## BIOS - System ROM
- Driver - Lights-Out Management
- Driver - Network
- Driver - Storage
- Driver - Storage Controller
- Driver - Storage Fibre Channel and Fibre Channel Over Ethernet
- Driver - System
- Driver - System Management
- Driver - Video
- Firmware - Blade Infrastructure
- Firmware - Lights-Out Management
- Firmware - Network
- Firmware - PCIe NVMe Storage Disk
- Firmware - Power Management
- Firmware - SAS Storage Disk
- Firmware - SATA Storage Disk
- Firmware - Storage Controller
- Firmware - Storage Fibre Channel
- Firmware - System
- Firmware (Entitlement Required) - Storage Controller
- Software - Lights-Out Management
- Software - Management
- Software - Network
- Software - Storage Controller
- Software - Storage Fibre Channel
- Software - Storage Fibre Channel HBA
- Software - System Management

### Important Note!

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant DL360/DL380 Gen9 System ROM - P89

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**Firmware Dependencies:**

None

**Enhancements/New Features:**
Problems Fixed:

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:

None

Problems Fixed:

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:

None

Online ROM Flash Component for Windows x64 - HPE ProLiant DL380 Gen9/DL360 Gen9 (P89) Servers
Version: 2.90_04-29-2021 (Recommended)
Filename: cp047833.exe

Important Note!

Important Notes:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.
Deliverable Name:
HPE ProLiant DL360/DL380 Gen9 System ROM - P89

Release Version:
2.90_04-29-2021

Last Recommended or Critical Revision:
2.90_04-29-2021

Previous Revision:
2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:
None

Problems Fixed:
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches
included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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Online ROM Flash Component for Linux - HPE Apollo 4200 Gen9/HPE ProLiant XL420 Gen9 (U19) Servers
Version: 2.90_04-29-2021 *(Recommended)*
Filename: RPMS/i386/firmware-system-u19-2.90_2021_04_29-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

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

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**
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.2021.1 guidance.

Firmware Dependencies:

None

Problems Fixed:

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x0000046 (CPUID 306F2) and 0xB00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:

None

Online ROM Flash Component for Linux - HPE ProLiant BL460c Gen9/WS460c Gen9 (I36) Servers
Version: 2.90_04-29-2021 (Recommended)
Filename: RPMS/i386/firmware-system-i36-2.90_2021_04_29-1.1.i386.rpm

Important Note!

Important Notes:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Deliverable Name:

HPE ProLiant BL460c Gen9/WS460c Gen9 System ROM - I36

Release Version:

2.90_04-29-2021

Last Recommended or Critical Revision:

2.90_04-29-2021

Previous Revision:

2.80_10-16-2020
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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:
None

Problems Fixed:
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:
None

Online ROM Flash Component for Linux - HPE ProLiant BL660c Gen9 (I38) Servers
Version: 2.90_04-29-2021 (B) (Recommended)
Filename: RPMS/i386/firmware-system-I38-2.90_2021_04_29-2.1.i386.rpm

Important Note!
Important Notes:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Ver. 2.90_04-29-2021 (B) contains support for Red Hat Enterprise Linux 8 Server. It is functionally equivalent to ver. 2.90_04-29-2021. It is not necessary to upgrade with version 2.90_04-29-2021 (B) if a previous component revision was used to upgrade the firmware to ver. 2.90_04-29-2021.

Deliverable Name:

HPE ProLiant BL660c Gen9 System ROM - I38

Release Version:

2.90_04-29-2021

Last Recommended or Critical Revision:

2.90_04-29-2021

Previous Revision:

2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Ver. 2.90_04-29-2021 (B) contains support for Red Hat Enterprise Linux 8 Server. It is functionally equivalent to ver. 2.90_04-29-2021. It is not necessary to upgrade with version 2.90_04-29-2021 (B) if a previous component revision was used to upgrade the firmware to ver. 2.90_04-29-2021.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0xB00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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

Version: 2.90_04-29-2021 *(Recommended)*

Filename: RPMS/i386/firmware-system-p86-2.90_2021_04_29-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant DL120 Gen9 System ROM - P86

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:

None

Problems Fixed:

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:

None

Online ROM Flash Component for Linux - HPE ProLiant DL160 Gen9/DL180 Gen9 (U20) Servers
Version: 2.90_04-29-2021 (Recommended)
Filename: RPMS/i386/firmware-system-u20-2.90_2021_04_29-1.1.i386.rpm

Important Note!

Important Notes:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Deliverable Name:
HPE ProLiant DL160 Gen9/DL180 Gen9 System ROM - U20

**Release Version:**
2.90_04-29-2021

**Last Recommended or Critical Revision:**
2.90_04-29-2021

**Previous Revision:**
2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Firmware Dependencies:**
None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches
included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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

**Version:** 3.00_04-01-2021 *(Recommended)*

**Filename:** RPMS/i386/firmware-system-u22-3.00_2021_04_01-1.1.i386.rpm  

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant DL20 Gen9 System ROM - U22

**Release Version:**

3.00_04-01-2021

**Last Recommended or Critical Revision:**

3.00_04-01-2021

**Previous Revision:**

2.90_11-27-2020

**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 mitigations for security vulnerabilities documented as CVE-2020-24512. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-464. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3 and CPUID 906E9). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel sighting CVE-2020-24512. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00463. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3) and 0x000000EA (CPUID 906E9). This issue is 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-2020-8670 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 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-2020-24512. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00464. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3 and CPUID 906E9). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel sighting CVE-2020-24512. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00463. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3) and 0x000000EA (CPUID 906E9). This issue is 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-2020-8670 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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: 2.90_04-29-2021 (Recommended)

Filename: RPMS/i386/firmware-system-p85-2.90_2021_04_29-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant DL560 Gen9 System ROM - P85
Release Version:
2.90_04-29-2021

Last Recommended or Critical Revision:
2.90_04-29-2021

Previous Revision:
2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:
None

Problems Fixed:
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**
None

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**Online ROM Flash Component for Linux - HPE ProLiant DL580 Gen9 (U17) Servers**
Version: 2.90_04-29-2020 (Recommended)
Filename: RPMS/i386/firmware-system-u17-2.90_2021_04_29-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**
HPE ProLiant DL580 Gen9 System ROM - U17

**Release Version:**
2.90_04-29-2020

**Last Recommended or Critical Revision:**
2.90_04-29-2020

**Previous Revision:**
2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000019 (CPUID 306F4) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**
None

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**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.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000019 (CPUID 306F4) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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

**Version:** 2.90_04-29-2021 *(Recommended)*

**Filename:** RPMS/i386/firmware-system-u15-2.90_2021_04_29-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

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

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:

None

Problems Fixed:

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:

None

Important Notes:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.
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: 2.90_04-29-2021 *(Recommended)*
Filename: RPMS/i386/firmware-system-p99-2.90_2021_04_29-1.1.i386.rpm

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant ML110 Gen9 System ROM - P99

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None
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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:
None

Problems Fixed:
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:
None

Online ROM Flash Component for Linux - HPE ProLiant ML30 Gen9 (U23) Servers
Version: 3.00_04-01-2021 (Recommended)
Filename: RPMS/i386/firmware-system-u23-3.00_2021_04_01-1.1.i386.rpm

Important Note!
Important Notes:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Deliverable Name:

HPE ProLiant ML30 Gen9 System ROM - U23

Release Version:

3.00_04-01-2021

Last Recommended or Critical Revision:

3.00_04-01-2021

Previous Revision:

2.90_11-27-2020

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 mitigations for security vulnerabilities documented as CVE-2020-24512. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-464. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3 and CPUID 906E9). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel sighting CVE-2020-24512. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00463. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3) and 0x000000EA (CPUID 906E9). This issue is 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-2020-8670 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 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-2020-24512. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-464. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3 and CPUID 906E9). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel sighting CVE-2020-24512. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00463. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3) and 0x000000EA (CPUID 906E9). This issue is 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-2020-8670 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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: 2.90_04-29-2021 (Recommended)
Filename: RPMS/i386/firmware-system-p92-2.90_2021_04_29-1.1.i386.rpm

Important Note!

Important Notes:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Deliverable Name:

HPE ProLiant ML350 Gen9 System ROM - P92

Release Version:

2.90_04-29-2021

Last Recommended or Critical Revision:

2.90_04-29-2021

Previous Revision:

2.80_10-16-2020
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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:
None

Problems Fixed:
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:
None
**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant XL170r/XL190r Gen9 System ROM - U14

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Firmware Dependencies:**

None
Problems Fixed:

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:

None

Online ROM Flash Component for Linux - HPE ProLiant XL230a/XL250a Gen9 (U13) Servers
Version: 2.90_04-29-2021 (Recommended)
Filename: RPMS/i386/firmware-system-u13-2.90_2021_04_29-1.1.i386.rpm

Important Note!

Important Notes:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Deliverable Name:

HPE ProLiant XL230a/250a Gen9 System ROM - U13

Release Version:

2.90_04-29-2021

Last Recommended or Critical Revision:

2.90_04-29-2021

Previous Revision:

2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360
and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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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/](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:
Important Note!

Important Notes:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Deliverable Name:

HPE ProLiant XL270d Accelerator Tray System ROM - U25

Release Version:

2.90_04-29-2021

Last Recommended or Critical Revision:

2.90_04-29-2021

Previous Revision:

2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:

None

Problems Fixed:

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:

None

Online ROM Flash Component for Linux - HPE ProLiant XL450 Gen9 (U21) Servers
Version: 2.90_04-29-2021 (Recommended)
Filename: RPMs/i386/firmware-system-u21-2.90_2021_04_29-1.1.i386.rpm

Important Notes:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Deliverable Name:

HPE ProLiant XL450 Gen9 System ROM - U21

Release Version:

2.90_04-29-2021

Last Recommended or Critical Revision:

2.90_04-29-2021

Previous Revision:

2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:

None

Problems Fixed:

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:

None

Online ROM Flash Component for Linux - HPE ProLiant XL730f/XL740f/XL750f Gen9 (U18) Servers
Version: 2.90_04-29-2021 (Recommended)
Filename: RPMS/i386/firmware-system-u18-2.90_2021_04_29-1.1.i386.rpm

Important Note!

Important Notes:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Deliverable Name:
Release Version:
2.90_04-29-2021

Last Recommended or Critical Revision:
2.90_04-29-2021

Previous Revision:
2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:
None

Problems Fixed:
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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

Version: 2.90_04-29-2021 (Recommended)

Filename: CP047852.compsig; CP047852.zip

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

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

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 5.1, 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.2021.1 guidance.

Firmware Dependencies:

None

Problems Fixed:

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:

None

Online ROM Flash Component for VMware - HPE ProLiant BL460c Gen9/WS460c Gen9 (I36) Servers
Version: 2.90_04-29-2021 (Recommended)
Filename: CP047766.compsig; CP047766.zip

Important Note!

Important Notes:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Deliverable Name:

HPE ProLiant BL460c Gen9/WS460c Gen9 System ROM - I36

Release Version:

2.90_04-29-2021
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 5.1, 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.2021.1 guidance.

Firmware Dependencies:

None

Problems Fixed:
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:

None
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.2021.1 guidance.

Firmware Dependencies:
None

Problems Fixed:
This revision of the System ROM includes the latest revision of the Intel microcode which provides
mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches
included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This
issue is 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-2020-12360
and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-
SA-00463. These issues are not unique to HPE servers.

Known Issues:
None

Online ROM Flash Component for VMware - HPE ProLiant DL120 Gen9 (P86) Servers
Version: 2.90.04-29-2021 (Recommended)
Filename: CP047858.compsig; CP047858.zip

Important Note!

Important Notes:
This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version
IPU.2021.1 guidance.

Deliverable Name:
HPE ProLiant DL120 Gen9 System ROM - P86
Release Version:
2.90_04-29-2021

Last Recommended or Critical Revision:
2.90_04-29-2021

Previous Revision:
2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 5.1, 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.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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Online ROM Flash Component for VMware - HPE ProLiant DL160 Gen9/DL180 Gen9 (U20) Servers
Version: 2.90_04-29-2021 *(Recommended)*
Filename: CP047837.compsig; CP047837.zip

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant DL160 Gen9/DL180 Gen9 System ROM - U20

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**Firmware Dependencies:**
Enhancements/New Features:
None

Problems Fixed:
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 5.1, 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.2021.1 guidance.

Firmware Dependencies:
None

Problems Fixed:
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:
Important Note

Important Notes:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Deliverable Name:

HPE ProLiant DL20 Gen9 System ROM - U22

Release Version:

3.00_04-01-2021

Last Recommended or Critical Revision:

3.00_04-01-2021

Previous Revision:

2.90_11-27-2020

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 mitigations for security vulnerabilities documented as CVE-2020-24512. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-464. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3 and CPUID 906E9). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel sighting CVE-2020-24512. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00463. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3) and 0x000000EA (CPUID 906E9). This issue is 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-2020-8670 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 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-2020-24512. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-464. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3 and CPUID 906E9). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel sighting CVE-2020-24512. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00463. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3) and 0x000000EA (CPUID 906E9). This issue is 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-2020-8670 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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: 2.90_04-29-2021  (Recommended)  
Filename: CP047834.compsig; CP047834.zip

**Important Note:**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.
Deliverable Name:
HPE ProLiant DL360/DL380 Gen9 System ROM - P89

Release Version:
2.90_04-29-2021

Last Recommended or Critical Revision:
2.90_04-29-2021

Previous Revision:
2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0xB00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 5.1, 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.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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

**Version:** 2.90_04-29-2021 (Recommended)

**Filename:** CP047850.compsig; CP047850.zip

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant DL560 Gen9 System ROM - P85

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020
**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 5.1, 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.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360.
and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant DL580 Gen9 System ROM - U17

**Release Version:**

2.90_04-29-2020

**Last Recommended or Critical Revision:**

2.90_04-29-2020

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000019 (CPUID 306F4) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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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:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000019 (CPUID 306F4) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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Online ROM Flash Component for VMware - HPE ProLiant DL60 Gen9/DL80 Gen9 (U15) Servers
Version: 2.90_04-29-2021 (Recommended)
Filename: CP047855.compsig; CP047855.zip

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.
**Deliverable Name:**

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

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 5.1, 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 vibsddepot.hpe.com.

**Fixes**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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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

Online ROM Flash Component for VMware - HPE ProLiant ML110 Gen9 (P99) Servers
Version: 2.90_04-29-2021 (Recommended)
Filename: CP047846.compsig; CP047846.zip

Important Note!

Important Notes:
This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Deliverable Name:
HPE ProLiant ML110 Gen9 System ROM - P99

Release Version:
2.90_04-29-2021

Last Recommended or Critical Revision:
2.90_04-29-2021

Previous Revision:
2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 5.1, 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.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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**Online ROM Flash Component for VMware - HPE ProLiant ML150 Gen9 (P95) Servers**

Version: 2.90_04-29-2021 *(Recommended)*

Filename: CP047864.compsig; CP047864.zip

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant ML150 Gen9 System ROM - P95

**Release Version:**

2.90_04-29-2021
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 5.1, 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.2021.1 guidance.
**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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**Online ROM Flash Component for VMware - HPE ProLiant ML30 Gen9 (U23) Servers**

Version: 3.00_04-01-2021 *(Recommended)*

Filename: CP047379.compsig; CP047379.zip

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant ML30 Gen9 System ROM - U23

**Release Version:**

3.00_04-01-2021

**Last Recommended or Critical Revision:**

3.00_04-01-2021

**Previous Revision:**

2.90_11-27-2020

**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 mitigations for security vulnerabilities documented as CVE-2020-24512. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-464. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3 and CPUID 906E9). These issues are not unique to HPE servers.
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel sighting CVE-2020-24512. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00463. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3) and 0x000000EA (CPUID 906E9). This issue is 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-2020-8670 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 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-2020-24512. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-464. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3 and CPUID 906E9). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel sighting CVE-2020-24512. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00463. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3) and 0x000000EA (CPUID 906E9). This issue is 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-2020-8670
and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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**Online ROM Flash Component for VMware - HPE ProLiant ML350 Gen9 (P92) Servers**

Version: 2.90_04-29-2021 *(Recommended)*

Filename: CP047843.compsig; CP047843.zip

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant ML350 Gen9 System ROM - P92

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 5.1, 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.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant XL170r/XL190r Gen9 System ROM - U14

**Release Version:**

2.90_04-29-2021
Last Recommended or Critical Revision:
2.90_04-29-2021

Previous Revision:
2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 5.1, 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.2021.1 guidance.

Firmware Dependencies:

None

Problems Fixed:

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:

None

Online ROM Flash Component for VMware - HPE ProLiant XL450 Gen9 (U21) Servers
Version: 2.90_04-29-2021 (Recommended)
Filename: CP047840.compsig; CP047840.zip

Important Note!
Problems Fixed:

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 5.1, 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.2021.1 guidance.

Firmware Dependencies:

None

Problems Fixed:

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:

None
Important Notes:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Deliverable Name:

HPE ProLiant XL230a/250a Gen9 System ROM - U13

Release Version:

2.90_04-29-2021

Last Recommended or Critical Revision:

2.90_04-29-2021

Previous Revision:

2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 5.1, 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.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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Online ROM Flash Component for Windows x64 - HPE Apollo 4200 Gen9/HPE ProLiant XL420 Gen9 (U19) Servers
Version: 2.90_04-29-2021 (Recommended)
Filename: cp047847.exe

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

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

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:

None

Problems Fixed:

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:

None
This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant BL460c Gen9/WS460c Gen9 System ROM - 136

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Ver. 2.90_04-29-2021 (B) contains support for Windows Server 2019. It is functionally equivalent to ver. 2.90_04-29-2021. It is not necessary to upgrade with version 2.90_04-29-2021 (B) if a previous component revision was used to upgrade the firmware to ver. 2.90_04-29-2021.

**Deliverable Name:**

HPE ProLiant BL660c Gen9 System ROM - I38

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Ver. 2.90_04-29-2021 (B) contains support for Windows Server 2019. It is functionally equivalent to ver. 2.90_04-29-2021. It is not necessary to upgrade with version 2.90_04-29-2021 (B) if a previous component revision was used to upgrade the firmware to ver. 2.90_04-29-2021.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

Online ROM Flash Component for Windows x64 - HPE ProLiant DL120 Gen9 (P86) Servers
Version: 2.90_04-29-2021 (Recommended)
Filename: cp047857.exe

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant DL120 Gen9 System ROM - P86

**Release Version:**
2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.
Online ROM Flash Component for Windows x64 - HPE ProLiant DL160 Gen9/DL180 Gen9 (U20) Servers
Version: 2.90_04-29-2021 (Recommended)
Filename: cp047836.exe

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant DL160 Gen9/DL180 Gen9 System ROM - U20

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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).
Important Notes:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:

None

Problems Fixed:

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:

None

Online ROM Flash Component for Windows x64 - HPE ProLiant DL20 Gen9 (U22) Servers
Version: 3.00_04-01-2021 (Recommended)
Filename: cp047376.exe

Important Note!

Important Notes:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Deliverable Name:

HPE ProLiant DL20 Gen9 System ROM - U22

Release Version:

3.00_04-01-2021

Last Recommended or Critical Revision:

3.00_04-01-2021

Previous Revision:

2.90_11-27-2020

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 mitigations for security vulnerabilities documented as CVE-2020-24512. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-464. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3 and CPUID 906E9). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel sighting CVE-2020-24512. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00463. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3) and 0x000000EA (CPUID 906E9). This issue is 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-2020-8670 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 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-2020-24512. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-464. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3 and CPUID 906E9). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel sighting CVE-2020-24512. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00463. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3) and 0x000000EA (CPUID 906E9). This issue is 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-2020-8670 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:

None
Important Note!

Important Notes:
This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Deliverable Name:
HPE ProLiant DL560 Gen9 System ROM - P85

Release Version:
2.90_04-29-2021

Last Recommended or Critical Revision:
2.90_04-29-2021

Previous Revision:
2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0xB00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.
Firmware Dependencies:

None

Problems Fixed:

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:

None

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Important Note:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Deliverable Name:

HPE ProLiant DL580 Gen9 System ROM - U17

Release Version:

2.90_04-29-2020

Last Recommended or Critical Revision:

2.90_04-29-2020

Previous Revision:

2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches
included in this release are version 0x00000019 (CPUID 306F4) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000019 (CPUID 306F4) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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**Online ROM Flash Component for Windows x64 - HPE ProLiant DL60 Gen9/DL80 Gen9 (U15) Servers**

**Version:** 2.90_04-29-2021 (Recommended)

**Filename:** cp047854.exe

**Important Note:**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

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

**Release Version:**

2.90_04-29-2021
Last Recommended or Critical Revision:
2.90_04-29-2021

Previous Revision:
2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:
None

Problems Fixed:
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.
Known Issues:
None

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:
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: 2.90_04-29-2021 (Recommended)
Filename: cp047845.exe

Important Note!

Important Notes:
This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Deliverable Name:
HPE ProLiant ML110 Gen9 System ROM - P99

Release Version:
2.90_04-29-2021

Last Recommended or Critical Revision:
2.90_04-29-2021

Previous Revision:
2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**
None

Online ROM Flash Component for Windows x64 - HPE ProLiant ML150 Gen9 (P95) Servers
Version: 2.90_04-29-2021 (Recommended)
Filename: cp047863.exe

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant ML150 Gen9 System ROM - P95
Release Version:
2.90_04-29-2021

Last Recommended or Critical Revision:
2.90_04-29-2021

Previous Revision:
2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:
None

Problems Fixed:
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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**Online ROM Flash Component for Windows x64 - HPE ProLiant ML30 Gen9 (U23) Servers**

**Version:** 3.00_04-01-2021 *(Recommended)*

**Filename:** cp047377.exe

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**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant ML30 Gen9 System ROM - U23

**Release Version:**

3.00_04-01-2021

**Last Recommended or Critical Revision:**

3.00_04-01-2021

**Previous Revision:**

2.90_11-27-2020

**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 mitigations for security vulnerabilities documented as CVE-2020-24512. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-464. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3 and CPUID 906E9). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel sighting CVE-2020-24512. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00463. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3) and 0x000000EA (CPUID 906E9). This issue is 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-2020-8670.
and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 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-2020-24512. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-464. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3 and CPUID 906E9). These issues are not unique to HPE servers.

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel sighting CVE-2020-24512. This security vulnerability is documented in Intel Security Advisory INTEL-SA-00463. The Intel microcode patches included in this release are version 0x000000EA (CPUID 506E3) and 0x000000EA (CPUID 906E9). This issue is 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-2020-8670 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant ML350 Gen9 System ROM - P92
Release Version:
2.90_04-29-2021

Last Recommended or Critical Revision:
2.90_04-29-2021

Previous Revision:
2.80_10-16-2020

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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:
None

Problems Fixed:
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant XL170r/XL190r Gen9 System ROM - U14

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0000003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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**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.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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**Online ROM Flash Component for Windows x64 - HPE ProLiant XL230a/XL250a Gen9 (U13) Servers**

**Version:** 2.90_04-29-2021 (Recommended)

**Filename:** cp047887.exe

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant XL230a/250a Gen9 System ROM - U13

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:
None

Problems Fixed:
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:
None
This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant XL270d Accelerator Tray System ROM - U25

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**
This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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**Online ROM Flash Component for Windows x64** - HPE ProLiant XL450 Gen9 (U21) Servers

**Version:** 2.90_04-29-2021 *(Recommended)*

**Filename:** cp047839.exe

**Important Note!**

**Important Notes:**

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

**Deliverable Name:**

HPE ProLiant XL450 Gen9 System ROM - U21

**Release Version:**

2.90_04-29-2021

**Last Recommended or Critical Revision:**

2.90_04-29-2021

**Previous Revision:**

2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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 version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Firmware Dependencies:
None

Problems Fixed:

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

Known Issues:
None

Online ROM Flash Component for Windows x64 - HPE ProLiant XL730f/XL740f/XL750f Gen9 (U18) Servers
Version: 2.90_04-29-2021 (Recommended)
Filename: cp047897.exe

Important Note!

Important Notes:

This version of the System ROM contains updates aligned with the Intel Product Update (IPU) version IPU.2021.1 guidance.

Deliverable Name:

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

Release Version:

2.90_04-29-2021

Last Recommended or Critical Revision:

2.90_04-29-2021

Previous Revision:
2.80_10-16-2020

**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 mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. 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.2021.1 guidance.

**Firmware Dependencies:**

None

**Problems Fixed:**

This revision of the System ROM includes the latest revision of the Intel microcode which provides mitigations for the Intel technical sighting referred to as MD Clear. The Intel microcode patches included in this release are version 0x00000046 (CPUID 306F2) and 0x0B00003E (CPUID 406F1). This issue is 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-2020-12360 and CVE-2020-12357. These security vulnerabilities are documented in Intel Security Advisory INTEL-SA-00463. These issues are not unique to HPE servers.

**Known Issues:**

None

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**Driver - Lights-Out Management**

HPE ILO Native Driver for ESXi 7.0

Version: 10.7.5 (Recommended)

Filename: ilo-driver_700.10.7.5.2-1OEM.700.1.0.15843807_17856914.zip

**Fixes**
Fixed driver unload function to allow controller to function properly on reload and when Quickboot is enabled.

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**Driver - Network**

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

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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 2016  
Version: 12.0.1344.0 (Optional)  
Filename: cp045173.compsig; cp045173.exe
Important Note!

HPE recommends the firmware provided in HPE Blade Firmware Flash for Emulex Mezzanine Converged Network Adapters for Microsoft Windows Server 2016/2019(x64), version 2021.09.01 or later, for use with this driver.

Fixes

This driver addresses a Windows Stop Error (BSOD) seen after Windows Event ID 67.

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 Windows Server 2019
Version: 12.0.1344.0 (Optional)
Filename: cp045174.compsig; cp045174.exe

Important Note!

HPE recommends the firmware provided in HPE Blade Firmware Flash for Emulex Mezzanine Converged Network Adapters for Microsoft Windows Server 2016/2019(x64), version 2021.09.01 or later, for use with this driver.

Fixes

This driver addresses a Windows Stop Error (BSOD) seen after Windows Event ID 67.
This driver corrects an issue which results in a BSOD for Software Defined Data Center (SDDC).

Enhancements

This product now supports the HPE ProLiant BL660c Gen9 Server.

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 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 2021.09.01 or later, for use with these drivers.

**Enhancements**

This product now supports the HPE ProLiant BL660c Gen9 Server.

**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 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

HPE Blade Emulex 10/20GbE Drivers for SUSE Linux Enterprise Server 15
Version: 12.0.1342.0-1 (Optional)
Filename: 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 Blade Emulex 10/20GbE iSCSI Drivers 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 (B) (Optional)
Filename: cp049074.compsig; cp049074.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 HPE ProLiant BL660c Gen9 Server.

**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 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 2021.09.01 or later, for use with these drivers.

Enhancements

This product now supports the HPE ProLiant BL660c Gen9 Server.

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 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

HPE Blade Emulex 10/20GbE iSCSI Drivers for SUSE Linux Enterprise Server 15
Version: 12.0.1342.0-1 (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

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**HPE Blade Intel ixgbe Drivers for Red Hat Enterprise Linux 8**

Version: 5.9.4-1 *(B) (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 the HPE ProLiant BL660c Gen9 Server.

**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 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

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

HPE Blade Intel ixgben Driver for VMware vSphere 6.5
Version: 2021.04.19 (Optional)
Filename: cp045171.compsig; cp045171.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 1.2.3 or later, for use with this driver.

Fixes

This product addresses VF issues when calculating, reset PF interface, link state propagation and VLAN trunk scenarios.
Enhancements

This product now supports VMware vSphere 6.5 U3.

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

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 (B) (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.

**Enhancements**

This product now supports the HPE ProLiant BL660c Gen9 Server.

**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)
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

**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_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 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

**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, ixtnmsg.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

Firmware

HPE Blade Intel ixn Driver for Windows Server 2019
Version: 4.1.197.0 (B) (Optional)
Filename: cp049075.compsig; cp049075.exe

Important Note!

HPE recommends the firmware provided in HPE Blade Intel Online Firmware Upgrade Utility for Windows Server x64 Editions, version 1.0.5.2 or later, for use with this driver.

Enhancements

This product now supports the HPE ProLiant BL660c Gen9 Server.

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

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, vxnxmsg.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
Important Note!

HPE recommends the firmware provided in HPE Blade Intel Online Firmware Upgrade Utility for Windows Server x64 Editions, version 1.0.5.2 or later, for use with this driver.

Prerequisites

This driver requires host driver version 4.1.197.0 or later.

Enhancements

This product now supports the HPE ProLiant BL660c Gen9 Server.

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

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 1.5.2 or later, for use with this driver.

 Fixes

This product addresses a PSOD seen during device state changes without IDLE state.
This product addresses a PSOD seen during scheduling fabric login.
This product addresses a PSOD issue to enhance immediately flush in work queue and unload/quiesce mechanisms.

Enhancements

This product enhances PLOGI for the HPE XP7 Storage Array.

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

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 Blade QLogic NX2 10/20 GbE Multifunction Driver for VMware vSphere 6.7
Version: 2021.09.01 (Optional)
Filename: cp047629.compsig; cp047629.zip
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 1.5.2 or later, for use with this driver.

**Fixes**

This product addresses a PSOD seen while collecting data dump.
This product addresses a PSOD seen during uplink reset with failure conditions.
This product addresses a PSOD seen during device state changes without IDLE state.
This product addresses a PSOD seen during scheduling fabric login.
This product addresses a PSOD issue to enhance immediately flush in work queue and unload/quiesce mechanisms.

**Enhancements**

This product enhances PLOGI for the HPE XP7 Storage Array.

**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 Driver for VMware vSphere 7.0
Version: 2021.09.01 *(Optional)*
Filename: cp047630.compsig; cp047630.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 1.5.2 or later, for use with this driver.

**Fixes**

This product addresses a PSOD seen while collecting data dump.
This product addresses a PSOD seen during uplink reset with failure conditions.
This product addresses a PSOD seen during device state changes without IDLE state.
This product addresses a PSOD seen during scheduling fabric login.
This product addresses a PSOD issue to enhance immediately flush in work queue and unload/quiesce mechanisms.

**Enhancements**

This product now supports VMware ESXi 7.0 U3.
This product enhances PLOGI for the HPE XP7 Storage Array.

**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 Blade QLogic NX2 10/20 GbE Multifunction Drivers for Red Hat Enterprise Linux 7

**Version:** 7.14.80-5 *(Optional)*

**Filename:** kmod-netxtreme2_bl-7.14.80-5.rhel7u8.x86_64.compsig; kmod-netxtreme2_bl-7.14.80-5.rhel7u8.x86_64.rpm; kmod-netxtreme2_bl-7.14.80-5.rhel7u9.x86_64.compsig; kmod-netxtreme2_bl-7.14.80-5.rhel7u9.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade QLogic NX2 Online Firmware Upgrade Utility for Linux*, version 1.5.2 or later, for use with these drivers.

**Enhancements**

This product is updated to maintain compatibility with firmware version 1.5.x.

**Supported Devices and Features**

These drivers support the following network adapters:

- 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:** 7.14.80-5 *(Optional)*

**Filename:** kmod-netxtreme2_bl-7.14.80-5.rhel8u3.x86_64.compsig; kmod-netxtreme2_bl-7.14.80-5.rhel8u3.x86_64.rpm; kmod-netxtreme2_bl-7.14.80-5.rhel8u4.x86_64.compsig; kmod-netxtreme2_bl-7.14.80-5.rhel8u4.x86_64.rpm

**Important Note!**

HPE recommends the firmware provided in *HPE Blade QLogic NX2 Online Firmware Upgrade Utility for Linux*, version 1.5.2 or later, for use with these drivers.

**Enhancements**

This product now supports Red Hat Enterprise Linux 8 Update 4.

This product now supports the HPE ProLiant BL660c Gen9 Server.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE FlexFabric 20Gb 2-port 630FLB Adapter
- HPE FlexFabric 20Gb 2-port 630M Adapter

### HPE Blade QLogic NX2 10/20 GbE Multifunction Drivers for SUSE Linux Enterprise Server 12

**Version:** 7.14.80-5 *(Optional)*

**Filename:** netxtreme2_bl-kmp-default-7.14.80_k4.12.14_120-5.sles12sp5.x86_64.compsig; netxtreme2_bl-kmp-default-7.14.80_k4.12.14_120-5.sles12sp5.x86_64.rpm

**Important Note!**
HPE recommends the firmware provided in *HPE Blade QLogic NX2 Online Firmware Upgrade Utility for Linux*, version 1.5.2 or later, for use with these drivers.

**Enhancements**

This product is updated to maintain compatibility with firmware version 1.5.x.

**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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**Important Note!**

HPE recommends the firmware provided in *HPE Blade QLogic NX2 Online Firmware Upgrade Utility for Linux*, version 1.5.2 or later, for use with these drivers.

**Enhancements**

This product now supports SUSE Linux Enterprise Server 15 SP3.

**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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**Important Note!**

HP recommends the firmware provided in *HPE Blade QLogic NX2 Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 1.5.2 or later, for use with these drivers.

**Fixes**

This driver corrects an issue which results in a Windows Stop Error (BSOD) when an invalid vPort ID is used with NIC VMSwitch.

The driver addresses an issue where a network is intermittently disconnected when Virtual Machine Queue (VMQ) is enabled.

**Supported Devices and Features**

This driver supports the following network adapters:
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

Fixes

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 dereference 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

**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 dereference 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

**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

**Important Note!**

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

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
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 dereference 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

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 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

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
Prerequisites

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.

Enhancements

Initial release

Supported Devices and Features

This product supports the following network adapters:

- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter
- 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

Fixes

This product now supports rdma-core v29(rdma user space application)
**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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**Prerequisites**

*HPE Broadcom NetXtreme-E RoCE Library for Red Hat Enterprise Linux 8 Update 3*, Version: 218.0.7.0 *(Optional)*

**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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**Prerequisites**

*HPE Broadcom NetXtreme-E RoCE Library for SUSE Linux Enterprise Server 12 SP4*, Version: 218.0.7.0 *(Optional)*

**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
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

Prerequisites

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

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 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

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

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

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 product 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

HPE Broadcom tg3 Ethernet Drivers for SUSE Linux Enterprise Server 12 x86_64
Version: 3.139b-2 *(Optional)*

**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

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**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 product 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

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**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

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**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
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

**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

**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
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

**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

**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 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

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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

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_195-1.sles15sp2.x86_64.compsig; be2net-kmp-default-12.0.1342.0_k4.12.14_195-1.sles15sp2.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 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

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 CP0xxxx.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 CP0xxxx.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

**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

**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

**HPE Emulex 10/20GbE iSCSI Drivers for SUSE Linux Enterprise Server 12 x86_64**
**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

**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

**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

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.5.0 or later, for use with this driver.

**Enhancements**
This product is updated to maintain compatibility with updated Windows installation library NicInE1R.dll and e1rmsg.dll.

**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
- HP Ethernet 1Gb 4-port 366i Communication Board
- HP Ethernet 1Gb 4-port 366FLR Adapter
- HP Ethernet 1Gb 4-port 366T Adapter

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HPE Intel E1R Driver for Windows Server 2019
Version: 12.18.12.1 *(Recommended)*
Filename: cp047044.compsig; cp047044.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.2.5.0 or later, for use with this driver.

**Enhancements**

This product is updated to maintain compatibility with updated Windows installation library NicInE1R.dll and e1rmsg.dll.

**Supported Devices and Features**

This driver supports the following 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
- HP Ethernet 1Gb 4-port 366i Communication Board
- HP Ethernet 1Gb 4-port 366FLR Adapter
- HP Ethernet 1Gb 4-port 366T Adapter

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HPE Intel i40e Drivers for Red Hat Enterprise Linux 7 x86_64
Version: 2.14.13-1 (C) *(Recommended)*

**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.
- HPE recommends i40e driver v.2.14.13(or later) suggested by Intel TA-256(Technical Advisory).

**Enhancements**

This product supports the following new server:

- HPE ProLiant DL360 Gen10 Plus Server
**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

**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.
- HPE recommends i40e driver v.2.14.13(or later) suggested by Intel TA-256(Technical Advisory).

**Enhancements**

This product supports the following new server:

- HPE ProLiant DL20 Gen10 Plus Server
- HPE ProLiant ML30 Gen10 Plus Server

**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

**Important Note!**

- HPE Intel i40e Drivers for Red Hat Enterprise Linux 8
  Version: 2.14.13-1 (B) *(Recommended)*
  Filename: 635390-TA-256.pdf; kmod-hp-i40e-2.14.13-1.rhel8u2.x86_64.compsig; kmod-hp-i40e-2.14.13-1.rhel8u2.x86_64.rpm; README

- HPE Intel i40e Drivers for SUSE Linux Enterprise Server 12 x86_64
  Version: 2.14.13-1 (B) *(Recommended)*
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.

HPE recommends i40e driver v.2.14.13(or later) suggested by Intel TA-256(Technical Advisory).

**Enhancements**

This product supports the following new server:

- HPE ProLiant DL20 Gen10 Plus Server
- HPE ProLiant ML30 Gen10 Plus Server

**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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**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.
- HPE recommends i40e driver v.2.14.13(or later) suggested by Intel TA-256(Technical Advisory).

**Enhancements**

This product supports the following new server:

- HPE ProLiant DL20 Gen10 Plus Server
- HPE ProLiant ML30 Gen10 Plus Server

**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-MMSFP+ Adapter
HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter

HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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

HPE Intel i40en Driver for VMware vSphere 6.5
Version: 2020.09.14 (B) (Recommended)
Filename: cp049456.compsig; cp049456.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.

**Enhancements**
This product supports HPE ProLiant DL385 Gen10 Plus Server

**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 (B) *(Recommended)*
Filename: cp049457.compsig; cp049457.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.

**Enhancements**

This product supports the following new server:

- HPE ProLiant DL360 Gen10 Plus Server
- HPE ProLiant DL380 Gen10 Plus Server

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**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 (B) *(Recommended)*
Filename: cp049458.compsig; cp049458.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**

This product supports the following new server:

- HPE ProLiant DL20 Gen10 Plus Server
- HPE ProLiant ML30 Gen10 Plus Server

**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 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
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

HPE Intel iavf Drivers for Red Hat Enterprise Linux 7 x86_64
Version: 4.2.7-1 *(Recommended)*
Filename: kmod-hp-iavf-4.2.7-1.rhel7u8.x86_64.compsig; kmod-hp-iavf-4.2.7-1.rhel7u8.x86_64.rpm; kmod-hp-iavf-4.2.7-1.rhel7u9.x86_64.compsig; kmod-hp-iavf-4.2.7-1.rhel7u9.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.22.0 or later, for use with these drivers.

**Fixes**

- This product addresses an issue where HyperV Ping is lost after change MTU on VF interface in a VM linux
- This product addresses an issue which could lead to traffic interrupts and full traffic stop through the bond when VFs were added to bonding-alb/tlb modes

**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 iavf Drivers for Red Hat Enterprise Linux 8
Version: 4.2.7-1 *(Recommended)*
Important Note!

HPE recommends the firmware provided in HPE Intel Online Firmware Upgrade Utility for Linux x86_64, version 1.22.0 or later, for use with these drivers.

Fixes

- This product addresses an issue where HyperV Ping is lost after change MTU on VF interface in a VM Linux.
- This product addresses an issue which could lead to traffic interrupts and full traffic stop through the bond when VFs were added to bonding-alb/tlb modes.

Enhancements

This product now supports Red Hat Enterprise Linux 8 update 4.

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: 4.2.7-1 (Recommended)
Filename: hp-iavf-kmp-default-4.2.7_k4.12.14_120-1.sles12sp5.x86_64.compsig; hp-iavf-kmp-default-4.2.7_k4.12.14_120-1.sles12sp5.x86_64.rpm; README

Important Note!

HPE recommends the firmware provided in HPE Intel Online Firmware Upgrade Utility for Linux x86_64, version 1.22.0 or later, for use with these drivers.

Fixes

- This product addresses an issue where HyperV Ping is lost after change MTU on VF interface in a VM Linux.
- This product addresses an issue which could lead to traffic interrupts and full traffic stop through the bond when VFs were added to bonding-alb/tlb modes.

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: 4.2.7-1 (Recommended)
Filename: hp-iavf-kmp-default-4.2.7_k5.3.18_22-1.sles15sp2.x86_64.compsig; hp-iavf-kmp-default-4.2.7_k5.3.18_22-1.sles15sp2.x86_64.rpm; hp-iavf-kmp-default-4.2.7_k5.3.18_57-1.sles15sp3.x86_64.compsig; hp-iavf-kmp-default-4.2.7_k5.3.18_57-1.sles15sp3.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86_64*, version 1.22.0 or later, for use with these drivers.

**Fixes**

- This product addresses an issue where HyperV Ping is lost after change MTU on VF interface in a VM
- This product addresses an issue which could lead to traffic interrupts and full traffic stop through the bond when VFs were added to bonding-alb/tlb modes

**Enhancements**

This product now supports SUSE Linux Enterprise Server 15 Service Pack 3

**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: 6.7.2-2 (Recommended)
Filename: kmod-hp-igb-6.7.2-2.rhel7u8.x86_64.compsig; kmod-hp-igb-6.7.2-2.rhel7u8.x86_64.rpm; kmod-hp-igb-6.7.2-2.rhel7u9.x86_64.compsig; kmod-hp-igb-6.7.2-2.rhel7u9.x86_64.rpm; README

**Enhancements**

This product now supports Linux Firmware upgrade utility v.1.22.5

**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: 6.7.2-2 (Recommended)
Enhancements

- This product now supports Linux Firmware upgrade utility v.1.22.5
- This product now supports Red Hat Enterprise Linux 8 update 4

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

HPE Intel igb Drivers for SUSE Linux Enterprise Server 12 x86_64
Version: 6.7.2-2 (Recommended)
Filename: hp-igb-kmp-default-6.7.2_k4.12.14_120-2.sles12sp5.x86_64.compsig; hp-igb-kmp-default-6.7.2_k4.12.14_120-2.sles12sp5.x86_64.rpm; README

Enhancements

This product now supports Linux Firmware upgrade utility v.1.22.5

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

HPE Intel igb Drivers for SUSE Linux Enterprise Server 15
Version: 6.7.2-2 (Recommended)
Filename: hp-igb-kmp-default-6.7.2_k5.3.18_22-2.sles15sp2.x86_64.compsig; hp-igb-kmp-default-6.7.2_k5.3.18_22-2.sles15sp2.x86_64.rpm; hp-igb-kmp-default-6.7.2_k5.3.18_57-2.sles15sp3.x86_64.compsig; hp-igb-kmp-default-6.7.2_k5.3.18_57-2.sles15sp3.x86_64.rpm; README

Enhancements

- This product now supports Linux Firmware upgrade utility v.1.22.5
- This product now supports SUSE Linux Enterprise Server 15 Service Pack 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
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

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 3.15.0 or later, for use with this driver.

Enhancements

This product enhances the reliability of TX/RX ring hang detection and recovery procedures.

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
HPE Intel igbn Driver for VMware vSphere 7.0
Version: 2021.09.04 (Recommended)
Filename: cp047111.compsig; cp047111.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 3.15.0 or later, for use with this driver.

Enhancements

This product supports the following new server:

- HPE ProLiant DL20 Gen10 Plus Server
- HPE ProLiant ML30 Gen10 Plus Server

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

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 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 also 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 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 also 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 also 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 Driver for VMware vSphere 6.5**

*Version: 2021.04.05 (Optional)*

*Filename:* cp045249.compsig; cp045249.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 the maximum supported number of virtual functions.

**Supported Devices and Features**

These drivers support the following network adapters:
HPE Ethernet 10Gb 2-port 560SFP+ Adapter
o HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
o HPE Ethernet 10Gb 2-port 561T Adapter
o HPE Ethernet 10Gb 2-port 561FLR-T Adapter
o HPE Ethernet 10Gb 2-port 562T Adapter
o HPE Ethernet 10Gb 2-port 562FLR-T Adapter

HPE Intel ixgben Driver for VMware vSphere 6.7
Version: 2021.04.05 (Optional)
Filename: cp045250.compsig; cp045250.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 the maximum supported number of virtual functions.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter
- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter

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HPE Intel ixgben Driver for VMware vSphere 7.0
Version: 2021.04.05 (Optional)
Filename: cp045248.compsig; cp045248.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 the maximum supported number of virtual functions.

