum retry timeout was decreased.

Increased PHY power consumption limit to 1.5w.

An issue that caused PortCounters.PortRcvErr / PPCNT.infiniband_counters.PortRcvErr not to report port icrc errors.

**Enhancements**

**Firmware for the following devices are updated to 12.28.1002:**

825110-B21 (HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter)
825111-B21 (HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter)

**New Feature and Changes in Version 12.28.1002:**

Increased the maximum XRQ number to 512.

**Firmware for the following devices are updated to 16.29.1016:**

879482-B21 (HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter)
872726-B21 (HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter)

**New Feature and Changes in Version 16.29.1016:**

Added support for the following features:

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.

"InfiniBand" properties set to the Network Device Function Redfish object.

HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compared to the FW Flow Metering.

Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

2 new Mini CQE formats: Responder Mini CQE With Flow Tag Layout Responder Mini CQE With l3_l4_info Layout

UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.

Steering DP hash flow groups.

A new counter per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause “CQE with Error” or “CQE_MOCK”.

PCIe Rx modifications to prevent the adapter cards from disappearing from the system.

ignore_flow_level is now enabled by the TRUST LEVEL access registry.

cq_overrun counter. The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

[Beta] Enabled the capability to allow Virtual Functions to send Pause Frames packets.

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 825110-B21 | HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter | HP_2180110032 |
| 825111-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter | HP_2190110032 |
| 872726-B21 | HPE InfiniBand EDR/Ethernet 100Gb 2-port 841QSFP28 Adapter | HPE0000000009 |
| 879482-B21 | HPE InfiniBand FDR/Ethernet 40/50Gb 2-port 547FLR-QSFP Adapter | HPE0000000022 |

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Online Firmware Upgrade Utility (Windows x64) for HPE Mellanox VPI (Ethernet and Infiniband mode) ConnectX6 devices on Windows x86_64 platformVersion: 1.0.0.3 **(Recommended)**Filename: cp044872.compsig; cp044872.exe **Important Note!**

**ConnectX-6 VPI supports having one port as InfiniBand and the other port as Ethernet according to the following matrix of combinations.**

| **Port #2 - InfiniBand** | | | | |
|---|---|---|---|---|
| **Port #1 – Ethernet** | **HDR/HDR100** | **EDR** | **FDR** | **QDR** |
| **50GbE** | supported | not supported | not supported | supported |
| **100GbE/25GbE** | supported | not supported | not supported | supported |
| **40GbE/10GbE** | supported | not supported | not supported | supported |
| **1GbE** | supported | not supported | not supported | supported |

| **Port #2 - Ethernet** | | | | |
|---|---|---|---|---|
| **Port #1 - InfiniBand** | **50GbE** | **100GbE/25GbE** | **40GbE/10GbE** | **1GbE** |
| **HDR / HDR100** | supported | supported | not supported | supported |
| **EDR** | supported | supported | not supported | supported |
| **FDR** | not supported | not supported | not supported | not supported |

| | | | | |
|---|---|---|---|---|
| **QDR/SDR** | supported | supported | not supported | supported |

**Prerequisites**

Use iLO5 firmware version 2.30 or higher with ConnectX6 firmware version 20.27.6008. Thermal sensor reporting on the adapter will not be functional with older versions of iLO5 firmware.

**Fixes**

**The following issues have been fixed in version 20.29.1016:**

Changed the default value of DCQCN's (Data center- Quantized Congestion Notification) NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An issue that prevented VXLAN packets with svlan/cvlan tag from being matched.

The eth_wqe_too_small counter to count ODP (On-Demand Paging) page used to fail.

An issue related to raising 100GbE link on ConnectX-6 VPI 100Gb/s adapter cards.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) will take longer than when MKEY_BY_NAME is disabled.

Low performance occurred after enabling the RoCE Accelerator capability.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

**Enhancements**

**Firmware for the following devices are updated to 20.29.1016:**

HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 x16 Adapter - P06154-B21
HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 x16 Adapter - P06250-B21
HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 x16 Adapter - P06251-B21

**New Features and Changes in Version 20.29.1016:**

Added support for following features:

LinkX module burning via MFT toolset. The new capability enables direct firmware burning from the internal flash storage to reduce the bandwidth and accelerate the burning process, including burning several modules at a time.

An option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.

Improved NRZ link performance (RX algorithm).

Improved NRZ link-up time (25G\50G\100G speeds).

Enabled the options to control different Tx sets for the same attribute when connecting a Mellanox-Mellanox vs Mellanox to 3rd party HCA.

"InfiniBand" properties set to the Network Device Function Redfish object.

Direct Packet Placement (DPP): DPP is a receive side transport service in which the Ethernet packets are scattered to the memory according to a packet sequence number (PSN) carried by the packet, and not by their arrival order.

To enable DPP offload, the software should create a special RQ by using the CREATE_RQ command, and set DPP relevant attributes.

Added trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.

Enhanced IB Congestion Control to support lower minimum rate. Now it uses destination-lid to classify flows to handle larger scale, and achieve better results in GPCNeT benchmark.

Hardware steering dump output used for debugging and troubleshooting.

**Supported Devices and Features**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| P06154-B21 | HPE InfiniBand HDR/Ethernet 200Gb 1-port 940QSFP56 x16 Adapter | HPE0000000034 |
| P06250-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 1-port 940QSFP56 x16 Adapter | HPE0000000035 |
| P06251-B21 | HPE InfiniBand HDR100/Ethernet 100Gb 2-port 940QSFP56 x16 Adapter | HPE0000000036 |

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Online Firmware Upgrade Utility (Windows x64) for HPE Mellanox VPI (Ethernet and Infiniband mode) devices on Windows x86_64 platformVersion: 1.0.0.12 **(Recommended)**Filename: cp045905.compsig; cp045905.exe **Important Note!**

**Known Issues in firmware 2.42.5000, 2.42.5056, 2.42.5700:**

When using the Quad Small Form-factor Pluggable (QSFP) module RTXM320-581, and performing a driver restart for the firmware upgrade/downgrade to take effect, the link does not come up.
**Workaround**: Reboot the server.

Enabling/disabling cq_timestamp using mlxconfig is not supported.

In a card with 2 separate LEDs scheme (a Phy LED and a logic LED) only the Phy LED will lit. Meaning, the orange LED will not be active while the ETH link is in an idle mode.

In SR-IOV setup, using mlxconfig when the Packet Filter (PF) is passed through to a VM requires a reboot of the Hypervisor.

Downgrading from v2.30.8000 or later to an earlier version than 2.30.8000 requires server reboot.
**Workaround**: Reboot the server.

On ConnectX-3 Ethernet adapter cards, there is a mismatch between the GUID value returned by firmware management tools and that returned by fabric/ driver utilities that read the GUID via device firmware (e.g., using ibstat). Mlxburn/flint return 0xffff as GUID while the utilities return a value derived from the MAC address. For all driver/firmware/software purposes, the latter value should be used.
**Workaround**: Please use the GUID value returned by the fabric/driver utilities (not 0xfffff).

SBR should be asserted for a minimum of 50 milliseconds for the ConnectX-3 adapters.

On Pilot1 SL230, PCIe link occasionally does not come up at Gen3 speed.

RHEL6.3 Inbox driver causes kernel panic when SRIOV is enabled on VPI cards due to driver compatibility issue.

**Workaround**: Set the "do_- sense=false" parameter in the [IB_TAB] i.

In advanced steering mode, side band management connectivity may be lost when having more than 8 QP per mcg.

When SR-IOV is disabled in the system BIOS, a PCI issue is noticed in Ubuntu v12.04.3 with Linux kernel v3.8 which affects NICs of several manufacturers including Mellanox's, preventing them from operating.
**Workaround**: Enable SR-IOV in the BIOS.

Mellanox Firmware Tools (MFT) might leave the flash semaphore locked if the tool operation is forced stopped. The locked semaphore prevents the firmware from accessing the flash and causes firmware hang.
**Workaround**: Clear the semaphore using MFT command: 'flint -clear_semaphore'

Cable Info MAD reports a wrong cable info when using the MC2210411-SR4 module.

Gen2 failure at temperature sweep up to 10C/min (for MT27518A1-FDIR-BV only)..

PCIe Gen2 link unstable at temperature sweep of 10C/min for MT27518A1-FDIR-BV.

Bloom filter is currently not supported.

When downgrading from firmware v2.11.0000 and using MFT 3.0.0-3, the following message is displayed due to the mlxconfig tool: You are trying to override configurable FW by non-configurable FW. If you continue, old FW configurations will be cleared, do you want to continue ? (y/n) [n] : y You are trying to restore default configuration, do you want to continue ? (y/n) [n] : y.

DMFS should not be enabled when working with InfiniBand on MLNX_OFED-2.0.3

ConnectX®-3 Pro VF device ID is presented the same as ConnectX®-3 VF device ID due to driver limitations.
**Workaround**: Use the physical function device ID to identify the device.

Virtual Product Data (VPD) read-only fields are writable.
**Workaround**: Do not write to read-only fields if you wish to preserve them.

When working in Virtual Path Identifier (VPI) mode with port1 FDR and port2 40G, error counters misbehave and increase rapidly.

Setting the device to 128Byte CQ/EQ stride will cause misbehavior of sideband management resulting in communication loss.

CQ and EQ cannot be configured to different stride sizes.

Changing port protocol from ETH to IB on port with NCSI/IPMI enabled while the port is connected to ETH switch is not supported.
**Workaround**: 1. Unplug the cable from the switch 2. Restart driver 3. Change the protocol via the appropriate tools.

Adapter card MCX349A-XCCN may experience longer linkup times of a few seconds with specific switches.

Adapter card MCX349A-XCCN does not respond to ethtool “identify” command (ethtool -p/--identify).

Remote Desktop Protocol (RDP) over IPv6 is currently not functional.
**Workaround**: Set the default RoCE mode in the software to RoCE v2 (also when not using RoCE)

Sniffer QP cannot be removed from the regular rule after adding the QP with insertion scheme equals to “push to that rule”.

Since only a single Boot Entry Vector (BEV) per PCI Physical Function is supported, disabling the first port causes the second port to disappear as well.

The NIC does not notify the driver of a link-down incident when a cable is unplugged from a NIC port with 56GbE port link.

56GbE link is not raised when using 100GbE optic cables.

When working with MLNX_OFED v3.3-1.0.0.0, server reboot could get stuck due to a kernel panic in mlx4_en_get_drvinfo() that is called from asynchronous event handler.

When running ibdump, loopback traffic is mirroring into the kernel driver.

MAC address that are set from the OS using ifconfig are not reflected in the OCBB buffer.

The adapter card cannot raise a 10G link vs. a 40GE capable switch port in C7000 enclosure. It can raise a 1G Link and only if the switch port allows it.

MTUSB communication via I2C header on primary I2C bus is supported only in live-fish mode.

## Fixes

### Fixes in version 2.42.5000:

PortRcvPkts counter was prevented from being cleared after resetting it.

The system Timed Out on the configuration cycle of the Virtual Functions (VFs) when more than 10 Virtual Functions performed FLR and the completion Time Out value was configured to a range of less than 16 msec.

The server hangs and results in NMI when running “mlxfwtop –d mt4103_pci_cr0” while restarting the driver in parallel (from a different thread). In this case, the downstream bridge over the device reported completion timeout error.

In flow_steering, BMC could not receive a ping over IPV6 after running bmc_reboot.

While closing the HCA, the RX packet caused bad access to resources that did not exist, and consequently caused the QPCGW or the irisc to get stuck.

The master SMLID and the LID was either 0 or 0xFFFF when the port was neither active nor armed.

ibdump could not capture all MADs packets.

link did not go up after reboot.

Fixed a rare issue that cause the PCIe configuration cycle that arrived during the time of sw_reset to generate 2 completions.

Network Controller Sideband Interface (NC-SI) did not work when adding the disable_static_steering_ini field in the ini file, due to memory allocation issue for this field in the scratchpad.

**Fixes in version 2.42.5056:**

Fixed an issue that resulted in reading from invalid I/O address on handover from UEFI boot to OS boot, when a port was configured as InfiniBand on a VPI adapter device.

**Enhancements**

**Firmware for the following devices are updated to 2.42.5000:**
764282-B21
764286-B21

**Firmware for the following devices are updated to 2.42.5056:**
764283-B21
764284-B21

**Firmware for the following device is updated to 2.42.5700:**
764285-B21

**New features in firmware version 2.42.5000:**

Added support for the following features.

new TLV: CX3_GLOBAL_CONF to enable/disable timestamp on incoming packets through mlxconfig configuration.

User MAC configuration.

Automatically collecting mstdump before driver reset.

A mechanism to detect DEAD_IRISC (plastic) from TPT (iron) and raise an assert.

A new field is added to "set port" command which notifies the firmware what is the user_mtu size.

Improved the debug ability for command timeout cases.

**New features and changes in firmware version 2.42.5700.**

Modified the mlx_cmd_get_mlx_link_status command return value to return "Link Type = Ethernet" in Ethernet adapter cards.

**Supported Devices and Features**

**Supported Devices:**

| HPE Part Number | Device Name | PSID |
|---|---|---|
| 764282-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter | HPE_1350110023 |
| 764283-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter | HPE_1360110017 |
| 764284-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter | HPE_1370110017 |
| 764285-B21 | HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter | HPE_1380110017 |
| 764286-B21 | HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter | HPE_1390110023 |

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Online Firmware Upgrade Utility (Windows x64) for Mellanox ConnectX6Dx Open Ethernet cardsVersion: 1.0.0.3 **(Recommended)**Filename: cp044271.compsig; cp044271.exe **Important Note!**

**Important Notes:**

Security Hardening Enhancements: This release contains important reliability improvements and security hardening enhancements. Mellanox recommends upgrading your devices firmware to this release to improve the devices' firmware security and reliability.

Single-root input/output virtualization (SR-IOV) - Virtual Functions (VF) per Port - The maximum Virtual Functions (VF) per port is 127.

It is recommended to enable the "above 4G decoding" BIOS setting for features that require large amount of PCIe resources. Such features are: Single-root input/output virtualization (SR-IOV) with numerous Virtual Functions (VFs), PCIe Emulated Switch, and Large BAR Requests.

**Known Issues:**

Multi-APP QoS is not supported when LAG is configured.

Workaround: N/A

When Emulated PCIe Switch is enabled, and more than 8 PFs are enabled, the OS boot process might halt.

Workaround: N/A

When Emulated PCIe Switch is enabled, and the OS does resource reallocation, the OS boot process might halt.

Workaround: N/A

Unable to complete migration when virtio device is in high traffic load (20/20 MPPS) as although vDPA hardware offload solution can support higher speed than the software solution, it needs to enable QEMU auto-converge to complete migration.

Workaround: Turn auto-converge on by adding "--auto-converge". For example: virsh migrate --verbose --live --persistent gen-l-vrt-295-005CentOS-7.4 qemu+ssh://gen-l-vrt-295/system --unsafe --auto-converge

Using the Eye-Opening tool might cause degradation in the link speed or link down events.

Workaround: N/A

Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.

Workaround: Use full reset flow for firmware upgrade/downgrade.

On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.

Workaround: If such issue is observed:

Enable ZTT to overcome the high latency. Run: mlxconfig -d <mst device> set ZERO_TOUCH_TUNING_ENABLE=1 .

Reset or power cycle the firmware for change to take effect .

Eye-opening can cause effective errors on the port.

Workaround: N/A

Connection to BMC is lost after applying Phyless reset following an AC-Cycle.

Workaround: N/A

Phyless Reset functionality is not supported when updating firmware from v22.28.4000 (and below) to v22.29.1000.

Workaround: N/A

The following are the Steering Dump limitations:

Supported only on ConnectX-5 adapter cards.

Requires passing the version (FW/Stelib/MFT) and device type to stelib.

Re-format is not supported Advanced multi-port feature is not supported – LAG/ROCE_AFFILIATION/MPFS_LB/ ESW_LB (only traffic vhca <-> wire).

Packet types supported:

Layer 2 Eth

Layer 3 IPv4/Ipv6/Grh

Layer 4 TCP/UDP/Bth/GreV0/GreV1

Tunneling VXLAN/Geneve/GREv0/Mpls FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86

FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86.

Workaround: N/A

When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf's ancestors.

Workaround: To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share

**Prerequisites**

Use iLO5 firmware version 2.30 or higher with ConnectX5/ConnectX6 firmware version 22.27.6008. Thermal sensor reporting on the adapter will not be functional with older versions of iLO5 firmware.

**Fixes**

**Following issues have been resolved in firmware version 22.29.1016:**

Traffic for virtio hardware offload solution was prevented from "iperf3" in Windows Operating System.

Traffic for virtio hardware offload solution was prevented from "iperf3 -i 512".

The struct virtio_net_hdr was not set properly by the virtio hardware offload solution. The following message appeared in dmesg during traffic: "bad gso: type xx, size: xx".

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs were configured, VM restart (VF/PF FLR) might had taken longer than that of when MKEY_BY_NAME was disabled.

TCP/IP traffic received by the guest kernel with version higher than 4.10 were unstable because of corrupted GSO header. The following message could be seen from dmegs: "bad gso: type: xx, size: xxxx".

Enabling the RoCE Accelerator capability resulted in low performance
Note: The fix is available when all ports are set as Ethernet.

On rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

**Enhancements**

**Firmware for the following devices is updated to 22.29.1016:**

P25960-B21 (HPE Ethernet 100Gb 2-Port QSFP56 MCX623106AS-CDAT Adapter)

P10180-B21 (Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE)

**New features and changes in version 22.29.1016:**

Improved NRZ link performance (RX algorithm).

Improved NRZ link-up time (25G\50G\100G speeds).

UCX can now enable AR by exposing Out-Of-Ordering bitmask per SL with "ooo_per_sl" field in the HCA_VPORT context. It can be also queried by running the QUERY_HCA_VPORT_CONTEXT command.

Optimized vDPA performance for PPS in scalability of up to 127 devices per port.

When using a Multi-Host device, the firmware can now discover who is the external SmartNIC host (the Embedded CPU PF (ECPF) ) with the highest index that is responsible for performing offload activities to the adapter card.

Hardware steering dump output used for debugging and troubleshooting.

Changed the default value of DCQCN's NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

**Added support for the following features:**

Eye-Opening: supported only when using NRZ signal. (Beta)

Option to allow applications to build their own QoS tree over the NIC hierarchy by connecting QPs to responder/requestor Queue Groups.

"InfiniBand" properties set to the Network Device Function Redfish object.

Direct Packet Placement (DPP): DPP is a receive side transport service in which the Ethernet packets are scattered to the memory according to a packet sequence number (PSN) carried by the packet, and not by their arrival

order. To enable DPP offload, the software should create a special RQ by using the CREATE_RQ command and set DPP relevant attributes.

Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

Error statistics and reporting for vDPA.

IPv6 TSO offload.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P25960-B21 | HPE Ethernet 100Gb 2-Port QSFP56 MCX623106AS-CDAT Adapter | MT_0000000437 |
| P10180-B21 | Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE | MT_0000000435 |

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Online Firmware Upgrade Utility (Windows x64) for Mellanox Open Ethernet cardsVersion: 1.0.0.4 **(Recommended)**Filename: cp045143.compsig; cp045143.exe **Important Note!**

**Known Issues in firmware 14.29.1016:**

Sub 1sec firmware update (fast reset flow) is not supported when updating from previous releases to the current one. Doing so may cause network disconnection events.
Workaround: Use full reset flow for firmware upgrade/downgrade.

On systems with high PCIe latency (2us or above), lower bandwidth may be experienced.
Workaround: If such issue is observed:

Enable ZTT to overcome the high latency. Run: mlxconfig -d <mst device> set ZERO_TOUCH_TUNING_ENABLE=1

Reset or power cycle the firmware for change to take effect

Low performance might be experienced when upgrading from previous firmware version to 14.29.1000 when using “Fast FW Reset”.

The following are the Steering Dump limitations:

Supported only on ConnectX-5 adapter cards.

Requires passing the version (FW/Stelib/MFT) and device type to stelib.

Re-format is not supported

Advanced multi-port feature is not supported – LAG/ROCE_AFFILIATION/MPFS_LB/ ESW_LB (only traffic vhca <-> wire).

Packet types supported:

Layer 2 Eth

Layer 3 IPv4/Ipv6/Grh

Layer 4 TCP/UDP/Bth/GreV0/GreV1

Tunneling VXLAN/Geneve/GREv0/Mpls FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

FlexParser protocols are not supported (e.g AliVxlan/VxlanGpe etc..).

Compiles only on x86

Congestion Control may not work properly if the card supports two ports and each PF for each port is not raised at the same time.

**Known Issues with firmware version 16.29.1016:**

Multi-APP QoS is not supported when LAG is configured.

When PER_PF_NUM_SF=1 (per PF configurations are used for SFs), if the number of SFs configured for a PF is 0 (PF_TOTAL_SF=0), than the firmware wrongly opens BAR2 with size 128KB.
Workaround: N/A

When configuring adapter card's Level Scheduling, a QoS tree leaf (QUEUE_GROUP) configured with default rate_limit and default bw_share, may not obey the QoS restrictions imposed by any of the leaf's ancestors.
Workaround: To prevent such a case, configure at least one of the following QoS attributes of a leaf: max_average_bw or bw_share.

Occasionally, Tag Matching RNDV and NVME emulation was not behaving as expected.
Workaround: N/A

Note: On Adapter Firmware rewrite scenario, SUM will always discover the Mellanox Open adapter firmware smart component as applicable and select it for deployment If the server iLO5 firmware version is older than 2.30.

**Fixes**

**Following issues have been fixed in firmware version 14.29.1016 and 16.29.1016:**

Changed the default value of DCQCN's NP parameter min_time_between_cnps to 4 on all devices to support larger scalability of cluster.

An issue that caused packets to drop due to header size issues and/or failing checks. This issue was caused due to a Linux issue that caused VFs to set the wrong header size value in wqe_inline_header_mode input.

When MKEY_BY_NAME was enabled by NVCONFIG and a large number of VFs are configured, VM restart (VF/PF FLR) might take longer than when MKEY_BY_NAME was disabled.

In rare cases, a fatal error related to errors from the PCI transport layer might be reported during FLR.

An issue that caused the device to go to dead IRISC as one of the firmware semaphores could not be released when a speed change or port state change was triggered.

**Following issues have been fixed in firmware version 16.29.1016:**

An issue that caused the eth_wqe_too_small counter to count ODP page faults.

A low performance was observed after enabling the RoCE Accelerator capability.

**Enhancements**

**Firmware for the following devices is updated to 14.29.1016:**

P21930-B21 (HPE Ethernet 10Gb 2-port SFP+ MCX4121A-XCAT Adapter)
P11341-B21 (HPE Ethernet 10Gb 2-port SFP+ MCX4621A-ACAB OCP3 Adapter)

**Firmware for the following devices is updated to 16.29.1016:**

P13188-B21 (HPE Ethernet 10/25Gb 2-port SFP28 MCX512F-ACAT Adapter)
P21927-B21 (HPE Ethernet 100Gb 2-Port QSFP28 MCX516A-CCHT Adapter)
P10112-B21 (HPE Ethernet 10/25Gb 2-port SFP28 MCX562A-ACAI OCP3 Adapter)

**This release contains important reliability improvements and security hardening enhancements. Upgrade the firmware of the device to this release to improve the devices' firmware security and reliability.**

**New Feature and Changes in Version 14.29.1016 and 16.29.1016:**

Ethernet wqe_too_small Mode: A per vPort that counts the number of packets that reached the Ethernet RQ but cannot fit into the WQE due to their large size. Additionally, we added the option to control if such packet will cause "CQE with Error" or "CQE_MOCK".

Hardware steering dump output used for debugging and troubleshooting.

Added support for the following features:

cq_overrun counter: The counter represents the number of times CQs enter an error state due to overflow that occur when the device tries to post a CQE into a full CQ buffer.

Enabled the capability to allow Virtual Functions to send Pause Frames packets. (Beta)

Enabled 10/25GbE auto-sensing with 3rd party when using 10/25GbE optical cables.

**New Feature and Changes in Version 16.29.1016:**

Hardware steering dump output used for debugging and troubleshooting.

Added support for the following features:

HW support for Flow Metering to utilize Advanced Steering Operation (ASO). HW Flow Meter allows higher scale, more accuracy, and better performance compare to the FW Flow Metering.

Trust level for VFs. Once the VF is trusted, it will get a set of trusted capabilities.

2 new Mini CQE formats:

Responder Mini CQE With Flow Tag Layout.

Responder Mini CQE With l3_l4_info Layout.

Steering DP hash flow groups.

ignore_flow_level is now enabled by the TRUST LEVEL access registry.

**Supported Devices and Features**

| HPE Part Number | Mellanox Ethernet Only Adapters | PSID |
|---|---|---|
| P21930-B21 | HPE Ethernet 10Gb 2-port SFP+ MCX4121A-XCHT Adapter | MT_0000000414 |
| P11341-B21 | HPE Ethernet 10Gb 2-port SFP+ MCX4621A-ACAB OCP3 Adapter | MT_0000000238 |
| P13188-B21 | HPE Ethernet 10/25Gb 2-port SFP28 MCX512F-ACHT Adapter | MT_0000000416 |
| P10112-B21 | HPE Ethernet 10/25Gb 2-port SFP28 MCX562A-ACAI OCP3 Adapter | MT_0000000241 |
| P21927-B21 | HPE Ethernet 100Gb 2-port QSFP28 MCX516A-CCHT Adapter | MT_0000000417 |

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Firmware – NVDIMM Top

Firmware Package - 16GB NVDIMM-N DDR4-2666Version: 1.04 (A) **(Recommended)**Filename: nvdimm-16gb_1.04.fwpkg

**Fixes**

Initial relaese.

**Enhancements**

Initial release.

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Firmware package for HPE Persistent Memory featuring Intel Optane DC Persistent Memory on HPE Gen10 ServersVersion: 01.02.00.5435 (B) **(Recommended)**Filename: dcpmm_01.02.00.5435.fwpkg **Important Note!**

This software package contains Intel Optane DC Persistent Memory Firmware version 1.2.0.5435

**Enhancements**

This product contains mainly performance improvements.

This product now supports Red Hat Enterprise Linux 8, SUSE Linux Enterprise Server 12 and VMware ESXi 7.0.

**Supported Devices and Features**

This package supports the following Memory Devices:

HPE 512GB 2666 Persistent Memory Kit featuring Intel Optane DC Persistent Memory

HPE 256GB 2666 Persistent Memory Kit featuring Intel Optane DC Persistent Memory

HPE 128GB 2666 Persistent Memory Kit featuring Intel Optane DC Persistent Memory

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Online Flash Component for Linux - 16GB NVDIMM-N DDR4-2666Version: 1.04 (A) **(Optional)**Filename: RPMS/x86_64/firmware-nvdimm-16gb-1.04-1.1.x86_64.compsig; RPMS/x86_64/firmware-nvdimm-16gb-1.04-1.1.x86_64.rpm **Fixes**

Initial release.

**Enhancements**

Initial release.

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Online Flash Component for Linux - HPE Persistent Memory featuring Intel Optane DC Persistent Memory on HPE Gen10 ServersVersion: 1.2.0.5435 (B) **(Recommended)**Filename: RPMS/x86_64/firmware-dcpmm-1.2.0.5435-2.1.x86_64.compsig; RPMS/x86_64/firmware-dcpmm-1.2.0.5435-2.1.x86_64.rpm **Important Note!**

This software package contains Intel Optane DC Persistent Memory Firmware version 1.2.0.5435

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Enhancements**

Initial release of Firmware for HPE Persistent Memory for Gen10 Servers.

This product contains mainly performance improvements.

This product now supports Red Hat Enterprise Linux 8 and SUSE Linux Enterprise Server 12.

**Supported Devices and Features**

This package supports the following Memory Devices:

HPE 512GB 2666 Persistent Memory Kit featuring Intel Optane DC Persistent Memory

HPE 256GB 2666 Persistent Memory Kit featuring Intel Optane DC Persistent Memory

HPE 128GB 2666 Persistent Memory Kit featuring Intel Optane DC Persistent Memory

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Online Flash Component for Windows x64 - 16GB NVDIMM-N DDR4-2666Version: 1.04 (A) **(Optional)**Filename: cp037531.compsig; cp037531.exe **Fixes**

Initial relaese.

**Enhancements**

Initial release.

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Online Flash Component for Windows x64 - HPE Persistent Memory featuring Intel Optane DC Persistent Memory on HPE Gen10 ServersVersion: 1.2.0.5435 **(Recommended)**Filename: cp042965.compsig; cp042965.exe **Important Note!**

This software package contains Intel Optane DC Persistent Memory Firmware version 1.2.0.5435

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Enhancements**

Initial release of Firmware for HPE Persistent Memory for Gen10 Servers.

This product contains mainly performance improvements.

**Supported Devices and Features**

This package supports the following Memory Devices:

HPE 512GB 2666 Persistent Memory Kit featuring Intel Optane DC Persistent Memory

HPE 256GB 2666 Persistent Memory Kit featuring Intel Optane DC Persistent Memory

HPE 128GB 2666 Persistent Memory Kit featuring Intel Optane DC Persistent Memory

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**Firmware - PCIe NVMe Storage Disk** Top

Online NVMe SSD Flash Component for Linux (x64) - MK000400KWDUK, VK000480KWDUE, MK000800KWDUL, VK000960KWDUF, MK001600KWDUN and VK001920KWDUH DrivesVersion: HPK4 (E) **(Recommended)**
Filename: rpm/RPMS/x86_64/firmware-hdd-b45e49679c-HPK4-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-b45e49679c-HPK4-5.1.x86_64.rpm

**Enhancements**

Added support for RHEL 8.3

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Online NVMe SSD Flash Component for Linux (x64) - MO0400KEFHN, MO0800KEFHP, MO1600KEFHQ, MO2000KEFHR, MT0800KEXUU and MT1600KEXUV DrivesVersion: HPK4 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-2a5b65f157-HPK4-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-2a5b65f157-HPK4-5.1.x86_64.rpm **Enhancements**

Added support for RHEL 8.2

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Online NVMe SSD Flash Component for Linux (x64) - VS000480KWDUP, VS000960KWDUQ, MS000400KWDUR and MS000800KWDUT DrivesVersion: HPK4 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-95a2e5abcb-HPK4-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-95a2e5abcb-HPK4-5.1.x86_64.rpm **Enhancements**

Added support for RHEL 8.3

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Online NVMe SSD Flash Component for Linux (x64) - LO0400KEFJQ, LO0800KEFJR, LO1600KEFJT, LO2000KEFJU, LT0800KEXVA, LT1600KEXVB and LT2000KEXVC DrivesVersion: HPK4 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-d64642c780-HPK4-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-d64642c780-HPK4-5.1.x86_64.rpm **Enhancements**

Added support for RHEL 8.2

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Online NVMe SSD Flash Component for Linux (x64) - MK000800KWWFE, MK001600KWWFF, MK003200KWWFH, MK006400KWWFK, VK000960KWWFL, VK001920KWWFN, VK003840KWWFP and VK007680KWWFQ DrivesVersion: HPK3 (E) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-54addf5312-HPK3-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-54addf5312-HPK3-5.1.x86_64.rpm **Fixes**

This FW change resolves a MCTP VDM compliance issue seen by iLO version 2.30.

For more information, refer to HPE Customer Advisory at the following URL:
https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00111061en_us

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Online NVMe SSD Flash Component for Linux (x64) - MO001600KWVNB, MO003200KWVNC, MO006400KWVND, MT001600KWSTB, MT003200KWSTC and MT006400KWSTD DrivesVersion: HPK3 **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-cea219e4b1-HPK3-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-cea219e4b1-HPK3-1.1.x86_64.rpm **Fixes**

Fixed SSD weargauge report error issue.

Fixed Assign FWState as TR_DONE_ERR at the correct location.

Prepare proper response data for Get Message Type Supported MCTP Command.

Added code to preserve current feature values cross live firmware update.

Allocate 4 bytes instead of 2 bytes for parameter code.

Changed the value for NLB equal to NSize -1.

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Online NVMe SSD Flash Component for Linux (x64) - MO001600KWZQP and MO003200KWZQQ DrivesVersion: HPK5 **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-95b6ae2e85-HPK5-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-95b6ae2e85-HPK5-1.1.x86_64.rpm **Fixes**

Optimized T-offset setting.

Change MQES setting to 8192.

Fixed LED Behavior misaligned specs issue.

Fixed performance drop issue when 4+ SSD are installed.

The Idle Power Management fix to keep the drive from entering and exiting the Lower Power Idle mode too frequently.

For more information, refer to HPE Customer Advisory at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00112800en_us

**Enhancements**

Added support for RHEL 8.3

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Online NVMe SSD Flash Component for Linux (x64) - MT001600KWHAC, MT003200KWHAD and MT006400KWHAE DrivesVersion: HPK1 (C) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-8e8ddc5265-HPK1-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-8e8ddc5265-HPK1-3.1.x86_64.rpm **Fixes**

Firmware corrects an issue where the drive will be in a failed state after an unexpected power loss. When this occurs the drive will not recover after subsequent power cycles and will not be accessible by the system configuration and Host applications.

Refer Customer Bulletin for workarounds https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00042733en_us

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Online NVMe SSD Flash Component for Linux (x64) - MZPLJ1T6HBJR-000H3, MZPLJ3T2HBJR-000H3 and MZPLJ6T4HALA-000H3 DrivesVersion: EPK74H3Q **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-6628fce235-EPK74H3Q-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-6628fce235-EPK74H3Q-1.1.x86_64.rpm **Fixes**

Optimized T-offset setting.

Change MQES setting to 8192.

Fixed LED Behavior misaligned specs issue.

Fixed performance drop issue when 4+ SSD are installed.

The Idle Power Management fix to keep the drive from entering and exiting the Lower Power Idle mode too frequently.

For more information, refer to HPE Customer Advisory at the following URL:
https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00112800en_us

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Online NVMe SSD Flash Component for Linux (x64) - MZXL5800HBHQ-000H3, MZXL51T6HBJR-000H3, MZXL53T2HBLS-000H3, MZXL56T4HALA-000H3, MZXL512THALA-000H3, MZXL5960HBHQ-000H3, MZXL51T9HBJR-000H3, MZXL53T8HBLS-000H3, MZXL57T6HALA-000H3 and MZXL515THALA-00H3 DriveVersion: MPK73H5Q **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-e320db791d-MPK73H5Q-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-e320db791d-MPK73H5Q-1.1.x86_64.rpm **Fixes**

Optimized T-offset setting.

Change MQES setting to 8192.

Code change to set 'Slot Clock Configuration bit in Link Status register.

Fixed LED Behavior misaligned specs issue.

Fixed performance drop issue when 4+ SSD are installed.

The Idle Power Management fix to keep the drive from entering and exiting the Lower Power Idle mode too frequently.

For more information, refer to HPE Customer Advisory at the following URL:
https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00112800en_us

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Online NVMe SSD Flash Component for Linux (x64) - VO001000KWJSE, VO002000KWJSF, VO004000KWJSH, VT004000KWJSU, MO001600KWJSN and MO003200KWJSQ DrivesVersion: 4ICDHPK1 **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-1656c1b14a-4ICDHPK1-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-1656c1b14a-4ICDHPK1-1.1.x86_64.rpm **Fixes**

This firmware corrects the potential for a drive to become disabled and nonfunctional during certain conditions or workloads.

After the drive is upgraded to firmware version HPK1, it cannot be downgraded to firmware version HPK0.

**Enhancements**

Added support for RHEL 8.3

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Online NVMe SSD Flash Component for Linux (x64) - VO001920KWVMT, VO003840KWVMU, and VO007680KWVMV DrivesVersion: HPK3 **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-fe9c474847-HPK3-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-fe9c474847-HPK3-1.1.x86_64.rpm **Fixes**

Fixed SSD weargauge report error issue.

Fixed Assign FWState as TR_DONE_ERR at the correct location.

Prepare proper response data for Get Message Type Supported MCTP Command.

Added code to preserve current feature values cross live firmware update.

Allocate 4 bytes instead of 2 bytes for parameter code.

Changed the value for NLB equal to NSize -1.

---

Online NVMe SSD Flash Component for Linux (x64) - VO001920KWZQR and VO003840KWZQT DrivesVersion: HPK5 **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-2af7385a1e-HPK5-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-2af7385a1e-HPK5-1.1.x86_64.rpm **Fixes**

Optimized T-offset setting.

Change MQES setting to 8192.

Fixed LED Behavior misaligned specs issue.

Fixed performance drop issue when 4+ SSD are installed.

The Idle Power Management fix to keep the drive from entering and exiting the Lower Power Idle mode too frequently.

For more information, refer to HPE Customer Advisory at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00112800en_us

**Enhancements**

Added support for RHEL 8.3

---

Online NVMe SSD Flash Component for Linux (x64) - VO0400KEFJB, VO1200KEFJC and VO2000KEFJD DrivesVersion: HPK4 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-9a826ccd8a-HPK4-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-9a826ccd8a-HPK4-5.1.x86_64.rpm **Enhancements**

Added support for RHEL 8.2

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Online NVMe SSD Flash Component for Linux (x64) - VS000480KXALB DriveVersion: 85030G00 (B) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-805abb7e9c-85030G00-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-805abb7e9c-85030G00-2.1.x86_64.rpm **Enhancements**

Added Support for RHEL 8.2

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Online NVMe SSD Flash Component for VMware ESXi - MK000400KWDUK, VK000480KWDUE, MK000800KWDUL, VK000960KWDUF, MK001600KWDUN and VK001920KWDUH DrivesVersion: HPK4 (F) **(Recommended)**Filename: CP045714.compsig; CP045714.zip **Important Note!**

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

---

Online NVMe SSD Flash Component for VMware ESXi - MO001600KWZQP and MO003200KWZQQ DrivesVersion: HPK5 **(Critical)**Filename: CP045989.compsig; CP045989.zip **Fixes**

Optimized T-offset setting.

Change MQES setting to 8192.

Fixed LED Behavior misaligned specs issue.

Fixed performance drop issue when 4+ SSD are installed.

The Idle Power Management fix to keep the drive from entering and exiting the Lower Power Idle mode too frequently.

For more information, refer to HPE Customer Advisory at the following URL:
https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00112800en_us

**Enhancements**

Added support for VMware 7.0 U1

Online NVMe SSD Flash Component for VMware ESXi - MO0400KEFHN, MO0800KEFHP, MO1600KEFHQ, MO2000KEFHR, MT0800KEXUU and MT1600KEXUV DrivesVersion: HPK4 (C) **(Recommended)**Filename: CP043753.compsig; CP043753.zip **Important Note!**

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0

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Online NVMe SSD Flash Component for VMware ESXi - MT001600KWHAC, MT003200KWHAD and MT006400KWHAE DrivesVersion: HPK1 **(Critical)**Filename: CP050549.compsig; CP050549.zip **Fixes**

Firmware corrects an issue where the drive will be in a failed state after an unexpected power loss. When this occurs the drive will not recover after subsequent power cycles and will not be accessible by the system configuration and Host applications.

Refer Customer Bulletin for workarounds https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00042733en_us

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Online NVMe SSD Flash Component for VMware ESXi - VO001920KWVMT, VO003840KWVMU, and VO007680KWVMV DrivesVersion: HPK3 **(Recommended)**Filename: CP046658.compsig; CP046658.zip **Fixes**

Fixed SSD weargauge report error issue.

Fixed Assign FWState as TR_DONE_ERR at the correct location.

Prepare proper response data for Get Message Type Supported MCTP Command.

Added code to preserve current feature values cross live firmware update.

Allocate 4 bytes instead of 2 bytes for parameter code.

Changed the value for NLB equal to NSize -1.

