

# SPP 2017.10.1

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## BIOS - System ROM

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Online ROM Flash Component for Linux - HPE Apollo 2000 Gen10/HPE ProLiant XL170r/XL190r Gen10 (U38) Servers

Version: 1.22\_09-29-2017 **(Optional)**

Filename: RPMS/x86\_64/firmware-system-u38-1.22\_2017\_09\_29-1.1.x86\_64.compsig; RPMS/x86\_64/firmware-system-u38-1.22\_2017\_09\_29-1.1.x86\_64.rpm

### Important Note!

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant XL170r/XL190r Gen10 System ROM - U38

**Release Version:**

1.22\_09-29-2017

**Last Recommended or Critical Revision:**

1.20\_08-18-2017

**Previous Revision:**

1.20\_08-18-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Prerequisites**

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

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-u19-2.52\_2017\_10\_25-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

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

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Linux - HPE Apollo 4510 Gen10/HPE ProLiant XL450 Gen10 (U40) Servers

Version: 1.22\_09-29-2017 **(Optional)**

Filename: RPMS/x86\_64/firmware-system-u40-1.22\_2017\_09\_29-1.1.x86\_64.compsig; RPMS/x86\_64/firmware-system-u40-1.22\_2017\_09\_29-1.1.x86\_64.rpm

**Important Note!****Important Notes:**

None

**Deliverable Name:**

HPE ProLiant XL450 Gen10 System ROM - U40

**Release Version:**

1.22\_09-29-2017

**Last Recommended or Critical Revision:**

1.20\_08-18-2017

**Previous Revision:**

1.20\_08-18-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Prerequisites**

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

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

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Online ROM Flash Component for Linux - HPE ProLiant BL460c Gen10 (I41) Servers

Version: 1.22\_09-29-2017 **(Optional)**

Filename: RPMS/x86\_64/firmware-system-i41-1.22\_2017\_09\_29-1.1.x86\_64.compsig; RPMS/x86\_64/firmware-system-i41-1.22\_2017\_09\_29-1.1.x86\_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant BL460c Gen10 System ROM - I41

**Release Version:**

1.22\_09-29-2017

**Last Recommended or Critical Revision:**

1.20\_08-18-2017

**Previous Revision:**

1.20\_08-18-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Prerequisites**

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

**Fixes****Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Enhancements**

None

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-i36-2.52\_2017\_10\_25-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant BL460c Gen9/WS460c Gen9 System ROM - I36

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.42\_06-14-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-i38-2.52\_2017\_10\_25-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-p86-2.52\_2017\_10\_25-1.1.i386.rpm

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant DL120 Gen9 System ROM - P86

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

### **Previous Revision:**

2.40\_02-17-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### **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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### **Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-u20-2.52\_2017\_10\_25-1.1.i386.rpm

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant DL160/DL180 Gen9 System ROM - U20

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.50\_10-02-2017 **(Critical)**

Filename: RPMS/i386/firmware-system-u22-2.50\_2017\_10\_02-1.1.i386.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL20 Gen9 System ROM - U22

**Release Version:**

2.50\_10-02-2017

**Last Recommended or Critical Revision:**

2.50\_10-02-2017

**Previous Revision:**

2.30\_06-15-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue with Intel processors in which a complex number of concurrent micro-architectural conditions may result in unpredictable system behavior. This revision of the System ROM contains an updated version of Intel's microcode for these processors that addresses this issue. This issue is not unique to HPE ProLiant servers and could impact any system utilizing affected processors that do not include the updated microcode. Due to the potential severity of the issue addressed in this revision of the System ROM, this System ROM upgrade is considered a critical fix.

**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:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue with Intel processors in which a complex number of concurrent micro-architectural conditions may result in unpredictable system behavior. This revision of the System ROM contains an updated version of Intel's microcode for these processors that addresses this issue. This issue is not unique to HPE ProLiant servers and could impact any system utilizing affected processors that do not include the updated microcode. Due to the potential severity of the issue addressed in this revision of the System ROM, this System ROM upgrade is considered a critical fix.

**Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Linux - HPE ProLiant DL360 Gen10 (U32) Servers

Version: 1.22\_09-29-2017 **(Optional)**

Filename: RPMS/x86\_64/firmware-system-u32-1.22\_2017\_09\_29-1.1.x86\_64.compsig; RPMS/x86\_64/firmware-system-u32-1.22\_2017\_09\_29-1.1.x86\_64.rpm

## **Important Note!**

### **Important Notes:**

None

### **Deliverable Name:**

HPE ProLiant DL360 Gen10 System ROM - U32

### **Release Version:**

1.22\_09-29-2017

### **Last Recommended or Critical Revision:**

1.20\_08-18-2017

### **Previous Revision:**

1.20\_08-18-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

None

### **Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

### **Known Issues:**

None

## **Prerequisites**

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

## **Fixes**

### **Important Notes:**

None

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

### **Known Issues:**

None

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Online ROM Flash Component for Linux - HPE ProLiant DL380 Gen10 (U30) Servers

Version: 1.22\_09-29-2017 **(Optional)**

Filename: RPMS/x86\_64/firmware-system-u30-1.22\_2017\_09\_29-1.1.x86\_64.compsig; RPMS/x86\_64/firmware-system-u30-1.22\_2017\_09\_29-1.1.x86\_64.rpm

## **Important Note!**

### **Important Notes:**

None

### **Deliverable Name:**

HPE ProLiant DL380 Gen10 System ROM - U30

### **Release Version:**

1.22\_09-29-2017

### **Last Recommended or Critical Revision:**

1.20\_08-18-2017

### **Previous Revision:**

1.20\_08-18-2017

### **Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Prerequisites**

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

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

### **Important Note!**

#### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

#### **Deliverable Name:**

HPE ProLiant DL360/DL380 Gen9 System ROM - P89

#### **Release Version:**

2.52\_10-25-2017

#### **Last Recommended or Critical Revision:**

2.22\_07-18-2016

#### **Previous Revision:**

2.42\_04-25-2017

#### **Firmware Dependencies:**

None

#### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Updated the system thermal logic to support the NVIDIA P4000 GPGPU.

#### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

#### **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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

#### **Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Updated the system thermal logic to support the NVIDIA P4000 GPGPU.

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Online ROM Flash Component for Linux - HPE ProLiant DL560 Gen10/DL580 Gen10 (U34) Servers

Version: 1.22\_09-29-2017 **(Optional)**

Filename: RPMS/x86\_64/firmware-system-u34-1.22\_2017\_09\_29-1.1.x86\_64.compsig; RPMS/x86\_64/firmware-system-u34-1.22\_2017\_09\_29-1.1.x86\_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL560 Gen10/ DL580 Gen10 System ROM - U34

**Release Version:**

1.22\_09-29-2017

**Last Recommended or Critical Revision:**

1.20\_08-18-2017

**Previous Revision:**

1.20\_08-18-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Prerequisites**

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

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Enhancements**

None

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-p85-2.52\_2017\_10\_25-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE

Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant DL560 Gen9 System ROM - P85

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.50\_10-01-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-u17-2.50\_2017\_10\_01-1.1.i386.rpm

### **Important Note!**

#### **Important Notes:**

None

#### **Deliverable Name:**

HPE ProLiant DL580 Gen9 System ROM - U17

#### **Release Version:**

2.50\_10-01-2017

#### **Last Recommended or Critical Revision:**

2.44\_09-12-2017

#### **Previous Revision:**

2.44\_09-12-2017

#### **Firmware Dependencies:**

None

#### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options

#### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E7 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E7 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

#### **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:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E7 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E7 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-u15-2.52\_2017\_10\_25-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant DL60/DL80 Gen9 System ROM - U15

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options

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Online ROM Flash Component for Linux - HPE ProLiant EC200a (U26) Server/HPE ProLiant Thin Micro TM200 (U26) Server

Version: 2.52\_10-25-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-u26-2.52\_2017\_10\_25-1.1.i386.rpm

**Important Note!****Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE

Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant Thin Micro TM200 Server Gen9 System ROM - U26

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

1.20\_11-09-2016

**Previous Revision:**

1.20\_11-09-2016

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

None

**Known Issues:**

None

**Prerequisites**

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

**Enhancements**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Known Issues:**

None

### **Important Note!**

#### **Important Notes:**

None

#### **Deliverable Name:**

HPE ProLiant ML110 Gen10 System ROM - U33

#### **Release Version:**

1.22\_09-29-2017

#### **Last Recommended or Critical Revision:**

1.20\_08-18-2017

#### **Previous Revision:**

1.20\_08-18-2017

#### **Firmware Dependencies:**

None

#### **Enhancements/New Features:**

None

#### **Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

#### **Known Issues:**

None

### **Prerequisites**

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

## **Fixes**

### **Important Notes:**

None

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

### **Known Issues:**

None

## **Enhancements**

None

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Online ROM Flash Component for Linux - HPE ProLiant ML110 Gen9 (P99) Servers

Version: 2.52\_10-25-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-p99-2.52\_2017\_10\_25-1.1.i386.rpm

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant ML110 Gen9 System ROM - P99

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

### **Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-p95-2.52\_2017\_10\_25-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant ML150 Gen9 System ROM - P95

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

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

Version: 2.50\_10-02-2017 **(Critical)**

Filename: RPMS/i386/firmware-system-u23-2.50\_2017\_10\_02-1.1.i386.rpm

## **Important Note!**

### **Important Notes:**

None

### **Deliverable Name:**

HPE ProLiant ML30 Gen9 System ROM - U23

### **Release Version:**

2.50\_10-02-2017

### **Last Recommended or Critical Revision:**

2.50\_10-02-2017

### **Previous Revision:**

2.30\_06-15-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

### **Problems Fixed:**

Addressed an issue with Intel processors in which a complex number of concurrent micro-architectural conditions may result in unpredictable system behavior. This revision of the System ROM contains an updated version of Intel's microcode for these processors that addresses this issue. This issue is not unique to HPE ProLiant servers and could impact any system utilizing affected processors that do not include the updated microcode. Due to the potential severity of the issue addressed in this revision of the System ROM, this System ROM upgrade is considered a critical fix.

### **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:**

None

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue with Intel processors in which a complex number of concurrent micro-architectural conditions may result in unpredictable system behavior. This revision of the System ROM contains an updated version of Intel's microcode for these processors that addresses this issue. This issue is not unique to HPE ProLiant servers and could impact any system utilizing affected processors that do not include the updated microcode. Due to the potential severity of the issue addressed in this revision of the System ROM, this System ROM upgrade is considered a critical fix.

### **Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

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Online ROM Flash Component for Linux - HPE ProLiant ML350 Gen10 (U41) Servers

Version: 1.22\_09-29-2017 **(Optional)**

Filename: RPMS/x86\_64/firmware-system-u41-1.22\_2017\_09\_29-1.1.x86\_64.compsig; RPMS/x86\_64/firmware-system-u41-1.22\_2017\_09\_29-1.1.x86\_64.rpm

## **Important Note!**

### **Important Notes:**

None

### **Deliverable Name:**

HPE ProLiant ML350 Gen10 System ROM - U41

### **Release Version:**

1.22\_09-29-2017

### **Last Recommended or Critical Revision:**

1.20\_08-18-2017

### **Previous Revision:**

1.20\_08-18-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Prerequisites**

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

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant ML350 Gen9 System ROM - P92

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

### **Previous Revision:**

2.42\_04-25-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### **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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

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Online ROM Flash Component for Linux - HPE ProLiant XL170r/XL190r Gen9 (U14) Servers

Version: 2.52\_10-25-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-u14-2.52\_2017\_10\_25-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant XL170r/XL190r Gen9 System ROM - U14

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-u13-2.52\_2017\_10\_25-1.1.i386.rpm

**Important Note!****Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant XL230a/XL250a Gen9 System ROM - U13

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

## **Important Note!**

### **Important Notes:**

None

### **Deliverable Name:**

HPE ProLiant XL230k Gen10 System ROM - U37

### **Release Version:**

1.22\_09-29-2017

### **Last Recommended or Critical Revision:**

1.20\_08-18-2017

### **Previous Revision:**

1.20\_08-18-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

None

### **Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

### **Known Issues:**

None

## **Prerequisites**

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

## **Fixes**

### **Important Notes:**

None

### **Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Enhancements**

None

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

Version: 1.50\_09-25-2017 **(Recommended)**

Filename: RPMS/i386/firmware-system-u24-1.50\_2017\_09\_25-1.1.i386.rpm

**Important Note!****Important Notes:**

None

**Deliverable Name:**

HPE ProLiant XL260a Gen9/XL2x260w System ROM - U24

**Release Version:**

1.50\_09-25-2017

**Last Recommended or Critical Revision:**

1.50\_09-25-2017

**Previous Revision:**

1.40\_08-08-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where a system may experience unpredictable system behavior when the embedded memory (MCDRAM) is configured in Cache or Hybrid Memory modes. This issue does not impact systems configured in Flat Memory mode. This issue is not unique to Hewlett Packard Enterprise systems.

**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:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where a system may experience unpredictable system behavior when the embedded memory (MCDRAM) is configured in Cache or Hybrid Memory modes. This issue does not impact systems configured in Flat Memory mode. This issue is not unique to Hewlett Packard Enterprise systems.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-u25-2.52\_2017\_10\_25-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant XL270d Accelerator Tray System ROM - U25

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-13-2016

**Previous Revision:**

2.44\_07-20-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-u21-2.52\_2017\_10\_25-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant XL450 Gen9 System ROM - U21

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Linux - HPE ProLiant XL730f/XL740f/XL750f Gen9 (U18) Servers

Version: 2.52\_10-25-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-u18-2.52\_2017\_10\_25-1.1.i386.rpm

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

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

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

### **Previous Revision:**

2.40\_02-17-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### **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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with

a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Linux - HPE Synergy 480 Gen10 (I42) Compute Module

Version: 1.22\_09-29-2017 **(Optional)**

Filename: RPMS/x86\_64/firmware-system-i42-1.22\_2017\_09\_29-1.1.x86\_64.compsig; RPMS/x86\_64/firmware-system-i42-1.22\_2017\_09\_29-1.1.x86\_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Synergy 480 Gen10 Compute Module System ROM - I42

**Release Version:**

1.22\_09-29-2017

**Last Recommended or Critical Revision:**

1.20\_08-19-2017

**Previous Revision:**

1.20\_08-19-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Prerequisites**

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

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

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Online ROM Flash Component for Linux - HPE Synergy 480 Gen9 (I37) Compute Module

Version: 2.52\_10-25-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-i37-2.52\_2017\_10\_25-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE Synergy 480 Gen9 System ROM - I37

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_09-14-2016

**Previous Revision:**

2.42\_06-14-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Linux - HPE Synergy 620/680 Gen9 (I40) Compute Module

Version: 2.50\_10-01-2017 **(Optional)**

Filename: RPMS/i386/firmware-system-i40-2.50\_2017\_10\_01-1.1.i386.rpm

### **Important Note!**

#### **Important Notes:**

None

#### **Deliverable Name:**

HPE Synergy 620/680 Gen9 System ROM - I40

#### **Release Version:**

2.50\_10-01-2017

#### **Last Recommended or Critical Revision:**

2.20\_09-08-2016

#### **Previous Revision:**

2.42\_04-05-2017

#### **Firmware Dependencies:**

None

#### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

#### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E7 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E7 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

#### **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:**

None

#### **Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E7 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E7 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Linux - HPE Synergy 660 Gen10 (I43) Compute Module

Version: 1.22\_09-29-2017 **(Optional)**

Filename: RPMS/x86\_64/firmware-system-i43-1.22\_2017\_09\_29-1.1.x86\_64.compsig; RPMS/x86\_64/firmware-system-i43-1.22\_2017\_09\_29-1.1.x86\_64.rpm

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE Synergy 660 Gen10 Compute Module System ROM - I43

**Release Version:**

1.22\_09-29-2017

**Last Recommended or Critical Revision:**

1.20\_08-18-2017

**Previous Revision:**

1.20\_08-18-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings

configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Prerequisites**

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

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

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Online ROM Flash Component for Linux - HPE Synergy 660 Gen9 (I39) Compute Module  
Version: 2.52\_10-25-2017 **(Optional)**  
Filename: RPMS/i386/firmware-system-i39-2.52\_2017\_10\_25-1.1.i386.rpm

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE Synergy 660 Gen9 System ROM - I39

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_09-08-2016

**Previous Revision:**

2.40\_02\_17\_2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: CP033758.zip

### **Important Note!**

#### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

#### **Deliverable Name:**

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

#### **Release Version:**

2.52\_10-25-2017

#### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

#### **Previous Revision:**

2.40\_02-17-2017

#### **Firmware Dependencies:**

None

#### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

#### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

#### **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.

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.

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](http://vibsdepot.hpe.com).

## **Fixes**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### **Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: CP033726.zip

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant BL460c Gen9/WS460c Gen9 System ROM - I36

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

### **Previous Revision:**

2.42\_06-14-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision

of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**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.
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.

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](http://vibsdepot.hpe.com).

**Fixes**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

### **Important Note!**

#### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

#### **Deliverable Name:**

HPE ProLiant BL660c Gen9 System ROM - I38

#### **Release Version:**

2.52\_10-25-2017

#### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

#### **Previous Revision:**

2.40\_02-17-2017

#### **Firmware Dependencies:**

None

#### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

#### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

#### **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.

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.

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](http://vibsdepot.hpe.com).

## **Fixes**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

### **Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: CP033772.zip

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant DL120 Gen9 System ROM - P86

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

### **Previous Revision:**

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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.

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](http://vibsdepot.hpe.com).

**Fixes**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: CP033761.zip

**Important Note!****Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant DL160/DL180 Gen9 System ROM - U20

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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.

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.

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](http://vibsdepot.hpe.com).

## **Fixes**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### **Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.50\_10-02-2017 **(Critical)**

Filename: CP033645.zip

## **Important Note!**

### **Important Notes:**

None

### **Deliverable Name:**

HPE ProLiant DL20 Gen9 System ROM - U22

### **Release Version:**

2.50\_10-02-2017

**Last Recommended or Critical Revision:**

2.50\_10-02-2017

**Previous Revision:**

2.30\_06-15-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue with Intel processors in which a complex number of concurrent micro-architectural conditions may result in unpredictable system behavior. This revision of the System ROM contains an updated version of Intel's microcode for these processors that addresses this issue. This issue is not unique to HPE ProLiant servers and could impact any system utilizing affected processors that do not include the updated microcode. Due to the potential severity of the issue addressed in this revision of the System ROM, this System ROM upgrade is considered a critical fix.

**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.
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.

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, and 5.5 on [vibsdepot.hpe.com](http://vibsdepot.hpe.com).

**Fixes****Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue with Intel processors in which a complex number of concurrent micro-architectural conditions may result in unpredictable system behavior. This revision of the System ROM contains an updated version of Intel's microcode for these processors that addresses this issue. This issue is not unique to HPE ProLiant servers and could impact any system utilizing affected processors that do not include the updated microcode. Due to the potential severity of the issue addressed in this revision of the System ROM, this System ROM upgrade is considered a critical fix.

**Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: CP033716.zip

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant DL360/DL380 Gen9 System ROM - P89

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.22\_07-18-2016

### **Previous Revision:**

2.42\_04-25-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Updated the system thermal logic to support the NVIDIA P4000 GPGPU.

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### **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.

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](http://vibsdepot.hpe.com).

## **Fixes**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### **Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Updated the system thermal logic to support the NVIDIA P4000 GPGPU.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: CP033745.zip

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant DL560 Gen9 System ROM - P85

### **Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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.
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.

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](http://vibsdepot.hpe.com).

**Fixes**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.50\_10-01-2017 **(Optional)**

Filename: CP033585.zip

## **Important Note!**

### **Important Notes:**

None

### **Deliverable Name:**

HPE ProLiant DL580 Gen9 System ROM - U17

### **Release Version:**

2.50\_10-01-2017

### **Last Recommended or Critical Revision:**

2.44\_09-12-2017

### **Previous Revision:**

2.44\_09-12-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E7 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E7 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

### **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.

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.

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, and 5.5 on [vibsdepot.hpe.com](http://vibsdepot.hpe.com).

## **Fixes**

### **Important Notes:**

None

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E7 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E7 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

### **Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: CP033769.zip

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant DL60/DL80 Gen9 System ROM - U15

### **Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**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 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.

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](http://vibsdepot.hpe.com).

**Fixes****Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options

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Online ROM Flash Component for VMware - HPE ProLiant EC200a (U26) Server/HPE ProLiant Thin Micro TM200 (U26) Server  
Version: 2.52\_10-25-2017 **(Optional)**  
Filename: CP033773.zip

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant Thin Micro TM200 Server Gen9 System ROM - U26

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

1.20\_11-09-2016

**Previous Revision:**

1.20\_11-09-2016

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

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, 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.

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](http://vibsdepot.hpe.com).

**Enhancements**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Known Issues:**

None

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Online ROM Flash Component for VMware - HPE ProLiant ML110 Gen9 (P99) Servers

Version: 2.52\_10-25-2017 **(Optional)**

Filename: CP033751.zip

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant ML110 Gen9 System ROM - P99

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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.

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.

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](http://vibsdepot.hpe.com).

**Fixes****Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: CP033736.zip

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant ML150 Gen9 System ROM - P95

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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.

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.

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](http://vibsdepot.hpe.com).

## **Fixes**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### **Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

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

Version: 2.50\_10-02-2017 **(Critical)**

Filename: CP033648.zip

## **Important Note!**

### **Important Notes:**

None

### **Deliverable Name:**

HPE ProLiant ML30 Gen9 System ROM - U23

### **Release Version:**

2.50\_10-02-2017

**Last Recommended or Critical Revision:**

2.50\_10-02-2017

**Previous Revision:**

2.30\_06-15-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

**Problems Fixed:**

Addressed an issue with Intel processors in which a complex number of concurrent micro-architectural conditions may result in unpredictable system behavior. This revision of the System ROM contains an updated version of Intel's microcode for these processors that addresses this issue. This issue is not unique to HPE ProLiant servers and could impact any system utilizing affected processors that do not include the updated microcode. Due to the potential severity of the issue addressed in this revision of the System ROM, this System ROM upgrade is considered a critical fix.

**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.

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.

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, and 5.5 on [vibsdepot.hpe.com](http://vibsdepot.hpe.com).

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue with Intel processors in which a complex number of concurrent micro-architectural conditions may result in unpredictable system behavior. This revision of the System ROM contains an updated version of Intel's microcode for these processors that addresses this issue. This issue is not unique to HPE ProLiant

servers and could impact any system utilizing affected processors that do not include the updated microcode. Due to the potential severity of the issue addressed in this revision of the System ROM, this System ROM upgrade is considered a critical fix.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: CP033748.zip

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant ML350 Gen9 System ROM - P92

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.42\_04-25-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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.

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.

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](http://vibsdepot.hpe.com).

## **Fixes**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### **Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

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Online ROM Flash Component for VMware - HPE ProLiant XL170r/XL190r Gen9 (U14) Servers

Version: 2.52\_10-25-2017 **(Optional)**

Filename: CP033724.zip

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant XL170r/XL190r Gen9 System ROM - U14

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**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.
2. The "Compaq ROM Utility Driver" (CRU) must be installed and running  
The minimum CRU version for 5.1 is 5.03.9.  
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.

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](http://vibsdepot.hpe.com).

**Fixes****Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: CP033764.zip

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant XL450 Gen9 System ROM - U21

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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.

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.

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](http://vibsdepot.hpe.com).

## **Fixes**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### **Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for VMware - HPE Synergy 480 Gen9 (I37) Compute Module

Version: 2.52\_10-25-2017 **(Optional)**

Filename: CP033730.zip

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE Synergy 480 Gen9 System ROM - I37

### **Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_09-14-2016

**Previous Revision:**

2.42\_06-14-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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.
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.