**Supported Devices and Features**

These drivers support the following network adapters:

- HPE Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter
- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
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 also 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

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 also 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 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;

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 also 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

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 also 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

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 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 5.2.3.0 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
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 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 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

**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 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 Mellanox CX3 Driver for Windows Server 2012 R2**

Version: 5.35.12978.0 (B) *(Optional)*

Filename: cp040882.compsig; cp040882.exe

**Enhancements**

This product now 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
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 546FLR-SFP+ Adapter
- HP Ethernet 10Gb 2-port 546SFP+ Adapter
- HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter

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

HPE Mellanox CX4LX and CX5 Driver for Microsoft Windows Server 2016
Version: 2.70.24728.0 (Recommended)
Filename: cp048373.compsig; cp048373.exe

Fixes

- This product correct an issue where mlx5cmd tools reporting of the OS version that a VF is running.
- This product correct an issue where incorrect report related to the firmware traces to be logged (FwTracer) feature on the VF
- This product correct an issue where prevented the package downgrade from replacing mlxdevx.dll in the system folder.
- This product correct an issue which cause TCP connection to drop
**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: 2.70.24728.0 *(Recommended)*

Filename: cp048374.compsig; cp048374.exe

**Fixes**

- This product correct an issue where mlx5cmd tools reporting of the OS version that a VF is running.
- This product correct an issue where incorrect report related to the firmware traces to be logged ( FwTracer) feature on the VF
- This product correct an issue where prevented the package downgrade from replacing mlxdevx.dll in the system folder.
- This product correct an issue which cause TCP connection to drop

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**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: 4.17 *(Recommended)*

Filename: kmod-kernel-mft-mlnx-4.17.0-1.rhel7u8.x86_64.compsig; kmod-kernel-mft-mlnx-4.17.0-1.rhel7u8.x86_64.rpm; mft-4.17.0-106.rhel7u8.x86_64.compsig; mft-4.17.0-106.rhel7u8.x86_64.rpm

**Fixes**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**The following issues have been fixed in MFT version 4.17.**

- Inconsistent flashing of the firmware while using the Intelligent Platform Management Bus/Bridge service.
- Occasional disconnections when the connected port was being activated.
- Flag "--json" did not work with features that required a user confirmation.
- mlxconfig query for the BOOT_INTERRUPT_DIS TLV showed a wrong value in the "current value" field.
- mst version returned an incorrect string: "mst, MFT_VERSION_STR built on TOOLS_BUILD_TIME + Git SHA Hash: TOOLS_GIT_SHA".
- MFT tools did not support using combined short flags without a separation between them.
Performing a driver restart while burning the firmware resulted in firmware burning failure and occasionally device was not accessible.

MVPD read errors occurred from the mlxfwmanager during fast reboot.

**Enhancements**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Changes and New features in MFT version 4.17:**

- Enabled Anti-rollback protection to prevent old vulnerable firmware versions from being flashed to the device.
- Flint now supports the "--activate_delay_sec" flag which performs the activation on the newly burned firmware after the specified delay.
- Remote mst device now supports cable devices. The remote cables will be shown on the mst status and can be accessed via the mixcables tool.
- Added support for the following
  - Parallel firmware burning. Although DMA burning is supported in Virtual Machines as well, burning in such scenarios might be slower than on Physical Machines
  - Dual Small Form Factor Pluggable (DSFP) modules in mlxlink.

**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 MFT Driver and Firmware Tools for Red Hat Enterprise Linux 7 Update 9 (x86_64)**

Version: 4.17 (Recommended)
Filename: kmod-kernel-mft-mlnx-4.17.0-1.rhel7u9.x86_64.compsig; kmod-kernel-mft-mlnx-4.17.0-1.rhel7u9.x86_64.rpm; mft-4.17.0-106.rhel7u9.x86_64.compsig; mft-4.17.0-106.rhel7u9.x86_64.rpm

**Fixes**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**The following issues have been fixed in MFT version 4.17.**

- Inconsistent flashing of the firmware while using the Intelligent Platform Management Bus/Bridge service.
- Occasional disconnections when the connected port was being activated.
- Flag "--json" did not work with features that required a user confirmation.
- mixconfig query for the BOOT_INTERRUPT_DIS TLV showed a wrong value in the "current value" field.
- mst version returned an incorrect string: "mst, MFT_VERSION_STR built on TOOLS_BUILD_TIME + Git SHA Hash: TOOLS_GIT_SHA".
- MFT tools did not support using combined short flags without a separation between them.
- Performing a driver restart while burning the firmware resulted in firmware burning failure and occasionally device was not accessible.
- MVPD read errors occurred from the mlxfwmanager during fast reboot.

**Enhancements**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.
Changes and New features in MFT version 4.17:

- Enabled Anti-rollback protection to prevent old vulnerable firmware versions from being flashed to the device.
- Flint now supports the "--activate_delay_sec" flag which performs the activation on the newly burned firmware after the specified delay.
- Remote mst device now supports cable devices. The remote cables will be shown on the mst status and can be accessed via the mlxcables tool.
- Added support for the following
  - Parallel firmware burning. Although DMA burning is supported in Virtual Machines as well, burning in such scenarios might be slower than on Physical Machines
  - Dual Small Form Factor Pluggable (DSFP) modules in mlxlink.

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 MFT Driver and Firmware Tools for Red Hat Enterprise Linux 8 Update 3 (x86_64)
Version: 4.17 (Recommended)
Filename: kmod-kernel-mft-mlnx-4.17.0-1.rhel8u3.x86_64.compsig; kmod-kernel-mft-mlnx-4.17.0-1.rhel8u3.x86_64.rpm; mft-4.17.0-106.rhel8u3.x86_64.compsig; mft-4.17.0-106.rhel8u3.x86_64.rpm

Fixes

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

The following issues have been fixed in MFT version 4.17.

- Inconsistent flashing of the firmware while using the Intelligent Platform Management Bus/Bridge service.
- Occasional disconnections when the connected port was being activated.
- Flag "--json" did not work with features that required a user confirmation.
- mlxconfig query for the BOOT_INTERRUPT_DIS TLV showed a wrong value in the "current value" field.
- mst version returned an incorrect string: "mst, MFT_VERSION_STR built on TOOLS_BUILD_TIME + Git SHA Hash: TOOLS_GIT_SHA".
- MFT tools did not support using combined short flags without a separation between them.
- Performing a driver restart while burning the firmware resulted in firmware burning failure and occasionally device was not accessible.
- MVPD read errors occurred from the mlxfwmanager during fast reboot.

Enhancements

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

Changes and New features in MFT version 4.17:

- Enabled Anti-rollback protection to prevent old vulnerable firmware versions from being flashed to the device.
- Flint now supports the "--activate_delay_sec" flag which performs the activation on the newly burned firmware after the specified delay.
- Remote mst device now supports cable devices. The remote cables will be shown on the mst status and can be accessed via the mlxcables tool.
- Added support for the following
  - Parallel firmware burning. Although DMA burning is supported in Virtual Machines as well, burning in such scenarios might be slower than on Physical Machines
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 MFT Driver and Firmware Tools for Red Hat Enterprise Linux 8 Update 4 (x86_64)
Version: 4.17 (Recommended)
Filename: kmod-kernel-mft-mlnx-4.17.0-1.rhel8u4.x86_64.compsig; kmod-kernel-mft-mlnx-4.17.0-1.rhel8u4.x86_64.rpm; mft-4.17.0-106.rhel8u4.x86_64.compsig; mft-4.17.0-106.rhel8u4.x86_64.rpm

Fixes

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

The following issues have been fixed in MFT version 4.17:

- Inconsistent flashing of the firmware while using the Intelligent Platform Management Bus/Bridge service.
- Occasional disconnections when the connected port was being activated.
- Flag "--json" did not work with features that required a user confirmation.
- mlxconfig query for the BOOT_INTERRUPT_DIS TLV showed a wrong value in the "current value" field.
- mst version returned an incorrect string: "mst, MFT_VERSION_STR built on TOOLS_BUILD_TIME + Git SHA Hash: TOOLS_GIT_SHA".
- MFT tools did not support using combined short flags without a separation between them.
- Performing a driver restart while burning the firmware resulted in firmware burning failure and occasionally device was not accessible.
- MVPD read errors occurred from the mlxfwmanager during fast reboot.

Enhancements

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

Changes and New features in MFT version 4.17:

- Enabled Anti-rollback protection to prevent old vulnerable firmware versions from being flashed to the device.
- Flint now supports the "--activate_delay_sec" flag which performs the activation on the newly burned firmware after the specified delay.
- Remote mst device now supports cable devices. The remote cables will be shown on the mst status and can be accessed via the mlx cables tool.
- Added support for the following
  - Parallel firmware burning. Although DMA burning is supported in Virtual Machines as well, burning in such scenarios might be slower than on Physical Machines
  - Dual Small Form Factor Pluggable (DSFP) modules in mlxlink.

Supported Devices and Features

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 8 update 4 (x86_64) supported by this binary rpm are:
4.18.0-305.el8 - (x86_64) and future update kernels.

HPE Mellanox MFT Driver and Firmware Tools for SUSE Linux Enterprise Server 12 SP4 (AMD64/EM64T)
Version: 4.17 (Recommended)
Fixes

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

The following issues have been fixed in MFT version 4.17.

- Inconsistent flashing of the firmware while using the Intelligent Platform Management Bus/Bridge service.
- Occasional disconnections when the connected port was being activated.
- Flag "--json" did not work with features that required a user confirmation.
- mlxconfig query for the BOOT_INTERRUPT_DIS TLV showed a wrong value in the "current value" field.
- mst version returned an incorrect string: "mst, MFT_VERSION_STR built on TOOLS_BUILD_TIME + Git SHA Hash: TOOLS_GIT_SHA".
- MFT tools did not support using combined short flags without a separation between them.
- Performing a driver restart while burning the firmware resulted in firmware burning failure and occasionally device was not accessible.
- MVPD read errors occurred from the mixfwmanager during fast reboot.

Enhancements

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

Changes and New features in MFT version 4.17:

- Enabled Anti-rollback protection to prevent old vulnerable firmware versions from being flashed to the device.
- Flint now supports the "--activate_delay_sec" flag which performs the activation on the newly burned firmware after the specified delay.
- Remote mst device now supports cable devices. The remote cables will be shown on the mst status and can be accessed via the mlxtools tool.
- Added support for the following
  - Parallel firmware burning. Although DMA burning is supported in Virtual Machines as well, burning in such scenarios might be slower than on Physical Machines
  - Dual Small Form Factor Pluggable (DSFP) modules in mlxlink.

Supported Devices and Features

**SUPPORTED KERNELS:**

The kernels of SUSE LINUX Enterprise Server 12 SP4 (AMD64/EM64T) supported by this binary rpm are:

- Inconsistent flashing of the firmware while using the Intelligent Platform Management Bus/Bridge service.
- Occasional disconnections when the connected port was being activated.
- Flag "--json" did not work with features that required a user confirmation.
- mlxconfig query for the BOOT_INTERRUPT_DIS TLV showed a wrong value in the "current value" field.
- mst version returned an incorrect string: "mst, MFT_VERSION_STR built on TOOLS_BUILD_TIME + Git SHA Hash: TOOLS_GIT_SHA".
- MFT tools did not support using combined short flags without a separation between them.
- Performing a driver restart while burning the firmware resulted in firmware burning failure and occasionally device was not accessible.
- MVPD read errors occurred from the mixfwmanager during fast reboot.

**Enhancements**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Changes and New features in MFT version 4.17:**

- Enabled Anti-rollback protection to prevent old vulnerable firmware versions from being flashed to the device.
- Flint now supports the "--activate_delay_sec" flag which performs the activation on the newly burned firmware after the specified delay.
- Remote mst device now supports cable devices. The remote cables will be shown on the mst status and can be accessed via the mixcables tool.
- Added support for the following
  - Parallel firmware burning. Although DMA burning is supported in Virtual Machines as well, burning in such scenarios might be slower than on Physical Machines
  - Dual Small Form Factor Pluggable(DSFP) modules in mlxlink.

**Supported Devices and Features**

**SUPPORTED KERNELS:**

The kernels of SUSE LINUX Enterprise Server 12 SP5 (AMD64/EM64T) supported by this binary rpm are:


HPE Mellanox MFT Driver and Firmware Tools for SUSE Linux Enterprise Server 15 SP2 (AMD64/EM64T) Version: 4.17 *(Recommended)*

Filename: kernel-mft-mlnx-kmp-default-4.17.0_k5.3.18_22-1.sles15sp2.x86_64.compssig; kernel-mft-mlnx-kmp-default-4.17.0_k5.3.18_22-1.sles15sp2.x86_64.rpm; mft-4.17.0-106.sles15sp2.x86_64.compssig; mft-4.17.0-106.sles15sp2.x86_64.rpm

**Fixes**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**The following issues have been fixed in MFT version 4.17.**

- Inconsistent flashing of the firmware while using the Intelligent Platform Management Bus/Bridge service.
- Occasional disconnections when the connected port was being activated.
- Flag "--json" did not work with features that required a user confirmation.
- mlxconfig query for the BOOT_INTERRUPT_DIS TLV showed a wrong value in the "current value" field.
- mst version returned an incorrect string: "mst, MFT_VERSION_STR built on TOOLS_BUILD_TIME + Git SHA Hash: TOOLS_GIT_SHA".
- MFT tools did not support using combined short flags without a separation between them.
- Performing a driver restart while burning the firmware resulted in firmware burning failure and occasionally device was not accessible.
MVPD read errors occurred from the mlxfwmanager during fast reboot.

**Enhancements**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

**Changes and New features in MFT version 4.17:**

- Enabled Anti-rollback protection to prevent old vulnerable firmware versions from being flashed to the device.
- Flint now supports the `--activate_delay_sec` flag which performs the activation on the newly burned firmware after the specified delay.
- Remote mst device now supports cable devices. The remote cables will be shown on the mst status and can be accessed via the mlxcables tool.
- Added support for the following
  - Parallel firmware burning. Although DMA burning is supported in Virtual Machines as well, burning in such scenarios might be slower than on Physical Machines
  - Dual Small Form Factor Pluggable (DSFP) modules in mlxlink.

**Supported Devices and Features**

**SUPPORTED KERNELS:**

The kernels of SUSE LINUX Enterprise Server 15 SP2 (AMD64/EM64T) supported by this binary rpm are:


HPE Mellanox MFT Driver and Firmware Tools for SUSE Linux Enterprise Server 15 SP3 (AMD64/EM64T) Version: 4.17 (Recommended)

Filename: kernel-mft-mlnx-kmp-default-4.17.0_k5.3.18_57-1.sles15sp3.x86_64.compsig; kernel-mft-mlnx-kmp-default-4.17.0_k5.3.18_57-1.sles15sp3.x86_64.rpm; mft-4.17.0-106.sles15sp3.x86_64.compsig; mft-4.17.0-106.sles15sp3.x86_64.rpm

**Fixes**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.

The following issues have been fixed in MFT version 4.17.

- Inconsistent flashing of the firmware while using the Intelligent Platform Management Bus/Bridge service.
- Occasional disconnections when the connected port was being activated.
- Flag `--json` did not work with features that required a user confirmation.
- mlxconfig query for the BOOT_INTERRUPT_DIS TLV showed a wrong value in the "current value" field.
- mst version returned an incorrect string: "mst, MFT_VERSION_STR built on TOOLS_BUILD_TIME + Git SHA Hash: TOOLS_GIT_SHA".
- MFT tools did not support using combined short flags without a separation between them.
- Performing a driver restart while burning the firmware resulted in firmware burning failure and occasionally device was not accessible.
- MVPD read errors occurred from the mlxfwmanager during fast reboot.

**Enhancements**

MFT prerequisite RPMs for Mellanox adapter firmware update in Secure Boot mode.
Changes and New features in MFT version 4.17:

- Enabled Anti-rollback protection to prevent old vulnerable firmware versions from being flashed to the device.
- Flint now supports the "--activate_delay_sec" flag which performs the activation on the newly burned firmware after the specified delay.
- Remote mst device now supports cable devices. The remote cables will be shown on the mst status and can be accessed via the mlx cables tool.
- Added support for the following
- Parallel firmware burning. Although DMA burning is supported in Virtual Machines as well, burning in such scenarios might be slower than on Physical Machines
- Dual Small Form Factor Pluggable (DSFP) modules in mlx link.

Supported Devices and Features

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 15 SP3 (AMD64/EM64T) supported by this binary rpm are:
5.3.18.57-default and future update kernels.

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: 5.4 (Recommended)
Filename: kmod-mlnx-ofa_kernel-5.4-OFED.5.4.1.0.3.1.rhel7u8.x86_64.compsig; kmod-mlnx-ofa_kernel-5.4-OFED.5.4.1.0.3.1.rhel7u8.x86_64.rpm; mlnx-ofa_kernel-5.4-OFED.5.4.1.0.3.1.rhel7u8.x86_64.compsig; mlnx-ofa_kernel-5.4-OFED.5.4.1.0.3.1.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 5.4:

- To support scalability, function representor channels were limited to 4. However in scenarios when SF (Scalable Function) was not used, certain use cases required representors to support a large number of channels. Hence, representor channel limit to 4 was applicable only when a PCI device, such as Scalable Function support, was enabled.
- Matching on ipv4_ihl (internet header length) was supported only for outer headers.
- When using one counter for both pop/push VLAN actions, the counter value was incorrect. Hence, splitting the counter for pop_vlan_action_counter and push_vlan_action_counter.
- Incorrect L3 decapsulation occurred when the original inner frame was small and was padded to comply with minimum frame size of 64-bytes.
- dapli and libmlx4 were needed by libdat2 and libdpdk. In order to remove or update dapli and libmlx4, their dependencies had to be removed.
- In fork situation, if parent/children processes happen to have same virtual address, then the doorbell mechanism did not work well and may led to errors in application behavior.
- An override of log_max_qp by other devices occurred if the devices share the same mlx5_core module.
A synchronization issue where closing and opening channels (which might happen on configuration changes such as changing number of channels) may caused null pointer dereference in function mlx5e_select_queue.

Enabling tx-udp_tnl-csum-segmentation had no affect on the driver.

Old udevd versions could get stuck renaming network devices, leaving interfaces named eth* instead of enp*.

Flows with t commit action with ct state -trk were not be offloaded (i.e., table=0,ct_state=-trk,ip actions=ct(commit,table=1)).

Connection tracking over VF LAG with tunnel encapsulation/decapsulation was not supported and caused traffic drop.

OFED compilation failed when stack size was limited to 1024.

Setting rate/burst values higher than 2,147,483,648 were rejected.

Offloaded remote mirroring flows on tunnel device caused forwarded traffic to VF to not be decapsulated.

Trying to set VPort match mode on VF (cat/sys/class/net/txnP8s0f2/compat/devlink/vport_match_mode), leads to kernel crash.

OVS flows were not being offloaded over socket-direct devices.

When VXLAN was configured and illegal route was added, the system crashed with call trace.

If any traffic was sent before the netdev went up for the first time, a division by zero caused by a modulo operation occurred in ndo_select_queue, leading to a kernel panic.

After restarting driver, the x86 host might be in grace period and might not recover on its own. As part of the fix, 5 FW_fatal recoveries are allowed within the 20-minute grace period. As a result, the grace period in the devlink health show command will appear as 0 for FW_fatal reporter.

Enhancements

MLNX OFED v5.4 contains the following changes and new features:

For ConnectX-4 Adapters:

- Updated mlx5 driver to use auxiliary bus in order to integrate different driver components into driver core and optimize module load/unload sequences.
- WJH (What Just Happened) in NICs: WJH allows for visibility of dropped packets (i.e., receiving notice of drop counters increase, seeing content of the dropped packets, debugging, and more). WJH is a service in devlink context and it is already implemented in the switch.
- Note: processing dropped packets (even for visibility purposes) may cause a degradation in performance and leaves the driver vulnerable for malicious attacks. The feature is disabled by default.
- Supported traps:
  - VLAN mismatch: existing generic trap DEVLINK_TRAP_GENERIC_ID_DMAC_MISMATCH Traps received packets with wrong VLAN tag
  - DMAC mismatch: new generic trap DEVLINK_TRAP_GENERIC_ID_DMAC_MISMATCH Traps received packets with wrong destination MAC
  - Added support for enabling Relaxed Ordering for Kernel ULPs. Using relaxed ordering can improve performance in some setups. Since kernel ULPs are expected to support RO, it is enabled for them by default so they can benefit from it.

For ConnectX-4 Adapters and above:

- In MLNX_OFED 5.4 GA, ConnectX-4/5/6 Ethernet network interfaces are now provided with permanent names. Prior to this release, the default interface names were provided by the kernel and udev (ethX) remained as-is. From this release onwards, interface names are generated via new udevd rules. The generated names are now predictable, and the default names are automatically renamed to the predictable names by the udevd daemon, according to udev rules files installed by OFED.

For ConnectX-5 Adapters and above:

- Support to allow OVS (OpenVSwitch) kernel to support up to 128 matches (groups) per table and 16M entries per group.
- Offload ct_state flags rpl, inv, and rel.
- For rpl, support was added for both set and not set matching offload (i.e., +rpl and -rpl).
- For inv and rel, support was added only for the not set option (i.e., -rel and -inv).
Scalable functions (also called subfunctions): This feature enables the user to create, configure, and deploy a scalable functions (e.g., RDMA and networking applications) and to assign them to a container when a container is started via mlxdevm tool. A scalable function can also be deployed in an untrusted guest/host system from the NIC/DPU. This enables full configuration of the function and its representors from the NIC/DPU before giving the function for a container to run in a host system.

"Signature API" which, on supported devices, allows application-level data-integrity checks via a signature handover mechanism. Various signature types, including CRC32 and T10-DIF, can be automatically calculated and checked, stripped, or appended during the transfer at full wire speed.

DR support for matching on RAW tunnel headers using the misc5 parameters. This feature allows matching on each bit of the header, inducing reserved fields.

For ConnectX-6 Dx Adapters:

- Mapping a QP (Queue Pair) to AH over DEVX API, which enables DC/UD QPs to use multiple CC algorithms in the same data center.
- Better insertion rate in software steering was supported. This includes multi-QP which skips areas in the code that may be for debug only.
- Improved rate of updating steering rules, insertion, and deletion. The feature includes definers, multi-qp approach, and better memory usage.
- Added support for ability to allow or prevent insertion of duplicate rules, so the user can choose one of the following behaviors:
  - Prevent duplicate rules, so that already-existing rule and fail can be detected.
  - Allow duplicate rules, to enable updating the rule's action (this will only take effect once the previous rule is deleted). By default, duplicate rules are allowed.
- Made it so that all rule's insertion occur in a defined time using defined (export) size of Htble and decreased use of dynamic allocation.

For all HCA's:

- As of version 5.4, the driver is set so that udev rules will change the names of network interfaces created from NVIDIA adapters. The udev rules are shipped to "/lib/udev/rules.d" and may be overridden by placing a file with the same name in "/etc/udev/rules.d".
- Example: /etc/udev/rules.d/82-net-setup-link.rules
- OvS-DPDK deprecated the command "ovs-appctl dpctl/dump-e2e-stats". Instead, the command has been integrated into the existing command "ovs-appctl dpctl/offload-stats-show -m" (when e2e-cache is enabled).
- OvS-DPDK ct-ct-nat offloads is now disabled by default.
- Before version 5.4, /etc/udev/rules.d/90-ib.rules was potentially automatically edited by installation scripts in case the options —umad-dev-rw or —umad-dev-na were used. From version 5.4 and above, those changes are made in /etc/udev/rules.d/91-ib-permissions.rules which (if exist) only include the settings for those command-line options.
- lbv_query_qp_data_in_order() API. This API enables an application to check if the given QP data is guaranteed to be in order, enabling poll for data instead of poll for completion.
- Added ethtool extended link state to mlx5e. ethtool can be used to get more information to help troubleshoot the state.
- Moved all Python scripts and some other common scripts out of the mlnxofa_ kernel packages. This removed the python dependency from that package when rebuilding it and avoided unnecessary errors when rebuilding them for custom kernels.

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.
Important Note!

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Prerequisites

Following packages must be installed from the respective OS distributions prior to installing the driver component:

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Fixes

The following issues have been fixed in version 5.4:

- To support scalability, function representor channels were limited to 4. However in scenarios when SF (Scalable Function) was not used, certain use cases required representors to support a large number of channels. Hence, representor channel limit to 4 was applicable only when a PCI device, such as Scalable Function support, was enabled.
- Matching on ipv4_ihl (internet header length) was supported only for outer headers.
- When using one counter for both pop/push VLAN actions, the counter value was incorrect. Hence, splitting the counter for `pop_vlan_action_counter` and `push_vlan_action_counter`.
- Incorrect L3 decapsulation occurred when the original inner frame was small and was padded to comply with minimum frame size of 64-bytes.
- dapl and libmlx4 were needed by libdat2 and libdpdk. In order to remove or update dapl and libmlx4, their dependencies had to be removed.
- In fork situation, if parent/children processes happen to have same virtual address, then the doorbell mechanism did not work well and may lead to errors in application behavior.
- An override of `log_max_qp` by other devices occurred if the devices share the same mlx5_core module.
- A synchronization issue where closing and opening channels (which might happen on configuration changes such as changing number of channels) may cause null pointer dereference in function mlx5e_select_queue.
- Enabling tx-udp_tnl-csum-segmentation had no affect on the driver.
- Old udevd versions could get stuck renaming network devices, leaving interfaces named eth* instead of enp*.
- Flows with t commit action with ct state -trk were not be offloaded (i.e., table=0,ct_state=-trk,ip actions=ct(commit,table=1)).
- Connection tracking over VF LAG with tunnel encapsulation/decapsulation was not supported and caused traffic drop.
- OFED compilation failed when stack size was limited to 1024.
- Setting rate/burst values higher than 2,147,483,648 were rejected.
- Offloaded remote mirroring flows on tunnel device caused forwarded traffic to VF to not be decapsulated.
- Trying to set VPort match mode on VF (cat/sys/class/net/enp8s0f2/compat/devlink/vport_match_mode), leads to kernel crash.
- OVS flows were not being offloaded over socket-direct devices.
- When VXLAN was configured and illegal route was added, the system crashed with call trace.
- If any traffic was sent before the netdev went up for the first time, a division by zero caused by a modulo operation occurred in ndo_select_queue, leading to a kernel panic.
- After restarting driver, the x86 host might be in grace period and might not recover on its own. As part of the fix, 5 FW_fatal recoveries are allowed within the 20-minute grace period. As a result, the grace period in the devlink health show command will appear as 0 for FW_fatal reporter.

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MLNX OFED v5.4 contains the following changes and new features:

For ConnectX-4 Adapters:
- Updated mlx5 driver to use auxiliary bus in order to integrate different driver components into driver core and optimize module load/unload sequences.
- WJH (What Just Happened) in NICs: WJH allows for visibility of dropped packets (i.e., receiving notice of drop counters increase, seeing content of the dropped packets, debugging, and more). WJH is a service in devlink context and it is already implemented in the switch.
- Note: processing dropped packets (even for visibility purposes) may cause a degradation in performance and leaves the driver vulnerable for malicious attacks. The feature is disabled by default.
- Supported traps:
  - VLAN mismatch: existing generic trap DEVLINK_TRAP_GENERIC_ID_DMAC_MISMATCH Traps received packets with wrong VLAN tag
  - DMAC mismatch: new generic trap DEVLINK_TRAP_GENERIC_ID_DMAC_MISMATCH Traps received packets with wrong destination MAC
  - Added support for enabling Relaxed Ordering for Kernel ULPs. Using relaxed ordering can improve performance in some setups. Since kernel ULPs are expected to support RO, it is enabled for them by default so they can benefit from it.

For ConnectX-4 Adapters and above:
- In MLNX_OFED 5.4 GA, ConnectX-4/5/6 Ethernet network interfaces are now provided with permanent names. Prior to this release, the default interface names were provided by the kernel and udevd (ethX) remained as-is. From this release onwards, interface names are generated via new udevd rules. The generated names are now predictable, and the default names are automatically renamed to the predictable names by the udevd daemon, according to udev rules files installed by OFED.

For ConnectX-5 Adapters and above:
- Support to allow OVS (OpenVSwitch) kernel to support up to 128 matches (groups) per table and 16M entries per group.
- Offload ct_state flags rpl, inv, and rel.
- For rpl, support was added for both set and not set matching offload (i.e., +rpl and -rpl).
- For inv and rel, support was added only for the not set option (i.e., -rel and -inv).
- Scalable functions (also called subfunctions): This feature enables the user to create, configure, and deploy a scalable functions (e.g., RDMA and networking applications) and to assign them to a container when a container is started via mlxdevm tool. A scalable function can also be deployed in an untrusted guest/host system from the NIC/DPU. This enables full configuration of the function and its representors from the NIC/DPU before giving the function for a container to run in a host system.
- Scalable function QoS and QoS group via mlxdevm's rate commands were added. Run "man mlxdevm port" for details.
- "Signature API" which, on supported devices, allows application-level data-integrity checks via a signature handover mechanism. Various signature types, including CRC32 and T10-DIF, can be automatically calculated and checked, stripped, or appended during the transfer at full wire speed.
- DR support for matching on RAW tunnel headers using the misc5 parameters, This feature allows matching on each bit of the header,
- inducing reserved fields.

For ConnectX-6 Dx Adapters:
- Mapping a QP (Queue Pair) to AH over DEVX API, which enables DC/UD QPs to use multiple CC algorithms in the same data center.
- Better insertion rate in software steering was supported. This includes multi-QP which skips areas in the code that may be for debug only.
- Improved rate of updating steering rules, insertion, and deletion. The feature includes definers, multi-qp approach, and better memory usage.
- Added support for ability to allow or prevent insertion of duplicate rules, so the user can choose one of the following behaviors:
- Prevent duplicate rules, so that already-existing rule and fail can be detected.
Allow duplicate rules, to enable updating the rule's action (this will only take effect once the previous rule is deleted). By default, duplicate rules are allowed.

Made it so that all rule's insertion occur in a defined time using defined (export) size of Htle and decreased use of dynamic allocation.

For all HCA's:

- As of version 5.4, the driver is set so that udev rules will change the names of network interfaces created from NVIDIA adapters. The udev rules are shipped to "/lib/udev/rules.d" and may be overridden by placing a file with the same name in "/etc/udev/rules.d".
- Example: /etc/udev/rules.d/82-net-setup-link.rules
- OvS-DPDK deprecated the command "ovs-appctl dpctl/dump-e2e-stats". Instead, the command has been integrated into the existing command "ovs-appctl dpctl/offload-stats-show -m" when e2e-cache is enabled.
- OvS-DPDK ct-ct-nat offloads is now disabled by default.
- Before version 5.4, /etc/udev/rules.d/90-ib.rules was potentially automatically edited by installation scripts in case the options —umad-dev-rr or —umad-dev-na were used. From version 5.4 and above, those changes are made in /etc/udev/rules.d/91-ib-permissions.rules which (if exist) only include the settings for those command-line options.
- ibv_query_qp_data_in_order() API: This API enables an application to check if the given QP data is guaranteed to be in order, enabling poll for data instead of poll for completion.
- Added ethtool extended link state to mlx5e. ethtool can be used to get more information to help troubleshoot the state.
- Moved all Python scripts and some other common scripts out of the mlnxofa_kernel packages. This removed the python dependency from that package when rebuilding it and avoided unnecessary errors when rebuilding them for custom kernels.

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 Mellanox ConnectX-4, ConnectX-5 and ConnectX-6 Adapters for Red Hat Enterprise Linux 8 Update 3 (x86_64)
Version: 5.4 (Recommended)
Filename: kmod-mlnx-ofa_kernel-5.4-OFED.5.4.1.0.3.1.rhel8u3.x86_64.compsig; kmod-mlnx-ofa_kernel-5.4-OFED.5.4.1.0.3.1.rhel8u3.x86_64.rpm; mlnx-ofa_kernel-5.4-OFED.5.4.1.0.3.1.rhel8u3.x86_64.compsig; mlnx-ofa_kernel-5.4-OFED.5.4.1.0.3.1.rhel8u3.x86_64.rpm

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The following issues have been fixed in version 5.4:

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Matching on ipv4_ihl (internet header length) was supported only for outer headers.

When using one counter for both pop/push VLAN actions, the counter value was incorrect. Hence, splitting the counter for pop_vlan_action_counter and push_vlan_action_counter.

Incorrect L3 decapsulation occurred when the original inner frame was small and was padded to comply with minimum frame size of 64-bytes.

dapl and libmlx4 were needed by libdat2 and libdpdk. In order to remove or update dapl and libmlx4, their dependencies had to be removed.

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A synchronization issue where closing and opening channels (which might happen on configuration changes such as changing number of channels) may cause null pointer dereference in function mlx5e_select_queue.

Enabling tx-udp_tnl-csum-segmentation had no affect on the driver.

Old udevd versions could get stuck renaming network devices, leaving interfaces named eth* instead of enp*.

Flows with t commit action with ct state -trk were not offloaded (i.e., table=0, ct_state=-trk, ip actions=ct(commit, table=1)).

Connection tracking over VF LAG with tunnel encapsulation/decapsulation was not supported and caused traffic drop.

OFED compilation failed when stack size was limited to 1024.

Setting rate/burst values higher than 2,147,483,648 were rejected.

Offloaded remote mirroring flows on tunnel device caused forwarded traffic to VF to not be decapsulated.

Trying to set VPort match mode on VF (cat/sys/class/net/enp8s0f2/compat/devlink/vport_match_mode), leads to kernel crash.

OVS flows were not being offloaded over socket-direct devices.

When VXLAN was configured and illegal route was added, the system crashed with call trace.

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**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 Red Hat Enterprise Linux 8 Update 4 (x86_64)
Version: 5.4 (Recommended)
Filename: kmod-mlnx-ofa_kernel-5.4-OFED.5.4.1.0.3.1.rhel8u4.x86_64.compsig; kmod-mlnx-ofa_kernel-5.4-OFED.5.4.1.0.3.1.rhel8u4.x86_64.rpm; mlnx-ofa_kernel-5.4-OFED.5.4.1.0.3.1.rhel8u4.x86_64.rpm

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- Matching on ipv4_ihl (internet header length) was supported only for outer headers.
- When using one counter for both pop/push VLAN actions, the counter value was incorrect. Hence, splitting the counter for pop_vlan_action_counter and push_vlan_action_counter.
- Incorrect L3 decapsulation occurred when the original inner frame was small and was padded to comply with minimum frame size of 64-bytes.
- dap1 and libmlx4 were needed by libdat2 and libdpdk. In order to remove or update dap1 and libmlx4, their dependencies had to be removed.
- In fork situation, if parent/children processes happen to have same virtual address, then the doorbell mechanism did not work well and may lead to errors in application behavior.
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**Supported Devices and Features**

**SUPPORTED KERNELS:**

The kernels of Red Hat Enterprise Linux 8 update 4(x86_64) supported by this binary rpm are: 4.18.0-296.el8 - (x86_64) and future update kernels.

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- In fork situation, if parent/children processes happen to have same virtual address, then the doorbell mechanism did not work well and may lead to errors in application behavior.
- An override of log_max_qp by other devices occurred if the devices share the same mlx5_core module.
- A synchronization issue where closing and opening channels (which might happen on configuration changes such as changing number of channels) may cause null pointer dereference in function mlx5e_select_queue.
- Enabling tx-udp_ttl-csum-segmentation had no affect on the driver.
- Old udevd versions could get stuck renaming network devices, leaving interfaces named eth* instead of enp*.
- Flows with t commit action with ct state -trk were not offloaded (i.e., table=0,ct_state=-trk,ip actions=ct(commit,table=1)).
- Connection tracking over VF LAG with tunnel encapsulation/decapsulation was not supported and caused traffic drop.
- OFED compilation failed when stack size was limited to 1024.
- Setting rate/burst values higher than 2,147,483,648 were rejected.
- Offloaded remote mirroring flows on tunnel device caused forwarded traffic to VF to not be decapsulated.
- Trying to set VPort match mode on VF (cat/sys/class/net/enp8s0f2/config/devlink/vport_match_mode), leads to kernel crash.
- OVS flows were not being offloaded over socket-direct devices.
- When VXLAN was configured and illegal route was added, the system crashed with call trace.
- If any traffic was sent before the netdev went up for the first time, a division by zero caused by a modulo operation occurred in ndo_select_queue, leading to a kernel panic.
- After restarting driver, the x86 host might be in grace period and might not recover on its own. As part of the fix, 5 FW_fatal recoveries are allowed within the 20-minute grace period. As a result, the grace period in the devlink health show command will appear as 0 for FW_fatal reporter.

Enhancements

MLNX OFED v5.4 contains the following changes and new features:

For ConnectX-4 Adapters:

- Updated mlx5 driver to use auxiliary bus in order to integrate different driver components into driver core and optimize module load/unload sequences.
- WJH (What Just Happened) in NICs: WJH allows for visibility of dropped packets (i.e., receiving notice of drop counters increase, seeing content of the dropped packets, debugging, and more). WJH is a service in devlink context and it is already implemented in the switch.
- Note: processing dropped packets (even for visibility purposes) may cause a degradation in performance and leaves the driver vulnerable for malicious attacks. The feature is disabled by default.
- Supported traps:
  - VLAN mismatch: existing generic trap DEVLINK_TRAP GENERIC_ID DMAC MISMATCH Traps received packets with wrong VLAN tag
o DMAC mismatch: new generic trap DEVLINK_TRAP_GENERIC_ID_DMAC_MISMATCH Traps received packets with wrong destination MAC

o Added support for enabling Relaxed Ordering for Kernel ULPs. Using relaxed ordering can improve performance in some setups. Since kernel ULPs are expected to support RO, it is enabled for them by default so they can benefit from it.

For ConnectX-4 Adapters and above:

o In MLNX_OFED 5.4 GA, ConnectX-4/5/6 Ethernet network interfaces are now provided with permanent names. Prior to this release, the default interface names were provided by the kernel and udevd (ethX) remained as-is. From this release onwards, interface names are generated via new udevd rules. The generated names are now predictable, and the default names are automatically renamed to the predictable names by the udevd daemon, according to udev rules files installed by OFED.

For ConnectX-5 Adapters and above:

o Support to allow OVS (OpenVSwitch) kernel to support up to 128 matches (groups) per table and 16M entries per group.

o Offload ct_state flags rpl, inv, and rel.

o For rpl, support was added for both set and not set matching offload (i.e., +rpl and -rpl).

o For inv and rel, support was added only for the not set option (i.e., -rel and -inv).

o Scalable functions (also called subfunctions): This feature enables the user to create, configure, and deploy a scalable functions (e.g., RDMA and networking applications) and to assign them to a container when a container is started via mlxdevm tool. A scalable function can also be deployed in an untrusted guest/host system from the NIC/DPU. This enables full configuration of the function and its representors from the NIC/DPU before giving the function for a container to run in a host system.

o Scalable function QoS and QoS group via mlxdevm's rate commands were added. Run "man mlxdevm port" for details.

o "Signature API" which, on supported devices, allows application-level data-integrity checks via a signature handover mechanism. Various signature types, including CRC32 and T10-DIF, can be automatically calculated and checked, stripped, or appended during the transfer at full wire speed.

o DR support for matching on RAW tunnel headers using the misc5 parameters. This feature allows matching on each bit of the header.

o inducing reserved fields.

For ConnectX-6 Dx Adapters:

o Mapping a QP (Queue Pair) to AH over DEVX API, which enables DC/UD QPs to use multiple CC algorithms in the same data center.

o Better insertion rate in software steering was supported. This includes multi-QP which skips areas in the code that may be for debug only.

o Improved rate of updating steering rules, insertion, and deletion. The feature includes definers, multi-qp approach, and better memory usage.

o Added support for ability to allow or prevent insertion of duplicate rules, so the user can choose one of the following behaviors:

  o Prevent duplicate rules, so that already-existing rule and fail can be detected.

  o Allow duplicate rules, to enable updating the rule's action (this will only take effect once the previous rule is deleted). By default, duplicate rules are allowed.

  o Made it so that all rule's insertion occur in a defined time using defined (export) size of Htble and decreased use of dynamic allocation.

For all HCA's:

o As of version 5.4, the driver is set so that udev rules will change the names of network interfaces created from NVIDIA adapters. The udev rules are shipped to "/lib/udev/rules.d" and may be overridden by placing a file with the same name in "/etc/udev/rules.d".

o Example: /etc/udev/rules.d/82-net-setup-link.rules

o OvS-DPDK deprecated the command "ovs-appctl dpctl/dump-e2e-stats". Instead, the command has been integrated into the existing command "ovs-appctl dpctl/offload-stats-show -m" (when e2e-cache is enabled).

o OvS-DPDK ct-ct-nat offloads is now disabled by default.

o Before version 5.4, /etc/udev/rules.d/90-ib.rules was potentially automatically edited by installation scripts in case the options —umad-dev-rw or —umad-dev-na were used. From
version 5.4 and above, those changes are made in /etc/udev/rules.d/91-ib-permissions.rules which (if exist) only include the settings for those command-line options.

- `ibv_query_qp_data_in_order()` API: This API enables an application to check if the given QP data is guaranteed to be in order, enabling poll for data instead of poll for completion.
- Added ethtool extended link state to mlx5e. ethtool can be used to get more information to help troubleshoot the state.
- Moved all Python scripts and some other common scripts out of the mlxnxofa kernel packages. This removed the python dependency from that package when rebuilding it and avoided unnecessary errors when rebuilding them for custom kernels.

### 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.

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:** 5.4 *(Recommended)*

*Filename:* mlnx-ofa_kernel-5.4-OFED.5.4.1.0.3.1.sles12sp5.x86_64.compsig; mlnx-ofa_kernel-5.4-OFED.5.4.1.0.3.1.sles12sp5.x86_64.rpm; mlnx-ofa_kernel-kmp-default-5.4_k4.12.14_120-OFED.5.4.1.0.3.1.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 5.4:

- To support scalability, function representor channels were limited to 4. However in scenarios when SF (Scalable Function) was not used, certain use cases required representors to support a large number of channels. Hence, representor channel limit to 4 was applicable only when a PCI device, such as Scalable Function support, was enabled.
- Matching on ipv4_ihl (internet header length) was supported only for outer headers.
- When using one counter for both pop/push VLAN actions, the counter value was incorrect. Hence, Spliting the counter for pop_vlan_action_counter and push_vlan_action_counter.
- Incorrect L3 decapsulation occured when the original inner frame was small and was padded to comply with minimum frame size of 64-bytes.
- `dapl` and `libmlx4` were needed by `libdat2` and `libdpdk`. In order to remove or update `dapl` and `libmlx4`, their dependencies had to be removed.
- In fork situation, if parent/children processes happen to have same virtual address, then the doorbell mechanism did not work well and may led to errors in application behavior.
- An override of `log_max_qp` by other devices occurred if the devices share the same mlx5_core module.
- A synchronization issue where closing and opening channels (which might happen on configuration changes such as changing number of channels) may caused null pointer dereference in function mlx5e_select_queue.
- Enabling `tx-udp_tnl-csum-segmentation` had no affect on the driver.
Old udevd versions could get stuck renaming network devices, leaving interfaces named eth* instead of enp*.

Flows with t commit action with ct state -trk were not be offloaded (i.e., table=0, ct_state=-
trk, ip actions=ct(commit,table=1)).

Connection tracking over VF LAG with tunnel encapsulation/decapsulation was not supported and caused traffic drop.

OFED compilation failed when stack size was limited to 1024.

Setting rate/burst values higher than 2,147,483,648 were rejected.

Offloaded remote mirroring flows on tunnel device caused forwarded traffic to VF to not be
decapsulated.

Trying to set VPort match mode on VF
(cat/sys/class/net/enp8s0f2/compat/devlink/vport_match_mode), leads to kernel crash.

OVS flows were not being offloaded over socket-direct devices.

When VXLAN was configured and illegal route was added, the system crashed with call trace.

If any traffic was sent before the netdev went up for the first time, a division by zero caused
by a modulo operation occured in ndo_select_queue, leading to a kernel panic.

After restarting driver, the x86 host might be in grace period and might not recover on its
own. As part of the fix, 5 FW_fatal recoveries are allowed within the 20-minute grace period.
As a result, the grace period in the devlink health show command will appear as 0 for
FW_fatal reporter.