---

Online NVMe SSD Flash Component for VMware ESXi - VO001920KWZQR and VO003840KWZQT DrivesVersion: HPK5 **(Critical)**Filename: CP045993.compsig; CP045993.zip **Fixes**

Optimized T-offset setting.

Change MQES setting to 8192.

Fixed LED Behavior misaligned specs issue.

Fixed performance drop issue when 4+ SSD are installed.

The Idle Power Management fix to keep the drive from entering and exiting the Lower Power Idle mode too frequently.

For more information, refer to HPE Customer Advisory at the following URL:
https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00112800en_us

**Enhancements**

Added support for VMware 7.0 U1

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Online NVMe SSD Flash Component for VMware ESXi - VS000480KWDUP, VS000960KWDUQ, MS000400KWDUR and MS000800KWDUT DrivesVersion: HPK4 (D) **(Recommended)**Filename: CP045692.compsig; CP045692.zip **Important Note!**

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online NVMe SSD Flash Component for VMware ESXi - LO0400KEFJQ, LO0800KEFJR, LO1600KEFJT, LO2000KEFJU, LT0800KEXVA, LT1600KEXVB, and LT2000KEXVC DrivesVersion: HPK4 (D) **(Recommended)**Filename: CP044498.compsig; CP044498.zip **Important Note!**

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc.

**Enhancements**

Added support for VMware 7.0

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Online NVMe SSD Flash Component for VMware ESXi - MK000800KWWFE, MK001600KWWFF, MK003200KWWFH, MK006400KWWFK, VK000960KWWFL, VK001920KWWFN, VK003840KWWFP and VK007680KWWFQ DrivesVersion: HPK3 (B) **(Critical)**Filename: CP047337.compsig; CP047337.zip **Fixes**

This FW change resolves a MCTP VDM compliance issue seen by iLO version 2.30.

For more information, refer to HPE Customer Advisory at the following URL:
https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00111061en_us

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Online NVMe SSD Flash Component for VMware ESXi - MO001600KWVNB, MO003200KWVNC, MO006400KWVND, MT001600KWSTB, MT003200KWSTC and MT006400KWSTD DrivesVersion: HPK3 **(Recommended)**Filename: CP045709.compsig; CP045709.zip **Fixes**

Fixed SSD weargauge report error issue.

Fixed Assign FWState as TR_DONE_ERR at the correct location.

Prepare proper response data for Get Message Type Supported MCTP Command.

Added code to preserve current feature values cross live firmware update.

Allocate 4 bytes instead of 2 bytes for parameter code.

Changed the value for NLB equal to NSize -1.

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Online NVMe SSD Flash Component for VMware ESXi - MZPLJ1T6HBJR-000H3, MZPLJ3T2HBJR-000H3 and MZPLJ6T4HALA-000H3 DrivesVersion: EPK74H3Q **(Critical)**Filename: CP046470.compsig; CP046470.zip **Fixes**

Optimized T-offset setting.

Change MQES setting to 8192.

Fixed LED Behavior misaligned specs issue.

Fixed performance drop issue when 4+ SSD are installed.

The Idle Power Management fix to keep the drive from entering and exiting the Lower Power Idle mode too frequently.

For more information, refer to HPE Customer Advisory at the following URL:
https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00112800en_us

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Online NVMe SSD Flash Component for VMware ESXi - MZXL5800HBHQ-000H3, MZXL51T6HBJR-000H3, MZXL53T2HBLS-000H3, MZXL56T4HALA-000H3, MZXL512THALA-000H3, MZXL5960HBHQ-000H3, MZXL51T9HBJR-000H3, MZXL53T8HBLS-000H3, MZXL57T6HALA-000H3 and MZXL515THALA-00H3 DriveVersion: MPK73H5Q **(Critical)**Filename: CP046468.compsig; CP046468.zip **Fixes**

Optimized T-offset setting.

Change MQES setting to 8192.

Code change to set 'Slot Clock Configuration bit in Link Status register.

Fixed LED Behavior misaligned specs issue.

Fixed performance drop issue when 4+ SSD are installed.

The Idle Power Management fix to keep the drive from entering and exiting the Lower Power Idle mode too frequently.

For more information, refer to HPE Customer Advisory at the following URL:
https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00112800en_us

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Online NVMe SSD Flash Component for VMware ESXi - VO001000KWJSE, VO002000KWJSF, VO004000KWJSH, VT004000KWJSU, MO001600KWJSN and MO003200KWJSQ DrivesVersion: 4ICDHPK1 **(Critical)**Filename: CP046728.compsig; CP046728.zip **Fixes**

This firmware corrects the potential for a drive to become disabled and nonfunctional during certain conditions or workloads.

After the drive is upgraded to firmware version HPK1, it cannot be downgraded to firmware version HPK0.

**Enhancements**

Added support for VMware 7.0 U1

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Online NVMe SSD Flash Component for VMware ESXi - VO0400KEFJB, VO1200KEFJC and VO2000KEFJD DrivesVersion: HPK4 (D) **(Recommended)**Filename: CP044497.compsig; CP044497.zip **Important Note!**

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc.

**Enhancements**

Added support for VMware 7.0

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Online NVMe SSD Flash Component for VMware ESXi - VS000480KXALB DriveVersion: 85030G00 (C) **(Recommended)**Filename: CP044993.compsig; CP044993.zip **Enhancements**

Added support for VMware 7.0 U1.

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Online NVMe SSD Flash Component for Windows (x64) - MK000400KWDUK, VK000480KWDUE, MK000800KWDUL, VK000960KWDUF, MK001600KWDUN and VK001920KWDUH DrivesVersion: HPK4 (C) **(Recommended)**Filename: cp045559.compsig; cp045559.exe; cp045559.md5 **Important Note!**

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows 2019.

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Online NVMe SSD Flash Component for Windows (x64) - MO0400KEFHN, MO0800KEFHP, MO1600KEFHQ, MO2000KEFHR, MT0800KEXUU and MT1600KEXUV DrivesVersion: HPK4 (C) **(Recommended)**Filename: cp045592.compsig; cp045592.exe; cp045592.md5 **Enhancements**

Added support for Microsoft Windows Server 2019.

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Online NVMe SSD Flash Component for Windows (x64) - MT001600KWHAC, MT003200KWHAD and MT006400KWHAE DrivesVersion: HPK1 **(Critical)**Filename: cp050550.compsig; cp050550.exe; cp050550.md5 **Fixes**

Firmware corrects an issue where the drive will be in a failed state after an unexpected power loss. When this occurs the drive will not recover after subsequent power cycles and will not be accessible by the system configuration and Host applications.

Refer Customer Bulletin for workarounds https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00042733en_us

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Online NVMe SSD Flash Component for Windows (x64) - VS000480KWDUP, VS000960KWDUQ, MS000400KWDUR and MS000800KWDUT DrivesVersion: HPK4 (C) **(Recommended)**Filename: cp045582.compsig; cp045582.exe; cp045582.md5 **Important Note!**

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows 2019.

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Online NVMe SSD Flash Component for Windows (x64) - LO0400KEFJQ, LO0800KEFJR, LO1600KEFJT, LO2000KEFJU, LT0800KEXVA, LT1600KEXVB, and LT2000KEXVC DrivesVersion: HPK4 (C) **(Recommended)**Filename: cp045513.compsig; cp045513.exe; cp045513.md5 **Enhancements**

Added support for Microsoft Windows Server 2019.

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Online NVMe SSD Flash Component for Windows (x64) - MK000800KWWFE, MK001600KWWFF, MK003200KWWFH, MK006400KWWFK, VK000960KWWFL, VK001920KWWFN, VK003840KWWFP and VK007680KWWFQ DrivesVersion: HPK3 (B) **(Critical)**Filename: cp047338.compsig; cp047338.exe; cp047338.md5 **Fixes**

This FW change resolves a MCTP VDM compliance issue seen by iLO version 2.30.

For more information, refer to HPE Customer Advisory at the following URL:
https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00111061en_us

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Online NVMe SSD Flash Component for Windows (x64) - MO001600KWVNB, MO003200KWVNC, MO006400KWVND, MT001600KWSTB, MT003200KWSTC and MT006400KWSTD DrivesVersion: HPK3 **(Recommended)**Filename: cp045598.compsig; cp045598.exe; cp045598.md5 **Fixes**

Fixed SSD weargauge report error issue.

Fixed Assign FWState as TR_DONE_ERR at the correct location.

Prepare proper response data for Get Message Type Supported MCTP Command.

Added code to preserve current feature values cross live firmware update.

Allocate 4 bytes instead of 2 bytes for parameter code.

Changed the value for NLB equal to NSize -1.

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Online NVMe SSD Flash Component for Windows (x64) - MO001600KWZQP and MO003200KWZQQ DrivesVersion: HPK5 **(Critical)**Filename: cp045987.compsig; cp045987.exe; cp045987.md5 **Fixes**

Optimized T-offset setting.

Change MQES setting to 8192.

Fixed LED Behavior misaligned specs issue.

Fixed performance drop issue when 4+ SSD are installed.

The Idle Power Management fix to keep the drive from entering and exiting the Lower Power Idle mode too frequently.

For more information, refer to HPE Customer Advisory at the following URL:
https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00112800en_us

**Enhancements**

Added support for Windows Server 2019

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Online NVMe SSD Flash Component for Windows (x64) - MZPLJ1T6HBJR-000H3, MZPLJ3T2HBJR-000H3 and MZPLJ6T4HALA-000H3 DrivesVersion: EPK74H3Q **(Critical)**Filename: cp046472.compsig; cp046472.exe; cp046472.md5 **Fixes**

Optimized T-offset setting.

Change MQES setting to 8192.

Fixed LED Behavior misaligned specs issue.

Fixed performance drop issue when 4+ SSD are installed.

The Idle Power Management fix to keep the drive from entering and exiting the Lower Power Idle mode too frequently.

For more information, refer to HPE Customer Advisory at the following URL:
https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00112800en_us

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Online NVMe SSD Flash Component for Windows (x64) - MZXL5800HBHQ-000H3, MZXL51T6HBJR-000H3, MZXL53T2HBLS-000H3, MZXL56T4HALA-000H3, MZXL512THALA-000H3, MZXL5960HBHQ-000H3, MZXL51T9HBJR-000H3, MZXL53T8HBLS-000H3, MZXL57T6HALA-000H3 and MZXL515THALA-0 DrivesVersion: MPK73H5Q **(Critical)**Filename: cp046469.compsig; cp046469.exe; cp046469.md5 **Fixes**

Optimized T-offset setting.

Change MQES setting to 8192.

Code change to set 'Slot Clock Configuration bit in Link Status register.

Fixed LED Behavior misaligned specs issue.

Fixed performance drop issue when 4+ SSD are installed.

The Idle Power Management fix to keep the drive from entering and exiting the Lower Power Idle mode too frequently.

For more information, refer to HPE Customer Advisory at the following URL:
https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00112800en_us

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Online NVMe SSD Flash Component for Windows (x64) - VO001000KWJSE, VO002000KWJSF, VO004000KWJSH, VT004000KWJSU, MO001600KWJSN and MO003200KWJSQ DrivesVersion: 4ICDHPK1 **(Critical)**Filename: cp046729.compsig; cp046729.exe; cp046729.md5 **Fixes**

This firmware corrects the potential for a drive to become disabled and nonfunctional during certain conditions or workloads.

After the drive is upgraded to firmware version HPK1, it cannot be downgraded to firmware version HPK0.

**Enhancements**

Added support for Windows 2019.

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Online NVMe SSD Flash Component for Windows (x64) - VO001920KWVMT, VO003840KWVMU, and VO007680KWVMV DrivesVersion: HPK3 **(Recommended)**Filename: cp046660.compsig; cp046660.exe; cp046660.md5 **Fixes**

Fixed SSD weargauge report error issue.

Fixed Assign FWState as TR_DONE_ERR at the correct location.

Prepare proper response data for Get Message Type Supported MCTP Command.

Added code to preserve current feature values cross live firmware update.

Allocate 4 bytes instead of 2 bytes for parameter code.

Changed the value for NLB equal to NSize -1.

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Online NVMe SSD Flash Component for Windows (x64) - VO001920KWZQR and VO003840KWZQT DrivesVersion: HPK5 **(Critical)**Filename: cp045992.compsig; cp045992.exe; cp045992.md5 **Fixes**

Optimized T-offset setting.

Change MQES setting to 8192.

Fixed LED Behavior misaligned specs issue.

Fixed performance drop issue when 4+ SSD are installed.

The Idle Power Management fix to keep the drive from entering and exiting the Lower Power Idle mode too frequently.

For more information, refer to HPE Customer Advisory at the following URL:
https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00112800en_us

**Enhancements**

Added support for Windows Server 2019

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Online NVMe SSD Flash Component for Windows (x64) - VO0400KEFJB, VO1200KEFJC and VO2000KEFJD DrivesVersion: HPK4 (C) **(Recommended)**Filename: cp045579.compsig; cp045579.exe; cp045579.md5 **Important Note!**

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Microsoft Windows Server 2019.

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Online NVMe SSD Flash Component for Windows (x64) - VS000480KXALB driveVersion: 85030G00 (C) **(Recommended)**Filename: cp045602.compsig; cp045602.exe; cp045602.md5 **Enhancements**

Added Support for Windows Server 2019.

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**Firmware - Power Management** Top

Online ROM Flash for Linux - Advanced Power Capping Microcontroller Firmware for HPE Gen9 ServersVersion: 1.0.9 (J) **(Optional)**Filename: RPMS/i386/firmware-powerpic-gen9-1.0.9-10.1.i386.rpm

**Important Note!**

**Important Notes:**

Ver. 1.0.9(J) contains updates to the component packaging and is functionally equivalent to ver. 1.0.9. It is not necessary to upgrade with Revision J if a previous component Revision was used to upgrade the firmware to version 1.0.9.

**Deliverable Name:**

Advanced Power Capping Microcontroller Firmware for HPE ProLiant Gen9 Servers

**Release Version:**

1.0.9

**Last Recommended or Critical Revision:**

1.0.7

**Previous Revision:**

1.0.7

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addresses an issue in which the minimum power capping value was incorrectly being calculated on certain systems. This fix increases the accuracy of the minimum capping value set during POST.

**Known Issues:**

None

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver" must be installed and running before using this flash component. If the driver is not running you will receive the following error message:
"The software is not supported for installation on this system.
You must install the iLO Channel Interface driver to use this component."

**Fixes**

**Important Notes:**

Ver. 1.0.9(J) contains updates to the component packaging and is functionally equivalent to ver. 1.0.9. It is not necessary to upgrade with Revision J if a previous component Revision was used to upgrade the firmware to version 1.0.9.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addresses an issue in which the minimum power capping value was incorrectly being calculated on certain systems. This fix increases the accuracy of the minimum capping value set during POST.

**Known Issues:**

None

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Online ROM Flash for Linux - Power Management ControllerVersion: 4.1 (E) **(Recommended)**Filename: RPMS/i386/hp-firmware-powerpic-dl580-4.1-5.i386.rpm **Important Note!**

**Important Notes:**

Ver. 4.1 (E) contains a change to the Firmware RPM install command name from “cpqsetup” to “hpsetup” and is functionally equivalent to ver. 4.1. It is not necessary to upgrade with Revision E if a previous component revision was used to upgrade the firmware to version 4.1.

**Deliverable Name:**

Power Management Controller

**Release Version:**

4.1(E)

**Last Recommended or Critical Revision:**

This is the initial version of the firmware.

**Previous Revision:**

This is the initial version of the firmware.

**Firmware Dependencies:**

None

**Enhancements/New Features:**

This is the initial version of the firmware.

**Problems Fixed:**

None

**Known Issues:**

The smart component prompts for reboot unnecessarily when the installation procedure is completed. Reboot is not required after installation for updates to take effect and hardware stability to be maintained.

## Prerequisites

The "HP ProLiant iLO 3/4 Channel Interface Driver" must be installed and running before using this flash component. If the driver is not running you will receive the following error message:
"The software is not supported for installation on this system.
You must install the iLO Channel Interface driver to use this component."

## Enhancements

**Important Notes:**

Ver. 4.1 (E) contains a change to the Firmware RPM install command name from “cpqsetup” to “hpsetup” and is functionally equivalent to ver. 4.1. It is not necessary to upgrade with Revision E if a previous component revision was used to upgrade the firmware to version 4.1.

**Firmware Dependencies:**

None

**Enhancements/New Features:**

This is the initial version of the firmware.

**Known Issues:**

The smart component prompts for reboot unnecessarily when the installation procedure is completed. Reboot is not required after installation for updates to take effect and hardware stability to be maintained.

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Online ROM Flash for VMware ESXi - Advanced Power Capping Microcontroller Firmware for HPE Gen9 ServersVersion: 1.0.9 (K) **(Optional)**Filename: CP047167.compsig; CP047167.zip **Important Note!**

**Important Notes:**

Ver. 1.0.9(K) contains updates to the component packaging and is functionally equivalent to ver. 1.0.9. It is not necessary to upgrade with Revision K if a previous component Revision was used to upgrade the firmware to version 1.0.9.

**Deliverable Name:**

Advanced Power Capping Microcontroller Firmware for HPE ProLiant Gen9 Servers

**Release Version:**

1.0.9

**Last Recommended or Critical Revision:**

1.0.7

**Previous Revision:**

1.0.7

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addresses an issue in which the minimum power capping value was incorrectly being calculated on certain systems. This fix increases the accuracy of the minimum capping value set during POST.

**Known Issues:**

None

**Prerequisites**

This component requires that the following HPE drivers be loaded before the component can run.

1. The "HPE ProLiant iLO 3/4 Channel Interface Driver" (CHIF) must be installed and running.

The minimum iLO version for ESXi 5.1, 5.5 and ESXi 6.0 and ESXi 6.5 is 1.4.

2. The "Compaq ROM Utility Driver" (CRU) must be installed and running

The minimum CRU version for ESXi 5.1 is 5.0.3.9.

The minimum CRU version for ESXi 5.5 is 5.5.4.1.

The minimum CRU version for ESXi 6.0 is 6.0.8.

The minimum CRU version for 6.5 is 6.5.8.

The minimum CRU version for 6.7 is 6.7.10.

Both drivers are integrated into the HPE VMware Custom Image which also contains other HPE advanced management tools. The drivers are also available from the OS specific "HPE Agentless Management Service Offline Bundle" for VMware vSphere 6.5, 6.0, 5.5, and 5.1 on vibsdepot.hpe.com.

**Fixes**

**Important Notes:**

Ver. 1.0.9(K) contains updates to the component packaging and is functionally equivalent to ver. 1.0.9. It is not necessary to upgrade with Revision K if a previous component Revision was used to upgrade the firmware to version 1.0.9.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addresses an issue in which the minimum power capping value was incorrectly being calculated on certain systems. This fix increases the accuracy of the minimum capping value set during POST.

**Known Issues:**

None

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Online ROM Flash for VMware ESXi - Power Management ControllerVersion: 4.1 (E) **(Recommended)**Filename: CP026094.zip **Important Note!**

**Important Notes:**

Ver. 4.1 (E) contains updates to the component packaging and is functionally equivalent to ver. 4.1. It is not necessary to upgrade with Revision E if a previous component Revision was used to upgrade the firmware to version 4.1.

**Deliverable Name:**

Power Management Controller

**Release Version:**

4.1(E)

**Last Recommended or Critical Revision:**

This is the initial version of the firmware.

**Previous Revision:**

This is the initial version of the firmware.

**Firmware Dependencies:**

None

**Enhancements/New Features:**

This is the initial version of the firmware.

**Problems Fixed:**

None

**Known Issues:**

The smart component prompts for reboot unnecessarily when the installation procedure is completed. Reboot is not required after installation for updates to take effect and hardware stability to be maintained.

**Prerequisites**

The "HP ProLiant iLO 3/4 Channel Interface Driver" must be installed and running before using this flash component. If the driver is not running you will receive the following error message:
"The software is not supported for installation on this system.
You must install the iLO Channel Interface driver to use this component."

**Enhancements**

**Important Notes:**

Ver. 4.1 (E) contains updates to the component packaging and is functionally equivalent to ver. 4.1. It is not necessary to upgrade with Revision E if a previous component Revision was used to upgrade the firmware to version 4.1.

**Firmware Dependencies:**

None

**Enhancements/New Features:**

This is the initial version of the firmware.

**Known Issues:**

The smart component prompts for reboot unnecessarily when the installation procedure is completed. Reboot is not required after installation for updates to take effect and hardware stability to be maintained.

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Online ROM Flash for Windows x64 - Advanced Power Capping Microcontroller Firmware for HPE Gen9 ServersVersion: 1.0.9(I) **(Optional)**Filename: cp037781.exe **Important Note!**

**Important Notes:**

Ver. 1.0.9(I) contains updates to the component packaging and is functionally equivalent to ver. 1.0.9. It is not necessary to upgrade with Revision I if a previous component Revision was used to upgrade the firmware to version 1.0.9.

**Deliverable Name:**

Advanced Power Capping Microcontroller Firmware for HPE ProLiant Gen9 Servers

**Release Version:**

1.0.9

**Last Recommended or Critical Revision:**

1.0.7

**Previous Revision:**

1.0.7

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addresses an issue in which the minimum power capping value was incorrectly being calculated on certain systems. This fix increases the accuracy of the minimum capping value set during POST.

**Known Issues:**

None

## Prerequisites

The "HPE ProLiant iLO 3/4 Channel Interface Driver for Windows" must be installed and running before using this flash component. If the driver is not running you will receive the following error message:
"The software is not supported for installation on this system.
You must install the iLO Channel Interface driver to use this component."

## Fixes

**Important Notes:**

Ver. 1.0.9(I) contains updates to the component packaging and is functionally equivalent to ver. 1.0.9. It is not necessary to upgrade with Revision I if a previous component Revision was used to upgrade the firmware to version 1.0.9.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addresses an issue in which the minimum power capping value was incorrectly being calculated on certain systems. This fix increases the accuracy of the minimum capping value set during POST.

**Known Issues:**

None

Online ROM Flash for Windows x64 - Power Management Controller for HPE ProLiant DL580 Gen9/Gen8 ServersVersion: 4.1 (F) **(Recommended)**Filename: cp037764.exe **Important Note!**

**Important Notes:**

Ver. 4.1 (F) adds support to perform the Online ROM Flash with Microsoft Windows Server 2016 by using Smart Update Manager. It is functionally equivalent to ver. 4.1. It is not necessary to upgrade with Revision (F) if a previous component revision was used to upgrade the firmware to ver.4.1.

**Deliverable Name:**

Power Management Controller

**Release Version:**

4.1(F)

**Last Recommended or Critical Revision:**

This is the initial version of the firmware.

**Previous Revision:**

This is the initial version of the firmware.

**Firmware Dependencies:**

None

**Enhancements/New Features:**

This is the initial version of the firmware.

**Problems Fixed:**

None

**Known Issues:**

The smart component prompts for reboot unnecessarily when the installation procedure is completed. Reboot is not required after installation for updates to take effect and hardware stability to be maintained.

**Prerequisites**

The "HPE ProLiant iLO 3/4 Channel Interface Driver for Windows" must be installed and running before using this flash component. If the driver is not running you will receive the following error message:

"The software is not supported for installation on this system.
You must install the iLO Channel Interface driver to use this component."

**Enhancements**

**Important Notes:**

Ver. 4.1 (F) adds support to perform the Online ROM Flash with Microsoft Windows Server 2016 by using Smart Update Manager. It is functionally equivalent to ver. 4.1. It is not necessary to upgrade with Revision (F) if a previous component revision was used to upgrade the firmware to ver.4.1.

**Firmware Dependencies:**

None

**Enhancements/New Features:**

This is the initial version of the firmware.

**Known Issues:**

The smart component prompts for reboot unnecessarily when the installation procedure is completed. Reboot is not required after installation for updates to take effect and hardware stability to be maintained.

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ROM Flash Firmware Package - Advanced Power Capping Microcontroller Firmware for HPE Gen10 and Gen10 Plus ServersVersion: 1.0.7 (D) **(Optional)**Filename: PICGen10-1.0.7-1.fwpkg **Important Note!**

**Important Notes:**

Ver. 1.0.7 (D) contains updates to the component packaging and is functionally equivalent to ver. 1.0.7. It is not necessary to upgrade with Revision (D) if a previous component revision was used to upgrade the firmware to ver. 1.0.7. This is the initial version for HPE Gen10 Plus servers.

**Deliverable Name:**

Advanced Power Capping Microcontroller Firmware for HPE Gen10 and Gen10 Plus Servers

**Release Version:**

1.0.7

**Last Recommended or Critical Revision:**

1.0.4 (HPE Gen10)

**Previous Revision:**

1.0.4 (HPE Gen10)

**Firmware Dependencies:**

For HPE ProLiant DL325/DL385 Gen10 servers, ROM version 2.00 or later is required to enable the support. iLO5 version 1.40 or above is required to upgrade to this version.

**Enhancements/New Features:**

Added support for AMD EPYC 7002 Generation Processors on HPE ProLiant DL325/DL385 Gen10 servers. ROM version 2.00 or later is required to enable the support. This version of firmware does not include any changes for AMD EPYC 7001 Generation Processors. iLO5 version 1.40 or above is required to upgrade to this version.

This is the initial version for HPE Gen10 Plus servers.

Added support for VMware ESXi 7.x on AMD Gen10 and Gen10 Plus servers.

**Problems Fixed:**

None

**Known Issues:**

None

## Prerequisites

Integrated Lights-Out 5 (iLO 5) Firmware version 1.40 and System ROM version 1.20 or later are required for HPE Gen10 servers.

## Enhancements

**Important Notes:**

Ver. 1.0.7 (D) contains updates to the component packaging and is functionally equivalent to ver. 1.0.7. It is not necessary to upgrade with Revision (D) if a previous component revision was used to upgrade the firmware to ver. 1.0.7. This is the initial version for HPE Gen10 Plus servers.

**Firmware Dependencies:**

For HPE ProLiant DL325/DL385 Gen10 servers, ROM version 2.00 or later is required to enable the support. iLO5 version 1.40 or above is required to upgrade to this version.

**Enhancements/New Features:**

Added support for AMD EPYC 7002 Generation Processors on HPE ProLiant DL325/DL385 Gen10 servers. ROM version 2.00 or later is required to enable the support. This version of firmware does not include any changes for AMD EPYC 7001 Generation Processors. iLO5 version 1.40 or above is required to upgrade to this version.

This is the initial version for HPE Gen10 Plus servers.

Added support for VMware ESXi 7.x on AMD Gen10 and Gen10 Plus servers.

**Known Issues:**

None

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**Firmware - SAS Storage Disk** Top

Online HDD/SDD Flash Component for VMware ESXi - MB6000JVYZD and MB4000JVYZC DrivesVersion: HPD4 (F) **(Recommended)**Filename: CP045783.compsig; CP045783.zip

**Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for Linux (x64) - EG000300JWBHR DriveVersion: HPD4 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-2e4c61fc63-HPD4-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-2e4c61fc63-HPD4-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EG000300JWFVB DriveVersion: HPD2 (F) **(Optional)**Filename: rpm/RPMS/x86_64/firmware-hdd-c5cd837c29-HPD2-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-c5cd837c29-HPD2-6.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EG000600JWFUV and EG001200JWFVA DrivesVersion: HPD3 (F) **(Optional)**Filename: rpm/RPMS/x86_64/firmware-hdd-f0c91d2fe3-HPD3-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-f0c91d2fe3-HPD3-6.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EG000600JWJNP and EG001200JWJNQ DrivesVersion: HPD3 (C) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-bdfb8e99d9-HPD3-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-bdfb8e99d9-HPD3-3.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added Support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EG001800JWJNR and EG002400JWJNT DrivesVersion: HPD5 (C) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-b1c9eaf74c-HPD5-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-b1c9eaf74c-HPD5-3.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EG0600JETKA, EG0900JETKB and EG1200JETKC DrivesVersion: HPD7 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-7505dfb5ae-HPD7-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-7505dfb5ae-HPD7-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EK0800JVYPN, EO1600JVYPP, MK0800JVYPQ and MO1600JVYPR DrivesVersion: HPD7 (C) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-481c8ea9a7-HPD7-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-481c8ea9a7-HPD7-3.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

The issue affects SSDs with an HPE firmware version prior to HPD7 that results in SSD failure at 40,000 hours of operation (i.e., 4 years, 205 days 16 hours), neither the SSD nor the data can be recovered, after the SSD failure occurs.

In addition, SSDs which were put into service at the same time will likely fail nearly simultaneously.

For more information, refer to HPE Customer Advisory at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00097382en_us.

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EO000400JWDKP, EO000800JWDKQ, EO001600JWDKR, MO000400JWDKU, MO000800JWDKV, MO001600JWDLA and MO003200JWDLB DrivesVersion: HPD2 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-5dcf26fa42-HPD2-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-5dcf26fa42-HPD2-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

Online HDD/SSD Flash Component for Linux (x64) - MB002000JWFVN and MB004000JWFVP DrivesVersion: HPD3 (C) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-d7af557f47-HPD3-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-d7af557f47-HPD3-3.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB004000JWFVK and MB006000JWFVL DrivesVersion: HPD3 (C) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-f6d00bd17e-HPD3-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-f6d00bd17e-HPD3-3.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB6000JVYZD and MB4000JVYZC DrivesVersion: HPD4 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-e800e8d3b9-HPD4-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-e800e8d3b9-HPD4-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MM1000JEFRB and MM2000JEFRC DrivesVersion: HPD8 (F) **(Optional)**Filename: rpm/RPMS/x86_64/firmware-hdd-b04257b77b-HPD8-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-b04257b77b-HPD8-6.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MO000400JWUFT, MO000800JWUFU, MO001600JWUFV, MO003200JWUGA, MO006400JWUGB, EO000400JWUGC, EO000800JWUGD and EO001600JWUGE DrivesVersion: HPD3 (B) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-ef93133161-HPD3-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-ef93133161-HPD3-2.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VO000960JWTBK, VO001920JWTBL, VO003840JWTBN, VO007680JWTBP, MO000400JWTBQ, MO000800JWTBR, MO001600JWTBT, MO003200JWTBU, MO006400JWTCD, EO000400JWTBV, EO000800JWTCA and EO001600JWTCB DrivesVersion: HPD7 (F) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-

9ad359dac1-HPD7-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-9ad359dac1-HPD7-6.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc...

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EG000300JWSJP, EG000600JWJNH and EG001200JWJNK DriveVersion: HPD2 (D) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-24fe569b72-HPD2-4.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-24fe569b72-HPD2-4.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EG001800JWFVC DriveVersion: HPD3 (F) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-693b9a2853-HPD3-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-693b9a2853-HPD3-6.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EG001800JWJNL and EG002400JWJNN DrivesVersion: HPD2 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-852266afdf-HPD2-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-852266afdf-HPD2-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EG0300FCSPH, EG0450FCSPK, EG0600FCSPL and EG0900FCSPN DrivesVersion: HPD2 (G) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-7c1a1734f9-HPD2-7.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-7c1a1734f9-HPD2-7.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EG0300JEHLV, EG0600JEHMA, EG0900JEHMB and EG1200JEHMC DrivesVersion: HPD5 (H) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-31f91b8622-HPD5-8.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-31f91b8622-HPD5-8.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EG0300JFCKA, EG0600JEMCV, EG0900JFCKB and EG1200JEMDA DrivesVersion: HPD6 (H) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-ac3fda26eb-HPD6-8.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-ac3fda26eb-HPD6-8.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EG1800JEHMD DriveVersion: HPD6 (H) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-8a2c06af48-HPD6-8.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-8a2c06af48-HPD6-8.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EG1800JEMDB DriveVersion: HPD5 (G) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-0a38b25661-HPD5-7.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-0a38b25661-HPD5-7.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EG1800JFHMH DriveVersion: HPD7 (F) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-7fc5497116-HPD7-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-7fc5497116-HPD7-6.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EH000300JWCPK, EH000600JWCPL and EH000900JWCPN DrivesVersion: HPD6 (B) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-3d97759111-HPD6-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-3d97759111-HPD6-2.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EH000600JWCPF and EH000900JWCPH DrivesVersion: HPD8 (B) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-a05f29cef3-HPD8-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-a05f29cef3-HPD8-2.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EH000900JWHPK and EH000600JWHPH DrivesVersion: HPD4 (C) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-c7df7ceedb-HPD4-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-c7df7ceedb-HPD4-3.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EH000900JWHPP, EH000600JWHPN and EH000300JWHPL DrivesVersion: HPD4 (C) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-8d68452816-HPD4-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-8d68452816-HPD4-3.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EH0300JDXBA, EH0450JDXBB and EH0600JDXBC DrivesVersion: HPD5 (G) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-1cbab97ff0-HPD5-7.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-1cbab97ff0-HPD5-7.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EH0300JDYTH, EH0450JDYTK and EH0600JDYTL DrivesVersion: HPD6 (H) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-b9340d29be-HPD6-8.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-b9340d29be-HPD6-8.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EH0300JEDHC, EH0450JEDHD and EH0600JEDHE DrivesVersion: HPD4 (H) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-8c4a212ff9-HPD4-8.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-8c4a212ff9-HPD4-8.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - EH0600JDYTN DriveVersion: HPD7 (G) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-f3faa195ff-HPD7-7.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-f3faa195ff-HPD7-7.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Fixes a data integrity risk where stale data is mistakenly used from cache.

Fixes a data integrity risk where stale data is returned on an unaligned overlapped write-read operation.

Fixes a data integrity risk during a sequential read and write workload when a recovered error is encountered, which could cause incomplete data to be read.

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB004000JWKGU DriveVersion: HPD1 (D) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-2c27a7a9a4-HPD1-4.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-2c27a7a9a4-HPD1-4.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB004000JWWQB, MB002000JWWQA and MB001000JWWPV DrivesVersion: HPD4 (B) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-adb3ab8147-HPD4-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-adb3ab8147-HPD4-2.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB006000JWKGN DriveVersion: HPD1 (D) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-a886842a99-HPD1-4.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-a886842a99-HPD1-4.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB008000JWJRQ and MB006000JWJRP DrivesVersion: HPD9 (B) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-faf39e0ff7-HPD9-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-faf39e0ff7-HPD9-2.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

This firmware release provides additional protection against command timeouts.

For more information, refer to HPE Customer Bulletin at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00117258en_us

**Enhancements**

Added support for RHEL 8.4 and SLES15SP3.

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Online HDD/SSD Flash Component for Linux (x64) - MB008000JWRTD DriveVersion: HPD1 (D) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-8b26d1ef02-HPD1-4.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-8b26d1ef02-HPD1-4.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc.

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB008000JWWQP and MB006000JWWQN DrivesVersion: HPD2 (C) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-ae6b41e855-HPD2-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-ae6b41e855-HPD2-3.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB010000JWAYK and MB008000JWAYH DrivesVersion: HPD5 (F) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-6ec35faf90-HPD5-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-6ec35faf90-HPD5-6.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

This code corrects a potential data integrity issue related to unaligned write commands.This issue was only found in supplier ongoing lab testing.

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB012000JWDFD DriveVersion: HPD2 (F) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-aaf1014ede-HPD2-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-aaf1014ede-HPD2-6.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Corrects a potential data integrity issue during unaligned write commands, only found in supplier ongoing lab testing.Includes additional fixes to improve error handling and reliability.

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB014000JWRTH, MB012000JWRTF and MB010000JWRTE DrivesVersion: HPD2 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-10385ef3e6-HPD2-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-10385ef3e6-HPD2-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB014000JWUDB DriveVersion: HPD2 (D) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-cfd7436fcc-HPD2-4.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-cfd7436fcc-HPD2-4.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB1000JVYZL, MB2000JVYZN, MB3000JVYZP and MB4000JVYZQ DrivesVersion: HPD3 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-b85516c7d2-HPD3-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-b85516c7d2-HPD3-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB2000JFDSL and MB4000JFDSN DrivesVersion: HPD4 (G) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-46fc43ab26-HPD4-7.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-46fc43ab26-HPD4-7.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB2000JFEML and MB4000JFEMN DrivesVersion: HPD6 (G) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-624b75c7e2-HPD6-7.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-624b75c7e2-HPD6-7.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Corrects a potential data integrity issue caused by an in process write retry incorrectly starting at the wrong location. This issue was found during supplier ongoing reliability testing.

The firmware also includes emergency power off improvements.

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB2000JFEPA and MB4000JFEPB DrivesVersion: HPD5 (G) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-326de7c0f2-HPD5-7.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-326de7c0f2-HPD5-7.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB4000JEFNC and MB6000JEFND DrivesVersion: HPD9 (G) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-af802bb412-HPD9-7.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-af802bb412-HPD9-7.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB4000JEQNL and MB6000JEQNN DrivesVersion: HPDB (G) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-2cfaac41db-HPDB-7.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-2cfaac41db-HPDB-7.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB4000JEXYA and MB6000JEXYB DrivesVersion: HPD9 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-0f923833e9-HPD9-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-0f923833e9-HPD9-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB6000JEQUV and MB8000JEQVA DrivesVersion: HPDB (G) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-df22f7effd-HPDB-7.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-df22f7effd-HPDB-7.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB6000JVYYV DriveVersion: HPD2 (G) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-0595c2a887-HPD2-7.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-0595c2a887-HPD2-7.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB8000JFECQ DriveVersion: HPD7 (F) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-252770cdda-HPD7-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-252770cdda-HPD7-6.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MM1000JFJTH DriveVersion: HPD3 (F) **(Optional)**Filename: rpm/RPMS/x86_64/firmware-hdd-fa46c607d6-HPD3-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-fa46c607d6-HPD3-6.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MO000400JWFWN, MO000800JWFWP, MO001600JWFWQ, MO003200JWFWR, MO000960JWFWT, MO001920JWFWU and MO003840JWFWV DrivesVersion: HPD5 (D) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-b8a60fbe9a-HPD5-4.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-b8a60fbe9a-HPD5-4.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MO0200JEFNV, MO0400JEFPA, MO0800JEFPB, MO1600JEFPC, EO0200JEFPD, EO0400JEFPE and EO0800JEFPF DrivesVersion: HPD3 (G) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-71af849f3b-HPD3-7.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-71af849f3b-HPD3-7.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MO0400JFFCF, MO0800JFFCH, MO1600JFFCK and MO3200JFFCL DrivesVersion: HPD9 (C) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-edf6dcd906-HPD9-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-edf6dcd906-HPD9-3.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VK000960JWSSQ, VK001920JWSSR, VK003840JWSST, VK007680JWSSU and VO015300JWSSV DrivesVersion: HPD8 (D) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-1e51a57347-HPD8-4.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-1e51a57347-HPD8-4.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

The issue affects SSDs with an HPE firmware version prior to HPD8 that results in SSD failure at 32,768 hours of operation (i.e., 3 years, 270 days 8 hours), neither the SSD nor the data can be recovered, after the SSD failure occurs.

In addition, SSDs which were put into service at the same time will likely fail nearly simultaneously.

For more information, refer to HPE Customer Advisory at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00092491en_us

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VO000480JWDAR, VO000960JWDAT, VO001920JWDAU and VO003840JWDAV DrivesVersion: HPD8 (C) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-2eb810cdd7-HPD8-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-2eb810cdd7-HPD8-3.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

The issue affects SSDs with an HPE firmware version prior to HPD8 that results in SSD failure at 32,768 hours of operation (i.e., 3 years, 270 days 8 hours), neither the SSD nor the data can be recovered, after the SSD failure occurs.

In addition, SSDs which were put into service at the same time will likely fail nearly simultaneously.