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, and 5.5 on [vibsdepot.hpe.com](http://vibsdepot.hpe.com).

**Fixes**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for VMware - HPE Synergy 620/680 Gen9 (I40) Compute Module

Version: 2.50\_10-01-2017 **(Optional)**

Filename: CP033493.zip

## **Important Note!**

### **Important Notes:**

None

### **Deliverable Name:**

HPE Synergy 620/680 Gen9 System ROM - I40

### **Release Version:**

2.50\_10-01-2017

### **Last Recommended or Critical Revision:**

2.20\_09-08-2016

### **Previous Revision:**

2.42\_04-05-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E7 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E7 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

### **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.

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.

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, and 5.5 on [vibsdepot.hpe.com](http://vibsdepot.hpe.com).

## **Fixes**

### **Important Notes:**

None

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E7 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E7 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

### **Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for VMware - HPE Synergy 660 Gen9 (I39) Compute Module

Version: 2.52\_10-25-2017 **(Optional)**

Filename: CP033739.zip

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE Synergy 660 Gen9 System ROM - I39

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_09-08-2016

**Previous Revision:**

2.40\_02\_17\_2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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.

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.

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, and 5.5 on [vibsdepot.hpe.com](http://vibsdepot.hpe.com).

**Fixes****Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: CP033754.zip

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant XL230a/XL250a Gen9 System ROM - U13

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

### **Previous Revision:**

2.40\_02-17-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### **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.

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.

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](http://vibsdepot.hpe.com).

## **Fixes**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### **Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Windows x64 - HPE Apollo 2000 Gen10/HPE ProLiant XL170r/XL190r Gen10 (U38) Servers

Version: 1.22\_09-29-2017 **(Optional)**

Filename: cp033184.compsig; cp033184.exe

## **Important Note!**

### **Important Notes:**

None

### **Deliverable Name:**

HPE ProLiant XL170r/XL190r Gen10 System ROM - U38

### **Release Version:**

1.22\_09-29-2017

### **Last Recommended or Critical Revision:**

1.20\_08-18-2017

### **Previous Revision:**

1.20\_08-18-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

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

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

### **Previous Revision:**

2.40\_02-17-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### **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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Windows x64 - HPE Apollo 4510 Gen10/HPE ProLiant XL450 Gen10 (U40) Servers

Version: 1.22\_09-29-2017 **(Optional)**

Filename: cp033650.compsig; cp033650.exe

**Important Note!****Important Notes:**

None

**Deliverable Name:**

HPE ProLiant XL450 Gen10 System ROM - U40

**Release Version:**

1.22\_09-29-2017

**Last Recommended or Critical Revision:**

1.20\_08-18-2017

**Previous Revision:**

1.20\_08-18-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

### **Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

### **Fixes**

#### **Important Notes:**

None

#### **Firmware Dependencies:**

None

#### **Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

#### **Known Issues:**

None

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Online ROM Flash Component for Windows x64 - HPE ProLiant BL460c Gen10 (I41) Servers

Version: 1.22\_09-29-2017 **(Optional)**

Filename: cp033608.compsig; cp033608.exe

### **Important Note!**

#### **Important Notes:**

None

#### **Deliverable Name:**

HPE ProLiant BL460c Gen10 System ROM - I41

#### **Release Version:**

1.22\_09-29-2017

#### **Last Recommended or Critical Revision:**

1.20\_08-18-2017

#### **Previous Revision:**

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

## **Enhancements**

None

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Online ROM Flash Component for Windows x64 - HPE ProLiant BL460c Gen9/WS460c Gen9 (I36) Servers

Version: 2.52\_10-25-2017 **(Optional)**

Filename: cp033725.exe

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant BL460c Gen9/WS460c Gen9 System ROM - I36

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

### **Previous Revision:**

2.42\_06-14-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

### **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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

### **Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Windows x64 - HPE ProLiant BL660c Gen9 (I38) Servers

Version: 2.52\_10-25-2017 **(Optional)**

Filename: cp033740.exe

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant BL660c Gen9 System ROM - I38

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

### **Previous Revision:**

2.40\_02-17-2017

### **Firmware Dependencies:**

None

#### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

#### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

#### **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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

##### **Firmware Dependencies:**

None

##### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

##### **Known Issues:**

None

#### **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant DL120 Gen9 System ROM - P86

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

### **Previous Revision:**

2.40\_02-17-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### **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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL160 Gen9/DL180 Gen9 (U20) Servers

Version: 2.52\_10-25-2017 **(Optional)**

Filename: cp033759.exe

**Important Note!****Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant DL160/DL180 Gen9 System ROM - U20

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL20 Gen9 (U22) Servers

Version: 2.50\_10-02-2017 **(Critical)**

Filename: cp033643.exe

**Important Note!****Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL20 Gen9 System ROM - U22

**Release Version:**

2.50\_10-02-2017

**Last Recommended or Critical Revision:**

2.50\_10-02-2017

**Previous Revision:**

2.30\_06-15-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue with Intel processors in which a complex number of concurrent micro-architectural conditions may result in unpredictable system behavior. This revision of the System ROM contains an updated version of Intel's microcode for these processors that addresses this issue. This issue is not unique to HPE ProLiant servers and could impact any system utilizing affected processors that do not include the updated microcode. Due to the potential severity of the issue addressed in this revision of the System ROM, this System ROM upgrade is considered a critical fix.

**Known Issues:**

None

**Prerequisites**

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

**Fixes****Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue with Intel processors in which a complex number of concurrent micro-architectural conditions may result in unpredictable system behavior. This revision of the System ROM contains an updated version of Intel's microcode for these processors that addresses this issue. This issue is not unique to HPE ProLiant servers and could impact any system utilizing affected processors that do not include the updated microcode. Due to the potential severity of the issue addressed in this revision of the System ROM, this System ROM upgrade is considered a critical fix.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

## **Important Note!**

### **Important Notes:**

None

### **Deliverable Name:**

HPE ProLiant DL360 Gen10 System ROM - U32

### **Release Version:**

1.22\_09-29-2017

### **Last Recommended or Critical Revision:**

1.20\_08-18-2017

### **Previous Revision:**

1.20\_08-18-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

None

### **Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

### **Known Issues:**

None

## **Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## **Fixes**

### **Important Notes:**

None

### **Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL380 Gen10 (U30) Servers

Version: 1.22\_09-29-2017 **(Optional)**

Filename: cp033549.compsig; cp033549.exe

**Important Note!****Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL380 Gen10 System ROM - U30

**Release Version:**

1.22\_09-29-2017

**Last Recommended or Critical Revision:**

1.20\_08-18-2017

**Previous Revision:**

1.20\_08-18-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: cp033714.exe

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.22\_07-18-2016

**Previous Revision:**

2.42\_04-25-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Updated the system thermal logic to support the NVIDIA P4000 GPGPU.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Updated the system thermal logic to support the NVIDIA P4000 GPGPU.

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL560 Gen10/DL580 Gen10 (U34) Servers

Version: 1.22\_09-29-2017 **(Optional)**

Filename: cp033595.compsig; cp033595.exe

### **Important Note!**

#### **Important Notes:**

None

#### **Deliverable Name:**

HPE ProLiant DL560 Gen10/ DL580 Gen10 System ROM - U34

#### **Release Version:**

1.22\_09-29-2017

#### **Last Recommended or Critical Revision:**

1.20\_08-18-2017

#### **Previous Revision:**

1.20\_08-18-2017

#### **Firmware Dependencies:**

None

#### **Enhancements/New Features:**

None

#### **Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

#### **Known Issues:**

None

### **Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## **Fixes**

### **Important Notes:**

None

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

### **Known Issues:**

None

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL560 Gen9 (P85) Servers

Version: 2.52\_10-25-2017 **(Optional)**

Filename: cp033743.exe

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant DL560 Gen9 System ROM - P85

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

### **Previous Revision:**

2.40\_02-17-2017

### **Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Windows x64 - HPE ProLiant DL580 Gen9 (U17) Servers

Version: 2.50\_10-01-2017 **(Optional)**

Filename: cp033586.exe

**Important Note!****Important Notes:**

None

**Deliverable Name:**

HPE ProLiant DL580 Gen9 System ROM - U17

**Release Version:**

2.50\_10-01-2017

**Last Recommended or Critical Revision:**

2.44\_09-12-2017

**Previous Revision:**

2.44\_09-12-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E7 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E7 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**Known Issues:**

None

**Prerequisites**

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

**Fixes****Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E7 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E7 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**Known Issues:**

None

## Enhancements

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: cp033767.exe

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant DL60/DL80 Gen9 System ROM - U15

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

### **Previous Revision:**

2.40\_02-17-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

### **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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

### **Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options

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Online ROM Flash Component for Windows x64 - HPE ProLiant EC200a (U26) Server/HPE ProLiant Thin Micro TM200 (U26) Server

Version: 2.52\_10-25-2017 **(Optional)**

Filename: cp033690.exe

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant Thin Micro TM200 Server Gen9 System ROM - U26

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

1.20\_11-09-2016

### **Previous Revision:**

1.20\_11-09-2016

### **Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

None

**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).

**Enhancements****Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Known Issues:**

None

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Online ROM Flash Component for Windows x64 - HPE ProLiant ML110 Gen10 (U33) Servers

Version: 1.22\_09-29-2017 **(Optional)**

Filename: cp033610.compsig; cp033610.exe

**Important Note!****Important Notes:**

None

**Deliverable Name:**

HPE ProLiant ML110 Gen10 System ROM - U33

**Release Version:**

1.22\_09-29-2017

**Last Recommended or Critical Revision:**

1.20\_08-18-2017

**Previous Revision:**

1.20\_08-18-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes****Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Enhancements**

None

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Online ROM Flash Component for Windows x64 - HPE ProLiant ML110 Gen9 (P99) Servers

Version: 2.52\_10-25-2017 **(Optional)**

Filename: cp033749.exe

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant ML110 Gen9 System ROM - P99

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### **Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

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Online ROM Flash Component for Windows x64 - HPE ProLiant ML150 Gen9 (P95) Servers

Version: 2.52\_10-25-2017 **(Optional)**

Filename: cp033734.exe

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant ML150 Gen9 System ROM - P95

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

### **Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

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

Version: 2.50\_10-02-2017 **(Critical)**

Filename: cp033646.exe

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HPE ProLiant ML30 Gen9 System ROM - U23

**Release Version:**

2.50\_10-02-2017

**Last Recommended or Critical Revision:**

2.50\_10-02-2017

**Previous Revision:**

2.30\_06-15-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

**Problems Fixed:**

Addressed an issue with Intel processors in which a complex number of concurrent micro-architectural conditions may result in unpredictable system behavior. This revision of the System ROM contains an updated version of Intel's microcode for these processors that addresses this issue. This issue is not unique to HPE ProLiant servers and could impact any system utilizing affected processors that do not include the updated microcode. Due to the potential severity of the issue addressed in this revision of the System ROM, this System ROM upgrade is considered a critical fix.

**Known Issues:**

None

**Prerequisites**

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

**Fixes****Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue with Intel processors in which a complex number of concurrent micro-architectural conditions may result in unpredictable system behavior. This revision of the System ROM contains an updated version of Intel's microcode for these processors that addresses this issue. This issue is not unique to HPE ProLiant servers and could impact any system utilizing affected processors that do not include the updated microcode. Due to the potential severity of the issue addressed in this revision of the System ROM, this System ROM upgrade is considered a critical fix.

**Known Issues:**

None

## **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

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Online ROM Flash Component for Windows x64 - HPE ProLiant ML350 Gen10 (U41) Servers

Version: 1.22\_09-29-2017 **(Optional)**

Filename: cp033574.compsig; cp033574.exe

## **Important Note!**

### **Important Notes:**

None

### **Deliverable Name:**

HPE ProLiant ML350 Gen10 System ROM - U41

### **Release Version:**

1.22\_09-29-2017

### **Last Recommended or Critical Revision:**

1.20\_08-18-2017

### **Previous Revision:**

1.20\_08-18-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

None

### **Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

### **Known Issues:**

None

## **Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

## **Fixes**

### **Important Notes:**

None

### **Firmware Dependencies:**

None

### **Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

### **Known Issues:**

None

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Online ROM Flash Component for Windows x64 - HPE ProLiant ML350 Gen9 (P92) Servers

Version: 2.52\_10-25-2017 **(Optional)**

Filename: cp033746.exe

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant ML350 Gen9 System ROM - P92

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.42\_04-25-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

Enhanced the system thermals to provide improved acoustics when the server is configured with no hard drives attached to the chipset SATA Controller.

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant XL170r/XL190r Gen9 System ROM - U14

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-05-2016

### **Previous Revision:**

2.40\_02-17-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

### **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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: cp033752.exe

**Important Note!****Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant XL230a/XL250a Gen9 System ROM - U13

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Windows x64 - HPE ProLiant XL230k Gen10 (U37) Server

Version: 1.22\_09-29-2017 **(Optional)**

Filename: cp033599.compsig; cp033599.exe

**Important Note!****Important Notes:**

None

**Deliverable Name:**

HPE ProLiant XL230k Gen10 System ROM - U37

**Release Version:**

1.22\_09-29-2017

**Last Recommended or Critical Revision:**

1.20\_08-18-2017

**Previous Revision:**

1.20\_08-18-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

## **Enhancements**

None

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Online ROM Flash Component for Windows x64 - HPE ProLiant XL270d (U25) Accelerator Tray

Version: 2.52\_10-25-2017 **(Optional)**

Filename: cp033765.exe

## **Important Note!**

### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

### **Deliverable Name:**

HPE ProLiant XL270d Accelerator Tray System ROM - U25

### **Release Version:**

2.52\_10-25-2017

### **Last Recommended or Critical Revision:**

2.20\_05-13-2016

### **Previous Revision:**

2.44\_07-20-2017

### **Firmware Dependencies:**

None

### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### **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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE

Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

---

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

Version: 2.52\_10-25-2017 **(Optional)**

Filename: cp033762.exe

**Important Note!**

**Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Deliverable Name:**

HPE ProLiant XL450 Gen9 System ROM - U21

**Release Version:**

2.52\_10-25-2017

**Last Recommended or Critical Revision:**

2.20\_05-05-2016

**Previous Revision:**

2.40\_02-17-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

---

Online ROM Flash Component for Windows x64 - HPE Synergy 480 Gen10 (I42) Compute Module

Version: 1.22\_09-29-2017 **(Optional)**

Filename: cp033551.compsig; cp033551.exe

**Important Note!****Important Notes:**

None

**Deliverable Name:**

HPE Synergy 480 Gen10 Compute Module System ROM - I42

**Release Version:**

1.22\_09-29-2017

**Last Recommended or Critical Revision:**

1.20\_08-19-2017

**Previous Revision:**

1.20\_08-19-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes****Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

### **Important Note!**

#### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

#### **Deliverable Name:**

HPE Synergy 480 Gen9 System ROM - I37

#### **Release Version:**

2.52\_10-25-2017

#### **Last Recommended or Critical Revision:**

2.20\_09-14-2016

#### **Previous Revision:**

2.42\_06-14-2017

#### **Firmware Dependencies:**

None

#### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

#### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

#### **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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

#### **Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

**Known Issues:**

None

**Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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Online ROM Flash Component for Windows x64 - HPE Synergy 620/680 Gen9 (I40) Compute Module

Version: 2.50\_10-01-2017 **(Optional)**

Filename: cp033491.exe

**Important Note!****Important Notes:**

None

**Deliverable Name:**

HPE Synergy 620/680 Gen9 System ROM - I40

**Release Version:**

2.50\_10-01-2017

**Last Recommended or Critical Revision:**

2.20\_09-08-2016

**Previous Revision:**

2.42\_04-05-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

**Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E7 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E7 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

**Known Issues:**

None

### **Prerequisites**

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

### **Fixes**

#### **Important Notes:**

None

#### **Firmware Dependencies:**

None

#### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E7 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E7 v3 processors.

Addressed an issue where systems configured with a Honeywell LCNP4 card installed may stop responding during system boot.

Addressed an issue where the system may become unresponsive during system boot when an optional HPE Dual 8GB MicroSD USB device is installed with firmware version 202. This issue does not impact servers configured with an HPE Dual 8GB MicroSD USB device using revision of firmware 212 or later.

#### **Known Issues:**

None

### **Enhancements**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

---

Online ROM Flash Component for Windows x64 - HPE Synergy 660 Gen10 (I43) Compute Module

Version: 1.22\_09-29-2017 **(Optional)**

Filename: cp033536.compsig; cp033536.exe

### **Important Note!**

#### **Important Notes:**

None

#### **Deliverable Name:**

HPE Synergy 660 Gen10 Compute Module System ROM - I43

#### **Release Version:**

1.22\_09-29-2017

#### **Last Recommended or Critical Revision:**

1.20\_08-18-2017

#### **Previous Revision:**

1.20\_08-18-2017

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

**Fixes****Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the system would not achieve maximum performance results when the BIOS/Platform Configuration (RBSU) Sub-NUMA Clustering option is enabled. This option is not enabled by default.

Addressed an issue where the system may have the system time incorrectly "shifted" to the incorrect time after the operating system has been running for an extended period of time. This issue was typically seen under Microsoft Windows when the Set Time Automatically option was enabled from the Windows Date and Time Settings configuration page.

Addressed an issue where the system may report an inaccurate error message in the Integrated Management Log (IML) when a memory training failure occurred. It is recommended that customers update to this version of the system ROM before replacing any DIMMs due to a training issue.

Addressed an issue where the system may experience an erroneous boot-time message and Integrated Management Log (IML) entry stating that Core Boost Technology is disabled due to a lack of an iLO Advanced License (531 - Core Boost Technology missing required iLO License) when using the Version 1.20 System ROM. This issue does NOT occur with the Version 1.00 System ROM. Note that this IML entry is only valid for servers using the Intel Xeon Scalable 6143 processor. If the message and IML entry are received with any other processor model installed, the message is erroneous and can be ignored without any negative impact to the system.

**Known Issues:**

None

### **Important Note!**

#### **Important Notes:**

This System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

#### **Deliverable Name:**

HPE Synergy 660 Gen9 System ROM - I39

#### **Release Version:**

2.52\_10-25-2017

#### **Last Recommended or Critical Revision:**

2.20\_09-08-2016

#### **Previous Revision:**

2.40\_02\_17\_2017

#### **Firmware Dependencies:**

None

#### **Enhancements/New Features:**

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

#### **Problems Fixed:**

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

#### **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 System ROM revision replaces the 2.50 revision. An issue was found with the 2.50 revision of the System ROM that may result in a system hang during boot with a messaging indicating "Memory Initialization - complete" with certain memory configurations. The 2.50 revision of the System ROM has been removed from the HPE Support Site. It is highly recommended that any customers using the 2.50 revision of the System ROM upgrade to the 2.52 revision or later.

#### **Firmware Dependencies:**

None

### Problems Fixed:

Addressed an issue where Processor Core Disable may not function properly, such as disabling the wrong number of cores, when Intel Xeon E5 v4 processors are installed in the system. This issue does not impact systems configured with Intel Xeon E5 v3 processors.

### Known Issues:

None

### Enhancements

Added support for Trusted Platform Module (TPM) 2.0 Firmware flash updates. For systems configured with the optional TPM 2.0 device, this is the minimum revision of the System ROM required to update TPM firmware.

Updated the HPE RESTful API HPE BIOS Attribute Registry resources to match the latest BIOS/Platform Configuration options.

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### Driver - Chipset

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Identifiers for AMD Epyc Processors for Windows

Version: 1.0.0.0 **(Optional)**

Filename: cp031486.compsig; cp031486.exe

### Enhancements

Initial release.

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Identifiers for Intel Xeon Processor Scalable Family for Windows

Version: 10.1.2.85 **(Optional)**

Filename: cp030694.compsig; cp030694.exe

### Enhancements

Initial release.

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### Driver - Network

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HPE Broadcom NetXtreme-E Driver for Windows Server 2012 R2

Version: 20.6.123.0 **(Optional)**

Filename: cp032642.compsig; cp032642.exe

### Important Note!

HPE recommends the firmware provided in *HPE Broadcom NetXtreme-E Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.1.0 or later, for use with this driver.

### Fixes

- This product corrects an issue that causes an incorrect MAC address to appear in the AHS log.
- This product corrects an issue that causes incorrect port speed information to appear in AHS log.
- This product addresses an issue that causes a link down when the port speed is changed to autonegotiate.
- This product corrects an issue which results in a failure to create VMQ on a NPAR interface.
- This product corrects an issue which results in a failure to establish RoCE connections using RoCEv2.

### 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

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HPE Broadcom NetXtreme-E Driver for Windows Server 2016

Version: 20.6.123.0 **(Optional)**

Filename: cp032643.compsig; cp032643.exe

### **Important Note!**

HPE recommends the firmware provided in *HPE Broadcom NetXtreme-E Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.1.0 or later, for use with this driver.

### **Fixes**

- This product corrects an issue that causes an incorrect MAC address to appear in the AHS log.
- This product corrects an issue that causes incorrect port speed information to appear in AHS log.
- This product addresses an issue that causes a link down when the port speed is changed to autonegotiate.
- This product corrects an issue which results in a failure to create VMO on a NPAR interface.
- This product corrects an issue which results in a failure to establish RoCE connections using RoCEv2.

### **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

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HPE Broadcom NetXtreme-E Drivers for Red Hat Enterprise Linux 6

Version: 1.8.1-1 **(Optional)**

Filename: kmod-bnxt\_en-1.8.1-1.rhel6u9x86\_64.compsig; kmod-bnxt\_en-1.8.1-1.rhel6u9x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Broadcom NetXtreme-E Online Firmware Upgrade Utility for Linux x86\_64*, version 1.1.7 or later, for use with these drivers.

### **Fixes**

This product addresses an issue where memory corruption occurs when a large number of RFS filters are in use.  
This product addresses an issue with RoCE driver update interface speed during driver load.

### **Enhancements**

This product now supports a firmware version query using `ibv_devinfo`.

### **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

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HPE Broadcom NetXtreme-E Drivers for Red Hat Enterprise Linux 7

Version: 1.8.1-1 **(Optional)**

Filename: kmod-bnxt\_en-1.8.1-1.rhel7u3.x86\_64.compsig; kmod-bnxt\_en-1.8.1-1.rhel7u3.x86\_64.rpm; kmod-bnxt\_en-1.8.1-1.rhel7u4.x86\_64.compsig; kmod-bnxt\_en-1.8.1-1.rhel7u4.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Broadcom NetXtreme-E Online Firmware Upgrade Utility for Linux x86\_64*, version 1.1.7 or later, for use with these drivers.

### **Fixes**

This product addresses an issue where memory corruption occurs when a large number of RFS filters are in use.

This product addresses an issue with RoCE driver update interface speed during driver load.

### **Enhancements**

This product now supports a firmware version query using `ibv_devinfo`.

This product now supports Red Hat Enterprise Linux 7 Update 4.

### **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

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HPE Broadcom NetXtreme-E Drivers for SUSE Linux Enterprise Server 11 x86\_64

Version: 1.8.1-1 **(Optional)**

Filename: bnxt\_en-kmp-default-1.8.1\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; bnxt\_en-kmp-default-1.8.1\_3.0.101\_63-1.sles11sp4.x86\_64.rpm; bnxt\_en-kmp-xen-1.8.1\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; bnxt\_en-kmp-xen-1.8.1\_3.0.101\_63-1.sles11sp4.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Broadcom NetXtreme-E Online Firmware Upgrade Utility for Linux x86\_64*, version 1.1.7 or later, for use with these drivers.

### **Fixes**

This product addresses an issue where memory corruption occurs when a large number of RFS filters are in use.

### **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

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HPE Broadcom NetXtreme-E Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 1.7.25-1 **(Optional)**

Filename: bnxt\_en-kmp-default-1.7.25\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; bnxt\_en-kmp-default-1.7.25\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Broadcom NetXtreme-E Online Firmware Upgrade Utility for Linux x86\_64*, version 1.0.22 or later, for use with these drivers.