Enhancements

**MLNX OFED v5.4 contains the following changes and new features:**

**For ConnectX-4 Adapters:**

- Updated mlx5 driver to use auxiliary bus in order to integrate different driver components
  into driver core and optimize module load/unload sequences.
- WJH (What Just Happened) in NICs: WJH allows for visibility of dropped packets (i.e.,
  receiving notice of drop counters increase, seeing content of the dropped packets,
  debugging, and more). WJH is a service in devlink context and it is already implemented in
  the switch.
- Note: processing dropped packets (even for visibility purposes) may cause a degradation in
  performance and leaves the driver vulnerable for malicious attacks. The feature is disabled by
  default.
- Supported traps:
  - VLAN mismatch: existing generic trap DEVLINK_TRAP_GENERIC_ID_DMAC_MISMATCH
    Traps
  - DMAC mismatch: new generic trap DEVLINK_TRAP_GENERIC_ID_DMAC_MISMATCH
    Traps
  - Added support for enabling Relaxed Ordering for Kernel ULPs. Using relaxed ordering can
    improve performance in some setups. Since kernel ULPs are expected to support RO, it is
    enabled for them by default so they can benefit from it.

**For ConnectX-4 Adapters and above:**

- In MLNX_OFED 5.4 GA, ConnectX-4/5/6 Ethernet network interfaces are now provided with
  permanent names. Prior to this release, the default interface names were provided by the
  kernel and udevd (ethX) remained as-is. From this release onwards, interface names are
  generated via new udevd rules. The generated names are now predictable, and the default
  names are automatically renamed to the predictable names by the udevd daemon, according
to udev rules files installed by OFED.

**For ConnectX-5 Adapters and above:**

- Support to allow OVS (OpenVSwitch) kernel to support up to 128 matches (groups) per table
  and 16M entries per group.
- Offload ct_state flags rpl, inv, and rel.
- For rpl, support was added for both set and not set matching offload (i.e., +rpl and -rpl).
- For inv and rel, support was added only for the not set option (i.e., -rel and -inv).
- Scalable functions (also called subfunctions): This feature enables the user to create,
  configure, and deploy a scalable functions (e.g., RDMA and networking applications) and to
  assign them to a container when a container is started via mlxdevm tool. A scalable function
can also be deployed in an untrusted guest/host system from the NIC/DPU. This enables full
configuration of the function and its representors from the NIC/DPU before giving the function for a container to run in a host system.

- Scalable function QoS and QoS group via mlxdevm's rate commands were added. Run "man mlxdevm port" for details.
- "Signature API" which, on supported devices, allows application-level data-integrity checks via a signature handover mechanism. Various signature types, including CRC32 and T10-DIF, can be automatically calculated and checked, stripped, or appended during the transfer at full wire speed.
- DR support for matching on RAW tunnel headers using the misc5 parameters, This feature allows matching on each bit of the header,
- inducing reserved fields.

For ConnectX-6 Dx Adapters:

- Mapping a QP (Queue Pair) to AH over DEVX API, which enables DC/UD QPs to use multiple CC algorithms in the same data center.
- Better insertion rate in software steering was supported. This includes multi-QP which skips areas in the code that may be for debug only.
- Improved rate of updating steering rules, insertion, and deletion. The feature includes definers, multi-qap approach, and better memory usage.
- Added support for ability to allow or prevent insertion of duplicate rules, so the user can choose one of the following behaviors:
  - Prevent duplicate rules, so that already-existing rule and fail can be detected.
  - Allow duplicate rules, to enable updating the rule's action (this will only take effect once the previous rule is deleted). By default, duplicate rules are allowed.
- Made it so that all rule's insertion occur in a defined time using defined (export) size of Htble and decreased use of dynamic allocation.

For all HCA's:

- As of version 5.4, the driver is set so that udev rules will change the names of network interfaces created from NVIDIA adapters. The udev rules are shipped to "/lib/udev/rules.d" and may be overridden by placing a file with the same name in "/etc/udev/rules.d".
- Example: /etc/udev/rules.d/82-net-setup-link.rules
- OvS-DPDK deprecated the command "ovs-appctl dpctl/dump-e2e-stats". Instead, the command has been integrated into the existing command "ovs-appctl dpctl/offload-stats-show -m" (when e2e-cache is enabled).
- OvS-DPDK ct-ct-net offloads is now disabled by default.
- Before version 5.4, /etc/udev/rules.d/90-ib.rules was potentially automatically edited by installation scripts in case the options —umad-dev-rw or —umad-dev-na were used. From version 5.4 and above, those changes are made in /etc/udev/rules.d/91-ib-permissions.rules which (if exist) only include the settings for those command-line options.
- ibv_query_qp_data_in_order() API: This API enables an application to check if the given QP data is guaranteed to be in order, enabling poll for data instead of poll for completion.
- Added ethtool extended link state to mlx5e. ethtool can be used to get more information to help troubleshoot the state.
- Moved all Python scripts and some other common scripts out of the mlnxofa_ kernel packages. This removed the python dependency from that package when rebuilding it and avoided unnecessary errors when rebuilding them for custom kernels.

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 SP2 (AMD64/EM64T)

Version: 5.4 (Recommended)

Filename: mlnx-ofa_kernel-5.4-OFED.5.4.1.0.3.1.sles15sp2.x86_64.compsig; mlnx-ofa_kernel-5.4-OFED.5.4.1.0.3.1.sles15sp2.x86_64.rpm; mlnx-ofa_kernel-kmp-default-5.4_k5.3.18-22-OFED.5.4.1.0.3.1.sles15sp2.x86_64.compsig; mlnx-ofa_kernel-kmp-default-5.4_k5.3.18-22-OFED.5.4.1.0.3.1.sles15sp2.x86_64.rpm
Important Note!

Mellanox Ethernet + RoCE Linux driver (mlnx-oa_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 5.4:

- To support scalability, function representor channels were limited to 4. However, in scenarios when SF (Scalable Function) was not used, certain use cases required representors to support a large number of channels. Hence, representor channel limit to 4 was applicable only when a PCI device, such as Scalable Function support, was enabled.
- Matching on ipv4_ihl (internet header length) was supported only for outer headers.
- When using one counter for both pop/push VLAN actions, the counter value was incorrect. Hence, splitting the counter for pop_vlan_action_counter and push_vlan_action_counter.
- Incorrect L3 decapsulation occurred when the original inner frame was small and was padded to comply with minimum frame size of 64-bytes.
- dapl and libmlx4 were needed by libdat2 and libdpdk. In order to remove or update dapl and libmlx4, their dependencies had to be removed.
- In fork situations, if parent/children processes happen to have same virtual address, then the doorbell mechanism did not work well and may lead to errors in application behavior.
- An override of log_max_qp by other devices occurred if the devices share the same mlx5_core module.
- A synchronization issue where closing and opening channels (which might happen on configuration changes such as changing number of channels) may cause null pointer dereference in function mlx5e_select_queue.
- Enabling tx-udp_tnl-csum-segmentation had no affect on the driver.
- Old udevd versions could get stuck renaming network devices, leaving interfaces named eth* instead of enp*.
- Flows with t commit action with ct state -trk were not being offloaded (i.e., table=0,ct_state=-trk,ip actions=ct(commit,table=1)).
- Connection tracking over VF LAG with tunnel encapsulation/decapsulation was not supported and caused traffic drop.
- OFED compilation failed when stack size was limited to 1024.
- Setting rate/burst values higher than 2,147,483,648 were rejected.
- Offloaded remote mirroring flows on tunnel device caused forwarded traffic to VF to not be decapsulated.
- Trying to set VPort match mode on VF (cat/sys/class/net/enp8s0f2/compat/devlink/vport_match_mode), leads to kernel crash.
- OVS flows were not being offloaded over socket-direct devices.
- When VXLAN was configured and illegal route was added, the system crashed with call trace.
- If any traffic was sent before the netdev went up for the first time, a division by zero caused by a modulo operation occurred in ndo_select_queue, leading to a kernel panic.
- After restarting driver, the x86 host might be in grace period and might not recover on its own. As part of the fix, 5 FW_fatal recoveries are allowed within the 20-minute grace period. As a result, the grace period in the devlink health show command will appear as 0 for FW_fatal reporter.

Enhancements

MLNX OFED v5.4 contains the following changes and new features:
For ConnectX-4 Adapters:

- Updated mlx5 driver to use auxiliary bus in order to integrate different driver components into driver core and optimize module load/unload sequences.
- WJH (What Just Happened) in NICs: WJH allows for visibility of dropped packets (i.e., receiving notice of drop counters increase, seeing content of the dropped packets, debugging, and more). WJH is a service in devlink context and it is already implemented in the switch.
- Note: processing dropped packets (even for visibility purposes) may cause a degradation in performance and leaves the driver vulnerable for malicious attacks. The feature is disabled by default.
- Supported traps:
  - VLAN mismatch: existing generic trap DEVLINK_TRAP_GENERIC_ID_DMAC_MISMATCH Traps received packets with wrong VLAN tag
  - DMAC mismatch: new generic trap DEVLINK_TRAP_GENERIC_ID_DMAC_MISMATCH Traps received packets with wrong destination MAC
  - Added support for enabling Relaxed Ordering for Kernel ULPs. Using relaxed ordering can improve performance in some setups. Since kernel ULPs are expected to support RO, it is enabled for them by default so they can benefit from it.

For ConnectX-4 Adapters and above:

- In MLNX_OFED 5.4 GA, ConnectX-4/5/6 Ethernet network interfaces are now provided with permanent names. Prior to this release, the default interface names were provided by the kernel and udevd (ethX) remained as-is. From this release onwards, interface names are generated via new udevd rules. The generated names are now predictable, and the default names are automatically renamed to the predictable names by the udevd daemon, according to udev rules files installed by OFED.

For ConnectX-5 Adapters and above:

- Support to allow OVS (OpenVSwitch) kernel to support up to 128 matches (groups) per table and 16M entries per group.
- Offload ct_state flags rpl, inv, and rel.
- For rpl, support was added for both set and not set matching offload (i.e., +rpl and -rpl).
- For inv and rel, support was added only for the not set option (i.e., -rel and -inv).
- Scalable functions (also called subfunctions): This feature enables the user to create, configure, and deploy a scalable functions (e.g., RDMA and networking applications) and to assign them to a container when a container is started via mlxdevm tool. A scalable function can also be deployed in an untrusted guest/host system from the NIC/DPU. This enables full configuration of the function and its representors from the NIC/DPU before giving the function for a container to run in a host system.
- Scalable function QoS and QoS group via mlxdevm's rate commands were added. Run "man mlxdevm port" for details.
- "Signature API" which, on supported devices, allows application-level data-integrity checks via a signature handover mechanism. Various signature types, including CRC32 and T10-DIF, can be automatically calculated and checked, stripped, or appended during the transfer at full wire speed.
- DR support for matching on RAW tunnel headers using the misc5 parameters, This feature allows matching on each bit of the header,
- inducing reserved fields.

For ConnectX-6 Dx Adapters:

- Mapping a QP (Queue Pair) to AH over DEVX API, which enables DC/UD QPs to use multiple CC algorithms in the same data center.
- Better insertion rate in software steering was supported. This includes multi-QP which skips areas in the code that may be for debug only.
- Improved rate of updating steering rules, insertion, and deletion. The feature includes definers, multi-qp approach, and better memory usage.
- Added support for ability to allow or prevent insertion of duplicate rules, so the user can choose one of the following behaviors:
  - Prevent duplicate rules, so that already-existing rule and fail can be detected.
  - Allow duplicate rules, to enable updating the rule's action (this will only take effect once the previous rule is deleted). By default, duplicate rules are allowed.
- Made it so that all rule's insertion occur in a defined time using defined (export) size of Htble and decreased use of dynamic allocation.

For all HCA's:

- As of version 5.4, the driver is set so that udev rules will change the names of network interfaces created from NVIDIA adapters. The udev rules are shipped to "/lib/udev/rules.d" and may be overridden by placing a file with the same name in "/etc/udev/rules.d".
- Example: `/etc/udev/rules.d/82-net-setup-link.rules`
- OvS-DPDK deprecated the command "ovs-appctl dpctl/dump-e2e-stats". Instead, the command has been integrated into the existing command "ovs-appctl dpctl/offload-stats-show -m" (when e2e-cache is enabled).
- OvS-DPDK ct-ct-nat offloads is now disabled by default.
- Before version 5.4, `/etc/udev/rules.d/90-lib.rules` was potentially automatically edited by installation scripts in case the options --umad-dev-rw or --umad-dev-na were used. From version 5.4 and above, those changes are made in `/etc/udev/rules.d/91-lib-permissions.rules` which (if exist) only include the settings for those command-line options.
- `ibv_query_qp_data_in_order()` API: This API enables an application to check if the given QP data is guaranteed to be in order, enabling poll for data instead of poll for completion.
- Added ethtool extended link state to mlx5e. Ethtool can be used to get more information to help troubleshoot the state.
- Moved all Python scripts and some other common scripts out of the mlxsofa_ kernel packages. This removed the python dependency from that package when rebuilding it and avoided unnecessary errors when rebuilding them for custom kernels.

**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 Mellanox ConnectX-4, ConnectX-5 and ConnectX-6 Adapters for SUSE LINUX Enterprise Server 15 SP3 (AMD64/EM64T)

Version: 5.4 (Recommended)

Filename: mlnx-ofa_kernel-5.4-OFED.5.4.1.0.3.1.sles15sp3.x86_64.compsig; mlnx-ofa_kernel-5.4-OFED.5.4.1.0.3.1.sles15sp3.x86_64.rpm; mlnx-ofa_kernel-kmp-default-5.4_k5.3.18_57-OFED.5.4.1.0.3.1.sles15sp3.x86_64.compsig; mlnx-ofa_kernel-kmp-default-5.4_k5.3.18_57-OFED.5.4.1.0.3.1.sles15sp3.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 5.4:

- To support scalability, function representor channels were limited to 4. However in scenarios when SF (Scalable Function) was not used, certain use cases required representors to support a large number of channels. Hence, representor channel limit to 4 was applicable only when a PCI device, such as Scalable Function support, was enabled.
o Matching on ipv4_ihl (internet header length) was supported only for outer headers.
o When using one counter for both pop/push VLAN actions, the counter value was incorrect.
   Hence, splitting the counter for pop_vlan_action_counter and push_vlan_action_counter.
o Incorrect L3 decapsulation occurred when the original inner frame was small and was padded
to comply with minimum frame size of 64-bytes.
o dapl and libmlx4 were needed by libdat2 and libdpdk. In order to remove or update dapl and
libmlx4, their dependencies had to be removed.
o In fork situation, if parent/children processes happen to have same virtual address, then the
doorbell mechanism did not work well and may lead to errors in application behavior.
o An override of log_max_qp by other devices occurred if the devices share the same mlx5_core
module.
o A synchronization issue where closing and opening channels (which might happen on
configuration changes such as changing number of channels) may cause null pointer
dereference in function mlx5e_select_queue.
o Enabling tx-udp_tnl-csum-segmentation had no effect on the driver.
o Old udevd versions could get stuck renaming network devices, leaving interfaces named eth*
instead of enp*.
o Flows with t commit action with ct state -trk were not be offloaded (i.e., table=0, ct_state=-
trk, ip actions=ct(commit, table=1)).
o Connection tracking over VF LAG with tunnel encapsulation/decapsulation was not supported
and caused traffic drop.
o OFED compilation failed when stack size was limited to 1024.
o Setting rate/burst values higher than 2,147,483,648 were rejected.
o Offloaded remote mirroring flows on tunnel device caused forwarded traffic to VF to not be
decapsulated.
o Trying to set VPort match mode on VF
   (cat/sys/class/net/enp8s0f2/compat/devlink/vport_match_mode), leads to kernel crash.
o OVS flows were not being offloaded over socket-direct devices.
o When VXLAN was configured and illegal route was added, the system crashed with call trace.
o If any traffic was sent before the netdev went up for the first time, a division by zero caused
by a modulo operation occurred in ndo_select_queue, leading to a kernel panic.
o After restarting driver, the x86 host might be in grace period and might not recover on its
own. As part of the fix, 5 FW_fatal recoveries are allowed within the 20-minute grace period.
As a result, the grace period in the devlink health show command will appear as 0 for
FW_fatal reporter.

Enhancements

MLNX OFED v5.4 contains the following changes and new features:

For ConnectX-4 Adapters:

o Updated mlx5 driver to use auxiliary bus in order to integrate different driver components
into driver core and optimize module load/unload sequences.
o WJH (What Just Happened) in NICs: WJH allows for visibility of dropped packets (i.e.,
receiving notice of drop counters increase, seeing content of the dropped packets,
deeding, and more). WJH is a service in devlink context and it is already implemented in
the switch.
o Note: processing dropped packets (even for visibility purposes) may cause a degradation in
performance and leaves the driver vulnerable for malicious attacks. The feature is disabled by
default.
o Supported traps:
o VLAN mismatch: existing generic trap DEVLINK_TRAP_GENERIC_ID_DMAC_MISMATCH Traps
received packets with wrong VLAN tag
o MAC mismatch: new generic trap DEVLINK_TRAP_GENERIC_ID_DMAC_MISMATCH Traps
received packets with wrong destination MAC
o Added support for enabling Relaxed Ordering for Kernel ULPs. Using relaxed ordering can
improve performance in some setups. Since kernel ULPs are expected to support RO, it is
enabled for them by default so they can benefit from it.

For ConnectX-4 Adapters and above:

o In MLNX_OFED 5.4 GA, ConnectX-4/5/6 Ethernet network interfaces are now provided with
permanent names. Prior to this release, the default interface names were provided by the
kernel and udevd (ethX) remained as-is. From this release onwards, interface names are
generated via new udevd rules. The generated names are now predictable, and the default
names are automatically renamed to the predictable names by the udevd daemon, according to udev rules files installed by OFED.

For ConnectX-5 Adapters and above:

- Support to allow OVS (OpenVSwitch) kernel to support up to 128 matches (groups) per table and 16M entries per group.
- Offload ct_state flags rpl, inv, and rel.
- For rpl, support was added for both set and not set matching offload (i.e., +rpl and -rpl).
- For inv and rel, support was added only for the not set option (i.e., -rel and -inv).
- Scalable functions (also called subfunctions): This feature enables the user to create, configure, and deploy a scalable functions (e.g., RDMA and networking applications) and to assign them to a container when a container is started via mlxdevm tool. A scalable function can also be deployed in an untrusted guest/host system from the NIC/DPU. This enables full configuration of the function and its representors from the NIC/DPU before giving the function for a container to run in a host system.
- Scalable function QoS and QoS group via mlxdevm's rate commands were added. Run "man mlxdevm port" for details.
- "Signature API" which, on supported devices, allows application-level data-integrity checks via a signature mechanism. Various signature types, including CRC32 and T10-DIF, can be automatically calculated and checked, stripped, or appended during the transfer at full wire speed.
- DR support for matching on RAW tunnel headers using the misc5 parameters, This feature allows matching on each bit of the header,
- inducing reserved fields.

For ConnectX-6 Dx Adapters:

- Mapping a QP (Queue Pair) to AH over DEVX API, which enables DC/UD QPs to use multiple CC algorithms in the same data center.
- Better insertion rate in software steering was supported. This includes multi-QP which skips areas in the code that may be for debug only.
- Improved rate of updating steering rules, insertion, and deletion. The feature includes definers, multi-qp approach, and better memory usage.
- Added support for ability to allow or prevent insertion of duplicate rules, so the user can choose one of the following behaviors:
  - Prevent duplicate rules, so that already-existing rule and fail can be detected.
  - Allow duplicate rules, to enable updating the rule's action (this will only take effect once the previous rule is deleted). By default, duplicate rules are allowed.
- Made it so that all rule's insertion occur in a defined time using defined (export) size of Htable and decreased use of dynamic allocation.

For all HCA's:

- As of version 5.4, the driver is set so that udev rules will change the names of network interfaces created from NVIDIA adapters. The udev rules are shipped to "/lib/udev/rules.d" and may be overridden by placing a file with the same name in "/etc/udev/rules.d".
- Example: /etc/udev/rules.d/82-net-setup-link.rules
- OvS-DPDK deprecated the command "ovs-appctl dpctl/dump-e2e-stats". Instead, the command has been integrated into the existing command "ovs-appctl dpctl/offload-stats-show -m" (when e2e-cache is enabled).
- OvS-DPDK ct-ct-nat offloads is now disabled by default.
- Before version 5.4, /etc/udev/rules.d/90-ib.rules was potentially automatically edited by installation scripts in case the options --umad-dev-rw or --umad-dev-na were used. From version 5.4 and above, those changes are made in /etc/udev/rules.d/91-ib-permissions.rules which (if exist) only include the settings for those command-line options.
- ibv_query_qp_data_in_order() API: This API enables an application to check if the given QP data is guaranteed to be in order, enabling poll for data instead of poll for completion.
- Added ethtool extended link state to mlx5e. Ethtool can be used to get more information to help troubleshoot the state.
- Moved all Python scripts and some other common scripts out of the mlxofa_ kernel packages. This removed the python dependency from that package when rebuilding it and avoided unnecessary errors when rebuilding them for custom kernels.

**Supported Devices and Features**
SUPPORTED KERNELS:

The kernels of SUSE LINUX Enterprise Server 15 SP3 (AMD64/EM64T) supported by this binary rpm are:
5.3.18-46-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: 4.9-3.1.6.1 (Recommended)
Filename: kmod-mlnx-ofa_kernel-4.9-OFED.4.9.3.1.6.1.rhel7u8.x86_64.compsig; kmod-mlnx-ofa_kernel-4.9-OFED.4.9.3.1.6.1.rhel7u8.x86_64.rpm; mlnx-ofa_kernel-4.9-OFED.4.9.3.1.6.1.rhel7u8.x86_64.compsig; mlnx-ofa_kernel-4.9-OFED.4.9.3.1.6.1.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:

- IOMMU allocation failures occurred when the device was under massive load.
- "ibv_devinfo -v" command did not print some of the MEM_WINDOW capabilities, even though they were supported.

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: 4.9-3.1.6.1 (Recommended)**

Filename: kmod\-mlnx\-ofa\_kernel-4.9-OFED.4.9.3.1.6.1.rhel7u9.x86_64.compsig; kmod\-mlnx\-ofa\_kernel-4.9-OFED.4.9.3.1.6.1.rhel7u9.x86_64.rpm; mlnx\-ofa\_kernel-4.9-OFED.4.9.3.1.6.1.rhel7u9.x86_64.compsig; mlnx\-ofa\_kernel-4.9-OFED.4.9.3.1.6.1.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:

- IOMMU allocation failures occurred when the device was under massive load.
- "ibv_devinfo -v" command did not print some of the MEM_WINDOW capabilities, even though they were supported.

**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_cnp - 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 3 (x86_64)**

Version: 4.9-3.1.6.1 (Recommended)

Filename: kmod-mlnx-ofa_kernel-4.9-OFED.4.9.3.1.6.1.rhel8u3.x86_64.compsig; kmod-mlnx-ofa_kernel-4.9-OFED.4.9.3.1.6.1.rhel8u3.x86_64.rpm; mlnx-ofa_kernel-4.9-OFED.4.9.3.1.6.1.rhel8u3.x86_64.compsig; mlnx-ofa_kernel-4.9-OFED.4.9.3.1.6.1.rhel8u3.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/](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:

- IOMMU allocation failures occurred when the device was under massive load.
- "ibv_devinfo -v" command did not print some of the MEM_WINDOW capabilities, even though they were supported.

**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_cnp - counts the number of times RoCE slow restart generated CNP packets.
    - roce_slow_retrans - 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 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 SUSE LINUX Enterprise Server 12 SP4 (AMD64/EM64T)

Version: 4.9-3.1.6.1 *(Recommended)*

Filename: mlnx-ofa_kernel-4.9-OFED.4.9.3.1.6.1.sles12sp4.x86_64.compsig; mlnx-ofa_kernel-4.9-OFED.4.9.3.1.6.1.sles12sp4.x86_64.rpm; mlnx-ofa_kernel-kmp-default-4.9_k4.12.14_94.41-OFED.4.9.3.1.6.1.sles12sp4.x86_64.compsig; mlnx-ofa_kernel-kmp-default-4.9_k4.12.14_94.41-OFED.4.9.3.1.6.1.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/](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:

- IOMMU allocation failures occurred when the device was under massive load.
- "ibv_devinfo -v" command did not print some of the MEM_WINDOW capabilities, even though they were supported.

**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.
o Updating remote mirroring rules using the software steering mechanism.

o 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_cnp` - 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 tunnelled 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.

HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for SUSE LINUX Enterprise Server 12 SP5 (AMD64/EM64T)

Version: 4.9-3.1.6.1 (Recommended)

Filename: mlxos-ofa_kernel-4.9-OFED.4.9.3.1.6.1.sles12sp5.x86_64.compsig; mlxos-ofa_kernel-4.9-OFED.4.9.3.1.6.1.sles12sp5.x86_64.rpm; mlxos-ofa_kernel-kmp-default-4.9_k4.12.14_120-OFED.4.9.3.1.6.1.sles12sp5.x86_64.compsig; mlxos-ofa_kernel-kmp-default-4.9_k4.12.14_120-OFED.4.9.3.1.6.1.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:

- IOMMU allocation failures occurred when the device was under massive load.
- "ibv_devinfo -v" command did not print some of the MEM_WINDOW capabilities, even though they were supported.

**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 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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**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 Handling) 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-selectors 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 Commumation 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 (Virtual 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_cnp` - 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: 4.9-3.1.6.1 (Recommended)

Filename: mlnx-ofa_kernel-4.9-OFED.4.9.3.1.6.1.sles15sp2.x86_64.compsig; mlnx-ofa_kernel-4.9-OFED.4.9.3.1.6.1.sles15sp2.x86_64.rpm; mlnx-ofa_kernel-kmp-default-4.9_k5.3.18_22-OFED.4.9.3.1.6.1.sles15sp2.x86_64.compsig; mlnx-ofa_kernel-kmp-default-4.9_k5.3.18_22-OFED.4.9.3.1.6.1.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:

- IOMMU allocation failures occurred when the device was under massive load.
- "ibv_devinfo -v" command did not print some of the MEM_WINDOW capabilities, even though they were supported.

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 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_cnp - 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.

HPE QLogic FastLinQ 10/25/50 GbE Drivers for Red Hat Enterprise Linux 7 x86_64
Version: 8.55.14.0-2 (Recommended)

**Important Note!**
HPE recommends the firmware provided in HPE QLogic FastLinQ Firmware Package for Arrowhead adapters, version 8.55.27 or later, for use with these drivers.

**Fixes**

- This product addresses an issue where the 10GbE Adapters having an DNS resolution issue on Kubernetes container-orchestration system
- This product addresses an issue where system crashes after PCIe error injection multiple times on HPE SDFlex system
- This product addresses an issue where the ethernet data rate limiting doesn't work for Virtual Functions (VFs).
- This product addresses an issue where the system crash once there are not enough number of msix vectors as requested for Virtual Functions (VFs).

**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: 8.55.14.0-2 *(Recommended)*

**Important Note!**

HPE recommends the firmware provided in HPE QLogic FastLinQ Firmware Package for Arrowhead adapters, version 8.55.27 or later, for use with these drivers.

**Fixes**

- This product addresses an issue where the 10GbE Adapters having an DNS resolution issue on Kubernetes container-orchestration system
- This product addresses an issue where system crashes after PCIe error injection multiple times on HPE SDFlex system

**Enhancements**

This product now supports Red Hat Enterprise Linux 8 update 4

**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
**Important Note!**

HPE recommends the firmware provided in **HPE QLogic FastLinQ Firmware Package for Arrowhead adapters**, version 8.55.27 or later, for use with these drivers.

**Fixes**

- This product addresses an issue where the 10GbE Adapters having an DNS resolution issue on Kubernetes container-orchestration system
- This product addresses an issue where system crashes after PCIe error injection multiple times on HPE SDFlex system

**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 10/25/50 GbE Drivers for Windows Server x64 Editions
Version: 8.58.16.0 (Recommended)
Filename: cp047061.compsig; cp047061.exe

**Important Note!**

HPE recommends the firmware provided in *HPE QLogic FastLinQ Firmware Package for Arrowhead adapters*, version 8.55.27 or later, for use with these drivers.

**Fixes**

- This product correct an issue where RoCE+L2 traffic on MOS in NPAR mode
- This product correct an issue where transmitting under heavy PAUSE/Priority-based Flow Control (PFC)
- This product correct an issue where turning off VMs while VF RDMA traffic is running
- This product correct an issue where yellow bang while running VF RoCE traffic with overnight switch port.
- This product correct an issue where installing dirvers with iSCSI enumerated.

**Enhancements**

This product now supports Microsoft Windows Server 2022.

**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 6.5
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 QLogic FastLinQ 10/25/50 GbE Multifunction Driver for VMware vSphere 6.7
Version: 2021.09.04 (Recommended)
Filename: cp047112.compsig; cp047112.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 Firmware Package for Arrowhead adapters, version 8.55.27 or later, for use with these drivers.

Fixes

This product corrects an issue Vmkernel logs are flooding while running the traffic.

Enhancements

This product enhances reliability via adding support for communication between firmware and drivers.

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 10/25/50 GbE Multifunction Driver for VMware vSphere 7.0
Version: 2021.09.04 (Recommended)
Filename: cp047113.compsig; cp047113.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 Firmware Package for Arrowhead adapters, version 8.55.27 or later, for use with these drivers.

Fixes

This product corrects an issue Vmkernel logs are flooding while running the traffic.

Enhancements

This product enhances reliability via adding support for communication between firmware and drivers.

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

**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 1.29.0 or later, for use with this driver.

**Enhancements**

This product enhances the mechanism that collation of data log.

**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

**Fixes**

This product addresses an PSOD issue which associated with Netpoll delay.

**Enhancements**

This product enhances the mechanism that collation of data log.

**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

**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 1.29.0 or later, for use with this driver.

**Fixes**

This product addresses an PSOD issue which associated with Netpoll delay.

**Enhancements**

- This product enhances the mechanism that collation of data log.
- This product now supports ESXi 7.0 U3.

**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

**Important Note!**

HPE recommends the firmware provided in **HPE QLogic NX2 Online Firmware Upgrade Utility for Linux x86_64**, version 2.29.0 or later, for use with these drivers.

**Fixes**
This product addresses an issue where Virtual Local Area Networks (VLANs) resource accounting when linux driver creating 272 Virtual Local Area Networks (VLANs) on single Virtual Functions, then enable interface after closed.

**Enhancements**

- This product now supports MDI (Medium Dependent Interface) / MDIX (Medium Dependent Interface Crossover) connection status to ethtool.
- This product now supports Timestamping the unicast Precision Time Protocol (PTP) packets.

**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: 7.14.80-6 *(Recommended)*

**Important Note!**

HPE recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for Linux x86_64*, version 2.29.0 or later, for use with these drivers.

**Fixes**

This product addresses an issue where Virtual Local Area Networks (VLANs) resource accounting when linux driver creating 272 Virtual Local Area Networks (VLANs) on single Virtual Functions, then enable interface after closed.

**Enhancements**

- This product now supports MDI (Medium Dependent Interface) / MDIX (Medium Dependent Interface Crossover) connection status to ethtool.
- This product now supports Timestamping the unicast Precision Time Protocol (PTP) packets.
- This product now supports Red Hat Enterprise Linux 8 update 4

**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
- HP FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
HPE QLogic NX2 10/20 GbE Multifunction Drivers for SUSE Linux Enterprise Server 12 x86_64
Version: 7.14.80-6 (Recommended)

**Important Note!**

HPE recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for Linux x86_64*, version 2.29.0 or later, for use with these drivers.

**Fixes**

This product addresses an issue where Virtual Local Area Networks (VLANs) resource accounting when linux driver creating 272 Virtual Local Area Networks (VLANs) on single Virtual Functions, then enable interface after closed.

**Enhancements**

- This product now supports MDI (Medium Dependent Interface)/MDIX (Medium Dependent Interface Crossover) connection status to ethtool.
- This product now supports Timestamping the unicast Precision Time Protocol (PTP) packets.

**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: 7.14.80-6 (Recommended)
Filename: netxtreme2-kmp-default-7.14.80_k5.3.18_22-6.sles15sp2.x86_64.compsig; netxtreme2-kmp-default-7.14.80_k5.3.18_22-6.sles15sp2.x86_64.rpm; netxtreme2-kmp-default-7.14.80_k5.3.18_57-6.sles15sp3.x86_64.compsig; netxtreme2-kmp-default-7.14.80_k5.3.18_57-6.sles15sp3.x86_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for Linux x86_64*, version 2.29.0 or later, for use with these drivers.

**Fixes**

This product addresses an issue where Virtual Local Area Networks (VLANs) resource accounting when linux driver creating 272 Virtual Local Area Networks (VLANs) on single Virtual Functions, then enable interface after closed.

**Enhancements**

- This product now supports MDI (Medium Dependent Interface)/MDIX (Medium Dependent Interface Crossover) connection status to ethtool.
- This product now supports Timestamping the unicast Precision Time Protocol (PTP) packets.
- This product now supports SUSE Linux Enterprise Server 15 Service Pack 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 Windows Server x64 Editions
Version: 7.13.206.0 (Recommended)
Filename: cp047060.compsig; cp047060.exe

**Important Note!**

HPE recommends the firmware provided in **HPE QLogic NX2 Online Firmware Upgrade Utility for Windows Server x64 Editions**, version 5.2.5.0 or later, for use with these drivers.

**Fixes**

- This product correct an issue where System crash while upgrading with NPAR SRIOV-EP mode enabled.
- This product correct an issue where BSOD in Windows NDIS driver while in WS2022 PCS Configuration.

**Enhancements**

This product now supports Microsoft Windows Server 2022.

**Supported Devices and Features**

This driver 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
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP 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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net-mst kernel module driver component for VMware ESXi 6.5 and 6.7
Version: 2020.11.11 (A) (Recommended)
Filename: cp048358.compsig; cp048358.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**
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**

<table>
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</tr>
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<tbody>
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</table>
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

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</table>
### 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.
- Management 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:

### 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

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nmlx4_en Driver Component for VMware 7.0
Version: 2020.11.11 (A) (Recommended)
Filename: cp047457.compsig; cp047457.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.
- Management 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 7.0 Driver Version 3.19.70.1 follow the below link:
https://www.mellanox.com/page/products_dyn?product_family=29&mtag=vmware_driver

Fixes

No fixes are included in version 3.19.70.1:

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

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<td>HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter</td>
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</tbody>
</table>
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 nic 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

<table>
<thead>
<tr>
<th>HPE Part Number</th>
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</table>

Important Note! (Recommended)

Important Note! (Recommended)

Known Issues in version 4.16.71.1:

- 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.
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 4.16.71.1:

- 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 2021.04.15:

- 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 4.16.71.1:

- 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**

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779793-B21  HPE Ethernet 10Gb 2-port 546SFP+ Adapter  HP_1200111023
779799-B21  HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter  HP_2240110043
817749-B21  HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter  HP_2690110034
817753-B21  HPE Ethernet 25Gb 2-port 640SFP28 Adapter  HP_2420110004
P21927-B21  HPE Ethernet 100Gb 2-port QSFP28 MCX516A-CCHT Adapter  MT_0000000014
P10112-B21  HPE Ethernet 10/25Gb 2-port SFP28 MCX562A-ACAI OCP3 Adapter  MT_0000000041
P13188-B21  HPE Ethernet 10/25Gb 2-port SFP28 MCX512F-ACHT Adapter  MT_0000000042
P11341-B21  HPE Ethernet 10Gb 2-port SFP+ MCX4621A-ACAB OCP3 Adapter  MT_0000000043
P21930-B21  HPE Ethernet 10Gb 2-port SFP+ MCX4121A-XCHT Adapter  MT_0000000044
874253-B21  HPE Ethernet 100Gb 1-port 842QSFP28 Adapter  HPE0000000018
P25960-B21  HPE Ethernet 100Gb 2-Port QSFP56 MCX623106AS-CDAT Adapter  MT_0000000047
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_00000000451
P23665-B21  HPE InfiniBand HDR100/Ethernet 100Gb 1-port MCX653105A-ECAT QSFP56 x16 Adapter  MT_00000000452
P23666-B21  HPE InfiniBand HDR100/Ethernet 100Gb 2-port MCX653106A-ECAT QSFP56 x16 Adapter  MT_00000000453
P10180-B21  Mellanox MCX623105AS-VDAT Ethernet 200Gb 1-port QSFP56 Adapter for HPE  MT_00000000435
P31246-B21  HPE Ethernet 100Gb 1-port QSFP28 PCIe3 x16 MCX515A-CCAT Adapter  MT_00000000591
P31323-B21  HPE InfiniBand HDR/Ethernet 200Gb 1-port QSFP56 PCIe4 x16 OCP3 MCX653435A-HDAI Adapter  MT_00000000592
P31348-B21  HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 OCP3 MCX653436A-HDAI Adapter  MT_00000000593
P31324-B21  HPE InfiniBand HDR/Ethernet 200Gb 2-port QSFP56 PCIe4 x16 MCX653106A-HDAT Adapter  MT_00000000594

**Important Note!**

**Known Issues in version 4.17.71.1:**

- 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 smpqquery) 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 4.17.71.1:

- 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 2021.04.15:

- 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 4.17.71.1:

- 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.

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</table>

- Driver covers for OS issue and the messages are for information only.
- ConnectedX-4: up to 127
- ConnectedX-5: up to 127
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<tr>
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<th>Model</th>
</tr>
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**Important Note!**

*Important: The version 4.21.71.1 supports VMware ESXi 7.0 Update 2 and Update 3.*

**Known Issues in version 4.21.71.101:**

- A mismatch between the uplink and the VF MTU values may result in CQE with error.
  - Workaround: Align the uplink and the VF MTU values.
- Enabling srivc_mc_isolation module parameter may result in vmknic and emulated NICs multicast and IPv6 traffic loss.
  - Workaround: Unset or set the module parameter to 0.
- RDMA is not supported in the Hypervisor with ENS (Enhanced Network Stack) model 2.
- 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.
- ECN (Explicit congestion notification) statistic counters accumulatorsPeriod and ecnMarkedRocePackets display wrong values and cannot be cleared.
- ECN tunable parameter initialAlphaValue for the Reaction Point protocol cannot be modified.
- Card's speed remains zero after port goes down and reboot is performed.
- RoCE traffic may fail after vMotion when using namespace.
- Legacy SR-IOV is not supported with Model 1.
- When in ENS mode, changing the scheduler to HCLK, may cause traffic loss.
- The 'esxcli mellanox uplink link info -u' command reports the 'Auto negotiation' capability always as 'true'.
- SMP MADs (ibnetdiscover, sminfo, iblinkinfo, smdump, 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

**Fixes**

**Fixes included in version 4.21.71.101:**

- Fixed a compatibility issue with VMware Update Manager as it wouldn't accept a bundle with metadata xml with old versioning scheme. The metadata xml now contains the new versioning scheme.

**Enhancements**

**Changes and New Features are included in smart component version 2021.04.21:**

- Added support for the following features:
  - vSan over RDMA.
  - Receive Side Scaling (RSS) for ENS model 0.
  - 200Gbe link speed.
  - ConnectX-6 Lx devices.
  - Scaled support for up to 10K connections over RDMA networks
  - Data Center Bridging Capability Exchange (DCBX) protocol with hardware offload.
  - sriov_mc_isolation module parameter to isolate multicast traffic to SR-IOV interfaces. Default value is OFF.
  - ens_fallback_model to set the default fallback mode when the option to query ENS model from the OS is no supported. Default to Model 1.

**New features and changes in version 4.21.71.101:**

- SR-IOV InfiniBand is at GA level.
- Updated the supported_num_ports default value to 1 to lower memory constraints. Note: The user must set a value corresponding to the amount of ports installed in the system.

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<td>P24837-B21</td>
<td>HPE Ethernet 10/25Gb 2-port 642SFP28 Adapter</td>
<td>HPE00000000054</td>
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<tr>
<td>P11338-B21</td>
<td>HPE Ethernet 10Gb 2-port 548SFP+ Adapter</td>
<td>HP_1200111023</td>
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<tr>
<td>764285-B21</td>
<td>HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter</td>
<td>HP_1380110017</td>
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<tr>
<td>764286-B21</td>
<td>HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter</td>
<td>HP_1390110023</td>
</tr>
<tr>
<td>825110-B21</td>
<td>HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter</td>
<td>HP_2180110032</td>
</tr>
<tr>
<td>825111-B21</td>
<td>HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter</td>
<td>HP_2190110032</td>
</tr>
</tbody>
</table>
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-OEM.700.1.0.1552992_16211416.zip

**Prerequisites**

NA

**Enhancements**

VM70 nmst 4.14.3.3
**Driver - Storage**
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.

**Driver - Storage Controller**
HPE Dynamic Smart Array B140i Controller Driver for VMware vSphere 6.5 (Driver Component).
Version: 2021.09.01 (Recommended)
Filename: cp048936.compsig; cp048936.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**
- 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.

**Enhancements**

---
HPE Dynamic Smart Array B140i Controller Driver for VMware vSphere 6.7 (Driver Component).
Version: 2021.09.01 (Recommended)
Filename: cp048935.compsig; cp048935.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**
- 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.

**Enhancements**

---
HPE Dynamic Smart Array B140i SATA RAID Controller Driver for Red Hat Enterprise Linux 7 (64-bit)
Version: 1.2.10-196 (Recommended)
Filename: kmod-hpdsa-1.2.10-196.rhel7u8.x86_64.compsig; kmod-hpdsa-1.2.10-196.rhel7u8.x86_64.rpm; kmod-hpdsa-1.2.10-196.rhel7u9.x86_64.compsig; kmod-hpdsa-1.2.10-196.rhel7u9.x86_64.rpm

**Enhancements**
Add support for Red Hat Enterprise Linux 7 Update 9

HPE Dynamic Smart Array B140i SATA RAID Controller Driver for Red Hat Enterprise Linux 8 (64-bit)
Version: 1.2.10-196 (Recommended)
Filename: kmod-hpdsa-1.2.10-196.rhel8u3.x86_64.compsig; kmod-hpdsa-1.2.10-196.rhel8u4.x86_64.rpm;
kmod-hpdsa-1.2.10-196.rhel8u5.x86_64.compsig; kmod-hpdsa-1.2.10-196.rhel8u6.x86_64.rpm

Enhancements

Added Support for Red Hat Enterprise Linux 8.4

HPE Dynamic Smart Array B140i SATA RAID Controller Driver for SUSE LINUX Enterprise Server 12 (64-bit)
Version: 1.2.10-196 (Recommended)
Filename: hpdsa-kmp-default-1.2.10-196.sles12sp4.x86_64.compsig; hpdsa-kmp-default-1.2.10-196.sles12sp4.x86_64.rpm; hpdsa-kmp-default-1.2.10-196.sles12sp5.x86_64.compsig; hpdsa-kmp-default-1.2.10-196.sles12sp5.x86_64.rpm

Enhancements

Aligned the driver version with SLES15

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.

HPE Dynamic Smart Array B140i SATA RAID Controller Driver for SUSE LINUX Enterprise Server 15 (64-bit)
Version: 1.2.10-196 (Recommended)
Filename: hpdsa-kmp-default-1.2.10-196.sles15sp2.x86_64.compsig; hpdsa-kmp-default-1.2.10-196.sles15sp2.x86_64.rpm; hpdsa-kmp-default-1.2.10-196.sles15sp3.x86_64.compsig; hpdsa-kmp-default-1.2.10-196.sles15sp3.x86_64.rpm

Enhancements

Add support for SUSE Linux Enterprise Services 15 SP3

Supported Devices and Features

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 15 (64-bit) supported by this binary rpm are:
default - SUSE LINUX Enterprise Server 15 (64-bit) SP1 plus future errata

HPE Dynamic Smart Array Controller Driver for VMware vSphere 6.7 (Bundle file).
Version: 6.0.0.76-1 (Recommended)
Filename: hpdsa-6.0.0.76-1-offline_bundle-18283990.zip

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.

Enhancements

Initial build

HPE Dynamic Smart Array Controller Driver for VMware vSphere 6.5 (Bundle file).
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.

Enhancements

Initial build

HPE H2xx SAS/SATA Host Bus Adapter (64-bit) Driver for vSphere 6.5
Version: 15.10.07.00-1 (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 (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.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 ProLiant Smart Array Controller (64-bit) Driver for Red Hat Enterprise Linux 7 (64-bit)**
Version: 3.4.20-208 *(Recommended)*
Filename: kmod-hpsa-3.4.20-208.rhel7u8.x86_64.compsig; kmod-hpsa-3.4.20-208.rhel7u8.x86_64.rpm

**Enhancements**
- Aligned the driver version with RHEL8

---

**HPE ProLiant Smart Array Controller (64-bit) Driver for Red Hat Enterprise Linux 8 (64-bit)**
Version: 3.4.20-208 *(Recommended)*
Filename: kmod-hpsa-3.4.20-208.rhel8u3.x86_64.compsig; kmod-hpsa-3.4.20-208.rhel8u3.x86_64.rpm

**Enhancements**
- Added support for Red Hat Enterprise Linux 8.4

---

**HPE ProLiant Smart Array Controller (64-bit) Driver for SUSE LINUX Enterprise Server 12 (64-bit)**
Version: 3.4.20-188 *(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: 3.4.20-210 (B) *(Recommended)*
Filename: hpsa-kmp-default-3.4.20-210.sles15sp2.x86_64.compsig; hpsa-kmp-default-3.4.20-210.sles15sp2.x86_64.rpm; hpsa-kmp-default-3.4.20-210.sles15sp3.x86_64.compsig; hpsa-kmp-default-3.4.20-210.sles15sp3.x86_64.rpm

**Enhancements**

Add support for SUSE Linux Enterprise Services 15 SP3

**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
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.

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.