For more information, refer to HPE Customer Advisory at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00092491en_us

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VO000800JWZJP, VO001600JWZJQ, VO003200JWZJR and VO006400JWZJT DrivesVersion: HPD4 **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-a07a420ed1-HPD4-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-a07a420ed1-HPD4-1.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

**Fixes**

Modify Drive Vendor Identification String (VID) in Inquiry page from “HP” to “HPE”.

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VO000960JWZJF, VO001920JWZJH, VO003840JWZJK, VO007680JWZJL and VO015360JWZJN DrivesVersion: HPD4 **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-35fd24601f-HPD4-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-35fd24601f-HPD4-1.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

**Fixes**

Modify Drive Vendor Identification String (VID) in Inquiry page from “HP” to “HPE”.

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VO000960RWUEV, VO001920RWUFA, VO003840RWUFB, VO007680RWUFC, VO000960RWUFD, VO001920RWUFE and VO003840RWUFF DrivesVersion: HPD3 (C) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-8fafc9efb2-HPD3-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-8fafc9efb2-HPD3-3.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VO007680JWCNK and VO015300JWCNL DrivesVersion: HPD8 (C) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-4c048aaeb0-HPD8-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-4c048aaeb0-HPD8-3.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

The issue affects SSDs with an HPE firmware version prior to HPD8 that results in SSD failure at 32,768 hours of operation (i.e., 3 years, 270 days 8 hours), neither the SSD nor the data can be recovered, after the SSD failure occurs.

In addition, SSDs which were put into service at the same time will likely fail nearly simultaneously.

For more information, refer to HPE Customer Advisory at the following URL:https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00092491en_us

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VO0480JFDGT, VO0960JFDGU, VO1920JFDGV and VO3840JFDHA DrivesVersion: HPD9 (C) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-8ed8893abd-HPD9-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-8ed8893abd-HPD9-3.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VO1920JEUQQ DriveVersion: HPD3 (G) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-5d9e841607-HPD3-7.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-5d9e841607-HPD3-7.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for VMware ESXi - EG000300JWBHR DriveVersion: HPD4 (F) **(Recommended)**Filename: CP045716.compsig; CP045716.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EG000300JWFVB DriveVersion: HPD2 (G) **(Recommended)**Filename: CP045604.compsig; CP045604.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EG000600JWFUV and EG001200JWFVA DrivesVersion: HPD3 (G) **(Optional)**Filename: CP045606.compsig; CP045606.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EG000600JWJNP and EG001200JWJNQ DrivesVersion: HPD3 (D) **(Recommended)**Filename: CP045607.compsig; CP045607.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EG001800JWJNR and EG002400JWJNT DrivesVersion: HPD5 (D) **(Recommended)**Filename: CP045609.compsig; CP045609.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EG0600JETKA, EG0900JETKB and EG1200JETKC DrivesVersion: HPD7 (E) **(Recommended)**Filename: CP045612.compsig; CP045612.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EH000900JWHPK and EH000600JWHPH DrivesVersion: HPD4 (D) **(Recommended)**Filename: CP045618.compsig; CP045618.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EH000900JWHPP, EH000600JWHPN and EH000300JWHPL DrivesVersion: HPD4 (D) **(Recommended)**Filename: CP045619.compsig; CP045619.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EH0600JDYTN DriveVersion: HPD7 (G) **(Critical)**Filename: CP045623.compsig; CP045623.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Fixes a data integrity risk where stale data is mistakenly used from cache.

Fixes a data integrity risk where stale data is returned on an unaligned overlapped write-read operation.

Fixes a data integrity risk during a sequential read and write workload when a recovered error is encountered, which could cause incomplete data to be read.Ã,Â

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EO000400JWDKP, EO000800JWDKQ, EO001600JWDKR, MO000400JWDKU, MO000800JWDKV, MO001600JWDLA and MO003200JWDLB DrivesVersion: HPD2 (E) **(Recommended)**Filename: CP045625.compsig; CP045625.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB002000JWFVN and MB004000JWFVP DrivesVersion: HPD3 (D) **(Recommended)**Filename: CP045630.compsig; CP045630.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB004000JWFVK and MB006000JWFVL DrivesVersion: HPD3 (D) **(Recommended)**Filename: CP045632.compsig; CP045632.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB012000JWDFD DriveVersion: HPD2 (F) **(Critical)**Filename: CP045643.compsig; CP045643.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Corrects a potential data integrity issue during unaligned write commands, found in supplier ongoing lab testing. Includes additional fixes to improve error handling and reliability.

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB2000JFEML and MB4000JFEMN DrivesVersion: HPD6 (H) **(Critical)**Filename: CP045654.compsig; CP045654.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Corrects a potential data integrity issue caused by an in process write retry incorrectly starting at the wrong location. This issue was found during supplier ongoing reliability testing.

The firmware also includes emergency power off improvements.

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB4000JEQNL and MB6000JEQNN DrivesVersion: HPDB (H) **(Recommended)**Filename: CP045659.compsig; CP045659.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB6000JEQUV and MB8000JEQVA DrivesVersion: HPDB (H) **(Recommended)**Filename: CP045666.compsig; CP045666.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MM1000JEFRB and MM2000JEFRC DrivesVersion: HPD8 (G) **(Optional)**Filename: CP045674.compsig; CP045674.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MM1000JFJTH DriveVersion: HPD3 (G) **(Optional)**Filename: CP045675.compsig; CP045675.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MO000400JWUFT, MO000800JWUFU, MO001600JWUFV, MO003200JWUGA, MO006400JWUGB, EO000400JWUGC, EO000800JWUGD and EO001600JWUGE DrivesVersion: HPD3 (B) **(Recommended)**Filename: CP045976.compsig; CP045976.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VO000960JWTBK, VO001920JWTBL, VO003840JWTBN, VO007680JWTBP, MO000400JWTBQ, MO000800JWTBR, MO001600JWTBT, MO003200JWTBU, MO006400JWTCD, EO000400JWTBV, EO000800JWTCA, EO001600JWTCB DrivesVersion: HPD7 (E) **(Recommended)**Filename: CP045688.compsig; CP045688.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EG000300JWSJP, EG000600JWJNH and EG001200JWJNK DriveVersion: HPD2 (E) **(Recommended)**Filename: CP045605.compsig; CP045605.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EG001800JWFVC DriveVersion: HPD3 (E) **(Recommended)**Filename: CP045608.compsig; CP045608.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EG001800JWJNL and EG002400JWJNN DriveVersion: HPD2 (F) **(Recommended)**Filename: CP045723.compsig; CP045723.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EG0300FCSPH, EG0450FCSPK, EG0600FCSPL and EG0900FCSPN DrivesVersion: HPD2 (H) **(Recommended)**Filename: CP045610.compsig; CP045610.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EG0300JEHLV, EG0600JEHMA, EG0900JEHMB, and EG1200JEHMC DrivesVersion: HPD5 (I) **(Recommended)**Filename: CP044982.compsig; CP044982.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EG0300JFCKA, EG0600JEMCV, EG0900JFCKB and EG1200JEMDA DrivesVersion: HPD6 (H) **(Recommended)**Filename: CP045611.compsig; CP045611.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EG1800JEHMD DriveVersion: HPD6 (I) **(Recommended)**Filename: CP045613.compsig; CP045613.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EG1800JEMDB DriveVersion: HPD5 (H) **(Recommended)**Filename: CP045614.compsig; CP045614.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EG1800JFHMH DriveVersion: HPD7 (G) **(Recommended)**Filename: CP045615.compsig; CP045615.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EH000300JWCPK, EH000600JWCPL and EH000900JWCPN DrivesVersion: HPD6 (B) **(Recommended)**Filename: CP046301.compsig; CP046301.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EH000600JWCPF and EH000900JWCPH DrivesVersion: HPD8 (B) **(Recommended)**Filename: CP046300.compsig; CP046300.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EH0300JDXBA, EH0450JDXBB and EH0600JDXBC DrivesVersion: HPD5 (H) **(Recommended)**Filename: CP045620.compsig; CP045620.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EH0300JDYTH, EH0450JDYTK and EH0600JDYTL DrivesVersion: HPD6 (I) **(Recommended)**Filename: CP045621.compsig; CP045621.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EH0300JEDHC, EH0450JEDHD and EH0600JEDHE DrivesVersion: HPD4 (I) **(Recommended)**Filename: CP045622.compsig; CP045622.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - EK0800JVYPN, EO1600JVYPP, MK0800JVYPQ and MO1600JVYPR DrivesVersion: HPD7 (C) **(Critical)**Filename: CP045698.compsig; CP045698.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

The issue affects SSDs with an HPE firmware version prior to HPD7 that results in SSD failure at 40,000 hours of operation (i.e., 4 years, 205 days 16 hours), neither the SSD nor the data can be recovered, after the SSD failure occurs.

In addition, SSDs which were put into service at the same time will likely fail nearly simultaneously.

For more information, refer to HPE Customer Advisory at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00097382en_us.

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB004000JWKGU DriveVersion: HPD1 (E) **(Recommended)**Filename: CP045633.compsig; CP045633.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB004000JWWQB, MB002000JWWQA and MB001000JWWPV DrivesVersion: HPD4 (B) **(Recommended)**Filename: CP045979.compsig; CP045979.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB006000JWKGN DriveVersion: HPD1 (E) **(Recommended)**Filename: CP045636.compsig; CP045636.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB008000JWJRQ and MB006000JWJRP DrivesVersion: HPD9 (B) **(Critical)**Filename: CP049132.compsig; CP049132.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

This firmware release provides additional protection against command timeouts.

For more information, refer to HPE Customer Bulletin at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00117258en_us

**Enhancements**

Added support for VMware 7.0 U3

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Online HDD/SSD Flash Component for VMware ESXi - MB008000JWRTD DriveVersion: HPD1 (E) **(Recommended)**Filename: CP045638.compsig; CP045638.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB008000JWWQP and MB006000JWWQN DrivesVersion: HPD2 (C) **(Recommended)**Filename: CP045696.compsig; CP045696.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB010000JWAYK and MB008000JWAYH DrivesVersion: HPD5 (F) **(Critical)**Filename: CP045640.compsig; CP045640.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

This code corrects a potential data integrity issue related to unaligned write commands. This issue was only found in supplier ongoing lab testing.

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB014000JWUDB DriveVersion: HPD2 (E) **(Recommended)**Filename: CP045647.compsig; CP045647.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB1000JVYZL, MB2000JVYZN, MB3000JVYZP and MB4000JVYZQ DrivesVersion: HPD3 (E) **(Recommended)**Filename: CP045650.compsig; CP045650.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB2000JFDSL and MB4000JFDSN DrivesVersion: HPD4 (H) **(Recommended)**Filename: CP045653.compsig; CP045653.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB2000JFEPA and MB4000JFEPB DrivesVersion: HPD5 (H) **(Recommended)**Filename: CP045655.compsig; CP045655.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB4000JEFNC and MB6000JEFND DrivesVersion: HPD9 (H) **(Recommended)**Filename: CP045658.compsig; CP045658.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB4000JEXYA and MB6000JEXYB DrivesVersion: HPD9 (E) **(Recommended)**Filename: CP045660.compsig; CP045660.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB6000JVYYV DriveVersion: HPD2 (H) **(Recommended)**Filename: CP045667.compsig; CP045667.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB8000JFECQ DriveVersion: HPD7 (G) **(Recommended)**Filename: CP045668.compsig; CP045668.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MO000400JWFWN, MO000800JWFWP, MO001600JWFWQ, MO003200JWFWR, MO000960JWFWT, MO001920JWFWU and MO003840JWFWV DrivesVersion: HPD5 (E) **(Recommended)**Filename: CP045676.compsig; CP045676.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MO0200JEFNV, MO0400JEFPA, MO0800JEFPB, MO1600JEFPC, EO0200JEFPD, EO0400JEFPE and EO0800JEFPF DrivesVersion: HPD3 (H) **(Recommended)**Filename: CP045677.compsig; CP045677.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MO0400JFFCF, MO0800JFFCH, MO1600JFFCK and MO3200JFFCL DrivesVersion: HPD9 (C) **(Recommended)**Filename: CP045708.compsig; CP045708.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VK000960JWSSQ, VK001920JWSSR, VK003840JWSST, VK007680JWSSU and VO015300JWSSV DrivesVersion: HPD8 (D) **(Critical)**Filename: CP045711.compsig; CP045711.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

The issue affects SSDs with an HPE firmware version prior to HPD8 that results in SSD failure at 32,768 hours of operation (i.e., 3 years, 270 days 8 hours), neither the SSD nor the data can be recovered, after the SSD failure occurs.

In addition, SSDs which were put into service at the same time will likely fail nearly simultaneously.

For more information, refer to HPE Customer Advisory at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00092491en_us

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VO000480JWDAR, VO000960JWDAT, VO001920JWDAU and VO003840JWDAV DrivesVersion: HPD8 (F) **(Critical)**Filename: CP044848.compsig; CP044848.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

The issue affects SSDs with an HPE firmware version prior to HPD8 that results in SSD failure at 32,768 hours of operation (i.e., 3 years, 270 days 8 hours), neither the SSD nor the data can be recovered, after the SSD failure occurs.

In addition, SSDs which were put into service at the same time will likely fail nearly simultaneously.

For more information, refer to HPE Customer Advisory at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00092491en_us

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VO000800JWZJP, VO001600JWZJQ, VO003200JWZJR and VO006400JWZJT DrivesVersion: HPD4 **(Recommended)**Filename: CP046321.compsig; CP046321.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

**Fixes**

Modify Drive Vendor Identification String (VID) in Inquiry page from “HP” to “HPE”.

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VO000960JWZJF, VO001920JWZJH, VO003840JWZJK, VO007680JWZJL and VO015360JWZJN DrivesVersion: HPD4 **(Recommended)**Filename: CP046318.compsig; CP046318.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

**Fixes**

Modify Drive Vendor Identification String (VID) in Inquiry page from “HP” to “HPE”.

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VO000960RWUEV, VO001920RWUFA, VO003840RWUFB, VO007680RWUFC, VO000960RWUFD, VO001920RWUFE and VO003840RWUFF DrivesVersion: HPD3 (D) **(Recommended)**Filename: CP045722.compsig; CP045722.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VO007680JWCNK and VO015300JWCNL DrivesVersion: HPD8 (D) **(Critical)**Filename: CP045689.compsig; CP045689.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

The issue affects SSDs with an HPE firmware version prior to HPD8 that results in SSD failure at 32,768 hours of operation (i.e., 3 years, 270 days 8 hours), neither the SSD nor the data can be recovered, after the SSD failure occurs.

In addition, SSDs which were put into service at the same time will likely fail nearly simultaneously.

For more information, refer to HPE Customer Advisory at the following URL:https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00092491en_us

**Enhancements**

Added support for VMware 7.0 U1

Online HDD/SSD Flash Component for VMware ESXi - VO0480JFDGT, VO0960JFDGU, VO1920JFDGV and VO3840JFDHA DrivesVersion: HPD9 (C) **(Recommended)**Filename: CP045701.compsig; CP045701.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VO1920JEUQQ DriveVersion: HPD3 (H) **(Recommended)**Filename: CP045690.compsig; CP045690.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi -MB014000JWRTH, MB012000JWRTF and MB010000JWRTE DrivesVersion: HPD2 (E) **(Recommended)**Filename: CP045646.compsig; CP045646.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for Windows (x64) - EG000300JWBHR DriveVersion: HPD4 (D) **(Recommended)**Filename: cp045490.compsig; cp045490.exe; cp045490.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EG000300JWFVB DriveVersion: HPD2 (E) **(Optional)**Filename: cp045489.compsig; cp045489.exe; cp045489.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EG000300JWSJP, EG000600JWJNH and EG001200JWJNK DrivesVersion: HPD2 (D) **(Recommended)**Filename: cp045492.compsig; cp045492.exe; cp045492.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EG000600JWFUV and EG001200JWFVA DrivesVersion: HPD3 (E) **(Optional)**Filename: cp045491.compsig; cp045491.exe; cp045491.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EG000600JWJNP and EG001200JWJNQ DrivesVersion: HPD3 (C) **(Recommended)**Filename: cp045493.compsig; cp045493.exe; cp045493.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EG001800JWFVC DriveVersion: HPD3 (D) **(Recommended)**Filename: cp045494.compsig; cp045494.exe; cp045494.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EG001800JWJNL and EG002400JWJNN DrivesVersion: HPD2 (E) **(Recommended)**Filename: cp045772.compsig; cp045772.exe; cp045772.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EG001800JWJNR and EG002400JWJNT DrivesVersion: HPD5 (C) **(Recommended)**Filename: cp045496.compsig; cp045496.exe; cp045496.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EG0300FCSPH, EG0450FCSPK, EG0600FCSPL and EG0900FCSPN DrivesVersion: HPD2 (F) **(Recommended)**Filename: cp045495.compsig; cp045495.exe; cp045495.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EG0300JEHLV, EG0600JEHMA, EG0900JEHMB and EG1200JEHMC DrivesVersion: HPD5 (G) **(Recommended)**Filename: cp045497.compsig; cp045497.exe; cp045497.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EG0300JFCKA, EG0600JEMCV, EG0900JFCKB and EG1200JEMDA DrivesVersion: HPD6 (F) **(Recommended)**Filename: cp045498.compsig; cp045498.exe; cp045498.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EG0600JETKA, EG0900JETKB and EG1200JETKC DrivesVersion: HPD7 (D) **(Recommended)**Filename: cp045499.compsig; cp045499.exe; cp045499.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EG1800JEHMD DriveVersion: HPD6 (G) **(Recommended)**Filename: cp045500.compsig; cp045500.exe; cp045500.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

Online HDD/SSD Flash Component for Windows (x64) - EG1800JEMDB DriveVersion: HPD5 (F) **(Recommended)**Filename: cp045501.compsig; cp045501.exe; cp045501.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EG1800JFHMH DriveVersion: HPD7 (F) **(Recommended)**Filename: cp045502.compsig; cp045502.exe; cp045502.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EH000300JWCPK, EH000600JWCPL and EH000900JWCPN DrivesVersion: HPD6 (B) **(Recommended)**Filename: cp046213.compsig; cp046213.exe; cp046213.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EH000600JWCPF and EH000900JWCPH DrivesVersion: HPD8 (B) **(Recommended)**Filename: cp046269.compsig; cp046269.exe; cp046269.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EH000900JWHPK and EH000600JWHPH DrivesVersion: HPD4 (C) **(Recommended)**Filename: cp045505.compsig; cp045505.exe; cp045505.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EH000900JWHPP, EH000600JWHPN and EH000300JWHPL DrivesVersion: HPD4 (C) **(Recommended)**Filename: cp045506.compsig; cp045506.exe; cp045506.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EH0300JDXBA, EH0450JDXBB and EH0600JDXBC DrivesVersion: HPD5 (F) **(Recommended)**Filename: cp045507.compsig; cp045507.exe; cp045507.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EH0300JDYTH, EH0450JDYTK and EH0600JDYTL DrivesVersion: HPD6 (G) **(Recommended)**Filename: cp045508.compsig; cp045508.exe; cp045508.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EH0300JEDHC, EH0450JEDHD and EH0600JEDHE DrivesVersion: HPD4 (H) **(Recommended)**Filename: cp045509.compsig; cp045509.exe; cp045509.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EH0600JDYTN DriveVersion: HPD7 (E) **(Critical)**Filename: cp045510.compsig; cp045510.exe; cp045510.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Fixes a data integrity risk where stale data is mistakenly used from cache.

Fixes a data integrity risk where stale data is returned on an unaligned overlapped write-read operation.

Fixes a data integrity risk during a sequential read and write workload when a recovered error is encountered, which could cause incomplete data to be read.

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EK0800JVYPN, EO1600JVYPP, MK0800JVYPQ and MO1600JVYPR DrivesVersion: HPD7 (C) **(Critical)**Filename: cp045587.compsig; cp045587.exe; cp045587.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

The issue affects SSDs with an HPE firmware version prior to HPD7 that results in SSD failure at 40,000 hours of operation (i.e., 4 years, 205 days 16 hours), neither the SSD nor the data can be recovered, after the SSD failure occurs.

In addition, SSDs which were put into service at the same time will likely fail nearly simultaneously.

For more information, refer to HPE Customer Advisory at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00097382en_us.

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - EO000400JWDKP, EO000800JWDKQ, EO001600JWDKR, MO000400JWDKU, MO000800JWDKV, MO001600JWDLA and MO003200JWDLB DrivesVersion: HPD2 (D) **(Recommended)**Filename: cp045512.compsig; cp045512.exe; cp045512.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB002000JWFVN and MB004000JWFVP DrivesVersion: HPD3 (C) **(Recommended)**Filename: cp045518.compsig; cp045518.exe; cp045518.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB004000JWFVK and MB006000JWFVL DrivesVersion: HPD3 (C) **(Recommended)**Filename: cp045520.compsig; cp045520.exe; cp045520.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB004000JWKGU DriveVersion: HPD1 (D) **(Recommended)**Filename: cp045521.compsig; cp045521.exe; cp045521.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB004000JWWQB, MB002000JWWQA and MB001000JWWPV DrivesVersion: HPD4 (B) **(Recommended)**Filename: cp045900.compsig; cp045900.exe; cp045900.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB006000JWKGN DriveVersion: HPD1 (D) **(Recommended)**Filename: cp045524.compsig; cp045524.exe; cp045524.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB008000JWJRQ and MB006000JWJRP DrivesVersion: HPD9 (B) **(Critical)**Filename: cp049130.compsig; cp049130.exe; cp049130.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

This firmware release provides additional protection against command timeouts.

For more information, refer to HPE Customer Bulletin at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00117258en_us

**Enhancements**

Added support for Microsoft Windows Server 2022.

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Online HDD/SSD Flash Component for Windows (x64) - MB008000JWRTD DriveVersion: HPD1 (D) **(Recommended)**Filename: cp045526.compsig; cp045526.exe; cp045526.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB008000JWWQP and MB006000JWWQN DrivesVersion: HPD2 (C) **(Recommended)**Filename: cp045585.compsig; cp045585.exe; cp045585.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

Online HDD/SSD Flash Component for Windows (x64) - MB010000JWAYK and MB008000JWAYH DrivesVersion: HPD5 (E) **(Critical)**Filename: cp045528.compsig; cp045528.exe; cp045528.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiantÂ and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

This code corrects a potential data integrity issue related to unaligned write commands.This issue was only found in supplier ongoing lab testing.

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB012000JWDFD DriveVersion: HPD2 (E) **(Critical)**Filename: cp045531.compsig; cp045531.exe; cp045531.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Corrects a potential data integrity issue during unaligned write commands, found in supplier ongoing lab testing.Includes additional fixes to improve error handling and reliability.

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB014000JWRTH, MB012000JWRTF and MB010000JWRTE DrivesVersion: HPD2 (D) **(Recommended)**Filename: cp045534.compsig; cp045534.exe; cp045534.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB014000JWUDB DriveVersion: HPD2 (D) **(Recommended)**Filename: cp045535.compsig; cp045535.exe; cp045535.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version likeÂ (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB1000JVYZL, MB2000JVYZN, MB3000JVYZP and MB4000JVYZQ DrivesVersion: HPD3 (D) **(Recommended)**Filename: cp045538.compsig; cp045538.exe; cp045538.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB2000JFDSL and MB4000JFDSN DrivesVersion: HPD4 (F) **(Recommended)**Filename: cp045541.compsig; cp045541.exe; cp045541.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB2000JFEML and MB4000JFEMN DrivesVersion: HPD6 (F) **(Critical)**Filename: cp045542.compsig; cp045542.exe; cp045542.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Corrects a potential data integrity issue caused by an in process write retry incorrectly starting at the wrong location. This issue was found during supplier ongoing reliability testing.

The firmware also includes emergency power off improvements.

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB2000JFEPA and MB4000JFEPB DrivesVersion: HPD5 (F) **(Recommended)**Filename: cp045543.compsig; cp045543.exe; cp045543.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB4000JEFNC and MB6000JEFND DrivesVersion: HPD9 (F) **(Recommended)**Filename: cp045546.compsig; cp045546.exe; cp045546.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB4000JEQNL and MB6000JEQNN DrivesVersion: HPDB (F) **(Recommended)**Filename: cp045547.compsig; cp045547.exe; cp045547.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

Online HDD/SSD Flash Component for Windows (x64) - MB4000JEXYA and MB6000JEXYB DrivesVersion: HPD9 (D) **(Recommended)**Filename: cp045548.compsig; cp045548.exe; cp045548.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB6000JEQUV and MB8000JEQVA DrivesVersion: HPDB (F) **(Recommended)**Filename: cp045554.compsig; cp045554.exe; cp045554.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB6000JVYYV DriveVersion: HPD2 (F) **(Recommended)**Filename: cp045555.compsig; cp045555.exe; cp045555.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB6000JVYZD and MB4000JVYZC DrivesVersion: HPD4 (D) **(Recommended)**Filename: cp045556.compsig; cp045556.exe; cp045556.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB8000JFECQ DriveVersion: HPD7 (E) **(Recommended)**Filename: cp045558.compsig; cp045558.exe; cp045558.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MM1000JEFRB and MM2000JEFRC DrivesVersion: HPD8 (E) **(Optional)**Filename: cp045563.compsig; cp045563.exe; cp045563.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..,

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MM1000JFJTH DriveVersion: HPD3 (E) **(Optional)**Filename: cp045564.compsig; cp045564.exe; cp045564.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc.

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MO000400JWFWN, MO000800JWFWP, MO001600JWFWQ, MO003200JWFWR, MO000960JWFWT, MO001920JWFWU and MO003840JWFWV DrivesVersion: HPD5 (D) **(Recommended)**Filename: cp045565.compsig; cp045565.exe; cp045565.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MO000400JWUFT, MO000800JWUFU, MO001600JWUFV, MO003200JWUGA, MO006400JWUGB, EO000400JWUGC, EO000800JWUGD and EO001600JWUGE DrivesVersion: HPD3 (B) **(Recommended)**Filename: cp045156.compsig; cp045156.exe; cp045156.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MO0200JEFNV, MO0400JEFPA, MO0800JEFPB, MO1600JEFPC, EO0200JEFPD, EO0400JEFPE and EO0800JEFPF DrivesVersion: HPD3 (F) **(Recommended)**Filename: cp045566.compsig; cp045566.exe; cp045566.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MO0400JFFCF, MO0800JFFCH, MO1600JFFCK and MO3200JFFCL DrivesVersion: HPD9 (C) **(Recommended)**Filename: cp045596.compsig; cp045596.exe; cp045596.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VK000960JWSSQ, VK001920JWSSR, VK003840JWSST, VK007680JWSSU and VO015300JWSSV DrivesVersion: HPD8 (C) **(Critical)**Filename: cp045600.compsig; cp045600.exe; cp045600.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

**Fixes**

The issue affects SSDs with an HPE firmware version prior to HPD8 that results in SSD failure at 32,768 hours of operation (i.e., 3 years, 270 days 8 hours), neither the SSD nor the data can be recovered, after the SSD failure occurs.

In addition, SSDs which were put into service at the same time will likely fail nearly simultaneously.

For more information, refer to HPE Customer Advisory at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00092491en_us

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VO000480JWDAR, VO000960JWDAT, VO001920JWDAU and VO003840JWDAV DrivesVersion: HPD8 (C) **(Critical)**Filename: cp044648.compsig; cp044648.exe; cp044648.md5 **Fixes**

The issue affects SSDs with an HPE firmware version prior to HPD8 that results in SSD failure at 32,768 hours of operation (i.e., 3 years, 270 days 8 hours), neither the SSD nor the data can be recovered, after the SSD failure occurs.

In addition, SSDs which were put into service at the same time will likely fail nearly simultaneously.

For more information, refer to HPE Customer Advisory at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00092491en_us

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VO000800JWZJP, VO001600JWZJQ, VO003200JWZJR and VO006400JWZJT DrivesVersion: HPD4 **(Recommended)**Filename: cp046322.compsig; cp046322.exe; cp046322.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

**Fixes**

Modify Drive Vendor Identification String (VID) in Inquiry page from “HP” to “HPE”.

**Enhancements**

Added support for Windows Server 2019

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Online HDD/SSD Flash Component for Windows (x64) - VO000960JWTBK, VO001920JWTBL, VO003840JWTBN, VO007680JWTBP, MO000400JWTBQ, MO000800JWTBR, MO001600JWTBT, MO003200JWTBU, MO006400JWTCD, EO000400JWTBV, EO000800JWTCA and EO001600JWTCB DrivesVersion: HPD7 (D) **(Recommended)**Filename: cp045576.compsig; cp045576.exe; cp045576.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VO000960JWZJF, VO001920JWZJH, VO003840JWZJK, VO007680JWZJL and VO015360JWZJN DrivesVersion: HPD4 **(Recommended)**Filename: cp046320.compsig; cp046320.exe; cp046320.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

**Fixes**

Modify Drive Vendor Identification String (VID) in Inquiry page from “HP” to “HPE”.

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VO000960RWUEV, VO001920RWUFA, VO003840RWUFB, VO007680RWUFC, VO000960RWUFD, VO001920RWUFE and VO003840RWUFF DrivesVersion: HPD3 (C) **(Recommended)**Filename: cp045603.compsig; cp045603.exe; cp045603.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019

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Online HDD/SSD Flash Component for Windows (x64) - VO007680JWCNK and VO015300JWCNL DrivesVersion: HPD8 (C) **(Critical)**Filename: cp045578.compsig; cp045578.exe; cp045578.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

The issue affects SSDs with an HPE firmware version prior to HPD8 that results in SSD failure at 32,768 hours of operation (i.e., 3 years, 270 days 8 hours), neither the SSD nor the data can be recovered, after the SSD failure occurs.

In addition, SSDs which were put into service at the same time will likely fail nearly simultaneously.

For more information, refer to HPE Customer Advisory at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00092491en_us

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VO0480JFDGT, VO0960JFDGU, VO1920JFDGV and VO3840JFDHA DrivesVersion: HPD9 (C) **(Recommended)**Filename: cp045594.compsig; cp045594.exe; cp045594.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VO1920JEUQQ DriveVersion: HPD3 (F) **(Recommended)**Filename: cp045580.compsig; cp045580.exe; cp045580.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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**Firmware - SATA Storage Disk** Top

Online HDD/SSD Flash Component for Linux (x64) - EK000200GWEPD, EK000400GWEPE, EK000800GWEPF and EK001600GWEPH DrivesVersion: HPG3 (F) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-5bf9355926-HPG3-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-5bf9355926-HPG3-6.1.x86_64.rpm

**Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB001000GWCBC and MB002000GWCBD DrivesVersion: HPG6 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-68b12e54d2-HPG6-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-68b12e54d2-HPG6-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB001000GWFWK and MB002000GWFWL DrivesVersion: HPG6 (D) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-bfc4af697b-HPG6-4.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-bfc4af697b-HPG6-4.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB001000GWJAN, MB002000GWFWA and MB004000GWFWB DrivesVersion: HPG1 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-d39e7a7e75-HPG1-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-d39e7a7e75-HPG1-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc...

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB002000GWFGH and MB001000GWFGF DrivesVersion: HPG3 (G) **(Optional)**Filename: rpm/RPMS/x86_64/firmware-hdd-0b575b5895-HPG3-7.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-0b575b5895-HPG3-7.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB004000GWKGV DriveVersion: HPG1 (D) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-ca21e169e2-HPG1-4.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-ca21e169e2-HPG1-4.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB004000GWWQH, MB002000GWWQF and MB001000GWWQE DrivesVersion: HPG3 (B) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-12304c1aca-HPG3-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-12304c1aca-HPG3-2.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB006000GWBXQ and MB008000GWBYL DrivesVersion: HPG8 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-a1fd19f9ca-HPG8-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-a1fd19f9ca-HPG8-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc...

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB006000GWJRR and MB008000GWJRT DrivesVersion: HPG4 (C) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-c993b31232-HPG4-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-c993b31232-HPG4-3.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB006000GWKGR DriveVersion: HPG1 (D) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-7f2a26e6d0-HPG1-4.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-7f2a26e6d0-HPG1-4.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB008000GWRTC DriveVersion: HPG1 (D) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-82894b9e0a-HPG1-4.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-82894b9e0a-HPG1-4.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB008000GWWQU and MB006000GWWQT DrivesVersion: HPG2 (C) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-18e328f036-HPG2-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-18e328f036-HPG2-3.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB010000GWAYN and MB008000GWAYL DrivesVersion: HPG5 (F) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-cc819d4bff-HPG5-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-cc819d4bff-HPG5-6.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

This code corrects a potential data integrity issue related to unaligned write commands.This issue was only found in supplier ongoing lab testing.

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB012000GWDFE DriveVersion: HPG2 (F) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-059b8654a6-HPG2-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-059b8654a6-HPG2-6.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB012000GWTFE and MB014000GWTFF DrivesVersion: HPG7 (B) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-b78255e146-HPG7-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-b78255e146-HPG7-2.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB014000GWRTN, MB012000GWRTL and MB010000GWRTK DrivesVersion: HPG2 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-6b7ce3da0e-HPG2-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-6b7ce3da0e-HPG2-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB014000GWUDA DriveVersion: HPG2 (D) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-41cdb1c9da-HPG2-4.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-41cdb1c9da-HPG2-4.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

Online HDD/SSD Flash Component for Linux (x64) - MB1000GDUNU, MB2000GDUNV, MB3000GDUPA and MB4000GDUPB DrivesVersion: HPG4 (I) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-3ab4c70e64-HPG4-9.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-3ab4c70e64-HPG4-9.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB1000GVYZE, MB2000GVYZF, MB3000GVYZH and MB4000GVYZK DrivesVersion: HPG4 (I) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-0a7010918e-HPG4-9.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-0a7010918e-HPG4-9.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB2000GCWLT, MB3000GCWLU and MB4000GCWLV DrivesVersion: HPG4 (I) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-2e70ce7412-HPG4-9.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-2e70ce7412-HPG4-9.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB2000GFEMH and MB4000GFEMK DrivesVersion: HPG6 (H) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-70e3962f98-HPG6-8.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-70e3962f98-HPG6-8.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Corrects a potential data integrity issue caused by an in process write retry incorrectly starting at the wrong location. This issue was found during supplier ongoing reliability testing.

The firmware also corrects settings preservation after a code download, and includes emergency power off improvements.

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB4000GEFNA and MB6000GEFNB DrivesVersion: HPG6 (I) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-40277d55d3-HPG6-9.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-40277d55d3-HPG6-9.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB4000GEQNH and MB6000GEQNK DrivesVersion: HPGB (H) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-bfc95f0628-HPGB-8.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-bfc95f0628-HPGB-8.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Corrects a potential data integrity issue caused by an in process write retry incorrectly starting at the wrong location. This issue was found during supplier ongoing reliability testing.

The firmware also corrects settings preservation after a code download, and includes emergency power off improvements.

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB6000GEBTP DriveVersion: HPG4 (H) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-3243fce9a0-HPG4-8.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-3243fce9a0-HPG4-8.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB6000GEQUT and MB8000GEQUU DrivesVersion: HPGB (H) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-1d7f19120b-HPGB-8.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-1d7f19120b-HPGB-8.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Corrects a potential data integrity issue caused by an in process write retry incorrectly starting at the wrong location. This issue was only found during supplier ongoing reliability testing.

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB6000GEXXV DriveVersion: HPG2 (I) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-a629fcea59-HPG2-9.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-a629fcea59-HPG2-9.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB6000GVYYU DriveVersion: HPG2 (H) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-bdc37cb37f-HPG2-8.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-bdc37cb37f-HPG2-8.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB6000GVYZB and MB4000GVYZA DrivesVersion: HPG4 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-0a7d4aa47f-HPG4-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-0a7d4aa47f-HPG4-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MB8000GFECR DriveVersion: HPG6 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-6d922fc9a8-HPG6-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-6d922fc9a8-HPG6-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MK000240GWCEU, MK000480GWCEV, MK000960GWCFA and MK001920GWCFB DrivesVersion: HPG3 (F) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-7677644a25-HPG3-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-7677644a25-HPG3-6.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MK000480GWSSC, MK000960GWSSD, MK001920GWSSE and MK003840GWSSF DrivesVersion: HPG3 (B) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-f693ccc138-HPG3-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-f693ccc138-HPG3-2.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MK000480GWXFF, MK000960GWXFH, MK001920GWXFK and MK003840GWXFL DrivesVersion: HPG1 (C) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-8e1e8083c5-HPG1-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-8e1e8083c5-HPG1-3.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MK003840GWHTE DriveVersion: HPG6 (D) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-ac20a1e1c6-HPG6-4.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-ac20a1e1c6-HPG6-4.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA)Â is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MK0960GECQK DriveVersion: HPG3 (J) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-3e34285be7-HPG3-10.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-3e34285be7-HPG3-10.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Firmware fixes intermittent data corruption issue associated with unaligned sequential write operations.

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MM1000GEFQV and MM2000GEFRA DrivesVersion: HPG8 (G) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-ec908c3650-HPG8-7.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-ec908c3650-HPG8-7.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MM1000GFJTE DriveVersion: HPG5 (E) **(Optional)**Filename: rpm/RPMS/x86_64/firmware-hdd-95af9a555e-HPG5-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-95af9a555e-HPG5-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - MR000240GWFLU, MR000480GWFLV, VR000480GWFMD, MR000960GWFMA, VR000960GWFME, MR001920GWFMB and VR001920GWFMC DrivesVersion: HPGE

(D) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-9196d4f720-HPGE-4.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-9196d4f720-HPGE-4.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VK000150GWCNN, VK000240GWCNP, VK000480GWCNQ, VK000960GWCNR and VK001600GWCNT DrivesVersion: HPG1 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-6e3845def5-HPG1-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-6e3845def5-HPG1-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VK000240GWCFD, VK000480GWCFE, VK000960GWCFF, VK001920GWCFH and VK003840GWCFK DrivesVersion: HPG3 (F) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-f42438de3d-HPG3-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-f42438de3d-HPG3-6.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VK000240GWEZB, VK000480GWEZC, VK000960GWEZD, VK001920GWEZE, MK000240GWEZF, MK000480GWEZH, MK000960GWEZK and MK001920GWHRU DrivesVersion: HPGE (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-3db7640485-HPGE-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-3db7640485-HPGE-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VK000240GWJPD, VK000480GWJPE, VK000960GWJPF, VK001920GWJPH, VK003840GWJPK, MK000240GWKVK, MK000480GWJPN, MK000960GWJPP and MK001920GWJPQ DrivesVersion: HPG5 (E) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-aef2a690c9-HPG5-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-aef2a690c9-HPG5-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Fixes a rare link loss issue and adds enhancements for drive reliability.

After HPG5 firmware is downloaded to the drive, the new HPG5 firmware will be active on the drive.

The new drive bootloader code will be activated after the next drive power cycle.

For more information, refer to HPE Customer Advisory at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00072768en_us

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VK000240GWSRQ, VK000480GWSRR, VK000960GWSRT, VK001920GWSRU and VK003840GWSRV DrivesVersion: HPG4 (B) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-db687966b4-HPG4-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-db687966b4-HPG4-2.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VK000240GWTSV, VK000480GWTTA, VK000960GWTTB, VK001920GWTTC, VK003840GWTTD, MK000480GWTTH, MK000960GWTTK, MK001920GWTTL and MK003840GWTTN DrivesVersion: HPG6 (C) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-c566d63ca0-HPG6-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-c566d63ca0-HPG6-3.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.4 and SLES15SP3.

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Online HDD/SSD Flash Component for Linux (x64) - VK000480GWSXF, VK000960GWSXH, VK001920GWSXK, MK000480GWUGF, MK000960GWUGH and MK001920GWUGK DrivesVersion: HPG2 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-

hdd-9e87eecb3f-HPG2-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-9e87eecb3f-HPG2-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc...