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

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HPE Broadcom NetXtreme-E Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 1.8.1-1 **(Optional)**

Filename: bnxt\_en-kmp-default-1.8.1\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; bnxt\_en-kmp-default-1.8.1\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; bnxt\_en-kmp-default-1.8.1\_k4.4.73\_5-1.sles12sp3.x86\_64.compsig; bnxt\_en-kmp-default-1.8.1\_k4.4.73\_5-1.sles12sp3.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Broadcom NetXtreme-E Online Firmware Upgrade Utility for Linux x86\_64*, version 1.1.7 or later, for use with these drivers.

### **Fixes**

This product addresses an issue where memory corruption occurs when a large number of RFS filters are in use.

This product addresses an issue with RoCE driver update interface speed during driver load.

### **Enhancements**

This product now supports a firmware version query using `ibv_devinfo`.

This product now supports SUSE Linux Enterprise Server 12 SP3.

### **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

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HPE Broadcom NetXtreme-E RoCE Library for Red Hat Enterprise Linux 6 Update 9

Version: 20.6.3.3 **(Optional)**

### **Prerequisites**

*HPE Broadcom NetXtreme-E Drivers for Red Hat Enterprise Linux 6*, version 1.7.25-1 or later, must be installed before installing this product.

The libibverb package must be installed on the target system prior to the installation of the RoCE library. If not already present, the libibverb package can be obtained from the operating system installation media.

### **Enhancements**

This product now supports a firmware version query using `ibv_devinfo`.

### **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

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HPE Broadcom NetXtreme-E RoCE Library for Red Hat Enterprise Linux 7 Update 3

Version: 20.6.3.3 **(Optional)**

Filename: libbnxtre-20.6.3.3-rhel7u3.x86\_64.compsig; libbnxtre-20.6.3.3-rhel7u3.x86\_64.rpm; README

### **Prerequisites**

*HPE Broadcom NetXtreme-E Drivers for Red Hat Enterprise Linux 7*, version 1.7.25-1 or later, must be installed before installing this product.

The libibverb package must be installed on the target system prior to the installation of the RoCE library. If not already present, the libibverb package can be obtained from the operating system installation media.

### **Enhancements**

This product now supports a firmware version query using `ibv_devinfo`.

### **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

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HPE Broadcom NetXtreme-E RoCE Library for Red Hat Enterprise Linux 7 Update 4

Version: 20.6.3.3 **(Optional)**

Filename: libbnxt\_re-20.6.3.3-rhel7u4.x86\_64.compsig; libbnxt\_re-20.6.3.3-rhel7u4.x86\_64.rpm; README

### **Prerequisites**

*HPE Broadcom NetXtreme-E Drivers for Red Hat Enterprise Linux 7*, version 1.7.25-1 or later, must be installed before installing this product.

The libibverb package must be installed on the target system prior to the installation of the RoCE library. If not already present, the libibverb package 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 10/25Gb 2-port 631FLR-SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter

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HPE Broadcom NetXtreme-E RoCE Library for SUSE Linux Enterprise Server 11 SP4

Version: 20.6.3.3 **(Optional)**

Filename: libbxtre-20.6.3.3-sles11sp4.x86\_64.compsig; libbxtre-20.6.3.3-sles11sp4.x86\_64.rpm; README

## **Prerequisites**

*HPE Broadcom NetXtreme-E Drivers for SUSE Linux Enterprise Server 11 x86\_64*, version 1.7.25-1 or later, and *HPE Broadcom NetXtreme-E RoCE Kernel Driver for SUSE Linux Enterprise Server 11 x86\_64*, version 20.6.1.6-1 or later, must be installed before installing this product.

The libibverb package must be installed on the target system prior to the installation of the RoCE library. If not already present, the libibverb package can be obtained from the operating system installation media.

## **Enhancements**

This product now supports a firmware version query using `ibv_devinfo`.

## **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

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HPE Broadcom NetXtreme-E RoCE Library for SUSE Linux Enterprise Server Server 12 SP2

Version: 20.6.1.3 **(Optional)**

Filename: libbxtre-20.6.1.3-sles12sp2.x86\_64.compsig; libbxtre-20.6.1.3-sles12sp2.x86\_64.rpm; README

## **Prerequisites**

*HPE Broadcom NetXtreme-E Drivers for SUSE Linux Enterprise Server 12 x86\_64*, version 1.7.25-1 or later, must be installed before installing this product.

The libibverb package must be installed on the target system prior to the installation of the RoCE library. If not already present, the libibverb package 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 10/25Gb 2-port 631FLR-SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter

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HPE Broadcom NetXtreme-E RoCE Library for SUSE Linux Enterprise Server Server 12 SP2

Version: 20.6.3.3 **(Optional)**

Filename: libbnxtre-20.6.3.3-sles12sp2.x86\_64.compsig; libbnxtre-20.6.3.3-sles12sp2.x86\_64.rpm; README

### **Prerequisites**

*HPE Broadcom NetXtreme-E Drivers for SUSE Linux Enterprise Server 12 x86\_64*, version 1.7.25-1 or later, must be installed before installing this product.

The libibverb package must be installed on the target system prior to the installation of the RoCE library. If not already present, the libibverb package can be obtained from the operating system installation media.

### **Enhancements**

This product now supports a firmware version query using `ibv_devinfo`.

### **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

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HPE Broadcom NetXtreme-E RoCE Library for SUSE Linux Enterprise Server Server 12 SP3

Version: 20.6.3.3 **(Optional)**

Filename: libbnxt\_re-20.6.3.3-sles12sp3.x86\_64.compsig; libbnxt\_re-20.6.3.3-sles12sp3.x86\_64.rpm; README

### **Prerequisites**

*HPE Broadcom NetXtreme-E Drivers for SUSE Linux Enterprise Server 12 x86\_64*, version 1.7.25-1 or later, must be installed before installing this product.

The libibverb package must be installed on the target system prior to the installation of the RoCE library. If not already present, the libibverb package 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 10/25Gb 2-port 631FLR-SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter

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HPE Broadcom NX1 1Gb Driver for Windows Server x64 Editions

Version: 20.6.0.5 **(Optional)**

### **Important Note!**

HPE recommends the firmware provided in *HPE Broadcom NX1 Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.1.0 or later, for use with this driver.

### **Fixes**

This driver addresses an issue where a firmware update causes a link down.

### **Supported Devices and Features**

This driver supports the following network adapters:

- HP Ethernet 1Gb 2-port 330i Adapter (22BD)
- HP Ethernet 1Gb 4-port 331i Adapter (22BE)
- HPE Ethernet 1Gb 4-port 331FLR Adapter
- HPE Ethernet 1Gb 4-port 331T Adapter
- HP Ethernet 1Gb 2-port 332i Adapter (2133)
- HP Ethernet 1Gb 2-port 332i Adapter (22E8)
- HPE Ethernet 1Gb 2-port 332T Adapter

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HPE Broadcom tg3 Ethernet Drivers for Red Hat Enterprise Linux 6 x86\_64

Version: 3.137q-1 **(Optional)**

Filename: kmod-tg3-3.137q-1.rhel6u8.x86\_64.compsig; kmod-tg3-3.137q-1.rhel6u8.x86\_64.rpm; kmod-tg3-3.137q-1.rhel6u9.x86\_64.compsig; kmod-tg3-3.137q-1.rhel6u9.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE NX1 Broadcom Online Firmware Upgrade Utility for Linux x86\_64*, version 2.18.14 or later, for use with these drivers.

### **Enhancements**

This product now supports Red Hat Enterprise Linux 6 Update 9.

### **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 (2133)
- HP Ethernet 1Gb 2-port 332i Adapter (22E8)
- HP Ethernet 1Gb 2-port 332T Adapter

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HPE Broadcom tg3 Ethernet Drivers for Red Hat Enterprise Linux 7 x86\_64

Version: 3.137s-1 **(Optional)**

Filename: kmod-tg3-3.137q-1.rhel7u3.x86\_64.compsig; kmod-tg3-3.137q-1.rhel7u3.x86\_64.rpm; kmod-tg3-3.137s-1.rhel7u4.x86\_64.compsig; kmod-tg3-3.137s-1.rhel7u4.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE NX1 Broadcom Online Firmware Upgrade Utility for Linux x86\_64*, version 2.19.6 or later, for use with these drivers.

## **Enhancements**

This product now supports Red Hat Enterprise Linux 7 Update 4.

## **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 (2133)
- HP Ethernet 1Gb 2-port 332i Adapter (22E8)
- HP Ethernet 1Gb 2-port 332T Adapter

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HPE Broadcom tg3 Ethernet Drivers for SUSE Linux Enterprise Server 11 x86\_64

Version: 3.137q-1 **(Optional)**

Filename: README; tg3-kmp-default-3.137q\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; tg3-kmp-default-3.137q\_3.0.101\_63-1.sles11sp4.x86\_64.rpm; tg3-kmp-default-3.137q\_3.0.76\_011-1.sles11sp3.x86\_64.compsig; tg3-kmp-default-3.137q\_3.0.76\_011-1.sles11sp3.x86\_64.rpm; tg3-kmp-xen-3.137q\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; tg3-kmp-xen-3.137q\_3.0.101\_63-1.sles11sp4.x86\_64.rpm; tg3-kmp-xen-3.137q\_3.0.76\_011-1.sles11sp3.x86\_64.compsig; tg3-kmp-xen-3.137q\_3.0.76\_011-1.sles11sp3.x86\_64.rpm

## **Important Note!**

HPE recommends the firmware provided in *HPE NX1 Broadcom Online Firmware Upgrade Utility for Linux x86\_64*, version 2.18.14 or later, for use with these drivers.

## **Enhancements**

The change log for this product has been updated.

## **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 (2133)
- HP Ethernet 1Gb 2-port 332i Adapter (22E8)
- HP Ethernet 1Gb 2-port 332T Adapter

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HPE Broadcom tg3 Ethernet Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 3.137q-1 **(Optional)**

Filename: README; tg3-kmp-default-3.137q\_k3.1249\_11-1.sles12sp1.x86\_64.compsig; tg3-kmp-default-3.137q\_k3.1249\_11-1.sles12sp1.x86\_64.rpm; tg3-kmp-default-3.137q\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; tg3-kmp-default-3.137q\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; tg3-kmp-xen-3.137q\_k3.1249\_11-1.sles12sp1.x86\_64.compsig; tg3-kmp-xen-3.137q\_k3.1249\_11-1.sles12sp1.x86\_64.rpm

## **Important Note!**

HPE recommends the firmware provided in *HPE NX1 Broadcom Online Firmware Upgrade Utility for Linux x86\_64*, version 2.18.14 or later, for use with these drivers.

## **Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP2.

## **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 (2133)
- HP Ethernet 1Gb 2-port 332i Adapter (22E8)
- HP Ethernet 1Gb 2-port 332T Adapter

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HPE Broadcom tg3 Ethernet Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 3.137s-1 **(Optional)**

Filename: README; tg3-kmp-default-3.137q\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; tg3-kmp-default-3.137q\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; tg3-kmp-default-3.137s\_k4.4.73\_5-1.sles12sp3.x86\_64.compsig; tg3-kmp-default-3.137s\_k4.4.73\_5-1.sles12sp3.x86\_64.rpm

### **Important Note!**

HPE recommends the firmware provided in *HPE NX1 Broadcom Online Firmware Upgrade Utility for Linux x86\_64*, version 2.19.6 or later, for use with these drivers.

### **Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP3.

## **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 (2133)
- HP Ethernet 1Gb 2-port 332i Adapter (22E8)
- HP Ethernet 1Gb 2-port 332T Adapter

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HPE Broadcom tg3 Ethernet Drivers for VMware vSphere 6.0

Version: 2017.07.07 **(Optional)**

Filename: cp032239.compsig; cp032239.zip

Driver Name and Version:

net-tg3:3.137l.v60.1-1OEM.600.0.0.2494585

### **Important Note!**

HP recommends the firmware provided in *HPE Broadcom NX1 Online Firmware Upgrade Utility for VMware*, version 1.17.15, for use with this driver.

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 vibstap.hpe.com webpages, plus an HPE specific CPOxxxx.xml file.

### **Fixes**

This product now correctly identifies the HP Ethernet 1Gb 2-port 332i Adapter (22E8).

## **Supported Devices and Features**

These drivers support the following network adapters:

- HP Ethernet 1Gb 2-port 330i Adapter
- HP Ethernet 1Gb 4-port 331FLR Adapter
- HP Ethernet 1Gb 4-port 331i Adapter
- HP Ethernet 1Gb 4-port 331i-SPI Adapter
- HP Ethernet 1Gb 4-port 331T Adapter
- HP Ethernet 1Gb 2-port 332i Adapter (2133)
- HP Ethernet 1Gb 2-port 332i Adapter (22E8)
- HP Ethernet 1Gb 2-port 332T Adapter

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HPE Emulex 10/20 GbE Driver for Windows Server 2012

Version: 11.2.1153.13 **(Optional)**

Filename: cp030661.compsig; cp030661.exe

#### **Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64)*, version 2017.06.01 or later, for use with this driver.

#### **Fixes**

This product addresses an issue where a server cannot be awakened by a Wake on LAN (WOL) magic packet.

#### **Supported Devices and Features**

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP Ethernet 10Gb 2-port 557SFP+ Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20 GbE Driver for Windows Server 2012 R2

Version: 11.2.1153.13 **(Optional)**

Filename: cp030662.compsig; cp030662.exe

#### **Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64)*, version 2017.06.01 or later, for use with this driver.

#### **Fixes**

This product addresses an issue where a server cannot be awakened by a Wake on LAN (WOL) magic packet.

#### **Supported Devices and Features**

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP Ethernet 10Gb 2-port 557SFP+ Adapter

- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20 GbE Driver for Windows Server 2016

Version: 11.2.1153.13 **(Optional)**

Filename: cp030663.compsig; cp030663.exe

#### **Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64)*, version 2017.06.01 or later, for use with this driver.

#### **Fixes**

This product addresses an issue where a server cannot be awakened by a Wake on LAN (WOL) magic packet.

#### **Supported Devices and Features**

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP Ethernet 10Gb 2-port 557SFP+ Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20 GbE iSCSI Driver for Windows Server 2012

Version: 11.2.1153.23 **(Optional)**

Filename: cp030667.compsig; cp030667.exe

#### **Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64)*, version 2017.06.01 or later, for use with this driver.

#### **Fixes**

This product addresses an issue where an iSCSI LUN mapping to a virtual machine cannot be initialized.

#### **Supported Devices and Features**

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20 GbE iSCSI Driver for Windows Server 2012 R2

Version: 11.2.1153.23 **(Optional)**

Filename: cp030668.compsig; cp030668.exe

### **Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64)*, version 2017.06.01 or later, for use with this driver.

### **Fixes**

This product addresses an issue where an iSCSI LUN mapping to a virtual machine cannot be initialized.

### **Supported Devices and Features**

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20 GbE iSCSI Driver for Windows Server 2016

Version: 11.2.1153.23 **(Optional)**

Filename: cp030669.compsig; cp030669.exe

### **Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64)*, version 2017.06.01 or later, for use with this driver.

### **Fixes**

This product addresses an issue where an iSCSI LUN mapping to a virtual machine cannot be initialized.

### **Supported Devices and Features**

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20GbE Drivers for Red Hat Enterprise Linux 6 x86\_64

Version: 11.2.1263.16-1 **(Optional)**

Filename: kmod-be2net-11.2.1263.16-1.rhel6u8.x86\_64.compsig; kmod-be2net-11.2.1263.16-1.rhel6u8.x86\_64.rpm; kmod-be2net-11.2.1263.16-1.rhel6u9.x86\_64.compsig; kmod-be2net-11.2.1263.16-1.rhel6u9.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2017.09.01 for use with these drivers.

## **Enhancements**

This product is updated in order to remain in sync with source updated to add support for Red Hat Enterprise Linux 7 Update 4 and SUSE Linux Enterprise Server 12 SP3.

## **Supported Devices and Features**

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP Ethernet 10Gb 2-port 557SFP+ Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20GbE Drivers for Red Hat Enterprise Linux 7 x86\_64

Version: 11.2.1263.16-1 **(Optional)**

Filename: kmod-be2net-11.2.1263.16-1.rhel7u3.x86\_64.compsig; kmod-be2net-11.2.1263.16-1.rhel7u3.x86\_64.rpm; kmod-be2net-11.2.1263.16-1.rhel7u4.x86\_64.compsig; kmod-be2net-11.2.1263.16-1.rhel7u4.x86\_64.rpm; README

## **Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2017.09.01 for use with these drivers.

## **Enhancements**

This product now supports Red Hat Enterprise Linux 7 Update 4.

## **Supported Devices and Features**

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP Ethernet 10Gb 2-port 557SFP+ Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20GbE Drivers for SUSE Linux Enterprise Server 11 x86\_64

Version: 11.2.1263.16-1 **(Optional)**

Filename: be2net-kmp-default-11.2.1263.16\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; be2net-kmp-default-11.2.1263.16\_3.0.101\_63-1.sles11sp4.x86\_64.rpm; be2net-kmp-default-11.2.1263.16\_3.0.76\_0.11-1.sles11sp3.x86\_64.compsig; be2net-kmp-default-11.2.1263.16\_3.0.76\_0.11-1.sles11sp3.x86\_64.rpm; be2net-kmp-xen-11.2.1263.16\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; be2net-kmp-xen-11.2.1263.16\_3.0.101\_63-1.sles11sp4.x86\_64.rpm; be2net-kmp-xen-11.2.1263.16\_3.0.76\_0.11-1.sles11sp3.x86\_64.compsig; be2net-kmp-xen-11.2.1263.16\_3.0.76\_0.11-1.sles11sp3.x86\_64.rpm; README

## **Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2017.09.01 for use with these drivers.

## Enhancements

This product is updated in order to remain in sync with source updated to add support for Red Hat Enterprise Linux 7 Update 4 and SUSE Linux Enterprise Server 12 SP3.

## Supported Devices and Features

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP Ethernet 10Gb 2-port 557SFP+ Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20GbE Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 11.2.1226.2-1 **(Optional)**

Filename: be2net-kmp-default-11.2.1226.2\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; be2net-kmp-default-11.2.1226.2\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; be2net-kmp-default-11.2.1226.2\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; be2net-kmp-default-11.2.1226.2\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; be2net-kmp-xen-11.2.1226.2\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; be2net-kmp-xen-11.2.1226.2\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; README

## Important Note!

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2017.06.01 for use with these drivers.

## Enhancements

This product now supports SUSE Linux Enterprise Server 12 SP2.

## Supported Devices and Features

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP Ethernet 10Gb 2-port 557SFP+ Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20GbE Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 11.2.1263.16-1 **(Optional)**

Filename: be2net-kmp-default-11.2.1263.16\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; be2net-kmp-default-11.2.1263.16\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; be2net-kmp-default-11.2.1263.16\_k4.4.73\_5-1.sles12sp3.x86\_64.compsig; be2net-kmp-default-11.2.1263.16\_k4.4.73\_5-1.sles12sp3.x86\_64.rpm; README

## Important Note!

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2017.09.01 for use with these drivers.

## Enhancements

This product now supports SUSE Linux Enterprise Server 12 SP3.

## **Supported Devices and Features**

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP Ethernet 10Gb 2-port 557SFP+ Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20GbE Drivers for VMware vSphere 6.0

Version: 2017.07.07 **(Optional)**

Filename: cp030637.compsig; cp030637.zip

Driver Name and Version:

elxnet:11.2.1149.0-1OEM.6000.0.2768847

### **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 vibstdepot.hpe.com webpages, plus an HPE specific CPOxxxx.xml file.

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.0*, version 2017.06.01 or later, for use with this driver.

### **Fixes**

This product resolves an issue where transmission completion status is not reported correctly.

## **Supported Devices and Features**

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP Ethernet 10Gb 2-port 557SFP+ Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20GbE Drivers for VMware vSphere 6.5

Version: 2017.07.07 **(Optional)**

Filename: cp030639.compsig; cp030639.zip

Driver Name and Version:

elxnet:11.2.1149.0-1OEM.6500.0.4240417

### **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 vibstdepot.hpe.com webpages, plus an HPE specific CPOxxxx.xml file.

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.5*, version 2017.06.01 or later, for use with this driver.

## **Fixes**

Initial release.

## **Supported Devices and Features**

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP Ethernet 10Gb 2-port 557SFP+ Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20GbE iSCSI Driver for VMware vSphere 6.5

Version: 2017.09.25 **(Optional)**

Filename: cp032534.zip

Driver Name and Version:

elx-esx-libelxima.so:11.2.1238.0-03|elxiscsi:11.2.1238.0-10EM.650.0.04598673

## **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 vib depot.hpe.com webpages, plus an HPE specific CPOxxxx.xml file.

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.5*, version 2017.09.01 or later, for use with this driver.

## **Fixes**

This product resolves an issue where the protocol endpoint (PE) LUN is missing after configuring IPv6 VLAN tagging on an HP StoreFabric CN1200E Dual Port Converged Network Adapter.

## **Supported Devices and Features**

These drivers support the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20GbE iSCSI Drivers for Red Hat Enterprise Linux 6 x86\_64

Version: 11.2.1263.16-1 **(Optional)**

Filename: kmod-be2iscsi-11.2.1263.16-1.rhel6u8.x86\_64.compsig; kmod-be2iscsi-11.2.1263.16-1.rhel6u8.x86\_64.rpm; kmod-be2iscsi-11.2.1263.16-1.rhel6u9.x86\_64.compsig; kmod-be2iscsi-11.2.1263.16-1.rhel6u9.x86\_64.rpm; README

## **Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2017.09.01 for use with these drivers.

## Enhancements

This product is updated in order to remain in sync with source updated to add support for Red Hat Enterprise Linux 7 Update 4 and SUSE Linux Enterprise Server 12 SP3.

## Supported Devices and Features

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20GbE iSCSI Drivers for Red Hat Enterprise Linux 7 x86\_64

Version: 11.2.1263.16-1 **(Optional)**

Filename: kmod-be2iscsi-11.2.1263.16-1.rhel7u3.x86\_64.compsig; kmod-be2iscsi-11.2.1263.16-1.rhel7u3.x86\_64.rpm; kmod-be2iscsi-11.2.1263.16-1.rhel7u4.x86\_64.compsig; kmod-be2iscsi-11.2.1263.16-1.rhel7u4.x86\_64.rpm; README

## Important Note!

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2017.09.01 for use with these drivers.

## Enhancements

This product now supports Red Hat Enterprise Linux 7 Update 4.

## Supported Devices and Features

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20GbE iSCSI Drivers for SUSE Linux Enterprise Server 11 x86\_64

Version: 11.2.1263.16-1 **(Optional)**

Filename: be2iscsi-kmp-default-11.2.1263.16\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; be2iscsi-kmp-default-11.2.1263.16\_3.0.101\_63-1.sles11sp4.x86\_64.rpm; be2iscsi-kmp-default-11.2.1263.16\_3.0.76\_0.11-1.sles11sp3.x86\_64.compsig; be2iscsi-kmp-default-11.2.1263.16\_3.0.76\_0.11-1.sles11sp3.x86\_64.rpm; be2iscsi-kmp-xen-11.2.1263.16\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; be2iscsi-kmp-xen-11.2.1263.16\_3.0.101\_63-1.sles11sp4.x86\_64.rpm; be2iscsi-kmp-xen-11.2.1263.16\_3.0.76\_0.11-1.sles11sp3.x86\_64.compsig; be2iscsi-kmp-xen-11.2.1263.16\_3.0.76\_0.11-1.sles11sp3.x86\_64.rpm; README

## Important Note!

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2017.09.01 for use with these drivers.

## Enhancements

This product is updated in order to remain in sync with source updated to add support for Red Hat Enterprise Linux 7 Update 4 and SUSE Linux Enterprise Server 12 SP3.