Fixes

System could potentially display a BSOD while executing a hot replace due to a memory alignment problem.
**Enhancements**

- Remove Microsoft Windows Server 2012 from supported OS

---

**Driver - Storage Fibre Channel and Fibre Channel Over Ethernet**

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: cp048530.compsig; cp048530.exe

---

**Important Note!**

Release Notes:

[HPE Emulex Adapters Release Notes](#)

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**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


---

**Enhancements**

Updated to driver version 12.0.1192.0

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
```

---

**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

---

**Enhancements**

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
**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 12.0.1192.0

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:

```
bcmdrvr-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
```

**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 Storage Fibre Channel Adapter Kit for the x64 Emulex Storport Driver for Microsoft Windows Server 2012R2
Version: 12.8.334.6 *(Recommended)*
Filename: cp049104.compsig; cp049104.exe

**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 12.8.334.6

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,
**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 16Gb Quad Port 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
- HPE SN1200E 16Gb Quad 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: 12.8.351.7 *(Recommended)*
Filename: cp048601.compsig; cp048601.exe

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


**Enhancements**

Updated to driver version 12.8.351.7

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```

**Supported Devices and Features**

This component is supported on following Emulex Fibre Channel Host Bus adapters:

**8Gb FC Adapter:**
HPE Storage Fibre Channel Adapter Kit for the x64 Emulex Storport Driver for Microsoft Windows Server 2019
Version: 12.8.351.7 (Recommended)
Filename: cp048600.compsig; cp048600.exe

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 12.8.351.7

The raw driver files can be obtained by extracting the Smart Component and then extracting the Emulex installer. Use this command:

elexdrvr-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

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 16Gb Quad Port 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 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 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 Storage Fibre Channel Adapter Kit for the x64 QLogic Storport Driver for Microsoft Windows Server 2012R2
Version: 9.4.1.20 *(Recommended)*
Filename: cp049108.compsig; cp049108.exe

**Important Note!**

Release Notes: [HPE QLogic Adapters Release Notes](#)

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


**Fixes**

Fixed the following:

- Removed the "fwload" registry parameter.
- Fixed an unwanted behavior where Link up/down messages were not always logged in the Window System Event log.
- Fixed unwanted behavior with the reporting of Fabric Port Identification Number (FPIN) and Universal Storage Area Network (SAN) Congestion Mitigation (USCM) statistics.
- Fixed an unwanted behavior where connections to tape drives may fail to recover in the event of "SCSI Check Condition" commands or cable pulls.
- Fixed an unwanted behavior where the server may encounter a Blue Screen Of Death (BSOD) 0x0000009F message during shutdown as described in Advisory: HPE Host Bus Adapters - HPE Platforms Running a Microsoft Windows Server 2016 / 2019 Hyper-V Environment, and Configured With Certain HPE HBAs With the QLogic Storport Driver v9.4.2.20, May Experience a Bug Check 0x9F Event

**Enhancements**

Added the following:

- Made improvements to the Fabric Port Identification Number (FPIN) and Universal Storage Area Network (SAN) Congestion Mitigation (USCM) Congestion Management algorithms.

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 Storage Fibre Channel Adapter Kit for the x64 QLogic Storport Driver for Microsoft Windows Server 2016
Version: 9.4.5.20 (Recommended)
Filename: cp048729.compsig; cp048729.exe

Important Note!

Release Notes:
HPE QLogic Adapters Release Notes

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:

- Removed the "fwload" registry parameter.
- Fixed an unwanted behavior where Link up/down messages were not always logged in the Window System Event log.
- Fixed unwanted behavior with the reporting of Fabric Port Identification Number (FPIN) and Universal Storage Area Network (SAN) Congestion Mitigation (USCM) statistics.
- Fixed an unwanted behavior where connections to tape drives may fail to recover in the event of "SCSI Check Condition" commands or cable pulls.
- Fixed an unwanted behavior where the server may encounter a Blue Screen Of Death (BSOD) 0x0000009F message during shutdown as described in Advisory: HPE Host Bus Adapters - HPE Platforms Running a Microsoft Windows Server 2016 / 2019 Hyper-V Environment, and Configured With Certain HPE HBAs With the QLogic Storport Driver v9.4.2.20, May Experience a Bug Check 0x9F Event

Enhancements

Added the following:

- Made improvements to the Fabric Port Identification Number (FPIN) and Universal Storage Area Network (SAN) Congestion Mitigation (USCM) Congestion Management algorithms.

Updated to version 9.4.5.20

Supported Devices and Features

This driver supports the following HPE adapters:

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
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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**Important Note!**

**Release Notes:**
HPE QLogic Adapters Release Notes

**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:

- Removed the "fwload" registry parameter.
- Fixed an unwanted behavior where Link up/down messages were not always logged in the Windows System Event log.
- Fixed unwanted behavior with the reporting of Fabric Port Identification Number (FPIN) and Universal Storage Area Network (SAN) Congestion Mitigation (USCM) statistics.
- Fixed an unwanted behavior where connections to tape drives may fail to recover in the event of "SCSI Check Condition" commands or cable pulls.
- Fixed an unwanted behavior where the server may encounter a Blue Screen Of Death (BSOD) 0x0000009f message during shutdown as described in Advisory: HPE Host Bus Adapters - HPE Platforms Running a Microsoft Windows Server 2016 / 2019 Hyper-V Environment, and Configured With Certain HPE HBAs With the QLogic Storport Driver v9.4.2.20, May Experience a Bug Check 0x9F Event

**Enhancements**

**Added the following:**

- Made improvements to the Fabric Port Identification Number (FPIN) and Universal Storage Area Network (SAN) Congestion Mitigation (USCM) Congestion Management algorithms.

Updated to version 9.4.5.20

**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 Over Ethernet Adapter Kit for the x64 Emulex Storport Driver for Microsoft Windows Server 2012R2/2016
Version: 12.0.1192.0 *(Recommended)*
Filename: cp048542.compsig; cp048542.exe

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


**Enhancements**

Updated to driver version 12.0.1192.0

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
```

**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 Storage Fibre Channel Over Ethernet Adapter Kit for the x64 Emulex Storport Driver for Microsoft Windows Server 2019
Version: 12.0.1192.0 (Recommended)
Filename: cp048541.compsig; cp048541.exe

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 12.0.1192.0

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

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 Storage Mezzanine Fibre Channel Adapter Kit for the x64 Emulex Storport Driver for Microsoft Windows Server 2012R2
Version: 12.8.334.6 (Recommended)
Filename: cp049106.compsig; cp049106.exe

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 12.8.334.6
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
```

**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 2016**

Version: 12.8.351.7 *(Recommended)*  
Filename: cp048582.compsig; cp048582.exe

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


**Enhancements**

Updated to driver version 12.8.351.7

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
```

**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
**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 12.8.351.7