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VK000480GWTHA, VK000960GWTHB, VK001920GWTHC and VK003840GWTHD DrivesVersion: HPG2 **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-492a9952f6-HPG2-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-492a9952f6-HPG2-1.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

**Fixes**

This maintenance FW release addresses a rare corner case COMRESET issue at warm boot, and to address an early EOL behavior under certain use cases.

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Online HDD/SSD Flash Component for Linux (x64) - VK003840GWSXL DriveVersion: HPG2 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-d1cf327bc4-HPG2-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-d1cf327bc4-HPG2-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VK007680GWSXN DriveVersion: HPG2 (E) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-b460823f70-HPG2-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-b460823f70-HPG2-5.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VK0120GFDKE, VK0240GFDKF, VK0480GFDKH, VK0960GFDKK, VK1920GFDKL and VK3840GFDKN DrivesVersion: HPG1 (I) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-a2d4b5c742-HPG1-9.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-a2d4b5c742-HPG1-9.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VK0240GEPQN, VK0480GEPQP and VK0960GEPQQ DrivesVersion: HPG1 (H) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-1a516522d1-HPG1-8.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-1a516522d1-HPG1-8.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - VR000150GWEPP and VR000480GWEPR DrivesVersion: HPG1 (F) **(Critical)**Filename: rpm/RPMS/x86_64/firmware-hdd-b7eb905efe-HPG1-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-b7eb905efe-HPG1-6.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Fixes an issue which caused the drive to become non-functional.

Fixes VPD Log D0h reported drive Sanitize times.

Adds support for Security Log Page BBh.

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for Linux (x64) - XP0120GFJSL and XP0240GFJSN DrivesVersion: HPS4 (I) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-hdd-d355375539-HPS4-9.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-d355375539-HPS4-9.1.x86_64.rpm **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for RHEL 8.3

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Online HDD/SSD Flash Component for VMware ESXi - EK000200GWEPD, EK000400GWEPE, EK000800GWEPF and EK001600GWEPH DrivesVersion: HPG3 (F) **(Recommended)**Filename: CP045624.compsig; CP045624.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB001000GWCBC and MB002000GWCBD DrivesVersion: HPG6 (E) **(Recommended)**Filename: CP045626.compsig; CP045626.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB001000GWFWK and MB002000GWFWL DrivesVersion: HPG6 (E) **(Recommended)**Filename: CP045627.compsig; CP045627.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB001000GWJAN, MB002000GWFWA and MB004000GWFWB DrivesVersion: HPG1 (E) **(Recommended)**Filename: CP045628.compsig; CP045628.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB002000GWFGH and MB001000GWFGF DrivesVersion: HPG3 (G) **(Optional)**Filename: CP045629.compsig; CP045629.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB004000GWKGV DriveVersion: HPG1 (E) **(Recommended)**Filename: CP045631.compsig; CP045631.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB004000GWWQH, MB002000GWWQF and MB001000GWWQE DrivesVersion: HPG3 (B) **(Recommended)**Filename: CP045978.compsig; CP045978.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB006000GWBXQ and MB008000GWBYL DrivesVersion: HPG8 (E) **(Recommended)**Filename: CP045634.compsig; CP045634.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB006000GWJRR and MB008000GWJRT DrivesVersion: HPG4 (C) **(Recommended)**Filename: CP045710.compsig; CP045710.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB006000GWKGR DriveVersion: HPG1 (E) **(Recommended)**Filename: CP045635.compsig; CP045635.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB008000GWRTC DriveVersion: HPG1 (E) **(Recommended)**Filename: CP045637.compsig; CP045637.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB008000GWWQU and MB006000GWWQT DrivesVersion: HPG2 (C) **(Recommended)**Filename: CP045695.compsig; CP045695.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB010000GWAYN and MB008000GWAYL DrivesVersion: HPG5 (F) **(Critical)**Filename: CP045639.compsig; CP045639.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

This code corrects a potential data integrity issue related to unaligned write commands. This issue was only found in supplier ongoing lab testing.

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB012000GWDFE DriveVersion: HPG2 (F) **(Critical)**Filename: CP045641.compsig; CP045641.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Corrects a potential data integrity issue during unaligned write commands, found in supplier ongoing lab testing.

Includes additional fixes to improve error handling and reliability.

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB012000GWTFE and MB014000GWTFF DrivesVersion: HPG7 (B) **(Recommended)**Filename: CP046334.compsig; CP046334.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB014000GWRTN, MB012000GWRTL and MB010000GWRTK DrivesVersion: HPG2 (E) **(Recommended)**Filename: CP045644.compsig; CP045644.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB014000GWUDA DriveVersion: HPG2 (E) **(Recommended)**Filename: CP045645.compsig; CP045645.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB1000GDUNU, MB2000GDUNV, MB3000GDUPA and MB4000GDUPB DrivesVersion: HPG4 (J) **(Recommended)**Filename: CP045648.compsig; CP045648.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB1000GVYZE, MB2000GVYZF, MB3000GVYZH and MB4000GVYZK DrivesVersion: HPG4 (H) **(Recommended)**Filename: CP045649.compsig; CP045649.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB2000GCWLT, MB3000GCWLU and MB4000GCWLV DrivesVersion: HPG4 (J) **(Recommended)**Filename: CP045651.compsig; CP045651.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB2000GFEMH and MB4000GFEMK DrivesVersion: HPG6 (H) **(Critical)**Filename: CP045652.compsig; CP045652.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Corrects a potential data integrity issue caused by an in process write retry incorrectly starting at the wrong location. This issue was found during supplier ongoing reliability testing.

The firmware also corrects settings preservation after a code download, and includes emergency power off improvements.

Online firmware update fails when drives are connected behind AHCI controller.

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB4000GEFNA and MB6000GEFNB DrivesVersion: HPG6 (H) **(Recommended)**Filename: CP045656.compsig; CP045656.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB4000GEQNH and MB6000GEQNK DrivesVersion: HPGB (H) **(Critical)**Filename: CP045657.compsig; CP045657.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Corrects a potential data integrity issue caused by an in process write retry incorrectly starting at the wrong location. This issue was found during supplier ongoing reliability testing.

The firmware also corrects settings preservation after a code download, and includes emergency power off improvements.

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB6000GEBTP DriveVersion: HPG4 (H) **(Recommended)**Filename: CP045661.compsig; CP045661.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB6000GEQUT and MB8000GEQUU DrivesVersion: HPGB (H) **(Critical)**Filename: CP045662.compsig; CP045662.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Corrects a potential data integrity issue caused by an in process write retry incorrectly starting at the wrong location. This issue was only found during supplier ongoing reliability testing.

Online firmware update fails when drives are connected behind AHCI controller.

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB6000GEXXV DriveVersion: HPG2 (J) **(Recommended)**Filename: CP045663.compsig; CP045663.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB6000GVYYU DriveVersion: HPG2 (H) **(Recommended)**Filename: CP045664.compsig; CP045664.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB6000GVYZB and MB4000GVYZA DrivesVersion: HPG4 (E) **(Recommended)**Filename: CP045665.compsig; CP045665.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MB8000GFECR DriveVersion: HPG6 (F) **(Recommended)**Filename: CP045713.compsig; CP045713.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MK000240GWCEU, MK000480GWCEV, MK000960GWCFA and MK001920GWCFB DrivesVersion: HPG3 (F) **(Recommended)**Filename: CP045669.compsig; CP045669.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MK000480GWSSC, MK000960GWSSD, MK001920GWSSE and MK003840GWSSF DrivesVersion: HPG3 (B) **(Recommended)**Filename: CP045980.compsig; CP045980.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MK000480GWXFF, MK000960GWXFH, MK001920GWXFK and MK003840GWXFL DrivesVersion: HPG1 (C) **(Recommended)**Filename: CP045697.compsig; CP045697.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MK003840GWHTE DriveVersion: HPG6 (E) **(Recommended)**Filename: CP045670.compsig; CP045670.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MK0960GECQK DriveVersion: HPG3 (K) **(Critical)**Filename: CP045671.compsig; CP045671.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Firmware fixes intermittent data corruption issue associated with unaligned sequential write operations.

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MM1000GEFQV and MM2000GEFRA DrivesVersion: HPG8 (G) **(Recommended)**Filename: CP045672.compsig; CP045672.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

Online HDD/SSD Flash Component for VMware ESXi - MM1000GFJTE DriveVersion: HPG5 (E) **(Optional)**Filename: CP045673.compsig; CP045673.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - MR000240GWFLU, MR000480GWFLV, VR000480GWFMD, MR000960GWFMA, VR000960GWFME, MR001920GWFMB and VR001920GWFMC DrivesVersion: HPGE (E) **(Recommended)**Filename: CP045678.compsig; CP045678.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VK000150GWCNN, VK000240GWCNP, VK000480GWCNQ, VK000960GWCNR and VK001600GWCNT DrivesVersion: HPG1 (E) **(Recommended)**Filename: CP045679.compsig; CP045679.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VK000240GWCFD, VK000480GWCFE, VK000960GWCFF, VK001920GWCFH and VK003840GWCFK Drives.Version: HPG3 (F) **(Recommended)**Filename: CP045680.compsig; CP045680.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VK000240GWEZB, VK000480GWEZC, VK000960GWEZD, VK001920GWEZE, MK000240GWEZF, MK000480GWEZH, MK000960GWEZK and MK001920GWHRU DrivesVersion: HPGE (F) **(Optional)**Filename: CP045694.compsig; CP045694.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VK000240GWJPD, VK000480GWJPE, VK000960GWJPF, VK001920GWJPH, VK003840GWJPK, MK000240GWKVK, MK000480GWJPN, MK000960GWJPP and MK001920GWJPQ DrivesVersion: HPG5 (E) **(Critical)**Filename: CP045721.compsig; CP045721.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Fixes a rare link loss issue and adds enhancements for drive reliability.

After HPG5 firmware is downloaded to the drive, the new HPG5 firmware will be active on the drive.

The new drive bootloader code will be activated after the next drive power cycle.

For more information, refer to HPE Customer Advisory at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00072768en_us

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VK000240GWSRQ, VK000480GWSRR, VK000960GWSRT, VK001920GWSRU, VK003840GWSRV DrivesVersion: HPG4 (B) **(Recommended)**Filename: CP045848.compsig; CP045848.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VK000240GWTSV, VK000480GWTTA, VK000960GWTTB, VK001920GWTTC, VK003840GWTTD, MK000480GWTTH, MK000960GWTTK, MK001920GWTTL and MK003840GWTTN DrivesVersion: HPG6 (C) **(Recommended)**Filename: CP048408.compsig; CP048408.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U3

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Online HDD/SSD Flash Component for VMware ESXi - VK000480GWSXF, VK000960GWSXH, VK001920GWSXK, MK000480GWUGF, MK000960GWUGH and MK001920GWUGK DrivesVersion: HPG2 (E) **(Recommended)**Filename: CP045682.compsig; CP045682.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VK000480GWTHA, VK000960GWTHB, VK001920GWTHC and VK003840GWTHD DrivesVersion: HPG2 **(Recommended)**Filename: CP046506.compsig; CP046506.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

**Fixes**

This maintenance FW release addresses a rare corner case COMRESET issue at warm boot, and to address an early EOL behavior under certain use cases.

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Online HDD/SSD Flash Component for VMware ESXi - VK003840GWSXL DriveVersion: HPG2 (E) **(Recommended)**Filename: CP045684.compsig; CP045684.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VK007680GWSXN DriveVersion: HPG2 (E) **(Recommended)**Filename: CP045685.compsig; CP045685.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VK0120GFDKE, VK0240GFDKF, VK0480GFDKH, VK0960GFDKK, VK1920GFDKL, and VK3840GFDKN DrivesVersion: HPG1 (I) **(Recommended)**Filename: CP045686.compsig; CP045686.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VK0240GEPQN, VK0480GEPQP and VK0960GEPQQ DrivesVersion: HPG1 (I) **(Recommended)**Filename: CP045687.compsig; CP045687.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - VR000150GWEPP and VR000480GWEPR DrivesVersion: HPG1 (F) **(Critical)**Filename: CP045691.compsig; CP045691.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Fixes a timing issue which can cause the drive to become non-functional.

Fixes VPD Log D0h reported drive Sanitize times.

Adds support for Security Log Page BBh.

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for VMware ESXi - XP0120GFJSL and XP0240GFJSN DrivesVersion: HPS4 (I) **(Recommended)**Filename: CP045693.compsig; CP045693.zip **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

In AHCI configuration only offline flashing is supported.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for VMware 7.0 U1

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Online HDD/SSD Flash Component for Windows (x64) - EK000200GWEPD, EK000400GWEPE, EK000800GWEPF and EK001600GWEPH DrivesVersion: HPG3 (E) **(Recommended)**Filename: cp045511.compsig; cp045511.exe; cp045511.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB001000GWCBC and MB002000GWCBD DrivesVersion: HPG6 (D) **(Recommended)**Filename: cp045514.compsig; cp045514.exe; cp045514.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB001000GWFWK and MB002000GWFWL DrivesVersion: HPG6 (D) **(Recommended)**Filename: cp045515.compsig; cp045515.exe; cp045515.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB001000GWJAN, MB002000GWFWA and MB004000GWFWB DrivesVersion: HPG1 (D) **(Recommended)**Filename: cp045516.compsig; cp045516.exe; cp045516.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB002000GWFGH and MB001000GWFGF DrivesVersion: HPG3 (F) **(Optional)**Filename: cp045517.compsig; cp045517.exe; cp045517.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc...

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB004000GWKGV DriveVersion: HPG1 (D) **(Recommended)**Filename: cp045519.compsig; cp045519.exe; cp045519.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB004000GWWQH, MB002000GWWQF and MB001000GWWQE DrivesVersion: HPG3 (B) **(Recommended)**Filename: cp045899.compsig; cp045899.exe; cp045899.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB006000GWBXQ and MB008000GWBYL DrivesVersion: HPG8 (D) **(Recommended)**Filename: cp045522.compsig; cp045522.exe; cp045522.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB006000GWJRR and MB008000GWJRT DrivesVersion: HPG4 (C) **(Recommended)**Filename: cp045599.compsig; cp045599.exe; cp045599.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB006000GWKGR DriveVersion: HPG1 (D) **(Recommended)**Filename: cp045523.compsig; cp045523.exe; cp045523.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB008000GWRTC DriveVersion: HPG1 (D) **(Recommended)**Filename: cp045525.compsig; cp045525.exe; cp045525.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB008000GWWQU and MB006000GWWQT DrivesVersion: HPG2 (C) **(Recommended)**Filename: cp045584.compsig; cp045584.exe; cp045584.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB010000GWAYN and MB008000GWAYL DrivesVersion: HPG5 (E) **(Critical)**Filename: cp045527.compsig; cp045527.exe; cp045527.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

This code corrects a potential data integrity issue related to unaligned write commands.This issue was only found in supplier ongoing lab testing.Â

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB012000GWDFE DriveVersion: HPG2 (E) **(Critical)**Filename: cp045529.compsig; cp045529.exe; cp045529.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Corrects a potential data integrity issue during unaligned write commands, found in supplier ongoing lab testing.Includes additional fixes to improve error handling and reliability.

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB012000GWTFE and MB014000GWTFF DrivesVersion: HPG7 (B) **(Recommended)**Filename: cp046335.compsig; cp046335.exe; cp046335.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB014000GWRTN, MB012000GWRTL and MB010000GWRTK DrivesVersion: HPG2 (D) **(Recommended)**Filename: cp045532.compsig; cp045532.exe; cp045532.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB014000GWUDA DriveVersion: HPG2 (D) **(Recommended)**Filename: cp045533.compsig; cp045533.exe; cp045533.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB1000GDUNU, MB2000GDUNV, MB3000GDUPA and MB4000GDUPB DrivesVersion: HPG4 (H) **(Recommended)**Filename: cp045536.compsig; cp045536.exe; cp045536.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB1000GVYZE, MB2000GVYZF, MB3000GVYZH and MB4000GVYZK DrivesVersion: HPG4 (H) **(Recommended)**Filename: cp045537.compsig; cp045537.exe; cp045537.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB2000GCWLT, MB3000GCWLU and MB4000GCWLV DrivesVersion: HPG4 (H) **(Recommended)**Filename: cp045539.compsig; cp045539.exe; cp045539.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

Online HDD/SSD Flash Component for Windows (x64) - MB2000GFEMH and MB4000GFEMK DrivesVersion: HPG6 (G) **(Critical)**Filename: cp045540.compsig; cp045540.exe; cp045540.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Corrects a potential data integrity issue caused by an in process write retry incorrectly starting at the wrong location.Â  This issue was found during supplier ongoing reliability testing.

The firmware also corrects settings preservation after a code download, and includes emergency power off improvements.

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB4000GEFNA and MB6000GEFNB DrivesVersion: HPG6 (H) **(Recommended)**Filename: cp045544.compsig; cp045544.exe; cp045544.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB4000GEQNH and MB6000GEQNK DrivesVersion: HPGB (G) **(Critical)**Filename: cp045545.compsig; cp045545.exe; cp045545.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Corrects a potential data integrity issue caused by an in process write retry incorrectly starting at the wrong location. This issue was found during supplier ongoing reliability testing.

The firmware also corrects settings preservation after a code download, and includes emergency power off improvements.

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB6000GEBTP DriveVersion: HPG4 (G) **(Recommended)**Filename: cp045549.compsig; cp045549.exe; cp045549.md5 **Important Note!**

Online firmware flashing of drives attached to aÂ Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB6000GEQUT and MB8000GEQUU DrivesVersion: HPGB (G) **(Critical)**Filename: cp045550.compsig; cp045550.exe; cp045550.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Corrects a potential data integrity issue caused by an in process write retry incorrectly starting at the wrong location. This issue was only found during supplier ongoing reliability testing.

Online firmware update fails when drives are connected behind AHCI controller.

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB6000GEXXV DriveVersion: HPG2 (H) **(Recommended)**Filename: cp045551.compsig; cp045551.exe; cp045551.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB6000GVYYU DriveVersion: HPG2 (G) **(Recommended)**Filename: cp045552.compsig; cp045552.exe; cp045552.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB6000GVYZB and MB4000GVYZA DrivesVersion: HPG4 (D) **(Recommended)**Filename: cp045553.compsig; cp045553.exe; cp045553.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc.

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MB8000GFECR DriveVersion: HPG6 (D) **(Recommended)**Filename: cp045557.compsig; cp045557.exe; cp045557.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MK000240GWCEU, MK000480GWCEV, MK000960GWCFA and MK001920GWCFB DrivesVersion: HPG3 (E) **(Recommended)**Filename: cp045560.compsig; cp045560.exe; cp045560.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MK000480GWSSC, MK000960GWSSD, MK001920GWSSE and MK003840GWSSF DrivesVersion: HPG3 (B) **(Recommended)**Filename: cp045901.compsig; cp045901.exe; cp045901.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MK000480GWXFF, MK000960GWXFH, MK001920GWXFK and MK003840GWXFL DrivesVersion: HPG1 (C) **(Recommended)**Filename: cp045586.compsig; cp045586.exe; cp045586.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

Online HDD/SSD Flash Component for Windows (x64) - MK003840GWHTE DriveVersion: HPG6 (D) **(Recommended)**Filename: cp045561.compsig; cp045561.exe; cp045561.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MK0960GECQK DriveVersion: HPG3 (J) **(Critical)**Filename: cp045562.compsig; cp045562.exe; cp045562.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Firmware fixes intermittent data corruption issue associated with unaligned sequential write operations.

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MM1000GEFQV and MM2000GEFRA DrivesVersion: HPG8 (F) **(Recommended)**Filename: cp044279.compsig; cp044279.exe; cp044279.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MM1000GFJTE DriveVersion: HPG5 (D) **(Optional)**Filename: cp044278.compsig; cp044278.exe; cp044278.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - MR000240GWFLU, MR000480GWFLV, VR000480GWFMD, MR000960GWFMA, VR000960GWFME, MR001920GWFMB and VR001920GWFMC DrivesVersion: HPGE (D) **(Recommended)**Filename: cp045567.compsig; cp045567.exe; cp045567.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VK000150GWCNN, VK000240GWCNP, VK000480GWCNQ, VK000960GWCNR and VK001600GWCNT DrivesVersion: HPG1 (D) **(Recommended)**Filename: cp045568.compsig; cp045568.exe; cp045568.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VK000240GWCFD, VK000480GWCFE, VK000960GWCFF, VK001920GWCFH and VK003840GWCFK DrivesVersion: HPG3 (E) **(Recommended)**Filename: cp045290.compsig; cp045290.exe; cp045290.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VK000240GWEZB, VK000480GWEZC, VK000960GWEZD, VK001920GWEZE, MK000240GWEZF, MK000480GWEZH, MK000960GWEZK and MK001920GWHRU DrivesVersion: HPGE (E) **(Optional)**Filename: cp045773.compsig; cp045773.exe; cp045773.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VK000240GWJPD, VK000480GWJPE, VK000960GWJPF, VK001920GWJPH, VK003840GWJPK, MK000240GWKVK, MK000480GWJPN, MK000960GWJPP and MK001920GWJPQ DrivesVersion: HPG5 (D) **(Critical)**Filename: cp045601.compsig; cp045601.exe; cp045601.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Fixes a rare link loss issue and adds enhancements for drive reliability.

After HPG5 firmware is downloaded to the drive, the new HPG5 firmware will be active on the drive.

The new drive bootloader code will be activated after the next drive power cycle.

For more information, refer to HPE Customer Advisory at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00072768en_us

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VK000240GWSRQ, VK000480GWSRR, VK000960GWSRT, VK001920GWSRU and VK003840GWSRV DrivesVersion: HPG4 (B) **(Recommended)**Filename: cp045204.compsig; cp045204.exe; cp045204.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VK000240GWTSV, VK000480GWTTA, VK000960GWTTB, VK001920GWTTC, VK003840GWTTD, MK000480GWTTH, MK000960GWTTK, MK001920GWTTL and MK003840GWTTN DrivesVersion: HPG6 (B) **(Recommended)**Filename: cp045898.compsig; cp045898.exe; cp045898.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VK000480GWSXF, VK000960GWSXH, VK001920GWSXK, MK000480GWUGF, MK000960GWUGH and MK001920GWUGK DrivesVersion: HPG2 (D) **(Recommended)**Filename: cp045570.compsig; cp045570.exe; cp045570.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VK000480GWTHA, VK000960GWTHB, VK001920GWTHC and VK003840GWTHD DrivesVersion: HPG2 **(Recommended)**Filename: cp046508.compsig; cp046508.exe; cp046508.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or Host Bus Adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

**Fixes**

This maintenance FW release addresses a rare corner case COMRESET issue at warm boot, and to address an early EOL behavior under certain use cases.

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Online HDD/SSD Flash Component for Windows (x64) - VK003840GWSXL DriveVersion: HPG2 (D) **(Recommended)**Filename: cp045572.compsig; cp045572.exe; cp045572.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VK007680GWSXN DriveVersion: HPG2 (D) **(Recommended)**Filename: cp045573.compsig; cp045573.exe; cp045573.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VK0120GFDKE, VK0240GFDKF, VK0480GFDKH, VK0960GFDKK, VK1920GFDKL and VK3840GFDKN DrivesVersion: HPG1 (G) **(Recommended)**Filename: cp045574.compsig; cp045574.exe; cp045574.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VK0240GEPQN, VK0480GEPQP and VK0960GEPQQ DrivesVersion: HPG1 (G) **(Recommended)**Filename: cp045575.compsig; cp045575.exe; cp045575.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - VR000150GWEPP and VR000480GWEPR DrivesVersion: HPG1 (E) **(Critical)**Filename: cp045581.compsig; cp045581.exe; cp045581.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

Fixes a timing issue which can cause the drive to become non-functional.

Fixes VPD Log D0h reported drive Sanitize times.

Adds support for Security Log Page BBh.

**Enhancements**

Added support for Windows Server 2019.

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Online HDD/SSD Flash Component for Windows (x64) - XP0120GFJSL and XP0240GFJSN DrivesVersion: HPS4 (G) **(Recommended)**Filename: cp045583.compsig; cp045583.exe; cp045583.md5 **Important Note!**

Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or a ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

Added support for Windows Server 2019.

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**Firmware - Storage Controller** Top

HPE D3600/D3700/D3610/D3710 12Gb SAS Disk Enclosure ROM Flash Component for Linux (x64)Version: 5.04 (B) **(Recommended)**
Filename: CP045792.md5; RPMS/x86_64/firmware-d3000-5.04-2.1.x86_64.compsig; RPMS/x86_64/firmware-d3000-5.04-2.1.x86_64.rpm

## Important Note!

**IMPORTANT:** Firmware updates must be performed during a system maintenance window, with all I/O to the system halted. In single domain configuration, if user hosts an OS in D3000(or any storage box) and flash the SEPs, it will hang/crash everytime as SmartComponent will reset the SEPs after flash/codeload.

**WARNING!** Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

**NOTE:** All firmware flash progress messages are logged to /var/cpq/D3000.log and flash summary is logged to /var/cpq/Component.log.

## Prerequisites

IMPORTANT: Firmware updates must be performed during a system maintenance window, with all I/O to the system halted.

WARNING! Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

NOTE: All firmware flash progress messages are logged to /var/cpq/D3000.log and flash summary is logged to /var/cpq/Component.log.

## Fixes

**The following fixes were incorporated in this version:**

The Enabled-ClusterS2D command now completes successfully when executed on a SATA drive within a D3610 disk enclosure for a NonStop solution.

The smart carrier, which is the drive case for SAS drives, now authenticates in the D3610/D3710 drive enclosure.

Added new 7-segment error codes E0 and E1 to report issues with Fan modules A and B, respectively. These new codes only apply to the D3610/D3710 and only display when running firmware 5.04.

If the storage enclosure processor within the I/O module fails, a hard reset (power down and then power up) is executed to ensure the processor comes back online.

Please refer to the Release Notes for the complete listing of fixes, enhancements, known issues and work-arounds corresponding to this firmware.

## Enhancements

**The following enhancement has been added in this version:**

Added support of Rhel 7.8

Added support of Rhel 8.2

Added support of SLES15 SP2

**Supported Devices and Features**

The D3600 / D3700 / D3610 / D3710 Enclosure can be attached to any of the following HPE Storage Controllers and Host Bus Adapters :

Smart Array P841 Controller

Smart Array P441 Controller

Smart HBA H241

Smart Array P408e-p Controller

Smart Array E208e-p Controller

Smart Array P408e-m Controller

Smart Array P741m Controller

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HPE D3600/D3700/D3610/D3710 12Gb SAS Disk Enclosure ROM Flash Component for VMware (ESXi)Version: 5.04 (B) **(Recommended)**Filename: CP045788.compsig; CP045788.md5; CP045788.zip **Important Note!**

**IMPORTANT:** Firmware updates must be performed during a system maintenance window, with all I/O to the system halted. In single domain configuration, if user hosts an OS in D3000(or any storage box) and flash the SEPs, it will hang/crash everytime as SmartComponent will reset the SEPs after flash/codeload.

**WARNING!** Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

**NOTE:** All firmware flash progress messages are logged to /var/cpq/D3000.log and flash summary is logged to /var/cpq/Component.log.

**Prerequisites**

IMPORTANT: Firmware updates must be performed during a system maintenance window, with all I/O to the system halted.

WARNING! Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

NOTE: All firmware flash progress messages are logged to /var/cpq/D3000.log and flash summary is logged to /var/cpq/Component.log.

**Fixes**

**The following fixes were incorporated in this version:**

The Enabled-ClusterS2D command now completes successfully when executed on a SATA drive within a D3610 disk enclosure for a NonStop solution.

The smart carrier, which is the drive case for SAS drives, now authenticates in the D3610/D3710 drive enclosure.

Added new 7-segment error codes E0 and E1 to report issues with Fan modules A and B, respectively. These new codes only apply to the D3610/D3710 and only display when running firmware 5.04.

If the storage enclosure processor within the I/O module fails, a hard reset (power down and then power up) is executed to ensure the processor comes back online.

Please refer to the Release Notes for the complete listing of fixes, enhancements, known issues and work-arounds corresponding to this firmware.

**Supported Devices and Features**

The D3600 / D3700 / D3610 / D3710 Enclosure can be attached to any of the following HPE Storage Controllers and Host Bus Adapters :

Smart Array P841 Controller

Smart Array P441 Controller

Smart HBA H241

Smart Array P741m Controller

Smart Array P408e-p Controller

Smart Array E208e-p Controller

Smart Array P408e-m Controller

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HPE D3600/D3700/D3610/D3710 12Gb SAS Disk Enclosure ROM Flash Component for Windows (x64)Version: 5.04 (B) **(Recommended)**Filename: cp045793.compsig; cp045793.exe **Important Note!**

**IMPORTANT:** Firmware updates must be performed during a system maintenance window, with all I/O to the system halted. In single domain configuration, if user hosts an OS in D3000(or any storage box) and flash the SEPs, it will hang/crash everytime as SmartComponent will reset the SEPs after flash/codeload.

**WARNING!** Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

**NOTE:** All firmware flash progress messages are logged to %systemdrive%\CPQSYSTEM\Log\D3000.log and flash summary is logged to %systemdrive%\CPQSYSTEM\Log\cpqsetup.log.

## Prerequisites

IMPORTANT: Firmware updates must be performed during a system maintenance window, with all I/O to the system halted.

WARNING! Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

NOTE: All firmware flash progress messages are logged to %systemdrive%\CPQSYSTEM\Log\D3000.log and flash summary is logged to %systemdrive%\CPQSYSTEM\Log\cpqsetup.log.

## Fixes

**The following fixes were incorporated in this version:**

The Enabled-ClusterS2D command now completes successfully when executed on a SATA drive within a D3610 disk enclosure for a NonStop solution.

The smart carrier, which is the drive case for SAS drives, now authenticates in the D3610/D3710 drive enclosure.

Added new 7-segment error codes E0 and E1 to report issues with Fan modules A and B, respectively. These new codes only apply to the D3610/D3710 and only display when running firmware 5.04.

If the storage enclosure processor within the I/O module fails, a hard reset (power down and then power up) is executed to ensure the processor comes back online.

Please refer to the Release Notes for the complete listing of fixes, enhancements, known issues and work-arounds corresponding to this firmware.

## Supported Devices and Features

The D3600 / D3700 / D3610 / D3710 Enclosure can be attached to any of the following HPE Storage Controllers and Host Bus Adapters :

Smart Array P841 Controller

Smart Array P441 Controller

Smart HBA H241

Smart Array P408e-p Controller

Smart Array E208e-p Controller

Smart Array P408e-m Controller

Smart Array P741m Controller

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HPE D6020 12Gb SAS Disk Enclosure ROM Flash Component for Linux (x64)Version: 2.74 (I) **(Recommended)**Filename: CP045970.md5; RPMS/x86_64/firmware-d6020-2.74-9.1.x86_64.compsig; RPMS/x86_64/firmware-d6020-2.74-9.1.x86_64.rpm **Important Note!**

**IMPORTANT:** Firmware updates must be performed during a system maintenance window, with all I/O to the system halted. In single domain configuration, if user hosts an OS in D6020(or any storage box) and flash the SEPs, it will hang/crash everytime as SmartComponent will reset the SEPs after flash/codeload.

**WARNING!** Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

**NOTE:** All firmware flash progress messages are logged to /var/cpq/D6020.log and flash summary is logged to /var/cpq/Component.log.

**Prerequisites**

IMPORTANT: Firmware updates must be performed during a system maintenance window, with all I/O to the system halted.

WARNING! Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

NOTE: All firmware flash progress messages are logged to /var/cpq/D6020.log and flash summary is logged to /var/cpq/Component.log.

**Fixes**

**The following fixes were incorporated in this version:**

Temperature sensors logic inside gSEP model and SES database

When an IOM is pulled the surviving IOM reports false critical temperatures

Please refer to the Release Notes for the complete listing of fixes, enhancements, known issues and work-arounds corresponding to this firmware.

**Enhancements**

**The following enhancement has been added in this version:**

Added support of Rhel 7.8

Added support of Rhel 8.2

Added support of SLES15 SP2

**Supported Devices and Features**

The D6020 Enclosure can be attached to any of the following HPE Storage Controllers and Host Bus Adapters :

Smart Array P841 Controller

Smart Array P441 Controller

Smart HBA H241

Smart Array P741m Controller

Smart Array P408e-p Controller

Smart Array E208e-p Controller

Smart Array P408e-m Controller

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HPE D6020 12Gb SAS Disk Enclosure ROM Flash Component for VMware (ESXi)Version: 2.74 (I) **(Recommended)**Filename: CP045969.compsig; CP045969.md5; CP045969.zip **Important Note!**

**IMPORTANT:** Firmware updates must be performed during a system maintenance window, with all I/O to the system halted. In single domain configuration, if user hosts an OS in D6020(or any storage box) and flash the SEPs, it will hang/crash everytime as SmartComponent will reset the SEPs after flash/codeload.

**WARNING!** Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

**NOTE:** All firmware flash progress messages are logged to /var/cpq/D6020.log and flash summary is logged to /var/cpq/Component.log.

**Prerequisites**

IMPORTANT: Firmware updates must be performed during a system maintenance window, with all I/O to the system halted.

WARNING! Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

NOTE: All firmware flash progress messages are logged to /var/cpq/D6020.log and flash summary is logged to /var/cpq/Component.log.

**Fixes**

**The following fixes were incorporated in this version:**

Temperature sensors logic inside gSEP model and SES database

When an IOM is pulled the surviving IOM reports false critical temperatures

Please refer to the Release Notes for the complete listing of fixes, enhancements, known issues and work-arounds corresponding to this firmware.

**Supported Devices and Features**

The D6020 Enclosure can be attached to any of the following HPE Storage Controllers and Host Bus Adapters :

Smart Array P841 Controller

Smart Array P441 Controller

Smart HBA H241

Smart Array P741m Controller

Smart Array P408e-p Controller

Smart Array E208e-p Controller

Smart Array P408e-m Controller

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HPE D6020 12Gb SAS Disk Enclosure ROM Flash Component for Windows (x64)Version: 2.74 (I) **(Recommended)**Filename: cp045968.compsig; cp045968.exe **Important Note!**

**IMPORTANT:** Firmware updates must be performed during a system maintenance window, with all I/O to the system halted. In single domain configuration, if user hosts an OS in D6020(or any storage box) and flash the SEPs, it will hang/crash everytime as SmartComponent will reset the SEPs after flash/codeload.

**WARNING!** Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

**NOTE:** All firmware flash progress messages are logged to %systemdrive%\CPQSYSTEM\Log\D6020.log and flash summary is logged to %systemdrive%\CPQSYSTEM\Log\cpqsetup.log.

**Prerequisites**

IMPORTANT: Firmware updates must be performed during a system maintenance window, with all I/O to the system halted.

WARNING! Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

NOTE: All firmware flash progress messages are logged to %systemdrive%\CPQSYSTEM\Log\D6020.log and flash summary is logged to %systemdrive%\CPQSYSTEM\Log\cpqsetup.log.

**Fixes**

**The following fixes were incorporated in this version:**

Temperature sensors logic inside gSEP model and SES database

When an IOM is pulled the surviving IOM reports false critical temperatures

Please refer to the Release Notes for the complete listing of fixes, enhancements, known issues and work-arounds corresponding to this firmware.

**Supported Devices and Features**

The D6020 Enclosure can be attached to any of the following HPE Storage Controllers and Host Bus Adapters :

Smart Array P841 Controller

Smart Array P441 Controller

Smart HBA H241

Smart Array P741m Controller

Smart Array P408e-p Controller

Smart Array E208e-p Controller

Smart Array P408e-m Controller

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HPE D8000 12Gb SAS Disk Enclosure ROM Flash Component for Linux (x64)Version: 0111 **(Recommended)**Filename: CP046459.md5; RPMS/x86_64/firmware-d8000-0111-1.1.x86_64.compsig; RPMS/x86_64/firmware-d8000-0111-1.1.x86_64.rpm **Important Note!**

**IMPORTANT:** Firmware updates must be performed during a system maintenance window, with all I/O to the system halted. In single domain configuration, if user hosts an OS in D8000(or any storage box) and flash the SEPs, it will hang/crash everytime as SmartComponent will reset the SEPs after flash/codeload.

**WARNING!** Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

**NOTE:** All firmware flash progress messages are logged to /var/cpq/D8000.log and flash summary is logged to /var/cpq/Component.log.

**Prerequisites**

IMPORTANT: Firmware updates must be performed during a system maintenance window, with all I/O to the system halted.

WARNING! Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this

unit. It typically takes several minutes for the firmware to load.

NOTE: All firmware flash progress messages are logged to /var/cpq/D8000.log and flash summary is logged to /var/cpq/Component.log.

**Fixes**

**The following fixes were incorporated in this version:**

Incorrect programming of the PHY ERROR COUNTERS parameter caused the amber LED to be lit, resulting in a false warning. The counter condition was corrected and the amber LED now functions correctly.

Please refer to the Release Notes for the complete listing of fixes, enhancements, known issues and work-arounds corresponding to this firmware.

**Enhancements**

**The following enhancement has been added in this version:**

Added support of Rhel 7.8

Added support of Rhel 8.2

Added support of SLES15 SP2

**Supported Devices and Features**

The D8000 Enclosure can be attached to any of the following HPE Storage Controllers and Host Bus Adapters :

HPE Smart Array P408e-p Controller

HPE Smart Array E208e-p Controller

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HPE D8000 12Gb SAS Disk Enclosure ROM Flash Component for VMware (ESXi)Version: 0111 **(Recommended)**Filename: CP046455.md5; CP046455.zip; CP046455_part1.compsig; CP046455_part2.compsig **Important Note!**

**IMPORTANT:** Firmware updates must be performed during a system maintenance window, with all I/O to the system halted. In single domain configuration, if user hosts an OS in D8000(or any storage box) and flash the SEPs, it will hang/crash everytime as SmartComponent will reset the SEPs after flash/codeload.

**WARNING!** Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

**NOTE:** All firmware flash progress messages are logged to /var/cpq/D8000.log and flash summary is logged to /var/cpq/Component.log.

**Prerequisites**

IMPORTANT: Firmware updates must be performed during a system maintenance window, with all I/O to the system halted.

WARNING! Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

NOTE: All firmware flash progress messages are logged to /var/cpq/D8000.log and flash summary is logged to /var/cpq/Component.log.

**Fixes**

**The following fixes were incorporated in this version:**

Incorrect programming of the PHY ERROR COUNTERS parameter caused the amber LED to be lit, resulting in a false warning. The counter condition was corrected and the amber LED now functions correctly.

Please refer to the Release Notes for the complete listing of fixes, enhancements, known issues and work-arounds corresponding to this firmware.

**Supported Devices and Features**

The D8000 Enclosure can be attached to any of the following HPE Storage Controllers and Host Bus Adapters :

HPE Smart Array P408e-p Controller

HPE Smart Array E208e-p Controller

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HPE D8000 12Gb SAS Disk Enclosure ROM Flash Component for Windows (x64)Version: 0111 **(Recommended)**Filename: cp046461.compsig; cp046461.exe **Important Note!**

**IMPORTANT:** Firmware updates must be performed during a system maintenance window, with all I/O to the system halted. In single domain configuration, if user hosts an OS in D8000(or any storage box) and flash the SEPs, it will hang/crash everytime as SmartComponent will reset the SEPs after flash/codeload.

**WARNING!** Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

**NOTE:** All firmware flash progress messages are logged to %systemdrive%\CPQSYSTEM\Log\D8000.log and flash summary is logged to %systemdrive%\CPQSYSTEM\Log\cpqsetup.log.

**Prerequisites**

IMPORTANT: Firmware updates must be performed during a system maintenance window, with all I/O to the system halted.

WARNING! Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this

unit. It typically takes several minutes for the firmware to load.