## **Supported Devices and Features**

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20GbE iSCSI Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 11.2.1226.13-1 **(Optional)**

Filename: be2iscsi-kmp-default-11.2.1226.13\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; be2iscsi-kmp-default-11.2.1226.13\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; be2iscsi-kmp-default-11.2.1226.13\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; be2iscsi-kmp-default-11.2.1226.13\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; be2iscsi-kmp-xen-11.2.1226.13\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; be2iscsi-kmp-xen-11.2.1226.13\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; README

## **Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2017.06.01 for use with these drivers.

## **Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP2.

## **Supported Devices and Features**

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20GbE iSCSI Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 11.2.1263.16-1 **(Optional)**

Filename: be2iscsi-kmp-default-11.2.1263.16\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; be2iscsi-kmp-default-11.2.1263.16\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; be2iscsi-kmp-default-11.2.1263.16\_k4.4.73\_5-1.sles12sp3.x86\_64.compsig; be2iscsi-kmp-default-11.2.1263.16\_k4.4.73\_5-1.sles12sp3.x86\_64.rpm; README

## **Important Note!**

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)*, version 2017.09.01 for use with these drivers.

## **Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP3.

## **Supported Devices and Features**

This driver supports the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Emulex 10/20GbE iSCSI Drivers for VMware vSphere 6.0

Version: 2017.07.07 **(Optional)**

Filename: cp030635.compsig; cp030635.zip

Driver Name and Version:

ima-be2iscsi:11.2.1147.5-10EM.600.0.0.2494585|scsi-be2iscsi:11.2.1147.5-10EM.600.0.0.2494585

### **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 vib depot.hpe.com webpages, plus an HPE specific CPOxxxx.xml file.

HPE recommends the firmware provided in *HPE Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.0*, version 2017.06.01 or later, for use with this driver.

### **Fixes**

This product addresses an ASSERT that is raised when the system boots.

### **Supported Devices and Features**

These drivers support the following network adapters:

- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter

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HPE Intel E1R Driver for Windows Server 2012

Version: 12.14.8.0 **(Optional)**

Filename: cp028837.exe

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.0.0.25 or later, for use with this driver.

### **Fixes**

This driver addresses an issue that results in the failure of a Powershell command that contains an adapter name.

### **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 361FLB Adapter
- HP Ethernet 1Gb 2-port 361T Adapter
- HP Ethernet 1Gb 2-port 363i Adapter

- o HP Ethernet 1Gb 1-port 364i Adapter
- o HP Ethernet 1Gb 4-port 366i Adapter
- o HP Ethernet 1Gb 4-port 366FLR Adapter
- o HP Ethernet 1Gb 4-port 366M Adapter
- o HP Ethernet 1Gb 4-port 366T Adapter
- o HP Ethernet 1Gb 2-port 367i Adapter

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HPE Intel E1R Driver for Windows Server 2012 R2

Version: 12.14.8.0 **(Optional)**

Filename: cp028838.exe

#### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.0.0.25 or later, for use with this driver.

#### **Fixes**

This driver addresses an issue that results in the failure of a Powershell command that contains an adapter name.

#### **Enhancements**

This product now supports the HPE Ethernet 1Gb 4-port 366i Communication Board.

#### **Supported Devices and Features**

This driver supports the following HPE Intel E1R network adapters:

- o HP Ethernet 1Gb 2-port 361i Adapter
- o HP Ethernet 1Gb 2-port 361FLB Adapter
- o HP Ethernet 1Gb 2-port 361T Adapter
- o HP Ethernet 1Gb 2-port 363i Adapter
- o HP Ethernet 1Gb 1-port 364i Adapter
- o HP Ethernet 1Gb 4-port 366i Adapter
- o HPE Ethernet 1Gb 4-port 366i Communication Board
- o HP Ethernet 1Gb 4-port 366FLR Adapter
- o HP Ethernet 1Gb 4-port 366M Adapter
- o HP Ethernet 1Gb 4-port 366T Adapter
- o HP Ethernet 1Gb 2-port 367i Adapter

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HPE Intel E1R Driver for Windows Server 2016

Version: 12.15.184.0 (B) **(Optional)**

Filename: cp031179.compsig; cp031179.exe

#### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.0.4 or later, for use with this driver.

#### **Enhancements**

Some of the devices supported by this product have been rebranded.

#### **Supported Devices and Features**

This driver supports the following HPE Intel E1R network adapters:

- HP Ethernet 1Gb 2-port 361i Adapter
- HPE Ethernet 1Gb 2-port 361T Adapter
- HP Ethernet 1Gb 2-port 363i Adapter
- HP Ethernet 1Gb 1-port 364i Adapter
- HP Ethernet 1Gb 4-port 366i Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HPE Ethernet 1Gb 4-port 366FLR Adapter
- HPE Ethernet 1Gb 4-port 366M Adapter
- HPE Ethernet 1Gb 4-port 366T Adapter

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HPE Intel i40e Driver for VMware vSphere 6.0/6.5

Version: 2017.09.25 **(Optional)**

Filename: cp031602.compsig; cp031602.zip

Driver Name and Version:

net-i40e:2.0.6-1OEM.600.0.0.2494585

### **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 vibstdepot.hpe.com webpages, plus an HPE specific CPOxxxx.xml file.

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for VMware*, version 3.5.12 or later, for use with this driver.

### **Enhancements**

This product now 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 568FLR-MMSFP+ Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter

### **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 i40e Drivers for Red Hat Enterprise Linux 6 x86\_64

Version: 2.0.29-3 **(Optional)**

Filename: kmod-hp-i40e-2.0.29-3.rhel6u8.x86\_64.compsig; kmod-hp-i40e-2.0.29-3.rhel6u8.x86\_64.rpm; kmod-hp-i40e-2.0.29-3.rhel6u9.x86\_64.compsig; kmod-hp-i40e-2.0.29-3.rhel6u9.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product now 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 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

### **Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- HPE Ethernet 10Gb 2-port 563i Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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HPE Intel i40e Drivers for Red Hat Enterprise Linux 7 x86\_64

Version: 2.0.29-3 (**Optional**)

Filename: kmod-hp-i40e-2.0.29-3.rhel7u3.x86\_64.compsig; kmod-hp-i40e-2.0.29-3.rhel7u3.x86\_64.rpm; kmod-hp-i40e-2.0.29-3.rhel7u4.x86\_64.compsig; kmod-hp-i40e-2.0.29-3.rhel7u4.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product now supports Red Hat Enterprise Linux 7 Update 4.

This product now 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 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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

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HPE Intel i40e Drivers for SUSE Linux Enterprise Server 11 x86\_64

Version: 2.0.29-3 (Optional)

Filename: hp-i40e-kmp-default-2.0.29\_3.0.101\_63-3.sles11sp4.x86\_64.compsig; hp-i40e-kmp-default-2.0.29\_3.0.101\_63-3.sles11sp4.x86\_64.rpm; hp-i40e-kmp-default-2.0.29\_3.0.76\_0.11-3.sles11sp3.x86\_64.compsig; hp-i40e-kmp-default-2.0.29\_3.0.76\_0.11-3.sles11sp3.x86\_64.rpm; hp-i40e-kmp-xen-2.0.29\_3.0.101\_63-3.sles11sp4.x86\_64.compsig; hp-i40e-kmp-xen-2.0.29\_3.0.101\_63-3.sles11sp4.x86\_64.rpm; hp-i40e-kmp-xen-2.0.29\_3.0.76\_0.11-3.sles11sp3.x86\_64.compsig; hp-i40e-kmp-xen-2.0.29\_3.0.76\_0.11-3.sles11sp3.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product now 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 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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

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HPE Intel i40e Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 2.0.19-1 (Optional)

Filename: hp-i40e-kmp-default-2.0.19\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; hp-i40e-kmp-default-2.0.19\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; hp-i40e-kmp-default-2.0.19\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; hp-i40e-kmp-default-2.0.19\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; hp-i40e-kmp-xen-2.0.19\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; hp-i40e-kmp-xen-2.0.19\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.12.18 or later, for use with these drivers.

### **Enhancements**

This product now supports the HPE Ethernet 10Gb 2-port 568i Adapter.

This product now supports SUSE Linux Enterprise Server 12 SP2.

### **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 Ethernet 10Gb 2-port 563i Adapter
- HPE Ethernet 10Gb 2-port 568i Adapter

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HPE Intel i40e Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 2.0.29-3 **(Optional)**

Filename: hp-i40e-kmp-default-2.0.29\_k4.4.21\_69-3.sles12sp2.x86\_64.compsig; hp-i40e-kmp-default-2.0.29\_k4.4.21\_69-3.sles12sp2.x86\_64.rpm; hp-i40e-kmp-default-2.0.29\_k4.4.73\_5-3.sles12sp3.x86\_64.compsig; hp-i40e-kmp-default-2.0.29\_k4.4.73\_5-3.sles12sp3.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP3.

This product now 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 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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

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HPE Intel i40ea Driver for Windows Server 2012

Version: 1.6.102.0 **(Optional)**

Filename: cp031176.compsig; cp031176.exe

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.0.4 or later, for use with this driver.

### **Fixes**

This driver addresses an issue which results in a loss of connectivity from a virtual machine's network after reaching max VMQ allocations.

This driver addresses an issue which results in a loss of connectivity from a physical function after reaching max VF allocations.

This driver addresses an issue where the device may report an incorrect value from get-netadaptervmq.

This driver addresses an issue which prevents the HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter from listening for wake-on-lan.

This driver addresses an issue which results in a virtual machine unexpectedly rebooting when connected with a virtual function of an HPE Ethernet 10Gb 2-port 562SFP+ Adapter.

This driver addresses an issue which results in a yellow-bang in the host device when a disable-enable is issued over multiple virtual functions.

## **Supported Devices and Features**

This product supports the following network adapters:

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

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HPE Intel i40Ea Driver for Windows Server 2012 R2

Version: 1.6.102.0 **(Optional)**

Filename: cp031177.compsig; cp031177.exe

## **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.0.4 or later, for use with this driver.

## **Fixes**

This driver addresses an issue which results in a loss of connectivity from a virtual machine's network after reaching max VMQ allocations.

This driver addresses an issue which results in a loss of connectivity from a physical function after reaching max VF allocations.

This driver addresses an issue where the device may report an incorrect value from get-netadaptervmq.

This driver addresses an issue which prevents the HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter from listening for wake-on-lan.

This driver addresses an issue which results in a virtual machine unexpectedly rebooting when connected with a virtual function of an HPE Ethernet 10Gb 2-port 562SFP+ Adapter.

This driver addresses an issue which results in a yellow-bang in the host device when a disable-enable is issued over multiple virtual functions.

This driver addresses an issue which results in network outages when the HPE Ethernet 10Gb 2-port 562SFP+ Adapter or the HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter is operating under a heavy iSCSI load.

## **Supported Devices and Features**

This product supports the following network adapters:

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

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HPE Intel i40Ea Driver for Windows Server 2016

Version: 1.6.102.0 **(Optional)**

Filename: cp031178.compsig; cp031178.exe

## **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.0.4 or later, for use with this driver.

## **Fixes**

This driver addresses an issue which results in a loss of connectivity from a virtual machine's network after reaching max VMQ allocations.

This driver addresses an issue which results in a loss of connectivity from a physical function after reaching max VF allocations.

This driver addresses an issue where the device may report an incorrect value from get-netadaptervmq.

This driver addresses an issue which prevents the HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter from listening for wake-on-lan.

This driver addresses an issue which results in a virtual machine unexpectedly rebooting when connected with a virtual function of an HPE Ethernet 10Gb 2-port

562SFP+ Adapter.

This driver addresses an issue which results in a yellow-bang in the host device when a disable-enable is issued over multiple virtual functions.

### **Supported Devices and Features**

This product supports the following network adapters:

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

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HPE Intel i40Eb Driver for Windows Server 2012 R2

Version: 1.6.104.0 (B) **(Optional)**

Filename: cp032195.compsig; cp032195.exe

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.1.0 or later, for use with this driver.

### **Enhancements**

This product now 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 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

### **Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 568i Adapter
- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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HPE Intel i40Eb Driver for Windows Server 2016

Version: 1.6.104.0 (B) **(Optional)**

Filename: cp032196.compsig; cp032196.exe

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.1.0 or later, for use with this driver.

### **Enhancements**

This product now 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 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

## **Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 568i Adapter
- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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HPE Intel i40evf Drivers for Red Hat Enterprise Linux 6 x86\_64

Version: 2.0.28-3 **(Optional)**

Filename: kmod-hp-i40evf-2.0.28-3.rhel6u8.x86\_64.compsig; kmod-hp-i40evf-2.0.28-3.rhel6u8.x86\_64.rpm; kmod-hp-i40evf-2.0.28-3.rhel6u9.x86\_64.compsig; kmod-hp-i40evf-2.0.28-3.rhel6u9.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product now 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 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

## **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 i40evf Drivers for Red Hat Enterprise Linux 7 x86\_64

Version: 2.0.28-3 **(Optional)**

Filename: kmod-hp-i40evf-2.0.28-3.rhel7u3.x86\_64.compsig; kmod-hp-i40evf-2.0.28-3.rhel7u3.x86\_64.rpm; kmod-hp-i40evf-2.0.28-3.rhel7u4.x86\_64.compsig; kmod-hp-i40evf-2.0.28-3.rhel7u4.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product now supports Red Hat Enterprise Linux 7 Update 4.

This product now 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 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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

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HPE Intel i40evf Drivers for SUSE Linux Enterprise Server 11 x86\_64

Version: 2.0.28-3 (**Optional**)

Filename: hp-i40evf-kmp-default-2.0.28\_3.0.101\_63-3.sles11sp4.x86\_64.compsig; hp-i40evf-kmp-default-2.0.28\_3.0.101\_63-3.sles11sp4.x86\_64.rpm; hp-i40evf-kmp-default-2.0.28\_3.0.76\_011-3.sles11sp3.x86\_64.compsig; hp-i40evf-kmp-default-2.0.28\_3.0.76\_011-3.sles11sp3.x86\_64.rpm; hp-i40evf-kmp-xen-2.0.28\_3.0.101\_63-3.sles11sp4.x86\_64.compsig; hp-i40evf-kmp-xen-2.0.28\_3.0.101\_63-3.sles11sp4.x86\_64.rpm; hp-i40evf-kmp-xen-2.0.28\_3.0.76\_011-3.sles11sp3.x86\_64.compsig; hp-i40evf-kmp-xen-2.0.28\_3.0.76\_011-3.sles11sp3.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product now 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 568FLR-MMT Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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

HPE Intel i40evf Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 2.0.16-1 **(Optional)**

Filename: hp-i40evf-kmp-default-2.0.16\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; hp-i40evf-kmp-default-2.0.16\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; hp-i40evf-kmp-default-2.0.16\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; hp-i40evf-kmp-default-2.0.16\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; hp-i40evf-kmp-xen-2.0.16\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; hp-i40evf-kmp-xen-2.0.16\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.12.18 or later, for use with these drivers.

### **Enhancements**

This product now supports the HPE Ethernet 10Gb 2-port 568i Adapter.

This product now supports SUSE Linux Enterprise Server 12 SP2.

### **Supported Devices and Features**

This product supports the following network adapters:

- o HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- o HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- o HPE Ethernet 10Gb 2-port 563i Adapter
- o HPE Ethernet 10Gb 2-port 568i Adapter

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HPE Intel i40evf Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 2.0.28-3 **(Optional)**

Filename: hp-i40evf-kmp-default-2.0.28\_k4.4.21\_69-3.sles12sp2.x86\_64.compsig; hp-i40evf-kmp-default-2.0.28\_k4.4.21\_69-3.sles12sp2.x86\_64.rpm; hp-i40evf-kmp-default-2.0.28\_k4.4.73\_5-3.sles12sp3.x86\_64.compsig; hp-i40evf-kmp-default-2.0.28\_k4.4.73\_5-3.sles12sp3.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP3.

This product now supports the following network adapters:

- o HPE Ethernet 1Gb 2-port 368i Adapter
- o HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- o HPE Ethernet 1Gb 4-port 369i Adapter
- o HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter
- o HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

### **Supported Devices and Features**

This product supports the following network adapters:

- o HPE Ethernet 1Gb 2-port 368i Adapter
- o HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- o HPE Ethernet 1Gb 4-port 369i Adapter
- o HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- o HPE Ethernet 10Gb 2-port 562SFP+ Adapter
- o HPE Ethernet 10Gb 2-port 563i Adapter
- o HPE Ethernet 1Gb 2-port 568i Adapter
- o HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter
- o HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter

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HPE Intel igb Drivers for Red Hat Enterprise Linux 6 x86\_64

Version: 5.3.5.9-3 **(Optional)**

Filename: kmod-hp-igb-5.3.5.9xxz-3.rhel6u8.x86\_64.compsig; kmod-hp-igb-5.3.5.9xxz-3.rhel6u8.x86\_64.rpm; kmod-hp-igb-5.3.5.9xxz-3.rhel6u9.x86\_64.compsig; kmod-hp-igb-5.3.5.9xxz-3.rhel6u9.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product is updated in order to remain in sync with source updated to add support for Red Hat Enterprise Linux 7 Update 4 and SUSE Linux Enterprise Server 12 SP3.

### **Supported Devices and Features**

These drivers support the following Intel 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 1-port 364i Adapter
- HP Ethernet 1Gb 4-port 366FLR Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HP Ethernet 1Gb 4-port 366M Adapter
- HP Ethernet 1Gb 4-port 366T Adapter

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HPE Intel igb Drivers for Red Hat Enterprise Linux 7 x86\_64

Version: 5.3.5.9-3 **(Optional)**

Filename: kmod-hp-igb-5.3.5.9xxz-3.rhel7u3.x86\_64.compsig; kmod-hp-igb-5.3.5.9xxz-3.rhel7u3.x86\_64.rpm; kmod-hp-igb-5.3.5.9xxz-3.rhel7u4.x86\_64.compsig; kmod-hp-igb-5.3.5.9xxz-3.rhel7u4.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product now supports Red Hat Enterprise Linux 7 Update 4.

### **Supported Devices and Features**

These drivers support the following Intel 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 1-port 364i Adapter
- HP Ethernet 1Gb 4-port 366FLR Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HP Ethernet 1Gb 4-port 366M Adapter
- HP Ethernet 1Gb 4-port 366T Adapter

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HPE Intel igb Drivers for SUSE Linux Enterprise Server 11 x86\_64

Version: 5.3.5.9-3 **(Optional)**

Filename: hp-igb-kmp-default-5.3.5.9xxz\_3.0.101\_63-3.sles11sp4.x86\_64.compsig; hp-igb-kmp-default-5.3.5.9xxz\_3.0.101\_63-3.sles11sp4.x86\_64.rpm; hp-igb-kmp-default-5.3.5.9xxz\_3.0.76\_011-3.sles11sp3.x86\_64.compsig; hp-igb-kmp-default-5.3.5.9xxz\_3.0.76\_011-3.sles11sp3.x86\_64.rpm; hp-igb-kmp-xen-5.3.5.9xxz\_3.0.101\_63-3.sles11sp4.x86\_64.compsig; hp-igb-kmp-xen-5.3.5.9xxz\_3.0.101\_63-3.sles11sp4.x86\_64.rpm; hp-igb-kmp-xen-5.3.5.9xxz\_3.0.76\_011-3.sles11sp3.x86\_64.compsig; hp-igb-kmp-xen-5.3.5.9xxz\_3.0.76\_011-3.sles11sp3.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product is updated in order to remain in sync with source updated to add support for Red Hat Enterprise Linux 7 Update 4 and SUSE Linux Enterprise Server 12 SP3.

### **Supported Devices and Features**

These drivers support the following Intel 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 1-port 364i Adapter
- HP Ethernet 1Gb 4-port 366FLR Adapter
- HP Ethernet 1Gb 4-port 366i Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HP Ethernet 1Gb 4-port 366M Adapter
- HP Ethernet 1Gb 4-port 366T Adapter

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HPE Intel igb Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 5.3.5.7-1 **(Optional)**

Filename: hp-igb-kmp-default-5.3.5.7\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; hp-igb-kmp-default-5.3.5.7\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; hp-igb-kmp-default-5.3.5.7\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; hp-igb-kmp-default-5.3.5.7\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; hp-igb-kmp-xen-5.3.5.7\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; hp-igb-kmp-xen-5.3.5.7\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.12.18 or later, for use with these drivers.

### **Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP2.

### **Supported Devices and Features**

These drivers support the following Intel 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 1-port 364i Adapter
- HP NC365T 4-port Ethernet Server Adapter
- HP Ethernet 1Gb 4-port 366FLR Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HP Ethernet 1Gb 4-port 366M Adapter
- HP Ethernet 1Gb 4-port 366T Adapter

HPE Intel igb Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 5.3.5.9-3 **(Optional)**

Filename: hp-igb-kmp-default-5.3.5.9xxz\_k4.4.21\_69-3.sles12sp2.x86\_64.compsig; hp-igb-kmp-default-5.3.5.9xxz\_k4.4.21\_69-3.sles12sp2.x86\_64.rpm; hp-igb-kmp-default-5.3.5.9xxz\_k4.4.73\_5-3.sles12sp3.x86\_64.compsig; hp-igb-kmp-default-5.3.5.9xxz\_k4.4.73\_5-3.sles12sp3.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP3.

### **Supported Devices and Features**

These drivers support the following Intel 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 1-port 364i Adapter
- HP Ethernet 1Gb 4-port 366FLR Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HP Ethernet 1Gb 4-port 366M Adapter
- HP Ethernet 1Gb 4-port 366T Adapter

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HPE Intel igb Drivers for VMware vSphere 6.0/6.5

Version: 2017.07.07 **(Optional)**

Filename: cp031278.compsig; cp031278.zip

Driver Name and Version:

net-igb:5.3.3-1OEM.550.0.1331820

### **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 vibstdepot.hpe.com webpages, plus an HPE specific CPOxxxx.xml file.

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for VMware*, version 3.4.18 or later, for use with this driver.

### **Enhancements**

This product now supports VMware vSphere 6.5.

### **Supported Devices and Features**

These drivers support the following 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 1-port 364i Adapter
- HP NC365T 4-port Ethernet Server Adapter
- HP Ethernet 1Gb 4-port 366FLR Adapter
- HP Ethernet 1Gb 4-port 366i Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HP Ethernet 1Gb 4-port 366M Adapter
- HP Ethernet 1Gb 4-port 366T Adapter

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HPE Intel ixgbe Driver for VMware vSphere 6.0/6.5

Version: 2017.09.25 **(Optional)**

Filename: cp031606.compsig; cp031606.zip

Driver Name and Version:

net-ixgbe:4.5.2-10EM.6000.0.2494585

### **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 vibsepot.hpe.com webpages, plus an HPE specific CPOxxxx.xml file.

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for VMware*, version 3.5.12 or later, for use with this driver.

### **Enhancements**

This product now supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

### **Supported Devices and Features**

These drivers support the following network adapters:

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

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HPE Intel ixgbe Drivers for Red Hat Enterprise Linux 6 x86\_64

Version: 5.2.1-4 **(Optional)**

Filename: kmod-hp-ixgbe-5.2.1-4.rhel6u8.x86\_64.compsig; kmod-hp-ixgbe-5.2.1-4.rhel6u8.x86\_64.rpm; kmod-hp-ixgbe-5.2.1-4.rhel6u9.x86\_64.compsig; kmod-hp-ixgbe-5.2.1-4.rhel6u9.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product now supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

### **Supported Devices and Features**

These drivers support the following network adapters:

- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HP Ethernet 10Gb 2-port 560M Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter

- HP Ethernet 10Gb 2-port 561FLR-T Adapter
- HP Ethernet 10Gb 2-port 561T Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

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HPE Intel ixgbe Drivers for Red Hat Enterprise Linux 7 x86\_64

Version: 5.2.1-4 **(Optional)**

Filename: kmod-hp-ixgbe-5.2.1-4.rhel7u3.x86\_64.compsig; kmod-hp-ixgbe-5.2.1-4.rhel7u3.x86\_64.rpm; kmod-hp-ixgbe-5.2.1-4.rhel7u4.x86\_64.compsig; kmod-hp-ixgbe-5.2.1-4.rhel7u4.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product now supports Red Hat Enterprise Linux 7 Update 4.