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
```

**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 2012R2**

Version: 9.4.1.20 (Recommended)

Filename: cp049109.compsig; cp049109.exe

**Important Note!**

Release Notes:

[HPE QLogic Adapters Release Notes](http://www.hpe.com/storage/spock/)

**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:

- Removed the "fwload" registry parameter.
- Fixed an unwanted behavior where Link up/down messages were not always logged in the Window System Event log.
- Fixed unwanted behavior with the reporting of Fabric Port Identification Number (FPIN) and Universal Storage Area Network (SAN) Congestion Mitigation (USCM) statistics.
Fixed an unwanted behavior where connections to tape drives may fail to recover in the event of “SCSI Check Condition” commands or cable pulls.

Fixed an unwanted behavior where the server may encounter a Blue Screen Of Death (BSOD) 0x0000009f message during shutdown as described in [Advisory: HPE Host Bus Adapters - HPE Platforms Running a Microsoft Windows Server 2016 / 2019 Hyper-V Environment, and Configured With Certain HPE HBAs With the QLogic Storport Driver v9.4.2.20, May Experience a Bug Check 0x9F Event](https://www.hpe.com/storage/spock/)

**Enhancements**

**Added the following:**

- Made improvements to the Fabric Port Identification Number (FPIN) and Universal Storage Area Network (SAN) Congestion Mitigation (USCM) Congestion Management algorithms.

**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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**Important Note!**

Release Notes:

[HPE QLogic Adapters Release Notes](https://www.hpe.com/storage/spock/)

Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:


**Fixes**

**Fixed the following:**

- Removed the "fwoalad" registry parameter.
- Fixed an unwanted behavior where Link up/down messages were not always logged in the Window System Event log.
- Fixed unwanted behavior with the reporting of Fabric Port Identification Number (FPIN) and Universal Storage Area Network (SAN) Congestion Mitigation (USCM) statistics.
- Fixed an unwanted behavior where connections to tape drives may fail to recover in the event of “SCSI Check Condition” commands or cable pulls.
- Fixed an unwanted behavior where the server may encounter a Blue Screen Of Death (BSOD) 0x0000009f message during shutdown as described in [Advisory: HPE Host Bus Adapters - HPE Platforms Running a Microsoft Windows Server 2016 / 2019 Hyper-V Environment, and Configured With Certain HPE HBAs With the QLogic Storport Driver v9.4.2.20, May Experience a Bug Check 0x9F Event](https://www.hpe.com/storage/spock/)

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**Enhancements**
Added the following:

- Made improvements to the Fabric Port Identification Number (FPIN) and Universal Storage Area Network (SAN) Congestion Mitigation (USCM) Congestion Management algorithms.

Updated to version 9.4.5.20

**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 2019
Version: 9.4.5.20 (Recommended)
Filename: cp048717.compsig; cp048717.exe

**Important Note!**

Release Notes:
HPE QLogic Adapters Release Notes

**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:

- Removed the "fwload" registry parameter.
- Fixed an unwanted behavior where Link up/down messages were not always logged in the Window System Event log.
- Fixed unwanted behavior with the reporting of Fabric Port Identification Number (FPIN) and Universal Storage Area Network (SAN) Congestion Mitigation (USCM) statistics.
- Fixed an unwanted behavior where connections to tape drives may fail to recover in the event of "SCSI Check Condition" commands or cable pulls.
- Fixed an unwanted behavior where the server may encounter a Blue Screen Of Death (BSOD) 0x0000009F message during shutdown as described in Advisory: HPE Host Bus Adapters - HPE Platforms Running a Microsoft Windows Server 2016 / 2019 Hyper-V Environment, and Configured With Certain HPE HBAs With the QLogic Storport Driver v9.4.2.20, May Experience a Bug Check 0x9F Event

**Enhancements**

Added the following:

- Made improvements to the Fabric Port Identification Number (FPIN) and Universal Storage Area Network (SAN) Congestion Mitigation (USCM) Congestion Management algorithms.

Updated to version 9.4.5.20

**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: 12.8.528.7 (Recommended)

Filename: kmod-elx-lpfc-12.8.528.7-1.rhel7u8.x86_64.compsig; kmod-elx-lpfc-12.8.528.7-1.rhel7u8.x86_64.rpm

**Important Note!**

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.

**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.

**Enhancements**

Updated to driver version 12.8.528.7

**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
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.

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.

Enhancements

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

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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 Adapters 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

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.

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 12.0.1342.0

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
Red Hat Enterprise Linux 7 Update 9 Server Fibre Channel Driver Kit for HPE Emulex Host Bus Adapters and Mezzanine Host Bus Adapters  
Version: 12.8.528.7 (Recommended)  
Filename: kmod-elx-lpfc-12.8.528.7-1.rhel7u9.x86_64.compsig; kmod-elx-lpfc-12.8.528.7-1.rhel7u9.x86_64.rpm

**Important Note**

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](https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us).

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


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](https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us).

**Enhancements**

Updated to driver version 12.8.528.7

**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 16Gb Quad Port 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
- 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

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](https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us).

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


**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](https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us).

**Enhancements**

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

Red Hat Enterprise Linux 7 Update 9 Server Fibre Channel over Ethernet (FCoE) Driver Kit for HPE Storage Emulex(BRCM) Converged Network Adapters 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

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.

Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:
http://www.hpe.com/storage/spock/

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

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 3 Server Fibre Channel Driver Kit for HPE Emulex Host Bus Adapters and Mezzanine Host Bus Adapters
Version: 12.8.528.7 (Recommended)
Filename: kmod-exl-lpfc-12.8.528.7-1.rhel8u3.x86_64.compsig; kmod-exl-lpfc-12.8.528.7-1.rhel8u3.x86_64.rpm

**Important Note!**

**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](https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us).

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


**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](https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us).

**Enhancements**

Updated to driver version 12.8.528.7

**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 16Gb Quad Port 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
- HPE Fibre Channel 16Gb LPe1605 Mezz

**32Gb FC Adapter:**
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!**

**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](https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us).

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


**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](https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us).

**Enhancements**

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:
Red Hat Enterprise Linux 8 Update 3 Server Fibre Channel over Ethernet (FCoE) Driver Kit for HPE Storage Emulex(BRCM) Converged Network Adapters 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

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.

Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:
http://www.hpe.com/storage/spock/

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

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 4 Server Fibre Channel Driver Kit for HPE Emulex Host Bus Adapters and Mezzanine Host Bus Adapters
Version: 12.8.528.7 (Recommended)
Filename: kmod-elx-lpfc-12.8.528.7-1.rhel8u4.x86_64.compsig; kmod-elx-lpfc-12.8.528.7-1.rhel8u4.x86_64.rpm

Important Note!
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.

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.

Enhancements

Added the following support:

- Added support for RHEL 8.4
- Updated to driver version 12.8.528.7

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 SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Quad Port 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
- 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
Red Hat Enterprise Linux 8 Update 4 Server Fibre Channel Driver Kit for HPE QLogic Host Bus Adapters and
Mezzanine Host Bus Adapters
Version: 10.02.01.01.a2-k1 (Recommended)
Filename: kmod-qlgc-qla2xxx-10.02.01.01.a2_k1-4.rhel8u4.x86_64.compsig; kmod-qlgc-qla2xxx-
10.02.01.01.a2_k1-4.rhel8u4.x86_64.rpm

**Important Note!**

**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](https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us).

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


**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](https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us).

**Enhancements**

**Added the following:-**

- Initial driver for RHEL 8.4

Updated to driver version 10.02.01.01.a2-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
SUSE Linux Enterprise Server 12 Service Pack 5 Fibre Channel Driver Kit for HPE Emulex Host Bus Adapters and Mezzanine Host Bus Adapters
Version: 12.8.528.7 (Recommended)
Filename: elx-lpfc-kmp-default-12.8.528.7_k4.12.14_120-1.sles12sp5.x86_64.compsig; elx-lpfc-kmp-default-12.8.528.7_k4.12.14_120-1.sles12sp5.x86_64.rpm

**Important Note!**

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](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](https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us).

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


**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](https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us).

**Enhancements**

Updated to driver version 12.8.528.7

**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 16Gb Quad Port 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**

**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**

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**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](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](https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us)

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


**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**

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

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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 Adapters 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

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.

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:
http://www.hpe.com/storage/spock/

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**

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

**SUSE Linux Enterprise Server 15 Service Pack 2 Fibre Channel Driver Kit for HPE Emulex Host Bus Adapters and Mezzanine Host Bus Adapters**

Version: 12.8.528.7 *(Recommended)*

Filename: `elx-lpfc-kmp-default-12.8.528.7_k5.3.18_22-1.sles15sp2.x86_64.rpm`

**Important Note!**

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](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](https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us).

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


**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](https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us).

**Enhancements**

Updated to driver version 12.8.528.7
**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 16Gb Quad Port 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
- 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

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**Important Note!**

**NOTE:**

1. 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](https://www.suse.com/support/kb/doc/?id=000019640)

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](https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00109772en_us)

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**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.

Enhancements

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 SN1100Q 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

SUSE Linux Enterprise Server 15 service pack 2 Fibre Channel over Ethernet (FCoE) Driver Kit for HPE Storage Emulex(BRCM) Converged Network Adapters 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

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.

Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:
http://www.hpe.com/storage/spock/
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

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

SUSE Linux Enterprise Server 15 Service Pack 3 Fibre Channel Driver Kit for HPE Emulex Host Bus Adapters and Mezzanine Host Bus Adapters

Version: 12.8.528.7 (Recommended)

Filename: elx-lpfc-kmp-default-12.8.528.7_k5.3.18_57-1.sles15sp3.x86_64.compsig; elx-lpfc-kmp-default-12.8.528.7_k5.3.18_57-1.sles15sp3.x86_64.rpm

Important Note!

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.

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.

Enhancements

Added the following support:

- Added support for S:ES 15 SP3

Updated to driver version 12.8.528.7

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 SN1200E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1200E 16Gb Single 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

SUSE Linux Enterprise Server 15 Service Pack 3 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_57-4.sles15sp3.x86_64.compsig; qlgc-qla2xxx-kmp-default-10.02.01.00.a14_k1_k5.3.18_57-4.sles15sp3.x86_64.rpm

Important Note!

NOTE:

1. 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
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.

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.

Enhancements

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

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.
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://persistentmemory.hpe.com/windows/nvdimm](https://persistentmemory.hpe.com/windows/nvdimm)

**Driver - System Management**

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**

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**

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 iLO 3.
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


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 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.

Driver - Video

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).

Firmware - Blade Infrastructure

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](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](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](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

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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

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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

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**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**

- **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.

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**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 workaround 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_SHA256
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](https://www.hpe.com/servers/hpsum/documentation).

- **FIPS**

- **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 workaround 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 workaround 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_SHA256
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.
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.

**ILOS 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.

Firmware - Lights-Out Management
Online ROM Flash Component for Linux - HPE Integrated Lights-Out 4
Version: 2.78 (Critical)
Filename: CP046465.scexe; RPMS/i386/firmware-ilo4-2.78-1.1.i386.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
- DONS 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

- IML reports fan modules failed for D3000 only after server reboot
- eRS service event added for Critical events like System Power Fault Detection
- Security fixes
  - Added a Content Security Policy (CSP) to harden the web interfaces
  - Enhanced Input validation for user controlled data
- Fixes for multiple security vulnerabilities

**Enhancements**

- Updated Jquery library to 3.5.1
- Updated Openssl library to OpenSSL 1.0.2x
- eRS enhanced to support generic service event 1000 for critical events

Online ROM Flash Component for VMware ESXi - HPE Integrated Lights-Out 4
Version: 2.78 (Critical)
Filename: CP046464.compsig; CP046464.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
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- LOCFG v5.10.0
- HPLOMIG 5.2.0

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- IML reports fan modules failed for D3000 only after server reboot
- eRS service event added for Critical events like System Power Fault Detection
- Security fixes
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- Enhanced Input validation for user controlled data

- Fixes for multiple security vulnerabilities

Enhancements

- Updated JQuery library to 3.5.1
- Updated OpenSSL library to OpenSSL 1.0.2x
- eRS enhanced to support generic service event 1000 for critical events

Online ROM Flash Component for Windows x64 - HPE Integrated Lights-Out 4
Version: 2.78 (Critical)
Filename: cp046467.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
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- Fixes for multiple security vulnerabilities

**Enhancements**

- Updated Jquery library to 3.5.1
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- eRS enhanced to support generic service event 1000 for critical events

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**Firmware - Network**

HPE Blade Firmware Flash for Emulex Mezzanine Converged Network Adapters for Linux (x64)  
Version: 2021.10.01 (Recommended)  
Filename: RPMS/x86_64/firmware-cna-mezz-emulex-2021.10.01-1.7.x86_64.compsig; RPMS/x86_64/firmware-cna-mezz-emulex-2021.10.01-1.7.x86_64.rpm

**Important Note!**

This component is only supported on RHEL7u8, RHEL7u9, RHEL8u3, SLES12SP5, SLES15SP2 OS's.

This Firmware package contains following firmware versions:

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<thead>
<tr>
<th>Adapter</th>
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**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.

**Enhancements**

We have separate components to update fibre channel and converged network adapters. This is a converged network adapter update component.

This component is only supported on RHEL7u8, RHEL7u9, RHEL8u3, SLES12SP5, SLES15SP2 OS’s.

Updated CNA (XE100 series) firmware

This Firmware package contains following firmware versions:

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**Supported Devices and Features**

This component is supported on following Emulex Converged Network Adapters:

**XE100 Series:**

- HPE FlexFabric 20Gb 2-port 650FLB Adapter
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**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:


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/](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.

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**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 Firmware Flash for Emulex Mezzanine Converged Network Adapters for Microsoft Windows Server 2016/2019(x64)  
Version: 2021.10.01 *(Recommended)*  
Filename: cp048528.compsig; cp048528.exe

**Important Note!**

This Firmware package contains following firmware versions:

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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.

**Enhancements**

We have separate components to update fibre channel and converged network adapters. This is a converged network adapter update component.

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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: 2021.10.01 *(Recommended)*
Filename: CP048524.compsig; CP048524.zip

**Important Note!**

This Firmware package contains following firmware versions:

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Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:


Enhancements

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<th>Firmware</th>
<th>UEFI</th>
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<tr>
<td>HPE FlexFabric 20Gb 2-port 650FLB Adapter</td>
<td>20Gb</td>
<td>12.0.1277.0</td>
<td>12.0.1345.0</td>
<td>12.0.1269.0</td>
<td>12.0.1171.0</td>
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<tr>
<td>HPE FlexFabric 20Gb 2-port 650M Adapter</td>
<td>20Gb</td>
<td>12.0.1277.0</td>
<td>12.0.1345.0</td>
<td>12.0.1269.0</td>
<td>12.0.1171.0</td>
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</tbody>
</table>

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


**Enhancements**

Updated CNA (XE100 series) firmware

This Firmware package contains following firmware versions:

<table>
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<tr>
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</tr>
</tbody>
</table>

**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 ixgbe 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

---

HPE Blade Intel Online Firmware Upgrade Utility for Windows Server x64 Editions
Version: 1.0.5.2 *(Optional)*
Filename: cp047539.compsig; cp047539.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 2016*, version 4.1.199.0 or later
Prerequisites

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

Fixes

This product no longer supports Windows Server 2012 R2.

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

Important Note!

HPE recommends HPE Blade QLogic NX2 10/20GbE Multifunction Drivers for Linux, versions 7.14.80-5 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 the Maximum Transmission Unit (MTU) value of iSCSI function port is displayed as 0 bytes in AHS log.

Enhancements

This product now supports Red Hat Enterprise Linux 8 Update 4.
This product now supports SuSE Linux Enterprise Server 15 SP3.

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

Important Note!

HPE recommends HPE Blade QLogic NX2 10/20 GbE Multifunction Driver for VMware, version 2021.09.01 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 the Maximum Transmission Unit (MTU) value of iSCSI function port is displayed as 0 bytes in AHS log.

**Enhancements**

This product now supports VMware ESXi 7.0 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

---

**Important Note!**

HPE recommends HPE Blade QLogic NX2 10/20GbE Multifunction Drivers for Windows Server x64 Editions, version 7.13.206.0 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 the Maximum Transmission Unit (MTU) value of iSCSI function port is displayed as 0 bytes in AHS log.

**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

---

**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 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:

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<tr>
<td>HPE Ethernet 1Gb 2-port 330i Adapter (22BD)</td>
<td>2.10</td>
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<td></td>
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<tr>
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<td>1.5.27</td>
<td>21.6.12</td>
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<tr>
<td>HPE Ethernet 1Gb 2-port 332T Adapter</td>
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</table>

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 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:

<table>
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<td>1.5.27</td>
<td>21.6.12</td>
<td>218.0.10.0</td>
</tr>
<tr>
<td>HPE Ethernet 1Gb 4-port 331FLR Adapter</td>
<td>1.40</td>
<td>21.6.0</td>
<td>1.5.27</td>
<td>21.6.12</td>
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**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: 2021.10.01 *(Recommended)*
Filename: RPMS/x86_64/firmware-cna-emulex-2021.10.01-1.5.x86_64.compsig; RPMS/x86_64/firmware-cna-emulex-2021.10.01-1.5.x86_64.rpm

**Important Note!**

This component is only supported on RHEL7u8, RHEL7u9, RHEL8u3, SLES12SP5, SLES15SP2 OS's.

This Firmware package contains following firmware version:

<table>
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<tr>
<th>Adapter</th>
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<td>HPE FlexFabric 10Gb 2-port 556FLR-T Adapter</td>
<td>10Gb</td>
<td>12.0.1277.0</td>
<td>12.0.1345.0</td>
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</tr>
</tbody>
</table>
**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.

**Enhancements**

We have separate components to update fibre channel and converged network adapters. This is a converged network adapter update component.

This component is only supported on RHEL7u8, RHEL7u9, RHEL8u3, SLES12SP5, SLES15SP2 OS's.

This Firmware package contains following firmware versions:

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<tr>
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**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 Firmware Flash for Emulex Converged Network Adapters for Microsoft Windows Server 2012R2(x64)
Version: 2021.10.01 *(Recommended)*
Filename: cp049111.compsig; cp049111.exe

**Important Note!**

This Firmware package contains following firmware versions:

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**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:


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/](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](http://www.hpe.com/servers/spp/download).

**Enhancements**

Updated CNA (XE100 series) firmware

This Firmware package contains following firmware versions:

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</table>
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 Firmware Flash for Emulex Converged Network Adapters for Microsoft Windows Server 2016/2019(x64)
Version: 2021.10.01 (Recommended)
Filename: cp048540.compsig; cp048540.exe

Important Note!

This Firmware package contains following firmware version:

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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.

Enhancements

This Firmware package contains following firmware version:

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<td>12.0.1277.0</td>
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<td>12.0.1269.0</td>
<td>12.0.1171.0</td>
</tr>
<tr>
<td>HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter</td>
<td>10Gb</td>
<td>12.0.1277.0</td>
<td>12.0.1345.0</td>
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<tr>
<td>HPE CN1200E Dual Port Converged Network Adapter</td>
<td>20Gb</td>
<td>12.0.1277.0</td>
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<td>12.0.1269.0</td>
<td>12.0.1171.0</td>
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<tr>
<td>HPE CN1200E-T Dual Port Adapter</td>
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<td>12.0.1269.0</td>
<td>12.0.1171.0</td>
</tr>
</tbody>
</table>
**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 Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.5
Version: 2021.10.01 *(Recommended)*
Filename: CP048536.compsig; CP048536.zip

**Important Note!**

This Firmware package contains following firmware version:

<table>
<thead>
<tr>
<th>Adapter</th>
<th>Speed</th>
<th>Universal Boot Image</th>
<th>Firmware</th>
<th>UEFI</th>
<th>Boot BIOS</th>
</tr>
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<tr>
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</tr>
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<td>12.0.1277.0</td>
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<td>12.0.1345.0</td>
<td>12.0.1269.0</td>
<td>12.0.1171.0</td>
</tr>
</tbody>
</table>

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


**Enhancements**

This Firmware package contains following firmware version:

<table>
<thead>
<tr>
<th>Adapter</th>
<th>Speed</th>
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<tr>
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<td>10Gb</td>
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<td>12.0.1277.0</td>
<td>12.0.1345.0</td>
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<tr>
<td>HPE CN1200E-T Dual Port Adapter</td>
<td>20Gb</td>
<td>12.0.1277.0</td>
<td>12.0.1345.0</td>
<td>12.0.1269.0</td>
<td>12.0.1171.0</td>
</tr>
</tbody>
</table>

**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 Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.7
Version: 2021.10.01 (Recommended)
Filename: CP048537.compsig; CP048537.zip

Important Note!

This Firmware package contains following firmware version:

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<th>Adapter</th>
<th>Speed</th>
<th>Universal Boot Image</th>
<th>Firmware UEFI</th>
<th>Boot BIOS</th>
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<tbody>
<tr>
<td>HPE FlexFabric 10Gb 2-port 556FLR-T Adapter</td>
<td>10Gb</td>
<td>12.0.1277.0</td>
<td>12.0.1269.0</td>
<td>12.0.1171.0</td>
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<tr>
<td>HPE FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter</td>
<td>10Gb</td>
<td>12.0.1277.0</td>
<td>12.0.1269.0</td>
<td>12.0.1171.0</td>
</tr>
<tr>
<td>HPE CN1200E Dual Port Converged Network Adapter</td>
<td>20Gb</td>
<td>12.0.1277.0</td>
<td>12.0.1269.0</td>
<td>12.0.1171.0</td>
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<td>12.0.1277.0</td>
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</tbody>
</table>

Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Enhancements

This Firmware package contains following firmware version:

<table>
<thead>
<tr>
<th>Adapter</th>
<th>Speed</th>
<th>Universal Boot Image</th>
<th>Firmware UEFI</th>
<th>UEFI</th>
<th>Boot BIOS</th>
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</thead>
<tbody>
<tr>
<td>HPE FlexFabric 10Gb 2-port 556FLR-T Adapter</td>
<td>10Gb</td>
<td>12.0.1277.0</td>
<td>12.0.1345.0</td>
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<tr>
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<td>12.0.1269.0</td>
<td>12.0.1171.0</td>
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<tr>
<td>HPE CN1200E-T Dual Port Adapter</td>
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<td>12.0.1171.0</td>
<td></td>
</tr>
</tbody>
</table>

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 Intel Online Firmware Upgrade Utility for Linux x86_64
Version: 1.22.6 (Recommended)
Filename: firmware-nic-intel-1.22.6-1.1.x86_64.compsig; firmware-nic-intel-1.22.6-1.1.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 6.7.2 or later
- HPE Intel ixgbe Drivers for Linux, versions 5.12.5 or later
- HPE Intel i40e Drivers for Linux, versions 2.16.11 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/.

**Enhancements**

This product now supports Red Hat Enterprise Linux 8 update 4 and SUSE Linux Enterprise Server 15 Service Pack 3

**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

---

HPE Intel Online Firmware Upgrade Utility for VMware
Version: 3.15.5 *(Recommended)*
Filename: CP047025.compsig; CP047025.zip

**Important Note!**

This software package contains the following firmware versions for the below listed supported network adapters:
<table>
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<tr>
<th>NIC</th>
<th>EEPROM/NVM Version</th>
<th>OROM Version</th>
<th>Single NVM Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPE Ethernet 1Gb 2-port 361i Adapter</td>
<td>8000106F</td>
<td>1.2836.0</td>
<td>N/A</td>
</tr>
<tr>
<td>HPE Ethernet 1Gb 2-port 361T Adapter</td>
<td>80001147</td>
<td>1.2836.0</td>
<td>N/A</td>
</tr>
<tr>
<td>HPE Ethernet 1Gb 2-port 363i Adapter</td>
<td>80000D00</td>
<td>1.2836.0</td>
<td>N/A</td>
</tr>
<tr>
<td>HPE Ethernet 1Gb 4-port 366i Communication Board</td>
<td>80000EBF</td>
<td>1.2836.0</td>
<td>N/A</td>
</tr>
<tr>
<td>HPE Ethernet 1Gb 4-port 366i Adapter</td>
<td>8000105E</td>
<td>1.2836.0</td>
<td>N/A</td>
</tr>
<tr>
<td>HPE Ethernet 1Gb 4-port 366FLR Adapter</td>
<td>80001148</td>
<td>1.2836.0</td>
<td>N/A</td>
</tr>
<tr>
<td>HPE Ethernet 1Gb 4-port 366T Adapter</td>
<td>80001146</td>
<td>1.2836.0</td>
<td>N/A</td>
</tr>
<tr>
<td>HPE Ethernet 1Gb 2-port 368i Adapter</td>
<td>800027FA</td>
<td>1.2836.0</td>
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<tr>
<td>HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter</td>
<td>800027F8</td>
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<tr>
<td>HPE Ethernet 1Gb 4-port 369i Adapter</td>
<td>800027FB</td>
<td>1.2836.0</td>
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<td>HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter</td>
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<tr>
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<td>HPE Ethernet 10Gb 2-port 561T Adapter</td>
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<tr>
<td>HPE Ethernet 10Gb 2-port 561FLR-T Adapter</td>
<td>800005B6</td>
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<tr>
<td>HPE Ethernet 10Gb 2-port 568i Adapter</td>
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<td>HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter</td>
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<tr>
<td>HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter</td>
<td>800035C0</td>
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<td>HPE Ethernet 10Gb 2-port 562FLR-T Adapter</td>
<td>80009655</td>
<td>1.2836.0</td>
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<td>HPE Ethernet 10Gb 2-port 562FLR-T Adapter</td>
<td>8000137D</td>
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<td>1.2836.0</td>
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<tr>
<td>HPE Ethernet 10Gb 2-port 562T Adapter</td>
<td>8000137C</td>
<td>1.2836.0</td>
<td>10.54.4</td>
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</tbody>
</table>

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.

**Enhancements**

This product now supports VMware ESXi 7.0 u3

**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

**HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions**

Version: 5.2.5.0 (Recommended)
Filename: cp047026.compsig; cp047026.exe

**Important Note!**

This software package contains the following firmware versions for the below listed supported network adapters:

<table>
<thead>
<tr>
<th>NIC</th>
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<tr>
<td>HPE Ethernet 1Gb 2-port 361T Adapter</td>
<td>80001147</td>
<td>1.2836.0</td>
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<tr>
<td>HPE Ethernet 1Gb 2-port 363i Adapter</td>
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<td>HPE Ethernet 1Gb 4-port 366i Communication Board</td>
<td>80000EBF</td>
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<td>HPE Ethernet 1Gb 4-port 366i Adapter</td>
<td>8000105E</td>
<td>1.2836.0</td>
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<tr>
<td>HPE Ethernet 1Gb 4-port 366FLR Adapter</td>
<td>80001148</td>
<td>1.2836.0</td>
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<td>HPE Ethernet 1Gb 4-port 366T Adapter</td>
<td>80001146</td>
<td>1.2836.0</td>
<td>N/A</td>
</tr>
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</table>
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 no longer supports Windows Server 2012 R2.

**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 QLogic NX2 Online Firmware Upgrade Utility for Linux x86_64
Version: 2.29.2 (Recommended)
Filename: firmware-nic-qlogic-nx2-2.29.2-1.1.x86_64.compsig; firmware-nic-qlogic-nx2-2.29.2-1.1.x86_64.rpm

**Important Note!**

HPE recommends HPE QLogic NX2 10/20GbE Multifunction Drivers for Linux, versions 7.14.80 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 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/.

**Enhancements**

This product now supports Red Hat Enterprise Linux 8 update 4 and SUSE Linux Enterprise Server 15 Service Pack 3

**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 VMware
Version: 1.29.3 (Recommended)
Filename: CP046935.compsig; CP046935.zip

**Important Note!**

HPE recommends HPE QLogic NX2 10/20GbE Multifunction Drivers for VMware, versions 2021.09.04 or later, for use with this firmware.

This software package contains combo image v7.18.82 with the following firmware versions:
### Prerequisites

This product requires the appropriate driver for your device and operating system be installed before firmware is updated.

### Enhancements

- This product enhances the mechanism that memory usage when more than one adapters
- This product now supports VMware ESXi 7.0 u3

### 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 Windows Server x64 Editions**

**Version:** 5.2.5.0 *(Recommended)*

**Filename:** cp046936.compsig; cp046936.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 7.13.206.0 or later

This software package contains combo image v7.18.82 with the following firmware versions:
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<th></th>
<th></th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>HPE Ethernet 10Gb 2-port 530SFP+ Adapter</td>
<td>7.16.03</td>
<td>7.14.13</td>
<td>8.9.0</td>
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<td>HPE Ethernet 10Gb 2-port 530T Adapter</td>
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<td>HPE FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter</td>
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<td>HPE FlexFabric 10Gb 4-port 536FLR-T Adapter</td>
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<td>HPE StoreFabric CN1100R Dual Port Converged Network Adapter</td>
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</tbody>
</table>

The users will only see the combo image versions in the interactive mode firmware update or while using HPESUM/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.

**Enhancements**

This product now supports Microsoft Windows Server 2022.

**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

Online Firmware Upgrade Utility (ESXi 6.5) for HPE Mellanox Ethernet only adapters
Version: 1.0.10 (Recommended)
Filename: CP046583.compsig; CP046583.zip

**Important Note!**

The Firmware Upgrade Utility has been split into 2 packages for Mellanox Ethernet Only NIC adapters, 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.

**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**
Fixes included in firmware 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.

The following issues have been fixed in version 14.31.1200:

- TX PRBS was not changed even after reconfiguring it, all PRBS mode were enabled in test mode.
- A fatal error occurred and eventually resulted in the HCA to get into an unresponsive state when a packet was larger than a strided receive WQE that was being scattered.
- The resource number size (a 64 bit number) was overwritten with a 32 bit number and erased the high bits when de-allocating the resource number.

Additional Fixes included in version 14.31.1200:

- Fixed the rate select mechanism in QSFP modules.
- Fixed classification issues for "Passive" cables to be more robust.
- Initialized the rate table in the static configuration so it will be configured at the link-not-up scenarios.

The following issues have been fixed in version 16.31.1014:

- TX PRBS was not changed even after reconfiguring it, all PRBS mode were enabled in test mode.
- An assert that was caused when trying to open 1024 functions on the device and the maximum number of functions was 1023.
- Occasional performance issues related to RC QPs using E2E-credits (not connected to SRQ and doing send/receive traffic) when the ROCE_ACCL tx_window was enabled.
- A fatal error occurred and eventually resulted in the HCA to get into an unresponsive state when a packet was larger than a strided receive WQE that was being scattered.
- A rare issue that caused RX pipe to hang.
- The resource number size (a 64 bit number) was overwritten with a 32 bit number and erased the high bits when de-allocating the resource number.
- CRT_DCR with index larger than 1 << 21 occasionally collided with the CRT_SW_RESERVED address.
- An issue that caused the TX queue to get into an unresponsive state when the VF rate limiter was set.

Additional Fixes included in version 16.31.1014:

- Disabled the CNP counter "rp_cnp_ignored " (triggered by OOS (out-of-sequence)) when all ports are IB.
- Fixed the TMP421 sensor temperature reporting.
- Fixed the rate select mechanism in QSFP modules.
- Fixed classification issues for "Passive" cables to be more robust.
- Initialized the rate table in the static configuration so it will be configured at the link-not-up scenarios.

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 14.31.1200:

- 817749-B21 (HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter)
Firmware for the following devices are updated to 14.31.1200:
817753-B21 (HPE Ethernet 25Gb 2-port 640SFP28 Adapter)

Firmware for the following device is updated to 16.31.1014:
874253-B21 (HPE Ethernet 100Gb 1-port 842QSFP28 Adapter)

New features and changes in version 14.31.1200:
- NVconfig per Port for a Specific Finisar Module: Added a new NVconfig per Port for a specific Finisar module. This new NVconfig sets the port to work in AN mode and sets the module to No DME. This change does not affect the speed logic, only the FEC logic (FEC override).
  Note: If the port does not go up, switch to Force mode.

New features and changes in version 16.31.1014:
- NIC scheduling feature support has been disabled for non-privileged functions.
- Implemented a new NC-SI command get_debug_info to get mstdump via the NC-SI protocol to debug a device if the PCI link fails for any given reason.
- Added support for Enabling/Disabling NIC and RDMA (port/partition) via the UEFI HII system settings.
  Note: Values set in this option only take effect when is Ethernet mode.
- Increased the maximum number of MSIX per VF to 127.
- Asymmetrical MSIX Configuration: This feature allows the device to be configured with a different number of MSIX vectors per physical PCI functions.
  To use this feature, please follow these steps:
  - Clear NUM_PF_MSIX_VALID to disable global symmetrical MSIX configuration.
  - Set PF_NUM_PF_MSIX_VALID to enable asymmetrical per Physical Function MSIX configuration.
  - Configure PF_NUM_PF_MSIX per physical PCI function.
- Support for RDMA partitioning and RDMA counters in IB mode.
- A new bit ("data_in_order") was added to query the QP and allow a process/library to detect when the AR is enabled.
- A new flex parser to support GENEVE hardware offload and ICMP.
- When the non-page-supplier-FLR funcion is initiated, the firmware triggers a page event to the page supplier to indicate that all pages should be returned for the FLR function. Pages are returned by the driver to the kernel without issuing the MANAGE_PAGES commands to the firmware.
- Enabled UID 0 to create resources with UMEM (User Memory).
- Receiving and sending native IB packets from/to the software (including all headers) via raw IBL2 QPs.
- RX RDMA NIC flow table on an IB port. Now the software can steer native IB packets to raw IB receive queues according to the DLID and the DQPN.

Supported Devices and Features

<table>
<thead>
<tr>
<th>HPE Part Number</th>
<th>Mellanox Ethernet Only Adapters</th>
<th>PSID</th>
</tr>
</thead>
<tbody>
<tr>
<td>779793-B21</td>
<td>HPE Ethernet 10Gb 2-port 546SFP+ Adapter</td>
<td>HP_1200111023</td>
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<tr>
<td>779799-B21</td>
<td>HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter</td>
<td>HP_2240110004</td>
</tr>
<tr>
<td>817749-B21</td>
<td>HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter</td>
<td>HP_2690110034</td>
</tr>
<tr>
<td>817753-B21</td>
<td>HPE Ethernet 25Gb 2-port 640SFP28 Adapter</td>
<td>HP_2420110034</td>
</tr>
<tr>
<td>874253-B21</td>
<td>HPE Ethernet 100Gb 1-port 842QSFP28 Adapter</td>
<td>HPE0000000014</td>
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</tbody>
</table>

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`). Mixburn/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 `0xffff`).
- 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. **Workaround:** Do not enable DMFS 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.
- 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/-v 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.

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:

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<tr>
<th>HPE Part Number</th>
<th>Device Name</th>
<th>PSID</th>
</tr>
</thead>
<tbody>
<tr>
<td>764282-B21</td>
<td>HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter</td>
<td>HPE_1350110023</td>
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<td>764283-B21</td>
<td>HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter</td>
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<td>HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter</td>
<td>HPE_1390110023</td>
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</tbody>
</table>

Online Firmware Upgrade Utility (ESXi 6.7) for HPE Mellanox Ethernet only adapters
Version: 1.0.6 (Recommended)
Filename: CP046584.compsig; CP046584.zip

Important Note!
The Firmware Upgrade Utility has been split into 2 packages for Mellanox Ethernet Only NIC adapters, 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.

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

Fixes included in firmware 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.

The following issues have been fixed in version 14.31.1200:
- TX PRBS was not changed even after reconfiguring it, all PRBS mode were enabled in test mode.
- A fatal error occurred and eventually resulted in the HCA to get into an unresponsive state when a packet was larger than a strided receive WQE that was being scattered.
- The resource number size (a 64 bit number) was overwritten with a 32 bit number and erased the high bits when de-allocating the resource number.

Additional Fixes included in version 14.31.1200:
- Fixed the rate select mechanism in QSFP modules.
- Fixed classification issues for "Passive" cables to be more robust.
initialized the rate table in the static configuration so it will be configured at the link-not-up scenarios.

the following issues have been fixed in version 16.31.1014:

- tx prbs was not changed even after reconfiguring it, all prbs mode were enabled in test mode.
- an assert that was caused when trying to open 1024 functions on the device and the maximum number of functions was 1023.
- occasional performance issues related to rc qps using e2e-credits (not connected to srq and doing send/receive traffic) when the roce_accl tx_window was enabled.
- a fatal error occurred and eventually resulted in the hca to get into an unresponsive state when a packet was larger than a strided receive wqe that was being scattered.
- a rare issue that caused rx pipe to hang.
- the resource number size (a 64 bit number) was overwritten with a 32 bit number and erased the high bits when de-allocating the resource number.
- crt_dcr with index larger than 1 << 21 occasionally collided with the crt_sw_reserved address.
- an issue that caused the tx queue to get into an unresponsive state when the vf rate limiter was set.

additional fixes included in version 16.31.1014:

- disabled the cnp counter "rp_cnp_ignored" (triggered by oos (out-of-sequence)) when all ports are ib.
- fixed the tmp421 sensor temperature reporting.
- fixed the rate select mechanism in qsfp modules.
- fixed classification issues for "passive" cables to be more robust.
- initialized the rate table in the static configuration so it will be configured at the link-not-up scenarios.

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 14.31.1200:

817749-b21 (hpe ethernet 25gb 2-port 640flr-sfp28 adapter)

firmware for the following devices are updated to 14.31.1200:

817753-b21 (hpe ethernet 25gb 2-port 640sfp28 adapter)

firmware for the following device is updated to 16.31.1014:

874253-b21 (hpe ethernet 100gb 1-port 842qsfp28 adapter)

new features and changes in version 14.31.1200:

- nvconfig per port for a specific finisar module: added a new nvconfig per port for a specific finisar module. this new nvconfig sets the port to work in an mode and sets the module to no dme. this change does not affect the speed logic, only the fec logic (fec override).
  note: if the port does not go up, switch to force mode.

new features and changes in version 16.31.1014:

- nic scheduling feature support has been disabled for non-privileged functions.
- implemented a new nc-si command get_debug_info to get mstdump via the nc-si protocol to debug a device if the pci link fails for any given reason.
- Added support for Enabling/Disabling NIC and RDMA (port/partition) via the UEFI HII system settings.
  **Note:** Values set in this option only take effect when is Ethernet mode.
- Increased the maximum number of MSIX per VF to 127.
- Asymmetrical MSIX Configuration: This feature allows the device to be configured with a different number of MSIX vectors per physical PCI functions.
  To use this feature, please follow these steps:
  - Clear NUM_PF_MSIX_VALID to disable global symmetrical MSIX configuration.
  - Set PF_NUM_PF_MSIX_VALID to enable asymmetrical per Physical Function MSIX configuration.
  - Configure PF_NUM_PF_MSIX per physical PCI function.
- Support for RDMA partitioning and RDMA counters in IB mode.
- A new bit ("data_in_order") was added to query the QP and allow a process/library to detect when the AR is enabled.
- A new flex parser to support GENEVE hardware offload and ICMP.
- When the non-page-supplier-FLR funcion is initiated, the firmware triggers a page event to the page supplier to indicate that all pages should be returned for the FLR function. Pages are returned by the driver to the kernel without issuing the MANAGEMENT_PAGES commands to the firmware.
- Enabled UID 0 to create resources with UMEM (User Memory).
- Receiving and sending native IB packets from/to the software (including all headers) via raw IBL2 QPs.
- RX RDMA NIC flow table on an IB port. Now the software can steer native IB packets to raw IB receive queues according to the DLID and the DQPN.

**Supported Devices and Features**

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<th>HPE Part Number</th>
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<th>PSID</th>
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<td>779793-B21</td>
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<td>HP_1200111023</td>
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<td>779799-B21</td>
<td>HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter</td>
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<td>817749-B21</td>
<td>HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter</td>
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</tr>
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<td>817753-B21</td>
<td>HPE Ethernet 25Gb 2-port 640SFP28 Adapter</td>
<td>HP_2420110034</td>
</tr>
<tr>
<td>874253-B21</td>
<td>HPE Ethernet 100Gb 1-port 842QSFP28 Adapter</td>
<td>HPE00000000014</td>
</tr>
</tbody>
</table>

Online Firmware Upgrade Utility (ESXi 6.7) for HPE Mellanox VPI (Ethernet and Infiniband mode) devices on VMware ESXi 6.7
Version: 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 0xffff).
- 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.
o 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.

o In advanced steering mode, side band management connectivity may be lost when having more than 8 QP per mcg.

o 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.

o 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'

o Cable Info MAD reports a wrong cable info when using the MC2210411-SR4 module.

o Gen2 failure at temperature sweep up to 10C/min (for MT27518A1-FDIR-BV only).

o PCIe Gen2 link unstable at temperature sweep of 10C/min for MT27518A1-FDIR-BV.

o Bloom filter is currently not supported.

o 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.

o DMFS should not be enabled when working with InfiniBand on MLNX_OFED-2.0.3.

o 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.

o Virtual Product Data (VPD) read-only fields are writable.

Workaround: Do not write to read-only fields if you wish to preserve them.

o When working in Virtual Path Identifier (VPI) mode with port1 FDR and port2 40G, error counters misbehave and increase rapidly.

o Setting the device to 128Byte CQ/EQ stride will cause misbehavior of sideband management resulting in communication loss.

o CQ and EQ cannot be configured to different stride sizes.

o 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.

o Adapter card MCX349A-XCCN may experience longer linkup times of a few seconds with specific switches.

o 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).

o Sniffer QP cannot be removed from the regular rule after adding the QP with insertion scheme equals to “push to that rule”.

o 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.

o 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.

o 56GbE link is not raised when using 100GbE optic cables.

o 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.

o When running ibdump, loopback traffic is mirroring into the kernel driver.

o MAC address that are set from the OS using ifconfig are not reflected in the OCBB buffer.

o The adapter card cannot raise a 10G link vs. a 40GE capable switch port in C7000 enclosure.

o It can raise a 1G Link and only if the switch port allows it.

o MTUSB communication via I2C header on primary I2C bus is supported only in live-fish mode.

---

**Fixes**

Fixes in version 2.42.5000:

o PortRcvPkts counter was prevented from being cleared after resetting it.

o 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.
o 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.

o In flow_steering, BMC could not receive a ping over IPV6 after running bmc_reboot.

o 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.

o The master SMLID and the LID was either 0 or 0xFFFF when the port was neither active nor armed.

o ibdump could not capture all MADs packets.

o link did not go up after reboot.

o Fixed a rare issue that cause the PCIe configuration cycle that arrived during the time of sw_reset to generate 2 completions.

o 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:

o 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:**

o 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.

o Improved the debug ability for command timeout cases.

**New features and changes in firmware version 2.42.5700.**

o 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:**

<table>
<thead>
<tr>
<th>HPE Part Number</th>
<th>Device Name</th>
<th>PSID</th>
</tr>
</thead>
<tbody>
<tr>
<td>764282-B21</td>
<td>HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter</td>
<td>HPE_1350110023</td>
</tr>
<tr>
<td>764283-B21</td>
<td>HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter</td>
<td>HPE_1360110017</td>
</tr>
<tr>
<td>764284-B21</td>
<td>HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter</td>
<td>HPE_1370110017</td>
</tr>
</tbody>
</table>
Online Firmware Upgrade Utility (ESXi 7.0) for HPE Mellanox Ethernet only adapters
Version: 1.0.2 (Recommended)
Filename: CP046592.compsig; CP046592.zip

Important Note!

The Firmware Upgrade Utility has been split into 2 packages for Mellanox Ethernet Only NIC adapters, 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.

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

Fixes included in firmware 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.

The following issues have been fixed in version 14.31.1200:

- TX PRBS was not changed even after reconfiguring it, all PRBS mode were enabled in test mode.
- A fatal error occurred and eventually resulted in the HCA to get into an unresponsive state when a packet was larger than a strided receive WQE that was being scattered.
- The resource number size (a 64 bit number) was overwritten with a 32 bit number and erased the high bits when de-allocating the resource number.

Additional Fixes included in version 14.31.1200:

- Fixed the rate select mechanism in QSFP modules.
- Fixed classification issues for "Passive" cables to be more robust.
- Initialized the rate table in the static configuration so it will be configured at the link-not-up scenarios.

The following issues have been fixed in version 16.31.1014:

- TX PRBS was not changed even after reconfiguring it, all PRBS mode were enabled in test mode.
- An assert that was caused when trying to open 1024 functions on the device and the maximum number of functions was 1023.
- Occasional performance issues related to RC QPs using E2E-credits (not connected to SRQ and doing send/receive traffic) when the ROCE_ACCL tx_window was enabled.
- A fatal error occurred and eventually resulted in the HCA to get into an unresponsive state when a packet was larger than a strided receive WQE that was being scattered.
- A rare issue that caused RX pipe to hang.
- The resource number size (a 64 bit number) was overwritten with a 32 bit number and erased the high bits when de-allocating the resource number.
- CRT_DCR with index larger than 1 << 21 occasionally collided with the CRT_SW_RESERVED address.
- An issue that caused the TX queue to get into an unresponsive state when the VF rate limiter was set.

Additional Fixes included in version 16.31.1014:
- Disabled the CNP counter "rp_cnp_ignored" (triggered by OOS (out-of-sequence)) when all ports are IB.
- Fixed the TMP421 sensor temperature reporting.
- Fixed the rate select mechanism in QSFP modules.
- Fixed classification issues for "Passive" cables to be more robust.
- Initialized the rate table in the static configuration so it will be configured at the link-not-up scenarios.

**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 14.31.1200:**

- 817749-B21 (HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter)

**Firmware for the following devices are updated to 14.31.1200:**

- 817753-B21 (HPE Ethernet 25Gb 2-port 640SFP28 Adapter)

**Firmware for the following device is updated to 16.31.1014:**

- 874253-B21 (HPE Ethernet 100Gb 1-port 842QSFP28 Adapter)

**New features and changes in version 14.31.1200:**

- NVconfig per Port for a Specific Finisar Module: Added a new NVconfig per Port for a specific Finisar module. This new NVconfig sets the port to work in AN mode and sets the module to No DME. This change does not affect the speed logic, only the FEC logic (FEC override).
  
  **Note:** If the port does not go up, switch to Force mode.

**New features and changes in version 16.31.1014:**

- NIC scheduling feature support has been disabled for non-privileged functions.
- Implemented a new NC-SI command get_debug_info to get mstdump via the NC-SI protocol to debug a device if the PCI link fails for any given reason.
- Added support for Enabling/Disabling NIC and RDMA (port/partition) via the UEFI HII system settings.
  
  **Note:** Values set in this option only take effect when is Ethernet mode.
- Increased the maximum number of MSIX per VF to 127.
- Asymmetrical MSIX Configuration: This feature allows the device to be configured with a different number of MSIX vectors per physical PCI functions.
  
  To use this feature, please follow these steps:
  - Clear NUM_PF_MSIX_VALID to disable global symmetrical MSIX configuration.
  - Set PF_NUM_PF_MSIX_VALID to enable asymmetrical per Physical Function MSIX configuration.
  - Configure PF_NUM_PF_MSIX per physical PCI function.
- Support for RDMA partitioning and RDMA counters in IB mode.
- A new bit ("data_in_order") was added to query the QP and allow a process/library to detect when the AR is enabled.
- A new flex parser to support GENEVE hardware offload and ICMP.
- When the non-page-supplier-FLR funcion is initiated, the firmware triggers a page event to the page supplier to indicate that all pages should be returned for the FLR function. Pages are returned by the driver to the kernel without issuing the MANAGE_PAGES commands to the firmware.
- Enabled UID 0 to create resources with UMEM (User Memory).
- Receiving and sending native IB packets from/to the software (including all headers) via raw IBL2 QPs.
RX RDMA NIC flow table on an IB port. Now the software can steer native IB packets to raw IB receive queues according to the DLID and the DQPN.

**Supported Devices and Features**

<table>
<thead>
<tr>
<th>HPE Part Number</th>
<th>Mellanox Ethernet Only Adapters</th>
<th>PSID</th>
</tr>
</thead>
<tbody>
<tr>
<td>779793-B21</td>
<td>HPE Ethernet 10Gb 2-port 546SFP+ Adapter</td>
<td>HP_1200111023</td>
</tr>
<tr>
<td>779799-B21</td>
<td>HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter</td>
<td>HP_2240110004</td>
</tr>
<tr>
<td>817749-B21</td>
<td>HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter</td>
<td>HP_2690110034</td>
</tr>
<tr>
<td>817753-B21</td>
<td>HPE Ethernet 25Gb 2-port 640SFP28 Adapter</td>
<td>HP_2420110034</td>
</tr>
<tr>
<td>874253-B21</td>
<td>HPE Ethernet 100Gb 1-port 842QSF28 Adapter</td>
<td>HPED0000000014</td>
</tr>
</tbody>
</table>

Online Firmware Upgrade Utility (ESXi 7.0) for HPE Mellanox VPI (Ethernet and Infiniband mode) devices on VMware ESXi 7.0

Version: 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). Mixburn/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 0xffff).
- 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 PCI devices 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 mcq. **Workaround:** Please use the MICROGUID value obtained by the microconfig tool.
- 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. **Workaround:** 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

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<td>HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter</td>
<td>HPE_1390110023</td>
</tr>
</tbody>
</table>

Online Firmware Upgrade Utility (Linux x86_64) for HPE Intel OPA adapters
Version: 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

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<th>OPA HFI Adapter Type</th>
<th>SSID</th>
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<tbody>
<tr>
<td>829334-B21</td>
<td>HPE 100Gb 1-Port OP101 QSFP28 x8 OPA Adapter</td>
<td>E7</td>
</tr>
<tr>
<td>829335-B21</td>
<td>HPE 100Gb 1-Port OP101 QSFP28 x16 OPA Adapter</td>
<td>E8</td>
</tr>
<tr>
<td>851226-B21</td>
<td>HPE Apollo 100Gb 1-port Intel Omni-Path Architecture 860z Mezzanine FIO Adapter</td>
<td>21C</td>
</tr>
</tbody>
</table>

Online Firmware Upgrade Utility (Linux x86_64) for HPE Mellanox Ethernet only adapters
Version: 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 adapters, 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-S81, 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.
- Downgrading 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: mixconfig -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/Gre
    - Layer 4 TCP/UDP/Bth/GreV0/GreV1
    - Tunneling VXLAN/Genrve/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)
- 817753-B21 (HPE Ethernet 25Gb 2-port 640SFP28 Adapter)
- 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.
  - 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 i3_i4_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.
  - Hardware steering dump output used for debugging and troubleshooting.

<table>
<thead>
<tr>
<th>Supported Devices and Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HPE Part Number</strong></td>
</tr>
<tr>
<td>779793-B21</td>
</tr>
<tr>
<td>779799-B21</td>
</tr>
<tr>
<td>817749-B21</td>
</tr>
<tr>
<td>817753-B21</td>
</tr>
<tr>
<td>874253-B21</td>
</tr>
</tbody>
</table>
Fixes

The following issues have been fixed in version 12.28.2006:

- 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's 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.

The following issues have been fixed in version 16.31.1014:

- TX PRBS was not changed even after reconfiguring it, all PRBS mode were enabled in test mode.
- An assert that was caused when trying to open 1024 functions on the device and the maximum number of functions was 1023.
- Occasional performance issues related to RC QPs using E2E-credits (not connected to SRQ and doing send/receive traffic) when the ROCE_ACCL tx_window was enabled.
- A fatal error occurred and eventually resulted in the HCA to get into an unresponsive state when a packet was larger than a strided receive WQE that was being scattered.
- A rare issue that caused RX pipe to hang.
- The resource number size (a 64 bit number) was overwritten with a 32 bit number and erased the high bits when de-allocating the resource number.
- CRT_DCR with index larger than 1 << 21 occasionally collided with the CRT_SW_RESERVED address.
- An issue that caused the TX queue to get into an unresponsive state when the VF rate limiter was set.

Additional Fixes included in version 16.31.1014:

- Disabled the CNP counter "rp_cnp_ignored " (triggered by OOS (out-of-sequence)) when all ports are IB.
- Fixed the TMP421 sensor temperature reporting.
- Fixed the rate select mechanism in QSFP modules.
- Fixed classification issues for "Passive" cables to be more robust.
- Initialized the rate table in the static configuration so it will be configured at the link-not-up scenarios.

Enhancements

Firmware for the following devices are updated to 12.28.2006:

843400-B21 (HPE Apollo A10 InfiniBand EDR (100Gb) 2-port Adapter)

Firmware for the following devices are updated to 16.31.1014:

872723-B21 (HPE Apollo InfiniBand EDR 100Gb 2-port 841z Mezzanine Adapter)
872725-B21 (HPE InfiniBand EDR 100Gb 1-port 841QSFP28 Adapter)

New features and changes in version 12.28.2006:

- Increased the maximum XRQ number to 512.

New features and changes in version 16.31.1014:
- NIC scheduling feature support has been disabled for non-privileged functions.
- Implemented a new NC-SI command get_debug_info to get mstdump via the NC-SI protocol to debug a device if the PCI link fails for any given reason.
- Support for Enabling/Disabling NIC and RDMA (port/partition) was included via the UEFI HII system settings.
- Increased the maximum number of MSIX per VF to 127.
- Asymmetrical MSIX Configuration: This feature allows the device to be configured with a different number of MSIX vectors per physical PCI functions. To use this feature, please follow these steps:
  - Clear NUM_PF_MSIX_VALID to disable global symmetrical MSIX configuration.
  - Set PF_NUM_PF_MSIX_VALID to enable asymmetrical per Physical Function MSIX configuration.
  - Configure PF_NUM_PF_MSIX per physical PCI function.
  - RDMA partitioning and RDMA counters in IB mode.
  - Added a new bit ("data_in_order") to query the QP and allow a process/library to detect when the AR is enabled.
  - A new flex parser to support GENEVE hardware offload and ICMP.
  - When the non-page-supplier-FLR function is initiated, the firmware triggers a page event to the page supplier to indicate that all pages should be returned for the FLR function.
  - Enabled UID 0 to create resources with UMEM (User Memory).
  - Receiving and sending native IB packets from/to the software (including all headers) via raw IBL2 QPs.
  - RX RDMA NIC flow table on an IB port. Now the software can steer native IB packets to raw IB receive queues according to the DLID and the DQPN.

**Supported Devices and Features**

**Supported Devices:**

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<tr>
<th>HPE Part Number</th>
<th>Device Name</th>
<th>PSID</th>
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<tbody>
<tr>
<td>843400-B21</td>
<td>HPE Apollo A10 InfiniBand EDR (100Gb) 2-port Adapter</td>
<td>HPE2920111032</td>
</tr>
<tr>
<td>872723-B21</td>
<td>HPE Apollo InfiniBand EDR 100Gb 2-port 841z Mezzanine Adapter</td>
<td>HPE0000000017</td>
</tr>
<tr>
<td>872725-B21</td>
<td>HPE InfiniBand EDR 100Gb 1-port 841QSFP28 Adapter</td>
<td>HPE0000000008</td>
</tr>
</tbody>
</table>

Online Firmware Upgrade Utility (Linux x86_64) for HPE Mellanox VPI (Ethernet and Infiniband mode) devices on Linux x86_64 platform

Version: 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). Mixburn/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 0xffff).
- 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 SR-IOV 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**

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<thead>
<tr>
<th>HPE Part Number</th>
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<th>PSID</th>
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<tbody>
<tr>
<td>764282-B21</td>
<td>HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter</td>
<td>HPE_1350110023</td>
</tr>
<tr>
<td>764283-B21</td>
<td>HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter</td>
<td>HPE_1360110017</td>
</tr>
<tr>
<td>764284-B21</td>
<td>HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter</td>
<td>HPE_1370110017</td>
</tr>
</tbody>
</table>
Online Firmware Upgrade Utility (Windows x64) for HPE Mellanox Ethernet only adapters
Version: 1.0.0.15 (Recommended)
Filename: cp046585.compsig; cp046585.exe

**Important Note!**

The Firmware Upgrade Utility has been split into 2 packages for Mellanox Ethernet Only NIC adapters, 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.

**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**

**Fixes included in firmware 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.

**The following issues have been fixed in version 14.31.1200:**

- TX PRBS was not changed even after reconfiguring it, all PRBS mode were enabled in test mode.
- A fatal error occurred and eventually resulted in the HCA to get into an unresponsive state when a packet was larger than a strided receive WQE that was being scattered.
- The resource number size (a 64 bit number) was overwritten with a 32 bit number and erased the high bits when de-allocating the resource number.

**Additional Fixes included in version 14.31.1200:**

- Fixed the rate select mechanism in QSFP modules.
- Fixed classification issues for "Passive" cables to be more robust.
- Initialized the rate table in the static configuration so it will be configured at the link-not-up scenarios.

**The following issues have been fixed in version 16.31.1014:**

- TX PRBS was not changed even after reconfiguring it, all PRBS mode were enabled in test mode.
- An assert that was caused when trying to open 1024 functions on the device and the maximum number of functions was 1023.
- Occasional performance issues related to RC QPs using E2E-credits (not connected to SRQ and doing send/receive traffic) when the ROCE_ACCL tx_window was enabled.
- A fatal error occurred and eventually resulted in the HCA to get into an unresponsive state when a packet was larger than a strided receive WQE that was being scattered.
- A rare issue that caused RX pipe to hang.
- The resource number size (a 64 bit number) was overwritten with a 32 bit number and erased the high bits when de-allocating the resource number.
- CRT_DCR with index larger than 1 << 21 occasionally collided with the CRT_SW_RESERVED address.
- An issue that caused the TX queue to get into an unresponsive state when the VF rate limiter was set.

**Additional Fixes included in version 16.31.1014:**
- Disabled the CNP counter "rp_cnp_ignored" (triggered by OOS (out-of-sequence)) when all ports are IB.
- Fixed the TMP421 sensor temperature reporting.
- Fixed the rate select mechanism in QSFP modules.
- Fixed classification issues for "Passive" cables to be more robust.
- Initialized the rate table in the static configuration so it will be configured at the link-not-up scenarios.

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 14.31.1200:
- 817749-B21 (HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter)

Firmware for the following devices are updated to 14.31.1200:
- 817753-B21 (HPE Ethernet 25Gb 2-port 640SFP28 Adapter)

Firmware for the following device is updated to 16.31.1014:
- 874253-B21 (HPE Ethernet 100Gb 1-port 842QSFP28 Adapter)

New features and changes in version 14.31.1200:
- NVconfig per Port for a Specific Finisar Module: Added a new NVconfig per Port for a specific Finisar module. This new NVconfig sets the port to work in AN mode and sets the module to No DME. This change does not affect the speed logic, only the FEC logic (FEC override).
  Note: If the port does not go up, switch to Force mode.

New features and changes in version 16.31.1014:
- NIC scheduling feature support has been disabled for non-privileged functions.
- Implemented a new NC-SI command get_debug_info to get mstdump via the NC-SI protocol to debug a device if the PCI link fails for any given reason.
- Added support for Enabling/Disabling NIC and RDMA (port/partition) via the UEFI HII system settings.
  Note: Values set in this option only take effect when is Ethernet mode.
- Increased the maximum number of MSIX per VF to 127.
- Asymmetrical MSIX Configuration: This feature allows the device to be configured with a different number of MSIX vectors per physical PCI functions.
  To use this feature, please follow these steps:
  - Clear NUM_PF_MSIX_VALID to disable global symmetrical MSIX configuration.
  - Set PF_NUM_PF_MSIX_VALID to enable asymmetrical per Physical Function MSIX configuration.
  - Configure PF_NUM_PF_MSIX per physical PCI function.
- Support for RDMA partitioning and RDMA counters in IB mode.
- A new bit ("data_in_order") was added to query the QP and allow a process/library to detect when the AR is enabled.
- A new flex parser to support GENEVE hardware offload and ICMP.
- When the non-page-supplier-FLR fonction is initiated, the firmware triggers a page event to the page supplier to indicate that all pages should be returned for the FLR function.
  Pages are returned by the driver to the kernel without issuing the MANAGE_PAGES commands to the firmware.
- Enabled UID 0 to create resources with UMEM (User Memory).
- Receiving and sending native IB packets from/to the software (including all headers) via raw IBL2 QPs.
RX RDMA NIC flow table on an IB port. Now the software can steer native IB packets to raw IB receive queues according to the DLID and the DQPN.

Supported Devices and Features

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<td>HPE Ethernet 10Gb 2-port 546SFP+ Adapter</td>
<td>HP_1200111023</td>
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<tr>
<td>779799-B21</td>
<td>HPE Ethernet 10Gb 2-port 546FLR-SFP+ Adapter</td>
<td>HP_2240110004</td>
</tr>
<tr>
<td>817749-B21</td>
<td>HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter</td>
<td>HP_2690110034</td>
</tr>
<tr>
<td>817753-B21</td>
<td>HPE Ethernet 25Gb 2-port 640SFP28 Adapter</td>
<td>HP_2420110034</td>
</tr>
<tr>
<td>874253-B21</td>
<td>HPE Ethernet 100Gb 1-port 842QSFP28 Adapter</td>
<td>HPED0000000014</td>
</tr>
</tbody>
</table>

Online Firmware Upgrade Utility (Windows x64) for HPE Mellanox IB only ConnectX4 and ConnectX5 devices on Windows x86_64 platform
Version: 1.0.0.8 *(Recommended)*
Filename: cp047567.compsig; cp047567.exe

**Fixes**

The following issues have been fixed in version 12.28.2006:

- 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.

The following issues have been fixed in version 16.31.1014:

- TX PRBS was not changed even after reconfiguring it, all PRBS mode were enabled in test mode.
- An assert that was caused when trying to open 1024 functions on the device and the maximum number of functions was 1023.
- Occasional performance issues related to RC QPs using E2E-credits (not connected to SRQ and doing send/receive traffic) when the ROCE_ACCL tx_window was enabled.
- A fatal error occurred and eventually resulted in the HCA to get into an unresponsive state when a packet was larger than a strided receive WQE that was being scattered.
- A rare issue that caused RX pipe to hang.
- The resource number size (a 64 bit number) was overwritten with a 32 bit number and erased the high bits when de-allocating the resource number.
- CRT_DCR with index larger than 1 << 21 occasionally collided with the CRT_SW_RESERVED address.
- An issue that caused the TX queue to get into an unresponsive state when the VF rate limiter was set.

Additional Fixes included in version 16.31.1014:

- Disabled the CNP counter "rp_cnp_ignored " (triggered by OOS (out-of-sequence)) when all ports are IB.
- Fixed the TMP421 sensor temperature reporting.
- Fixed the rate select mechanism in QSFP modules.
- Fixed classification issues for "Passive" cables to be more robust.
- Initialized the rate table in the static configuration so it will be configured at the link-not-up scenarios.

**Enhancements**

Firmware for the following devices are updated to 12.28.2006:
843400-B21 (HPE Apollo A10 InfiniBand EDR (100Gb) 2-port Adapter)

**Firmware for the following devices are updated to 16.31.1014:**

- 872723-B21 (HPE Apollo InfiniBand EDR 100Gb 2-port 841z Mezzanine Adapter)
- 872725-B21 (HPE InfiniBand EDR 100Gb 1-port 841QSFP28 Adapter)

**New features and changes in version 12.28.2006:**
- Increased the maximum XRQ number to 512.

**New features and changes in version 16.31.1014:**
- NIC scheduling feature support has been disabled for non-privileged functions.
- Implemented a new NC-SI command get_debug_info to get mdstdump via the NC-SI protocol to debug a device if the PCI link fails for any given reason.
- Support for Enabling/Disabling NIC and RDMA (port/partition) was included via the UEFI HII system settings.
- Increased the maximum number of MSIX per VF to 127.
- Asymmetrical MSIX Configuration: This feature allows the device to be configured with a different number of MSIX vectors per physical PCI functions. To use this feature, please follow these steps:
  - Clear NUM_PF_MSIX_VALID to disable global symmetrical MSIX configuration.
  - Set PF_NUM_PF_MSIX_VALID to enable asymmetrical per Physical Function MSIX configuration.
- RDMA partitioning and RDMA counters in IB mode.
- Added a new bit ("data_in_order") to query the QP and allow a process/library to detect when the AR is enabled.
- A new flex parser to support GENEVE hardware offload and ICMP.
- When the non-page-supplier-FLR funcion is initiated, the firmware triggers a page event to the page supplier to indicate that all pages should be returned for the FLR function.
- Enabled UID 0 to create resources with UMEM (User Memory).
- Receiving and sending native IB packets from/to the software (including all headers) via raw IBL2 QPs.
- RX RDMA NIC flow table on an IB port. Now the software can steer native IB packets to raw IB receive queues according to the DLID and the DQPN.

**Supported Devices and Features**

**Supported Devices:**

<table>
<thead>
<tr>
<th>HPE Part Number</th>
<th>Device Name</th>
<th>PSID</th>
</tr>
</thead>
<tbody>
<tr>
<td>843400-B21</td>
<td>HPE Apollo A10 InfiniBand EDR (100Gb) 2-port Adapter</td>
<td>HPE2920111032</td>
</tr>
<tr>
<td>872723-B21</td>
<td>HPE Apollo InfiniBand EDR 100Gb 2-port 841z Mezzanine Adapter</td>
<td>HPE0000000017</td>
</tr>
<tr>
<td>872725-B21</td>
<td>HPE InfiniBand EDR 100Gb 1-port 841QSFP28 Adapter</td>
<td>HPE0000000008</td>
</tr>
</tbody>
</table>

**Online Firmware Upgrade Utility (Windows x64) for HPE Mellanox VPI (Ethernet and Infiniband mode) devices on Windows x86_64 platform**

Version: 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). Mixburn/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 0xffff).

- 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 MCMX349A-XCCN may experience longer linkup times of a few seconds with specific switches.
- Adapter card MCMX349A-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:**

<table>
<thead>
<tr>
<th>HPE Part Number</th>
<th>Device Name</th>
<th>PSID</th>
</tr>
</thead>
<tbody>
<tr>
<td>764282-B21</td>
<td>HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter</td>
<td>HPE_1350110023</td>
</tr>
<tr>
<td>764283-B21</td>
<td>HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter</td>
<td>HPE_1360110017</td>
</tr>
<tr>
<td>764284-B21</td>
<td>HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter</td>
<td>HPE_1370110017</td>
</tr>
<tr>
<td>764285-B21</td>
<td>HPE InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter</td>
<td>HPE_1380110017</td>
</tr>
<tr>
<td>764286-B21</td>
<td>HPE InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter</td>
<td>HPE_1390110023</td>
</tr>
</tbody>
</table>

**Firmware - PCIe NVMe Storage Disk**

Online NVMe SSD Flash Component for Linux (x64) - MK000400KWDUK, VK000480KWDUE, MK000800KWDUL, VK000960KWDUF, MK001600KWDUN and VK001920KWDUH Drives

Version: HPK4 (F) *(Recommended)*

Filename: rpm/RPMS/x86_64/firmware-hdd-b45e49679c-HPK4-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-b45e49679c-HPK4-6.1.x86_64.rpm

**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 RHEL 8.4 and SLES15SP3.

Online NVMe SSD Flash Component for Linux (x64) - MO0400KEFHN, MO0800KEFHP, MO1600KEFHQ, MO2000KEFHR, MT0800KEXU and MT1600KEXUV Drives

Version: HPK4 (F) *(Recommended)*

Filename: rpm/RPMS/x86_64/firmware-hdd-2a5b65f157-HPK4-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-2a5b65f157-HPK4-6.1.x86_64.rpm

**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 RHEL 8.4 and SLES15SP3.

Online NVMe SSD Flash Component for Linux (x64) - VS000480KWDUP, VS000960KWDUQ, MS000400KWDUR and MS000800KWDUT Drives

Version: HPK4 (F) *(Recommended)*
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 RHEL 8.4 and SLES15SP3.

Online NVMe SSD Flash Component for Linux (x64) - ET000750KWJTF, EO000750KWTXC and EO000375KWJUC Drives
Version: 4ICSHPK4 (C) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-c4355d15c4-4ICSHPK4-3.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-c4355d15c4-4ICSHPK4-3.1.x86_64.rpm

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 RHEL 8.4 and SLES15SP3.

Online NVMe SSD Flash Component for Linux (x64) - KCD6XVUL800G, KCD6XVUL1T60, KCD6XVUL3T20, KCD6XVUL6T40, KCD6XVUL12T8, KCD6XLUL960G, KCD6XLUL1T92, KCD6XLUL3T84, KCD6XLUL7T68 and KCD6XLUL15T3 Drives
Version: GPK3 (B) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-6fc985bd3b-GPK3-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-6fc985bd3b-GPK3-2.1.x86_64.rpm

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 RHEL 8.4 and SLES15SP3.

Online NVMe SSD Flash Component for Linux (x64) - KCM6XVUL800G, KCM6XVUL1T60, KCM6XVUL3T20, KCM6XVUL6T40, KCM6XRUL960G, KCM6XRUL1T92, KCM6XRUL3T84 and KCM6XRUL7T68 Drives
Version: GPK3 (B) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-3815d4b024-GPK3-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-3815d4b024-GPK3-2.1.x86_64.rpm

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 RHEL 8.4 and SLES15SP3.

**Online NVMe SSD Flash Component for Linux (x64) -**
- LO0400KEFIQ, LO0800KEFJR, LO1600KEFJT, LO2000KEFJU, LT0800KEVKA, LT1600KEVB and LT2000KEVC Drives
  - Version: HPK4 (F) **(Recommended)**
  - Filename: `rpm/RPMS/x86_64/firmware-hdd-d64642c780-HPK4-6.1.x86_64.compsig`
  - `rpm/RPMS/x86_64/firmware-hdd-d64642c780-HPK4-6.1.x86_64.rpm`

**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 RHEL 8.4 and SLES15SP3.

**Online NVMe SSD Flash Component for Linux (x64) -**
- MK000800KWFE, MK001600KWFF, MK003200KWFFH, MK006400KWFFK, VK000960KWFL, VK001920KWFFN, VK003840KWFFP and VK007680KWFFQ Drives
  - Version: HPK3 (F) **(Critical)**
  - Filename: `rpm/RPMS/x86_64/firmware-hdd-54addf5312-HPK3-6.1.x86_64.compsig`
  - `rpm/RPMS/x86_64/firmware-hdd-54addf5312-HPK3-6.1.x86_64.rpm`

**Important Note!**

- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**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](https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00111061en_us)

**Enhancements**

- Added support for RHEL 8.4 and SLES15SP3.

**Online NVMe SSD Flash Component for Linux (x64) -**
- MO001600KWVNB, MO003200KWVNC, MO006400KWVND, MT001600KWSTB, MT003200KWSTC and MT006400KWSTD Drives
  - Version: HPK3 (C) **(Recommended)**
  - Filename: `rpm/RPMS/x86_64/firmware-hdd-cea219e4b1-HPK3-3.1.x86_64.compsig`
  - `rpm/RPMS/x86_64/firmware-hdd-cea219e4b1-HPK3-3.1.x86_64.rpm`

**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 RHEL 8.4 and SLES15SP3.

Online NVMe SSD Flash Component for Linux (x64) - MO001600KWZQP and MO003200KWZQQQ Drives
Version: HPK5 (D) (Critical)
Filename: rpm/RPMS/x86_64/firmware-hdd-95b6ae2e85-HPK5-4.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-95b6ae2e85-HPK5-4.1.x86_64.rpm

Important Note!
- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

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 8.4 and SLES15SP3.

Online NVMe SSD Flash Component for Linux (x64) - MT001600KWHAC, MT003200KWHAD and MT006400KWHAE Drives
Version: HPK2 (B) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-8e8ddc5265-HPK2-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-8e8ddc5265-HPK2-2.1.x86_64.rpm

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 RHEL 9.

Online NVMe SSD Flash Component for Linux (x64) - MZPLJ1T6HBJR-000H3, MZPLJ3T2HBJR-000H3 and MZPLJ6T4HALA-000H3 Drives
Version: EPK75H3Q (B) (Critical)
Filename: rpm/RPMS/x86_64/firmware-hdd-6628fce235-EPK75H3Q-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-6628fce235-EPK75H3Q-2.1.x86_64.rpm

Important Note!
- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc.
**Fixes**

- Fixed False UECC issue at idle power mode.
- Old FW download Blocking (EPK70H3Q~EPK74H3Q).
- FW is changed off the option of TX data alignment for each lane.
- FW is changed to clear the interrupt after TLP Complete when PCIe config read operation.
- For more information, refer to HPE Customer Bulletin at the following URL: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00113342en_us

**Enhancements**

- Added support for RHEL 8.4 and SLES15SP3.

**Important Note!**

- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

- Fixed False UECC issue at idle power mode (12.8TB and 15.36TB only).
- Apply PCLK running PHY option, PLL clock disable can be avoided in lane 0 missing case.
- Old FW download Blocking.
- FW is changed off the option of TX data alignment for each lane.
- FW is changed to clear the interrupt after TLP Complete when PCIe config read operation.
- For more information, refer to HPE Customer Bulletin at the following URL: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00113342en_us

**Enhancements**

- Added support for RHEL 8.4 and SLES15SP3.

**Important Note!**

- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Fixes**

- This Firmware release contains various drive interoperability enhancements and code fixes accumulated since the last firmware release, as well as a change to disable MCTP over PCIe VDM function per requested of HPE, and a PHY setting change for improved compatibility with Intel Ice Lake based Gen10 Plus DL360 platform.
For more information, refer to HPE Customer Bulletin at the following URL:
https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00115201en_us

Enhancements

- Added support for RHEL 8.4 and SLES15SP3.

Online NVMe SSD Flash Component for Linux (x64) - VO001000KWJSE, VO002000KWJSF, VO004000KWJSJ, VT004000KWJSU, MO001600KWJSN and MO003200KWJSQ Drives
Version: 4ICDHPK1 (B) (Critical)
Filename: rpm/RPMS/x86_64/firmware-hdd-1656c1b14a-4ICDHPK1-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-1656c1b14a-4ICDHPK1-2.1.x86_64.rpm

Important Note!

- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

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 8.4 and SLES15SP3.

Online NVMe SSD Flash Component for Linux (x64) - VO001920KWVMT, VO003840KWVMU, and VO007680KWVMV Drives
Version: HPK3 (C) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-fe9c474847-HPK3-3.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-fe9c474847-HPK3-3.1.x86_64.rpm

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 RHEL 8.4 and SLES15SP3.

Online NVMe SSD Flash Component for Linux (x64) - VO001920KWZQR and VO003840KWZQT Drives
Version: HPK5 (D) (Critical)
Filename: rpm/RPMS/x86_64/firmware-hdd-2af7385a1e-HPK5-4.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-2af7385a1e-HPK5-4.1.x86_64.rpm

Important Note!

- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..
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 8.4 and SLES15SP3.

Online NVMe SSD Flash Component for Linux (x64) - VO002000KWVVC, VO004000KWVUR, MO001600KWVUU, MO003200KWVUV and MO006400KWVVA Drives
Version: 4ICRHPK3 (C) (Critical)
Filename: rpm/RPMS/x64/firmware-hdd-92d876cfea-4ICRHPK3-3.1.x86_64.compsig; rpm/RPMS/x64/firmware-hdd-92d876cfea-4ICRHPK3-3.1.x86_64.rpm

Important Note!

- 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 4ICRHPK3 that may result in SSD failure starting at 4,700 hours of operation, neither the SSD nor the data can be recovered, after the SSD failure occurs.
- For more information, refer to HPE Customer Bulletin at the following URL: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00111900en_us

Enhancements

- Added support for RHEL 8.4 and SLES15SP3.

Online NVMe SSD Flash Component for Linux (x64) - VO04000KEFJB, VO12000KEFJC and VO2000KEFJD Drives
Version: HPK4 (F) (Recommended)
Filename: rpm/RPMS/x64/firmware-hdd-9a826ccd8a-HPK4-6.1.x86_64.compsig; rpm/RPMS/x64/firmware-hdd-9a826ccd8a-HPK4-6.1.x86_64.rpm

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 RHEL 8.4 and SLES15SP3.

Online NVMe SSD Flash Component for VMware ESXi - MK000400KWDUK, VK000480KWDUE, MK000800KWDUL, VK000960KWDUF, MK001600KWDUN and VK001920KWDUH Drives
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 U3

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 U3

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 U3

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 U3

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 U3
**Fixes**

- Applied enhanced NAND recovery algorithm to prevent read UECC error
- Prepare proper response data for Get Message Type Supported MCTP Command

**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 U3

**Important Note!**

- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

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**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 U3

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**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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Enhancements

- Added support for VMware 7.0 U3

Online NVMe SSD Flash Component for VMware ESXi - ET000750Kwjtf, EO000750Kwtxc and EO000375KwJuc Drives
Version: 4icsHpk4 (B) (Recommended)
Filename: CP048513.compsig; CP048513.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 U3

Online NVMe SSD Flash Component for VMware ESXi - KCD6xVul800G, KCD6xVul1t60, KCD6xVul3t20, KCD6xVul6t40, KCD6xVul12t8, KCD6xLul960G, KCD6xLul1t92, KCD6xLul3t84, KCD6xLul7t68 and KCD6xLul15t3 Drives
Version: GPK3 (B) (Recommended)
Filename: CP049279.compsig; CP049279.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 U3

Online NVMe SSD Flash Component for VMware ESXi - KCM6xVul800G, KCM6xVul1t60, KCM6xVul3t20, KCM6xVul6t40, KCM6xRul960G, KCM6xRul1t92, KCM6xRul3t84 and KCM6xRul7t68 Drives
Version: GPK3 (B) (Recommended)
Filename: CP049284.compsig; CP049284.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 U3

Version: Hpk4 (E) (Recommended)
Filename: CP045718.compsig; CP045718.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 U3

Online NVMe SSD Flash Component for VMware ESXi - MK000800KWWFE, MK001600KWWFF, MK003200KWWFH, MK006400KWWFK, VK000960KWWFL, VK001920KWWFN, VK003840KWWFP and VK007680KWWFQ Drives
Version: HPK3 (C) (Critical)
Filename: CP048467.compsig; CP048467.zip

Important Note!

- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

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

Enhancements

- Added support for VMware 7.0 U3

Online NVMe SSD Flash Component for VMware ESXi - MO001600KWVNB, MO003200KWVNC, MO006400KWVND, MT001600KWSTB, MT003200KWSTC and MT006400KWSTD Drives
Version: HPK3 (B) (Recommended)
Filename: CP048478.compsig; CP048478.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 U3

Online NVMe SSD Flash Component for VMware ESXi - MZPLJ1T6HBJR-000H3, MZPLJ3T2HBJR-000H3 and MZPLJ6T4HALA-000H3 Drives
Version: EPK75H3Q (B) (Critical)
Filename: CP048458.compsig; CP048458.zip

Fixes

- Fixed False UECC issue at idle power mode.
- Old FW download Blocking (EPK70H3Q~EPK74H3Q).
- FW is changed off the option of TX data alignment for each lane.
- FW is changed to clear the interrupt after TLP Complete when PCIe config read operation.
For more information, refer to HPE Customer Bulletin at the following URL:
https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00113342en_us

Enhancements

- Added support for VMware 7.0 U3

Online NVMe SSD Flash Component for VMware ESXi - MZXL5800HBHQ-000H3, MZXL51T6HBJR-000H3, MZXL53T2HBLS-000H3, MZXL56T4HALA-000H3, MZXL512THALAO000H3, MZXL5960HBHQ-000H3, MZXL515THALAO000H3 and MZXL512THALAO000H3 Drive
Version: MPK75HSQ (B) (Critical)
Filename: CP048456.compsig; CP048456.zip

Fixes

- Fixed False UECC issue at idle power mode (12.8TB and 15.36TB only).
- Apply PCLK running PHY option, PLL clock disable can be avoided in lane 0 missing case.
- Old FW download Blocking.
- FW is changed off the option of TX data alignment for each lane.
- FW is changed to clear the interrupt after TLP Complete when PCIe config read operation.

For more information, refer to HPE Customer Bulletin at the following URL:
https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00113342en_us

Enhancements

- Added support for VMware 7.0 U3

Online NVMe SSD Flash Component for VMware ESXi - VO000960KXAVL, VO001920KXAVP, VO003840KXAVQ, VO007680KXAVR, MO000800KXAVN, MO001600KXAVT, MO003200KXAVU and MO006400KXAVV Drives
Version: HPK3 (B) (Critical)
Filename: CP049302.compsig; CP049302.zip

Important Note!

- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

Fixes

- This Firmware release contains various drive interoperability enhancements and code fixes accumulated since the last firmware release, as well as a change to disable MCTP over PCIe VDM function per requested of HPE, and a PHY setting change for improved compatibility with Intel Ice Lake based Gen10 Plus DL360 platform.

For more information, refer to HPE Customer Bulletin at the following URL:
https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00115201en_us

Enhancements

- Added support for VMware 7.0 U3

Online NVMe SSD Flash Component for VMware ESXi - VO001000KWJSE, VO002000KWJSF, VO004000KWJSH, VT004000KWJSU, MO001600KWJSN and MO003200KWJSQ Drives
Version: 4ICDHPK1 (B) (Recommended)
Filename: CP048471.compsig; CP048471.zip
**Important Note!**

- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**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 U3

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### Online NVMe SSD Flash Component for VMware ESXi

- Version: 4ICRHPK3 (B) **(Critical)**
- Filename: CP048511.compsig; CP048511.zip

**Important Note!**

- 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 4ICRHPK3 that may result in SSD failure starting at 4,700 hours of operation, neither the SSD nor the data can be recovered, after the SSD failure occurs.
- For more information, refer to HPE Customer Bulletin at the following URL: [https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00111900en_us](https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00111900en_us)

**Enhancements**

- Added support for VMware 7.0 U3

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### Online NVMe SSD Flash Component for VMware ESXi

- Version: HPK4 (E) **(Recommended)**
- Filename: CP045719.compsig; CP045719.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 U3

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### Online NVMe SSD Flash Component for Windows (x64)

- Filename: CP045719.compsig; CP045719.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 U3
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 Server Windows 2022.

Enhancements

- Added support for Microsoft Server Windows 2022.

Fixes

- Applied enhanced NAND recovery algorithm to prevent read UECC error.
- Prepare proper response data for Get Message Type Supported MCTP Command

Enhancements

- Added support for Microsoft Server Windows 2022.
**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 Server Windows 2022.

Online NVMe SSD Flash Component for Windows (x64) - KCD6XVUL800G, KCD6XVUL1T60, KCD6XVUL3T20, KCD6XVUL6T40, KCD6XVUL12T8, KCD6XLUL960G, KCD6XLUL1T92, KCD6XLUL3T84, KCD6XLUL7T68 and KCD6XLUL15T3 Drives
Version: GPK3 (B) *(Recommended)*
Filename: cp049282.compsig; cp049282.exe; cp049282.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 2022.

Online NVMe SSD Flash Component for Windows (x64) - KCM6XVUL800G, KCM6XVUL1T60, KCM6XVUL3T20, KCM6XVUL6T40, KCM6XRUL960G, KCM6XRUL1T92, KCM6XRUL3T84 and KCM6XRUL7T68 Drives
Version: GPK3 (B) *(Recommended)*
Filename: cp049285.compsig; cp049285.exe; cp049285.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 2022.

Online NVMe SSD Flash Component for Windows (x64) - LO0400KEFJQ, LO0800KEFJR, LO1600KEFJT, LO2000KEFJU, LT0800KEXVA, LT1600KEXVB, and LT2000KEXVC Drives
Version: HPK4 (D) *(Recommended)*
Filename: cp048428.compsig; cp048428.exe; cp048428.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 2022.
Online NVMe SSD Flash Component for Windows (x64) - MK000800KWWFE, MK001600KWWFF, MK003200KWWFH, MK006400KWWFK, VK000960KWWFN, VK001920KWWFN, VK003840KWWFP and VK007680KWWFQ Drives
Version: HPK3 (C) (Critical)
Filename: cp048463.compsig; cp048463.exe; cp048463.md5

Important Note!
- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

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

Enhancements
- Added support for Microsoft Server Windows 2022.

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Online NVMe SSD Flash Component for Windows (x64) - MO001600KWVNB, MO003200KWVNC, MO006400KWVND, MT001600KWSTB, MT003200KWSTC and MT006400KWSTD Drives
Version: HPK3 (B) (Recommended)
Filename: cp048684.compsig; cp048684.exe; cp048684.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 Server Windows 2022.

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Online NVMe SSD Flash Component for Windows (x64) - MO000800KZWQP and MO003200KZQQQ Drives
Version: HPK3 (C) (Critical)
Filename: cp048685.compsig; cp048685.exe; cp048685.md5

Important Note!
- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

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 Microsoft Server Windows 2022.

Online NVMe SSD Flash Component for Windows (x64) - MZPLJ1T6HBJR-000H3, MZPLJ3T2HBJR-000H3 and MZPLJ6T4HALA-000H3 Drives
Version: EPK75H3Q (B) (Critical)
Filename: cp048301.compsig; cp048301.exe; cp048301.md5

Important Note!

- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

Fixes

- Fixed False UECC issue at idle power mode.
- Old FW download Blocking (EPK70H3Q~EPK74H3Q).
- FW is changed off the option of TX data alignment for each lane.
- FW is changed to clear the interrupt after TLP Complete when PCIe config read operation.
- For more information, refer to HPE Customer Bulletin at the following URL: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00113342en_us

Enhancements

- Added support for Microsoft Server Windows 2022.

Online NVMe SSD Flash Component for Windows (x64) - MZXL5800HBHQ-000H3, MZXL51T6HBJR-000H3, MZXL53T2HBL5-000H3, MZXL56T4HALA-000H3, MZXL512THALA-000H3, MZXL5960HBHQ-000H3, MZXL51T9HBJR-000H3, MZXL53T8HBL5-000H3, MZXL57T6HALA-000H3 and MZXL515THALA-0 Drives
Version: MPK75H5Q (B) (Critical)
Filename: cp048464.compsig; cp048464.exe; cp048464.md5

Important Note!

- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

Fixes

- Fixed False UECC issue at idle power mode (12.8TB and 15.36TB only).
- Apply PCLK running PHY option, PLL clock disable can be avoided in lane 0 missing case.
- Old FW download Blocking.
- FW is changed off the option of TX data alignment for each lane.
- FW is changed to clear the interrupt after TLP Complete when PCIe config read operation.
- For more information, refer to HPE Customer Bulletin at the following URL: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00113342en_us

Enhancements

- Added support for Microsoft Server Windows 2022.
Important Note!

- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

Fixes

- This Firmware release contains various drive interoperability enhancements and code fixes accumulated since the last firmware release, as well as a change to disable MCTP over PCIe VDM function per requested of HPE, and a PHY setting change for improved compatibility with Intel Ice Lake based Gen10 Plus DL360 platform.
- For more information, refer to HPE Customer Bulletin at the following URL: https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00115201en_us

Enhancements

- Added support for Microsoft Windows Sever 2022.

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Important Note!

- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

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 Microsoft Server Windows 2022

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Enhancements

- Added support for Microsoft Server Windows 2022
- Added support for Microsoft Server Windows 2022.

**Online NVMe SSD Flash Component for Windows (x64) - VO001920KWZQR and VO003840KWZQT Drives**
Version: HPK5 (C) (**Critical**)  
Filename: cp048687.compsig; cp048687.exe; cp048687.md5

**Important Note!**
- Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**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 Microsoft Server Windows 2022.

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**Online NVMe SSD Flash Component for Windows (x64) - VO002000KWVVC, VO004000KWVUR, MO001600KWVUU, MO003200KWVUV and MO006400KWVVA Drives**
Version: 4ICRHPK3 (B) (**Critical**)  
Filename: cp048693.compsig; cp048693.exe; cp048693.md5

**Important Note!**
- 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 4ICRHPK3 that may result in SSD failure starting at 4,700 hours of operation, neither the SSD nor the data can be recovered, after the SSD failure occurs.
- For more information, refer to HPE Customer Bulletin at the following URL:  
https://support.hpe.com/hpesc/public/docDisplay?docId=emr_na-a00111900en_us

**Enhancements**
- Added support for Microsoft Server Windows 2022.

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**Online NVMe SSD Flash Component for Windows (x64) - VO0400KEFJB, VO1200KEFJC and VO2000KEFJD Drives**
Version: HPK4 (D) (**Recommended**)  
Filename: cp048476.compsig; cp048476.exe; cp048476.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 Server Windows 2022.

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**Firmware - Power Management**

Online ROM Flash for Linux - Advanced Power Capping Microcontroller Firmware for HPE Gen9 Servers

Version: 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 Controller
Version: 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 Servers**

Version: 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

Online ROM Flash for VMware ESXi - Power Management Controller
Version: 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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**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 Servers
Version: 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.
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
**Firmware - SAS Storage Disk**

**Online HDD/SSD Flash Component for Linux (x64) - EG000300JWBHR Drive**

Version: HPD5 (B) *(Recommended)*

Filename: rpm/RPMS/x86_64/firmware-hdd-2e4c61fc63-HPD5-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-2e4c61fc63-HPD5-2.1.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**

- Added support for RHEL 8.4 and SLES15SP3.

**Enhancements**

- Added support for RHEL 8.4 and SLES15SP3.

**Online HDD/SSD Flash Component for Linux (x64) - EG000600JWFVB Drive**

Version: HPD3 (B) *(Recommended)*

Filename: rpm/RPMS/x86_64/firmware-hdd-c5cd837c29-HPD3-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-c5cd837c29-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 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..
would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

**Enhancements**

- Added support for RHEL 8.4 and SLES15SP3.

**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**

- Added support for RHEL 8.4 and SLES15SP3.

**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.

**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..
- 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.

Online HDD/SSD Flash Component for Linux (x64) - EG0600JETKA, EG0900JETKB and EG1200JETKC Drives
Version: HPD8 (B) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-7505dfb5ae-HPD8-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-7505dfb5ae-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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - EK0800JVYPN, EO1600JVYPP, MK0800JVYPP and MO1600JVYPR Drives
Version: HPD7 (D) (Critical)
Filename: rpm/RPMS/x86_64/firmware-hdd-481c8ea9a7-HPD7-4.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-481c8ea9a7-HPD7-4.1.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..

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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - EO000400JWDPK, EO000800JWDKQ, EO001600JWDKR, MO000400JWDKU, MO000800JWDKV, MO001600JWDLA and MO003200JWDLB Drives

Version: HPD2 (F) (Recommended)

Filename: rpm/RPMS/x86_64/firmware-hdd-5dcf26fa42-HPD2-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-5dcf26fa42-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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB002000JWFVN and MB004000JWFVP Drives

Version: HPD4 (B) (Recommended)

Filename: rpm/RPMS/x86_64/firmware-hdd-d7af557f47-HPD4-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-d7af557f47-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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB004000JWFVK and MB006000JWFVL Drives

Version: HPD4 (B) (Recommended)

Filename: rpm/RPMS/x86_64/firmware-hdd-f6d00bd17e-HPD4-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-f6d00bd17e-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 8.4 and SLES15SP3.

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Online HDD/SSD Flash Component for Linux (x64) - MB6000JVYZD and MB4000JVYZC Drives

Version: HPD4 (F) *(Recommended)*

Filename: rpm/RPMS/x86_64/firmware-hdd-e800e8d3b9-HPD4-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-e800e8d3b9-HPD4-6.1.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 8.4 and SLES15SP3.

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Online HDD/SSD Flash Component for Linux (x64) - MM1000JEFRB and MM2000JEFRC Drives

Version: HPD9 (B) *(Recommended)*

Filename: rpm/RPMS/x86_64/firmware-hdd-b04257b77b-HPD9-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-b04257b77b-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..

**Enhancements**

- Added support for RHEL 8.4 and SLES15SP3.
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.
would require an offline update using the Service Pack for ProLiant and Smart Update Manager.
  o Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

  o Added support for RHEL 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - EG001800JWFVC Drive
Version: HPD4 (B) *(Recommended)*
Filename: rpm/RPMS/x86_64/firmware-hdd-693b9a2853-HPD4-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-693b9a2853-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**

  o Added support for RHEL 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - EG001800JWJNL and EG002400JWJNN Drives
Version: HPD4 (B) *(Recommended)*
Filename: rpm/RPMS/x86_64/firmware-hdd-852266afdf-HPD4-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-852266afdf-HPD4-2.1.x86_64.rpm

**Important Note!**

  o 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.
  o Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.
  o Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

  o Added support for RHEL 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - EG0300FCSPH, EG0450FCSPK, EG0600FCSPPL and EG0900FCSPN Drives
Version: HPD2 (H) *(Recommended)*
Filename: rpm/RPMS/x86_64/firmware-hdd-7c1a1734f9-HPD2-8.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-7c1a1734f9-HPD2-8.1.x86_64.rpm

**Important Note!**

  o 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.
  o Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.
  o Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

  o Added support for RHEL 8.4 and SLES15SP3.
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.

Online HDD/SSD Flash Component for Linux (x64) - EG0300JEHLV, EG0600JEHMA, EG0900JEHMB and EG1200JEHMC Drives
Version: HPD5 (I) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-31f91b8622-HPD5-9.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-31f91b8622-HPD5-9.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - EG0300JFCKA, EG0600JEMCV, EG0900JFCKB and EG1200JEMDA Drives
Version: HPD6 (I) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-ac3fda26eb-HPD6-9.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-ac3fda26eb-HPD6-9.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - EG18001EHMD Drive
Version: HPD6 (I) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-8a2c06af48-HPD6-9.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-8a2c06af48-HPD6-9.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - EG18001EMDB Drive
Version: HPD5 (H) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-0a38b25661-HPD5-8.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-0a38b25661-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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - EG18001FHMH Drive
Version: HPD8 (B) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-7fc5497116-HPD8-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-7fc5497116-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 8.4 and SLES15SP3.

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**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) - EH000300JWCPK, EH000600JWCPL and EH000900JWCPN**

**Version:** HPD7 (B) **(Recommended)**

**Filename:** rpm/RPMS/x86_64/firmware-hdd-3d97759111-HPD7-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-3d97759111-HPD7-2.1.x86_64.rpm

**Enhancements**

- Added support for RHEL 8.4 and SLES15SP3.

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**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) - EH000900JWHPK and EH000600JWHPH**

**Version:** HPD7 (B) **(Recommended)**

**Filename:** rpm/RPMS/x86_64/firmware-hdd-c7df7ceedb-HPD7-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-c7df7ceedb-HPD7-2.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - EH000900JWHPP, EH000600JWHPN and EH000300JWHPL Drives
Version: HPD7 (B) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-8d68452816-HPD7-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-8d68452816-HPD7-2.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - EH0300JDXBA, EH0450JDXBB and EH0600JDXBC Drives
Version: HPD5 (H) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-1cbab97ff0-HPD5-8.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-1cbab97ff0-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
o Added support for RHEL 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - EH0300JDYTH, EH0450JDYTK and EH0600JDTYL Drives
Version: HPD6 (I) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-b9340d29be-HPD6-9.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-b9340d29be-HPD6-9.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - EH0300JEDHC, EH0450JEDHD and EH0600JEDHE Drives
Version: HPD4 (I) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-8c4a212ff9-HPD4-9.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-8c4a212ff9-HPD4-9.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - EH0600JDTYN Drive
Version: HPD7 (H) (Critical)
Filename: rpm/RPMS/x86_64/firmware-hdd-f3faa195ff-HPD7-8.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-f3faa195ff-HPD7-8.1.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**

- 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 8.4 and SLES15SP3.

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Online HDD/SSD Flash Component for Linux (x64) - E0000400PXDBQ, E0000800PXDCK, E0001600PXDCH, M0000800PXDBP, M0001600PXDCM, M0002400PXDCD, M0006400PXDCF, V0000960PXDBN, V0001920PXDBR, V0003840PXDBT, V0007680PXDBU and V0015300PXDBV Drives

Version: HPD1 (B) **(Recommended)**

Filename: rpm/RPMS/x86_64/firmware-hdd-42aff4675b-HPD1-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-42aff4675b-HPD1-2.1.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 8.4 and SLES15SP3.

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Online HDD/SSD Flash Component for Linux (x64) - MB004000JWKGU Drive

Version: HPD2 (B) **(Recommended)**

Filename: rpm/RPMS/x86_64/firmware-hdd-2c27a7a9a4-HPD2-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-2c27a7a9a4-HPD2-2.1.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**
Online HDD/SSD Flash Component for Linux (x64) - MB004000JWWQB, MB002000JWWQA and MB001000JWWPV Drives
Version: HPD6 (B) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-adb3ab8147-HPD6-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-adb3ab8147-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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB006000JWKGN Drive
Version: HPD2 (B) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-a886842a99-HPD2-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-a886842a99-HPD2-2.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB008000JWJRQ and MB006000JWJRP Drives
Version: 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](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 Drive**

*Version: HPD2 (B) (Recommended)*

*Filename:* rpm/RPMS/x86_64/firmware-hdd-8b26d1ef02-HPD2-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-8b26d1ef02-HPD2-2.1.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 8.4 and SLES15SP3.

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**Online HDD/SSD Flash Component for Linux (x64) - MB008000JWWQP and MB006000JWWQN Drives**

*Version: HPD6 (B) (Recommended)*

*Filename:* rpm/RPMS/x86_64/firmware-hdd-ae6b41e855-HPD6-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-ae6b41e855-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 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 8.4 and SLES15SP3.
Online HDD/SSD Flash Component for Linux (x64) - MB010000JWAYK and MB008000JWAYH Drives
Version: HPD6 (B) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-6ec35faf90-HPD6-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-6ec35faf90-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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB012000JWZHA, MB012000JWZHB, MB014000JWZHC and MB016000JWZHE Drives
Version: HPD2 (B) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-cf0b6cabe1-HPD2-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-cf0b6cabe1-HPD2-2.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB012000JWDFD Drive
Version: HPD3 (B) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-aaf1014ede-HPD3-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-aaf1014ede-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 8.4 and SLES15SP3.

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**Enhancements**

- Added support for RHEL 8.4 and SLES15SP3.

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**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/psn/public/display?docld=emr_na-a00117258en_us

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**Enhancements**

- Added support for RHEL 8.4 and SLES15SP3.
Online HDD/SSD Flash Component for Linux (x64) - MB014000JWUB Drive
Version: HPD3 (B) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-cfd7436fcc-HPD3-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-cfd7436fcc-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 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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB016000JWXXH Drive
Version: HPD9 (B) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-8a0371a425-HPD9-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-8a0371a425-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 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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB016000JXLBA and MB018000JXLAU Drives
Version: HPD2 (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-d550523365-HPD2-1.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-d550523365-HPD2-1.1.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**
VENDOR IDENTIFICATION field changed from “HP” to “HPE” and Reliability improvements.

Enhancements

- Added support for RHEL 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB1000JVYZL, MB2000JVYZN, MB3000JVYZP and MB4000JVYZQ Drives
Version: HPD3 (F) (Recommended)
Filename: rpm/RPMS/x64/firmware-hdd-b85516c7d2-HPD3-6.1.x86_64.compsig;
rpm/RPMS/x64/firmware-hdd-b85516c7d2-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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB2000JFDSL and MB4000JFDSN Drives
Version: HPD4 (H) (Recommended)
Filename: rpm/RPMS/x64/firmware-hdd-46fc43ab26-HPD4-8.1.x86_64.compsig;
rpm/RPMS/x64/firmware-hdd-46fc43ab26-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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB2000JFEML and MB4000JFEMN Drives
Version: HPD6 (H) (Critical)
Filename: rpm/RPMS/x64/firmware-hdd-624b75c7e2-HPD6-8.1.x86_64.compsig;
rpm/RPMS/x64/firmware-hdd-624b75c7e2-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..

**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 8.4 and SLES15SP3.

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Online HDD/SSD Flash Component for Linux (x64) - MB2000JFEPA and MB4000JFEPB Drives
Version: HPD5 (H) *(Recommended)*
Filename: rpm/RPMS/x86_64/firmware-hdd-326de7c0f2-HPD5-8.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-326de7c0f2-HPD5-8.1.x86_64.rpm

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**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) - MB4000JEFNC and MB6000JEFND Drives
Version: HPD9 (H) *(Recommended)*
Filename: rpm/RPMS/x86_64/firmware-hdd-af802bb412-HPD9-8.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-af802bb412-HPD9-8.1.x86_64.rpm

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**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) - MB4000JEQNL and MB6000JEQNN Drives**

Version: HPDB (H) **(Recommended)**

Filename: rpm/RPMS/x86_64/firmware-hdd-2caac41db-HPDB-8.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-2caac41db-HPDB-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..

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**Enhancements**

- Added support for RHEL 8.4 and SLES15SP3.

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**Online HDD/SSD Flash Component for Linux (x64) - MB4000JEXYA and MB6000JEXYB Drives**

Version: HPD9 (F) **(Recommended)**

Filename: rpm/RPMS/x86_64/firmware-hdd-0f923833e9-HPD9-6.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-0f923833e9-HPD9-6.1.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..

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**Enhancements**

- Added support for RHEL 8.4 and SLES15SP3.

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**Online HDD/SSD Flash Component for Linux (x64) - MB6000JEQUV and MB8000JEQVA Drives**

Version: HPDB (H) **(Recommended)**

Filename: rpm/RPMS/x86_64/firmware-hdd-df22f7effd-HPDB-8.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-df22f7effd-HPDB-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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB6000JYYV Drive
Version: HPD2 (H) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-0595c2a887-HPD2-8.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-0595c2a887-HPD2-8.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB8000JFECQ Drive
Version: HPD7 (G) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-252770cdda-HPD7-7.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-252770cdda-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..

Enhancements

- Added support for RHEL 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MM1000JFJTH and MM002000JWCNF Drives
Version: HPD4 (B) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-fa46c607d6-HPD4-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-fa46c607d6-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 8.4 and SLES15SP3.

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**Online HDD/SSD Flash Component for Linux (x64) - MO000400JWFWN, MO000800JWFWP, MO001600JWFWQ, MO003200JWFWR, MO000960JWFWT, MO001920JWFU and MO003840JWFV Drives
Version: HPD5 (E) (Recommended)**

Filename: rpm/RPMS/x86_64/firmware-hdd-b8a60f6e9a-HPD5-5.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-b8a60f6e9a-HPD5-5.1.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 8.4 and SLES15SP3.

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**Online HDD/SSD Flash Component for Linux (x64) - MO000400JXBEV, MO000800JXBFP, MO001600JXBFQ, MO006400JXBFR, MO000960JXBFA, MO001920JXBFT, MO003840JXBFU, MO007680JXBG, MO015360JXBFV, EO000400JXBEU, EO000800JXBFL and EO001600JXBFN Drives
Version: HPD1 (B) (Recommended)**

Filename: rpm/RPMS/x86_64/firmware-hdd-24384980ec-HPD1-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-24384980ec-HPD1-2.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MO0200JEFNV, MO0400JEFPA, MO0800JEPB, MO1600JEFFC, EO0200JEFPD, EO0400JEFPF and EO0800JEFPF Drives
Version: HPD3 (H) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-71af849f3b-HPD3-8.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-71af849f3b-HPD3-8.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MO0400JFFCF, MO0800JFFCH, MO1600JFFCK and MO3200JFFCL Drives
Version: HPD9 (D) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-edf6dcd906-HPD9-4.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-edf6dcd906-HPD9-4.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - VK00960JWSSQ, VK001920JWSSR, VK003840JWSST, VK007680JWSSU and VO015300JWSSV Drives