NOTE: All firmware flash progress messages are logged to %systemdrive%\CPQSYSTEM\Log\D8000.log and flash summary is logged to %systemdrive%\CPQSYSTEM\Log\cpqsetup.log.

**Fixes**

**The following fixes were incorporated in this version:**

Incorrect programming of the PHY ERROR COUNTERS parameter caused the amber LED to be lit, resulting in a false warning. The counter condition was corrected and the amber LED now functions correctly.

Please refer to the Release Notes for the complete listing of fixes, enhancements, known issues and work-arounds corresponding to this firmware.

**Supported Devices and Features**

The D8000 Enclosure can be attached to any of the following HPE Storage Controllers and Host Bus Adapters :

HPE Smart Array P408e-p Controller

HPE Smart Array E208e-p Controller

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HPE MR216i-a Gen10 Plus Tri Mode ControllerVersion: 52.16.3-3913 **(Recommended)**Filename: HPE_MR216i-a_Gen10P_52.16.3-3913.fwpkg **Important Note!**

**This firmware version to be used on MR216i-a controllers.**

**Enhancements**

Initial Release

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HPE MR216i-p Gen10 Plus Tri Mode ControllerVersion: 52.16.3-3913 **(Recommended)**Filename: HPE_MR216i-p_Gen10P_52.16.3-3913.fwpkg **Important Note!**

**This firmware version to be used on MR216i-p controllers.**

**Enhancements**

Initial Release

HPE MR416i-a Gen10 Plus Tri Mode ControllerVersion: 52.16.3-3913 **(Recommended)**Filename: HPE_MR416i-a_Gen10P_52.16.3-3913.fwpkg **Important Note!**

**This firmware version to be used on MR416i-a controllers.**

**Enhancements**

Initial Release

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HPE MR416i-p Gen10 Plus Tri Mode ControllerVersion: 52.16.3-3913 **(Recommended)**Filename: HPE_MR416i-p_Gen10P_52.16.3-3913.fwpkg **Important Note!**

**This firmware version to be used on MR416i-pcontrollers.**

**Enhancements**

Initial Release

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HPE SR932i-p and SR416i-a Gen10 Plus ControllersVersion: 03.01.00.006 **(Recommended)**Filename: HPE_SRXXX_Gen10p_3.01.00.006.fwpkg **Enhancements**

Initial Release

**Supported Devices and Features**

Supported Devices - SmartRAID SR932i-p and SR416i-a

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Online Firmware Flash for ESXi - HPE NS204i-p, NS204i-d, NS204i-t, NS204i-r Gen10 Plus Boot ControllerVersion: 1.0.14.1055 **(Critical)**Filename: CP047954.compsig; CP047954.zip **Important Note!**

VMware **7.0u1 is** supported by HPE NS204i-p, NS204i-d, NS204i-t and NS204i-r Gen10 Plus Boot Controller

**VMware 7.0 is NOT supported by HPE NS204i-p, NS204i-d, NS204i-t and NS204i-r Gen10 Plus Boot Controller**

**Fixes**

Firmware may skip rebuilding chunks of data on the new drive when the drive rebuild is performed followed by a Redfish Read on servers with NS204i adapter card.

Online Firmware Flash for Linux(x64) - HPE NS204i-p, NS204i-d, NS204i-t, NS204i-r Gen10 Plus Boot ControllerVersion: 1.0.14.1055 **(Critical)**Filename: CP047953.md5; CP047953.scexe; deb/firmware-9041739931_1.0.14.1055-1.1_amd64.deb; rpm/RPMS/x86_64/firmware-9041739931-1.0.14.1055-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-9041739931-1.0.14.1055-1.1.x86_64.rpm **Fixes**

Firmware may skip rebuilding chunks of data on the new drive when the drive rebuild is performed followed by a Redfish Read on servers with NS204i adapter card.

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Online Firmware Flash for Windows - HPE NS204i-p, NS204i-d, NS204i-t, NS204i-r Gen10 Plus Boot ControllerVersion: 1.0.14.1055 (C) **(Critical)**Filename: cp050165.compsig; cp050165.exe; cp050165.md5 **Important Note!**

SC rebuilt for OS signed mnv.cli tool and carry over previous critical issue resolution with reference SID7544.

**Fixes**

Add HPE digital signing to CLI tool

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Online ROM Flash Component for ESXi (x86) - HPE Smart Array P824i-p MR Gen10Version: 24.23.0-0043 (B) **(Recommended)**Filename: CP044443.compsig; CP044443.zip **Enhancements**

Added support for VMware ESXi 7.0

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Online ROM Flash Component for Linux - HPE Host Bus Adapters H221Version: 15.10.10.00 (C) **(Optional)**Filename: rpm/RPMS/i386/firmware-43d7eff89e-15.10.10.00-3.1.i386.rpm **Important Note!**

Customers who already have firmware version 15.10.10.00 installed do not need to update to 15.10.10.00(C).

This driver component supports Gen9 servers only with H221 controllers and the controller does not support connection to D2600, D2700, and D6000 Disk Enclosures with Gen9 servers.

**Enhancements**

Improved Integration with Smart Update Manager.

**Supported Devices and Features**

This driver component supports Gen9 servers only with H221 controllers and the controller does not support connection to D2600, D2700, and D6000 Disk Enclosures with Gen9 servers.

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Online ROM Flash Component for Linux (x64) – HPE Apollo 2000 Gen10 Backplane Expander FirmwareVersion: 1.00 (B) **(Optional)**Filename: rpm/RPMS/x86_64/firmware-smartarray-9f082dffb4-1.00-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-smartarray-9f082dffb4-1.00-2.1.x86_64.rpm **Important Note!**

**Note:** If version 1.00 was previously installed, then it is not necessary to upgrade to version 1.00 (B).

**Enhancements**

Added support for SUSE Linux Enterprise Server 15 OS

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Online ROM Flash Component for Linux (x64) – HPE Apollo 2000 Gen10 Plus Backplane Expander FWVersion: 1.27 **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-smartarray-7b5e8400dd-1.27-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-smartarray-7b5e8400dd-1.27-1.1.x86_64.rpm **Enhancements**

Initial Release

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Online ROM Flash Component for Linux (x64) - HPE Apollo 2000 System - SAS ExpanderVersion: 1.00 (C) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-smartarray-3bf7ece88e-1.00-3.1.x86_64.rpm **Important Note!**

Customers who already have previous firmware version 1.00 installed do not need to update to 1.00(C).

**Enhancements**

Added support for SUSE Linux Enterprise Server 15 OS

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Online ROM Flash Component for Linux (x64) – HPE Apollo 4200 Backplane Expander FirmwareVersion: 1.78 (A) **(Optional)**Filename: rpm/RPMS/x86_64/firmware-smartarray-f18fdefd0b-1.78-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-smartarray-f18fdefd0b-1.78-1.1.x86_64.rpm **Important Note!**

Power cycle / cold reboot is required if firmware is upgraded from version 1.03 or earlier.

**Enhancements**

Added HPE Smart Array P824i-p controller support

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Online ROM Flash Component for Linux (x64) – HPE Apollo 4200 Gen10 Plus Backplane Expander FirmwareVersion: 0.37 **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-smartarray-f36d4ef431-0.37-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-smartarray-f36d4ef431-0.37-1.1.x86_64.rpm **Enhancements**

Initial Release

Online ROM Flash Component for Linux (x64) - HPE SAS Expander Firmware for HPE D2500sb Storage BladeVersion: 2.00 (B) **(Optional)**Filename: rpm/RPMS/x86_64/firmware-smartarray-1d0696d939-2.00-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-smartarray-1d0696d939-2.00-2.1.x86_64.rpm **Important Note!**

Customers who already installed firmware version 2.00 do not need to update to 2.00 (B).

**Enhancements**

Added support for SUSE Linux Enterprise Server 15 OS

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Online ROM Flash Component for Linux (x64) - HPE Smart Array P824i-p MR Gen10Version: 24.23.0-0043 (B) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-cafee9b6e4-24.23.0_0043-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-cafee9b6e4-24.23.0_0043-2.1.x86_64.rpm **Fixes**

**CFI 24378: sum-8.5.1 "smartupdate upgrade" Not Installing the P824i Controller FW on RHEL7**

---

Online ROM Flash Component for VMware ESXi - HPE 12Gb/s SAS Expander Firmware for HPE Smart Array Controllers and HPE HBA ControllersVersion: 5.10 **(Recommended)**Filename: CP049281.compsig; CP049281.zip **Important Note!**

Power cycle / cold reboot is required if firmware is upgraded from version 1.31 or earlier.

**Fixes**

Valid flag is always set to true initially so that CRC check can be performed on initstring partition and test if it is really valid.

Move Smart Carrier Authentication to later in the boot process and move the Exception Dumper task to earlier in the process in order to support Winbond alternative Flash

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Online ROM Flash Component for VMware ESXi - HPE Apollo 2000 Gen10 Backplane Expander FirmwareVersion: 1.00 (C) **(Optional)**Filename: CP037611.compsig; CP037611.zip **Important Note!**

Customers who already installed firmware version 1.00 do not need to update to 1.00 (C).

**Enhancements**

Added support for VMware vSphere 6.7 OS

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Online ROM Flash Component for VMware ESXi - HPE Apollo 2000 Gen10 Plus Backplane Expander FWVersion: 1.27 **(Recommended)**Filename: CP046386.compsig; CP046386.zip **Enhancements**

Initial Release

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Online ROM Flash Component for VMware ESXi - HPE Apollo 2000 System - SAS ExpanderVersion: 1.52 (B) **(Recommended)**Filename: CP045347.compsig; CP045347.zip **Enhancements**

Added support for ESXi 7.0

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Online ROM Flash Component for VMware ESXi - HPE Apollo 4200 Backplane Expander FirmwareVersion: 1.79 (B) **(Recommended)**Filename: CP045810.zip; CP045810_part1.compsig; CP045810_part2.compsig **Important Note!**

Power cycle / cold reboot is required if firmware is upgraded from version 1.03 or earlier.

**Enhancements**

Added ESXi 7.0 support.

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Online ROM Flash Component for VMware ESXi - HPE Apollo 4200 Gen10 Plus Backplane Expander FirmwareVersion: 0.37 **(Recommended)**Filename: CP044965.compsig; CP044965.zip **Enhancements**

Initial Release

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Online ROM Flash Component for VMware ESXi - HPE Apollo 45xx Gen10 Backplane Expander FirmwareVersion: 1.56 (D) **(Recommended)**Filename: CP038103.compsig; CP038103.zip **Enhancements**

Added HPE Smart Array P824i-p controller support

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Online ROM Flash Component for VMware ESXi - HPE Apollo 45xx Gen9 Backplane Expander FirmwareVersion: 2.50 (B) **(Recommended)**Filename: CP045346.compsig; CP045346.zip **Important Note!**

Please un-plug and re-plug the power cord to the server for firmware upgrade from version 1.03 or earlier to take effect.

**Enhancements**

Added support for the ESXi OS 7.0

---

Online ROM Flash component for VMware ESXi - HPE Dual 8GB microSD USBVersion: 1.3.2.215 (B) **(Recommended)**Filename: CP037940.compsig; CP037940.zip **Fixes**

To show corresponding HPE Dual 8GB Micron SD  part number in Agentless Management Service version 11.2.0 or later.

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Online ROM Flash Component for VMware ESXi - HPE Express Bay Enablement Switch CardVersion: 1.78 (B) **(Optional)**Filename: CP035193.zip **Important Note!**

Customers who already have firmware version 1.78 installed do not need to update to 1.78(B).

Power cycle / cold reboot is required after installation for updates to take effect.

**Prerequisites**

The HP ProLiant iLO firmware version must be v2.20 or later. If the HP ProLiant iLO firmware is older than v2.20 you will receive the following error message:

*Check dependency failed.*

*Current version: iLOx x.xx*

*Minimum version required: iLO4 2.20*

*The software will not be installed on this system because the required hardware is not present in the system or the software/firmware doesn't apply to this system*

**Enhancements**

Added VMware vSphere 6.7 OS support

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Online ROM Flash Component for VMware ESXi - HPE SAS Expander Firmware for HPE D2500sb Storage BladeVersion: 2.00 (C) **(Optional)**Filename: CP037690.compsig; CP037690.zip **Important Note!**

Customers who already installed firmware version 2.00 do not need to update to 2.00 (C).

When using ESXi6.0 you must be at upgrade 3 or newer. The required SmartPQI driver is not present in earlier versions of the OS

**Prerequisites**

When using ESXi6.0 you must be at upgrade 3 or newer. The required SmartPQI driver is not present in earlier versions of the OS

**Enhancements**

Added support for VMware vSphere 6.7 OS

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Online ROM Flash Component for VMware ESXi - HPE Smart Array P408i-p, P408e-p, P408i-a, P408i-c, E208i-p, E208e-p, E208i-c, E208i-a, P408i-sb, P408e-m, P204i-c, P204i-b, P816i-a and P416ie-m SR Gen10Version: 3.53 **(Recommended)**Filename: CP046359.compsig; CP046359.zip **Fixes**

An issue where the controller might become unresponsive while receiving periodic I/Os.

Host I/O timeouts might occur due to continuing firmware attempts to discover devices during an expander configuration.

A controller lockup problem (with code 0x1E10) might occur when a bad drive with unsupported block size.

A Controller hangs when multiple hot-plug and hot remove events (drives or JBODs) were being processed.

A Controller hangs on Flash Backed Write Cache enabled logical drives with sequential read towards the end of the logical drive.

A Controller hangs when hot-plug physical drive with outstanding I/Os.

A controller hangs if a host I/O and background consistency check simultaneously encounter a RAID-1 ADM or RAID-10 ADM stripe in which all drives have URE's on the same LBA.

A Controller hangs when a drive is failed from a RAID6/60 logical drive when the host issues a Clear Controller Configuration command or any other configuration change command.

The SSD data drive might be set offline (with reason code 0x37) when hot-remove and re-insert during a spare rebuild in progress.

A drive might not be exposed to the OS if the system is rebooted just after the sanitize erase finishes.

UBM backplanes are not detected properly when connected to specific ports (port 7 or above) in the 12Gb SAS Expander Card.

A controller might hang when idle followed by a short burst of I/Os.

The controller might return the previous drive firmware version, after a drive firmware update on SATA drives.

The controller might fail drives (with reason code 0x49, I/O freeze timeout) during expander firmware upgrade on a multi-expander enclosure configuration.

Hot-added drive LED control fails on specific fan-out expander type external enclosure models.

Smart Array Essential series controller might not be responsive when processing sequential I/Os and the firmware coalescing logic can't get the memory.

Filesystem or application might read old data when SmartCache configurations encounter intermittent write I/O errors to a primary logical drive.

**Enhancements**

Added UBM type3 backplane support

Added support for long device model/product ID for SATA drives.

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Online ROM Flash Component for VMware ESXi - Smart Array and Smart HBA H240ar, H240nr, H240, H241, H244br, P240nr, P244br, P246br, P440ar, P440, P441, P542D, P741m, P840, P840ar, and P841Version: 7.00 (D) **(Recommended)**Filename: CP047335.compsig; CP047335.zip **Fixes**

Improved flash engine efficiency

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Online ROM Flash Component for VMware ESXi - Smart Array P220i, P222, P420i, P420, P421, P721m, and P822Version: 8.32 (E) **(Recommended)**Filename: CP045344.compsig; CP045344.zip **Enhancements**

Added support for ESXi 7.0

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Online ROM Flash Component for VMware ESXi - Smart Array P230i, P430, P431, P731m, P830i, and P830Version: 5.02 (B) **(Recommended)**Filename: CP045345.compsig; CP045345.zip **Enhancements**

Added support for the ESXI OS7.0

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Online ROM Flash Component for Windows (x64) - HPE 12Gb/s SAS Expander Firmware for HPE Smart Array Controllers and HPE HBA ControllersVersion: 5.10 **(Recommended)**Filename: cp049280.compsig; cp049280.exe; cp049280.md5 **Important Note!**

Power cycle / cold reboot is required if firmware is upgraded from version 1.31 or earlier.

**Fixes**

Valid flag is always set to true initially so that CRC check can be performed on initstring partition and test if it is really valid.

Move Smart Carrier Authentication to later in the boot process and move the Exception Dumper task to earlier in the process in order to support Winbond alternative Flash

**Enhancements**

Add Windows 2022 support

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Online ROM Flash Component for Windows (x64) - HPE Apollo 2000 Gen10 Backplane Expander FirmwareVersion: 1.00 (B) **(Optional)**Filename: cp037609.compsig; cp037609.exe; cp037609.md5 **Important Note!**

**Note:** If version 1.00 was previously installed, then it is not necessary to upgrade to version 1.00 (B).

**Enhancements**

Added support for Microsoft Windows Server 2019 OS

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Online ROM Flash Component for Windows (x64) - HPE Apollo 2000 Gen10 Plus Backplane Expander FWVersion: 1.27 **(Recommended)**Filename: cp046384.compsig; cp046384.exe; cp046384.md5 **Enhancements**

Initial Release

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Online ROM Flash Component for Windows (x64) - HPE Apollo 2000 System - SAS ExpanderVersion: 1.00 (E) **(Recommended)**Filename: cp037691.exe; cp037691.md5 **Important Note!**

Customers who already have previous firmware version 1.00 installed do not need to update to 1.00(E).

**Enhancements**

Added support for Microsoft Windows Server 2019 OS

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Online ROM Flash Component for Windows (x64) - HPE Apollo 4200 Backplane Expander FirmwareVersion: 1.78 (A) **(Optional)**Filename: cp038812.compsig; cp038812.exe; cp038812.md5 **Important Note!**

Power cycle / cold reboot is required if firmware is upgraded from version 1.03 or earlier.

**Enhancements**

Added HPE Smart Array P824i-p controller support

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Online ROM Flash Component for Windows (x64) - HPE Apollo 4200 Gen10 Plus Backplane Expander FirmwareVersion: 0.37 **(Recommended)**Filename: cp044967.compsig; cp044967.exe; cp044967.md5 **Enhancements**

Initial Release

Online ROM Flash Component for Windows (x64) - HPE Apollo 45xx Gen10 Backplane Expander FirmwareVersion: 1.56 (C) **(Recommended)**Filename: cp037765.compsig; cp037765.exe; cp037765.md5 **Enhancements**

Added HPE Smart Array p824i-p controller support

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Online ROM Flash Component for Windows (x64) - HPE Apollo 45xx Gen9 Backplane Expander FirmwareVersion: 2.50 **(Optional)**Filename: cp038040.exe; cp038040.md5 **Important Note!**

Please un-plug and re-plug the power cord to the server for firmware upgrade from version 1.03 or earlier to take effect.

**Fixes**

Expander may reset during heavy SSACLI polling

SATA drives may take longer to spin up, not be initially detected, and then hot add later. This can prevent system boot or affect the logical drive status.

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Online ROM Flash Component for Windows (x64) - HPE Express Bay Enablement Switch CardVersion: 1.78 (C) **(Optional)**Filename: cp037730.exe; cp037730.md5 **Important Note!**

Customers who already have firmware version 1.78 installed do not need to update to 1.78(C).

Power cycle / cold reboot is required after installation for updates to take effect.

**Prerequisites**

The "HP ProLiant iLO 3/4 Channel Interface Driver" must be installed and running before using this flash component. If the driver is not running you will receive the following error message:

*“Setup is unable to load a setup DLL”*

The HP ProLiant iLO firmware version must be v2.20 or later. If the HP ProLiant iLO firmware is older than v2.20 you will receive the following error message:

*Check dependency failed.*

*Current version: iLOx x.xx*

*Minimum version required: iLO4 2.20*

*The software will not be installed on this system because the required hardware is not present in the system or the software/firmware doesn't apply to this system.*

**Enhancements**

Added support for Microsoft Windows Server 2019 OS

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Online ROM Flash Component for Windows (x64) - HPE Host Bus Adapters H221Version: 15.10.10.00 (E) **(Optional)**Filename: cp038049.exe; cp038049.md5 **Important Note!**

Customers who already have firmware version 15.10.10.00 installed do not need to update to 15.10.10.00(E).

This driver component supports Gen9 servers only with H221 controllers and the controller does not support connection to D2600, D2700, and D6000 Disk Enclosures with Gen9 servers.

**Enhancements**

Improved Integration with Smart Update Manager.

**Supported Devices and Features**

This driver component supports Gen9 servers only with H221 controllers and the controller does not support connection to D2600, D2700, and D6000 Disk Enclosures with Gen9 servers.

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Online ROM Flash Component for Windows (x64) - HPE SAS Expander Firmware for HPE D2500sb Storage BladeVersion: 2.00 (B) **(Optional)**Filename: cp037679.compsig; cp037679.exe; cp037679.md5 **Important Note!**

Customers who already installed firmware version 2.00 do not need to update to 2.00 (B).

**Enhancements**

Added support for Microsoft Windows Server 2019 OS

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Online ROM Flash Component for Windows (x64) - HPE Smart Array P408i-p, P408e-p, P408i-a, P408i-c, E208i-p, E208e-p, E208i-c, E208i-a, P408i-sb, P408e-m, P204i-c, P204i-b, P816i-a and P416ie-m SR Gen10Version: 3.53 **(Recommended)**Filename: cp046357.compsig; cp046357.exe; cp046357.md5 **Fixes**

An issue where the controller might become unresponsive while receiving periodic I/Os.

Host I/O timeouts might occur due to continuing firmware attempts to discover devices during an expander configuration.

A controller lockup problem (with code 0x1E10) might occur when a bad drive with unsupported block size.

A Controller hangs when multiple hot-plug and hot remove events (drives or JBODs) were being processed.

A Controller hangs on Flash Backed Write Cache enabled logical drives with sequential read towards the end of the logical drive.

A Controller hangs when hot-plug physical drive with outstanding I/Os.

A controller hangs if a host I/O and background consistency check simultaneously encounter a RAID-1 ADM or RAID-10 ADM stripe in which all drives have URE's on the same LBA.

A Controller hangs when a drive is failed from a RAID6/60 logical drive when the host issues a Clear Controller Configuration command or any other configuration change command.

The SSD data drive might be set offline (with reason code 0x37) when hot-remove and re-insert during a spare rebuild in progress.

A drive might not be exposed to the OS if the system is rebooted just after the sanitize erase finishes.

UBM backplanes are not detected properly when connected to specific ports (port 7 or above) in the 12Gb SAS Expander Card.

A controller might hang when idle followed by a short burst of I/Os.

The controller might return the previous drive firmware version, after a drive firmware update on SATA drives.

The controller might fail drives (with reason code 0x49, I/O freeze timeout) during expander firmware upgrade on a multi-expander enclosure configuration.

Hot-added drive LED control fails on specific fan-out expander type external enclosure models.

Smart Array Essential series controller might not be responsive when processing sequential I/Os and the firmware coalescing logic can't get the memory.

Filesystem or application might read old data when SmartCache configurations encounter intermittent write I/O errors to a primary logical drive.

**Enhancements**

Added UBM type3 backplane support

Added support for long device model/product ID for SATA drives.

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Online ROM Flash Component for Windows (x64) - HPE Smart Array P824i-p MR Gen10Version: 24.23.0-0043 (A) **(Recommended)**Filename: cp044919.compsig; cp044919.exe; cp044919.md5 **Fixes**

Over-temp issue was a false IML due to a >=60C threshold, modified the threshold to >65C in new version.

Please reference Customer Advisory a00101958en_us

Online ROM Flash Component for Windows (x64) - Smart Array and Smart HBA H240ar, H240nr, H240, H241, H244br, P240nr, P244br, P246br, P440ar, P440, P441, P542D, P741m, P840, P840ar, and P841Version: 7.00 **(Recommended)**Filename: cp039995.exe; cp039995.md5 **Fixes**

Occasionally the drive will not accept any IO's after running Sanitize command for a period of time due to the FW being out of sync with the drive during that time

Non-HPE drives could report "Task Set Full" due to the drives reaching the qdepth limit during heavy workload

Raid volume is not discovered due to a bad drive consuming two slots during hotplug

Data could become inaccessible when upgrading from firmware versions prior to 4.5x

The controller could stop responding when executing a SCSI verify command due to a CPU exception

The system could stop communicating due to an I/O command timeout

While on HBA mode, a drive could stop responding due to an early allocated buffer release

A SAS drive WWN is reported inaccuratelyy due to an incorrect report causing the driver to be out of sync with the device

If using a 4G module, the controller could stop responding due to the SSD Cache metadata exceeding its limits during a Backup

SSD Smart Cache module become disabled due to a reduction in usable cache space

**Enhancements**

Add optimization for the iLO communication interface in order to have a more effective mechanism to check for ownership of the communication buffer

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Online ROM Flash Component for Windows (x64) - Smart Array P220i, P222, P420i, P420, P421, P721m, and P822Version: 8.32 (C) **(Recommended)**Filename: cp037741.exe; cp037741.md5 **Important Note!**

Customers who already have firmware version 8.32 installed do not need to update to 8.32(C).

**Enhancements**

Improved Integration with Smart Update Manager

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Online ROM Flash Component for Windows (x64) - Smart Array P230i, P430, P431, P731m, P830i, and P830Version: 5.02 **(Optional)**Filename: cp039412.exe; cp039412.md5 **Fixes**

The firmware updates could fail while SmartCache is enabled due to active I/O in the Smart Cache.

The serial output of the expander could fail to be populated in the controller logs due to the buffer not being handled appropriately by the controller

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Supplemental Update / Online ROM Flash Component for Linux (x64) – HPE 12Gb/s SAS Expander Firmware for HPE Smart Array Controllers and HPE HBA ControllersVersion: 5.10 **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-smartarray-1f19a4a64d-5.10-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-smartarray-1f19a4a64d-5.10-1.1.x86_64.rpm **Important Note!**

Power cycle / cold reboot is required if firmware is upgraded from version 1.31 or earlier.

**Fixes**

Valid flag is always set to true initially so that CRC check can be performed on initstring partition and test if it is really valid.

Move Smart Carrier Authentication to later in the boot process and move the Exception Dumper task to earlier in the process in order to support Winbond alternative Flash

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Supplemental Update / Online ROM Flash Component for Linux (x64) - HPE Apollo 45xx Gen10 Backplane Expander FirmwareVersion: 1.56 (C) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-smartarray-815b1ae26d-1.56-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-smartarray-815b1ae26d-1.56-3.1.x86_64.rpm **Enhancements**

Added HPE Smart Array P824i-p controller support

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Supplemental Update / Online ROM Flash Component for Linux (x64) – HPE Apollo 45xx Gen9 Backplane Expander FirmwareVersion: 2.50 **(Optional)**Filename: rpm/RPMS/x86_64/firmware-smartarray-7bdfcd246b-2.50-1.1.x86_64.rpm **Important Note!**

Please un-plug and re-plug the power cord to the server for firmware upgrade from version 1.03 or earlier to take effect.

**Fixes**

Expander may reset during heavy SSACLI polling

SATA drives may take longer to spin up, not be initially detected, and then hot add later. This can prevent system boot or affect the logical drive status.

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Supplemental Update / Online ROM Flash Component for Linux (x64) – HPE Express Bay Enablement Switch CardVersion: 1.78 (B) **(Optional)**Filename: firmware-smartarray-94189dca85-1.78-2.1.x86_64.rpm **Important Note!**

Customers who already have firmware version 1.78 installed do not need to update to 1.78(B).

Power cycle / cold reboot is required after installation for updates to take effect.

**Prerequisites**

Previous releases of HPE Express Bay Enablement Switch Card firmware Smart Component documented dependency on iLO 3/4 Channel Interface Driver. This driver is now included with the following Linux OSes:

Red Hat Enterprise Linux 7 Server

Red Hat Enterprise Linux 6 Server (x86-64)

SUSE Linux Enterprise Server 12

The HP ProLiant iLO firmware version must be v2.20 or later. If the HP ProLiant iLO firmware is older than v2.20 you will receive the following error message:

*Check dependency failed.*

*Current version: iLOx x.xx*

*Minimum version required: iLO4 2.20*

*The software will not be installed on this system because the required hardware is not present in the system or the software/firmware doesn't apply to this system.*

**Enhancements**

Added support for SUSE Linux Enterprise Server 15 OS

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Supplemental Update / Online ROM Flash Component for Linux (x64) - HPE Smart Array P408i-p, P408e-p, P408i-a, P408i-c, E208i-p, E208e-p, E208i-c, E208i-a, P408i-sb, P408e-m, P204i-c, P204i-b, P816i-a and P416ie-m SR Gen10Version: 3.53 **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-smartarray-f7c07bdbbd-3.53-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-smartarray-f7c07bdbbd-3.53-1.1.x86_64.rpm **Fixes**

An issue where the controller might become unresponsive while receiving periodic I/Os.

Host I/O timeouts might occur due to continuing firmware attempts to discover devices during an expander configuration.

A controller lockup problem (with code 0x1E10) might occur when a bad drive with unsupported block size.

A Controller hangs when multiple hot-plug and hot remove events (drives or JBODs) were being processed.

A Controller hangs on Flash Backed Write Cache enabled logical drives with sequential read towards the end of the logical drive.

A Controller hangs when hot-plug physical drive with outstanding I/Os.

A controller hangs if a host I/O and background consistency check simultaneously encounter a RAID-1 ADM or RAID-10 ADM stripe in which all drives have URE's on the same LBA.

A Controller hangs when a drive is failed from a RAID6/60 logical drive when the host issues a Clear Controller Configuration command or any other configuration change command.

The SSD data drive might be set offline (with reason code 0x37) when hot-remove and re-insert during a spare rebuild in progress.

A drive might not be exposed to the OS if the system is rebooted just after the sanitize erase finishes.

UBM backplanes are not detected properly when connected to specific ports (port 7 or above) in the 12Gb SAS Expander Card.

A controller might hang when idle followed by a short burst of I/Os.

The controller might return the previous drive firmware version, after a drive firmware update on SATA drives.

The controller might fail drives (with reason code 0x49, I/O freeze timeout) during expander firmware upgrade on a multi-expander enclosure configuration.

Hot-added drive LED control fails on specific fan-out expander type external enclosure models.

Smart Array Essential series controller might not be responsive when processing sequential I/Os and the firmware coalescing logic can't get the memory.

Filesystem or application might read old data when SmartCache configurations encounter intermittent write I/O errors to a primary logical drive.

**Enhancements**

Added UBM type3 backplane support

Added support for long device model/product ID for SATA drives.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - Smart Array and Smart HBA H240ar, H240nr, H240, H241, H244br, P240nr, P244br, P246br, P440ar, P440, P441, P542D, P741m, P840, P840ar, and P841Version: 7.00 **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-smartarray-ea3138d8e8-7.00-1.1.x86_64.rpm **Important Note!**

In order to be detected properly, some controllers may need a newer version of the Smart Array driver installed prior to upgrading the controller firmware. If not installed, the component will fail with return code 3.

When booting a system running Red Hat Enterprise Linux 7.1 Operating System, the HP Smart Array controllers might not be recognized. This issue is due to changes in the OS where the sg driver is no longer loaded during system boot. The work around for this issue is to manually issue a "**modprobe sg**" command which should load the sg driver. After the sg driver is loaded, the /dev/sg* devices should be present and the sg driver can be used to access SCSI devices.

**Fixes**

Occasionally the drive will not accept any IO's after running Sanitize command for a period of time due to the FW being out of sync with the drive during that time

Non-HPE drives could report "Task Set Full" due to the drives reaching the qdepth limit during heavy workload

Raid volume is not discovered due to a bad drive consuming two slots during hotplug

Data could become inaccessible when upgrading from firmware versions prior to 4.5x

The controller could stop responding when executing a SCSI verify command due to a CPU exception

The system could stop communicating due to an I/O command timeout

While on HBA mode, a drive could stop responding due to an early allocated buffer release

A SAS drive WWN is reported inaccuratelyy due to an incorrect report causing the driver to be out of sync with the device

If using a 4G module, the controller could stop responding due to the SSD Cache metadata exceeding its limits during a Backup

SSD Smart Cache module become disabled due to a reduction in usable cache space

**Enhancements**

Add optimization for the iLO communication interface in order to have a more effective mechanism to check for ownership of the communication buffer

---

Supplemental Update / Online ROM Flash Component for Linux (x64) - Smart Array P220i, P222, P420i, P420, P421, P721m, and P822Version: 8.32 **(Recommended)**Filename: rpm/RPMS/x86_64/hp-firmware-smartarray-46a4d957a7-8.32-1.1.x86_64.rpm **Important Note!**

When booting a system running Red Hat Enterprise Linux 7.1 Operating System, the HP Smart Array controllers might not be recognized. This issue is due to changes in the OS where the sg driver is no longer loaded during system boot. The work around for this issue is to manually issue a "**modprobe sg**" command which should load the sg driver. After the sg driver is loaded, the /dev/sg* devices should be present and the sg driver can be used to access SCSI devices.

**Fixes**

System can potentially stop responding with no lockup code due to livelock condition where the RAID Stack thread is polling a queue for a completion to be returned by the base code firmware

**Enhancements**

Improved accuracy of drive temperature reporting feature

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Supplemental Update / Online ROM Flash Component for Linux (x64) - Smart Array P230i, P430, P431, P731m, P830i, and P830Version: 5.02 **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-smartarray-112204add8-5.02-1.1.x86_64.rpm **Important Note!**

When booting a system running Red Hat Enterprise Linux 7.1 Operating System, the HP Smart Array controllers might not be recognized. This issue is due to changes in the OS where the sg driver is no longer loaded during system boot. The work around for this issue is to manually issue a "**modprobe sg**" command which should load the sg driver. After the sg driver is loaded, the /dev/sg* devices should be present and the sg driver can be used to access SCSI devices.

**Fixes**

The firmware updates could fail while SmartCache is enabled due to active I/O in the Smart Cache.

The serial output of the expander could fail to be populated in the controller logs due to the buffer not being handled appropriately by the controller

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**Firmware - Storage Fibre Channel** Top

HPE Firmware Flash for Emulex Fibre Channel Host Bus Adapters for Linux (x64)Version: 2021.02.01 **(Recommended)** Filename: RPMS/x86_64/firmware-fc-emulex-2021.02.01-1.23.x86_64.compsig; RPMS/x86_64/firmware-fc-emulex-2021.02.01-1.23.x86_64.rpm

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:-**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image |
|---|---|---|
| HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |

**Prerequisites**

Firmware updates may be accomplished using the inbox or Out of Box (OOB) drivers. Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied enablement kit must be installed prior to this firmware component being identified by SUM for deployment.

The OOB driver and enablement kit are available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download.

The Enablement Kit requires that the target environment have the libHBAAPI package installed from your OS installation media.

Install the FC Driver Kit, reboot, and then install the Enablement Kit.

Additional requirements:

Environment must be running the syslog daemon for the flash engine to run
Environment must have 32-bit netlink library (libnl.so) installed for component to be able to discover Emulex Host Bus Adapters(HBAs)

**Fixes**

**Fixed the following:**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Enhancements**

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image |
|---|---|---|
| HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Dual Port  Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter

**32Gb FC Adapter:**

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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HPE Firmware Flash for Emulex Fibre Channel Host Bus Adapters for Microsoft Windows Server 2012R2/2016/2019 x64Version: 2021.02.01 **(Recommended)**Filename: cp044732.compsig; cp044732.exe **Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:-**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image |
|---|---|---|
| HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied Emulex driver must be installed prior to this firmware component being identified by SUM for deployment. The OOB driver is available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download/

## Fixes

**Fixed the following:**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Enhancements**

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image |
|---|---|---|
| HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter

**32Gb FC Adapter:**

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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HPE Firmware Flash for Emulex Fibre Channel Host Bus Adapters for VMware vSphere 6.5Version: 2021.02.01 **(Recommended)**Filename: CP044728.compsig; CP044728.zip **Important Note!**

Release Notes:

HPE Emulex Adapter Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:-**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image |
|---|---|---|
| HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Fixes**

**Fixed the following:**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Enhancements**

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image |
|---|---|---|
| HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Dual Port  Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter

**32Gb FC Adapter:**

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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HPE Firmware Flash for Emulex Fibre Channel Host Bus Adapters for VMware vSphere 6.7Version: 2021.02.01 **(Recommended)**Filename: CP044729.compsig; CP044729.zip **Important Note!**

Release Notes:

HPE Emulex Adapter Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:-**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image |
|---|---|---|
| HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Fixes**

**Fixed the following:**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Enhancements**

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image |
|---|---|---|
| HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Dual Port  Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter

**32Gb FC Adapter:**

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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HPE Firmware Flash for Emulex Fibre Channel Host Bus Adapters for VMware vSphere 7.0Version: 2021.02.01 **(Recommended)**Filename: CP044730.compsig; CP044730.zip **Important Note!**

Release Notes:

HPE Emulex Adapter Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:-**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image |
|---|---|---|
| HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |

| | | |
|---|---|---|
| HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Fixes**

**Fixed the following:**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Enhancements**

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image |
|---|---|---|
| HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 12.80a3 |
| HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |
| HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter | 16Gb | 12.8.352.12 |

| | | |
|---|---|---|
| HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |
| HPE SN1610E 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 12.8.352.12 |

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter

**32Gb FC Adapter:**

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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HPE Firmware Flash for Emulex Mezzanine Fibre Channel Host Bus Adapters for Linux (x64)Version: 2021.02.01 **(Recommended)**Filename: RPMS/x86_64/firmware-fc-mezz-emulex-2021.02.01-1.13.x86_64.compsig; RPMS/x86_64/firmware-fc-mezz-emulex-2021.02.01-1.13.x86_64.rpm **Important Note!**

Release Notes:

HPE Emulex Adapter Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) Host Bus adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:-**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class | 16Gb | 12.8.352.12 | 12.8.352.12 | 12.8.352.10 | 12.8.352.5 |

**Prerequisites**

Firmware updates may be accomplished using the inbox or Out of Box (OOB) drivers. Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied enablement kit must be installed prior to this firmware component being identified by SUM for deployment.

The OOB driver and enablement kit are available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download.

The Enablement Kit requires that the target environment have the libHBAAPI package installed from your OS installation media.

Install the FC Driver Kit, reboot, and then install the Enablement Kit.