This product now supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

### **Supported Devices and Features**

These drivers support the following network adapters:

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

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HPE Intel ixgbe Drivers for SUSE Linux Enterprise Server 11 x86\_64

Version: 5.2.1-4 **(Optional)**

Filename: hp-ixgbe-kmp-default-5.2.1\_3.0.101\_63-4.sles11sp4.x86\_64.compsig; hp-ixgbe-kmp-default-5.2.1\_3.0.101\_63-4.sles11sp4.x86\_64.rpm; hp-ixgbe-kmp-default-5.2.1\_3.0.76\_011-4.sles11sp3.x86\_64.compsig; hp-ixgbe-kmp-default-5.2.1\_3.0.76\_011-4.sles11sp3.x86\_64.rpm; hp-ixgbe-kmp-xen-5.2.1\_3.0.101\_63-4.sles11sp4.x86\_64.compsig; hp-ixgbe-kmp-xen-5.2.1\_3.0.101\_63-4.sles11sp4.x86\_64.rpm; hp-ixgbe-kmp-xen-5.2.1\_3.0.76\_011-4.sles11sp3.x86\_64.compsig; hp-ixgbe-kmp-xen-5.2.1\_3.0.76\_011-4.sles11sp3.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product now supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

### **Supported Devices and Features**

These drivers support the following network adapters:

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

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HPE Intel ixgbe Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 5.0.7-1 **(Optional)**

Filename: hp-ixgbe-kmp-default-5.0.7\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; hp-ixgbe-kmp-default-5.0.7\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; hp-ixgbe-kmp-default-5.0.7\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; hp-ixgbe-kmp-default-5.0.7\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; hp-ixgbe-kmp-xen-5.0.7\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; hp-ixgbe-kmp-xen-5.0.7\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.12.18 or later, for use with these drivers.

### **Fixes**

This product addresses an issue where the transmit queue hangs when Data Center Bridging (DCB) is enabled.

This product addresses a system panic seen when enabling Single-Root Input/Output Virtualization (SR-IOV).

This product addresses a PHY stack trace and system panic seen when creating and/or allocating a Virtual Function (VF).

This product addresses an issue where a Media Access Control Virtual Local Area Network (MAC-VLAN) cannot be set if the MAC is set by a Physical Function (PF) that has an associated trusted Virtual Function (VF).

### **Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP2.

### **Supported Devices and Features**

These drivers support the following network adapters:

- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HP Ethernet 10Gb 2-port 560M Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter
- HP Ethernet 10Gb 2-port 561FLR-T Adapter
- HP Ethernet 10Gb 2-port 561T Adapter

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HPE Intel ixgbe Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 5.2.1-4 **(Optional)**

Filename: hp-ixgbe-kmp-default-5.2.1\_k4.4.21\_69-4.sles12sp2.x86\_64.compsig; hp-ixgbe-kmp-default-5.2.1\_k4.4.21\_69-4.sles12sp2.x86\_64.rpm; hp-ixgbe-kmp-default-5.2.1\_k4.4.73\_5-4.sles12sp3.x86\_64.compsig; hp-ixgbe-kmp-default-5.2.1\_k4.4.73\_5-4.sles12sp3.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP3.

This product now supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

### **Supported Devices and Features**

These drivers support the following network adapters:

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

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HPE Intel ixgbevf Drivers for Red Hat Enterprise Linux 6 x86\_64

Version: 4.2.1-4 **(Optional)**

Filename: kmod-hp-ixgbevf-4.2.1-4.rhel6u8.x86\_64.compsig; kmod-hp-ixgbevf-4.2.1-4.rhel6u8.x86\_64.rpm; kmod-hp-ixgbevf-4.2.1-4.rhel6u9.x86\_64.compsig; kmod-hp-ixgbevf-4.2.1-4.rhel6u9.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product now supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

### **Supported Devices and Features**

These drivers support the following network adapters:

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

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HPE Intel ixgbevf Drivers for Red Hat Enterprise Linux 7 x86\_64

Version: 4.2.1-4 **(Optional)**

Filename: kmod-hp-ixgbevf-4.2.1-4.rhel7u3.x86\_64.compsig; kmod-hp-ixgbevf-4.2.1-4.rhel7u3.x86\_64.rpm; kmod-hp-ixgbevf-4.2.1-4.rhel7u4.x86\_64.compsig; kmod-hp-ixgbevf-4.2.1-4.rhel7u4.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

## **Enhancements**

This product now supports Red Hat Enterprise Linux 7 Update 4.

This product now supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

## **Supported Devices and Features**

These drivers support the following network adapters:

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

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HPE Intel ixgbevf Drivers for SUSE Linux Enterprise Server 11 x86\_64

Version: 4.2.1-4 **(Optional)**

Filename: hp-ixgbevf-kmp-default-4.2.1\_3.0.101\_63-4.sles11sp4.x86\_64.compsig; hp-ixgbevf-kmp-default-4.2.1\_3.0.101\_63-4.sles11sp4.x86\_64.rpm; hp-ixgbevf-kmp-default-4.2.1\_3.0.76\_011-4.sles11sp3.x86\_64.compsig; hp-ixgbevf-kmp-default-4.2.1\_3.0.76\_011-4.sles11sp3.x86\_64.rpm; hp-ixgbevf-kmp-xen-4.2.1\_3.0.101\_63-4.sles11sp4.x86\_64.compsig; hp-ixgbevf-kmp-xen-4.2.1\_3.0.101\_63-4.sles11sp4.x86\_64.rpm; hp-ixgbevf-kmp-xen-4.2.1\_3.0.76\_011-4.sles11sp3.x86\_64.compsig; hp-ixgbevf-kmp-xen-4.2.1\_3.0.76\_011-4.sles11sp3.x86\_64.rpm; README

## **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

## **Enhancements**

This product now supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

## **Supported Devices and Features**

These drivers support the following network adapters:

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

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HPE Intel ixgbevf Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 4.0.5-1 **(Optional)**

Filename: hp-ixgbevf-kmp-default-4.0.5\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; hp-ixgbevf-kmp-default-4.0.5\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; hp-ixgbevf-kmp-default-4.0.5\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; hp-ixgbevf-kmp-default-4.0.5\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; hp-ixgbevf-kmp-xen-4.0.5\_k3.12.49\_11-

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.12.18 or later, for use with these drivers.

### **Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP2.

### **Supported Devices and Features**

These drivers support the following network adapters:

- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HP Ethernet 10Gb 2-port 560M Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter
- HP Ethernet 10Gb 2-port 561FLR-T Adapter
- HP Ethernet 10Gb 2-port 561T Adapter

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HPE Intel ixgbevf Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 4.2.1-4 **(Optional)**

Filename: hp-ixgbevf-kmp-default-4.2.1\_k4.4.21\_69-4.sles12sp2.x86\_64.compsig; hp-ixgbevf-kmp-default-4.2.1\_k4.4.21\_69-4.sles12sp2.x86\_64.rpm; hp-ixgbevf-kmp-default-4.2.1\_k4.4.73\_5-4.sles12sp3.x86\_64.compsig; hp-ixgbevf-kmp-default-4.2.1\_k4.4.73\_5-4.sles12sp3.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Linux x86\_64*, version 1.13.12 or later, for use with these drivers.

### **Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP3.

This product now supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

### **Supported Devices and Features**

These drivers support the following network adapters:

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

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HPE Intel ixn Driver for Windows Server 2012

Version: 3.9.58.9103 (B) **(Optional)**

Filename: cp032561.compsig; cp032561.exe

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.1.0 or later, for use with this driver.

### **Enhancements**

This component no longer supports network adapters using the Intel X540 chipset. Those devices are now supported by the *HPE Intel ixt Driver for Windows* products.

### **Supported Devices and Features**

This component supports the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Intel ixn Driver for Windows Server 2012 R2

Version: 3.9.58.9103 (B) **(Optional)**

Filename: cp032562.compsig; cp032562.exe

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.1.0 or later, for use with this driver.

### **Enhancements**

This component no longer supports network adapters using the Intel X540 chipset. Those devices are now supported by the *HPE Intel ixt Driver for Windows* products.

### **Supported Devices and Features**

This component supports the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Intel ixn Driver for Windows Server 2016

Version: 4.0.217.1 (B) **(Optional)**

Filename: cp032563.compsig; cp032563.exe

### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.1.0 or later, for use with this driver.

### **Enhancements**

This component no longer supports network adapters using the Intel X540 chipset. Those devices are now supported by the *HPE Intel ixt Driver for Windows* products.

### **Supported Devices and Features**

This component supports the following network adapters:

- HPE Ethernet 10Gb 2-port 560FLB Adapter
- HPE Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560SFP+ Adapter
- HPE Ethernet 10Gb 2-port 560M Adapter

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HPE Intel ix3 Driver for Windows Server 2012 R2

Version: 3.14.3.0 **(Optional)**

Filename: cp031297.compsig; cp031297.exe

#### **Enhancements**

Initial release.

#### **Supported Devices and Features**

This driver supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

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HPE Intel ix3 Driver for Windows Server 2016

Version: 4.1.4.0 **(Optional)**

Filename: cp031298.compsig; cp031298.exe

#### **Enhancements**

Initial release.

#### **Supported Devices and Features**

This driver supports the following network adapters:

- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter

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HPE Intel ixt Driver for Windows Server 2012

Version: 3.9.58.9103 **(Optional)**

Filename: cp032564.compsig; cp032564.exe

#### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.1.0 or later, for use with this driver.

#### **Enhancements**

Initial release.

#### **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

HPE Intel ixt Driver for Windows Server 2012 R2  
Version: 3.9.58.9103 **(Optional)**  
Filename: cp032565.compsig; cp032565.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.1.0 or later, for use with this driver.

**Enhancements**

Initial release.

**Supported Devices and Features**

This component supports the following network adapters:

- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter

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HPE Intel ixt Driver for Windows Server 2016  
Version: 4.0.215.1 **(Optional)**  
Filename: cp032566.compsig; cp032566.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.1.0 or later, for use with this driver.

**Enhancements**

Initial release.

**Supported Devices and Features**

This component supports the following network adapters:

- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter

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HPE Intel vxn Driver for Windows Server 2012  
Version: 1.0.15.4 **(Optional)**  
Filename: cp032567.compsig; cp032567.exe

**Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.1.0 or later, for use with this driver.

**Enhancements**

Initial release.

**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 560FLR-SFP+ Adapter

- HPE Ethernet 10Gb 2-port 56OSFP+ Adapter
- HPE Ethernet 10Gb 2-port 56OM Adapter

This component supports the following HPE Intel ixt network adapters:

- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter

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HPE Intel vxn Driver for Windows Server 2012 R2

Version: 1.0.16.1 **(Optional)**

Filename: cp032568.compsig; cp032568.exe

#### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.1.0 or later, for use with this driver.

#### **Enhancements**

Initial release.

#### **Supported Devices and Features**

This component supports the following HPE Intel ixn network adapters:

- HPE Ethernet 10Gb 2-port 56OFLB Adapter
- HPE Ethernet 10Gb 2-port 56OFLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 56OSFP+ Adapter
- HPE Ethernet 10Gb 2-port 56OM Adapter

This component supports the following HPE Intel ixt network adapters:

- HPE Ethernet 10Gb 2-port 561FLR-T Adapter
- HPE Ethernet 10Gb 2-port 561T Adapter

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HPE Intel vxn Driver for Windows Server 2016

Version: 2.0.210.0 **(Optional)**

Filename: cp032569.compsig; cp032569.exe

#### **Important Note!**

HPE recommends the firmware provided in *HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.1.0 or later, for use with this driver.

#### **Enhancements**

Initial release.

#### **Supported Devices and Features**

This component supports the following HPE Intel ixn network adapters:

- HPE Ethernet 10Gb 2-port 56OFLB Adapter
- HPE Ethernet 10Gb 2-port 56OFLR-SFP+ Adapter
- HPE Ethernet 10Gb 2-port 56OSFP+ Adapter
- HPE Ethernet 10Gb 2-port 56OM 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

Version: 5.35.12978.0 **(Optional)**

Filename: cp031560.compsig; cp031560.exe

### **Fixes**

Fixed an issue where the link speed of an IPoB adapter was the actual speed and not the official speed (i.e. 54.3GB/s instead of 56 GB/s).

Fixed an issue where firmware burning failed on servers with Connectx-3 and Connectx-4 devices.

Fixed an issue where Mellanox counters in Perfmon did not work over HPE devices.

Fixed an issue that caused the installation process to hang while checking if the RDSH service is installed.

Fixed an issue where a SR-IOV team failure was caused by an unsuccessful adapter parameters update.

Fixed a crash in the driver properties dialog in the case where more than 8 teaming ports were defined.

Fixed an issue which reported a false error for successful netsh tcp settings via performance tuning.

Fixed a crash which could occur during virtual function initialization.

Deactivated the RDMA statistics counters query for vPorts for which RDMA is not enabled.

Fixed the issue which caused the failure of the powershell command Get\_MLNXNetAdapterSettings and the command Get\_MLNXNetAdapterFlowControlSettings on servers with Connectx3/Pro and ConnectX4/LX devices.

Fixed a crash which could occur during driver initialization.

Fixed an issue that generated and sent an erroneous message to the Windows event log when using firmware 2.36.5000 whenever "Mellanox WinOF Bus Counters" was selected in Perfmon.

Fixed an issue that occasionally caused system-hang when TCP offload parameters were updated dynamically while SR-IOV was enabled.

Fixed an issue that occasionally caused system-hang upon bus driver disabling, when the encapsulation parameters were updated dynamically while SR-IOV was enabled.

Fixed an issue where the virtual function RDMA was not functional when vSwitch was attached to port 2. Now RDMA over VF is supported only when the vSwitch is attached to port 1.

Fixed an issue which caused the driver to hang during installation process.

### **Supported Devices and Features**

This driver supports the following HPE Mellanox CX3 network adapters:

- HP Ethernet 10G 2-port 546FLR-SFP+ Adapter
- HP Ethernet 10G 2-port 546SFP+ Adapter
- HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter
- HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter
- HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter
- HP InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter
- HP InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter
- HP InfiniBand QDR/EN 10Gb Dual Port 544FLR-QSFP Adapter
- HP InfiniBand FDR/EN 10/40Gb Dual Port 544QSFP Adapter
- HP InfiniBand FDR/EN 10/40Gb Dual Port 544FLR-QSFP Adapter
- HP InfiniBand FDR/EN 10/40Gb Dual Port 544M Adapter
- HP InfiniBand QDR/EN 10Gb Dual Port 544M Adapter
- HP InfiniBand QDR/Ethernet 10Gb 2P 544i Adapter

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HPE Mellanox CX3 Driver for Windows Server 2012 R2

Version: 5.35.12978.0 **(Optional)**

Filename: cp031561.compsig; cp031561.exe

### **Fixes**

Fixed an issue where the link speed of an IPoB adapter was the actual speed and not the official speed (i.e. 54.3GB/s instead of 56 GB/s).

Fixed an issue where firmware burning failed on servers with Connectx-3 and Connectx-4 devices.

Fixed an issue where Mellanox counters in Perfmon did not work over HPE devices.

Fixed an issue that caused the installation process to hang while checking if the RDSH service is installed.

Fixed an issue where a SR-IOV team failure was caused by an unsuccessful adapter parameters update.

Fixed a crash in the driver properties dialog in the case where more than 8 teaming ports were defined.

Fixed an issue which reported a false error for successful netsh tcp settings via performance tuning.

Fixed a crash which could occur during virtual function initialization.

Deactivated the RDMA statistics counters query for vPorts for which RDMA is not enabled.

Fixed the issue which caused the failure of the powershell command Get\_MLNXNetAdapterSettings and the command Get\_MLNXNetAdapterFlowControlSettings on servers with Connectx3/Pro and ConnectX4/LX devices.

Fixed a crash which could occur during driver initialization.

Fixed an issue that generated and sent an erroneous message to the Windows event log when using firmware 2.36.5000 whenever "Mellanox WinOF Bus Counters" was selected in Perfmon.

Fixed an issue that occasionally caused system-hang when TCP offload parameters were updated dynamically while SR-IOV was enabled.

Fixed an issue that occasionally caused system-hang upon bus driver disabling, when the encapsulation parameters were updated dynamically while SR-IOV was enabled.

Fixed an issue where the virtual function RDMA was not functional when vSwitch was attached to port 2. Now RDMA over VF is supported only when the vSwitch is attached to port 1.

Fixed an issue which caused the driver to hang during installation process.

## **Supported Devices and Features**

This driver supports the following HPE Mellanox CX3 network adapters:

- HP Ethernet 10G 2-port 546FLR-SFP+ Adapter
- HP Ethernet 10G 2-port 546SFP+ Adapter
- HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter
- HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter
- HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter
- HP InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter
- HP InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter
- HP InfiniBand QDR/EN 10Gb Dual Port 544FLR-QSFP Adapter
- HP InfiniBand FDR/EN 10/40Gb Dual Port 544QSFP Adapter
- HP InfiniBand FDR/EN 10/40Gb Dual Port 544FLR-QSFP Adapter
- HP InfiniBand FDR/EN 10/40Gb Dual Port 544M Adapter
- HP InfiniBand QDR/EN 10Gb Dual Port 544M Adapter
- HP InfiniBand QDR/Ethernet 10Gb 2P 544i Adapter

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HPE Mellanox CX3 Driver for Windows Server 2016

Version: 5.35.12978.0 **(Optional)**

Filename: cp031850.compsig; cp031850.exe

## **Fixes**

Fixed an issue where the link speed of an IPoB adapter was the actual speed and not the official speed (i.e. 54.3GB/s instead of 56 GB/s).

Fixed an issue where firmware burning failed on servers with Connectx-3 and Connectx-4 devices.

Fixed an issue where Mellanox counters in Perfmon did not work over HPE devices.

Fixed an issue that caused the installation process to hang while checking if the RDSH service is installed.

Fixed an issue where a SR-IOV team failure was caused by an unsuccessful adapter parameters update.

Fixed a crash in the driver properties dialog in the case where more than 8 teaming ports were defined.

Fixed an issue which reported a false error for successful netsh tcp settings via performance tuning.

Fixed a crash which could occur during virtual function initialization.

Deactivated the RDMA statistics counters query for vPorts for which RDMA is not enabled.

Fixed an issue that caused occasional failures of the execution of OID\_QOS\_OFFLOAD\_CURRENT\_CAPABILITIES on Windows 2016.

Fixed an issue that caused traffic loss following an upgrade of Windows 2016 virtual machine.

Fixed the issue which caused the failure of the powershell command Get\_MLNXNetAdapterSettings and the command Get\_MLNXNetAdapterFlowControlSettings on servers with Connectx3/Pro and ConnectX4/LX devices.

Fixed a crash which could occur during driver initialization.

Fixed an issue that generated and sent an erroneous message to the Windows event log when using firmware 2.36.5000 whenever "Mellanox WinOF Bus Counters" was selected in Perfmon.

Fixed an issue that occasionally caused system-hang when TCP offload parameters were updated dynamically while SR-IOV was enabled.

Fixed an issue that occasionally caused system-hang upon bus driver disabling, when the encapsulation parameters were updated dynamically while SR-IOV was enabled.

Fixed an issue where the virtual function RDMA was not functional when vSwitch was attached to port 2. Now RDMA over VF is supported only when the vSwitch is attached to port 1.

Fixed an issue which caused the driver to hang during installation process.

## **Supported Devices and Features**

This driver supports the following HP Mellanox CX3 network adapters:

- HP Ethernet 10G 2-port 546FLR-SFP+ Adapter
- HP Ethernet 10G 2-port 546SFP+ Adapter
- HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter
- HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter
- HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter
- HP InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter
- HP InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter
- HP InfiniBand QDR/EN 10Gb Dual Port 544FLR-QSFP Adapter
- HP InfiniBand FDR/EN 10/40Gb Dual Port 544QSFP Adapter
- HP InfiniBand FDR/EN 10/40Gb Dual Port 544FLR-QSFP Adapter
- HP InfiniBand FDR/EN 10/40Gb Dual Port 544M Adapter
- HP InfiniBand QDR/EN 10Gb Dual Port 544M Adapter
- HP InfiniBand QDR/Ethernet 10Gb 2P 544i Adapter

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HPE Mellanox CX4LX Driver for Windows Server 2012

Version: 1.60.16216.0 **(Optional)**

Filename: cp031093.compsig; cp031093.exe

## **Fixes**

Fixed an issue which led to a false report of event log error number 66.

Fixed an issue which caused the link speed to be persistent over machine reboots when setting it using mlx5cmd.

Fixed an incorrect RSS hash calculation for encapsulated traffic which led to the wrong usage of RSS CPUs.

Fixed an issue which caused the driver to request more resources from the OS than it actually requires.

Fixed an issue which prevented adapters with customized device description containing a back slash character not to have counter instances in perfmon.

Fixed an issue which cause the driver unload process on a machine with many adapter cards to take longer than required.

## **Supported Devices and Features**

This driver supports the following network adapters:

- HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter
- HPE Ethernet 25Gb 2-port 640SFP28 Adapter
- HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter
- HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter

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HPE Mellanox CX4LX Driver for Windows Server 2012 R2

Version: 1.60.16216.0 **(Optional)**

Filename: cp031094.compsig; cp031094.exe

## **Fixes**

Fixed an issue which led to a false report of event log error number 66.

Fixed an issue which caused the link speed to be persistent over machine reboots when setting it using mlx5cmd.

Fixed an incorrect RSS hash calculation for encapsulated traffic which led to the wrong usage of RSS CPUs.

Fixed an issue which caused the driver to request more resources from the OS than it actually requires.

Fixed an issue which prevented adapters with customized device description containing a back slash character not to have counter instances in perfmon.  
Fixed an issue which cause the driver unload process on a machine with many adapter cards to take longer than required.

## **Supported Devices and Features**

This driver supports the following network adapters:

- HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter
- HPE Ethernet 25Gb 2-port 640SFP28 Adapter
- HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter
- HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter

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HPE Mellanox CX4LX Driver for Windows Server 2016

Version: 1.60.16216.0 **(Optional)**

Filename: cp031092.compsig; cp031092.exe

## **Fixes**

Fixed an issue which led to a false report of event log error number 66.

Fixed an issue which caused the link speed to be persistent over machine reboots when setting it using mlx5cmd.

Fixed an incorrect RSS hash calculation for encapsulated traffic which led to the wrong usage of RSS CPUs.

Fixed an issue which caused the driver to request more resources from the OS than it actually requires.

Fixed an issue which prevented adapters with customized device description containing a back slash character not to have counter instances in perfmon.

Fixed an issue which cause the driver unload process on a machine with many adapter cards to take longer than required.