Version: HPD8 (E) (Critical)
Filename: rpm/RPMS/x86_64/firmware-hdd-1e51a57347-HPD8-5.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-1e51a57347-HPD8-5.1.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**

- 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 8.4 and SLES15SP3.

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Online HDD/SSD Flash Component for Linux (x64) - VK0400JEABD, VK0800JEABE, and VO1600JEABF Drives

Version: HPD4 (B) (Critical)

Filename: rpm/RPMS/x86_64/firmware-hdd-8a7ecf7465-HPD4-2.1.x86_64.compsig;
 rpm/RPMS/x86_64/firmware-hdd-8a7ecf7465-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 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**

- If Power On Hours exceeds 70,000hrs, PM2R will report Hardware error (04/4C/A8) after the next Power Cycle and will not accept read/write commands. This fix will update storage location reporting when the maximum number of registrations in the Work Load Log read process reaches 70,000; the last registered 70,000th storage location will be modified to be read as the next (70,001st) storage location.
- For more information, refer to HPE Customer Advisory at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00111296en_us

**Enhancements**

- Added support for RHEL 8.4 and SLES15SP3.

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Online HDD/SSD Flash Component for Linux (x64) - VO000480JWDAR, VO000960JWDAT, VO001920JWDAU and VO003840JWDAV Drives

Version: HPD8 (D) (Critical)

Filename: rpm/RPMS/x86_64/firmware-hdd-2eb810cdd7-HPD8-4.1.x86_64.compsig;
 rpm/RPMS/x86_64/firmware-hdd-2eb810cdd7-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](https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00092491en_us)

**Enhancements**

- Added support for RHEL 8.4 and SLES15SP3.

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**Online HDD/SSD Flash Component for Linux (x64) - VO000800JWZJP, VO001600JWZJQ, VO003200JWZJR and VO006400JWZJT Drives**

Version: HPD4 (B) *(Recommended)*

**Filename:**

rpm/RPMS/x86_64/firmware-hdd-a07a420ed1-HPD4-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-a07a420ed1-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 8.4 and SLES15SP3.

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**Online HDD/SSD Flash Component for Linux (x64) - VO000960JWZJF, VO001920JWZJH, VO003840JWZJK, VO007680JWZJL and VO015360JWZJN Drives**

Version: HPD4 (B) *(Recommended)*

**Filename:**

rpm/RPMS/x86_64/firmware-hdd-35fd24601f-HPD4-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-35fd24601f-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 8.4 and SLES15SP3.

Fixes

- Reduced the occurrence probability of PMIC busy issue.
- Fixed the system data error at the drive power on issue.
- When the PLP operation starts, the waiting Unmap request to the 4KB not-aligned host write area is canceled to be able to complete PLP correctly.

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 RHEL 8.4 and SLES15SP3.

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Online HDD/SSD Flash Component for Linux (x64) - VO0480JFDGT, VO0960JFDGU, VO1920JFDGV and VO3840JFDHA Drives

**Version:** HPD9 (D) *(Recommended)*

**Filename:** rpm/RPMS/x86_64/firmware-hdd-8ed8893abd-HPD9-4.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-8ed8893abd-HPD9-4.1.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..

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Online HDD/SSD Flash Component for Linux (x64) - VO1920JEUQQ Drive

**Version:** HPD3 (H) *(Recommended)*

**Filename:** rpm/RPMS/x86_64/firmware-hdd-5d9e841607-HPD3-8.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-5d9e841607-HPD3-8.1.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..

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Online HDD/SSD Flash Component for VMware ESXi - EG000300JWBHR Drive

**Version:** HPD5 (B) *(Recommended)*

**Filename:** CP048248.compsig; CP048248.zip

**Important Note!**

- Added support for RHEL 8.4 and SLES15SP3.
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

Online HDD/SSD Flash Component for VMware ESXi - EG000300JWFVB Drive
Version: HPD3 (B) (Recommended)
Filename: CP048245.compsig; CP048245.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

Online HDD/SSD Flash Component for VMware ESXi - EG000600JWEBF Drives
Version: HPD5 (B) (Recommended)
Filename: CP049345.compsig; CP049345.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
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

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

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

Online HDD/SSD Flash Component for VMware ESXi - EG0600JETKA, EG0900JETKB and EG1200JETKC Drives
Version: HPD8 (B) (Recommended)
Filename: CP048264.compsig; CP048264.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

Online HDD/SSD Flash Component for VMware ESXi - EH000900JWHPK and EH000600JWPH Drives
Version: HPD7 (B) (Recommended)
Filename: CP049135.compsig; CP049135.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

Online HDD/SSD Flash Component for VMware ESXi - EH000900JWHPPP, EH000600JWHPN and EH000300JWHPL Drives
Version: HPD7 (B) (Recommended)
Filename: CP049136.compsig; CP049136.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 - EH0600JDYTN Drive**

Version: HPD7 (H) *(Critical)*

Filename: CP048294.compsig; CP048294.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.

**Enhancements**

- Added support for VMware 7.0 U3

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**Online HDD/SSD Flash Component for VMware ESXi - EO000400JWDKP, EO000800JWDKQ, EO001600JWDKR, MO000400JWDKU, MO000800JWDKV, MO001600JWDLA and MO003200JWDLB Drives**

Version: HPD2 (F) *(Recommended)*

Filename: CP048297.compsig; CP048297.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

Online HDD/SSD Flash Component for VMware ESXi - EO000400PXDBQ, EO000800PXDCK, EO001600PXDCH, MO000800PXDBP, MO001600PXDC, MO003200PXDCD, MO006400PXDCE, VO000960PXDBN, VO001920PXDBR, VO003840PXDBT, VO007680PXDBU and VO015300PXDBV Drives
Version: HPD1 (B) (Recommended)
Filename: CP049165.compsig; CP049165.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

Online HDD/SSD Flash Component for VMware ESXi - MB002000JWFVN and MB004000JWFVP Drives
Version: HPD4 (B) (Recommended)
Filename: CP048318.compsig; CP048318.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

Online HDD/SSD Flash Component for VMware ESXi - MB004000JWFVK and MB006000JWFVL Drives
Version: HPD4 (B) (Recommended)
Filename: CP048320.compsig; CP048320.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

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

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
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 U3

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Online HDD/SSD Flash Component for VMware ESXi - MB4000JEQNL and MB6000JEQNN Drives

Version: HPDB (I) (Recommended)
Filename: CP048368.compsig; CP048368.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 - MB6000JEQUV and MB8000JEQVA Drives

Version: HPDB (I) (Recommended)
Filename: CP048378.compsig; CP048378.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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**Enhancements**

- Added support for VMware 7.0 U3

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**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..

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**Enhancements**

- Added support for VMware 7.0 U3

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**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..

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**Enhancements**

- Added support for VMware 7.0 U3

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**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..

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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

Online HDD/SSD Flash Component for VMware ESXi - MO000400JWUFT, MO000800JWUFU, MO001600JWUFV, MO003200JWUGA, MO006400JWUGB, EO000400JWUGC, EO000800JWUGD and EO001600JWUGE Drives
Version: HPD3 (C) (Recommended)
Filename: CP048397.compsig; CP048397.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

Online HDD/SSD Flash Component for VMware ESXi - VO000960JWTBK, VO001920JWTBL, VO003840JWTBN, VO007680JWTBP, MO000400JWTBQ, MO000800JWTBR, MO001600JWTBT, MO003200JWTBU, MO006400JWTCD, EO000400JWTBV, EO000800JWTCA, EO001600JWTCB Drives
Version: HPD9 (B) (Recommended)
Filename: CP049147.compsig; CP049147.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
Online HDD/SSD Flash Component for VMware ESXi - EG00300JWSJP, EG00600JWJNH and EG001200JWJNK Drives
Version: HPD4 (B) (Recommended)
Filename: CP049144.compsig; CP049144.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

Online HDD/SSD Flash Component for VMware ESXi - EG001800JWFVC Drive
Version: HPD4 (B) (Recommended)
Filename: CP048253.compsig; CP048253.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

Online HDD/SSD Flash Component for VMware ESXi - EG001800JWJNL and EG002400JWJNN Drives
Version: HPD4 (B) (Recommended)
Filename: CP049141.compsig; CP049141.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
would require an offline update using the Service Pack for ProLiant and Smart Update Manager.
  o Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

**Enhancements**

  o Added support for VMware 7.0 U3

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**Important Note!**

  o 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.
  o In AHCI configuration only offline flashing is supported.
  o Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.
  o Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

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**Enhancements**

  o Added support for VMware 7.0 U3

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Online HDD/SSD Flash Component for VMware ESXi - EG0300FCSPH, EG0450FCSPK, EG0600FCSPL and EG0900FCSPN Drives
Version: HPD2 (I) **(Recommended)**
Filename: CP048255.compsig; CP048255.zip

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**Important Note!**

  o 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.
  o In AHCI configuration only offline flashing is supported.
  o Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.
  o Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

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**Enhancements**

  o Added support for VMware 7.0 U3

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Online HDD/SSD Flash Component for VMware ESXi - EG0300JEHLV, EG0600JEHMA, EG0900JEHMB, and EG1200JEHMCA Drives
Version: HPD5 (J) **(Recommended)**
Filename: CP048261.compsig; CP048261.zip

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**Important Note!**

  o 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.
  o In AHCI configuration only offline flashing is supported.
  o Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.
  o Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

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**Enhancements**

  o Added support for VMware 7.0 U3

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Online HDD/SSD Flash Component for VMware ESXi - EG0300JFCKA, EG0600JEMCV, EG0900JFCKB and EG1200JEMDA Drives
Version: HPD6 (I) **(Recommended)**
Filename: CP048263.compsig; CP048263.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 - EG1800JEHMD Drive**

Version: HPD6 (J) *(Recommended)*

Filename: CP048265.compsig; CP048265.zip

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**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 - EG1800JEMDB Drive**

Version: HPD5 (I) *(Recommended)*

Filename: CP048266.compsig; CP048266.zip

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Online HDD/SSD Flash Component for VMware ESXi - EG1800JFHMH Drive
Version: HPD8 (B) (Recommended)
Filename: CP048270.compsig; CP048270.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

Online HDD/SSD Flash Component for VMware ESXi - EH000300JWCPK, EH000600JWCPL and EH000900JWCPN Drives
Version: HPD7 (B) (Recommended)
Filename: CP048286.compsig; CP048286.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

Online HDD/SSD Flash Component for VMware ESXi - EH000600JWCPF and EH000900JWCPH Drives
Version: HPD9 (B) (Recommended)
Filename: CP048272.compsig; CP048272.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
would require an offline update using the Service Pack for ProLiant and Smart Update Manager.
- 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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**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..

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**Enhancements**

- Added support for VMware 7.0 U3

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**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..

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**Enhancements**

- Added support for VMware 7.0 U3

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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 - EK0800JVYPN, EO1600JVYP, MK0800JVYPQ and MO1600JVYPR Drives
Version: HPD7 (D) **(Critical)**
Filename: CP048429.compsig; CP048429.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](https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00097382en_us).

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**Enhancements**

- Added support for VMware 7.0 U3

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Online HDD/SSD Flash Component for VMware ESXi - MB004000JWKGU Drive
Version: HPD2 (B) **(Recommended)**
Filename: CP048321.compsig; CP048321.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

**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

**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
**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](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 Drive**

Version: HPD2 (B) *(Recommended)*

Filename: CP048332.compsig; CP048332.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 - MB008000JWWQP and MB006000JWWQN Drives**

Version: HPD6 (B) *(Recommended)*

Filename: CP048426.compsig; CP048426.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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**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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**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](https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00117258en_us)

**Enhancements**

- Added support for VMware 7.0 U3
Online HDD/SSD Flash Component for VMware ESXi - MB014000JWUDB Drive
Version: HPD3 (B) (Recommended)
Filename: CP048341.compsig; CP048341.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.
- Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.
- 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 - MB016000JWXKH Drive
Version: HPD9 (B) (Recommended)
Filename: CP049124.compsig; CP049124.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 - MB016000JXLBA and MB018000JXLAU Drives
Version: HPD2 (Recommended)
Filename: CP049256.compsig; CP049256.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.
- Online drive firmware update available for Smart Array Controllers configured in systems running supported 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**
VENDOR IDENTIFICATION field changed from “HP” to “HPE” and Reliability improvements.

Enhancements

- Added support for VMware 7.0 U3.

Online HDD/SSD Flash Component for VMware ESXi - MB1000JVYZL, MB2000JVYZN, MB3000JVYZZ, and MB4000JVYZZQ Drives
Version: HPD3 (F) (Recommended)
Filename: CP048344.compsig; CP048344.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

Online HDD/SSD Flash Component for VMware ESXi - MB2000JFDSL and MB4000JFDSN Drives
Version: HPD4 (I) (Recommended)
Filename: CP048347.compsig; CP048347.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

Online HDD/SSD Flash Component for VMware ESXi - MB2000JFEPA and MB4000JFEPB Drives
Version: HPD5 (I) (Recommended)
Filename: CP048362.compsig; CP048362.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

Online HDD/SSD Flash Component for VMware ESXi - MB4000JEFC and MB6000JEFND Drives
Version: HPD9 (I) (Recommended)
Filename: CP048367.compsig; CP048367.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

Online HDD/SSD Flash Component for VMware ESXi - MB4000JEXYA and MB6000JEYXB Drives
Version: HPD9 (F) (Recommended)
Filename: CP048369.compsig; CP048369.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
**Online HDD/SSD Flash Component for VMware ESXi - MB6000JYYYV Drive**  
Version: HPD2 (I)  
Filename: CP048379.compsig; CP048379.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 - MB8000JFECQ Drive**  
Version: HPD7 (H)  
Filename: CP048382.compsig; CP048382.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 - MO000400JWFWN, MO000800JWFWP, MO001600JWFWQ, MO003200JWFWR, MO000960JWFWT, MO001920JWFWS and MO003840JWFVW Drives**  
Version: HPD5 (F)  
Filename: CP048393.compsig; CP048393.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

Online HDD/SSD Flash Component for VMware ESXi - MO000800JXBEV, MO001600JXBFP, MO003200JXBFQ, MO006400JXBFR, MO000960JXBFA, MO003840JXBFU, MO007680JXBG4, MO015360JXBFV, EO000400JXBEU, EO000800JXBFL and EO001600JXBFN Drives
Version: HPD1 (B) (Recommended)
Filename: CP049157.compsig; CP049157.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

Online HDD/SSD Flash Component for VMware ESXi - MO00200JEFNV, MO00400JEFPB, MO00800JEFPB, MO1600JEFFC, EO00200JEFPD, EO00400JEFPF and EO00800JEFPF Drives
Version: HPD3 (I) (Recommended)
Filename: CP048401.compsig; CP048401.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

Online HDD/SSD Flash Component for VMware ESXi - MO00400JFFCF, MO00800JFFCH, MO1600JFFCK and MO3200JFFCL Drives
Version: HPD9 (D) (Recommended)
Filename: CP048439.compsig; CP048439.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 - VK000960JWSSQ, VK001920JWSSR, VK003840JWSST, VK007680JWSSU and VO015300JWSSV Drives**

Version: HPD8 (E) **(Critical)**

Filename: CP048446.compsig; CP048446.zip

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**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 U3

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**Online HDD/SSD Flash Component for VMware ESXi - VK0400JEABD, VK0800JEABE, and VO1600JEABF Drives**

Version: HPD4 (B) **(Critical)**

Filename: CP049410.compsig; CP049410.zip

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**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**

- If Power On Hours exceeds 70,000hrs, PM2R will report Hardware error (04/4C/A8) after the next Power Cycle and will not accept read/write commands. This fix will update storage location reporting when the maximum number of registrations in the Work Load Log read process reaches 70,000; the last registered 70,000th storage location will be modified to be read as the next (70,001st) storage location.
- For more information, refer to HPE Customer Advisory at the following URL: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00111296en_us

**Enhancements**

- Added support for VMware 7.0 U3

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Online HDD/SSD Flash Component for VMware ESXi - VO000480JWDAR, VO000960JWDAT, VO001920JWDAU and VO003840JWDAV Drives
Version: HPD8 (G) *(Critical)*
Filename: CP048445.compsig; CP048445.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 U3

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Online HDD/SSD Flash Component for VMware ESXi - VO000800JWZJP, VO001600JWZJQ, VO003200JWZJR and VO006400JWZJT Drives
Version: HPD4 (B) *(Recommended)*
Filename: CP048454.compsig; CP048454.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** - VO000960JWZJF, VO001920JWZJH, VO003840JWZJK, VO007680JWZJL and VO015360JWZJN Drives

Version: HPD4 (B) *(Recommended)*

Filename: CP048455.compsig; CP048455.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** - VO000960RWUEV, VO001920RWUFA, VO003840RWUFB, VO007680RWUFC, VO000960RWUFD, VO001920RWUFE and VO003840RWUFF Drives

Version: HPD6 *(Critical)*

Filename: CP049363.compsig; CP049363.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**

- Reduced the occurrence probability of PMIC busy issue.
- Fixed the system data error at the drive power on issue.
When the PLP operation starts, the waiting Unmap request to the 4KB not-aligned host write area is canceled to be able to complete PLP correctly.

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 U3

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
**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 VMware 7.0 U3

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**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 VMware 7.0 U3

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**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 Microsoft Windows Server 2022.

Online HDD/SSD Flash Component for Windows (x64) - EG000300JWFVB Drive
Version: HPD3 (B) (Recommended)
Filename: cp048433.compsig; cp048433.exe; cp048433.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 Microsoft Windows Server 2022.

Online HDD/SSD Flash Component for Windows (x64) - EG000300JWSJP, EG000600JWJNH and EG001200JWJNK Drives
Version: HPD4 (B) (Recommended)
Filename: cp049143.compsig; cp049143.exe; cp049143.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 Microsoft Windows Server 2022.

Online HDD/SSD Flash Component for Windows (x64) - EG000600JWEBH and EG000300JWEBF Drives
Version: HPD5 (B) (Recommended)
Filename: cp049346.compsig; cp049346.exe; cp049346.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 Microsoft Windows Server 2022.

Online HDD/SSD Flash Component for Windows (x64) - EG000600JWFUV and EG001200JWFVA Drives
Version: HPD4 (B) **(Recommended)**
Filename: cp048452.compsig; cp048452.exe; cp048452.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 Microsoft Windows Server 2022.

Online HDD/SSD Flash Component for Windows (x64) - EG000600JWJNP and EG001200JWJNQ Drives
Version: HPD4 (B) **(Recommended)**
Filename: cp048457.compsig; cp048457.exe; cp048457.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 Microsoft Windows Server 2022.

Online HDD/SSD Flash Component for Windows (x64) - EG001800JWFVC Drive
Version: HPD4 (B) **(Recommended)**
Filename: cp048459.compsig; cp048459.exe; cp048459.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 Microsoft Windows Server 2022.

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**Online HDD/SSD Flash Component for Windows (x64) - EG001800JWJNL and EG002400JWJNN Drives**

Version: HPD4 (B) *(Recommended)*

Filename: cp049140.compsig; cp049140.exe; cp049140.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 Microsoft Windows Server 2022.

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**Online HDD/SSD Flash Component for Windows (x64) - EG001800JWJNR and EG002400JWJNT Drives**

Version: HPD6 (B) *(Recommended)*

Filename: cp048242.compsig; cp048242.exe; cp048242.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 Microsoft Windows Server 2022.

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**Online HDD/SSD Flash Component for Windows (x64) - EG0300FCSPH, EG0450FCSPK, EG0600FCSPPL and EG0900FCSPN Drives**

Version: HPD2 (G) *(Recommended)*

Filename: cp048481.compsig; cp048481.exe; cp048481.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 Microsoft Windows Server 2022.
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 Microsoft Windows Server 2022.

Online HDD/SSD Flash Component for Windows (x64) - EG0300JEHLV, EG0600JEHMA, EG0900JEHMB and EG1200JEHMC Drives
Version: HPD5 (H) *(Recommended)*
Filename: cp048482.compsig; cp048482.exe; cp048482.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 Microsoft Windows Server 2022.

Online HDD/SSD Flash Component for Windows (x64) - EG0300JFCKA, EG0600JEMCV, EG0900JFCKB and EG1200JEMDA Drives
Version: HPD6 (G) *(Recommended)*
Filename: cp048483.compsig; cp048483.exe; cp048483.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 Microsoft Windows Server 2022.
Online HDD/SSD Flash Component for Windows (x64) - EG0600JETKA, EG0900JETKB and EG1200JETKC Drives
Version: HPD8 (B) (**Recommended**)  
Filename: cp048485.compsig; cp048485.exe; cp048485.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 Microsoft Windows Server 2022.

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Online HDD/SSD Flash Component for Windows (x64) - EG1800JEHMD Drive
Version: HPD6 (H) (**Recommended**)  
Filename: cp048507.compsig; cp048507.exe; cp048507.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 Microsoft Server Windows 2022.

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Online HDD/SSD Flash Component for Windows (x64) - EG1800JEMDB Drive
Version: HPD5 (G) (**Recommended**)  
Filename: cp048508.compsig; cp048508.exe; cp048508.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 Microsoft Server Windows 2022.

**Online HDD/SSD Flash Component for Windows (x64) - EG18003FHMH Drive**

Version: HPD8 (B) (**Recommended**)

Filename: cp048509.compsig; cp048509.exe; cp048509.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 Microsoft Server Windows 2022.

**Online HDD/SSD Flash Component for Windows (x64) - EH000300JWCPK, EH000600JWCPL and EH000900JWCPN Drives**

Version: HPD7 (B) (**Recommended**)

Filename: cp048510.compsig; cp048510.exe; cp048510.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 Microsoft Server Windows 2022.

**Online HDD/SSD Flash Component for Windows (x64) - EH000600JWCPF and EH000900JWCPH Drives**

Version: HPD9 (B) (**Recommended**)

Filename: cp048516.compsig; cp048516.exe; cp048516.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 Microsoft Server Windows 2022.

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 Microsoft Windows Server 2022.

Online HDD/SSD Flash Component for Windows (x64) - EH000900JWHPK and EH000600JWPH (Recommended)
Filename: cp049134.compsig; cp049134.exe; cp049134.md5

Enhancements

- Added support for Microsoft Server Windows 2022.

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 Microsoft Windows Server 2022.

Online HDD/SSD Flash Component for Windows (x64) - EH000900JWHPP, EH000600JWHPN and EH000300JWHPL (Recommended)
Filename: cp049138.compsig; cp049138.exe; cp049138.md5

Enhancements

- Added support for Microsoft Windows Server 2022.

Online HDD/SSD Flash Component for Windows (x64) - EH000900JWXBA, EH0450JDXBB and EH0600JDXBC (Recommended)
Filename: cp048517.compsig; cp048517.exe; cp048517.md5
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 Microsoft Windows Server 2022.

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Online HDD/SSD Flash Component for Windows (x64) - EH0300JDYTH, EH0450JDYTK and EH0600JDYTL Drives

Version: HPD6 (H) *(Recommended)*

Filename: cp048515.compsig; cp048515.exe; cp048515.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 Microsoft Windows Server 2022.

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Online HDD/SSD Flash Component for Windows (x64) - EH0300JEDHC, EH0450JEDHD and EH0600JEDHE Drives

Version: HPD4 (I) *(Recommended)*

Filename: cp048520.compsig; cp048520.exe; cp048520.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 Microsoft Windows Server 2022.

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Online HDD/SSD Flash Component for Windows (x64) - EH0600JDYTN Drive
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 Microsoft Windows Server 2022.

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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 Microsoft Server Windows 2022.
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 Microsoft Windows Server 2022.
- Added support for Microsoft Windows Server 2022.

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**Online HDD/SSD Flash Component for Windows (x64) - MB004000JWFVK and MB006000JWFVL Drives**

Version: HPD4 (B) *(Recommended)*

Filename: cp048562.compsig; cp048562.exe; cp048562.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 Microsoft Windows Server 2022.

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**Online HDD/SSD Flash Component for Windows (x64) - MB004000JWKGU Drive**

Version: HPD2 (B) *(Recommended)*

Filename: cp048666.compsig; cp048666.exe; cp048666.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 Microsoft Windows Server 2022.

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**Online HDD/SSD Flash Component for Windows (x64) - MB004000JWWQB, MB002000JWWQA and MB001000JWWPV Drives**

Version: HPD6 (B) *(Recommended)*

Filename: cp048653.compsig; cp048653.exe; cp048653.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 Microsoft Server Windows 2022.

**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 Microsoft Windows Server 2022.

**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](https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00117258en_us)

**Enhancements**

- Added support for Microsoft Windows Server 2022.
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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB008000JWWQP and MB006000JWWQN Drives
Version: HPD6 (B) (Recommended)
Filename: cp048649.compsig; cp048649.exe; cp048649.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB010000JWAYK and MB008000JWAYH Drives
Version: HPD6 (B) (Recommended)
Filename: cp048672.compsig; cp048672.exe; cp048672.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 Microsoft Server Windows 2022.
Online HDD/SSD Flash Component for Windows (x64) - MB010000JWZHA, MB012000JWZHB, MB014000JWZHC and MB016000JWZHE Drives
Version: HPD2 (B) (Recommended)
Filename: cp049052.compsig; cp049052.exe; cp049052.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.
- 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.

**Enhancements**

- Added support for Microsoft Windows Server 2022.

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Online HDD/SSD Flash Component for Windows (x64) - MB012000JWDFD Drive
Version: HPD3 (B) (Recommended)
Filename: cp048634.compsig; cp048634.exe; cp048634.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 Microsoft Server Windows 2022.

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Online HDD/SSD Flash Component for Windows (x64) - MB014000JWRTH, MB012000JWRTF and MB010000JWRTF Drives
Version: HPD2 (E) (Recommended)
Filename: cp048547.compsig; cp048547.exe; cp048547.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB014000JWTFD and MB012000JWTFC Drives
Version: HPD8 (B) (Critical)
Filename: cp049123.compsig; cp049123.exe; cp049123.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](https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00117258en_us)

**Enhancements**

- Added support for Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB014000JWUDB Drive
Version: HPD3 (B) (Recommended)
Filename: cp048563.compsig; cp048563.exe; cp048563.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB016000JWXKH Drive
Version: HPD9 (B) (Recommended)
Filename: cp049126.compsig; cp049126.exe; cp049126.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..
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 Microsoft Windows Server 2022.

**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**

- VENDOR IDENTIFICATION field changed from "HP" to "HPE" and Reliability improvements.

**Enhancements**

- Added support for Microsoft Windows Server 2022.
- Added support for Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB2000JFDSL and MB4000JFDSN Drives
Version: HPD4 (G) **(Recommended)**
Filename: cp048589.compsig; cp048589.exe; cp048589.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 Microsoft Server Windows 2022.

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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB2000JFEML and MB4000JFEMN Drives
Version: HPD6 (G) **(Critical)**
Filename: cp048590.compsig; cp048590.exe; cp048590.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 Microsoft Server Windows 2022.
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 Microsoft Server Windows 2022.

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**Online HDD/SSD Flash Component for Windows (x64) - MB4000JEFNC and MB6000JEFND Drives**

**Version:** HPD9 (G) *(Recommended)*

**Filename:** cp048607.compsig; cp048607.exe; cp048607.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..

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**Online HDD/SSD Flash Component for Windows (x64) - MB4000JEQNL and MB6000JEQNN Drives**

**Version:** HPDB (G) *(Recommended)*

**Filename:** cp048608.compsig; cp048608.exe; cp048608.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..

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**Online HDD/SSD Flash Component for Windows (x64) - MB4000JEXYA and MB6000JEXYB Drives**

**Version:** HPD9 (E) *(Recommended)*

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**Online HDD/SSD Flash Component for Windows (x64) - MB4000JEXYA and MB6000JEXYB Drives**

**Version:** HPD9 (E) *(Recommended)*
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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB6000JEQUV and MB8000JEQVA Drives
Version: HPDB (G) (Recommended)
Filename: cp048614.compsig; cp048614.exe; cp048614.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB6000JVYYV Drive
Version: HPD2 (G) (Recommended)
Filename: cp048615.compsig; cp048615.exe; cp048615.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 Microsoft Server Windows 2022.
Online HDD/SSD Flash Component for Windows (x64) - MB6000JYZD and MB4000JYZC Drives
Version: HPD4 (E) (Recommended)
Filename: cp048617.compsig; cp048617.exe; cp048617.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB8000JFECQ Drive
Version: HPD7 (F) (Recommended)
Filename: cp048619.compsig; cp048619.exe; cp048619.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MM1000JEFRB and MM2000JEFRC Drives
Version: HPD9 (B) (Recommended)
Filename: cp048625.compsig; cp048625.exe; cp048625.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MM1000JFJTH and MM002000JWCFN Drives
Version: HPD4 (B) (Recommended)
Filename: cp048626.compsig; cp048626.exe; cp048626.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MO000400JWFVN, MO000800JWFWP, MO001600JWFVR, MO003200JWFVR, MO000960JWFVT, MO001920JWFU and MO003840JWFVW Drives
Version: HPD5 (E) (Recommended)
Filename: cp048627.compsig; cp048627.exe; cp048627.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MO000400JWUFN, MO000800JWUFU, MO001600JWUFV, MO003200JWUGA, MO006400JWUGB, EO000400JWUGC, EO000800JWUGD and EO001600JWUGE Drives
Version: HPD3 (C) (Recommended)
Filename: cp048628.compsig; cp048628.exe; cp048628.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 Microsoft Server Windows 2022.

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**Online HDD/SSD Flash Component for Windows (x64)** - MO000800JXBEV, MO001600JXBFP, MO003200JXBFQ, MO006400JXBFR, MO000960JXBFA, MO001920JXBFT, MO003840JXBFU, MO007680JXBG, MO015360JXBFV, E0009400JXBL, E0000800JXBL and E001600XJBFN Drives

Version: HPD1 (B) *(Recommended)*

Filename: cp049152.compsig; cp049152.exe; cp049152.md5

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**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 Microsoft Windows Server 2022.

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**Online HDD/SSD Flash Component for Windows (x64)** - MO0200JEFPV, MO0400JEFPB, MO0800JEFPB, MO1600JEPC, E00200JEFPD, EO0400JEFPB and E00800JEFPF Drives

Version: HPD3 (G) *(Recommended)*

Filename: cp048630.compsig; cp048630.exe; cp048630.md5

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**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 Microsoft Server Windows 2022.

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**Online HDD/SSD Flash Component for Windows (x64)** - MO0400JFFCF, MO0800JFFCH, MO1600JFFCK and MO3200JFFCL Drives

Version: HPD9 (D) *(Recommended)*

Filename: cp048661.compsig; cp048661.exe; cp048661.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 Microsoft Server Windows 2022.

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Online HDD/SSD Flash Component for Windows (x64) - VK000960JWSSQ, VK001920JWSSR, VK003840JWSST, VK007680JWSSU and VO015300JWSSV Drives

Version: HPD8 (D) (Critical)
Filename: cp048665.compsig; cp048665.exe; cp048665.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 Microsoft Server Windows 2022.

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Online HDD/SSD Flash Component for Windows (x64) - VK0400JEABD, VK0800JEABE, and VO1600JEABF Drives

Version: HPD4 (B) (Critical)
Filename: cp049412.compsig; cp049412.exe; cp049412.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**

- If Power On Hours exceeds 70,000hrs, PM2R will report Hardware error (04/4C/A8) after the next Power Cycle and will not accept read/write commands. This fix will update storage location reporting when the maximum number of registrations in the Work Load Log read process reaches 70,000; the last registered 70,000th storage location will be modified to be read as the next (70,001st) storage location.
- For more information, refer to HPE Customer Advisory at the following URL:
  https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00111296en_us

**Enhancements**

- Added support for Microsoft Windows Server 2022.

Online HDD/SSD Flash Component for Windows (x64) - VO000480JWDAR, VO000960JWDAT, VO001920JWDAU and VO003840JWDAV Drives
Version: HPD8 (D) **(Critical)**
Filename: cp044739.compsig; cp044739.exe; cp044739.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-a0092491en_us

**Enhancements**

- Added support for Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - VO0000800JWZJP, VO001600JWZJQ, VO003200JWZJR and VO006400JWZJT Drives
Version: HPD4 (B) **(Recommended)**
Filename: cp048468.compsig; cp048468.exe; cp048468.md5

**Important Note!**
o 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.

o Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

o Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

Enhancements

o Added support for Microsoft Server Windows 2022.

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Online HDD/SSD Flash Component for Windows (x64) - VO000960JWZJF, VO001920JWZJH, VO003840JWZJK, VO007680JWZJL and VO015360JWZJN Drives
Version: HPD4 (B) (Recommended)
Filename: cp048466.compsig; cp048466.exe; cp048466.md5

Important Note!

o 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.

o Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

o Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

Enhancements

o Added support for Microsoft Windows Server 2022.

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Online HDD/SSD Flash Component for Windows (x64) - VO000960JWZJF, VO001920JWZJH, VO003840JWZJK, VO007680JWZJL and VO015360JWZJN Drives
Version: HPD4 (B) (Recommended)
Filename: cp048466.compsig; cp048466.exe; cp048466.md5

Important Note!

o 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.

o Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

o Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

Enhancements

o Added support for Microsoft Server Windows 2022.
**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**

- Reduced the occurrence probability of PMIC busy issue.
- Fixed the system data error at the drive power on issue.
- When the PLP operation starts, the waiting Unmap request to the 4KB not-aligned host write area is canceled to be able to complete PLP correctly.

**Enhancements**

- Added support for Microsoft Server Windows 2022.
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 Microsoft Server Windows 2022.

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 Microsoft Server Windows 2022.

Firmware - SATA Storage Disk

- Online HDD/SSD Flash Component for Windows (x64) - VO1920JEUQQ Drive
  - Version: HPD3 (G) **Recommended**
  - Filename: cp048645.compsig; cp048645.exe; cp048645.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 Microsoft Server Windows 2022.

Firmware - SATA Storage Disk

- Online HDD/SSD Flash Component for Linux (x64) - EK000200GWEPP, EK000400GWEPE, EK000800GWEPF and EK001600GWEPH Drives
  - Version: HPG3 (G) **Recommended**
  - Filename: rpm/RPMS/x86_64/firmware-hdd-5bf9355926-HPG3-7.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-5bf9355926-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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB001000GWBC and MB002000GWCB Drives
Version: HPG6 (F) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-68b12e54d2-HPG6-6.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-68b12e54d2-HPG6-6.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB001000GWFWK and MB002000GWFWL Drives
Version: HPG6 (E) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-bfc4af697b-HPG6-5.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-bfc4af697b-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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB001000GWJAN, MB002000GWFWA and MB004000GWFWB Drives
Version: HPG1 (F) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-d39e7a7e75-HPG1-6.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-d39e7a7e75-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...

**Enhancements**

- Added support for RHEL 8.4 and SLES15SP3.

**Online HDD/SSD Flash Component for Linux (x64) - MB002000GWFGH and MB001000GWFGF Drives**

*Version: HPG3 (H) (Optional)*

Filename: rpm/RPMS/x86_64/firmware-hdd-0b575b5895-HPG3-8.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-0b575b5895-HPG3-8.1.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 8.4 and SLES15SP3.

**Online HDD/SSD Flash Component for Linux (x64) - MB004000GWKGV Drive**

*Version: HPG1 (E) (Recommended)*

Filename: rpm/RPMS/x86_64/firmware-hdd-ca21e169e2-HPG1-5.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-ca21e169e2-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 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 8.4 and SLES15SP3.

**Online HDD/SSD Flash Component for Linux (x64) - MB004000GWQW, MB002000GWQF and MB001000GWQWQE Drives**

*Version: HPG3 (C) (Recommended)*

Filename: rpm/RPMS/x86_64/firmware-hdd-12304c1aca-HPG3-3.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-12304c1aca-HPG3-3.1.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) - MB006000GWBXQ and MB008000GWBYL Drives
Version: HPG8 (F) *(Recommended)*
Filename: rpm/RPMS/x86_64/firmware-hdd-a1fd19f9ca-HPG8-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-a1fd19f9ca-HPG8-6.1.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 8.4 and SLES15SP3.

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Online HDD/SSD Flash Component for Linux (x64) - MB006000GWJRR and MB008000GWJRT Drives
Version: HPG4 (D) *(Recommended)*
Filename: rpm/RPMS/x86_64/firmware-hdd-c993b31232-HPG4-4.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-c993b31232-HPG4-4.1.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 8.4 and SLES15SP3.
Online HDD/SSD Flash Component for Linux (x64) - MB006000GWKG Drive
Version: HPG1 (E) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-7f2a26e6d0-HPG1-5.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-7f2a26e6d0-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 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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB008000GWRTC Drive
Version: HPG1 (E) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-82894b9e0a-HPG1-5.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-82894b9e0a-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 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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB008000GWQU and MB006000GWWT Drives
Version: HPG2 (D) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-18e328f036-HPG2-4.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-18e328f036-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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB012000GWDFE Drive

Version: HPG3 (B) (Recommended)

Filename: rpm/RPMS/x86_64/firmware-hdd-059b8654a6-HPG3-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-059b8654a6-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..

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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB012000GWTFE and MB014000GWTFF Drives

Version: HPG3 (B) (Recommended)

Filename: rpm/RPMS/x86_64/firmware-hdd-059b8654a6-HPG3-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-059b8654a6-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 8.4 and SLES15SP3.
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.

Online HDD/SSD Flash Component for Linux (x64) - MB014000GWRTN, MB012000GWRTL and MB010000GWRTK Drives
Version: HPG2 (F) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-6b7ce3da0e-HPG2-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-6b7ce3da0e-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 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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB014000GWUDA Drive
Version: HPG2 (E) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-41cdb1c9da-HPG2-5.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-41cdb1c9da-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 8.4 and SLES 15 SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB016000GWXKK Drive
Version: HPG3 (B) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-e4f147cdd2-HPG3-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-e4f147cdd2-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 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 8.4 and SLES 15 SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB1000GDUNU, MB2000GDUNV, MB3000GDUPA and MB4000GDUPB Drives
Version: HPG4 (J) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-3ab4c70e64-HPG4-10.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-3ab4c70e64-HPG4-10.1.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..

Enhancements

- Added support for RHEL 8.4 and SLES 15 SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB1000GVYZE, MB2000GVYZF, MB3000GVYZH and MB4000GVYZK Drives
Version: HPG4 (J) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-0a7010918e-HPG4-10.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-0a7010918e-HPG4-10.1.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..

Enhancements

- Added support for RHEL 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB2000GCWLT, MB3000GCWLU and MB4000GCWLV Drives
Version: HPG4 (J) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-2e70ce7412-HPG4-10.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-2e70ce7412-HPG4-10.1.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.

Fixes

- The firmware also corrects settings preservation after a code download, and includes emergency power off improvements.
Added support for RHEL 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB4000GEFNA and MB6000GEFN1 Drives
Version: HPG6 (I) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-40277d55d3-HPG6-10.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-40277d55d3-HPG6-10.1.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..

Enhancements
- Added support for RHEL 8.4 and SLES15SP3.

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.

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.

Online HDD/SSD Flash Component for Linux (x64) - MB6000GEFNB Drives
Version: HPG4 (I) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-3243f0628-HPG4-9.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-3243f0628-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 8.4 and SLES15SP3.

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**Importance 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 8.4 and SLES15SP3.

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**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.

Online HDD/SSD Flash Component for Linux (x64) - MB6000GVYYU Drive
Version: HPG2 (I) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-bdc37cb37f-HPG2-9.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-bdc37cb37f-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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB6000GVYZB and MB4000GVYZA Drives
Version: HPG4 (F) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-0a7d4aa47f-HPG4-6.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-0a7d4aa47f-HPG4-6.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MB8000GFECR Drive
Version: HPG6 (F) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-6d922fc9a8-HPG6-6.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-6d922fc9a8-HPG6-6.1.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 8.4 and SLES15SP3.

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**Enhancements**

Online HDD/SSD Flash Component for Linux (x64) - MK000240GWCEU, MK000480GWCEV, MK000960GWCFA and MK001920GWCFB Drives

Version: HPG3 (G) **(Recommended)**

Filename: rpm/RPMS/x86_64/firmware-hdd-767764a25-HPG3-7.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-767764a25-HPG3-7.1.x86_64.rpm

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**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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**Enhancements**

Online HDD/SSD Flash Component for Linux (x64) - MK000480GWSSC, MK000960GWSSD, MK001920GWSSSE and MK003840GWSSSF Drives

Version: HPG3 (C) **(Recommended)**

Filename: rpm/RPMS/x86_64/firmware-hdd-f693ccc138-HPG3-3.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-f693ccc138-HPG3-3.1.x86_64.rpm

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**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.
Online HDD/SSD Flash Component for Linux (x64) - MK000480GWXFF, MK000960GWXFH, MK001920GWXFK and MK003840GWXFL Drives
Version: HPG2 (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-8e1e8083c5-HPG2-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-8e1e8083c5-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 FW release deploys an Enhanced Media Scan algorithm that addresses an issue when the host system does not provide enough idle time for drive's Foreground Media Scan to be activated, which is needed to ensure long term drive reliability. It also addresses few minor issues.

Online HDD/SSD Flash Component for Linux (x64) - MK003840GWHTE Drive
Version: HPG8 (B) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-ac20a1e1c6-HPG8-2.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-ac20a1e1c6-HPG8-2.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MK0960GECQK Drive
Version: HPG3 (K) (Critical)
Filename: rpm/RPMS/x86_64/firmware-hdd-3e34285be7-HPG3-11.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-3e34285be7-HPG3-11.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MM1000GEFQV and MM2000GEFRA Drives
Version: HPG8 (H) *(Recommended)*
Filename: rpm/RPMS/x86_64/firmware-hdd-ec908c3650-HPG8-8.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-ec908c3650-HPG8-8.1.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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MM1000GFJTE Drive
Version: HPG5 (F) *(Optional)*
Filename: rpm/RPMS/x86_64/firmware-hdd-95af9a555e-HPG5-6.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-95af9a555e-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..

Enhancements

- Added support for RHEL 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - MR000240GWFLU, MR000480GWFLV, VR000480GWFMD, MR000960GWFMA, VR000960GWFME, MR001920GWFMB and VR001920GWFMC Drives
Version: HPGG (B) *(Recommended)*
Filename: rpm/RPMS/x86_64/firmware-hdd-9196d4f720-HPGG-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-9196d4f720-HPGG-2.1.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 8.4 and SLES15SP3.

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Online HDD/SSD Flash Component for Linux (x64) - VK000150GWCNN, VK000240GWCPN, VK000480GWQ, VK000960GWCR and VK001600GWCNT Drives
Version: HPG1 (F) *(Recommended)*
Filename: rpm/RPMS/x86_64/firmware-hdd-6e3845def5-HPG1-6.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-6e3845def5-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..

**Enhancements**

- Added support for RHEL 8.4 and SLES15SP3.

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Online HDD/SSD Flash Component for Linux (x64) - VK000240GWCFD, VK000480GWCFE, VK000960GWCF, VK001920GWCFH and VK003840GWCFK Drives
Version: HPG3 (G) *(Recommended)*
Filename: rpm/RPMS/x86_64/firmware-hdd-f42438de3d-HPG3-7.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-f42438de3d-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**
o Added support for RHEL 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - VK000240GWJPD, VK000480GWJPE, VK000960GWJPF, VK001920GWJPH, VK003840GWJPK, MK000240GWJKV, MK000480GWJPN, MK000960GWJPP and MK001920GWJPQ Drives
Version: HPG5 (F) (Critical)
Filename: rpm/RPMS/x86_64/firmware-hdd-aef2a690c9-HPG5-6.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-hdd-aef2a690c9-HPG5-6.1.x86_64.rpm

Important Note!

o 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.

o Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

o Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

Enhancements

o Added support for RHEL 8.4 and SLES15SP3.

Fixes

o Fixes a rare link loss issue and adds enhancements for drive reliability.

o After HPG5 firmware is downloaded to the drive, the new HPG5 firmware will be active on the drive.

o The new drive bootloader code will be activated after the next drive power cycle.

o 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

o Added support for RHEL 8.4 and SLES15SP3.
Online HDD/SSD Flash Component for Linux (x64) - VK000240GWSRQ, VK000480GWSRR, VK000960GWSRT, VK001920GWSRU and VK003840GWSRV Drives
Version: HPG4 (C) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-db687966b4-HPG4-3.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-db687966b4-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 8.4 and SLES15SP3.

Online HDD/SSD Flash Component for Linux (x64) - VK000240GWTSV, VK000480GWTTA, VK000960GWTTB, VK001920GWTTCC, VK003840GWTTD, MK000480GWTTTH, MK000960GWTTTK, MK001920GWTTTL and MK003840GWTTN Drives
Version: 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.

Online HDD/SSD Flash Component for Linux (x64) - VK000240GXAWE, VK000480GXAWK, VK000960GXAWL, VK001920GXAWN, VK003840GXAWP, VK007680GXAWQ, MK000480GXAWF, MK000960GXAXB, MK001920GXAWR, MK003840GXAWT, VR000240GXBBB, MR000480GXBGGH and MR000960GXBBGK Drives
Version: HPG1 (B) (Recommended)
Filename: rpm/RPMS/x86_64/firmware-hdd-8f9bf23306-HPG1-2.1.x86_64.compsig;
rpm/RPMS/x86_64/firmware-hdd-8f9bf23306-HPG1-2.1.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 8.4 and SLES15SP3.

Enhancements

- Added support for RHEL 8.4 and SLES15SP3.

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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- Added support for RHEL 8.4 and SLES15SP3.
**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 8.4 and SLES15SP3.

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**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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**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.
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.

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.
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 8.4 and SLES15SP3.

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Enhancements

- Added support for RHEL 8.4 and SLES15SP3.

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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..

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Enhancements

- Added support for RHEL 8.4 and SLES15SP3.

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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..

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Enhancements

- Added support for VMware 7.0 U3
**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 - MB001000GWFWK and MB002000GWFWL Drives
Version: HPG6 (F) *(Recommended)*
Filename: CP048302.compsig; CP048302.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 - MB001000GWJAN, MB002000GWFWA and MB004000GWFWB Drives
Version: HPG1 (F) *(Recommended)*
Filename: CP048313.compsig; CP048313.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

Online HDD/SSD Flash Component for VMware ESXi - MB002000GWFGH and MB001000GWFGF Drives
Version: HPG3 (H) (Optional)
Filename: CP048317.compsig; CP048317.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

Online HDD/SSD Flash Component for VMware ESXi - MB004000GWKGV Drive
Version: HPG1 (F) (Recommended)
Filename: CP048319.compsig; CP048319.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

Online HDD/SSD Flash Component for VMware ESXi - MB004000GWWQH, MB002000GWWQF and MB001000GWWQF Drives
Version: HPG3 (C) (Recommended)
Filename: CP048430.compsig; CP048430.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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**Enhancements**

- Added support for VMware 7.0 U3

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**Enhancements**

- Added support for VMware 7.0 U3

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**Enhancements**

- Added support for VMware 7.0 U3

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**Enhancements**

- Added support for VMware 7.0 U3
o 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.

o In AHCI configuration only offline flashing is supported.

o Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

o 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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**Enhancements**

- Added support for VMware 7.0 U3

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**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..

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**Enhancements**

- Added support for VMware 7.0 U3

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**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..

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**Enhancements**

- Added support for VMware 7.0 U3
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 U3
Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.

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

Online HDD/SSD Flash Component for VMware ESXi - MB014000GWRTN, MB012000GWRTL and MB010000GWRTK Drives
Version: HPG2 (F) [Recommended]
Filename: CP048337.compsig; CP048337.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

Online HDD/SSD Flash Component for VMware ESXi - MB014000GWUDA Drive
Version: HPG2 (F) [Recommended]
Filename: CP048339.compsig; CP048339.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
**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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**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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**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**

Online HDD/SSD Flash Component for VMware ESXi - MB1000GDUNU, MB2000GDUNV, MB3000GDUPA and MB4000GDUPB Drives
Version: HPG4 (K) (Recommended)
Filename: CP048342.compsig; CP048342.zip

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Online HDD/SSD Flash Component for VMware ESXi - MB1000GVYZE, MB2000GVYZF, MB3000GVYZH and MB4000GVYZK Drives
Version: HPG4 (I) (Recommended)
Filename: CP048343.compsig; CP048343.zip
Online HDD/SSD Flash Component for VMware ESXi - MB2000GCWLT, MB3000GCWLJ and MB4000GCWLV Drives  
Version: HPG4 (K) (Recommended)  
Filename: CP048345.compsig; CP048345.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 - MB2000GFEMH and MB4000GFEMK Drives  
Version: HPG6 (I) (Critical)  
Filename: CP048346.compsig; CP048346.zip

**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 U3

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Online HDD/SSD Flash Component for VMware ESXi - MB4000GEFNA and MB6000GEFNB Drives  
Version: HPG6 (I) (Recommended)  
Filename: CP048365.compsig; CP048365.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

**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 U3

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**Online HDD/SSD Flash Component for VMware ESXi - MB4000GEQNH and MB6000GEQNK Drives**

Version: HPGB (I) (Critical)

Filename: CP048366.compsig; CP048366.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 - MB6000GEBTP Drive**

Version: HPG4 (I) (Recommended)

Filename: CP048370.compsig; CP048370.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 - MB6000GEOHT and MB8000GEQUU Drives**

Version: HPGB (I) (Critical)

Filename: CP048371.compsig; CP048371.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 U3

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Online HDD/SSD Flash Component for VMware ESXi - MB6000GEXXV Drive
Version: HPG2 (K) (Recommended)
Filename: CP048403.compsig; CP048403.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 - MB6000GVYYU Drive
Version: HPG2 (I) (Recommended)
Filename: CP048372.compsig; CP048372.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

**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

**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

**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
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

Online HDD/SSD Flash Component for VMware ESXi - MK000480GWSSC, MK000960GWSSD, MK001920GWSSE and MK003840GWSSF Drives
Version: HPG3 (Recommended)
Filename: CP048432.compsig; CP048432.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

Online HDD/SSD Flash Component for VMware ESXi - MK000480GWXFF, MK000960GWXFH, MK001920GWXFK and MK003840GWXFL Drives
Version: HPG2 (Recommended)
Filename: CP049299.compsig; CP049299.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 FW release deploys an Enhanced Media Scan algorithm that addresses an issue when the host system does not provide enough idle time for drive's Foreground Media Scan to be activated, which is needed to ensure long term drive reliability. It also addresses few minor issues.
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

Fixes

- Firmware fixes intermittent data corruption issue associated with unaligned sequential write operations.

Enhancements

- Added support for VMware 7.0 U3

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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Enhancements

- Added support for VMware 7.0 U3

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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 - MM1000GFJTE Drive
Version: HPG5 (F) (Optional)
Filename: CP048389.compsig; CP048389.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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Enhancements

- Added support for VMware 7.0 U3

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Online HDD/SSD Flash Component for VMware ESXi - MR000240GWFLU, MR000480GWFLV, VR000480GWFD, MR000960GWFM, MR001920GWFFM, VR000960GWFM, and VR001920GWFFM Drives
Version: HPGG (B) (Recommended)
Filename: CP048402.compsig; CP048402.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 - VK000150GWCN, VK000240GWCN, VK000880GWCN, VK000960GWCN, and VK001600GWCN Drives
Version: HPG1 (F) (Recommended)
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

Online HDD/SSD Flash Component for VMware ESXi - VK000240GWCFD, VK000480GWCFE, VK000960GWCFH, VK001920GWCFK and VK003840GWCFK Drives.
Version: HPG3 (G) (Recommended)
Filename: CP048407.compsig; CP048407.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

Online HDD/SSD Flash Component for VMware ESXi - VK000240GWEZB, VK000480GWECZ, VK000960GWEDZ, VK001920GWEZE, MK000240GWEZF, MK000480GWEZD, MK000960GWEZK and MK001920GWHRU Drives
Version: HPGG (B) (Recommended)
Filename: CP048406.compsig; CP048406.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 - VK000240GWJPD, VK000480GWJPE, VK000960GWJPF, VK001920GWJPH, VK003840GWJPK, MK000240GWKVK, MK000480GWJPN, MK000960GWJP and MK001920GWJPQ Drives
Version: HPG5 (F) (Critical)
Filename: CP048444.compsig; CP048444.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](https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00072768en_us)

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**Enhancements**

- Added support for VMware 7.0 U3

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Online HDD/SSD Flash Component for VMware ESXi - VK000240GWSRQ, VK000480GWSR, VK000960GWSR, VK001920GWSRU, VK003840GWSRV Drives
Version: HPG4 (C) (Recommended)
Filename: CP048434.compsig; CP048434.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
Online HDD/SSD Flash Component for VMware ESXi - VK000240GWTSV, VK000480GWTTA, VK000960GWTTB, VK001920GWTTCC, VK003840GWTTDD, MK000480GWTTTH, MK000960GWTTTK, MK001920GWTTTL and MK003840GWTTTN Drives
Version: 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

Offline HDD/SSD Flash Component for VMware ESXi - VK000240GXAWE, VK000480GXAWK, VK000960GXAWL, VK001920GXAWN, VK003840GXAWP, VK007680GXAWQ, MK000480GXAWF, MK000960GXAXB, MK001920GXAXR, MK003840GXAWT, VR000240GXBL, MR000480GXBGH and MR000960GXBGK Drives
Version: HPG1 (B) (Recommended)
Filename: CP049160.compsig; CP049160.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

Offline HDD/SSD Flash Component for VMware ESXi - VK000480GWSXF, VK000960GWSXH, VK001920GWSXX, MK000480GWUGF, MK000960GWUGH and MK001920GWUGK Drives
Version: HPG3 (B) (Recommended)
Filename: CP048409.compsig; CP048409.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.
  o Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

Enhancements

  o Added support for VMware 7.0 U3

Important Note!

  o 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.
  o In AHCI configuration only offline flashing is supported.
  o Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.
  o Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

Enhancements

  o Added support for VMware 7.0 U3

Important Note!

  o 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.
  o In AHCI configuration only offline flashing is supported.
  o Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.
  o Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..

Enhancements

  o Added support for VMware 7.0 U3

Important Note!

  o 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.
  o In AHCI configuration only offline flashing is supported.
  o Online drive firmware update available for Smart Array Controllers configured in systems running supported Linux, Microsoft Windows, and VMware environments. All other OSes would require an offline update using the Service Pack for ProLiant and Smart Update Manager.
  o Customers who already installed latest firmware version do not need to update to sub version like (B) (C) (D) etc..
**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 - VK007680GWSXN Drive
Version: HPG3 (B) *(Recommended)*
Filename: CP048411.compsig; CP048411.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 - VK0120GFDKE, VK0240GFDKF, VK0480GFDKH, VK0960GFDKK, VK1920GFDKL, and VK3840GFDKN Drives
Version: HPG1 (J) *(Recommended)*
Filename: CP048412.compsig; CP048412.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

**Online HDD/SSD Flash Component for VMware ESXi - VK0240GEPQN, VK0480GEPQP and VK0960GEPQQ Drives**
*Version: HPG1 (J) (Recommended)*
*Filename: CP048413.compsig; CP048413.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 - VR000150GWEPP and VR000480GWEPR Drives**
*Version: HPG1 (G) (Critical)*
*Filename: CP048424.compsig; CP048424.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 U3

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**Online HDD/SSD Flash Component for VMware ESXi - XP0120GFJSL and XP0240GFJSN Drives**
*Version: HPS4 (J) (Recommended)*
*Filename: CP048423.compsig; CP048423.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

**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 Microsoft Windows Server 2022.

**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 Microsoft Windows Server 2022.
Online HDD/SSD Flash Component for Windows (x64) - MB001000GWFWK and MB002000GWFWL Drives
Version: HPG6 (E) (Recommended)
Filename: cp048557.compsig; cp048557.exe; cp048557.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 Microsoft Windows Server 2022.

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Online HDD/SSD Flash Component for Windows (x64) - MB001000GWJAN, MB002000GWFWA and MB004000GWFWB Drives
Version: HPG1 (E) (Recommended)
Filename: cp048558.compsig; cp048558.exe; cp048558.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 Microsoft Windows Server 2022.

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Online HDD/SSD Flash Component for Windows (x64) - MB002000GWFGH and MB001000GWFGF Drives
Version: HPG3 (G) (Optional)
Filename: cp048559.compsig; cp048559.exe; cp048559.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 Microsoft Windows Server 2022.
Online HDD/SSD Flash Component for Windows (x64) - MB004000GWKGV Drive
Version: HPG1 (E) (Recommended)
Filename: cp048561.compsig; cp048561.exe; cp048561.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 Microsoft Windows Server 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB004000GWQWH, MB002000GWQF and MB001000GWQEQ Drives
Version: HPG3 (C) (Recommended)
Filename: cp048652.compsig; cp048652.exe; cp048652.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB006000GWBXQ and MB008000GWBYL Drives
Version: HPG8 (E) (Recommended)
Filename: cp048667.compsig; cp048667.exe; cp048667.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 Microsoft Windows Server 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB006000GWJRR and MB008000GWJRT Drives
Version: HPG4 (D) (Recommended)
Filename: cp048470.compsig; cp048470.exe; cp048470.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 Microsoft Server Windows 2022.
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 Microsoft Windows Server 2022.

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 Microsoft Windows Server 2022.

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 Microsoft Windows Server 2022.

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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB012000GWDFE Drive
Version: HPG3 (B) (Recommended)
Filename: cp048673.compsig; cp048673.exe; cp048673.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB012000GWDFE and MB014000GWTFF Drives
Version: HPG7 (C) (Recommended)
Filename: cp048543.compsig; cp048543.exe; cp048543.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB014000GWTFN, MB012000GWRTL and MB010000GWRTK Drives
Version: HPG2 (E) (Recommended)
Filename: cp048544.compsig; cp048544.exe; cp048544.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB014000GWUDA Drive
Version: HPG3 (E) (Recommended)
Filename: cp048545.compsig; cp048545.exe; cp048545.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB016000GWXKK Drive
Version: HPG3 (B) *(Recommended)*
Filename: cp049127.compsig; cp049127.exe; cp049127.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 Microsoft Windows Server 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB10000GDUNU, MB2000GDUNV, MB3000GDUPA and MB4000GDUPB Drives
Version: HPG4 (I) *(Recommended)*
Filename: cp048564.compsig; cp048564.exe; cp048564.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB10000GVYZE, MB2000GVYZF, MB3000GVYZH and MB4000GVYZK Drives
Version: HPG4 (I) *(Recommended)*
Filename: cp048568.compsig; cp048568.exe; cp048568.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB2000GCVL, MB3000GCVLU and MB4000GCVL Drive
Version: HPG4 (I) *(Recommended)*
Filename: cp048574.compsig; cp048574.exe; cp048574.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB2000GFEMH and MB4000GFEMK Drives
Version: HPG6 (H) **Critical**
Filename: cp048588.compsig; cp048588.exe; cp048588.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB4000GEFNA and MB6000GEFNB Drives
Version: HP66 (I) **Recommended**
Filename: cp048592.compsig; cp048592.exe; cp048592.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MB4000GEQNH and MB6000GEQNK Drives
Version: HPGB (H) **Critical**
Filename: cp048593.compsig; cp048593.exe; cp048593.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 Microsoft Server Windows 2022.
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 Microsoft Server Windows 2022.

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 Microsoft Server Windows 2022.
**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 Microsoft Server Windows 2022.

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**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 Microsoft Server Windows 2022.

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**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 Microsoft Server Windows 2022.
Online HDD/SSD Flash Component for Windows (x64) - MK000480GWXFF, MK000960GWXFH, MK001920GWXFK and MK003840GWXFL Drives
Version: HPG2 (Recommended)
Filename: cp049300.compsig; cp049300.exe; cp049300.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 FW release deploys an Enhanced Media Scan algorithm that addresses an issue when the host system does not provide enough idle time for drive’s Foreground Media Scan to be activated, which is needed to ensure long term drive reliability. It also addresses few minor issues.

Online HDD/SSD Flash Component for Windows (x64) - MK003840GWHTE Drive
Version: HPG8 (B) (Recommended)
Filename: cp048620.compsig; cp048620.exe; cp048620.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MK0960GECQK Drive
Version: HPG3 (K) (Critical)
Filename: cp048621.compsig; cp048621.exe; cp048621.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MM1000GEFQV and MM2000GEFRA Drives
Version: HPG8 (G) (Recommended)
Filename: cp048622.compsig; cp048622.exe; cp048622.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MM1000GFJTE Drive
Version: HPGS (E) *(Optional)*
Filename: cp048623.compsig; cp048623.exe; cp048623.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - MM1000GFJTE Drive
Version: HPGS (F) *(Recommended)*
Filename: cp048637.compsig; cp048637.exe; cp048637.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 Microsoft Server Windows 2022.
- 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 Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - VK000240GWEZB, VK000480GWEZC, VK000960GWEZD, VK001920GWEZE, MK000240GWEZF, MK000480GWEZHH, MK000960GWEZK and MK001920GWHRU Drives
Version: HP5G (B) (Recommended)
Filename: cp048636.compsig; cp048636.exe; cp048636.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 Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - VK000240GWJPD, VK000480GWJPE, VK000960GWJPF, VK001920GWJPJ, VK003840GWJPK, MK000240GWKVK, MK000480GWJPN, MK000960GWJPP and MK001920GWJPQ Drives
Version: HP5G (E) (Critical)
Filename: cp048664.compsig; cp048664.exe; cp048664.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 HP5G firmware is downloaded to the drive, the new HP5G 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](https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00072768en_us)

**Enhancements**
- Added support for Microsoft Server Windows 2022.

Online HDD/SSD Flash Component for Windows (x64) - VK000240GWSRQ, VK000480GWSRR, VK000960GWSRT, VK001920GWSRU and VK003840GWSRV Drives
Version: HP5G (C) (Recommended)
Filename: cp048657.compsig; cp048657.exe; cp048657.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 Microsoft Server Windows 2022.
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 Microsoft Windows Server 2022.

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 Microsoft Windows Server 2022.

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 Microsoft Server Windows 2022.

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 Microsoft Server Windows 2022.
• 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 2022.

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Online HDD/SSD Flash Component for Windows (x64) - VK000960GXCLD, VK001920GXCGP, VK003840GXCGQ and VK007680GXCGR Drives
Version: HPG2 (B) *(Recommended)*
Filename: cp049274.compsig; cp049274.exe; cp049274.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 Microsoft Windows Server 2022.

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Online HDD/SSD Flash Component for Windows (x64) - VK003840GW
Version: HPG3 (B) *(Recommended)*
Filename: cp048639.compsig; cp048639.exe; cp048639.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..

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Online HDD/SSD Flash Component for Windows (x64) - VK007680GWSXL Drive
Version: HPG3 (B) *(Recommended)*
Filename: cp048640.compsig; cp048640.exe; cp048640.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 Microsoft Server Windows 2022.

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Online HDD/SSD Flash Component for Windows (x64) - VK0120GFDKE, VK0240GFDKF, VK0480GFDKH, VK0960GFDKK, VK1920GFDKL and VK3840GFDKN Drives
Version: HPG1 (H) *(Recommended)*
Filename: cp048641.compsig; cp048641.exe; cp048641.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 Microsoft Server Windows 2022.

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Online HDD/SSD Flash Component for Windows (x64) - VK0240GEPQN, VK0480GEPQP and VK0960GEPQQ Drives
Version: HPG1 (H) *(Recommended)*
Filename: cp048642.compsig; cp048642.exe; cp048642.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 Microsoft Server Windows 2022.

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Online HDD/SSD Flash Component for Windows (x64) - VR00150GWEPP and VR00480GWEPR Drives
Version: HPG1 (F) *(Critical)*
Filename: cp048647.compsig; cp048647.exe; cp048647.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 Microsoft Server Windows 2022.

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Online HDD/SSD Flash Component for Windows (x64) - XP0120GFJSL and XP0240GFJSN Drives
Version: HP54 (H) *(Recommended)*
Filename: cp048646.compsig; cp048646.exe; cp048646.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 Microsoft Server Windows 2022.

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**Firmware - Storage Controller**
HPE D3600/D3700/D3610/D3710 12Gb SAS Disk Enclosure ROM Flash Component for Linux (x64)
Version: 5.04 (C) *(Recommended)*
Filename: cp048695.md5; RPMS/x86_64/firmware-d3000-5.04-3.1.x86_64.compsig; RPMS/x86_64/firmware-d3000-5.04-3.1.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 workarounds 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
**HPE D3600/D3700/D3610/D3710 12Gb SAS Disk Enclosure ROM Flash Component for VMware (ESXi)**
**Version:** 5.04 (C) *(Recommended)*
**Filename:** CP048696.compsig; CP048696.md5; CP048696.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 workarounds 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
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 workarounds 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 (J) (Recommended)
Filename: CP048698.md5; RPMS/x86_64/firmware-d6020-2.74-10.1.x86_64.compsig; RPMS/x86_64/firmware-d6020-2.74-10.1.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 workarounds 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 VMware (ESXi)**

Version: 2.74 (J) (**Recommended**)

Filename: CP048699.compsig; CP048699.md5; CP048699.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 workarounds 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

HPE D6020 12Gb SAS Disk Enclosure ROM Flash Component for Windows (x64)
Version: 2.74 (1) (Recommended)
Filename: cp048697.compsig; cp048697.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

**Online ROM Flash Component for Linux - HPE Host Bus Adapters H221**

Version: 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.

**Online ROM Flash Component for Linux (x64) - HPE Apollo 2000 System - SAS Expander**

Version: 1.52 *(Recommended)*

Filename: rpm/RPMS/x86_64/firmware-smartarray-3bf7ece88e-1.52-1.1.x86_64.rpm

**Fixes**

Fixed an issue in the HPE Apollo 2000 System SAS Expander FW where the HDD Zoning Table would be set to default after upgrading to 1.51.

Please reference Customer Advisory a00095304en_us.

**Online ROM Flash Component for VMware ESXi - HPE Apollo 2000 System - SAS Expander**

Version: 1.52 (B) *(Recommended)*

**Important Note!**

- Do NOT downgrade firmware to previous version if your current expander is 5.12, 5.10 or earlier version; please upgrade to 5.14 immediately.

**Fixes**

- Fix intermittent expander/drives missing issue during repeatedly power cycles
- Provide a proper downgrade restriction to ensure firmware compatibility with the latest flashes.

**Enhancements**

- Now Shiner Expander firmware boots up successfully at the time of Initialization.

**Online ROM Flash Component for VMware ESXi - HPE Apollo 2000 System - SAS Expander**

Version: 1.52 (B) *(Recommended)*
Enhancements

Added support for ESXi 7.0

Online ROM Flash Component for VMware ESXi – HPE Apollo 45xx Gen9 Backplane Expander Firmware
Version: 2.51 (Recommended)
Filename: CP043496.compsig; CP043496.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.

Fixes

Drive may show up missing after a system reboot.

Please reference Customer Advisory a00098241en_us

Online ROM Flash component for VMware ESXi - HPE Dual 8GB microSD USB
Version: 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.

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 support for the ESXi OS 7.0 changes

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 P841
Version: 7.00 (D) (Recommended)
Filename: CP047335.compsig; CP047335.zip

Fixes
- Improved flash engine efficiency

Online ROM Flash Component for VMware ESXi - Smart Array P220i, P222, P420i, P420, P421, P721m, and P822
Version: 8.32 (E) (Recommended)
Enhancements

Added support for ESXi 7.0

Online ROM Flash Component for VMware ESXi - Smart Array P230i, P430, P431, P731m, P830i, and P830
Version: 5.02 (B) (Recommended)
Filename: CP045345.compsig; CP045345.zip

Enhancements

Added support for the ESXi OS 7.0

Online ROM Flash Component for Windows (x64) - HPE 12Gb/s SAS Expander Firmware for HPE Smart Array Controllers and HPE HBA Controllers
Version: 5.14 (Recommended)
Filename: cp052265.compsig; cp052265.exe; cp052265.md5

Important Note!
- Do NOT downgrade firmware to previous version if your current expander is 5.12, 5.10 or earlier version; please upgrade to 5.14 immediately.

Fixes
- Fix intermittent expander/drives missing issue during repeatedly power cycles
- Provide a proper downgrade restriction to ensure firmware compatibility with the latest flashes.

Enhancements
- Now Shiner Expander firmware boots up successfully at the time of Initialization.

Online ROM Flash Component for Windows (x64) - HPE Apollo 2000 System - SAS Expander
Version: 1.52 (Recommended)
Filename: cp041644.exe; cp041644.md5

Fixes
- Fixed an issue in the HPE Apollo 2000 System SAS Expander FW where the HDD Zoning Table would be set to default after upgrading to 1.51

Please reference Customer Advisory a00095304en_us.

Online ROM Flash Component for Windows (x64) - HPE Apollo 45xx Gen9 Backplane Expander Firmware
Version: 2.51 (Recommended)
Filename: cp043498.exe; cp043498.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
- Drive may show up missing after a system reboot.

Please reference Customer Advisory a00098241en_us.

Online ROM Flash Component for Windows (x64) - HPE Express Bay Enablement Switch Card
Version: 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 H221
Version: 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) - Smart Array and Smart HBA H240ar, H240nr, H240, H241, H244br, P240nr, P244br, P246br, P440ar, P440, P441, P542D, P741m, P840, P840ar, and P841  
Version: 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 inaccurately 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.

Online ROM Flash Component for Windows (x64) - Smart Array P220i, P222, P420i, P420, P421, P721m, and P822
Version: 8.32 (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

Online ROM Flash Component for Windows (x64) - Smart Array P230i, P430, P431, P731m, P830i, and P830
Version: 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.

Supplemental Update / Online ROM Flash Component for Linux (x64) – HPE 12Gb/s SAS Expander Firmware for HPE Smart Array Controllers and HPE HBA Controllers
Version: 5.14 (Recommended)
Filename: rpm/RPMS/x86_64/firmware-smartarray-1f19a4a64d-5.14-1.1.x86_64.compsig; rpm/RPMS/x86_64/firmware-smartarray-1f19a4a64d-5.14-1.1.x86_64.rpm

**Important Note!**

- Do NOT downgrade firmware to previous version if your current expander is 5.12, 5.10 or earlier version; please upgrade to 5.14 immediately.

**Fixes**

- Fix intermittent expander/drives missing issue during repeatedly power cycles
- Provide a proper downgrade restriction to ensure firmware compatibility with the latest flashes

**Enhancements**

- Now Shiner Expander firmware boots up successfully at the time of Initialization.

Supplemental Update / Online ROM Flash Component for Linux (x64) – HPE Apollo 45xx Gen9 Backplane Expander Firmware
Version: 2.51 (Recommended)
Filename: rpm/RPMS/x86_64/firmware-smartarray-7bfdfcd246b-2.51-1.1.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**

Drive may show up missing after a system reboot.

Please reference Customer Advisory a00098241en_us

Supplemental Update / Online ROM Flash Component for Linux (x64) – HPE Express Bay Enablement Switch Card
Version: 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

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 P841
  
  Version: 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 inaccurately 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 P822
Version: 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

Supplemental Update / Online ROM Flash Component for Linux (x64) - Smart Array P230i, P430, P431, P731m, P830i, and P830
Version: 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

**Firmware - Storage Fibre Channel**

HPE Firmware Flash for Emulex Fibre Channel Host Bus Adapters for Linux (x64)
Version: 2021.10.01 (Recommended)
Filename: RPMS/x86_64/firmware-fc-emulex-2021.10.01-1.6.x86_64.compsig; RPMS/x86_64/firmware-fc-emulex-2021.10.01-1.6.x86_64.rpm

**Important Note!**

The target environment must have the libHBAAPI Package installed prior to the installation of the firmware as the discovery of adapters might not complete without the library. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

This Firmware package contains following firmware versions:

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<td>8Gb</td>
<td>12.80a3</td>
<td>2.10X6</td>
<td>12.8.183.0</td>
<td>12.8.9.0</td>
</tr>
</tbody>
</table>
**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 target environment must have the libHBAAPI Package installed prior to the installation of the firmware as the discovery of adapters might not complete without the library. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

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)

**Enhancements**

This Firmware package contains following firmware versions:

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<td>12.8.528.10</td>
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</tr>
</tbody>
</table>
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 Quad Port Fibre Channel Host Bus Adapter
- HPE SN1100E 16Gb Single Port 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 Firmware Flash for Emulex Fibre Channel Host Bus Adapters for Microsoft Windows Server 2012R2 x64
Version: 2021.10.01 (Recommended)
Filename: cp049105.compsig; cp049105.exe

Important Note!

This Firmware package contains following firmware versions:

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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/

Enhancements

This Firmware package contains following firmware versions:

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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 16Gb Quad Port 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 Firmware Flash for Emulex Fibre Channel Host Bus Adapters for Microsoft Windows Server 2016/2019 x64
Version: 2021.10.01 *(Recommended)*
Filename: cp048599.compsig; cp048599.exe

**Important Note!**

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This Firmware package contains following firmware versions:

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**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 16Gb Quad Port 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 SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter
• HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

HPE Firmware Flash for Emulex Fibre Channel Host Bus Adapters for VMware vSphere 6.5
Version: 2021.10.01 (Recommended)
Filename: CP048595.compsig; CP048595.zip

Important Note!

This Firmware package contains following firmware versions:

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Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

Enhancements

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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 Quad Port 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 Firmware Flash for Emulex Fibre Channel Host Bus Adapters for VMware vSphere 6.7
Version: 2021.10.01 (Recommended)
Filename: CP048596.compsig; CP048596.zip

**Important Note!**

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HPE SN1200E 16Gb Single Port Fibre Channel Host Bus Adapter
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**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


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**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
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 16Gb Quad Port 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 Firmware Flash for Emulex Mezzanine Fibre Channel Host Bus Adapters for Linux (x64)
Version: 2021.10.01 (Recommended)
Filename: RPMS/x86_64/firmware-fc-mezz-emulex-2021.10.01-1.5.x86_64.compsig; RPMS/x86_64/firmware-fc-mezz-emulex-2021.10.01-1.5.x86_64.rpm

Important Note!
The target environment must have the libHBAAPI Package installed prior to the installation of the firmware as the discovery of adapters might not complete without the library. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

This Firmware package contains following firmware versions:

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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 target environment must have the libHBAAPI Package installed prior to the installation of the firmware as the discovery of adapters might not complete without the library. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

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)

Enhancements

This Firmware package contains following firmware versions:
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

HPE Firmware Flash for Emulex Mezzanine Fibre Channel Host Bus Adapters for Microsoft Windows Server 2012R2 x64
Version: 2021.10.01 (Recommended)
Filename: cp049107.compsig; cp049107.exe

Important Note!

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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/

Enhancements

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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

HPE Firmware Flash for Emulex Mezzanine Fibre Channel Host Bus Adapters for Microsoft Windows Server 2016/2019 x64
Important Note!

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Prerequisites

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http://www.hpe.com/storage/sopock/

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/

Enhancements

This Firmware package contains following firmware versions:

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<td>HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class</td>
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<td>12.8.528.12</td>
<td>12.8.528.10</td>
<td>12.8.502.0</td>
</tr>
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</table>

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 6.5
Version: 2021.10.01 (Recommended)
Filename: CP048576.compsig; CP048576.zip

Important Note!

This Firmware package contains following firmware versions:

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Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/sopock/

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**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

---

**Important Note!**

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Please consult SPOCK for a list of supported configurations available at the following link:


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**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

---

**Important Note!**

HPE Firmware Flash for QLogic Fibre Channel Host Bus Adapters - Linux (x86_64)
Version: 2021.10.01 (Recommended)
Filename: RPMS/x86_64/firmware-fc-qlogic-2021.10.01-1.3.x86_64.compsig; RPMS/x86_64/firmware-fc-qlogic-2021.10.01-1.3.x86_64.rpm

**Important Note!**
The target environment must have the libHBAAPI Package installed prior to the installation of the firmware as the discovery of adapters might not complete without the library. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

This Firmware package contains following firmware versions:

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**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:


The target environment must have the libHBAAPI Package installed prior to the installation of the firmware as the discovery of adapters might not complete without the library. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

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](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.

**Enhancements**

This Firmware package contains following firmware versions:

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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 Firmware Flash for QLogic Fibre Channel Host Bus Adapters - Microsoft Windows Server 2012R2/2016/2019(x86_64)
Version: 2021.10.01 (Recommended)
Filename: cp048728.compsig; cp048728.exe

**Important Note!**

This Firmware package contains following firmware versions:

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**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.

**Enhancements**

This Firmware package contains following firmware versions:

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**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 Firmware Flash for QLogic Fibre Channel Host Bus Adapters for VMware vSphere 6.5
Version: 2021.10.01 *(Recommended)*
Filename: CP048724.compsig; CP048724.zip

**Important Note!**

This Firmware package contains following firmware versions:

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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/

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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 Firmware Flash for QLogic Fibre Channel Host Bus Adapters for VMware vSphere 6.7
Version: 2021.10.01 (**Recommended**)
Filename: CP048725.compsig; CP048725.zip

**Important Note!**

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**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/

**Enhancements**

This Firmware package contains following firmware versions:

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<tr>
<td>HPE 81Q 8Gb PCIe Fibre Channel Host Bus Adapter</td>
<td>8Gb</td>
<td>3.82.00</td>
<td>8.08.207</td>
<td>7.00</td>
<td>3.56</td>
</tr>
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<td>HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter</td>
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</tr>
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<td>HPE 84Q 8Gb Quad Port Fibre Channel Host Bus Adapter</td>
<td>8Gb</td>
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</table>

**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 Firmware Flash for QLogic Mezzanine Fibre Channel Host Bus Adapters - Linux (x86_64)
Version: 2021.10.01 (Recommended)
Filename: RPMs/x86_64/firmware-fc-mezz-qlogic-2021.10.01-1.6.x86_64.compsig; RPMs/x86_64/firmware-fc-mezz-qlogic-2021.10.01-1.6.x86_64.rpm

Important Note!

The target environment must have the libHBAAPI Package installed prior to the installation of the firmware as the discovery of adapters might not complete without the library. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

This Firmware package contains following firmware versions:

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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 target environment must have the libHBAAPI Package installed prior to the installation of the firmware as the discovery of adapters might not complete without the library. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

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.
**Enhancements**

Updated the Firmware/BIOS/UEFI packages for 16 Gb products.

<table>
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**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 - Microsoft Windows Server 2012R2/2016/2019 (x86_64)
Version: 2021.10.01 *(Recommended)*
Filename: cp048715.compsig; cp048715.exe

**Important Note!**

This Firmware package contains following firmware versions:

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**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.

**Enhancements**

Updated the Firmware/BIOS/UEFI packages for 16 Gb products.

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**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 6.5
Version: 2021.10.01 *(Recommended)*
Important Note!

Release Notes:
HPE QLogic Adapter Release Notes

This Firmware package contains following firmware versions:

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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/

Enhancements

Updated the Firmware/BIOS/UEFI packages for 16 Gb products.

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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 6.7
Version: 2021.10.01 (Recommended)
Filename: CP048712.compsig; CP048712.zip

Important Note!

Release Notes:
HPE QLogic Adapter Release Notes

This Firmware package contains following firmware versions:

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<tr>
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**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/

**Enhancements**

Updated the Firmware/BIOS/UEFI packages for 16 Gb products.

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**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

---

**Firmware - System**

Online Flash Component for Linux - NVMe Backplane PIC Firmware
Version: 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 Firmware
Version: 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 Windows x64 - NVMe Backplane PIC Firmware
Version: 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

**Firmware (Entitlement Required) - Storage Controller**

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

**Software - Lights-Out Management**

**Top**

HPE Lights-Out Online Configuration Utility for Linux (AMD64/EM64T)

Version: 5.6.0-0 *(Optional)*

Filename: hpncfg-5.6.0-0.x86_64.compsig; hpncfg-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).

**Top**

HPE Lights-Out Online Configuration Utility for Windows x64 Editions

Version: 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**

HPE Agentless Management Bundle Smart Component for Gen9 on ESXi 7.0
Version: 2021.10.01 *(Recommended)*
Filename: cp047519.compsig; cp047519.zip

**Fixes**

**Agentless Management Service**


---

HPE CRU Driver Bundle Smart Component for ESXi 7.0
Version: 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 7.0
Version: 2021.10.01 *(Recommended)*
Filename: cp047521.compsig; cp047521.zip

**Enhancements**

Supports VMware ESXi 7.0 U2 and ESXi 7.0 U3

---

HPE ILO Driver Bundle Smart Component for ESXi 7.0
Version: 2021.09.01 *(Recommended)*
Filename: cp047518.compsig; cp047518.zip

**Fixes**

- Fixed driver unload function to allow controller to function properly on reload.

---

HPE Management Bundle Smart Component for ESXi 6.5 for Gen9 Servers
Version: 2021.10.00 *(Recommended)*
Filename: cp049077.compsig; cp049077.zip

**Fixes**

**Agentless Management Service**


**iLO Driver**

- Fixed driver unload function to allow controller to function properly on reload.

---

HPE Management Bundle Smart Component for ESXi 6.7 for Gen9 Servers
Version: 2021.10.00 *(Recommended)*
Filename: cp049078.compsig; cp049078.zip

**Fixes**
Agentless Management Service


iLO Driver

- Fixed driver unload function to allow controller to function properly on reload and when Quickboot is enabled

HPE SDK Python Module

Version: 3.3.0 (Optional)
Filename: python-iloorest-library-3.3.0.0.zip

Fixes

Snap5

HPE SMX Provider Bundle Smart Component for ESXi 7.0
Version: 2020.04.01 (B) (Recommended)
Filename: cp044960.compsig; cp044960.zip

Enhancements

Updated supported server list.

Smart Storage Administrator (SSA) CLI Smart Component for ESXi 7.0
Version: 2021.04.01 (Recommended)
Filename: cp047031.compsig; cp047031.zip

Enhancements

Adding support to the HPE SR Gen10 Plus Controllers.

Smart Storage Administrator (SSA) CLI Smart Component for ESXi 7.0
Version: 2021.09.01 (Recommended)
Filename: cp047066.compsig; cp047066.zip

Fixes

- Fixed an issue where the "Turn off" LED operation momentarily turns on all Identify LED.
- Fixed an issue where an NVME drive was failed after flashing drive firmware.
- Fixed an issue where an operation failure message was observed while deleting a volume with status “Not Available”.
- Fixed an issue that SSAScripting reported incorrect size for some drives greater than 1TB. This did not affect SSACLI.

Enhancements

- Added initial passive SED support.
- Added new "unchanged" Drive Write Cache (DWC) policy to the applications.
- Added support for discovering and reporting failed drives that are not part of a RAID volume.

Software - Network

Broadcom Active Health System Agent for HPE ProLiant Network Adapters for Linux x86_64
Version: 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_64
Version: 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

**Software - Storage Controller**

HPE ProLiant Smart Array SAS/SATA Event Notification Service for 64-bit Windows Server Editions
Version: 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**


**Software - Storage Fibre Channel**

HPE QLogic Fibre Channel driver component for VMware vSphere 6.5
Version: 2021.10.01 *(Recommended)*
Filename: cp048721.compsig; cp048721.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.

**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:

- Addressed unwanted behavior with Fabric Port Identification Number (FPIN) based congestion throttling leading to poor performance.
- Fixed an unwanted behavior where stale connection IDs could be used with Fibre Channel- Non Volatile Memory Express (FC-NVMe) traffic.
- Fixed an unwanted behavior with response queue handling to avoid the problem referenced by https://kb.vmware.com/s/article/81721

**Enhancements**

Added the following:

- Made improvements to the Fabric Port Identification Number (FPIN) and Universal Storage Area Network (SAN) Congestion Mitigation (USCM) Congestion Management algorithm
- Implemented the vmkmgmt Application programming Interface (API) to report Non-Volatile Memory Express (NVMe) target info and send Non-Volatile Memory Express (NVMe) pass through commands

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 QLogic Fibre Channel driver component for VMware vSphere 6.7
Version: 2021.10.01 (Recommended)
Filename: cp048722.compsig; cp048722.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.

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:

• Addressed unwanted behavior with Fabric Port Identification Number (FPIN) based congestion throttling leading to poor performance.
• Fixed an unwanted behavior where stale connection IDs could be used with Fibre Channel- Non Volatile Memory Express (FC-NVMe) traffic.

• Fixed an unwanted behavior with response queue handling to avoid the problem referenced by https://kb.vmware.com/s/article/81721

Enhancements

Added the following:

• Made improvements to the Fabric Port Identification Number (FPIN) and Universal Storage Area Network (SAN) Congestion Mitigation (USCM) Congestion Management algorithm

• Implemented the vmkmgmt Application programming Interface (API) to report Non-Volatile Memory Express (NVMe) target info and send Non-Volatile Memory Express (NVMe) pass through commands

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 QLogic Mezzanine Fibre Channel driver component for VMware vSphere 6.5
Version: 2021.10.01 (Recommended)
Filename: cp048708.compsig; cp048708.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.

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:

- Addressed unwanted behavior with Fabric Port Identification Number (FPIN) based congestion throttling leading to poor performance.
- Fixed an unwanted behavior where stale connection IDs could be used with Fibre Channel- Non Volatile Memory Express (FC-NVMe) traffic.
- Fixed an unwanted behavior with response queue handling to avoid the problem referenced by https://kb.vmware.com/s/article/81721

Enhancements

Added the following:

- Made improvements to the Fabric Port Identification Number (FPIN) and Universal Storage Area Network (SAN) Congestion Mitigation (USCM) Congestion Management algorithm
- Implemented the vmkmgmt Application programming Interface (API) to report Non-Volatile Memory Express (NVMe) target info and send Non-Volatile Memory Express (NVMe) pass through commands

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

HPE QLogic Mezzanine Fibre Channel driver component for VMware vSphere 6.7
Version: 2021.10.01 (Recommended)
Filename: cp048709.compsig; cp048709.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.

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:

- Addressed unwanted behavior with Fabric Port Identification Number (FPIN) based congestion throttling leading to poor performance.
- Fixed an unwanted behavior where stale connection IDs could be used with Fibre Channel- Non Volatile Memory Express (FC-NVMe) traffic.
- Fixed an unwanted behavior with response queue handling to avoid the problem referenced by https://kb.vmware.com/s/article/81721

Enhancements

Added the following:

- Made improvements to the Fabric Port Identification Number (FPIN) and Universal Storage Area Network (SAN) Congestion Mitigation (USCM) Congestion Management algorithm
- Implemented the vmkmgmt Application programming Interface (API) to report Non-Volatile Memory Express (NVMe) target info and send Non-Volatile Memory Express (NVMe) pass through commands

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

HPE Storage Emulex Fibre Channel driver component for VMware vSphere 6.5
Version: 2021.10.01 (Recommended)
Filename: cp048603.compsig; cp048603.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 viibsdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

Prerequisites

Please consult SPOCK for a list of supported configurations available at the following link:

http://www.hpe.com/storage/spock/

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 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 Emulex Fibre Channel driver component for VMware vSphere 6.7
Version: 2021.10.01 *(Recommended)*
Filename: cp048604.compsig; cp048604.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.

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


**Enhancements**

Updated to Driver version 12.8.528.14

**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 16Gb Quad Port 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 Storage Emulex Mezzanine Fibre Channel driver component for VMware vSphere 6.5
Version: 2021.10.01 (Recommended)
Filename: cp048584.compsig; cp048584.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.

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


**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

HPE Storage Emulex Mezzanine Fibre Channel driver component for VMware vSphere 6.7
Version: 2021.10.01 (Recommended)
Filename: cp048585.compsig; cp048585.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.
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 12.8.528.14

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

Software - Storage Fibre Channel HBA

Fibreutils for HPE Storage Fibre Channel Host Bus Adapters for Linux -Red Hat Enterprise Linux (RHEL)
Version: 4.1-1 (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 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 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 Dual Port Fibre Channel Host Bus Adapter
- HPE SN1600Q 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
Fibreutils for HPE Storage Fibre Channel Host Bus Adapters for Linux -SuSE Linux Enterprise Server (SLES)
Version: 4.1-1 (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 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 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 CN1200E Dual Port 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 Emulex Fibre Channel Enablement Kit for Host Bus Adapters and Mezzanine Host Bus Adapters for Red Hat Enterprise Linux 7 Server
Version: 12.8.526.0 (Recommended)
Filename: HPE-CNA-FC-Emulex-Enablement-Kit-12.8.526.0-1.rhel7.x86_64.compsig; HPE-CNA-FC-Emulex-Enablement-Kit-12.8.526.0-1.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.)

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.)

Enhancements
Updated to version 12.8.526.0

**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 16Gb Quad Port 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
- HPE SN1200E 16Gb Quad 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

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HPE Emulex Fibre Channel Enablement Kit for Host Bus Adapters and Mezzanine Host Bus Adapters for Red Hat Enterprise Linux 8 Server
Version: 12.8.526.0 *(Optional)*
Filename: HPE-CNA-FC-Emulex-Enablement-Kit-12.8.526.0-1.rhel8.x86_64.compsig; HPE-CNA-FC-Emulex-Enablement-Kit-12.8.526.0-1.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.)

**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.)

**Enhancements**

Added the following support:

- Added support for RHEL 8.4

Updated to version 12.8.526.0

**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 16Gb Quad Port 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
- 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 Emulex Fibre Channel Enablement Kit for Host Bus Adapters and Mezzanine Host Bus Adapters for SUSE Linux Enterprise Server 12
Version: 12.8.526.0 (Optional)
Filename: HPE-CNA-FC-Emulex-Enablement-Kit-12.8.526.0-1.sles12sp5.x86_64.compsig; HPE-CNA-FC-Emulex-Enablement-Kit-12.8.526.0-1.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.)

Rewrite of same Enablement kit version on 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

For more information please refer the Knowledge Base at: https://www.suse.com/support/kb/doc/?id=000019640

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.)

Enhancements

Updated to version 12.8.526.0

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 16Gb Quad Port 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
- 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

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HPE Emulex Fibre Channel Enablement Kit for Host Bus Adapters and Mezzanine Host Bus Adapters for SUSE Linux Enterprise Server 15

Version: 12.8.526.0 *(Optional)*

Filename: HPE-CNA-FC-Emulex-Enablement-Kit-12.8.526.0-1.sles15sp2.x86_64.compsig; HPE-CNA-FC-Emulex-Enablement-Kit-12.8.526.0-1.sles15sp2.x86_64.rpm; HPE-CNA-FC-Emulex-Enablement-Kit-12.8.526.0-1.sles15sp3.x86_64.compsig; HPE-CNA-FC-Emulex-Enablement-Kit-12.8.526.0-1.sles15sp3.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.)

Rewrite of same Enablement kit version on SuSE Linux Enterprise Server 15 service pack 2 and SuSE Linux Enterprise Server 15 service pack 3 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](https://www.suse.com/support/kb/doc/?id=000019640)

**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.)

**Enhancements**

Added the following support:

- Added support for SLES 15 SP3

Updated to version 12.8.526.0

**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 16Gb Quad Port 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
- 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

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**HPE Emulex Smart SAN Enablement Kit for Linux**

Version: 1.0.0.0-4 **(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 occurred.

Obtain Smart SAN User Guide for 3PAR at following link: [HPE Smart SAN for 3PAR 2.0 User Guide](#)

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


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](http://www.hpe.com).

Linux FC Driver Kit for HPE Emulex FC HBAs and mezz cards, version 12.8.482.2 for RedHat 7, RedHat 8 and 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 SLES15SP3

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 16Gb Quad Port 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
- HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class

### 32Gb FC Adapter:

- HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1600E 32Gb Single Port Fibre Channel Host Bus Adapter

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**HPE Emulex Smart SAN Enablement Kit for Microsoft Windows Server 2012R2/2016/2019 (x86_64)**

Version: 1.0.0.1 *(Optional)*

Filename: cp048583.compsig; cp048583.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 occurred.

Obtain Smart SAN User Guide for 3PAR at following link: [HPE Smart SAN for 3PAR 2.0 User Guide](#)

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link:


The HPE supplied fibre channel driver must be installed prior to this enablement kit component if you want to enable Smart SAN functionality. The latest Emulex FC driver 12.8.351.7 is available on the Service Pack for ProLiant (SPP) which is available at [http://www.hpe.com/servers/spp/download/](http://www.hpe.com/servers/spp/download/)

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 16Gb Quad Port 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
- HPE SN1200E 16Gb Quad Port Fibre Channel Host Bus Adapter
- HPE 16Gb LPe1605 Fibre Channel Host Bus Adapter for BladeSystem c-Class

### 32Gb FC Adapter:
- HPE SN1600E 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE SN1600E 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 Server**

*Version: 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](#)

**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.)

**Enhancements**

Updated EK version to 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
Important Note!

Release Notes: [HPE Emulex Adapters Release Notes](#)

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.)

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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Important Note!

Release Notes: [HPE Emulex Adapters Release Notes](#)

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.)

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 Emulex(BRCM) Fibre Channel Over Ethernet Enablement Kit for Host Bus Adapters and Mezzanine Host Bus Adapters for SUSE Linux Enterprise Server 15
Version: 12.0.1339.0 (Recommended)
Filename: 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

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.)

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 NVMe Fibre Channel Enablement Kit for Emulex Host Bus Adapters for Linux Server
Version: 12.8.264.0 (Optional)

Important Note!

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

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 16Gb Quad Port 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
- 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 QLogic Fibre Channel Enablement Kit for Host Bus Adapter and Mezzanine Host Bus Adapter for Linux Version: 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

**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

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HPE QLogic Smart SAN Enablement Kit for Fibre Channel Host Bus Adapter for Microsoft Windows Server 2012R2/2016/2019 (x86_64)
Version: 1.0.0.1 (Optional)
Filename: cp048718.compsig; cp048718.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 occurred.

Obtain Smart SAN User Guide for 3PAR at following link: HPE Smart SAN for 3PAR 2.0 User Guide

**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 latest Qlogic FC driver 9.4.5.20 is available on the Service Pack for ProLiant (SPP) which is available at http://www.hpe.com/servers/spp/download/
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:

**Gen 4 Fibre Channel Host Bus Adapter:**
- HPE 81Q PCIe Fibre Channel Host Bus Adapter
- HPE 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE84Q 8Gb Quad Port Fibre Channel Host Bus Adapter

**Gen 5 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

**Gen 6 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
- HPE SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter
- HPE QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

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HPE QLogic Smart SAN enablement kit for Linux
Version: 3.3-3 (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!**

Obtain Smart SAN User Guide for 3PAR at following link: [HPE Smart SAN for 3PAR 2.0 User Guide](http://www.hpe.com/storage/spock/)

**Prerequisites**

Please consult SPOCK for a list of supported configurations available at the following link: [http://www.hpe.com/storage/spock/](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 7 Server (x86-64) FC Driver Kit for HPE Qlogic HBAs and mezzaine HBAs, version 10.02.01.00.a14-k1.
- Red Hat Enterprise Linux 8 Server FC Driver Kit for HPE QLogic HBAs and mezzaine HBAs, version 10.02.01.01.a2-k1.
- SUSE Linux Enterprise Server 12 FC Driver Kit for HPE Qlogic HBAs and mezzaine HBAs, version 10.02.01.00.a14-k1.
SUSE Linux Enterprise Server 15 FC Driver Kit for HPE QLogic HBAs and mezzanine HBAs, version 10.02.01.00.a14-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**

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

**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

**Software - System Management**

**Top**

HPE Agentless Management Bundle for ESXi 7.0 on Gen9
Version: 701.11.8.0 (Recommended)
Filename: amshelpComponent_701.11.8.0.12-1_18567695.zip

**Fixes**

**Agentless Management Service**


**Enhancements**

HPE Fiber Channel and Storage Enablement Component for ESXi 7.0
Version: 3.8.0 (Recommended)
Filename: fc-enablement-component_700.3.8.0.6-1_18506758.zip

Supports VMware ESXi 7.0 U2 and ESXi 7.0 U3

**Prerequisites**

HPE Insight Management Agents for Microsoft Windows Server x64 Editions
Version: 11.1.0.0 (Optional)
Filename: cp041529.exe
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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**Important Note!**

WBEM providers smart component is including VC2015 redistributable package for installation. Without KB2919355 installed, the VC2015 redistributable package cannot be installed on Microsoft Windows Server 2012 R2.

**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 the older WBEM version will still exist in Programs and Features after uninstalling it.

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**HPE Offline Bundle for ESXi 6.5 for HPE Gen9 Servers**

Version: gen9.3.8.0 *(Recommended)*

Filename: esxi6.5uX-mgmt-bundle-gen9.3.8.0.12-1.zip

**Fixes**

**Agentless Management Service**


**iLO Driver**

- Fixed driver unload function to allow controller to function properly on reload.

**Supported Devices and Features**

VMware vSphere version support:

- VMware vSphere 6.5 U2
- VMware vSphere 6.5 U3
HPE Offline Bundle for ESXi 6.7 for HPE Gen9 Servers
Version: gen9.3.8.0 (Recommended)
Filename: esxi6.7uX-mgmt-bundle-gen9.3.8.0.12-1.zip

**Fixes**

**Agentless Management Service**

**iLO Driver**
- Fixed driver unload function to allow controller to function properly on reload and when Quickboot is enabled

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HPE ProLiant Agentless Management Service for HPE Apollo, ProLiant and Synergy Gen9 servers
Version: 10.100.0.0 (Optional)
Filename: cp047524.exe

**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**
- Handled more running exceptions when AMS is querying iSCSI information.
- Removed software path restriction for software inventory.
- Logged OS information to AHS again if AMS lost communication with iLO.

**Enhancements**
- Added support OS uptime information.

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HPE ProLiant Agentless Management Service for Red Hat Enterprise Linux 7 Server
Version: 2.10.4 (Optional)
Filename: hp-ams-2.10.4-885.4.rhel7.x86_64.compsig; hp-ams-2.10.4-885.4.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:
  - Drive status all shows failed on SL4540 Gen8 H220 [LSI] ILO4 due to incorrect SCSI command tags.
  - Addressed issue where hp-ams may fail to start when U.3 NVMe devices are installed in the system.
  - The HPE Synergy 6810C 25/50Gb Ethernet Adapter not displaying information in hp-ams is now resolved

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HPE ProLiant Agentless Management Service for Red Hat Enterprise Linux 8 Server
Version: 2.10.4 (Optional)
Filename: hp-ams-2.10.4-885.5.rhel8.x86_64.compsig; hp-ams-2.10.4-885.5.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:

- Drive status all shows failed on SL4540 Gen8 H220 [LSI] ILO4 due to incorrect SCSI command tags.
- Addressed issue where hp-ams may fail to start when U.3 NVMe devices are installed in the system
- The HPE Synergy 6810C 25/50Gb Ethernet Adapter not displaying information in hp-ams is now resolved

HPE ProLiant Agentless Management Service for SUSE LINUX Enterprise Server 12
Version: 2.10.4 *(Optional)*
Filename: hp-ams-2.10.4-885.4.sles12.x86_64.compsig; hp-ams-2.10.4-885.4.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:

- Drive status all shows failed on SL4540 Gen8 H220 [LSI] ILO4 due to incorrect SCSI command tags.
- Addressed issue where hp-ams may fail to start when U.3 NVMe devices are installed in the system
- The HPE Synergy 6810C 25/50Gb Ethernet Adapter not displaying information in hp-ams is now resolved

HPE ProLiant Agentless Management Service for SUSE LINUX Enterprise Server 15
Version: 2.10.4 *(Optional)*
Filename: hp-ams-2.10.4-885.4.sles15.x86_64.compsig; hp-ams-2.10.4-885.4.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:

- Drive status all shows failed on SL4540 Gen8 H220 [LSI] ILO4 due to incorrect SCSI command tags.
- Addressed issue where hp-ams may fail to start when U.3 NVMe devices are installed in the system
- The HPE Synergy 6810C 25/50Gb Ethernet Adapter not displaying information in hp-ams is now resolved

HPE SNMP Agents for Red Hat Enterprise Linux 7 Server
Version: 10.9.4 *(Optional)*
Filename: hp-snmp-agents-10.94-689.8.rhel7.x86_64.compsig; hp-snmp-agents-10.94-689.8.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-snmp-agents type:

```
rpm -qp --requires hp-snmp-agents-<version>.rpm
```

**Fixes**

Fixed the following items:

- The hp-snmp-agent may show "NAME="SLES"" as OS description for all the SLES15 and subversion.
- The user may see the incorrect status for the connected NIC ports due to missing the ifconfig system command in SLES15 and subversion.
- The user may see interface information is missing on the SMH page due to the hp-snmp-agent for SLES 15 missing the systemd rpm during the package build.

---

**HPE SNMP Agents for Red Hat Enterprise Linux 8 Server**

Version: 10.9.4 *(Optional)*

Filename: hp-snmp-agents-10.94-689.8.rhel8.x86_64.compsig; hp-snmp-agents-10.94-689.8.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:

- The hp-snmp-agent may show "NAME="SLES"" as OS description for all the SLES15 and subversion.
- The user may see the incorrect status for the connected NIC ports due to missing the ifconfig system command in SLES15 and subversion.
- The user may see interface information is missing on the SMH page due to the hp-snmp-agent for SLES 15 missing the systemd rpm during the package build.

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**HPE SNMP Agents for SUSE LINUX Enterprise Server 12**

Version: 10.9.4 *(Optional)*

Filename: hp-snmp-agents-10.94-689.8.sles12.x86_64.compsig; hp-snmp-agents-10.94-689.8.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:
- The hp-snmp-agent may show "NAME="SLES"" as OS description for all the SLES15 and subversion.
- The user may see the incorrect status for the connected NIC ports due to missing the ifconfig system command in SLES15 and subversion.
- The user may see interface information is missing on the SMH page due to the hp-snmp-agent for SLES 15 missing the systemd rpm during the package build.

HPE SNMP Agents for SUSE LINUX Enterprise Server 15
Version: 10.9.4 (Optional)
Filename: hp-snmp-agents-10.94-689.8.sles15.x86_64.compsig; hp-snmp-agents-10.94-689.8.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:

```bash
rpm -qp --requires hp-snmp-agents=<version>.rpm
```

Fixes

Fixed the following items:

- The hp-snmp-agent may show "NAME="SLES"" as OS description for all the SLES15 and subversion.
- The user may see the incorrect status for the connected NIC ports due to missing the ifconfig system command in SLES15 and subversion.
- The user may see interface information is missing on the SMH page due to the hp-snmp-agent for SLES 15 missing the systemd rpm during the package build.

HPE System Health Application and Command Line Utilities for Red Hat Enterprise Linux 7 Server
Version: 10.9.3 (Optional)
Filename: hp-health-10.93-307.7.rhel7.x86_64.compsig; hp-health-10.93-307.7.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:

```bash
rpm -qp --requires hp-health=<version>.rpm
```

Fixes

Fixed the following items:

- The hpsmcli utility may show DIMM status as "N/A" due to the SMBIOS data entry not correctly initializing the DIMM information.

HPE System Health Application and Command Line Utilities for Red Hat Enterprise Linux 8 Server
Version: 10.9.3 (Optional)
Filename: hp-health-10.93-307.4.rhel8.x86_64.compsig; hp-health-10.93-307.4.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:

- The hpasmcli utility may show DIMM status as "N/A" due to the SMBIOS data entry not correctly initializing the DIMM information.

---

**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:

- The hpasmcli utility may show DIMM status as "N/A" due to the SMBIOS data entry not correctly initializing the DIMM information.

---

**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:

- The hpasmcli utility may show DIMM status as "N/A" due to the SMBIOS data entry not correctly initializing the DIMM information.

---

**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

HPE System Management Homepage for Windows x64
Version: 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 Linux
Version: 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

HPE Utilities Offline Bundle for ESXi 6.5
Version: 10.8.0 (Recommended)
Filename: HPE-Utility-Component_10.8.0.650-26.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**

hpessacli

- Fixed an issue where the "Turn off" LED operation momentarily turns on all Identify LED.
- Fixed an issue where an NVME drive was failed after flashing drive firmware.
- Fixed an issue where an operation failure message was observed while deleting a volume with status "Not Available".
- Fixed an issue that SSAScripting reported incorrect size for some drives greater than 1TB. This did not affect SSACLI.

**Enhancements**

hpessacli

- Added initial passive SED support.
- Added new "unchanged" Drive Write Cache (DWC) policy to the applications.
- Added support for discovering and reporting failed drives that are not part of a RAID volume.

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HPE Utilities Offline Bundle for ESXi 6.7
Version: 10.8.0 **(Recommended)**
Filename: HPE-Utility-Component_10.8.0.670-26.zip

**Important Note!**

Refer to the HPE VMware Utilities Guide for VMware vSphere 6.7 U1 for April 2019 which is located at www.hpe.com/info/vmware/proliant-docs.

**Fixes**

hpessacli

- Fixed an issue where the "Turn off" LED operation momentarily turns on all Identify LED.
- Fixed an issue where an NVME drive was failed after flashing drive firmware.
- Fixed an issue where an operation failure message was observed while deleting a volume with status "Not Available".
- Fixed an issue that SSAScripting reported incorrect size for some drives greater than 1TB. This did not affect SSACLI.

**Enhancements**

hpessacli

- Added initial passive SED support.
- Added new "unchanged" Drive Write Cache (DWC) policy to the applications.
- Added support for discovering and reporting failed drives that are not part of a RAID volume.

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NVMe Drive Eject NMI Fix for Intel Xeon v3 and Xeon v4 Processors for Windows Server 2012 R2 to Server 2019
Version: 1.0.5.0 **(Optional)**
Filename: cp035799.exe

**Enhancements**

Fixes
- Fixed an issue where the "Turn off" LED operation momentarily turns on all Identify LED.
- Fixed an issue where an NVME drive was failed after flashing drive firmware.
- Fixed an issue where an operation failure message was observed while deleting a volume with status "Not Available".
- Fixed an issue that SSAScripting reported incorrect size for some drives greater than 1TB. This did not affect SSACLI.

Enhancements
- Added initial passive SED support.
- Added new "unchanged" Drive Write Cache (DWC) policy to the applications.
- Added support for discovering and reporting failed drives that are not part of a RAID volume.

Fixes
- Fixed an issue where the "Turn off" LED operation momentarily turns on all Identify LED.
- Fixed an issue where an NVME drive was failed after flashing drive firmware.
- Fixed an issue where an operation failure message was observed while deleting a volume with status "Not Available".
- Fixed an issue that SSAScripting reported incorrect size for some drives greater than 1TB. This did not affect SSACLI.

Enhancements
- Added initial passive SED support.
- Added new "unchanged" Drive Write Cache (DWC) policy to the applications.
- Added support for discovering and reporting failed drives that are not part of a RAID volume.

Fixes
- Fixed an issue where the "Turn off" LED operation momentarily turns on all Identify LED.
- Fixed an issue where an NVME drive was failed after flashing drive firmware.
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Enhancements
- Added initial passive SED support.
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- Added initial passive SED support.
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Enhancements
Adding support to the HPE SR Gen10 Plus Controllers.

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**Enhancements**

Adding support to the HPE SR Gen10 Plus Controllers.

Smart Storage Administrator (SSA) CLI for VMware 7.0
Version: 5.20.8.0 *(Recommended)*
Filename: ssacli-component_5.20.8.0-7.0.0_18528106.zip

**Fixes**
- Fixed an issue where the "Turn off" LED operation momentarily turns on all Identify LED.
- Fixed an issue where an NVME drive was failed after flashing drive firmware.
- Fixed an issue where an operation failure message was observed while deleting a volume with status "Not Available".
- Fixed an issue that SSAScripting reported incorrect size for some drives greater than 1TB. This did not affect SSACLI.

**Enhancements**
- Added initial passive SED support.
- Added new "unchanged" Drive Write Cache (DWC) policy to the applications.
- Added support for discovering and reporting failed drives that are not part of a RAID volume.

Smart Storage Administrator (SSA) CLI for Windows 64-bit
Version: 5.20.8.0 *(Recommended)*
Filename: cp047063.compsig; cp047063.exe

**Fixes**
- Fixed an issue where the "Turn off" LED operation momentarily turns on all Identify LED.
- Fixed an issue where an NVME drive was failed after flashing drive firmware.
- Fixed an issue where an operation failure message was observed while deleting a volume with status "Not Available".
- Fixed an issue that SSAScripting reported incorrect size for some drives greater than 1TB. This did not affect SSACLI.

**Enhancements**
- Added support for Windows Server 2022 for HPE ProLiant Gen10 and Gen10 Plus platforms only.
- Added initial passive SED support.
- Added new "unchanged" Drive Write Cache (DWC) policy to the applications.
- Added support for discovering and reporting failed drives that are not part of a RAID volume.

Smart Storage Administrator (SSA) for Linux 64-bit
Version: 5.20.8.0 *(Recommended)*
Filename: ssa-5.20-8.0.x86_64.compsig; ssa-5.20-8.0.x86_64.rpm; ssa-5.20-8.0.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.

**Fixes**
- Fixed an issue where the "Turn off" LED operation momentarily turns on all Identify LED.
- Fixed an issue where an NVME drive was failed after flashing drive firmware.
- Fixed an issue where an operation failure message was observed while deleting a volume with status “Not Available”.
- Fixed an issue that SSAScripting reported incorrect size for some drives greater than 1TB. This did not affect SSACLI.

**Enhancements**
- Added initial passive SED support.
- Added new "unchanged" Drive Write Cache (DWC) policy to the applications.
- Added support for discovering and reporting failed drives that are not part of a RAID volume.

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Smart Storage Administrator (SSA) for Windows 64-bit
Version: 5.20.8.0 *(Recommended)*
Filename: cp047062.compsig; cp047062.exe

**Fixes**
- Fixed an issue where the "Turn off" LED operation momentarily turns on all Identify LED.
- Fixed an issue where an NVME drive was failed after flashing drive firmware.
- Fixed an issue where an operation failure message was observed while deleting a volume with status “Not Available”.
- Fixed an issue that SSAScripting reported incorrect size for some drives greater than 1TB. This did not affect SSACLI.

**Enhancements**
- Added support for Windows Server 2022 for HPE ProLiant Gen10 and Gen10 Plus platforms only.
- Added initial passive SED support.
- Added new "unchanged" Drive Write Cache (DWC) policy to the applications.
- Added support for discovering and reporting failed drives that are not part of a RAID volume.

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Smart Storage Administrator Diagnostic Utility (SSADU) CLI for Linux 64-bit
Version: 5.20.8.0 *(Recommended)*
Filename: ssaducli-5.20-8.0.x86_64.compsig; ssaducli-5.20-8.0.x86_64.rpm; ssaducli-5.20-8.0.x86_64.txt

**Fixes**
- Fixed an issue where the "Turn off" LED operation momentarily turns on all Identify LED.
- Fixed an issue where an NVME drive was failed after flashing drive firmware.
- Fixed an issue where an operation failure message was observed while deleting a volume with status “Not Available”.
- Fixed an issue that SSAScripting reported incorrect size for some drives greater than 1TB. This did not affect SSACLI.

**Enhancements**
- Added initial passive SED support.
- Added new "unchanged" Drive Write Cache (DWC) policy to the applications.
- Added support for discovering and reporting failed drives that are not part of a RAID volume.

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Smart Storage Administrator Diagnostic Utility (SSADU) CLI for Windows 64-bit
Version: 5.20.8.0 *(Recommended)*
Filename: cp047064.compsig; cp047064.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).

**Fixes**
- Fixed an issue where the "Turn off" LED operation momentarily turns on all Identify LED.
- Fixed an issue where an NVME drive was failed after flashing drive firmware.
- Fixed an issue where an operation failure message was observed while deleting a volume with status “Not Available”.
- Fixed an issue that SSAScripting reported incorrect size for some drives greater than 1TB. This did not affect SSACLI.

**Enhancements**
- Added support for Windows Server 2022 for HPE ProLiant Gen10 and Gen10 Plus platforms only.
- Added initial passive SED support.
- Added new "unchanged" Drive Write Cache (DWC) policy to the applications.
- Added support for discovering and reporting failed drives that are not part of a RAID volume.