Additional requirements:

Environment must be running the syslog daemon for the flash engine to run
Environment must have 32-bit netlink library (libnl.so) installed for component to be able to discover Emulex Host Bus Adapters(HBAs)

**Fixes**

**Fixed the following:-**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Enhancements**

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class | 16Gb | 12.8.352.12 | 12.8.352.12 | 12.8.352.10 | 12.8.352.5 |

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**16Gb FC Adapter:**

HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class

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HPE Firmware Flash for Emulex Mezzanine Fibre Channel Host Bus Adapters for Microsoft Windows Server 2012R2/2016/2019 x64Version: 2021.02.01 **(Recommended)**Filename: cp044766.compsig; cp044766.exe **Important Note!**

Release Notes:

HPE Emulex Adapter Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) Host Bus adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:-**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class | 16Gb | 12.8.352.12 | 12.8.352.12 | 12.8.352.10 | 12.8.352.5 |

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied Emulex driver must be installed prior to this firmware component being identified by SUM for deployment. The OOB driver is available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download/

**Fixes**

**Fixed the following:-**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Enhancements**

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class | 16Gb | 12.8.352.12 | 12.8.352.12 | 12.8.352.10 | 12.8.352.5 |

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**16Gb FC Adapter:**

HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class

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HPE Firmware Flash for Emulex Mezzanine Fibre Channel Host Bus Adapters for VMware vSphere 6.5Version: 2021.02.01 **(Recommended)**Filename: CP044762.compsig; CP044762.zip **Important Note!**

Release Notes:

HPE Emulex Adapter Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) Host Bus adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:-**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class | 16Gb | 12.8.352.12 | 12.8.352.12 | 12.8.352.10 | 12.8.352.5 |

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

## Fixes

**Fixed the following:-**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

## Enhancements

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class | 16Gb | 12.8.352.12 | 12.8.352.12 | 12.8.352.10 | 12.8.352.5 |

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**16Gb FC Adapter:**

HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class

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HPE Firmware Flash for Emulex Mezzanine Fibre Channel Host Bus Adapters for VMware vSphere 6.7Version: 2021.02.01 **(Recommended)**Filename: CP044763.compsig; CP044763.zip **Important Note!**

Release Notes:

HPE Emulex Adapter Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) Host Bus adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:-**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class | 16Gb | 12.8.352.12 | 12.8.352.12 | 12.8.352.10 | 12.8.352.5 |

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Fixes**

**Fixed the following:-**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Enhancements**

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class | 16Gb | 12.8.352.12 | 12.8.352.12 | 12.8.352.10 | 12.8.352.5 |

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**16Gb FC Adapter:**

HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class

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HPE Firmware Flash for Emulex Mezzanine Fibre Channel Host Bus Adapters for VMware vSphere 7.0Version: 2021.02.01 **(Recommended)**Filename: CP044764.compsig; CP044764.zip **Important Note!**

Release Notes:

HPE Emulex Adapter Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) Host Bus adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Fixed the following:-**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class | 16Gb | 12.8.352.12 | 12.8.352.12 | 12.8.352.10 | 12.8.352.5 |

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Fixes**

**Fixed the following:-**

Fixed a behavior where the SN1600E would wrongly display an unwanted message when loading Unified Extensible Firmware Interface (UEFI) driver defaults

**Enhancements**

**Added the following:-**

Added support for Distributed Management Task Force (DMTF) – Platform Level Data Model (PLDM) Firmware Update to the SN1200E, SN1600E, and SN1610E

The adapter will now reset to defaults when the user activates Hewlett Packard Enterprise (HPE) Secure Erase from Hewlett Packard Enterprise (HPE) intelligent provisioning

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | Universal Boot Image | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class | 16Gb | 12.8.352.12 | 12.8.352.12 | 12.8.352.10 | 12.8.352.5 |

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**16Gb FC Adapter:**

HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class

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HPE Firmware Flash for QLogic Fibre Channel Host Bus Adapters - Linux (x86_64)Version: 2021.02.01 **(Recommended)**Filename: RPMS/x86_64/firmware-fc-qlogic-2021.02.01-1.24.x86_64.compsig; RPMS/x86_64/firmware-fc-qlogic-2021.02.01-1.24.x86_64.rpm **Important Note!**

Refer release notes available at:

HPE QLogic Adapter Release Notes

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 81Q 8Gb PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE SN1000Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1000Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |
| HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |

## Prerequisites

Firmware updates may be accomplished using the inbox or Out of Box (OOB) drivers. Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied enablement kit must be installed prior to this firmware component being identified by SUM for deployment.

The OOB driver and enablement kit are available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download.

It is advised to provide read-write permissions on /var/tmp folder. Firmware deployment via Service Pack for ProLiant(SPP) might be unsuccessful in some cases , if read-write(rw) permissions are not enable on /tmp or /var/tmp directories.

## Fixes

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

## Enhancements

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 81Q 8Gb PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE SN1000Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1000Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |
| HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |

## Supported Devices and Features

This firmware supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

**32Gb Fibre Channel Host Bus Adapter:**

HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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HPE Firmware Flash for QLogic Fibre Channel Host Bus Adapters - Microsoft Windows Server 2012R2/2016/2019 (x86_64)Version: 2021.02.01 **(Recommended)**Filename: cp044784.compsig; cp044784.exe **Important Note!**

Refer release notes available at:

HPE QLogic Adapter Release Notes

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 81Q 8Gb PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE SN1000Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1000Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |
| HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The OOB driver is available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download.

## Fixes

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

## Enhancements

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 81Q 8Gb PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE SN1000Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1000Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |
| HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |

## Supported Devices and Features

This firmware supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

**32Gb Fibre Channel Host Bus Adapter:**

HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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HPE Firmware Flash for QLogic Fibre Channel Host Bus Adapters for VMware vSphere 6.5Version: 2021.02.01 **(Recommended)**Filename: CP044780.compsig; CP044780.zip **Important Note!**

Refer release notes available at:

HPE QLogic Adapter Release Notes

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 81Q 8Gb PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE SN1000Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1000Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |
| HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied Qlogic driver must be installed prior to this firmware component being identified by SUM for deployment. The OOB driver is available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download/

## Fixes

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

## Enhancements

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 81Q 8Gb PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE SN1000Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1000Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |
| HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |

## Supported Devices and Features

This firmware supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

**32Gb Fibre Channel Host Bus Adapter:**

HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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HPE Firmware Flash for QLogic Fibre Channel Host Bus Adapters for VMware vSphere 6.7Version: 2021.02.01 **(Recommended)**Filename: CP044781.compsig; CP044781.zip **Important Note!**

Refer release notes available at:

HPE QLogic Adapter Release Notes

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 81Q 8Gb PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE SN1000Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1000Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |
| HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied Qlogic driver must be installed prior to this firmware component being identified by SUM for deployment. The OOB driver is available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download/

## Fixes

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

## Enhancements

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 81Q 8Gb PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE SN1000Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1000Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |
| HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |

## Supported Devices and Features

This firmware supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

**32Gb Fibre Channel Host Bus Adapter:**

HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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HPE Firmware Flash for QLogic Fibre Channel Host Bus Adapters for VMware vSphere 7.0Version: 2021.02.01 **(Recommended)**Filename: CP044782.compsig; CP044782.zip **Important Note!**

Refer release notes available at:

HPE QLogic Adapter Release Notes

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 81Q 8Gb PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE SN1000Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1000Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |
| HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied Qlogic driver must be installed prior to this firmware component being identified by SUM for deployment. The OOB driver is available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download/

## Fixes

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

## Enhancements

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE 81Q 8Gb PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter | 8Gb | 3.82.00 | 8.08.207 | 7.00 | 3.56 |
| HPE SN1000Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1000Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |
| HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter | 16Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 1.75.07 | 9.06.02 | 7.04 | 3.64 |
| HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |
| HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter | 32Gb | 02.04.07 | 09.06.02 | 7.11 | 0.0 |

## Supported Devices and Features

This firmware supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

**32Gb Fibre Channel Host Bus Adapter:**

HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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HPE Firmware Flash for QLogic Fibre Channel Mezzanine Host Bus Adapters for VMware vSphere 7.0Version: 2021.02.01 **(Recommended)**Filename: CP044795.compsig; CP044795.zip **Important Note!**

Release Notes:

HPE QLogic Adapter Release Notes

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the Unified Extensible Firmware Interface (UEFI) driver would force the system to reboot if one or both ports of a mezzanine adapter were not connected to an interconnect module during boot.

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied Qlogic driver must be installed prior to this firmware component being identified by SUM for deployment. The OOB driver is available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download/

**Fixes**

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the Unified Extensible Firmware Interface (UEFI) driver would force the system to reboot if one or both ports of a mezzanine adapter were not connected to an interconnect module during boot.

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

**Enhancements**

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

Updated the Firmware/BIOS/UEFI packages for 16 Gb products.

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |

**Supported Devices and Features**

This version of the enablement kit supports the following devices:

**16Gb Fibre Channel Host Bus Adapter:**

HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

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HPE Firmware Flash for QLogic Mezzanine Fibre Channel Host Bus Adapters - Linux (x86_64)Version: 2021.02.01 **(Recommended)**Filename: RPMS/x86_64/firmware-fc-mezz-qlogic-2021.02.01-1.11.x86_64.compsig; RPMS/x86_64/firmware-fc-mezz-qlogic-2021.02.01-1.11.x86_64.rpm **Important Note!**

Release Notes:

HPE QLogic Adapter Release Notes

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the Unified Extensible Firmware Interface (UEFI) driver would force the system to reboot if one or both ports of a mezzanine adapter were not connected to an interconnect module during boot.

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |

**Prerequisites**

Firmware updates may be accomplished using the inbox or Out of Box (OOB) drivers. Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied enablement kit must be installed prior to this firmware component being identified by SUM for deployment.

The OOB driver and enablement kit are available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download.

It is advised to provide read-write permissions on /var/tmp folder. Firmware deployment via Service Pack for ProLiant(SPP) might be unsuccessful in some cases , if read-write(rw) permissions are not enable on /tmp or /var/tmp directories.

**Fixes**

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the Unified Extensible Firmware Interface (UEFI) driver would force the system to reboot if one or both ports of a mezzanine adapter were not connected to an interconnect module during boot.

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

**Enhancements**

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

Updated the Firmware/BIOS/UEFI packages for 16 Gb products.

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |

**Supported Devices and Features**

This version of the enablement kit supports the following devices:

**16Gb Fibre Channel Host Bus Adapter:**

HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

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HPE Firmware Flash for QLogic Mezzanine Fibre Channel Host Bus Adapters - Microsoft Windows Server 2012R2/2016/2019 (x86_64)Version: 2021.02.01 **(Recommended)**Filename: cp044797.compsig; cp044797.exe **Important Note!**

Release Notes:

HPE QLogic Adapter Release Notes

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the Unified Extensible Firmware Interface (UEFI) driver would force the system to reboot if one or both ports of a mezzanine adapter were not connected to an interconnect module during boot.

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The OOB driver is available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download.

**Fixes**

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the Unified Extensible Firmware Interface (UEFI) driver would force the system to reboot if one or both ports of a mezzanine adapter were not connected to an interconnect module during boot.

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

**Enhancements**

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

Updated the Firmware/BIOS/UEFI packages for 16 Gb products.

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |

**Supported Devices and Features**

This version of the enablement kit supports the following devices:

**16Gb Fibre Channel Host Bus Adapter:**

HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

HPE Firmware Flash for QLogic Mezzanine Fibre Channel Host Bus Adapters for VMware vSphere 6.5Version: 2021.02.01 **(Recommended)**Filename: CP044793.compsig; CP044793.zip **Important Note!**

Release Notes:

HPE QLogic Adapter Release Notes

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the Unified Extensible Firmware Interface (UEFI) driver would force the system to reboot if one or both ports of a mezzanine adapter were not connected to an interconnect module during boot.

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied Qlogic driver must be installed prior to this firmware component being identified by SUM for deployment. The OOB driver is available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download/

**Fixes**

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the Unified Extensible Firmware Interface (UEFI) driver would force the system to reboot if one or both ports of a mezzanine adapter were not connected to an interconnect module during boot.

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

**Enhancements**

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

Updated the Firmware/BIOS/UEFI packages for 16 Gb products.

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |

**Supported Devices and Features**

This version of the enablement kit supports the following devices:

**16Gb Fibre Channel Host Bus Adapter:**

HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

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HPE Firmware Flash for QLogic Mezzanine Fibre Channel Host Bus Adapters for VMware vSphere 6.7Version: 2021.02.01 **(Recommended)**Filename: CP044794.compsig; CP044794.zip **Important Note!**

Release Notes:

HPE QLogic Adapter Release Notes

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the Unified Extensible Firmware Interface (UEFI) driver would force the system to reboot if one or both ports of a mezzanine adapter were not connected to an interconnect module during boot.

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

This Firmware package contains following firmware versions:

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied Qlogic driver must be installed prior to this firmware component being identified by SUM for deployment. The OOB driver is available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download/

**Fixes**

**Fixed the following:-**

Enhancements have been made to the firmware to prevent and better recover from any stoppage as described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us

Fixed a behavior where the Unified Extensible Firmware Interface (UEFI) driver would force the system to reboot if one or both ports of a mezzanine adapter were not connected to an interconnect module during boot.

Fixed a behavior where the number of active Input/Output (IO) exchanges could be reduced under certain fabric conditions, resulting in reduced performance.

**Enhancements**

**Added the following:-**

Added support for Fabric Performance Impact Notifications (FPIN)

Updated the Firmware/BIOS/UEFI packages for 16 Gb products.

| Adapter | Speed | MBI | Firmware | UEFI | Boot Bios |
|---|---|---|---|---|---|
| HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem | 16Gb | 6.04.04 | 8.08.232 | 7.04 | 3.43 |

**Supported Devices and Features**

This version of the enablement kit supports the following devices:

**16Gb Fibre Channel Host Bus Adapter:**

HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

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**Firmware – System** Top

Firmware Package - Gen10 NVMe Backplane PIC FirmwareVersion: 1.20 **(Optional)**
Filename: ISS_NVMe_BP_PIC_flashV1B20.fwpkg
**Prerequisites**

iLO 5 version 1.10 or later is required.

**Enhancements**

Initial release.

---

Firmware Package - Gen10Plus UBM2 Backplane PIC FirmwareVersion: 1.16 **(Recommended)**
Filename: UBM2_V1.16.fwpkg
**Prerequisites**

iLO 5 version 2.10 or later is required.

**Fixes**

Fixed to correct the LED lighting condition

---

Online Flash Component for Linux - Gen10 NVMe Backplane PIC FirmwareVersion: 1.20 (E) **(Optional)**Filename: RPMS/x86_64/firmware-nvmebackplane-gen10-1.20-5.1.x86_64.compsig; RPMS/x86_64/firmware-nvmebackplane-gen10-1.20-5.1.x86_64.rpm **Important Note!**

Note: If the target device was previously updated to firmware version 1.20, it is not necessary to apply firmware update 1.20(E).

**Prerequisites**

iLO 5 version 1.10 or later is required.

**Enhancements**

Added support for SUSE Linux Enterprise Server 15 OS

---

Online Flash Component for Linux - Gen10Plus UBM1 Backplane PIC FirmwareVersion: 1.42 (B) **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-2e20068436-1.42-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-2e20068436-1.42-2.1.x86_64.rpm **Prerequisites**

iLO 5 version 2.30 or later is required.

**Fixes**

Correct device GUID.

---

Online Flash Component for Linux - Gen10Plus UBM2 Backplane PIC FirmwareVersion: 1.16 **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-smartarray-40023de47f-1.16-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-smartarray-40023de47f-1.16-1.1.x86_64.rpm **Fixes**

Fixed to correct the LED lighting condition

---

Online Flash Component for Linux - Gen10Plus UBM3 Backplane PIC FirmwareVersion: 1.20 **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-b249e2e715-1.20-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-b249e2e715-1.20-1.1.x86_64.rpm **Prerequisites**

iLO 5 version 1.10 or later is required.

**Enhancements**

Initial Release

---

Online Flash Component for Linux - Gen10Plus UBM4 Backplane PIC FirmwareVersion: 1.20 **(Recommended)**Filename: rpm/RPMS/x86_64/firmware-b368ad032e-1.20-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-b368ad032e-1.20-1.1.x86_64.rpm **Prerequisites**

iLO 5 version 1.10 or later is required.

**Enhancements**

Initial Release

---

Online Flash Component for Linux - NVMe Backplane PIC FirmwareVersion: 8.4 (D) **(Optional)**Filename: RPMS/i386/firmware-nvmebackplane-8.4-4.1.i386.rpm **Important Note!**

**Note:** If version 8.4 was previously installed, then it is not necessary to upgrade to version 8.4 (D).

**Prerequisites**

iLO 4 version 2.50 or later is required.

**Enhancements**

Added support for SUSE Linux Enterprise Server 15 OS

---

Online Flash Component for VMware - NVMe Backplane PIC FirmwareVersion: 8.4 (D) **(Optional)**Filename: CP035161.compsig; CP035161.zip **Important Note!**

**Note:** If version 8.4 was previously installed, then it is not necessary to upgrade to version 8.4 (D).

**Prerequisites**

iLO 4 version 2.50 or later is required.

**Enhancements**

Added VMware vSphere 6.7 OS support

---

Online Flash Component for VMware Esxi - Gen10Plus UBM1 Backplane PIC FirmwareVersion: 1.42 (B) **(Recommended)**Filename: CP049821.compsig; CP049821.zip **Fixes**

Correct device GUID

---

Online Flash Component for VMware Esxi - Gen10Plus UBM2 Backplane PIC FirmwareVersion: 1.16 **(Recommended)**Filename: CP043320.compsig; CP043320.zip **Fixes**

Fixed to correct the LED lighting condition

---

Online Flash Component for VMware Esxi - Gen10Plus UBM3 Backplane PIC FirmwareVersion: 1.20 **(Recommended)**Filename: CP045879.compsig; CP045879.zip **Enhancements**

Initial release

---

Online Flash Component for VMware Esxi - Gen10Plus UBM4 Backplane PIC FirmwareVersion: 1.20 **(Recommended)**Filename: CP045880.compsig; CP045880.zip **Enhancements**

Initial release

---

Online Flash Component for Windows x64 - Gen10 NVMe Backplane PIC FirmwareVersion: 1.20 (D) **(Optional)**Filename: cp037722.compsig; cp037722.exe **Important Note!**

Note: If the target device was previously updated to firmware version 1.20, it is not necessary to apply firmware update 1.20(D).

**Prerequisites**

iLO 5 version 1.10 or later is required.

**Enhancements**

Added support for Microsoft Windows Server 2019 OS

---

Online Flash Component for Windows x64 - Gen10Plus UBM1 Backplane PIC FirmwareVersion: 1.42 (B) **(Recommended)**Filename: cp049776.compsig; cp049776.exe; cp049776.md5 **Prerequisites**

iLO 5 version 2.30 or later is required.

**Enhancements**

Add Microsoft Windows 2022 to OS supported lists.

---

Online Flash Component for Windows x64 - Gen10Plus UBM2 Backplane PIC FirmwareVersion: 1.16 **(Recommended)**Filename: cp041524.compsig; cp041524.exe; cp041524.md5 **Prerequisites**

iLO 5 version 2.30 or later is required.

**Fixes**

Fixed to correct the LED lighting condition

---

Online Flash Component for Windows x64 - Gen10Plus UBM3 Backplane PIC FirmwareVersion: 1.20 **(Recommended)**Filename: cp042623.compsig; cp042623.exe; cp042623.md5 **Prerequisites**

iLO 5 version 1.10 or later is required.

**Enhancements**

Initial release

---

Online Flash Component for Windows x64 - Gen10Plus UBM4 Backplane PIC FirmwareVersion: 1.20 **(Recommended)**Filename: cp043315.compsig; cp043315.exe; cp043315.md5 **Prerequisites**

iLO 5 version 1.10 or later is required.

**Enhancements**

Initial release

---

Online Flash Component for Windows x64 - NVMe Backplane PIC FirmwareVersion: 8.4 (E) **(Optional)**Filename: cp037743.exe **Important Note!**

**Note:** If version 8.4 was previously installed, then it is not necessary to upgrade to version 8.4 (E).

**Prerequisites**

iLO 4 version 2.50 or later is required.

**Enhancements**

Added support for Microsoft Windows Server 2019 OS

---

Online ROM Flash Component for Windows x64 - Server Platform Services (SPS) Firmware for HPE Gen10 ServersVersion: 04.01.04.423 **(Recommended)**Filename: cp045310.compsig; cp045310.exe **Important Note!**

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE Gen10 Server Platform Services (SPS) Firmware

**Release Version:**

04.01.04.423

**Last Recommended or Critical Revision:**

04.01.04.423

**Previous Revision:**

04.01.04.381(B)

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

**Prerequisites**

HPE Gen10 system ROM version 1.26 or later

HPE Gen10 Innovation Engine (IE) Firmware version 0.1.5.2 or later

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

---

Online ROM Flash Component for Windows x64 - Server Platform Services (SPS) Firmware for HPE MicroServer Gen10 PlusVersion: 05.01.04.208 **(Recommended)**Filename: cp045278.compsig; cp045278.exe **Important Note!**

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

Server Platform Services (SPS) Firmware for HPE ProLiant MicroServer Gen10 Plus (U48) Servers

**Release Version:**

05.01.04.208

**Last Recommended or Critical Revision:**

05.01.04.208

**Previous Revision:**

05.01.04.113

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

Online ROM Flash Component for Windows x64 - Server Platform Services (SPS) Firmware for HPE ProLiant DL20/ML30 Gen10Version: 05.01.04.208 **(Recommended)**Filename: cp045274.compsig; cp045274.exe **Important Note!**

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE DL20ML30Gen10SPS Server Platform Services (SPS) Firmware

**Release Version:**

05.01.04.208

**Last Recommended or Critical Revision:**

05.01.04.208

**Previous Revision:**

05.01.04.113

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

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Online ROM Flash for Linux - HPE Gen10 Innovation Engine Firmware for HPE Gen10 ServersVersion: 0.2.2.0 **(Optional)**Filename: RPMS/x86_64/firmware-iegen10-0.2.2.0-1.1.x86_64.compsig; RPMS/x86_64/firmware-iegen10-0.2.2.0-1.1.x86_64.rpm **Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Gen10 Innovation Engine (IE) Firmware

**Release Version:**

0.2.2.0

**Last Recommended or Critical Revision:**

0.1.5.2

**Previous Revision:**

0.2.1.2

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an extremely rare issue where Processor or Memory temperature reporting may not be collected properly by the platform and the system fans may be running faster than expected. This issue has been seen occasionally after a server reboot and is typically corrected with a subsequent server reboot.

**Known Issues:**

None

**Prerequisites**

System ROM V1.26 or later

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an extremely rare issue where Processor or Memory temperature reporting may not be collected properly by the platform and the system fans may be running faster than expected. This issue has been seen occasionally after a server reboot and is typically corrected with a subsequent server reboot.

**Known Issues:**

None

---

Online ROM Flash for Linux - Server Platform Services (SPS) Firmware for HPE Gen10 ServersVersion: 04.01.04.423 **(Recommended)**Filename: RPMS/x86_64/firmware-spsgen10-04.01.04.423-1.1.x86_64.compsig; RPMS/x86_64/firmware-spsgen10-04.01.04.423-1.1.x86_64.rpm **Important Note!**

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE Gen10 Server Platform Services (SPS) Firmware

**Release Version:**

04.01.04.423

**Last Recommended or Critical Revision:**

04.01.04.423

**Previous Revision:**

04.01.04.381(B)

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

## Prerequisites

HPE Gen10 system ROM version 1.26 or later

HPE Gen10 Innovation Engine (IE) Firmware version 0.1.5.2 or later

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

---

Online ROM Flash for Linux - Server Platform Services (SPS) Firmware for HPE MicroServer Gen10 PlusVersion: 05.01.04.208 **(Recommended)**Filename: RPMS/x86_64/firmware-microservergen10plussps-05.01.04.208-1.1.x86_64.compsig; RPMS/x86_64/firmware-microservergen10plussps-05.01.04.208-1.1.x86_64.rpm **Important Note!**

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

Server Platform Services (SPS) Firmware for HPE ProLiant MicroServer Gen10 Plus (U48) Servers

**Release Version:**

05.01.04.208

**Last Recommended or Critical Revision:**

05.01.04.208

**Previous Revision:**

05.01.04.113

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

**Fixes**

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

---

Online ROM Flash for Linux - Server Platform Services (SPS) Firmware for HPE ProLiant DL20/ML30 Gen10Version: 05.01.04.208 **(Recommended)**Filename: RPMS/x86_64/firmware-dl20ml30gen10sps-05.01.04.208-1.1.x86_64.compsig; RPMS/x86_64/firmware-dl20ml30gen10sps-05.01.04.208-1.1.x86_64.rpm **Important Note!**

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE DL20ML30Gen10SPS Server Platform Services (SPS) Firmware

**Release Version:**

05.01.04.208

**Last Recommended or Critical Revision:**

05.01.04.208

**Previous Revision:**

05.01.04.113

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

## Prerequisites

The "iLO 5 Channel Interface Driver" (CHIF) for Linux which is integrated into the standard Linux kernel.

## Fixes

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

---

Online ROM Flash for Windows x64 - HPE Gen10 Innovation Engine Firmware for HPE Gen10 ServersVersion: 0.2.2.0 **(Optional)**Filename: cp043588.compsig; cp043588.exe **Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Gen10 Innovation Engine (IE) Firmware

**Release Version:**

0.2.2.0

**Last Recommended or Critical Revision:**

0.1.5.2

**Previous Revision:**

0.2.1.2

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an extremely rare issue where Processor or Memory temperature reporting may not be collected properly by the platform and the system fans may be running faster than expected. This issue has been seen occasionally after a server reboot and is typically corrected with a subsequent server reboot.

**Known Issues:**

None

**Prerequisites**

System ROM V1.26 or later

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an extremely rare issue where Processor or Memory temperature reporting may not be collected properly by the platform and the system fans may be running faster than expected. This issue has been seen occasionally after a server reboot and is typically corrected with a subsequent server reboot.

**Known Issues:**

None

---

ROM Flash Firmware Package - HPE Gen10 Innovation Engine Firmware for HPE Gen10 ServersVersion: 0.2.2.0 **(Optional)**Filename: IEGen10_0.2.2.0.fwpkg **Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Gen10 Innovation Engine (IE) Firmware

**Release Version:**

0.2.2.0

**Last Recommended or Critical Revision:**

0.1.5.2

**Previous Revision:**

0.2.1.2

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an extremely rare issue where Processor or Memory temperature reporting may not be collected properly by the platform and the system fans may be running faster than expected. This issue has been seen occasionally after a server reboot and is typically corrected with a subsequent server reboot.

**Known Issues:**

None

## Prerequisites

System ROM V1.26 or later

iLO 5 v1.20 or later

## Fixes

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an extremely rare issue where Processor or Memory temperature reporting may not be collected properly by the platform and the system fans may be running faster than expected. This issue has been seen occasionally after a server reboot and is typically corrected with a subsequent server reboot.

**Known Issues:**

None

ROM Flash Firmware Package - Server Platform Services (SPS) Firmware for HPE Gen10 ServersVersion: 05.01.04.208 **(Recommended)**Filename: DL20ML30Gen10SPS_05.01.04.208.fwpkg **Important Note!**

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE DL20ML30Gen10SPS Server Platform Services (SPS) Firmware

**Release Version:**

05.01.04.208

**Last Recommended or Critical Revision:**

05.01.04.208

**Previous Revision:**

05.01.04.113

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

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ROM Flash Firmware Package - Server Platform Services (SPS) Firmware for HPE MicroServer Gen10 PlusVersion: 05.01.04.208 **(Recommended)**Filename: MicroserverGen10PlusSPS_05.01.04.208.fwpkg **Important Note!**

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

Server Platform Services (SPS) Firmware for HPE ProLiant MicroServer Gen10 Plus (U48) Servers

**Release Version:**

05.01.04.208

**Last Recommended or Critical Revision:**

05.01.04.208

**Previous Revision:**

05.01.04.113

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

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ROM Flash Firmware Package - Server Platform Services (SPS) Firmware for HPE Gen10 ServersVersion: 04.01.04.423 **(Recommended)**Filename: SPSGen10_04.01.04.423.fwpkg **Important Note!**

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Deliverable Name:**

HPE Gen10 Server Platform Services (SPS) Firmware

**Release Version:**

04.01.04.423

**Last Recommended or Critical Revision:**

04.01.04.423

**Previous Revision:**

04.01.04.381(B)

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

## Prerequisites

HPE Gen10 system ROM version 1.26 or later

HPE Gen10 Innovation Engine (IE) Firmware version 0.1.5.2 or later

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## Fixes

**Important Notes:**

This version of the Server Platform Services (SPS) Firmware contains updates aligned with the Intel Product Update (IPU) version IPU.2020.2 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the Server Platform Services Firmware provides mitigations for security vulnerability documented as CVE-2020-8755. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00391. This issue is not unique to HPE servers.

**Known Issues:**

None

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Server Platform Services (SPS) FirmwareVersion: 05.01.04.208 **(Recommended)**Filename: cp045275.compsig; cp045275.zip **Enhancements**

This image contains the latest Intel Server Platform Services (SPS) Firmware which contains mitigations for a variety of security vulnerabilities. The following vulnerabilities have been addressed in this SPS release: CVE-2020-0545 and CVE-2020-0586. These issues are not unique to HPE Servers.

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Server Platform Services (SPS) Firmware for Intel C242 and C246 PCH based systemsVersion: 05.01.04.208 **(Recommended)**Filename: cp045271.compsig; cp045271.zip **Enhancements**

See release doc

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**Firmware (Entitlement Required) - Storage Controller** Top

HP D2600/D2700 6Gb SAS Disk Enclosure ROM Flash Component for Linux (x64)Version: 0150 (B) **(Recommended)** Filename: RPMS/x86_64/hp-firmware-d2600-d2700-0150-2.1.x86_64.rpm

**Important Note!**

Firmware upgrade to 150(B) is not necessary, if the device is currently running 150 firmware

**IMPORTANT**:Firmware updates must be performed during a system maintenance window, with all I/O to the system halted.

**WARNING!** Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

**NOTE:** When disk enclosures are cascaded, I/O module A of one enclosure is connected to I/O module A of the subsequent enclosure. During a firmware update, I/O module A in the cascaded disk enclosures is automatically updated.

In dual-domain configurations, both I/O modules of the target disk enclosure and cascaded disk enclosures are automatically updated during the firmware installation process.

All firmware flash progress messages are logged to /var/cpq/Component.log .

**Prerequisites**

IMPORTANT: Firmware updates must be performed during a system maintenance window, with all I/O to the system halted.

WARNING! Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

NOTE: When disk enclosures are cascaded, I/O module A of one enclosure is connected to I/O module A of the subsequent enclosure. During a firmware update, I/O module A in the cascaded disk enclosures is automatically updated.

In dual-domain configurations, both I/O modules of the target disk enclosure and cascaded disk enclosures are automatically updated during the firmware installation process.

All firmware flash progress messages are logged to /var/cpq/Component.log.

**Fixes**

**The following fix is added in this version:-**

-Removed action over FAULT_SENSED bit due to incorrect algorithm.

**Supported Devices and Features**

The D2600/ D2700 Enclosure can be attached to any of the following HP Storage Controllers and Host Bus Adapters:

- HP H222 Host Bus Adapter
- HP H221 Host Bus Adapter
- HP H241 Smart Host Bus Adapter
- HP Smart Array P812 Controller
- HP Smart Array P822 Controller
- HP Smart Array P841 Controller
- HP Smart Array P441 Controller
- HP Smart Array P431 Controller
- HP Smart Array P421 Controller
- HP Smart Array P411 Controller
- HP Smart Array P212 Controller
- HP Smart Array P222 Controller

HP D2600/D2700 6Gb SAS Disk Enclosure ROM Flash Component for Windows (x64)Version: 0150 (B) **(Recommended)**Filename: cp028806.exe **Important Note!**

Firmware upgrade to 150(B) is not necessary, if the device is currently running 150 firmware

**IMPORTANT:** Firmware updates must be performed during a system maintenance window, with all I/O to the system halted.

**WARNING!** Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

**NOTE:** When disk enclosures are cascaded, I/O module A of one enclosure is connected to I/O module A of the subsequent enclosure. During a firmware update, I/O module A in the cascaded disk enclosures is automatically updated.

In dual-domain configurations, both I/O modules of the target disk enclosure and cascaded disk enclosures are automatically updated during the firmware installation process.

All firmware flash progress messages are logged to %systemdrive%\CPQSYSTEM\Log\D2000.log and flash summary is logged to %systemdrive%\CPQSYSTEM\Log\cpqsetup.log.

**Prerequisites**

IMPORTANT: Firmware updates must be performed during a system maintenance window, with all I/O to the system halted.

WARNING! Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

NOTE: When disk enclosures are cascaded, I/O module A of one enclosure is connected to I/O module A of the subsequent enclosure. During a firmware update, I/O module A in the cascaded disk enclosures is automatically updated.

In dual-domain configurations, both I/O modules of the target disk enclosure and cascaded disk enclosures are automatically updated during the firmware installation process.

All firmware flash progress messages are logged to %systemdrive%\CPQSYSTEM\Log\D2000.log and flash summary is logged to %systemdrive%\CPQSYSTEM\Log\cpqsetup.log.

**Fixes**

**The following fix is added in this version:-**

-Removed action over FAULT_SENSED bit due to incorrect algorithm.

**Supported Devices and Features**

The D2600/ D2700 Enclosure can be attached to any of the following HP Storage Controllers and Host Bus Adapters:

- HP H222 Host Bus Adapter
- HP H221 Host Bus Adapter
- HP H241 Smart Host Bus Adapter
- HP Smart Array P812 Controller
- HP Smart Array P822 Controller
- HP Smart Array P841 Controller
- HP Smart Array P441 Controller
- HP Smart Array P431 Controller
- HP Smart Array P421 Controller
- HP Smart Array P411 Controller
- HP Smart Array P212 Controller
- HP Smart Array P222 Controller

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**Software - Lights-Out Management** Top

HPE Lights-Out Online Configuration Utility for Linux (AMD64/EM64T)Version: 5.6.0-0 **(Optional)**Filename: hponcfg-5.6.0-0.x86_64.compsig; hponcfg-5.6.0-0.x86_64.rpm

**Prerequisites**

This utility requires the following minimum firmware revisions:

Integrated Lights-Out 3 firmware v1.00 or later

Integrated Lights-Out 4 firmware v1.00 or later

Integrated Lights-Out 5 firmware v1.20 or later

The management interface driver and management agents must be installed on the server.

For iLO 5, openssl v1.0.x or later is required in addition to above packages.
Customers who manually compile and install openssl or intentionally relocate /usr/bin/openssl, need to set PATH environment variable to direct HPONCFG to the right/intended openssl.

**Fixes**

Fixed an issue where HPONCFG was not able to detect openssl library when multiple 64-bit openssl installed.

**Enhancements**

Updated product name to HPE Lights-Out Online Configuration Utility for Linux (AMD64/EM64T).

---

HPE Lights-Out Online Configuration Utility for Windows x64 EditionsVersion: 5.5.0.0 (A) **(Optional)**

Filename: cp046381.compsig; cp046381.exe

**Prerequisites**

This utility requires the following minimum firmware revisions:

Integrated Lights-Out 3 firmware v1.00 or later

Integrated Lights-Out 4 firmware v1.00 or later

Integrated Lights-Out 5 firmware v1.30 or later

The management interface driver must be installed on the server.

Microsoft .Net Framework 2.0 or later is required to launch HPONCFG GUI.

**Fixes**

Fixed an issue were HPONCFG Windows Smart Component was not installing when SW RAID configuration enabled in RBSU.

---

**Software – Management** Top

HPE Agentless Management Bundle Smart Component for Gen9 on ESXi 7.0Version: 2021.04.01 **(Recommended)**
Filename: cp044741.compsig; cp044741.zip **Fixes**

**Agentless Management Service**

Fixed resource leak when AHS logging fails

Fix incorrect reporting of SATA disks attached to Smart Array and SAS controllers in the cpqIdeAtaDisk MIB

**Enhancements**

**Agentless Management Service**

Implemented new vSphere 7.0U1 Daemon interface and is only supported on vSphere 7.0U1 and newer. New "esxcli daemon control" commands are now used to stop/start/restart AMS.

---

HPE Agentless Management Bundle Smart Component on ESXi 7.0Version: 2021.04.12 **(Recommended)**
Filename: cp046906.compsig; cp046906.zip
**Fixes**

**Agentless Management Service**

Reduce Software Inventory cache refresh time to 15 seconds to help resolve OneView online SW update issues without reboot.

Fixed resource leak when AHS logging fails

Fix incorrect reporting of SATA disks attached to Smart Array and SAS controllers in the cpqIdeAtaDisk MIB.

**Enhancements**

**Agentless Management Service**

Added support for new NIC devices

Added support for new SATA, SAS and NVMe drives

Implemented new vSphere 7.0U1 Daemon interface and is only supported on vSphere 7.0U1 and newer. New "esxcli daemon" commands are now used to control AMS and get AMS status.

---

HPE CRU Driver Bundle Smart Component for ESXi 7.0Version: 2020.04.01 (A) **(Recommended)**Filename: cp044598.compsig; cp044598.zip **Enhancements**

Add new supported servers

---

HPE Fiber Channel and Storage Enablement Bundle Smart Component for ESXi 7.0Version: 2021.04.01 **(Recommended)**Filename: cp044916.compsig; cp044916.zip **Enhancements**

Supports VMware ESXi 7.0 U1 and ESXi 7.0 U2

---

HPE iLO Driver Bundle Smart Component for ESXi 7.0Version: 2021.04.01 **(Recommended)**Filename: cp045983.compsig; cp045983.zip **Fixes**

Fixed PSOD when the iLO driver device initialization fails.

**Enhancements**

Supports VMware ESXi 7.0 U1 and ESXi 7.0 U2

---

HPE Management Bundle Smart Component for ESXi 6.5Version: 2021.04.12 **(Recommended)**Filename: cp046908.compsig; cp046908.zip **Fixes**

**Agentless Management Service**

Reduce Software Inventory cache refresh time to 15 seconds to help resolve OneView online SW update issues without reboot.

Fixed resource leak when AHS logging fails

Fix incorrect reporting of SATA disks attached to Smart Array and SAS controllers in the cpqIdeAtaDisk MIB.

**Enhancements**

**Agentless Management Service**

Added support for new NIC devices (Gen10 AMS only)

Added support for new SATA, SAS and NVMe drives (Gen10 AMS only)

---

HPE Management Bundle Smart Component for ESXi 6.7Version: 2021.04.12 **(Recommended)**Filename: cp046907.compsig; cp046907.zip **Fixes**

**Agentless Management Service**

Reduce Software Inventory cache refresh time to 15 seconds to help resolve OneView online SW update issues without reboot.

Fixed resource leak when AHS logging fails

Fix incorrect reporting of SATA disks attached to Smart Array and SAS controllers in the cpqIdeAtaDisk MIB.

**Enhancements**

**Agentless Management Service**

Added support for new NIC devices (Gen10 AMS only)

Added support for new SATA, SAS and NVMe drives (Gen10 AMS only)

---

HPE SDK Python ModuleVersion: 3.2.0 **(Optional)**Filename: python-ilorest-library-3.2.0.zip **Fixes**

Certificate Login will be added

---

HPE SMX Provider Bundle Smart Component for ESXi 7.0Version: 2020.04.01 (A) **(Recommended)**Filename: cp044591.compsig; cp044591.zip **Enhancements**

Add new supported servers

---

Smart Storage Administrator (SSA) CLI Smart Component for ESXi 7.0Version: 2021.04.01 **(Recommended)**Filename: cp047031.compsig; cp047031.zip **Enhancements**

Adding support to the HPE SR Gen10 Plus Controllers.

---

**Software – Network** Top

Broadcom Active Health System Agent for HPE ProLiant Network Adapters for Linux x86_64Version: 1.0.21-1 **(Optional)**Filename: hp-tg3sd-1.0.21-1.x86_64.compsig; hp-tg3sd-1.0.21-1.x86_64.rpm; hp-tg3sd-1.0.21-1.x86_64.txt **Fixes**

This product adddresses a library dependency issue seen when installing on a system running SUSE Linux Enterprise Server 15.

**Supported Devices and Features**

These drivers support the following network adapters:

HP Ethernet 1Gb 2-port 330i Adapter (22BD)

HP Ethernet 1Gb 4-port 331i Adapter (22BE)

HP Ethernet 1Gb 4-port 331FLR Adapter

HP Ethernet 1Gb 4-port 331T Adapter

HP Ethernet 1Gb 2-port 332i Adapter (22E8)

HP Ethernet 1Gb 2-port 332T Adapter

---

Intel Active Health System Agent for HPE ProLiant Network Adapters for Linux x86_64Version: 1.1.85.0-1 (B) **(Optional)**Filename: hp-ocsbbd-1.1.85.0-1.x86_64.compsig; hp-ocsbbd-1.1.85.0-1.x86_64.rpm; hp-ocsbbd-1.1.85.0-1.x86_64.txt **Fixes**

This product fixes an issue that it takes long time to boot-up server due to ocsbbd service.