## **Supported Devices and Features**

This driver supports the following network adapters:

- HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter
- HPE Ethernet 25Gb 2-port 640SFP28 Adapter
- HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter
- HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter

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HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for Red Hat Enterprise Linux 6 Update 8 (x86\_64)

Version: 3.4 **(Recommended)**

Filename: kmod-mlnx-ofa\_kernel-3.4-OFED.3.4.2.1.5.1.ged26eb5.rhel6u8.x86\_64.compsig; kmod-mlnx-ofa\_kernel-3.4-OFED.3.4.2.1.5.1.ged26eb5.rhel6u8.x86\_64.rpm; mlnx-ofa\_kernel-3.4-OFED.3.4.2.1.5.1.ged26eb5.rhel6u8.x86\_64.compsig; mlnx-ofa\_kernel-3.4-OFED.3.4.2.1.5.1.ged26eb5.rhel6u8.x86\_64.rpm

## **Fixes**

**The following issues are fixed in version 3.4:**

- "ethtool" self test used to fail on interrupt test after timeout if mlx4\_ib module was not loaded.
- On rare occasions, kernel panic occurred during system reboot caused by mlx4\_en\_get\_drvinfo() called from asynchronous event handler.
- When attempting to disable SR-IOV while there are any VF netdevs open, the operation failed to succeed.

## **Enhancements**

**HPE Mellanox RoCE driver version 3.4 contains the following changes and new features:**

- Added the following kernel module parameters:
  - mlx4\_en\_only\_mode
  - udev\_dev\_port\_dev\_id

## **Supported Devices and Features**

## SUPPORTED KERNELS:

The kernels of Red Hat Enterprise Linux 6U8 (x86\_64) supported by this binary rpm are:  
2.6.32-642.el6 - (x86\_64) and future update kernels.

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HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for Red Hat Enterprise Linux 6 Update 9 (x86\_64)

Version: 4.1 (**Recommended**)

Filename: kmod-mlx-ofa\_kernel-4.1-OFED.4.1.1.0.2.1.gc22af88.rhel6u9.x86\_64.compsig; kmod-mlx-ofa\_kernel-4.1-OFED.4.1.1.0.2.1.gc22af88.rhel6u9.x86\_64.rpm; mlx-  
ofa\_kernel-4.1-OFED.4.1.1.0.2.1.gc22af88.rhel6u9.x86\_64.compsig; mlx-ofa\_kernel-4.1-OFED.4.1.1.0.2.1.gc22af88.rhel6u9.x86\_64.rpm

## **Fixes**

### **The following issues are fixed in version 4.1:**

- IPv6 procedures were called when they were not supported by the underlying kernel.
- Fixed memory leak issue that was introduced in kernel 4.11, and added warning messages to the Soft RoCE driver for easy detection of future SKB leaks.
- Kernel crash used to occur when RXe device was coupled with a virtual (dummy) device.
- Race condition in the RoCE GID cache used to cause for the loss of IP-based GIDs.
- "rdma\_cm" connection between a client and a server that were on the same host was not possible when working over VLAN interfaces.
- RDMACM connection used to fail upon high connection rate accompanied with the error message: RDMA\_CM\_EVENT\_UNREACHABLE.
- SR-IOV (Single Root I/O Virtualization) was not supported in systems with a page size greater than 16KB.

### **The following issues are fixed in version 4.0:**

- Kernel became out of memory upon driver start occasionally on SLES12 SP2.
- Spoof-check was turned on for MAC address 00:00:00:00:00:00
- TCP packets were received in out of order manner when Large Receive Offload (LRO) was on.
- Memory allocation for CQ buffers used to fail when increasing the RX ring size.
- MLNX\_EN driver failed to load on 4K page ARM architecture.

### **The following issues are fixed in version 3.4:**

- "ethtool" self test used to fail on interrupt test after timeout if mlx4\_ib module was not loaded.
- On rare occasions, kernel panic occurred during system reboot caused by mlx4\_en\_get\_drvinfo() called from asynchronous event handler.
- When attempting to disable SR-IOV while there are any VF netdevs open, the operation failed to succeed.

## **Enhancements**

### **HPE Mellanox RoCE driver version 4.1 contains the following changes and new features:**

- Support for additional RoCE diagnostics and ECN congestion counters under /sys/class/infiniband/mlx5\_0/ports/1/hw\_counters/ directory.
- Support for rx-fcs ethtool offload configuration. Normally, the FCS of the packet will be truncated by the ASIC hardware before sending it to the application socket buffer (skb). Ethtool allows to set the rx-fcs not to be truncated, but to pass it to the application for analysis.
- Option to enable PFC based on the DSCP value. Using this solution, VLAN headers will no longer be mandatory for use.
- ECN parameters have been moved to the following directory: /sys/kernel/debug/mlx5/<PCI BUS>/cc\_params/
- Support for mlx\_fs\_dump, which is a python tool that prints the steering rules in a readable manner.
- Ability to open a device and create a context while giving PCI peer attributes such as name and ID.
- Ability to disable probed VFs on the hypervisor.
- Improved performance by rendering Local loopback (unicast and multicast) disabled by mlx5 driver by default while local loopback is not in use. The mlx5 driver keeps track of the number of transport domains that are opened by user-space applications. If there is more than one userspace transport domain open, local loopback will automatically be enabled.
- Support for One Pulse Per Second (1PPS), which is a time synchronization feature that allows the adapter to send or receive 1 pulse per second on a dedicated pin on the adapter card.
- Support for fast driver teardown in shutdown and kexec flows.
- support for NVMe over fabrics (NVMeoF) offload, an implementation of the new NVMeoF standard target (server) side in hardware.
- Changed the default RoCE mode on which RDMA CM runs to RoCEv2 instead of RoCEv1. RDMA\_CM session requires both the client and server sides to support the same RoCE mode. Otherwise, the client will fail to connect to the server.

### **HPE Mellanox RoCE driver version 3.4 contains the following changes and new features:**

- Added the following kernel module parameters:
  - mlx4\_en\_only\_mode

- udev\_dev\_port\_dev\_id

## Supported Devices and Features

### SUPPORTED KERNELS:

The kernels of Red Hat Enterprise Linux 6 Update 9 (x86\_64) supported by this binary rpm are:  
2.6.32-696.el6 - (x86\_64) and future update kernels.

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HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for Red Hat Enterprise Linux 7 Update 3 (x86\_64)

Version: 3.4 **(Recommended)**

Filename: kmod-mlnx-ofa\_kernel-3.4-OFED.3.4.2.1.5.1.ged26eb5.rhel7u3.x86\_64.compsig; kmod-mlnx-ofa\_kernel-3.4-OFED.3.4.2.1.5.1.ged26eb5.rhel7u3.x86\_64.rpm; mlnx-ofa\_kernel-3.4-OFED.3.4.2.1.5.1.ged26eb5.1.rhel7u3.x86\_64.compsig; mlnx-ofa\_kernel-3.4-OFED.3.4.2.1.5.1.ged26eb5.1.rhel7u3.x86\_64.rpm

## Fixes

### The following issues have been fixed in version 3.4:

- "ethtool" self test used to fail on interrupt test after timeout if mlx4\_ib module was not loaded.
- On rare occasions, kernel panic occurred during system reboot caused by mlx4\_en\_get\_drvinfo() called from asynchronous event handler.
- When attempting to disable SR-IOV while there are any VF netdevs open, the operation failed to succeed.

### The following issues have been fixed in version 3.3(A):

- Race condition between "mlnx\_interface\_mgr.sh" script and udev flow, when renaming interfaces.

### The following issues have been fixed in version 3.3:

- Added compatible "ocrdma.ko" module to fix driver loading issue with SLES12 SP1.
- The error counters found under /sys/class/infiniband/<mlx5\_dev>/ports/<port>/ did not function properly in ConnectX-4 adapter cards.
- Changed TX queue counter format to: xq\_[tc]\*[ring/channel].
- RDMA sniffer functionality issues.
- Error messages were logged to dmesg when a Virtual Function used ethtool facilities.
- Traffic from Physical Function to any Virtual Function on the same port was dropped when the physical link was down.

### Fixes in version 3.2 (A):

- The RoCE user-space library RPM "mlnx-ofa\_kernel" failed to install when OS distribution RPMs in "infiniband support" group were already installed.
- The RoCE driver upgrade didn't work properly when a previous version of MLNX-EN driver was already installed. This resulted in Mellanox Ethernet ports not coming up.

### Fixes in version 3.2:

- Set closest NUMA node as the default for Receive Side Scaling.
- ARP request packets destined for a proxy VXLAN interface were not handled correctly when GRO was enabled.

## Enhancements

### HPE Mellanox RoCE driver version 3.4 contains the following changes and new features:

- Added the following kernel module parameters:
  - mlx4\_en\_only\_mode
  - udev\_dev\_port\_dev\_id

### HPE Mellanox RoCE driver version 3.3 contains the following changes and new features:

- Fixes only.

### HPE Mellanox RoCE driver version 3.2 contains the following changes and new features:

- FCS scattering for Raw Packet Queue Pairs and Work Queues.
- Indication of L4 packet type on the receive side completions.
- Support CVLAN insertion for Work Queues

## **Supported Devices and Features**

### SUPPORTED KERNELS:

The kernels of Red Hat Enterprise Linux 7 Update 3 (x86\_64) supported by this binary rpm are:  
3.10.0-514.el7 - (x86\_64) and future update kernels.

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HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for SUSE LINUX Enterprise Server 11 SP3 AMD64/EM64T)

Version: 3.4 (**Recommended**)

Filename: mlnx-ofa\_kernel-3.4-OFED.3.4.2.1.5.1.ged26eb5.1.sles11sp3x86\_64.compsig; mlnx-ofa\_kernel-3.4-OFED.3.4.2.1.5.1.ged26eb5.1.sles11sp3x86\_64.rpm; mlnx-ofa\_kernel-kmp-default-3.4\_3.0.76\_0.11-OFED.3.4.2.1.5.1.ged26eb5.sles11sp3x86\_64.compsig; mlnx-ofa\_kernel-kmp-default-3.4\_3.0.76\_0.11-OFED.3.4.2.1.5.1.ged26eb5.sles11sp3x86\_64.rpm; mlnx-ofa\_kernel-kmp-xen-3.4\_3.0.76\_0.11-OFED.3.4.2.1.5.1.ged26eb5.sles11sp3x86\_64.compsig; mlnx-ofa\_kernel-kmp-xen-3.4\_3.0.76\_0.11-OFED.3.4.2.1.5.1.ged26eb5.sles11sp3x86\_64.rpm

## **Fixes**

### **The following issues have been fixed in version 3.4:**

- "ethtool" self test used to fail on interrupt test after timeout if mlx4\_ib module was not loaded.
- On rare occasions, kernel panic occurred during system reboot caused by mlx4\_en\_get\_drvinfo() called from asynchronous event handler.
- When attempting to disable SR-IOV while there are any VF netdevs open, the operation failed to succeed.

### **The following issues have been fixed in version 3.3(A):**

- Race condition between "mlnx\_interface\_mgrsh" script and udev flow, when renaming interfaces.

### **The following issues have been fixed in version 3.3:**

- Added compatible "ocrdma.ko" module to fix driver loading issue with SLES12 SP1.
- The error counters found under /sys/class/infiniband/<mlx5\_dev>/ports/<port>/ did not function properly in ConnectX-4 adapter cards.
- Changed TX queue counter format to: xq\_[tc]\*[ring/channel].
- RDMA sniffer functionality issues.
- Error messages were logged to dmesg when a Virtual Function used ethtool facilities.
- Traffic from Physical Function to any Virtual Function on the same port was dropped when the physical link was down.

### **Fixes in version 3.2 (A):**

- The RoCE user-space library RPM "mlnx-ofa\_kernel" failed to install when OS distribution RPMs in "infiniband support" group were already installed.
- The RoCE driver upgrade didn't work properly when a previous version of MLNX-EN driver was already installed. This resulted in Mellanox Ethernet ports not coming up.

### **Fixes in version 3.2:**

- Set closest NUMA node as the default for Receive Side Scaling.
- ARP request packets destined for a proxy VXLAN interface were not handled correctly when GRO was enabled.

## **Enhancements**

### **HPE Mellanox RoCE driver version 3.4 contains the following changes and new features:**

- Added the following kernel module parameters:
  - mlx4\_en\_only\_mode
  - udev\_dev\_port\_dev\_id

### **HPE Mellanox RoCE driver version 3.3 contains the following changes and new features:**

- Fixes only.

### **HPE Mellanox RoCE driver version 3.2 contains the following changes and new features:**

- FCS scattering for Raw Packet Queue Pairs and Work Queues.
- Indication of L4 packet type on the receive side completions.

- Support CVLAN insertion for Work Queues.

## **Supported Devices and Features**

### SUPPORTED KERNELS:

The kernels of SUSE LINUX Enterprise Server SP3 (AMD64/EM64T) supported by this binary rpm are:

3.0.76-0.11-default - (AMD64/EM64T) and future update kernels.

3.0.76-0.11-xen - (AMD64/EM64T) and future update kernels.

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HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for SUSE LINUX Enterprise Server 11 SP4 AMD64/EM64T)

Version: 3.4 **(Recommended)**

Filename: mlnx-ofa\_kernel-3.4-OFED.3.4.2.1.5.1.ged26eb5.1.sles11sp4.x86\_64.compsig; mlnx-ofa\_kernel-3.4-OFED.3.4.2.1.5.1.ged26eb5.1.sles11sp4.x86\_64.rpm; mlnx-ofa\_kernel-kmp-default-3.4\_3.0.101\_63-OFED.3.4.2.1.5.1.ged26eb5.sles11sp4.x86\_64.compsig; mlnx-ofa\_kernel-kmp-default-3.4\_3.0.101\_63-OFED.3.4.2.1.5.1.ged26eb5.sles11sp4.x86\_64.rpm; mlnx-ofa\_kernel-kmp-xen-3.4\_3.0.101\_63-OFED.3.4.2.1.5.1.ged26eb5.sles11sp4.x86\_64.compsig; mlnx-ofa\_kernel-kmp-xen-3.4\_3.0.101\_63-OFED.3.4.2.1.5.1.ged26eb5.sles11sp4.x86\_64.rpm

## **Fixes**

### **The following issues have been fixed in version 3.4:**

- "ethtool" self test used to fail on interrupt test after timeout if mlx4\_ib module was not loaded.
- On rare occasions, kernel panic occurred during system reboot caused by mlx4\_en\_get\_drvinfo() called from asynchronous event handler.
- When attempting to disable SR-IOV while there are any VF netdevs open, the operation failed to succeed.

### **The following issues have been fixed in version 3.3(A):**

- Race condition between "mlnx\_interface\_mgr.sh" script and udev flow, when renaming interfaces.

### **The following issues have been fixed in version 3.3:**

- Added compatible "ocrdma.ko" module to fix driver loading issue with SLES12 SP1.
- The error counters found under /sys/class/infiniband/<mlx5\_dev>/ports/<port>/ did not function properly in ConnectX-4 adapter cards.
- Changed TX queue counter format to: xq\_[tc]\*[ring/channel].
- RDMA sniffer functionality issues.
- Error messages were logged to dmesg when a Virtual Function used ethtool facilities.
- Traffic from Physical Function to any Virtual Function on the same port was dropped when the physical link was down.

### **Fixes in version 3.2 (A):**

- The RoCE user-space library RPM "mlnx-ofa\_kernel" failed to install when OS distribution RPMs in "infiniband support" group were already installed.
- The RoCE driver upgrade didn't work properly when a previous version of MLNX-EN driver was already installed. This resulted in Mellanox Ethernet ports not coming up.

### **Fixes in version 3.2:**

- Set closest NUMA node as the default for Receive Side Scaling.
- ARP request packets destined for a proxy VXLAN interface were not handled correctly when GRO was enabled.

## **Enhancements**

### **HPE Mellanox RoCE driver version 3.4 contains the following changes and new features:**

- Added the following kernel module parameters:
  - mlx4\_en\_only\_mode
  - udev\_dev\_port\_dev\_id

### **HPE Mellanox RoCE driver version 3.3 contains the following changes and new features:**

Fixes only.

**HPE Mellanox RoCE driver version 3.2 contains the following changes and new features:**

- FCS scattering for Raw Packet Queue Pairs and Work Queues.
- Indication of L4 packet type on the receive side completions.
- Support CVLAN insertion for Work Queues.

**Supported Devices and Features**

SUPPORTED KERNELS:

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

3.0.101-63-default - (AMD64/EM64T) and future update kernels.

3.0.101-63-xen - (AMD64/EM64T) and future update kernels.

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HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for SUSE LINUX Enterprise Server 12 SP1 (AMD64/EM64T)

Version: 3.4 **(Recommended)**

Filename: mlnx-ofa\_kernel-3.4-OFED.3.4.2.1.5.1.ged26eb5.1.sles12sp1.x86\_64.compsig; mlnx-ofa\_kernel-3.4-OFED.3.4.2.1.5.1.ged26eb5.1.sles12sp1.x86\_64.rpm; mlnx-ofa\_kernel-kmp-default-3.4\_k3.12.49\_11-OFED.3.4.2.1.5.1.ged26eb5.sles12sp1.x86\_64.compsig; mlnx-ofa\_kernel-kmp-default-3.4\_k3.12.49\_11-OFED.3.4.2.1.5.1.ged26eb5.sles12sp1.x86\_64.rpm; mlnx-ofa\_kernel-kmp-xen-3.4\_k3.12.49\_11-OFED.3.4.2.1.5.1.ged26eb5.sles12sp1.x86\_64.compsig; mlnx-ofa\_kernel-kmp-xen-3.4\_k3.12.49\_11-OFED.3.4.2.1.5.1.ged26eb5.sles12sp1.x86\_64.rpm

**Fixes**

**The following issues have been fixed in version 3.4:**

- "ethtool" self test used to fail on interrupt test after timeout if mlx4\_ib module was not loaded.
- On rare occasions, kernel panic occurred during system reboot caused by mlx4\_en\_get\_drvinfo() called from asynchronous event handler.
- When attempting to disable SR-IOV while there are any VF netdevs open, the operation failed to succeed.

**The following issues have been fixed in version 3.3(A):**

- Race condition between "mlnx\_interface\_mgr.sh" script and udev flow, when renaming interfaces.

**The following issues have been fixed in version 3.3:**

- Added compatible "ocrdma.ko" module to fix driver loading issue with SLES12 SP1.
- The error counters found under /sys/class/infiniband/<mlx5\_dev>/ports/<port>/ did not function properly in ConnectX-4 adapter cards.
- Changed TX queue counter format to: xq\_[tc]\*[ring/channel].
- RDMA sniffer functionality issues.
- Error messages were logged to dmesg when a Virtual Function used ethtool facilities.
- Traffic from Physical Function to any Virtual Function on the same port was dropped when the physical link was down.

**Fixes in version 3.2 (A):**

- The RoCE user-space library RPM "mlnx-ofa\_kernel" failed to install when OS distribution RPMs in "infiniband support" group were already installed.
- The RoCE driver upgrade didn't work properly when a previous version of MLNX-EN driver was already installed. This resulted in Mellanox Ethernet ports not coming up.

**Fixes in version 3.2:**

- Set closest NUMA node as the default for Receive Side Scaling.
- ARP request packets destined for a proxy VXLAN interface were not handled correctly when GRO was enabled.

**Enhancements**

**HPE Mellanox RoCE driver version 3.4 contains the following changes and new features:**

- Added the following kernel module parameters:
  - mlx4\_en\_only\_mode
  - udev\_dev\_port\_dev\_id

### **HPE Mellanox RoCE driver version 3.3 contains the following changes and new features:**

- Fixes only.

### **HPE Mellanox RoCE driver version 3.2 contains the following changes and new features:**

- FCS scattering for Raw Packet Queue Pairs and Work Queues.
- Indication of L4 packet type on the receive side completions.
- Support CVLAN insertion for Work Queues.

### **Supported Devices and Features**

SUPPORTED KERNELS:

The kernels of SUSE LINUX Enterprise Server 12 SP1 (AMD64/EM64T) supported by this binary rpm are:

3.12.49-11-default - (AMD64/EM64T) and future update kernels.

3.12.49-11-xen - (AMD64/EM64T) and future update kernels.

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HPE Mellanox RoCE (RDMA over Converged Ethernet) Driver for SUSE LINUX Enterprise Server 12 SP2 (AMD64/EM64T)

Version: 3.4 **(Recommended)**

Filename: mlnx-ofa\_kernel-3.4-OFED.3.4.2.1.5.1.ged26eb5.1.sles12sp2.x86\_64.compsig; mlnx-ofa\_kernel-3.4-OFED.3.4.2.1.5.1.ged26eb5.1.sles12sp2.x86\_64.rpm; mlnx-ofa\_kernel-kmp-default-3.4\_k4.4.21\_69-OFED.3.4.2.1.5.1.ged26eb5.sles12sp2.x86\_64.compsig; mlnx-ofa\_kernel-kmp-default-3.4\_k4.4.21\_69-OFED.3.4.2.1.5.1.ged26eb5.sles12sp2.x86\_64.rpm

### **Fixes**

#### **The following issues have been fixed in version 3.4:**

- "ethtool" self test used to fail on interrupt test after timeout if mlx4\_ib module was not loaded.
- On rare occasions, kernel panic occurred during system reboot caused by mlx4\_en\_get\_drvinfo() called from asynchronous event handler.
- When attempting to disable SR-IOV while there are any VF netdevs open, the operation failed to succeed.

#### **The following issues have been fixed in version 3.3(A):**

- Race condition between "mlnx\_interface\_mgr.sh" script and udev flow, when renaming interfaces.

#### **The following issues have been fixed in version 3.3:**

- Added compatible "ocrdma.ko" module to fix driver loading issue with SLES12 SP1.
- The error counters found under /sys/class/infiniband/<mlx5\_dev>/ports/<port>/ did not function properly in ConnectX-4 adapter cards.
- Changed TX queue counter format to: xq\_[tc]\*[ring/channel].
- RDMA sniffer functionality issues.
- Error messages were logged to dmesg when a Virtual Function used ethtool facilities.
- Traffic from Physical Function to any Virtual Function on the same port was dropped when the physical link was down.

#### **Fixes in version 3.2 (A):**

- The RoCE user-space library RPM "mlnx-ofa\_kernel" failed to install when OS distribution RPMs in "infiniband support" group were already installed.
- The RoCE driver upgrade didn't work properly when a previous version of MLNX-EN driver was already installed. This resulted in Mellanox Ethernet ports not coming up.

#### **Fixes in version 3.2:**

- Set closest NUMA node as the default for Receive Side Scaling.
- ARP request packets destined for a proxy VXLAN interface were not handled correctly when GRO was enabled.

### **Enhancements**

#### **HPE Mellanox RoCE driver version 3.4 contains the following changes and new features:**

- Added the following kernel module parameters:
  - mlx4\_en\_only\_mode

**HPE Mellanox RoCE driver version 3.3 contains the following changes and new features:**

- Fixes only.

**HPE Mellanox RoCE driver version 3.2 contains the following changes and new features:**

- FCS scattering for Raw Packet Queue Pairs and Work Queues.
- Indication of L4 packet type on the receive side completions.
- Support CVLAN insertion for Work Queues.

**Supported Devices and Features**

SUPPORTED KERNELS:

The kernels of SUSE LINUX Enterprise Server 12 SP2 (AMD64/EM64T) supported by this binary rpm are:  
4.4.21-69-default - (AMD64/EM64T) and future update kernels.

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HPE QLogic FastLinQ 10/25/50 GbE Drivers for Red Hat Enterprise Linux 6 x86\_64

Version: 8.22.3.0-1 **(Optional)**

Filename: kmod-qlgc-fastlinq-8.22.3.0-1.rhel6u8.x86\_64.compsig; kmod-qlgc-fastlinq-8.22.3.0-1.rhel6u8.x86\_64.rpm; kmod-qlgc-fastlinq-8.22.3.0-1.rhel6u9.x86\_64.compsig; kmod-qlgc-fastlinq-8.22.3.0-1.rhel6u9.x86\_64.rpm; README

**Important Note!**

HPE recommends the firmware provided in HPE QLogic FastLinQ Online Firmware Upgrade Utility for Linux x86\_64, version 1.2.14 or later, for use with these drivers.

**Fixes**

This product addresses an issue where "ethtool --show-eee" displays EEE status as not supported after setting EEE off.

This product addresses an issue where the processing of an NVM read/write continues even if some portion of the operation fails.

This product addresses an issue where WoL remains enabled after it is disabled with the "ethtool" command.

This product addresses an issue where "ethool" allows autonegotiation to be enabled while it is disabled in NVM.

**Enhancements**

This product now supports qed module parameters being exposed with read permissions under /sys/module/qed/parameters.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE FlexFabric 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE FlexFabric 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE Synergy 4820C 10/25Gb Converged Network Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter
- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE StorFabric CN1200R-T Converged Network Adapter
- HPE StorFabric CN1300R Converged Network Adapter

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HPE QLogic FastLinQ 10/25/50 GbE Drivers for Red Hat Enterprise Linux 7 x86\_64

Version: 8.22.3.0-1 **(Optional)**

Filename: kmod-qlgc-fastlinq-8.22.3.0-1.rhel7u3.x86\_64.compsig; kmod-qlgc-fastlinq-8.22.3.0-1.rhel7u3.x86\_64.rpm; kmod-qlgc-fastlinq-8.22.3.0-1.rhel7u4.x86\_64.compsig; kmod-qlgc-fastlinq-8.22.3.0-1.rhel7u4.x86\_64.rpm; README

## **Important Note!**

HPE recommends the firmware provided in HPE QLogic FastLinQ Online Firmware Upgrade Utility for Linux x86\_64, version 1.2.14 or later, for use with these drivers.

## **Fixes**

This product addresses an issue where `*ethtool --show-eee*` displays EEE status as not supported after setting EEE off.

This product addresses an issue where the processing of an NVM read/write continues even if some portion of the operation fails.

This product addresses an issue where WoL remains enabled after it is disabled with the `*ethtool*` command.

This product addresses an issue where `*ethool*` allows autonegotiation to be enabled while it is disabled in NVM.

## **Enhancements**

This product now supports qed module parameters being exposed with read permissions under `/sys/module/qed/parameters`.

This product now supports Red Hat Enterprise Linux 7 Update 4.

## **Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE FlexFabric 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE FlexFabric 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE Synergy 4820C 10/25Gb Converged Network Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter
- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE StorFabric CN1200R-T Converged Network Adapter
- HPE StorFabric CN1300R Converged Network Adapter

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HPE QLogic FastLinQ 10/25/50 GbE Drivers for SUSE Linux Enterprise Server 11 x86\_64

Version: 8.22.3.0-1 **(Optional)**

Filename: `qlgc-fastlinq-kmp-default-8.22.3.0_3.0.101_63-1.sles11sp4.x86_64.compsig`; `qlgc-fastlinq-kmp-default-8.22.3.0_3.0.101_63-1.sles11sp4.x86_64.rpm`; `qlgc-fastlinq-kmp-xen-8.22.3.0_3.0.101_63-1.sles11sp4.x86_64.compsig`; `qlgc-fastlinq-kmp-xen-8.22.3.0_3.0.101_63-1.sles11sp4.x86_64.rpm`; README

## **Important Note!**

HPE recommends the firmware provided in HPE QLogic FastLinQ Online Firmware Upgrade Utility for Linux x86\_64, version 1.2.14 or later, for use with these drivers.

## **Fixes**

This product addresses an issue where `*ethtool --show-eee*` displays EEE status as not supported after setting EEE off.

This product addresses an issue where the processing of an NVM read/write continues even if some portion of the operation fails.

This product addresses an issue where WoL remains enabled after it is disabled with the `*ethtool*` command.

This product addresses an issue where `*ethool*` allows autonegotiation to be enabled while it is disabled in NVM.

## **Enhancements**

This product now supports qed module parameters being exposed with read permissions under `/sys/module/qed/parameters`.

## **Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE FlexFabric 10Gb 2-port 522FLR-T Converged Network Adapter

- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE FlexFabric 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE Synergy 4820C 10/25Gb Converged Network Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter
- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE StorFabric CN1200R-T Converged Network Adapter
- HPE StorFabric CN1300R Converged Network Adapter

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HPE QLogic FastLinQ 10/25/50 GbE Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 8.22.3.0-1 **(Optional)**

Filename: qlgc-fastlinq-kmp-default-8.22.3.0\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; qlgc-fastlinq-kmp-default-8.22.3.0\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; qlgc-fastlinq-kmp-default-8.22.3.0\_k4.4.73\_5-1.sles12sp3.x86\_64.compsig; qlgc-fastlinq-kmp-default-8.22.3.0\_k4.4.73\_5-1.sles12sp3.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in HPE QLogic FastLinQ Online Firmware Upgrade Utility for Linux x86\_64, version 1.2.14 or later, for use with these drivers.

### **Fixes**

This product addresses an issue where "ethtool --show-eee" displays EEE status as not supported after setting EEE off.

This product addresses an issue where the processing of an NVM read/write continues even if some portion of the operation fails.

This product addresses an issue where WoL remains enabled after it is disabled with the "ethtool" command.

This product addresses an issue where "ethtool" allows autonegotiation to be enabled while it is disabled in NVM.

### **Enhancements**

This product now supports qed module parameters being exposed with read permissions under /sys/module/qed/parameters.

This product now supports SUSE Linux Enterprise Server 12 SP3.

### **Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE FlexFabric 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE FlexFabric 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE Synergy 4820C 10/25Gb Converged Network Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter
- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE StorFabric CN1200R-T Converged Network Adapter
- HPE StorFabric CN1300R Converged Network Adapter

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HPE QLogic FastLinQ 10/25/50 GbE Drivers for Windows Server x64 Editions

Version: 8.22.6.0 **(Optional)**

Filename: cp032443.compsig; cp032443.exe

### **Important Note!**

HPE recommends the firmware provided in *HPE QLogic FastLinQ Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.1.0 or later, for use with these drivers.

### **Fixes**

- This product addresses an issue which results in the Device Manager hanging while iwarp traffic is running.

This product addresses an issue which results in a Windows Stop Error (BSOD) when enabling RDMA.

- This product addresses an issue which results in a BSOD while stopping iWARP traffic.
- This product addresses an issue which results in a BSOD after enabling NPAR mode.
- This product addresses an issue which results in a BSOD while disabling and enabling the VBD driver.
- This product addresses an issue where SR-IOV capability is not available in the VMSwitch.
- This product addresses an issue where the Wake-On-LAN parameter is not displayed in advanced properties for supported adapters.
- The driver INF is now updated to display the correct number of maximum virtual functions.
- This product no longer displays VMMQ Max QP in advanced properties.

## **Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter

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HPE QLogic FastLinQ 10/25/50GbE Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 8.18.22.0-1 (**Optional**)

Filename: qlgc-fastlinq-kmp-default-8.18.22.0\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; qlgc-fastlinq-kmp-default-8.18.22.0\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; qlgc-fastlinq-kmp-default-8.18.22.0\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; qlgc-fastlinq-kmp-default-8.18.22.0\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; qlgc-fastlinq-kmp-xen-8.18.22.0\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; qlgc-fastlinq-kmp-xen-8.18.22.0\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; README

## **Important Note!**

HPE recommends the firmware provided in *HPE QLogic FastLinQ Online Firmware Upgrade Utility for Linux x86\_64*, version 1.1.29 or later, for use with these drivers.

## **Fixes**

This product addresses an issue where "ethtool -T" fails for two out of the four ports of the HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter.

This product addresses an issue where the "ifconfig ethX down" command does not log a "Link Down" message to be displayed by dmesg.

This product addresses an issue where a malicious VF driver can cause a failed assert() using "VPORT\_STOP."

## **Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP2.

This product now supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter

## **Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter

- HPE Synergy 6810C 25/50Gb Ethernet Adapter

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HPE QLogic FastLinQ 10/25/50GbE Multifunction Drivers for VMware vSphere 6.0

Version: 2017.09.25 **(Optional)**

Filename: cp032576.compsig; cp032576.zip

Driver Name and Version:

qedentv:2.0.7.2-1OEM.600.0.0.2768847

### **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 vibspot.hpe.com webpages, plus an HPE specific CPOxxxx.xml file.

HPE recommends the firmware provided in *HPE QLogic FastLinQ Online Firmware Upgrade Utility for VMware*, version 4.4.14 or later, for use with this driver.

### **Fixes**

This product resolves an issue where an ASSERT is raised when a VF is enabled.

This product resolves an issue where the system hangs when a card without NPAR EP mode support is in use.

### **Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter

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HPE QLogic FastLinQ 10/25/50GbE Multifunction Drivers for VMware vSphere 6.5

Version: 2017.09.25 **(Optional)**

Filename: cp032577.compsig; cp032577.zip

Driver Name and Version:

qedentv:3.0.7.2-1OEM.650.0.0.4598673

### **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 vibspot.hpe.com webpages, plus an HPE specific CPOxxxx.xml file.

HPE recommends the firmware provided in *HPE QLogic FastLinQ Online Firmware Upgrade Utility for VMware*, version 4.4.14 or later, for use with this driver.

### **Fixes**

This product resolves an issue where an ASSERT is raised when a VF is enabled.

This product resolves an issue where the system hangs when a card without NPAR EP mode support is in use.

### **Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter

- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter

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HPE QLogic FastLinQ RoCE Library for Red Hat Enterprise Linux 6 Update 8

Version: 8.20.1.0-1 **(Optional)**

Filename: qlgc-libqedr-8.20.1.0-1.rhel6u8.x86\_64.compsig; qlgc-libqedr-8.20.1.0-1.rhel6u8.x86\_64.rpm; README

### **Prerequisites**

*HPE QLogic FastLinQ 10/25/50GbE Drivers for Red Hat Enterprise Linux 6 x86\_64*, version 8.20.4.0-1 or later, must be installed before installing this product.

The libibverb package must be installed on the target system prior to the installation of the RoCE library. If not already present, the libibverb package can be obtained from the operating system installation media.

### **Fixes**

This library addresses an issue which results in an rstream application hang.

### **Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter

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HPE QLogic FastLinQ RoCE Library for Red Hat Enterprise Linux 6 Update 9

Version: 8.20.1.0-1 **(Optional)**

Filename: qlgc-libqedr-8.20.1.0-1.rhel6u9.x86\_64.compsig; qlgc-libqedr-8.20.1.0-1.rhel6u9.x86\_64.rpm; README

### **Prerequisites**

*HPE QLogic FastLinQ 10/25/50GbE Drivers for Red Hat Enterprise Linux 6 x86\_64*, version 8.20.4.0-1 or later, must be installed before installing this product.

The libibverb package must be installed on the target system prior to the installation of the RoCE library. If not already present, the libibverb package can be obtained from the operating system installation media.

### **Fixes**

This library addresses an issue which results in an rstream application hang.

### **Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter

HPE QLogic FastLinQ RoCE Library for Red Hat Enterprise Linux 7 Update 3

Version: 8.20.1.0-1 **(Optional)**

Filename: qlgc-libqedr-8.20.1.0-1.rhel7u3.x86\_64.compsig; qlgc-libqedr-8.20.1.0-1.rhel7u3.x86\_64.rpm; README

### **Prerequisites**

*HPE QLogic FastLinQ 10/25/50GbE Drivers for Red Hat Enterprise Linux 7 x86\_64*, version 8.20.4.0-1 or later, must be installed before installing this product.

The libibverb package must be installed on the target system prior to the installation of the RoCE library. If not already present, the libibverb package can be obtained from the operating system installation media.

### **Fixes**

This library addresses an issue which results in an rstream application hang.

### **Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter

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HPE QLogic FastLinQ RoCE Library for SUSE Linux Enterprise Server 11 SP4

Version: 8.20.1.0-1 **(Optional)**

Filename: qlgc-libqedr-8.20.1.0-1.sles11sp4.x86\_64.compsig; qlgc-libqedr-8.20.1.0-1.sles11sp4.x86\_64.rpm; README

### **Prerequisites**

*HPE QLogic FastLinQ 10/25/50GbE Drivers for SUSE Linux Enterprise Server 11 x86\_64*, version 8.20.4.0-1 or later, must be installed before installing this product.

The libibverb package must be installed on the target system prior to the installation of the RoCE library. If not already present, the libibverb package can be obtained from the operating system installation media.

### **Fixes**

This library addresses an issue which results in an rstream application hang.

### **Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter

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HPE QLogic FastLinQ RoCE Library for SUSE Linux Enterprise Server 12 SP1

Version: 8.18.6.0-1 **(Optional)**

Filename: qlgc-libqedr-8.18.6.0-1.sles12sp1.x86\_64.compsig; qlgc-libqedr-8.18.6.0-1.sles12sp1.x86\_64.rpm; README

### **Prerequisites**

*HPE QLogic FastLinQ 10/25/50GbE Drivers for SUSE Linux Enterprise Server 12 x86\_64*, version 8.18.22.0-1 or later, must be installed before installing this product.

The libibverb package must be installed on the target system prior to the installation of the RoCE library. If not already present, the libibverb package 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 521T Adapter
- HPE Ethernet 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter

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HPE QLogic FastLinQ RoCE Library for SUSE Linux Enterprise Server 12 SP2

Version: 8.18.6.0-1 **(Optional)**

Filename: qlgc-libqedr-8.18.6.0-1.sles12sp2.x86\_64.compsig; qlgc-libqedr-8.18.6.0-1.sles12sp2.x86\_64.rpm; README

## **Prerequisites**

*HPE QLogic FastLinQ 10/25/50GbE Drivers for SUSE Linux Enterprise Server 12 x86\_64*, version 8.18.22.0-1 or later, must be installed before installing this product.

The libibverb package must be installed on the target system prior to the installation of the RoCE library. If not already present, the libibverb package 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 521T Adapter
- HPE Ethernet 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter

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HPE QLogic FastLinQ RoCE Library for SUSE Linux Enterprise Server 12 SP2

Version: 8.20.1.0-1 **(Optional)**

Filename: qlgc-libqedr-8.20.1.0-1.sles12sp2.x86\_64.compsig; qlgc-libqedr-8.20.1.0-1.sles12sp2.x86\_64.rpm; README

## **Prerequisites**

*HPE QLogic FastLinQ 10/25/50GbE Drivers for SUSE Linux Enterprise Server 12 x86\_64*, version 8.20.4.0-1 or later, must be installed before installing this product.

The libibverb package must be installed on the target system prior to the installation of the RoCE library. If not already present, the libibverb package can be obtained from the operating system installation media.

## Fixes

This library addresses an issue which results in an rstream application hang.

## Supported Devices and Features

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter

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HPE QLogic NX2 10/20 GbE Multifunction Drivers for Red Hat Enterprise Linux 6 x86\_64

Version: 7.14.29-1 **(Optional)**

Filename: kmod-netxtreme2-7.14.29-1.rhel6u8.x86\_64.compsig; kmod-netxtreme2-7.14.29-1.rhel6u8.x86\_64.rpm; kmod-netxtreme2-7.14.29-1.rhel6u9.x86\_64.compsig; kmod-netxtreme2-7.14.29-1.rhel6u9.x86\_64.rpm; README

## Important Note!

HPE recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for Linux x86\_64*, version 2.20.4 or later, for use with these drivers.

## Fixes

This product addresses an issue where VxLAN offload doesn't work on 4.8+ kernels.

This product addresses an issue where bnx2i errors are seen on the linux console during iSCSI I/O.

## Enhancements

This product now provides a new module parameter "use\_random\_vf\_mac" for bnx2x which, when set, causes a virtual function to be created with a random forced local MAC address.

## Supported Devices and Features

These drivers support the following network adapters:

- HP Ethernet 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- HP Ethernet 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE Synergy 10Gb 2820C Ethernet Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

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HPE QLogic NX2 10/20 GbE Multifunction Drivers for Red Hat Enterprise Linux 7 x86\_64

Version: 7.14.29-1 **(Optional)**

Filename: kmod-netxtreme2-7.14.29-1.rhel7u3.x86\_64.compsig; kmod-netxtreme2-7.14.29-1.rhel7u3.x86\_64.rpm; kmod-netxtreme2-7.14.29-2.rhel7u4.x86\_64.compsig; kmod-netxtreme2-7.14.29-2.rhel7u4.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for Linux x86\_64*, version 2.20.4 or later, for use with these drivers.

### **Fixes**

This product addresses an issue where VxLAN offload doesn't work on 4.8+ kernels.

This product addresses an issue where bnx2i errors are seen on the linux console during iSCSI I/O.

### **Enhancements**

This product now supports Red Hat Enterprise Linux 7 Update 4.

This product now provides a new module parameter "use\_random\_vf\_mac" for bnx2x which, when set, causes a virtual function to be created with a random forced local MAC address.

### **Supported Devices and Features**

These drivers support the following network adapters:

- HP Ethernet 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- HP Ethernet 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE Synergy 10Gb 2820C Ethernet Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

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HPE QLogic NX2 10/20 GbE Multifunction Drivers for SUSE Linux Enterprise Server 11 x86\_64

Version: 7.14.29-1 **(Optional)**

Filename: netxtreme2-kmp-default-7.14.29\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; netxtreme2-kmp-default-7.14.29\_3.0.101\_63-1.sles11sp4.x86\_64.rpm; netxtreme2-kmp-default-7.14.29\_3.0.76\_0.11-1.sles11sp3.x86\_64.compsig; netxtreme2-kmp-default-7.14.29\_3.0.76\_0.11-1.sles11sp3.x86\_64.rpm; netxtreme2-kmp-xen-7.14.29\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; netxtreme2-kmp-xen-7.14.29\_3.0.101\_63-1.sles11sp4.x86\_64.rpm; netxtreme2-kmp-xen-7.14.29\_3.0.76\_0.11-1.sles11sp3.x86\_64.compsig; netxtreme2-kmp-xen-7.14.29\_3.0.76\_0.11-1.sles11sp3.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for Linux x86\_64*, version 2.20.4 or later, for use with these drivers.

### **Fixes**

This product addresses an issue where VxLAN offload doesn't work on 4.8+ kernels.

This product addresses an issue where bnx2i errors are seen on the linux console during iSCSI I/O.

### **Enhancements**

This product now provides a new module parameter "use\_random\_vf\_mac" for bnx2x which, when set, causes a virtual function to be created with a random forced local MAC address.

## **Supported Devices and Features**

These drivers support the following network adapters:

- HP Ethernet 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- HP Ethernet 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE Synergy 10Gb 2820C Ethernet Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

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HPE QLogic NX2 10/20 GbE Multifunction Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 7.14.29-1 (**Optional**)

Filename: netxtreme2-kmp-default-7.14.29\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; netxtreme2-kmp-default-7.14.29\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; netxtreme2-kmp-default-7.14.29\_k4.4.73\_5-2.sles12sp3.x86\_64.compsig; netxtreme2-kmp-default-7.14.29\_k4.4.73\_5-2.sles12sp3.x86\_64.rpm; README

## **Important Note!**

HPE recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for Linux x86\_64*, version 2.20.4 or later, for use with these drivers.

## **Fixes**

This product addresses an issue where VxLAN offload doesn't work on 4.8+ kernels.

This product addresses an issue where bnx2i errors are seen on the linux console during iSCSI I/O.

## **Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP3.

This product now provides a new module parameter "use\_random\_vf\_mac" for bnx2x which, when set, causes a virtual function to be created with a random forced local MAC address.

## **Supported Devices and Features**

These drivers support the following network adapters:

- HP Ethernet 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- HP Ethernet 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter

- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE Synergy 10Gb 2820C Ethernet Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

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HPE QLogic NX2 10/20 GbE Multifunction Drivers for Windows Server x64 Editions

Version: 7.13.115.0 **(Optional)**

Filename: cp032608.compsig; cp032608.exe

### **Important Note!**

HP recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for Windows Server x64 Editions*, version 5.1.1.0 or later, for use with these drivers.

### **Fixes**

An unsupported catalog file has been removed from this driver package.

### **Supported Devices and Features**

This driver supports the following network adapters:

- HP Flex-10 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- HP Ethernet 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE Synergy 10Gb 2820C Ethernet Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

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HPE QLogic NX2 10/20GbE Multifunction Drivers for SUSE Linux Enterprise Server 12 x86\_64

Version: 7.14.19-1 **(Optional)**

Filename: netxtreme2-kmp-default-7.14.19\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; netxtreme2-kmp-default-7.14.19\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; netxtreme2-kmp-default-7.14.19\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; netxtreme2-kmp-default-7.14.19\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; netxtreme2-kmp-xen-7.14.19\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; netxtreme2-kmp-xen-7.14.19\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; README

### **Important Note!**

HPE recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for Linux x86\_64*, version 2.19.22 or later, for use with these drivers.

### **Fixes**

This product addresses an issue where the NIC firmware doesn't discard FCoE Initialization Protocol (FIP) frames not intended for a physical function (PF).

### **Enhancements**

This product now supports SUSE Linux Enterprise Server 12 SP2.

This product now provides support for transmit segmentation offload of tunnels with outer packet checksums.

## **Supported Devices and Features**

These drivers support the following network adapters:

- HP Ethernet 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- HP Ethernet 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE Synergy 10Gb 2820C Ethernet Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

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HPE QLogic NX2 10/20GbE Multifunction Drivers for VMware vSphere 6.0/6.5

Version: 2017.10.06 **(Critical)**

Filename: **No released binaries available - bnx2.vmware60@2017.10.06\_\_component-vmware\_en**

Driver Name and Version:

net-cnic:2.713.30.v60.6-1OEM.600.0.0.2494585|misc-cnic-register:1.713.30.v60.1-1OEM.600.0.0.2494585|net-bnx2:2.2.6b.v60.2-1OEM.600.0.0.2494585|net-bnx2x:2.713.30.v60.9-1OEM.600.0.0.2494585|scsi-bnx2i:2.713.30.v60.5-1OEM.600.0.0.2494585|scsi-bnx2fc:1.713.30.v60.6-1OEM.600.0.0.2494585

## **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 vibspot.hpe.com webpages, plus an HPE specific CPOxxxx.xml file.

HPE recommends the firmware provided in *HPE QLogic NX2 Online Firmware Upgrade Utility for VMware*, version 1.19.5 or later, for use with this driver.

## **Fixes**

This driver resolves an issue with the supported adapters' firmware that can cause the adapter hardware to become inoperable. See the Customer Notice Advisory a00027591en\_us at [http://h20566.www2.hpe.com/hpsc/doc/public/display?docId=emr\\_na-a00027591en\\_us](http://h20566.www2.hpe.com/hpsc/doc/public/display?docId=emr_na-a00027591en_us) for more information.

This product resolves an issue where an excessive number of error messages is logged.

This product resolves a lost connection between virtual machines with VLAN.

This product resolves an issue which results in a VXLAN RX filter failure.

## **Supported Devices and Features**

These drivers support the following network adapters:

- HP Ethernet 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- HP Ethernet 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter

- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP FlexFabric 20Gb 2-port 631M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Dual Port Converged Network Adapter
- HPE Synergy 10Gb 2820C Ethernet Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

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HPE QLogic NX2 Linux iSCSI Offload IO Daemon for Red Hat Enterprise Linux 6 Update 8 x86\_64

Version: 2.11.5.1-1 **(Optional)**

Filename: iscsiui0-2.11.5.1-1.rhel6u8.x86\_64.compsig; iscsiui0-2.11.5.1-1.rhel6u8.x86\_64.rpm

### **Fixes**

This product addresses an issue where the Initiator fails to acquire an IPv6 DHCP address from the DHCP server.

### **Enhancements**

This product now supports ping packet size greater than 1K.