**Enhancements**

SUM no longer attempts to install this product on Gen10 servers, which this product does not support.

**Supported Devices and Features**

This software supports the following Intel network adapters:

HPE Ethernet 1Gb 2-port 361i Adapter

HPE Ethernet 1Gb 2-port 361T Adapter

HPE Ethernet 1Gb 2-port 363i Adapter

HPE Ethernet 1Gb 2-port 364i Adapter

HPE Ethernet 1Gb 4-port 366FLR Adapter

HPE Ethernet 1Gb 4-port 366M Adapter

HPE Ethernet 1Gb 4-port 366T Adapter

HPE Ethernet 10Gb 2-port 560FLB Adapter

HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter

HPE Ethernet 10Gb 2-port 560M Adapter

HPE Ethernet 10Gb 2-port 560SFP+ Adapter

HPE Ethernet 10Gb 2-port 561FLR-T Adapter

HPE Ethernet 10Gb 2-port 561T Adapter

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**Software - Storage Controller** Top

HPE MegaRAID Storage Administrator StorCLI for VMware6.5Version: 2021.04.00 **(Recommended)**
Filename: cp045835.compsig; cp045835.zip
**Enhancements**

Added support for the Apollo 4510 system

---

HPE MegaRAID Storage Administrator StorCLI for VMware6.7Version: 2021.04.00 **(Recommended)**Filename: cp045812.compsig; cp045812.zip **Enhancements**

initial release

---

HPE MegaRAID Storage Administrator StorCLI for VMware6.7Version: 2021.04 **(Recommended)**Filename: cp045860.compsig; cp045860.zip **Enhancements**

Support for maintaining, monitoring and configuring MegaRAID Gen10 Plus Controllers: MR416i-a, MR416i-p, MR216i-a, MR216i-p

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HPE MegaRAID Storage Administrator StorCLI for VMware7.0Version: 2021.04.00 **(Recommended)**Filename: cp044633.compsig; cp044633.zip **Enhancements**

initial release

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HPE ProLiant Smart Array SAS/SATA Event Notification Service for 64-bit Windows Server EditionsVersion: 6.46.0.64 (E) **(Optional)**Filename: cp037465.exe **Important Note!**

Customers who already have firmware version 6.46.0.64 installed do not need to update to 6.46.0.64(E).

**Enhancements**

Added support for Microsoft Windows Server 2019.

---

HPE Smart Array SR Event Notification Service for Windows Server 64-bit EditionsVersion: 1.2.1.65 **(Recommended)**Filename: cp045133.compsig; cp045133.exe **Fixes**

Fixed for the version information

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**Software - Storage Fibre Channel** Top

HPE Blade Emulex(BRCM) Mezzanine Fibre Channel over Ethernet driver for VMware vSphere 6.5Version: 2021.02.01 **(Recommended)**Filename: cp042231.compsig; cp042231.zip

**Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

If the server contains only CNA adapters and lpfc driver is already been installed, post the new driver update, please remove the lpfc driver using the following command*:*

#esxcli software vib remove lpfc

Updated to Driver version 12.0.1278.0

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

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If the server contains only CNA adapters and lpfc driver is already been installed, post the new driver update, please remove the lpfc driver using the following command*:*

#esxcli software vib remove lpfc

**Enhancements**

Updated to Driver version 12.0.1278.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

HPE FlexFabric 20Gb 2-port 650FLB Adapter

HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Blade Emulex(BRCM) Mezzanine Fibre Channel over Ethernet driver for VMware vSphere 6.7Version: 2021.02.01 **(Recommended)**Filename: cp042232.compsig; cp042232.zip **Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

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Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

If the server contains only CNA adapters and lpfc driver is already been installed, post the new driver update, please remove the lpfc driver using the following command*:*

#esxcli software vib remove lpfc

Updated to Driver version 12.0.1278.0

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

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Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

If the server contains only CNA adapters and lpfc driver is already been installed, post the new driver update, please remove the lpfc driver using the following command*:*

#esxcli software vib remove lpfc

**Enhancements**

Updated to Driver version 12.0.1278.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

HPE FlexFabric 20Gb 2-port 650FLB Adapter

HPE FlexFabric 20Gb 2-port 650M Adapter

HPE QLogic Fibre Channel driver component for VMware vSphere 6.5Version: 2021.02.01 **(Recommended)**Filename: cp044777.compsig; cp044777.zip **Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

**Fixed the following:**

Fixed a behavior where enabling VM-ID and SmartSAN on a boot from Storage Area Network (SAN) setup caused driver load incomplete

Fixed a behavior where automatic attempts to recover from the behavior described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us would result in a Purple Screen of Death (PSoD)

**Added the following:**

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability

Added support for Fabric Performance Impact Notifications (FPIN)

Driver version 2.1.101.0

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Fixes**

**Fixed the following:-**

Fixed a behavior where enabling VM-ID and SmartSAN on a boot from Storage Area Network (SAN) setup caused driver load incomplete

Fixed a behavior where automatic attempts to recover from the behavior described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us would result in a Purple Screen of Death (PSoD)

**Enhancements**

**Added the following:-**

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability

Added support for Fabric Performance Impact Notifications (FPIN)

Driver version 2.1.101.0

**Supported Devices and Features**

This driver supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

**32Gb Fibre Channel Host Bus Adapter:**

HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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HPE QLogic Fibre Channel driver component for VMware vSphere 6.7Version: 2021.02.01 **(Recommended)**Filename: cp044778.compsig; cp044778.zip **Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

**Fixed the following:**

Fixed a behavior where enabling VM-ID and SmartSAN on a boot from Storage Area Network (SAN) setup caused driver load incomplete

Fixed a behavior where automatic attempts to recover from the behavior described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us would result in a Purple Screen of Death (PSoD)

**Added the following:**

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability

Added support for Fabric Performance Impact Notifications (FPIN)

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

## Fixes

**Fixed the following:**

Fixed a behavior where enabling VM-ID and SmartSAN on a boot from Storage Area Network (SAN) setup caused driver load incomplete

Fixed a behavior where automatic attempts to recover from the behavior described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us would result in a Purple Screen of Death (PSoD)

## Enhancements

**Added the following:-**

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability

Added support for Fabric Performance Impact Notifications (FPIN)

Driver version 3.1.46.0

## Supported Devices and Features

This driver supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

**32Gb Fibre Channel Host Bus Adapter:**

HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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HPE QLogic Fibre Channel driver component for VMware vSphere 7.0Version: 2021.02.01 **(Recommended)**Filename: cp044779.compsig; cp044779.zip **Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

**Fixed the following:**

Fixed a behavior where enabling VM-ID and SmartSAN on a boot from Storage Area Network (SAN) setup caused driver load incomplete

Fixed a behavior where automatic attempts to recover from the behavior described in Customer Advisory available

at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us would result in a Purple Screen of Death (PSoD)

**Added the following:-**

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability

Added support for Fabric Performance Impact Notifications (FPIN)

Driver version 4.1.22.0

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

## Fixes

**Fixed the following:**

Fixed a behavior where enabling VM-ID and SmartSAN on a boot from Storage Area Network (SAN) setup caused driver load incomplete

Fixed a behavior where automatic attempts to recover from the behavior described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us would result in a Purple Screen of Death (PSoD)

## Enhancements

**Added the following:-**

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability

Added support for Fabric Performance Impact Notifications (FPIN)

Driver version 4.1.22.0

## Supported Devices and Features

This driver supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

**32Gb Fibre Channel Host Bus Adapter:**

HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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HPE QLogic Mezzanine Fibre Channel driver component for VMware vSphere 6.5Version: 2021.02.01 **(Recommended)**Filename: cp044790.compsig; cp044790.zip **Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

**Fixed the following:-**

Fixed a behavior where enabling VM-ID and SmartSAN on a boot from Storage Area Network (SAN) setup caused driver load incomplete

Fixed a behavior where automatic attempts to recover from the behavior described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us would result in a Purple Screen of Death (PSoD)

**Added the following:-**

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability

Added support for Fabric Performance Impact Notifications (FPIN)

Driver version 2.1.101.0

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Fixes**

**Fixed the following:-**

Fixed a behavior where enabling VM-ID and SmartSAN on a boot from Storage Area Network (SAN) setup caused driver load incomplete

Fixed a behavior where automatic attempts to recover from the behavior described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us would result in a Purple Screen of Death (PSoD)

**Enhancements**

**Added the following:-**

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability

Added support for Fabric Performance Impact Notifications (FPIN)

Driver version 2.1.101.0

**Supported Devices and Features**

This version of the enablement kit supports the following devices:

**16Gb Fibre Channel Host Bus Adapter:**

HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

**Fixed the following:-**

Fixed a behavior where enabling VM-ID and SmartSAN on a boot from Storage Area Network (SAN) setup caused driver load incomplete

Fixed a behavior where automatic attempts to recover from the behavior described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us would result in a Purple Screen of Death (PSoD)

**Added the following:-**

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability

Added support for Fabric Performance Impact Notifications (FPIN)

Driver version 3.1.46.0

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

## Fixes

**Fixed the following:-**

Fixed a behavior where enabling VM-ID and SmartSAN on a boot from Storage Area Network (SAN) setup caused driver load incomplete

Fixed a behavior where automatic attempts to recover from the behavior described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us would result in a Purple Screen of Death (PSoD)

## Enhancements

**Added the following:-**

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability

Added support for Fabric Performance Impact Notifications (FPIN)

Driver version 3.1.46.0

**Supported Devices and Features**

This version of the enablement kit supports the following devices:

**16Gb Fibre Channel Host Bus Adapter:**

HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

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HPE QLogic Mezzanine Fibre Channel driver component for VMware vSphere 7.0Version: 2021.02.01 **(Recommended)**Filename: cp044792.compsig; cp044792.zip **Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

**Fixed the following:-**

Fixed a behavior where enabling VM-ID and SmartSAN on a boot from Storage Area Network (SAN) setup caused driver load incomplete

Fixed a behavior where automatic attempts to recover from the behavior described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us would result in a Purple Screen of Death (PSoD)

**Added the following:-**

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability

Added support for Fabric Performance Impact Notifications (FPIN)

Driver version 4.1.22.0

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Fixes**

**Fixed the following-**

Fixed a behavior where enabling VM-ID and SmartSAN on a boot from Storage Area Network (SAN) setup caused driver load incomplete

Fixed a behavior where automatic attempts to recover from the behavior described in Customer Advisory available at https://support.hpe.com/hpesc/public/docDisplay?docLocale=en_US&docId=a00094722en_us would result in a Purple Screen of Death (PSoD)

**Enhancements**

**Added the following:-**

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) Capability

Added support for Fabric Performance Impact Notifications (FPIN)

Driver version 4.1.22.0

**Supported Devices and Features**

This version of the enablement kit supports the following devices:

**16Gb Fibre Channel Host Bus Adapter:**

HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

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HPE Storage Emulex Fibre Channel driver component for VMware vSphere 6.5Version: 2021.02.01 **(Recommended)**Filename: cp044735.compsig; cp044735.zip **Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

Beginning with software release 11.2, Fibre Channel (LightPulse) host bus adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Added the following:-**

Changed the default Logical Unit Number (LUN) queue depth from 30 to 64

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to Driver version 12.8.317.0

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) host bus adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## Enhancements

**Added the following:-**

Changed the default Logical Unit Number (LUN) queue depth from 30 to 64

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to Driver version 12.8.317.0

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter

**32Gb FC Adapter:**

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

HPE Storage Emulex Fibre Channel driver component for VMware vSphere 6.7Version: 2021.02.01 **(Recommended)**Filename: cp044736.compsig; cp044736.zip **Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Added the following:-**

Changed the default Logical Unit Number (LUN) queue depth from 30 to 64

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to Driver version 12.8.317.0

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## Enhancements

**Added the following:-**

Changed the default Logical Unit Number (LUN) queue depth from 30 to 64

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to Driver version 12.8.317.0

## Supported Devices and Features

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Dual Port  Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter

**32Gb FC Adapter:**

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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HPE Storage Emulex Fibre Channel driver component for VMware vSphere 7.0Version: 2021.02.01 **(Recommended)**Filename: cp044737.compsig; cp044737.zip **Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

This component is intended to be used by HPE applications.  It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Added the following:-**

Changed the default Logical Unit Number (LUN) queue depth from 30 to 64

Added support for ESXi 7.0 U1

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to Driver version 12.8.329.0

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## Enhancements

**Added the following:-**

Changed the default Logical Unit Number (LUN) queue depth from 30 to 64

Added support for ESXi 7.0 U1

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to Driver version 12.8.329.0

## Supported Devices and Features

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter

**32Gb FC Adapter:**

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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HPE Storage Emulex Fibre Channel NVMe driver component for VMware vSphere 7.0Version: 2021.02.01 **(Recommended)**Filename: cp045822.compsig; cp045822.zip **Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

Updated to Driver version 12.8.329.0

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Enhancements**

Updated to Driver version 12.8.329.0

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter

**32Gb FC Adapter:**

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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HPE Storage Emulex Mezzanine Fibre Channel driver component for VMware vSphere 6.5Version: 2021.02.01 **(Recommended)**Filename: cp044769.compsig; cp044769.zip **Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Added the following:-**

Changed the default Logical Unit Number (LUN) queue depth from 30 to 64

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to Driver version 12.8.317.0

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Enhancements**

**Added the following:-**

Changed the default Logical Unit Number (LUN) queue depth from 30 to 64

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to Driver version 12.8.317.0

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**16Gb FC Adapter:**

HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class

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HPE Storage Emulex Mezzanine Fibre Channel driver component for VMware vSphere 6.7Version: 2021.02.01 **(Recommended)**Filename: cp044770.compsig; cp044770.zip **Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Added the following:-**

Changed the default Logical Unit Number (LUN) queue depth from 30 to 64

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to Driver version 12.8.317.0

## Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## Enhancements

**Added the following:-**

Changed the default Logical Unit Number (LUN) queue depth from 30 to 64

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to Driver version 12.8.317.0

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**16Gb FC Adapter:**

HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class

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HPE Storage Emulex Mezzanine Fibre Channel driver component for VMware vSphere 7.0Version: 2021.02.01 **(Recommended)**Filename: cp044771.compsig; cp044771.zip **Important Note!**

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Added the following:-**

Added support for ESXi 7.0 U1

Changed the default Logical Unit Number (LUN) queue depth from 30 to 64

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to Driver version 12.8.329.0

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Enhancements**

**Added the following:-**

Added support for ESXi 7.0 U1

Changed the default Logical Unit Number (LUN) queue depth from 30 to 64

Added Non-volatile memory express (NVMe) over Fibre Channel (FC) capability

Updated to Driver version 12.8.329.0

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**16Gb FC  Adapter:**

HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class

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HPE Storage Emulex Mezzanine Fibre Channel NVMe driver component for VMware vSphere 7.0Version: 2021.02.01 **(Recommended)**Filename: cp045823.compsig; cp045823.zip **Important Note!**

This component is intended to be used by HPE applications.  It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

Updated to Driver version 12.8.329.0

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

**Enhancements**

Updated to Driver version 12.8.329.0

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**16Gb FC  Adapter:**

HPE Fibre Channel 16Gb LPe1605 Mezzanine Host Bus Adapter

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HPE Storage Emulex(BRCM) Fibre Channel over Ethernet driver for VMware vSphere 6.5Version: 2021.02.01 **(Recommended)**Filename: cp042522.compsig; cp042522.zip **Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

This component is intended to be used by HPE applications.  It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

If the server contains only CNA adapters and lpfc driver is already been installed, post the new driver update, please remove the lpfc driver using the following command*:*

#esxcli software vib remove lpfc

Updated to Driver version 12.0.1278.0

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

If the server contains only CNA adapters and lpfc driver is already been installed, post the new driver update, please remove the lpfc driver using the following command*:*

#esxcli software vib remove lpfc

**Enhancements**

Updated to Driver version 12.0.1278.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

HPE CN1200E Dual Port Converged Network Adapter

HPE CN1200E-T Dual Port Converged Network Adapter

HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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HPE Storage Emulex(BRCM) Fibre Channel over Ethernet driver for VMware vSphere 6.7Version: 2021.02.01 **(Recommended)**Filename: cp042523.compsig; cp042523.zip **Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

This component is intended to be used by HPE applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HPE vibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

If the server contains only CNA adapters and lpfc driver is already been installed, post the new driver update, please remove the lpfc driver using the following command*:*

#esxcli software vib remove lpfc

Updated to Driver version 12.0.1278.0

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

If the server contains only CNA adapters and lpfc driver is already been installed, post the new driver update, please remove the lpfc driver using the following command*:*

#esxcli software vib remove lpfc

**Enhancements**

Updated to Driver version 12.0.1278.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

HPE CN1200E Dual Port Converged Network Adapter

HPE CN1200E-T Dual Port Converged Network Adapter

HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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**Software - Storage Fibre Channel HBA** Top

Fibreutils for HPE Storage Fibre Channel Host Bus Adapters for Linux -Red Hat Enterprise Linux (RHEL)Version: 4.1-1 (c) **(Optional)**Filename: fibreutils-4.1-1_rhel.x86_64.compsig; fibreutils-4.1-1_rhel.x86_64.rpm

**Prerequisites**

- Requires the following packages to be installed: glibc libgcc libstdc++ bash perl

**Enhancements**

This package supports only Red Hat Enterprise Linux (RHEL) Distros

**Supported Devices and Features**

Supports the following:

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

HPE LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Quad Port Fibre Channel Host Bus Adapter

HPE LPe1605 16Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class

HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

HPE CN1200E Dual Port Converged Network Adapter

HPE CN1200E-T Converged Network Adapter

HPE FlexFabric 20Gb 2-port 650FLB Adapter

HPE FlexFabric 20Gb 2-port 650M Adapter

HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

HPE QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

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Fibreutils for HPE Storage Fibre Channel Host Bus Adapters for Linux -SuSE Linux Enterprise Server(SLES)Version: 4.1-1 (c) **(Optional)**Filename: fibreutils-4.1-1_sles.x86_64.compsig; fibreutils-4.1-1_sles.x86_64.rpm **Prerequisites**

- Requires the following packages to be installed: glibc libgcc libstdc++ bash perl

**Enhancements**

This package supports only SuSE Linux Enterprise Server(SLES) Distros

**Supported Devices and Features**

Supports the following:

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

HPE LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Quad Port Fibre Channel Host Bus Adapter

HPE LPe1605 16Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class

HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

HPE CN1200E Dual Port Converged Network Adapter

HPE CN1200E-T Converged Network Adapter

HPE FlexFabric 20Gb 2-port 650FLB Adapter

HPE FlexFabric 20Gb 2-port 650M Adapter

HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

HPE QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

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HPE Emulex Fibre Channel Enablement Kit for Host Bus Adapters and Mezzanine Host Bus Adapters for Red Hat Enterprise Linux 7 ServerVersion: 12.8.352.11 **(Recommended)**Filename: HPE-CNA-FC-Emulex-Enablement-Kit-12.8.352.11-1.rhel7.x86_64.compsig; HPE-CNA-FC-Emulex-Enablement-Kit-12.8.352.11-1.rhel7.x86_64.rpm **Important Note!**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

The Linux Enablement kit has been changed from "HP-CNA-FC-Emulex-Enablement-Kit" to “HPE-CNA-FC-Emulex-Enablement-Kit”. Upgrade from the older released Enablement kit is supported. However downgrade to earlier version "HP-CNA-FC-Emulex-Enablement-Kit" may not be successful and may report conflicts.

Workaround : Please uninstall the Enablement kit and install the older versions

Updated to version 12.8.352.11

**Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## Enhancements

Updated to version 12.8.352.11

## Supported Devices and Features

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Dual Port  Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter

HPE LPe1605 16Gb Fibre Channel Mezzanine Host Bus Adapter

**32Gb FC Adapter:**

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

HPE Emulex Fibre Channel Enablement Kit for Host Bus Adapters and Mezzanine Host Bus Adapters for Red Hat Enterprise Linux 8 ServerVersion: 12.8.352.11 **(Recommended)**Filename: HPE-CNA-FC-Emulex-Enablement-Kit-12.8.352.11-1.rhel8.x86_64.compsig; HPE-CNA-FC-Emulex-Enablement-Kit-12.8.352.11-1.rhel8.x86_64.rpm **Important Note!**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

The Linux Enablement kit has been changed from "HP-CNA-FC-Emulex-Enablement-Kit" to “HPE-CNA-FC-Emulex-Enablement-Kit”. Upgrade from the older released Enablement kit is supported. However downgrade to earlier version "HP-CNA-FC-Emulex-Enablement-Kit" may not be successful and may report conflicts.

Workaround : Please uninstall the Enablement kit and install the older versions

Updated to version 12.8.352.11

**Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## Enhancements

Updated to version 12.8.352.11

## Supported Devices and Features

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter

HPE LPe1605 16Gb Fibre Channel Mezzanine Host Bus Adapter

**32Gb FC Adapter:**

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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HPE Emulex Fibre Channel Enablement Kit for Host Bus Adapters and Mezzanine Host Bus Adapters for SUSE Linux Enterprise Server 12Version: 12.8.352.11 **(Recommended)**Filename: HPE-CNA-FC-Emulex-Enablement-Kit-12.8.352.11-1.sles12sp4.x86_64.compsig; HPE-CNA-FC-Emulex-Enablement-Kit-12.8.352.11-1.sles12sp4.x86_64.rpm; HPE-CNA-FC-Emulex-Enablement-Kit-12.8.352.11-1.sles12sp5.x86_64.compsig; HPE-CNA-FC-Emulex-Enablement-Kit-12.8.352.11-1.sles12sp5.x86_64.rpm **Important Note!**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

The Linux Enablement kit has been changed from "HP-CNA-FC-Emulex-Enablement-Kit" to “HPE-CNA-FC-Emulex-Enablement-Kit”. Upgrade from the older released Enablement kit is supported. However downgrade to earlier version "HP-CNA-FC-Emulex-Enablement-Kit" may not be successful and may report conflicts.

Workaround : Please uninstall the Enablement kit and install the older versions

Rewrite of same Enablement kit version on SuSE Linux Enterprise Server 12 service pack 4 and SuSE Linux Enterprise Server 12 service pack 5 has to be performed using –force or --replacepkgs with --nodeps option

Example: rpm –Uvh HPE-CNA-FC-Emulex-Enablement-Kit-<version>.<OS>.<architecture>.rpm --force --nodeps

rpm –Uvh HPE-CNA-FC-Emulex-Enablement-Kit-<version>.<OS>.<architecture>.rpm --replacepkgs --nodeps

For more information please refer the Knowledge Base at: https://www.suse.com/support/kb/doc/?id=000019640

Updated to version 12.8.352.11

**Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Enhancements**

Updated to version 12.8.352.11

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter

HPE LPe1605 16Gb Fibre Channel Mezzanine Host Bus Adapter

**32Gb FC Adapter:**

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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HPE Emulex Fibre Channel Enablement Kit for Host Bus Adapters and Mezzanine Host Bus Adapters for SUSE Linux Enterprise Server 15Version: 12.8.352.11 **(Recommended)**Filename: HPE-CNA-FC-Emulex-Enablement-Kit-12.8.352.11-1.sles15sp1.x86_64.compsig; HPE-CNA-FC-Emulex-Enablement-Kit-12.8.352.11-1.sles15sp1.x86_64.rpm; HPE-CNA-FC-Emulex-Enablement-Kit-12.8.352.11-1.sles15sp2.x86_64.compsig; HPE-CNA-FC-Emulex-Enablement-Kit-12.8.352.11-1.sles15sp2.x86_64.rpm **Important Note!**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

The Linux Enablement kit has been changed from "HP-CNA-FC-Emulex-Enablement-Kit" to “HPE-CNA-FC-Emulex-Enablement-Kit”. Upgrade from the older released Enablement kit is supported. However downgrade to earlier version "HP-CNA-FC-Emulex-Enablement-Kit" may not be successful and may report conflicts.

Workaround : Please uninstall the Enablement kit and install the older versions

Rewrite of same Enablement kit version on SuSE Linux Enterprise Server 15 service pack 1 and SuSE Linux Enterprise Server 15 service pack 2 has to be performed using --reinstall option

Example: rpm –Uvh HPE-CNA-FC-Emulex-Enablement-Kit-<version>.<OS>.<architecture>.rpm --reinstall

For more information please refer the Knowledge Base at: https://www.suse.com/support/kb/doc/?id=000019640

Updated to version 12.8.352.11

**Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## Enhancements

Updated to version 12.8.352.11

## Supported Devices and Features

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Dual Port  Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter

HPE Fibre Channel 16Gb LPe1605 Mezz

**32Gb FC Adapter:**

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

HPE Emulex NVMe Fibre Channel Enablement Kit for HPE Emulex Host Bus Adapters for Linux ServerVersion: 12.8.264.0 **(Optional)**Filename: nvmefc-connect-12.8.264.0-1.rhel7u8.noarch.compsig; nvmefc-connect-12.8.264.0-1.rhel7u8.noarch.rpm; nvmefc-connect-12.8.264.0-1.rhel7u9.noarch.compsig; nvmefc-connect-12.8.264.0-1.rhel7u9.noarch.rpm; nvmefc-connect-12.8.264.0-1.sles12sp4.noarch.compsig; nvmefc-connect-12.8.264.0-1.sles12sp4.noarch.rpm **Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

This package is applicable only on the below Operating Systems

Red Hat Enterprise Linux Server 7 update 8

Red Hat Enterprise Linux Server 7 update 9

SUSE Linux Enterprise Server 12 service pack 4

**Prerequisites**

To successfully deploy nvme-connect rpm on target systems based on a Linux operating system, "nvme-cli" package has to be available on the target system. This package is available as part of the OS-distro.

**Enhancements**

Updated to version 12.8.264.0

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Dual Port  Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter

HPE Fibre Channel 16Gb LPe1605 Mezzanine Host Bus Adapter

**32Gb FC Adapter:**

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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HPE Emulex Smart SAN Enablement Kit for LinuxVersion: 1.0.0.0-4 (f) **(Optional)**Filename: hpe-emulex-smartsan-enablement-kit-1.0.0.0-4.x86_64.compsig; hpe-emulex-smartsan-enablement-kit-1.0.0.0-4.x86_64.rpm **Important Note!**

The Smart SAN enablement kit will not execute when an operating system has only the inbox fibre channel driver installed.  An out of box (OOB) fibre channel driver is needed to utilize Smart SAN functionality.  If any OOB driver is installed, the enablement kit will pre-enable/disable Smart SAN functionality for future use. It can then be activated once a Smart SAN enabled OOB driver is installed (see Prerequisite Notes) and after a reboot has occured.

To obtain the 3PAR Smart SAN User Guide to go the Storage Information Library at the following link:

Storage Information Library

(http://www.hpe.com/info/storage/docs/)

By default, **HP 3PAR Storage** is selected under

**Products and Solutions**.

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied fibre channel driver must be installed prior to this enablement kit component if you want to enable Smart SAN functionality. The driver is available on the HPE.com website at www.hpe.com.

Linux FC Driver Kit for HPE Branded Emulex FC HBAs and mezz cards, version 11.1.183.21(minimum version supported) for RedHat 7, RedHat 8 and Novell SUSE 12, SUSE 15

However, if a Smart SAN enabled driver is not installed at execution time, the component will land the enablement kit files for future use after the driver has been installed.

**Enhancements**

Added support to SLES15SP1

Updated to version 1.0.0.0-4

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Dual Port  Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter

**32Gb FC Adapter:**

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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HPE Emulex Smart SAN Enablement Kit for Microsoft Windows Server 64 bit operating systemsVersion: 1.0.0.1 (j) **(Recommended)**Filename: cp042255.compsig; cp042255.exe **Important Note!**

The Smart SAN enablement kit will not execute when an operating system has only the inbox fibre channel driver installed. An out of box (OOB) fibre channel driver is needed to utilize Smart SAN functionality. If any OOB driver is installed, the enablement kit will pre-enable/disable Smart SAN functionality for future use. It can then be activated once a Smart SAN enabled OOB driver is installed (see Prerequisite Notes) and after a reboot has occured.

To obtain the 3PAR Smart SAN User Guide to go the Storage Information Library at the following link:

Storage Information Library

(http://www.hpe.com/info/storage/docs/)

By default, **HP 3PAR Storage** is selected under

**Products and Solutions**.

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied fibre channel driver must be installed prior to this enablement kit component if you want to enable Smart SAN functionality. The driver is available on the HPE.com website at www.hpe.com.

HPE Storage Fibre Channel Adapter Kit for the x64 Emulex Storport Driver v11.1.145.16 cp030886.exe

However, if a Smart SAN enabled driver is not installed at execution time, the component will land the enablement kit files for future use after the driver has been installed.

**Enhancements**

Updated to version 1.0.0.1

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**

HPE 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84E 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb FC Adapter:**

HPE SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1100E Quad Port 16Gb Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb Dual Port  Fibre Channel Host Bus Adapter

HPE SN1200E 16Gb 1Single Port Fibre Channel Host Bus Adapter

**32Gb FC Adapter:**

HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Dual port Fibre Channel Host Bus Adapter

HPE SN1610E 32Gb Single port Fibre Channel Host Bus Adapter

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HPE Emulex(BRCM) Fibre Channel Over Ethernet Enablement Kit for Host Bus Adapters and Mezzanine Host Bus Adapters for Red Hat Enterprise Linux 7 ServerVersion: 12.0.1339.0 **(Recommended)**Filename: HPE-CNA-FC-Broadcom-Enablement-Kit-12.0.1339.0-1.rhel7.x86_64.compsig; HPE-CNA-FC-Broadcom-Enablement-Kit-12.0.1339.0-1.rhel7.x86_64.rpm **Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

Updated to version: 12.0.1339.0

**Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Enhancements**

Updated to version: 12.0.1339.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

HPE CN1200E Dual Port Converged Network Adapter

HPE CN1200E-T Dual Port Converged Network Adapter

HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

HPE FlexFabric 20Gb 2-port 650FLB Adapter

HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Emulex(BRCM) Fibre Channel Over Ethernet Enablement Kit for Host Bus Adapters and Mezzanine Host Bus Adapters for Red Hat Enterprise Linux 8 ServerVersion: 12.0.1339.0 **(Recommended)**Filename: HPE-CNA-FC-Broadcom-Enablement-Kit-12.0.1339.0-1.rhel8.x86_64.compsig; HPE-CNA-FC-Broadcom-Enablement-Kit-12.0.1339.0-1.rhel8.x86_64.rpm **Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

Updated to version: 12.0.1339.0

**Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Enhancements**

Updated to version: 12.0.1339.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

HPE CN1200E Dual Port Converged Network Adapter

HPE CN1200E-T Dual Port Converged Network Adapter

HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

HPE FlexFabric 20Gb 2-port 650FLB Adapter

HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Emulex(BRCM) Fibre Channel Over Ethernet Enablement Kit for Host Bus Adapters and Mezzanine Host Bus Adapters for SUSE Linux Enterprise Server 12Version: 12.0.1339.0 **(Recommended)**Filename: HPE-CNA-FC-Broadcom-Enablement-Kit-12.0.1339.0-1.sles12sp4.x86_64.compsig; HPE-CNA-FC-Broadcom-Enablement-Kit-12.0.1339.0-1.sles12sp4.x86_64.rpm; HPE-CNA-FC-Broadcom-Enablement-Kit-12.0.1339.0-1.sles12sp5.x86_64.compsig; HPE-CNA-FC-Broadcom-Enablement-Kit-12.0.1339.0-1.sles12sp5.x86_64.rpm **Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

Updated to version: 12.0.1339.0

**Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Enhancements**

Updated to version: 12.0.1339.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

HPE CN1200E Dual Port Converged Network Adapter

HPE CN1200E-T Dual Port Converged Network Adapter

HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

HPE FlexFabric 20Gb 2-port 650FLB Adapter

HPE FlexFabric 20Gb 2-port 650M Adapter

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HPE Emulex(BRCM) Fibre Channel Over Ethernet Enablement Kit for Host Bus Adapters and Mezzanine Host Bus Adapters for SUSE Linux Enterprise Server 15Version: 12.0.1339.0 **(Recommended)**Filename: HPE-CNA-FC-Broadcom-Enablement-Kit-12.0.1339.0-1.sles15sp1.x86_64.compsig; HPE-CNA-FC-Broadcom-Enablement-Kit-12.0.1339.0-1.sles15sp1.x86_64.rpm; HPE-CNA-FC-Broadcom-Enablement-Kit-12.0.1339.0-1.sles15sp2.x86_64.compsig; HPE-CNA-FC-Broadcom-Enablement-Kit-12.0.1339.0-1.sles15sp2.x86_64.rpm **Important Note!**

Release Notes:
HPE Emulex Adapters Release Notes

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

Updated to version: 12.0.1339.0

**Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

Go to http://www.hpe.com/support/manuals

Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Enhancements**

Updated to version: 12.0.1339.0

**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

HPE CN1200E Dual Port Converged Network Adapter

HPE CN1200E-T Dual Port Converged Network Adapter

HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter

HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

HPE FlexFabric 20Gb 2-port 650FLB Adapter

HPE FlexFabric 20Gb 2-port 650M Adapter

HPE QLogic Fibre Channel Enablement Kit for Host Bus Adapter and Mezzanine Host Bus Adapter for LinuxVersion: 6.0.0.0-16 **(Recommended)**Filename: HPE-CNA-FC-hpeqlgc-Enablement-Kit-6.0.0.0-16.noarch.compsig; HPE-CNA-FC-hpeqlgc-Enablement-Kit-6.0.0.0-16.noarch.rpm **Important Note!**

Release Notes:
HPE QLogic Adapters Release Notes

The Enablement Kit requires that the target environment have the libHBAAPI package installed from your OS installation media.

The Linux Enablement kit has been changed from "HP-CNA-FC-hpqlgc-Enablement-Kit" to “HPE-CNA-FC-hpeqlgc-Enablement-Kit”. Upgrade from the older released Enablement kit is supported. However downgrade to earlier version "HP-CNA-FC-hpqlgc-Enablement-Kit" may not be successful and may report conflicts.

Workaround : Please uninstall the Enablement kit and install the older versions

Rewrite of same Enablement kit version on SuSE Linux Enterprise Server 12 service pack 4 and SuSE Linux Enterprise Server 12 service pack 5 has to be performed using –force or --replacepkgs with --nodeps option

Example: rpm –Uvh HPE-CNA-FC-hpeqlgc-Enablement-Kit-<version>.noarch.rpm --force --nodeps

rpm –Uvh HPE-CNA-FC-hpeqlgc-Enablement-Kit-<version>.noarch.rpm --replacepkgs --nodeps

Rewrite of same Enablement kit version on SuSE Linux Enterprise Server 15 service pack 1 and SuSE Linux Enterprise Server 15 service pack 2 has to be performed using --reinstall option

Example: rpm –Uvh HPE-CNA-FC-hpeqlgc-Enablement-Kit-<version>.noarch.rpm --force --nodeps

For more information please refer the Knowledge Base at: https://www.suse.com/support/kb/doc/?id=000019640

Updated the kit to version 6.0.0.0-16

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The Enablement Kit requires that the target environment have the libHBAAPI package installed from your OS installation media.

**Enhancements**

Updated the kit to version 6.0.0.0-16

**Supported Devices and Features**

This driver supports the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

HPE 81Q 8Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

HPE SN1000Q 16Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1000Q 16Gb Single Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

**32Gb Fibre Channel Host Bus Adapter:**

HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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HPE QLogic Smart SAN enablement kit for LinuxVersion: 3.3-3 (h) **(Optional)**Filename: hpe-qlogic-smartsan-enablement-kit-3.3-3.x86_64.compsig; hpe-qlogic-smartsan-enablement-kit-3.3-3.x86_64.rpm **Important Note!**

To obtain the 3PAR Smart SAN User Guide to go the Storage Information Library at the following link:

Storage Information Library

(http://www.hpe.com/info/storage/docs/)

By default, **HP 3PAR Storage** is selected under

**Products and Solutions**.

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied fibre channel driver must be installed prior to this enablement kit component if you want to enable Smart SAN functionality. The driver is available on the HPE.com website at www.hpe.com.

Red Hat Enterprise Linux 6 Server (x86-64) FCoE/FC Driver Kit for HPE Qlogic CNAs, HBAs and mezzanine HBAs, version 8.07.00.42.06.0-k1

Red Hat Enterprise Linux 7 Server FCoE/FC Driver Kit for HPE QLogic CNAs, HBAs and mezzanine HBAs and CNAs, version 8.07.00.42.07.0-k1

SUSE Linux Enterprise Server 11 (AMD64/EM64T) FCoE/FC Driver Kit for HPE Qlogic CNAs, HBAs and mezzanine HBAs, version 8.07.00.42.11.3-k

SUSE Linux Enterprise Server 12 FCoE/FC Driver Kit for HPE QLogic CNAs, HBAs and mezzanine HBAs and CNAs version 8.07.00.42.12.0-k1

However, if a Smart SAN enabled driver is not installed at execution time, the component will land the enablement kit files for future use after the driver has been installed.

## Enhancements

Added Support to RHEL8 and SLES15SP1

Updated to version 3.3-3

## Supported Devices and Features

This version of the enablement kit supports the following devices:

**8Gb Fibre Channel Host Bus Adapter:**

HPE 81Q PCIe Fibre Channel Host Bus Adapter

HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84Q 4P 8Gb Fibre Channel HBA

HPE QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

**16Gb Fibre Channel Host Bus Adapter:**

HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

HPE SN1000Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1000Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

**32Gb Fibre Channel Host Bus Adapter:**

HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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HPE QLogic Smart SAN Enablement Kit for Microsoft Windows Server 64 bit operating systemsVersion: 1.0.0.1
(i) **(Recommended)**Filename: cp039719.compsig; cp039719.exe **Important Note!**

The Smart SAN enablement kit will not execute when an operating system has only the inbox fibre channel driver installed. An out of box (OOB) fibre channel driver is needed to utilize Smart SAN functionality. If any OOB driver is installed, the enablement kit will pre-enable/disable Smart SAN functionality for future use. It can then be activated once a Smart SAN enabled OOB driver is installed (see Prerequisite Notes) and after a reboot has occured.

To obtain the 3PAR Smart SAN User Guide to go the Storage Information Library at the following link:

Storage Information Library

(http://www.hpe.com/info/storage/docs/)

By default, **HPE 3PAR Storage** is selected under

**Products and Solutions**.

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied fibre channel driver must be installed prior to this enablement kit component if you want to enable Smart SAN functionality. The driver is available on the HPE.com website at www.hpe.com.

HPE Storage Fibre Channel Adapter Kit for the x64 QLogic Storport Driver v9.2.2.20, cp031252.exe

HPE Storage Fibre Channel Adapter Kit for the QLogic Storport Driver for Windows Server 2012 and 2012 R2 v9.2.2.20, cp031253.exe

HPE Storage Fibre Channel Adapter Kit for the QLogic Storport Driver for Windows Server 2016 version 9.2.2.20, cp031251.exe

HPE Storage Fibre Channel Adapter Kit for the QLogic Storport Driver for Windows Server 2019 version 9.2.9.22, cp037397.exe

However, if a Smart SAN enabled driver is not installed at execution time, the component will land the enablement kit files for future use after the driver has been installed.

**Enhancements**

Updated to version 1.0.0.1

**Supported Devices and Features**

This version of the enablement kit supports the following devices:

**8Gb Fibre Channel Host Bus Adapter:**

HPE 81Q PCIe Fibre Channel Host Bus Adapter

HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84Q 4P 8Gb Fibre Channel HBA

HPE QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

**16Gb Fibre Channel Host Bus Adapter:**

HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

HPE SN1000Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1000Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Dual Port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB Single Port PCIe Fibre Channel Host Bus Adapter

**32Gb Fibre Channel Host Bus Adapter:**

HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Dual Port Fibre Channel Host Bus Adapter

HPE SN1610Q 32Gb Single Port Fibre Channel Host Bus Adapter

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HPE QLogic Smart SAN Enablement Kit for Microsoft Windows Server 64 bit operating systemsVersion: 1.0.0.1 **(Recommended)**Filename: cp046397.compsig; cp046397.exe **Important Note!**

The Smart SAN enablement kit will not execute when an operating system has only the inbox fibre channel driver installed. An out of box (OOB) fibre channel driver is needed to utilize Smart SAN functionality. If any OOB driver is installed, the enablement kit will pre-enable/disable Smart SAN functionality for future use. It can then be activated once a Smart SAN enabled OOB driver is installed (see Prerequisite Notes) and after a reboot has occured.

To obtain the 3PAR Smart SAN User Guide to go the Storage Information Library at the following link:

Storage Information Library

(http://www.hpe.com/info/storage/docs/)

By default, **HPE 3PAR Storage** is selected under

**Products and Solutions**.

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

The HPE supplied fibre channel driver must be installed prior to this enablement kit component if you want to enable Smart SAN functionality. The driver is available on the HPE.com website at www.hpe.com.

However, if a Smart SAN enabled driver is not installed at execution time, the component will land the enablement kit files for future use after the driver has been installed.

**Enhancements**

Updated to version 1.0.0.1

**Supported Devices and Features**

This enablement kit is supported on the following HPE adapters:

**8Gb Fibre Channel Host Bus Adapter:**

HPE 81Q PCIe Fibre Channel Host Bus Adapter

HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter

HPE 84Q 4P 8Gb Fibre Channel Host Bus Adapter

**16Gb Fibre Channel Host Bus Adapter:**

HPE SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter

HPE SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter

HPE SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter

**32Gb Fibre Channel Host Bus Adapter:**

HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter

HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

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**Software - System Management** **Top**

Agentless Management Service (iLO 5) for Red Hat Enterprise Linux 7 ServerVersion: 2.4.1 **(Optional)**
Filename: amsd-2.4.1-1571.4.rhel7.x86_64.compsig; amsd-2.4.1-1571.4.rhel7.x86_64.rpm
**Prerequisites**

**amsd only supported on HPE Gen10/Gen10 Plus Servers.**

**amsd provides information to the iLO 5 service providing SNMP support.**

**Requirements:**

Minimum iLO 5 Firmware Version = 1.1

Minimum supported OS Versions = Red Hat Enterprise Linux 7.3 Errata 3.10.0.514.6.1

**Fixes**

Fixed the following items:

Addressed a small amount of memory leak as outlined in the Customer Advisory, a00053824en_us

A customer may experience where smad may periodically report: No response from iLO for Hello. After losing connection with iLO, the subagent may experience high CPU utilization for trying the reconnection. This issue

is documented in Customer Advisory https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00111063en_us.

The cpqIde service not able to start while the AMSD configuration is agent mode.

Addressed buffer overflow issues in select corner cases.

**Enhancements**

This release contains the following enhancements:

Enhance the robust communication with iLO. The enhancement has a proper process exist and OS signal handling.

Enhance the SMA logging system for better recording of the communication events.

The AMSD reports the Open NIC controllers SN to align with iLO for avoiding the un-sync information.

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Agentless Management Service (iLO 5) for Red Hat Enterprise Linux 8 ServerVersion: 2.4.1 **(Optional)**
Filename: amsd-2.4.1-1571.8.rhel8.x86_64.compsig; amsd-2.4.1-1571.8.rhel8.x86_64.rpm

**Prerequisites**

**amsd only supported on HPE Gen10/Gen10 Plus Servers.**

**amsd provides information to the iLO 5 service providing SNMP support.**

**Requirements:**

Minimum iLO 5 Firmware Version = 1.1

Minimum supported OS Versions = Red Hat Enterprise Linux 8

**Fixes**

Fixed the following items:

Addressed a small amount of memory leak as outlined in the Customer Advisory, a00053824en_us

A customer may experience where smad may periodically report: No response from iLO for Hello. After losing connection with iLO, the subagent may experience high CPU utilization for trying the reconnection. This issue is documented in Customer Advisory https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00111063en_us.

The cpqIde service not able to start while the AMSD configuration is agent mode.

Addressed buffer overflow issues in select corner cases.

**Enhancements**

This release contains the following enhancements:

Enhance the robust communication with iLO. The enhancement has a proper process exist and OS signal handling.

Enhance the SMA logging system for better recording of the communication events.

The AMSD reports the Open NIC controllers SN to align with iLO for avoiding the un-sync information.

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Agentless Management Service (iLO 5) for SUSE Linux Enterprise Server 12Version: 2.4.1 **(Optional)**Filename: amsd-2.4.1-1571.4.sles12.x86_64.compsig; amsd-2.4.1-1571.4.sles12.x86_64.rpm **Prerequisites**

**amsd only supported on HPE Gen10/Gen10 Plus Servers.**

**amsd provides information to the iLO 5 service providing SNMP support.**

**Requirements:**

Minimum iLO 5 Firmware Version = 1.1

Minimum supported OS Versions = SUSE Linux Enterprise Server 12 SP2

**Fixes**

Fixed the following items:

Addressed a small amount of memory leak as outlined in the Customer Advisory, a00053824en_us

A customer may experience where smad may periodically report: No response from iLO for Hello. After losing connection with iLO, the subagent may experience high CPU utilization for trying the reconnection. This issue is documented in Customer Advisory https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00111063en_us.

The cpqIde service not able to start while the AMSD configuration is agent mode.

Addressed buffer overflow issues in select corner cases.

**Enhancements**

This release contains the following enhancements:

Enhance the robust communication with iLO. The enhancement has a proper process exist and OS signal handling.

Enhance the SMA logging system for better recording of the communication events.

The AMSD reports the Open NIC controllers SN to align with iLO for avoiding the un-sync information.

Agentless Management Service (iLO 5) for SUSE Linux Enterprise Server 15Version: 2.4.1 **(Optional)**Filename: amsd-2.4.1-1571.4.sles15.x86_64.compsig; amsd-2.4.1-1571.4.sles15.x86_64.rpm **Prerequisites**

**amsd only supported on HPE Gen10/Gen10 Plus Servers.**

**amsd provides information to the iLO 5 service providing SNMP support.**

**Requirements:**

Minimum iLO 5 Firmware Version = 1.1

Minimum supported OS Versions = SUSE Linux Enterprise Server 15

**Fixes**

Fixed the following items:

Addressed a small amount of memory leak as outlined in the Customer Advisory, a00053824en_us

A customer may experience where smad may periodically report: No response from iLO for Hello. After losing connection with iLO, the subagent may experience high CPU utilization for trying the reconnection. This issue is documented in Customer Advisory https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00111063en_us.

The cpqIde service not able to start while the AMSD configuration is agent mode.

Addressed buffer overflow issues in select corner cases.

Metadata update to address new AMD servers not listed in the supported platforms list.

**Enhancements**

This release contains the following enhancements:

Enhance the robust communication with iLO. The enhancement has a proper process exist and OS signal handling.

Enhance the SMA logging system for better recording of the communication events.

The AMSD reports the Open NIC controllers SN to align with iLO for avoiding the un-sync information.

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Agentless Management Service for Windows x64Version: 2.41.0.0 **(Optional)**Filename: cp046676.compsig; cp046676.exe **Important Note!**

iLO Firmware Version:

This version of AMS has been tested with iLO 5 firmware version 2.40. It is recommended to install AMS 2.41.0.0 on systems with iLO 5 firmware 2.40 or newer.

About installation and enablement of SMA service:

During AMS installation in interactive mode, there is pop up message to selectively install SMA.

If Yes is selected, SMA service will be installed and set to running state.

If No is selected, SMA service will be installed but the service is not enabled.

During AMS installation in silent mode, SMA is installed but the service is not enabled.

To enable SMA service at a later time, go to the following folder: %ProgramFiles%\OEM\AMS\Service\ (Typically c:\Program Files\OEM\AMS\Service) and execute "EnableSma.bat /f"

IMPORTANT: The SNMP service community name and permission must also be setup. This is not done by “EnableSma.bat”.

To disable SMA after it has been enabled, go to the following folder: %ProgramFiles%\OEM\AMS\Service\ (Typically c:\Program Files\OEM\AMS\Service) and execute "DisableSma.bat /f"

After installing Windows operating system, make sure all the latest Microsoft Updates are downloaded and installed (wuapp.exe can be launched to start the update process). If this is not done, a critical error may be reported in Windows Event Log, “The Agentless Management Service terminated unexpectedly.”.

AMS Control Panel Applet:

The AMS control panel applet UI is best displayed on the system when screen resolution is 1280 x 1024 pixels or higher and text size 100%.

Test trap generated from AMS Control Panel Applet requires iLO5 firmware version 2.10 and newer.

When in iLO5 high security mode (e.g. FIPS mode), MD5 authentication protocol will not be shown.

**Prerequisites**

The *Channel Interface Driver for Windows X64* must be installed prior to this component.

Microsoft SNMP Service must be enabled, if SMA (System Management Assistant) is enabled.

**Fixes**

Fixed IML was missing NIC link down record if the user unplugs many cables at the same time.

Fixed iLO web GUI missing IPv6 address when Windows Hype-V switch is created.

Fixed a crash issue when AMS is querying iSCSI information.

Fixed incorrect drive status if IDE SATA drive is busy on access.

Fixed incorrect drive status if Windows see the predictive failure drive.

**Enhancements**

Added Logical Drive Trap 5023.

Added support for new I/O cards.

Changed IDE/SATA interval time from 120 seconds to 60 seconds.

Redirect more iLO security logs to the Windows event system.

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HPE Agentless Management Bundle for ESXi 7.0 Gen 9Version: 701.11.7.0 **(Recommended)**Filename: amshelprComponent_701.11.7.0.14-1_17510219.zip **Fixes**

**Agentless Management Service**

Fixed resource leak when AHS logging fails

Fix incorrect reporting of SATA disks attached to Smart Array and SAS controllers in the cpqIdeAtaDisk MIB

**Enhancements**

**Agentless Management Service**

Implemented new vSphere 7.0U1 Daemon interface and is only supported on vSphere 7.0U1 and newer. New "esxcli daemon" commands are now used to control AMS and get AMS status.

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HPE Agentless Management Bundle for ESXi 7.0 Update 1 for HPE Gen10 and Gen10 Plus ServersVersion: 701.11.7.1 **(Recommended)**Filename: amsdComponent_701.11.7.1.3-1_17671487.zip **Fixes**

**Agentless Management Service**

Reduce Software Inventory cache refresh time to 15 seconds to help resolve OneView online SW update issues without reboot.

Fixed resource leak when AHS logging fails

Fix incorrect reporting of SATA disks attached to Smart Array and SAS controllers in the cpqIdeAtaDisk MIB.

**Enhancements**

**Agentless Management Service**

Added support for new NIC devices

Added support for new SATA, SAS and NVMe drives

Implemented new vSphere 7.0U1 Daemon interface and is only supported on vSphere 7.0U1 and newer. New "esxcli daemon" commands are now used to control AMS and get AMS status.

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HPE Fiber Channel and Storage Enablement Component for ESXi 7.0Version: 3.7.0 **(Recommended)**Filename: fc-enablement-component_700.3.7.0.5-1_17477831.zip **Enhancements**

Supports VMware ESXi 7.0 U1 and ESXi 7.0 U2

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HPE Insight Management Agents for Microsoft Windows Server x64 EditionsVersion: 11.1.0.0 **(Optional)**Filename: cp041529.exe **Prerequisites**

The HPE Insight Management Agents require the SNMP Service , HPE ProLiant iLO 3/4 Channel Interface and Management Controller Drivers for Windows x64 to be installed prior to this component.

In addition, the System Management Homepage (SMH) component is required for a single server web-based user interface.

**Fixes**

Fixed unusual Windows system events originating from SNMP network agents

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HPE Insight Management WBEM Providers for Microsoft Windows Server x64 EditionsVersion: 11.0.0.0 **(Optional)**Filename: cp045863.exe **Prerequisites**

The HPE Insight Management WBEM Providers require the HPE ProLiant iLO 3/4 Channel Interface and Management Controller Drivers (version 3.4.0.0 or later) for Windows X64 to be installed prior to this component.

In addition, the System Management Homepage (SMH) component (version 7.2.2.9 or later) is required for a single server web-based user interface.

Make sure to apply all updates needed for the OS on the system by running Windows Update. Incomplete Windows Update may cause the HPE WBEM Providers installation failures.

**Fixes**

Fixed issue that allowed installation on unsupported products incorrectly

Modified help information to comply with de-branding requirements

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HPE MegaRAID Storage Administrator (HPE MRSA) for Linux 64-bitVersion: 7.016.16.0 **(Recommended)**Filename: HPE_Linux_64_readme.txt; MRStorageAdministrator-007.016.016.000-00.x86_64.rpm; MRStorageAdministrator-007.016.016.000-00.x86_64_part1.compsig; MRStorageAdministrator-007.016.016.000-00.x86_64_part2.compsig **Important Note!**

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**Prerequisites**

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**Enhancements**

Added support for Gen10 Plus MegaRAID Controllers.

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HPE MegaRAID Storage Administrator (HPE MRSA) for Windows 64-bitVersion: 7.16.16.0 **(Recommended)**Filename: cp046226.exe; cp046226_part1.compsig; cp046226_part2.compsig **Enhancements**

Supports Gen10 Plus MegaRAID Controllers.

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HPE MegaRAID Storage Administrator StorCLI for Linux 64-bitVersion: 1.25.12 **(Optional)**Filename: LINUX_Readme.txt; storcli-1.25.12-1.noarch.compsig; storcli-1.25.12-1.noarch.rpm **Enhancements**

Added support for the Apollo 4510 system

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HPE MegaRAID Storage Administrator StorCLI for Linux 64-bitVersion: 007.1616.0000.0000 **(Optional)**Filename: storcli-007.1616.0000.0000-1.x86_64.compsig; storcli-007.1616.0000.0000-1.x86_64.rpm **Enhancements**

This version of StorCLI supports maintaining, troubleshooting, and configuration functions for the MegaRAID® Gen10 Plus controller products: MR416i-a, MR416i-p, MR216i-a, MR216i-p

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HPE MegaRAID Storage Administrator StorCLI for VMwareVersion: 1.25.12 **(Optional)**Filename: vmware-esx-storcli-1.25.12.vib; VMWARE_MN_NDS_Readme.txt **Enhancements**

Added support for the Apollo 4510 system

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HPE MegaRAID Storage Administrator StorCLI for VMwareVersion: 007.1616.0000.0000 **(Recommended)**Filename: BCM-vmware-storcli64_007.1616.0000.0000-01_17650073.zip **Enhancements**

Supported on ESXi OS 7.0 64 bit

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HPE MegaRAID Storage Administrator StorCLI for VMwareVersion: 007.1616.0000.0000 **(Recommended)**Filename: storcli-esxi6.7-bundle-007.1616.0000.0000.zip **Enhancements**

This version of StorCLI supports maintaining, troubleshooting, and configuration functions for the MegaRAID® Gen10 Plus controller products: MR416i-a, MR416i-p, MR216i-a, MR216i-p

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HPE MegaRAID Storage Administrator StorCLI for VMwareVersion: 1.25.16 **(Recommended)**Filename: storcli-esxi6.7-bundle-1.25.16.zip **Enhancements**

Added ProLiant features support (Megacell status, AHS, Spade, Sanitize & Expander)

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HPE MegaRAID Storage Administrator StorCLI for VMwareVersion: 1.25.16 **(Recommended)**Filename: storcli-esxi6.5-bundle-1.25.16.zip **Enhancements**

Initial release

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HPE MegaRAID Storage Administrator StorCLI for Windows 64-bitVersion: 1.25.12.0 **(Optional)**Filename: cp036918.compsig; cp036918.exe **Enhancements**

Added support for the Apollo 4510 system

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HPE MegaRAID Storage Administrator StorCLI for Windows 64-bitVersion: 7.1616.0.0 **(Optional)**Filename: cp045859.compsig; cp045859.exe **Enhancements**

Supports maintaining and configuration of Gen10 Plus MegaRAID Controllers: MR416i-a, MR416i-p, MR216i-a, MR216i-p

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HPE Offline Bundle for ESXi 6.5Version: 3.7.1 **(Recommended)**Filename: esxi6.5uX-mgmt-bundle-3.7.1.2-1.zip **Fixes**

**Agentless Management Service**

Reduce Software Inventory cache refresh time to 15 seconds to help resolve OneView online SW update issues without reboot.

Fixed resource leak when AHS logging fails

Fix incorrect reporting of SATA disks attached to Smart Array and SAS controllers in the cpqIdeAtaDisk MIB.

**Enhancements**

**Agentless Management Service**

Added support for new NIC devices (Gen10 AMS only)

Added support for new SATA, SAS and NVMe drives (Gen10 AMS only)

**Supported Devices and Features**

VMware vSphere version support:

VMware vSphere 6.5 U2

VMware vSphere 6.5 U3

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HPE Offline Bundle for ESXi 6.7Version: 3.7.1 **(Recommended)**Filename: esxi6.7uX-mgmt-bundle-3.7.1.2-1.zip **Fixes**

**Agentless Management Service**

Reduce Software Inventory cache refresh time to 15 seconds to help resolve OneView online SW update issues without reboot.

Fixed resource leak when AHS logging fails

Fix incorrect reporting of SATA disks attached to Smart Array and SAS controllers in the cpqIdeAtaDisk MIB.

**Enhancements**

**Agentless Management Service**

Added support for new NIC devices (Gen10 AMS only)

Added support for new SATA, SAS and NVMe drives (Gen10 AMS only)

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HPE ProLiant Agentless Management Service for HPE Apollo, ProLiant and Synergy Gen9 serversVersion: 10.99.0.0 **(Optional)**Filename: cp046273.exe **Important Note!**

iLO Firmware Version:

This version of AMS has been tested with iLO 4 firmware version 2.76. It is recommended to install AMS 10.98 on system with iLO 4 firmware 2.76.

**Prerequisites**

The *HPE ProLiant iLO 3/4 Channel Interface Driver for Windows X64* (version 3.4.0.0 or later) must be installed prior to this component.

**Fixes**

Fixed IML missing NIC link down record if the user unplugs many cables at the same time.

Fixed iLO web GUI missing IPv6 address when Windows Hype-V switch is created.

Fixed a crash issue when AMS is querying iSCSI information.

Fixed incorrect drive status if IDE SATA drive is busy on access.

Fixed incorrect drive status if Windows see the predictive failure drive.

**Enhancements**

Added Logical Drive Trap 5023.

Changed IDE/SATA interval time from 120 seconds to 60 seconds.

Redirect more iLO security logs to the Windows event system.

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HPE ProLiant Agentless Management Service for Red Hat Enterprise Linux 7 ServerVersion: 2.10.2 **(Optional)**Filename: hp-ams-2.10.2-876.11.rhel7.x86_64.compsig; hp-ams-2.10.2-876.11.rhel7.x86_64.rpm **Prerequisites**

**hp-ams supported on HPE ProLiant Gen8 and Gen9 Servers.**

**hp-ams provides information to the HPE iLO 4 service providing SNMP support.**

**SNMP PASS-THRU on the HPE iLO 4 MUST be disabled, and SNMP should be configured on the HPE iLO 4. The HPE iLO 4 may need to be reset after changing these settings.**

**Requirements:**

Minimum HPE iLO 4 Firmware Version = 1.05

Minimum supported OS Versions = Red Hat Enterprise Linux 5.6, Red Hat Enterprise Linux 6.0, Red Hat Enterprise Linux 7.0, Red Hat Enterprise Linux 8.0, SUSE Linux Enterprise Server 10 SP4, SUSE Linux Enterprise Server 11 SP1, SUSE Linux Enterprise Server 12, SUSE Linux Enterprise Server 15

**Fixes**

Fixed the following items:

Addressed a small amount of memory leak as documented in the Customer Advisory, a00053824en_us

NVMe drive information is now available in the CPQSE.

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HPE ProLiant Agentless Management Service for Red Hat Enterprise Linux 8 ServerVersion: 2.10.2 **(Optional)**Filename: hp-ams-2.10.2-876.6.rhel8.x86_64.compsig; hp-ams-2.10.2-876.6.rhel8.x86_64.rpm **Prerequisites**

**hp-ams supported on HPE ProLiant Gen8 and Gen9 Servers.**

**hp-ams provides information to the HPE iLO 4 service providing SNMP support.**

**SNMP PASS-THRU on the HPE iLO 4 MUST be disabled, and SNMP should be configured on the HPE iLO 4. The HPE iLO 4 may need to be reset after changing these settings.**

**Requirements:**

Minimum HPE iLO 4 Firmware Version = 1.05

Minimum supported OS Versions = Red Hat Enterprise Linux 5.6, Red Hat Enterprise Linux 6.0, SuSE Linux Enterprise Server 10 SP4, SuSE Linux Enterprise Server 11 SP1

**Fixes**

Fixed the following items:

Addressed a small amount of memory leak as documented in the Customer Advisory, a00053824en_us

NVMe drive information is now available in the CPQSE.

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HPE ProLiant Agentless Management Service for SUSE LINUX Enterprise Server 12Version: 2.10.2 **(Optional)**Filename: hp-ams-2.10.2-876.6.sles12.x86_64.compsig; hp-ams-2.10.2-876.6.sles12.x86_64.rpm **Prerequisites**

**hp-ams supported on HPE ProLiant Gen8 and Gen9 Servers.**

**hp-ams provides information to the HPE iLO 4 service providing SNMP support.**

**SNMP PASS-THRU on the HPE iLO 4 MUST be disabled, and SNMP should be configured on the HPE iLO 4. The HPE iLO 4 may need to be reset after changing these settings.**

**Requirements:**

Minimum HPE iLO 4 Firmware Version = 1.05

Minimum supported OS Versions = Red Hat Enterprise Linux 5.6, Red Hat Enterprise Linux 6.0, Red Hat Enterprise Linux 7.0, Red Hat Enterprise Linux 8.0, SUSE Linux Enterprise Server 10 SP4, SUSE Linux Enterprise Server 11 SP1, SUSE Linux Enterprise Server 12, SUSE Linux Enterprise Server 15

**Fixes**

Fixed the following items:

Addressed a small amount of memory leak as documented in the Customer Advisory, a00053824en_us

NVMe drive information is now available in the CPQSE.

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HPE ProLiant Agentless Management Service for SUSE LINUX Enterprise Server 15Version: 2.10.3 **(Optional)**Filename: hp-ams-2.10.3-877.3.sles15.x86_64.compsig; hp-ams-2.10.3-877.3.sles15.x86_64.rpm **Prerequisites**

**hp-ams supported on HPE ProLiant Gen8 and Gen9 Servers.**

**hp-ams provides information to the HPE iLO 4 service providing SNMP support.**

**SNMP PASS-THRU on the HPE iLO 4 MUST be disabled, and SNMP should be configured on the HPE iLO 4. The HPE iLO 4 may need to be reset after changing these settings.**

**Requirements:**

Minimum HPE iLO 4 Firmware Version = 1.05

Minimum supported OS Versions = Red Hat Enterprise Linux 5.6, Red Hat Enterprise Linux 6.0, Red Hat Enterprise Linux 7.0, SUSE Linux Enterprise Server 10 SP4, SUSE Linux Enterprise Server 11 SP1, SUSE Linux Enterprise Server 12, SUSE Linux Enterprise Server 15

**Fixes**

Fixed the following items:

Addressed a small amount of memory leak as documented in the Customer Advisory, a00053824en_us

NVMe drive information is now available in the CPQSE.

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HPE SMX Provider Component for ESXi 7.0Version: 3.16.00 **(Recommended)**Filename: smxProvider_700.03.16.00__1_.12_14828939_signed_component_1567546.zip **Enhancements**

Support for VMware ESXi 7.0

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HPE SNMP Agents for Red Hat Enterprise Linux 7 ServerVersion: 10.9.2 **(Optional)**Filename: hp-snmp-agents-10.92-679.11.rhel7.x86_64.compsig; hp-snmp-agents-10.92-679.11.rhel7.x86_64.rpm **Prerequisites**

The hp-health and hp-snmp-agents run as 32 bit applications in the x86_64 environment. The Linux kernel 32 bit compatibility must be enabled (usual default for Linux) and the 32 bit compatibility libraries must be present.

To get the list of all dependency files for hp-snmp-agents type:

***rpm –qp –-requires hp-snmp-agents-<version>.rpm***

**Fixes**

Fixed the following items:

Addressed issue where the HPE Synergy 3820C 10/20Gb Converged Network Adapter was showing not supported

Corrected invalid utf8mb4 char in database

---

HPE SNMP Agents for Red Hat Enterprise Linux 8 ServerVersion: 10.9.2 **(Optional)**Filename: hp-snmp-agents-10.92-679.6.rhel8.x86_64.compsig; hp-snmp-agents-10.92-679.6.rhel8.x86_64.rpm **Prerequisites**

The hp-health and hp-snmp-agents run as 32 bit applications in the x86_64 environment. The Linux kernel 32 bit compatibility must be enabled (usual default for Linux) and the 32 bit compatibility libraries must be present.

To get the list of all dependency files for hp-snmp-agents type:

***rpm –qp –-requires hp-snmp-agents-<version>.rpm***

**Fixes**

Fixed the following items:

Addressed issue where the HPE Synergy 3820C 10/20Gb Converged Network Adapter was showing not supported

Corrected invalid utf8mb4 char in database

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HPE SNMP Agents for SUSE LINUX Enterprise Server 12Version: 10.9.2 **(Optional)**Filename: hp-snmp-agents-10.92-679.5.sles12.x86_64.compsig; hp-snmp-agents-10.92-679.5.sles12.x86_64.rpm **Prerequisites**

The hp-health and hp-snmp-agents run as 32 bit applications in the x86_64 environment. The Linux kernel 32 bit compatibility must be enabled (usual default for Linux) and the 32 bit compatibility libraries must be present.

To get the list of all dependency files for hp-snmp-agents type:

***rpm –qp –-requires hp-snmp-agents-<version>.rpm***

**Fixes**

Fixed the following items:

Addressed issue where the HPE Synergy 3820C 10/20Gb Converged Network Adapter was showing not supported

Corrected invalid utf8mb4 char in database

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HPE SNMP Agents for SUSE LINUX Enterprise Server 15Version: 10.9.3 **(Optional)**Filename: hp-snmp-agents-10.93-680.4.sles15.x86_64.compsig; hp-snmp-agents-10.93-680.4.sles15.x86_64.rpm **Prerequisites**

The hp-health and hp-snmp-agents run as 32 bit applications in the x86_64 environment. The Linux kernel 32 bit compatibility must be enabled (usual default for Linux) and the 32 bit compatibility libraries must be present.

To get the list of all dependency files for hp-snmp-agents type:

***rpm –qp –-requires hp-snmp-agents-<version>.rpm***

**Fixes**

Fixed the following items:

Addressed issue where the HPE Synergy 3820C 10/20Gb Converged Network Adapter was showing not supported

Corrected invalid utf8mb4 char in database

---

HPE System Health Application and Command Line Utilities for Red Hat Enterprise Linux 7 ServerVersion: 10.9.2 **(Optional)**Filename: hp-health-10.92-8.8.rhel7.x86_64.rpm **Prerequisites**

The hp-health and hp-snmp-agents run as 32 bit applications in the x86_64 environment. The Linux kernel 32 bit compatibility must be enabled (usual default for Linux) and the 32 bit compatibility libraries must be present.

To get the list of all dependency files for hp-health, type:

rpm –qp –requires hp-health-< version >.rpm

**Fixes**

Fixed the following items:

When a customer queries the HPE Software Delivery Repository (SDR) site and experiences a failure amsd no longer exhibits a segfault.

hp-heath service will no longer crash in a non secure boot environment.

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HPE System Health Application and Command Line Utilities for Red Hat Enterprise Linux 8 ServerVersion: 10.9.2 **(Optional)**Filename: hp-health-10.92-5.5.rhel8.x86_64.rpm **Prerequisites**

The hp-health and hp-snmp-agents run as 32 bit applications in the x86_64 environment. The Linux kernel 32 bit compatibility must be enabled (usual default for Linux) and the 32 bit compatibility libraries must be present.

To get the list of all dependency files for hp-health, type:

rpm –qp –requires hp-health-< version >.rpm

**Fixes**

Fixed the following items:

When a customer queries the HPE Software Delivery Repository (SDR) site and experiences a failure amsd no longer exhibits a segfault.

hp-heath service will no longer crash in a non secure boot environment.

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HPE System Health Application and Command Line Utilities for SUSE LINUX Enterprise Server 12Version: 10.9.2 **(Optional)**Filename: hp-health-10.92-4.4.sles12.x86_64.rpm **Prerequisites**

The hp-health and hp-snmp-agents run as 32 bit applications in the x86_64 environment. The Linux kernel 32 bit compatibility must be enabled (usual default for Linux) and the 32 bit compatibility libraries must be present.

To get the list of all dependency files for hp-health, type:

rpm –qp –requires hp-health-< version >.rpm

**Fixes**

Fixed the following items:

When a customer queries the HPE Software Delivery Repository (SDR) site and experiences a failure amsd no longer exhibits a segfault.

hp-heath service will no longer crash in a non secure boot environment.

**Enhancements**

Enhancements included in this release:

Support for SUSE Linux Enterprise Server 12 Service Pack 5

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HPE System Health Application and Command Line Utilities for SUSE LINUX Enterprise Server 15Version: 10.9.2 **(Optional)**Filename: hp-health-10.92-6.6.sles15.x86_64.rpm **Prerequisites**

The hp-health and hp-snmp-agents run as 32 bit applications in the x86_64 environment. The Linux kernel 32 bit compatibility must be enabled (usual default for Linux) and the 32 bit compatibility libraries must be present.

To get the list of all dependency files for hp-health, type:

rpm –qp –requires hp-health-< version >.rpm

**Fixes**

Fixed the following items:

When a customer queries the HPE Software Delivery Repository (SDR) site and experiences a failure amsd no longer exhibits a segfault.

hp-heath service will no longer crash in a non secure boot environment.

**Enhancements**

Enhancements included in this release:

Support for SUSE Linux Enterprise Server 15 Service Pack 2

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HPE System Management Homepage for Linux (AMD64/EM64T)Version: 7.6.6-2 **(Recommended)**Filename: hpsmh-7.6.6-2.x86_64.rpm **Important Note!**

Users should update to this version if their system is affected by one of the documented fixes or if there is a desire to utilize any of the enhanced functionality provided by this version.

SMH 7.6.0 & later versions, will support only Gen8 and Gen9 servers. Any future patch releases could be available, only on SMH web page. Please refer to HPE SMH Release Notes

Precautions for the user on Linux OS:

Do not provide login access to the “hpsmh” user (created during installation) by editing the /etc/passwd file or any other means

Do not add any user to the “hpsmh” group (created during installation)

**Prerequisites**

Before installing the SMH software, the RPM verifies that the required versions of Linux library dependencies are present. If any dependencies are not present, then a list of the missing dependencies is provided. The user must manually install all missing dependencies to satisfy the prerequisites before proceeding with the RPM installation.

**Fixes**

Updated Apache to 2.4.41

Added security fix to response header

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HPE System Management Homepage for Windows x64Version: 7.6.6.2 **(Recommended)**Filename: cp043048.exe

**Important Note!**

Users should update to this version if their system is affected by one of the documented fixes or if there is a desire to utilize any of the enhanced functionality provided by this version.

SMH 7.6.0 & later versions, will support only Gen 8 and Gen 9 servers. Any future patch releases could be available, only on SMH web page. Please refer to HPE SMH Release Notes

**Fixes**

Updated Apache to 2.4.41

Added security fix to response header

---

HPE System Management Homepage Templates for LinuxVersion: 10.8.1 **(Optional)**Filename: hp-smh-templates-10.8.1-1487.3.noarch.rpm

**Prerequisites**

The **hp-smh-templates** RPM install will fail, if all dependencies are not installed. The administrator can verify the list of dependencies required by running this command. If the repositories being used by yum or zypper, includes these dependencies, the installation tool will automatically retrieve them. However if they are not present, the user must manually install them prior to proceeding with the RPM install.

To get the list of all dependency files for hp-smh-templates type:

rpm –qp –-requires hp-smh-templates-<version>.rpm

**Fixes**

Initial support for Red Hat Enterprise Linux 8 Server

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HPE Utilities Offline Bundle for ESXi 6.5Version: 10.7.1 **(Recommended)**Filename: HPE-Utility-Component_6.5.0.10.7.1-8.zip **Important Note!**

Refer to the HPE VMware Utilities Guide for VMware vSphere 6.5 which is located at www.hpe.com/info/vmware/proliant-docs.

**Fixes**

Includes an updated the Smart Storage Administrator CLI.

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HPE Utilities Offline Bundle for ESXi 6.7Version: 10.7.1 **(Recommended)**Filename: HPE-Utility-Component_6.7.0.10.7.1-8.zip **Important Note!**

Refer to the HPE VMware Utilities Guide for VMware which is located at www.hpe.com/info/vmware/proliant-docs.

**Enhancements**

Includes an updated Smart Storage Administrator CLI (SSACLI) that has support for the HPE SR Gen10 Plus Controllers.

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HPE Utilities Offline Bundle for ESXi 7.0Version: 10.7.0 **(Recommended)**Filename: HPE-Utility-Component_7.0.0.10.7.0-8_17004542.zip **Important Note!**

Refer to the HPE VMware Utilities Guide for VMware vSphere/ESXi which is located at www.hpe.com/info/vmware/proliant-docs.

**Enhancements**

Supports VMware ESXi 7.0

Integrated Smart Update Tools for VMware ESXi 6.5Version: 2.8.0.0 **(Recommended)**Filename: sut-esxi6.5-offline-bundle-2.8.0.0-22.zip **Important Note!**

Integrated Smart Update Tools for ESXi provides support for firmware and driver updates via iLO Repository

**Fixes**

See the iSUT Release Notes for information about the issues resolved in this release

**Enhancements**

See the iSUT Release Notes for information about the issues resolved in this release

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Integrated Smart Update Tools for VMware ESXi 6.7Version: 2.8.0.0 **(Recommended)**Filename: sut-esxi6.7-offline-bundle-2.8.0.0-18.zip **Important Note!**

Integrated Smart Update Tools for ESXi provides support for firmware and driver updates via iLO Repository

**Fixes**

See the iSUT Release Notes for information about the issues resolved in this release

**Enhancements**

See the iSUT Release Notes for information about the issues resolved in this release

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Integrated Smart Update Tools for VMware ESXi 7.0Version: 700.2.8.0 **(Recommended)**
Filename: sutComponent_700.2.8.0.20-0-signed_component-17782108.zip
**Important Note!**

Integrated Smart Update Tools for ESXi 7.0 provides support for firmware and driver updates via iLO Repository

**Fixes**

See the iSUT Release Notes for information about the issues resolved in this release

**Enhancements**

See the iSUT Release Notes for information about the enhancements in this release.

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NVMe Drive Eject NMI Fix for Intel Xeon Processor Scalable Family for WindowsVersion: 1.1.0.0 (C) **(Optional)**
Filename: cp034635.compsig; cp034635.exe
**Enhancements**

Added support for Windows Server 2019

Added support for the HPE ProLiant XL270d Gen10 and the HPE ProLiant XL420 Gen10

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NVMe Drive Eject NMI Fix for Intel Xeon v3 and Xeon v4 Processors for Windows Server 2012 R2 to Server 2019Version: 1.0.5.0 (C) **(Optional)**Filename: cp035799.exe **Enhancements**

Add support for Windows Server 2019.

---

Smart Storage Administrator (SSA) CLI for Linux 64-bitVersion: 5.10.44.0 **(Recommended)**Filename: ssacli-5.10-44.0.x86_64.compsig; ssacli-5.10-44.0.x86_64.rpm; ssacli-5.10-44.0.x86_64.txt **Enhancements**

Added support to the HPE SR932i-p and SR416-a Gen10 Plus Controllers.

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Smart Storage Administrator (SSA) CLI for VMware 6.5Version: 5.10.45.0 **(Recommended)**Filename: MIS_bootbank_ssacli-5.10.45.0-6.5.0.4240417.oem.vib **Enhancements**

Adding support to the HPE SR Gen10 Plus Controllers.

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Smart Storage Administrator (SSA) CLI for VMware 6.7Version: 5.10.45.0 **(Recommended)**Filename: MIS_bootbank_ssacli-5.10.45.0-6.7.0.7535516.oem.vib **Enhancements**

Adding support to the HPE SR Gen10 Plus Controllers.

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Smart Storage Administrator (SSA) CLI for VMware 7.0Version: 5.10.45.0 **(Recommended)**Filename: ssacli-component_5.10.45.0-7.0.0_17605318.zip **Enhancements**

Adding support to the HPE SR Gen10 Plus Controllers.

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Smart Storage Administrator (SSA) CLI for VMware 7.0Version: 5.10.45.1 **(Recommended)**Filename: hpessacli-component_5.10.45.1-7.0.0_17771110.zip **Enhancements**

Adding support to the HPE SR Gen10 Plus Controllers.

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Smart Storage Administrator (SSA) CLI for Windows 64-bitVersion: 5.10.44.0 **(Recommended)**Filename: cp041183.compsig; cp041183.exe **Enhancements**

Added support to the HPE SR932i-p and SR416-a Gen10 Plus Controllers.

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Smart Storage Administrator (SSA) for Linux 64-bitVersion: 5.10.44.0 **(Recommended)**Filename: ssa-5.10-44.0.x86_64.compsig; ssa-5.10-44.0.x86_64.rpm; ssa-5.10-44.0.x86_64.txt **Prerequisites**

The Smart Storage Administrator for Linux requires the System Management Homepage software to be installed on the server. If the System Management Homepage software is not already installed on your server, please download it from HPE.com and install it before installing the Smart Storage Administrator for Linux.

**IMPORTANT UPDATE:** SSA (GUI) for Linux can now be run without requiring the System Management Homepage. SSA now supports a Local Application Mode for Linux. The System Management Homepage is still supported, but no longer required to run the SSA GUI.

To invoke, enter the following at the command prompt:

ssa -local

The command will start SSA in a new Firefox browser window. When the browser window is closed, SSA will automatically stop. This is only valid for the loopback interface, and not visible to external network connections.

**Enhancements**

Added support to the HPE SR932i-p and SR416-a Gen10 Plus Controllers.

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Smart Storage Administrator (SSA) for Windows 64-bitVersion: 5.10.44.0 **(Recommended)**Filename: cp041182.compsig; cp041182.exe **Enhancements**

Added support to the HPE SR932i-p and SR416-a Gen10 Plus Controllers.

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Smart Storage Administrator Diagnostic Utility (SSADU) CLI for Linux 64-bitVersion: 5.10.44.0 **(Recommended)** Filename: ssaducli-5.10-44.0.x86_64.compsig; ssaducli-5.10-44.0.x86_64.rpm; ssaducli-5.10-44.0.x86_64.txt
**Enhancements**

Added support to the HPE SR932i-p and SR416-a Gen10 Plus Controllers.

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Smart Storage Administrator Diagnostic Utility (SSADU) CLI for Windows 64-bitVersion: 5.10.44.0 **(Recommended)** Filename: cp041184.compsig; cp041184.exe
**Important Note!**

This stand alone version of the Smart Storage Administrator's Diagnostic feature is available only in CLI form. For the GUI version of Diagnostic reports, please use Smart Storage Administrator (SSA).

**Enhancements**

Added support to the HPE SR932i-p and SR416-a Gen10 Plus Controllers.