### **Supported Devices and Features**

This product supports the following network adapters:

- HP Flex-10 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter
- HP Flex-10 10Gb 2-port 530M Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifuntion BL-c Adapter
- HP FlexFabric 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLB Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE Synergy 10Gb 2-port 2820C Converged Network Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

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HPE QLogic NX2 Linux iSCSI Offload IO Daemon for Red Hat Enterprise Linux 6 Update 9 x86\_64

Version: 2.11.5.1-1 **(Optional)**

Filename: iscsiui0-2.11.5.1-1.rhel6u9.x86\_64.compsig; iscsiui0-2.11.5.1-1.rhel6u9.x86\_64.rpm

### **Fixes**

This product addresses an issue where the Initiator fails to acquire an IPv6 DHCP address from the DHCP server.

### **Enhancements**

This product now supports ping packet size greater than 1K.

## **Supported Devices and Features**

This product supports the following network adapters:

- HP Flex-10 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter
- HP Flex-10 10Gb 2-port 530M Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- HP FlexFabric 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLB Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE Synergy 10Gb 2-port 2820C Converged Network Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

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HPE QLogic NX2 Linux iSCSI Offload IO Daemon for Red Hat Enterprise Linux 7 Update 3 x86\_64

Version: 2.11.5.1-1 **(Optional)**

Filename: iscsiui0-2.11.5.1-1.rhel7u3.x86\_64.compsig; iscsiui0-2.11.5.1-1.rhel7u3.x86\_64.rpm

## **Fixes**

This product addresses an issue where the Initiator fails to acquire an IPv6 DHCP address from the DHCP server.

## **Enhancements**

This product now supports ping packet size greater than 1K.

## **Supported Devices and Features**

This product supports the following network adapters:

- HP Flex-10 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter
- HP Flex-10 10Gb 2-port 530M Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- HP FlexFabric 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLB Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE Synergy 10Gb 2-port 2820C Converged Network Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

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HPE QLogic NX2 Linux iSCSI Offload IO Daemon for Red Hat Enterprise Linux 7 Update 4 x86\_64

Version: 2.11.5.1-1 **(Optional)**

Filename: iscsiuiio-2.11.5.1-1.rhel7u4.x86\_64.compsig; iscsiuiio-2.11.5.1-1.rhel7u4.x86\_64.rpm

### **Enhancements**

Initial release.

### **Supported Devices and Features**

This product supports the following network adapters:

- HP Flex-10 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter
- HP Flex-10 10Gb 2-port 530M Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- HP FlexFabric 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLB Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE Synergy 10Gb 2-port 2820C Converged Network Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

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HPE QLogic NX2 Linux iSCSI Offload IO Daemon for SUSE Linux Enterprise Server 11 SP3 x86\_64

Version: 2.11.5.1-1 **(Optional)**

Filename: iscsiuiio-2.11.5.1-1.sles11sp3.x86\_64.compsig; iscsiuiio-2.11.5.1-1.sles11sp3.x86\_64.rpm

### **Fixes**

This product addresses an issue where the Initiator fails to acquire an IPv6 DHCP address from the DHCP server.

### **Enhancements**

This product now supports ping packet size greater than 1K.

### **Supported Devices and Features**

This product supports the following network adapters:

- HP Flex-10 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter
- HP Flex-10 10Gb 2-port 530M Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- HP FlexFabric 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLB Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter

- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE Synergy 10Gb 2-port 2820C Converged Network Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

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HPE QLogic NX2 Linux iSCSI Offload IO Daemon for SUSE Linux Enterprise Server 11 SP4 x86\_64

Version: 2.11.5.1-1 **(Optional)**

Filename: iscsiuiio-2.11.5.1-1.sles11sp4.x86\_64.compsig; iscsiuiio-2.11.5.1-1.sles11sp4.x86\_64.rpm

### **Fixes**

This product addresses an issue where the Initiator fails to acquire an IPv6 DHCP address from the DHCP server.

### **Enhancements**

This product now supports ping packet size greater than 1K.

### **Supported Devices and Features**

This product supports the following network adapters:

- HP Flex-10 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter
- HP Flex-10 10Gb 2-port 530M Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifunntion BL-c Adapter
- HP FlexFabric 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLB Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE Synergy 10Gb 2-port 2820C Converged Network Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

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HPE QLogic NX2 Linux iSCSI Offload IO Daemon for SUSE Linux Enterprise Server 12 SP1 x86\_64

Version: 2.11.4.3-1 **(Optional)**

Filename: iscsiuiio-2.11.4.3-1.sles12sp1.x86\_64.compsig; iscsiuiio-2.11.4.3-1.sles12sp1.x86\_64.rpm

### **Fixes**

This daemon addresses an issue where the iscsiuiio service encounters a segmentation fault during target discovery.

### **Supported Devices and Features**

This product supports the following network adapters:

- o HP Flex-10 10Gb 2-port 530FLB Adapter
- o HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter
- o HP Flex-10 10Gb 2-port 530M Adapter
- o HP Ethernet 10Gb 2-port 530SFP+ Adapter
- o HP Ethernet 10Gb 2-port 530T Adapter
- o HP NC532m Dual Port 10GbE Multifunntion BL-c Adapter
- o HP FlexFabric 10Gb 2-port 533FLR-T Adapter
- o HP FlexFabric 10Gb 2-port 534FLB Adapter
- o HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- o HP FlexFabric 10Gb 2-port 534M Adapter
- o HP FlexFabric 10Gb 2-port 536FLB Adapter
- o HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- o HP FlexFabric 20Gb 2-port 630FLB Adapter
- o HP FlexFabric 20Gb 2-port 630M Adapter
- o HP StoreFabric CN1100R Dual Port Converged Network Adapter
- o HPE StoreFabric CN1100R-T Converged Network Adapter
- o HPE Synergy 10Gb 2-port 2820C Converged Network Adapter
- o HPE Synergy 3820C 10/20Gb Converged Network Adapter

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HPE QLogic NX2 Linux iSCSI Offload IO Daemon for SUSE Linux Enterprise Server 12 SP2 x86\_64

Version: 2.11.4.3-1 **(Optional)**

Filename: iscsiuiio-2.11.4.3-1.sles12sp2.x86\_64.compsig; iscsiuiio-2.11.4.3-1.sles12sp2.x86\_64.rpm

### **Enhancements**

Initial release.

### **Supported Devices and Features**

This product supports the following network adapters:

- o HP Flex-10 10Gb 2-port 530FLB Adapter
- o HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter
- o HP Flex-10 10Gb 2-port 530M Adapter
- o HP Ethernet 10Gb 2-port 530SFP+ Adapter
- o HP Ethernet 10Gb 2-port 530T Adapter
- o HP NC532m Dual Port 10GbE Multifunntion BL-c Adapter
- o HP FlexFabric 10Gb 2-port 533FLR-T Adapter
- o HP FlexFabric 10Gb 2-port 534FLB Adapter
- o HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- o HP FlexFabric 10Gb 2-port 534M Adapter
- o HP FlexFabric 10Gb 2-port 536FLB Adapter
- o HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- o HP FlexFabric 20Gb 2-port 630FLB Adapter
- o HP FlexFabric 20Gb 2-port 630M Adapter
- o HP StoreFabric CN1100R Dual Port Converged Network Adapter
- o HPE StoreFabric CN1100R-T Converged Network Adapter
- o HPE Synergy 10Gb 2-port 2820C Converged Network Adapter
- o HPE Synergy 3820C 10/20Gb Converged Network Adapter

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HPE QLogic NX2 Linux iSCSI Offload IO Daemon for SUSE Linux Enterprise Server 12 SP2 x86\_64

Version: 2.11.5.1-1 **(Optional)**

Filename: iscsiuiio-2.11.5.1-1.sles12sp2.x86\_64.compsig; iscsiuiio-2.11.5.1-1.sles12sp2.x86\_64.rpm

### **Fixes**

This product addresses an issue where the Initiator fails to acquire an IPv6 DHCP address from the DHCP server.

## **Enhancements**

This product now supports ping packet size greater than 1K.

## **Supported Devices and Features**

This product supports the following network adapters:

- HP Flex-10 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter
- HP Flex-10 10Gb 2-port 530M Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- HP FlexFabric 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLB Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE Synergy 10Gb 2-port 2820C Converged Network Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

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HPE QLogic NX2 Linux iSCSI Offload IO Daemon for SUSE Linux Enterprise Server 12 SP3 x86\_64  
Version: 2.11.5.1-1 **(Optional)**  
Filename: iscsiuiio-2.11.5.1-1.sles12sp3.x86\_64.compsig; iscsiuiio-2.11.5.1-1.sles12sp3.x86\_64.rpm

## **Enhancements**

Initial release.

## **Supported Devices and Features**

This product supports the following network adapters:

- HP Flex-10 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter
- HP Flex-10 10Gb 2-port 530M Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- HP FlexFabric 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLB Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE Synergy 10Gb 2-port 2820C Converged Network Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

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net-mst kernel module driver component for VMware 6.0  
Version: 2016.12.22 **(Recommended)**  
Filename: cp031540.compsig; cp031540.zip  
Driver Name and Version:  
MEL\_bootbank\_nmst:4.6.0.101-1OEM.6000.0.2768847

**Important Note!**

This component is intended to be used by HP applications. It is a zip that contains the same driver deliverable available from the HP vibsdepot.hp.com webpage, plus an HP specific CPXXXX.xml file.

**Prerequisites**

NA

**Fixes**

Initial version of 4.6.0.101 for Gen10 Snap1

**Enhancements**

MST Version 4.6.0.101

---

net-mst kernel module driver component for VMware 6.5  
Version: 2016.12.22 **(Recommended)**  
Filename: cp031541.compsig; cp031541.zip  
Driver Name and Version:  
MEL\_bootbank\_nmst:4.6.0.101-1OEM.6500.0.4598673

**Important Note!**

This component is intended to be used by HP applications. It is a zip that contains the same driver deliverable available from the HP vibsdepot.hp.com webpage, plus an HP specific CPXXXX.xml file.

**Prerequisites**

NA

**Fixes**

Initial version of 4.6.0.101 for Gen10 Snap1

**Enhancements**

MST Version 4.6.0.101

---

nmlx4\_en driver component for VMware 6.0  
Version: 2016.07.19 **(Recommended)**  
Filename: cp030479.zip; cp030479\_part1.compsig; cp030479\_part2.compsig  
Driver Name and Version:  
MEL\_bootbank\_nmlx4-core:3.15.5.5-1OEM.6000.0.2768847  
MEL\_bootbank\_nmlx4-en:3.15.5.5-1OEM.6000.0.2768847  
MEL\_bootbank\_nmlx4-rdma:3.15.5.5-1OEM.6000.0.2768847

## **Important Note!**

### **Known Issues:**

- 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".
- When using HPE Ethernet only cards with ESXi 6.5, "cableType" property value gets populated with an empty string.
- RDMA sniffer feature is not supported with driver version 3.15.5.5 for ESXi 6.5.

## **Fixes**

### **Fixes:**

- Fixed an issue which prevented VLAN tag Priority Code Point (PCP) in RX and TX from working properly.
- Fixed a PSOD case during installation when the RDMA module was not removed.
- Management interface port type field (nmlx\_en\_MgmtIFPortType) reported incorrect value.

## **Enhancements**

### **Changes in 3.15.5.5:**

- Added support for VXLAN hardware offload. VXLAN hardware offload enables the traditional offloads to be performed on the encapsulated traffic. With ConnectX®-3 Pro, data center operators can decouple the overlay network layer from the physical NIC performance, thus achieving native performance in the new network architecture.
- Added Management Interface support
- **Hardware Performance**
  - 1G
  - 10G
  - 40G
- Large Send Offload (TCP Segmentation Offload)
- WoL (only on supported hardware)
- RSS Queues
- Multiple Tx/Rx rings
- NetQueue support
- Fixed Pass-Through
- Single/Dual port
- MSI-X

---

nmlx4\_en driver component for VMware 6.5

Version: 2016.08.17 **(Recommended)**

Filename: cp030693.zip; cp030693\_part1.compsig; cp030693\_part2.compsig

Driver Name and Version:

MEL\_bootbank\_nmlx4-core:3.15.5.5-1OEM.600.0.0.2768847

MEL\_bootbank\_nmlx4-en:3.15.5.5-1OEM.600.0.0.2768847

MEL\_bootbank\_nmlx4-rdma:3.15.5.5-1OEM.600.0.0.2768847

## **Important Note!**

### **Known Issues:**

- 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".
- When using HPE Ethernet only cards with ESXi 6.5, "cableType" property value gets populated with an empty string.
- RDMA sniffer feature is not supported with driver version 3.15.5.5 for ESXi 6.5.

## **Fixes**

### **Fixes:**

- Fixed an issue which prevented VLAN tag Priority Code Point (PCP) in RX and TX from working properly.
- Fixed a PSOD case during installation when the RDMA module was not removed.
- Management interface port type field (nmlx\_en\_MgmtIFPortType) reported incorrect value.

## **Enhancements**

### **Changes in 3.15.5.5:**

- Added support for VXLAN hardware offload. VXLAN hardware offload enables the traditional offloads to be performed on the encapsulated traffic. With ConnectX®-3 Pro, data center operators can decouple the overlay network layer from the physical NIC performance, thus achieving native performance in the new network architecture.
- Added Management Interface support
- **Hardware Performance**
  - 1G
  - 10G
  - 40G
- Large Send Offload (TCP Segmentation Offload)
- WoL (only on supported hardware)
- RSS Queues
- Multiple Tx/Rx rings
- NetQueue support
- Fixed Pass-Through
- Single/Dual port
- MSI-X

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nmlx5\_en driver component for VMware 6.0

Version: 2016.07.29 **(Recommended)**

Filename: cp030575.compsig; cp030575.zip

Driver Name and Version:

MEL\_bootbank\_nmlx5-core:4.15.8.8-1OEM-600.0.0.2768847

## **Important Note!**

### **Known Issues:**

- This driver support Ethernet cards only, VPI cards can be configured as Ethernet only mode when burning the firmware. For further information on firmware burning, please refer to the MFT User Manual. ([www.mellanox.com](http://www.mellanox.com) > Products > Software > InfiniBand/VPI Drivers > Firmware Tools).
- Multicast and IPv6 traffic might be unstable over SR-IOV.
- Reboot is required after any SR-IOV configuration change.
- Firmware VF configuration must be N+1 (while N is the required VF number). For example: If your configuration requires 10 VFs, the firmware must be set to support 16 VFs (ESXi Limitation).
- Driver specific statistics are not supported in ESXi 5.5.
- 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.
- Call trace might occur after running VGT with heavy traffic.
- Traffic loss of large packets might occur after MTU change.

**Workaround:** Reboot the driver

- VMs can get Call Trace upon MTU change during heavy traffic.
- Reloading the driver when the SR-IOV VFs are ON, will result in Purple Screen of Death (PSOD).
- VGT traffic over VXLAN interfaces is currently not supported.
- The adapter card might get stuck in Down state after setting the ring size to 8192.
- VMs with SR-IOV cannot be powered on when running low on available vectors.
- Occasionally, untagged traffic can pass between VMs with SR-IOV enabled when portgroup is configured for VLAN trunk range.
- 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.
- Although 'drss' and 'rss' parameters are disabled by default, when querying the nmlx5\_core module parameter the displayed default values of drss/drss are "4".
- VST mode in SR-IOV in ConnectX-5 is currently not functional.
- NetQ RSS for encapsulated traffic is currently not supported. Encapsulated traffic (VXLAN/Geneve) directed to NetQ RSS queue will not be distributed through all queues' channels, thus will not utilize the RSS feature.

**Note:** It is highly recommended to avoid requesting RSS for encapsulated interfaces, i.e. refrain from defining the following in the VM configuration file:  
<iface\_name>.pnictFeatures=4

## Fixes

### Fixes:

- In ESXi5.5 – when using a server with many ConnectX-4 / ConnectX-4 Lx ports, some of the interfaces do not show up in the esxcfg-nics -l list. This can occur if no MSI-X resources are available to enable loading all interfaces.
- When SR-IOV is enabled and the max\_vfs is not equal to 0, new filters are not applied.
- Added a new module parameter to nmlx5\_core "supported\_num\_ports" to support up to "8" ConnectX-4 Lx ports.
- Fixed an issue which prevented the driver from loading on machines with 64 or more CPU cores.

## Enhancements

### Changes in 4.15.8.8:

- Added support for ConnectX-5/ConnectX-5 Ex adapter cards.  
**Note:** ConnectX-5/ConnectX-5 Ex cards are currently at beta level.

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nmlx5\_en driver component for VMware 6.5

Version: 2016.07.29 **(Recommended)**

Filename: cp030579.compsig; cp030579.zip

Driver Name and Version:

MEL\_bootbank\_nmlx5-core:4.16.8.8-1OEM.650.0.0.4598673

## Important Note!

### Known Issues in 4.16.8.8:

- This driver support Ethernet cards only, VPI cards can be configured as Ethernet only mode when burning the firmware. For further information on firmware burning, please refer to the MFT User Manual. ([www.mellanox.com](http://www.mellanox.com) > Products > Software > InfiniBand/VPI Drivers > Firmware Tools)
- Multicast and IPv6 traffic might be unstable over SR-IOV.
- Firmware VF configuration must be N+1 (while N is the required VF number). For example: If your configuration requires 10 VFs, the firmware must be set to support 11 VFs (ESXi Limitation).
- 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.
- Traffic loss of large packets might occur after MTU change.
- VMs can get Call Trace upon MTU change during heavy traffic.
- Reloading the driver while the SR-IOV VFs are ON will result in a Purple Screen of Death (PSOD).
- VGT traffic over VXLAN interfaces is currently not supported.
- VMs with SR-IOV cannot be powered on when running low on available vectors.
- When setting a trunk range in an SR-IOV VF that operates in VGT+ mode, untagged traffic will pass.

- 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.
- Running 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

**Workaround:** Upgrade your firmware to the latest version 12.17.2020/14.17.2020
- Geneve options length support is limited to 56B. The behavior of received packets with options length bigger than 56B is undefined.
- VST mode in SR-IOV in ConnectX-5 is currently not functional.
- NetQ RSS for encapsulated traffic is currently not supported. Encapsulated traffic (VXLAN/Geneve) directed to NetQ RSS queue will not be distributed through all queues' channels, thus will not utilize the RSS feature.
 

**Note:** It is highly recommended to avoid requesting RSS for encapsulated interfaces, i.e. refrain from defining the following in the VM configuration file:  
<iface\_name>.pnicFeatures=4

## **Fixes**

### **Fixes in 4.16.8.8:**

- Fixed an issue which caused the adapter card to get stuck in Down state after setting the ring size to 8192.

## **Enhancements**

### **New features and changes in version 4.16.8.8:**

- Added support for ConnectX-5/ConnectX-5 Ex adapter cards.  
Note: ConnectX-5/ConnectX-5 Ex cards are currently at beta level.

VMware ESX 6.0 MST Drivers Offline Bundle for Mellanox Adapters

Version: 4.6.0.101 **(Recommended)**

Filename: MLNX-NMST-ESX-6.0.0-4.6.0.101.zip

## **Prerequisites**

NA

## **Fixes**

Initial version of VM60 nmst 4.6.0.101

VMware ESX 6.5 MST Drivers Offline Bundle for Mellanox Adapters

Version: 4.6.0.101 **(Recommended)**

Filename: MLNX-NMST-ESX-6.5.0-4.6.0.101.zip

## **Prerequisites**

NA

## **Fixes**

Initial version of VM65 nmst 4.6.0.101

## **Driver - Security**

AMD Secure Processor Driver for Windows Server 2012 R2

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Version: 4.1.0.0 **(Optional)**

Filename: cp031963.compsig; cp031963.exe

### **Enhancements**

Initial release.

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AMD Secure Processor Driver for Windows Server 2016

Version: 4.1.0.0 **(Optional)**

Filename: cp032712.compsig; cp032712.exe

### **Enhancements**

Initial release.

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## **Driver - Storage**

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Dynamic Smart Array B140i Controller Driver for 64-bit Microsoft Windows Server 2012/2016 Editions

Version: 62.12.0.64 **(Recommended)**

Filename: cp028631.exe

### **Fixes**

Blue Screen of Death (BSOD) displayed after installing Microsoft Windows Server 2012 R2 on systems configured with a HPE Dynamic Smart Array B140i RAID Controller and CPU count higher than the driver anticipated supporting (typically more than 128 CPU cores).

When running "Hypervisor Code Integrity Readiness Test", the WHQL test would fail.

### **Enhancements**

Reduce debug output from optical devices to filter out unwanted messages and retain only the critical data.

Added support for Microsoft Windows Server 2016.

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HPE Smart Array S100i SR Gen10 SW RAID Driver for Windows Server 2012 R2 and Windows Server 2016

Version: 62.0.32.64 **(Recommended)**

Filename: cp032846.compsig; cp032846.exe

### **Enhancements**

Added support for the following Gen10 servers:

- HPE ProLiant XL190r Gen10 Server
- HPE ProLiant XL170r Gen10 Server
- HPE ProLiant DL180 Gen10 Server
- HPE ProLiant DL160 Gen10 Server
- HPE ProLiant DL580 Gen10 Server
- HPE ProLiant ML110 Gen10 Server
- HPE ProLiant ML350 Gen10 Server
- HPE ProLiant XL450 Gen10 Server
- HPE ProLiant DL120 Gen10 Server

HP Dynamic Smart Array B140i Controller Driver for VMware vSphere 6.0 (Driver Component).

Version: 2016.04.18 **(Recommended)**

Filename: cp028914.zip

Driver Name and Version:

scsi-hpdsa:5.5.0.52-1OEM.550.0.0.1331820

**Important Note!**

This component is intended to be used by HP applications. It is a zip that contains the same driver deliverable available from the vmware.com and the HP vibstdepot.hp.com webpages, plus an HP specific CPXXXX.xml file.

**Fixes**

Modifies how driver versioning is reported to HPSSA in order to conform to the behavior hpssa expects and allows correct display of version.

**Enhancements**

Reduce debug output from optical devices to filter out unwanted messages and retain only the critical data.

**Note:** VMware Driver Component version 2016.04.18 includes HPDSA driver version 5.5.0.52-1

HP Dynamic Smart Array Controller Driver for VMware vSphere 6.0 (Bundle file).

Version: 5.5.0.52-1 **(Recommended)**

Filename: hpdsa.zip

**Fixes**

Modifies how driver versioning is reported to HPSSA in order to conform to the behavior hpssa expects and allows correct display of version.

**Enhancements**

Reduce debug output from optical devices to filter out unwanted messages and keep only the critical data.

HPE Dynamic Smart Array B140i Controller Driver for VMware vSphere 6.5 (Driver Component).

Version: 2016.10.21 **(Recommended)**

Filename: cp031035.zip

Driver Name and Version:

scsi-hpdsa:5.5.0.54-1OEM.550.0.0.1331820

**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 vibstdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

**Enhancements**

Added VMware vSphere 6.5 support.

HPE Dynamic Smart Array B140i SATA RAID Controller Driver for Red Hat Enterprise Linux 6 (64-bit)

Version: 1.2.10-120 **(Recommended)**

Filename: kmod-hpdsa-1.2.10-120.rhel6u8.x86\_64.rpm; kmod-hpdsa-1.2.10-120.rhel6u9.x86\_64.rpm

## **Fixes**

The following issue has been resolved:

In a system configured with the HPE Dynamic Smart Array B140i Controller and higher than 128 CPU (cores), a system failure event would occur.

## **Supported Devices and Features**

SUPPORTED KERNELS:

The kernels of Red Hat Enterprise Linux 6 (64-bit) supported by this binary rpm are:

2.6.32-642.el6 - Red Hat Enterprise Linux 6 Update 8(64-bit) and future errata kernels for update 8.

2.6.32-696.el6 - Red Hat Enterprise Linux 6 Update 9(64-bit) and future errata kernels for update 9.

---

HPE Dynamic Smart Array B140i SATA RAID Controller Driver for Red Hat Enterprise Linux 7 (64-bit)

Version: 1.2.10-123 **(Recommended)**

Filename: kmod-hpdsa-1.2.10-123.rhel7u3.x86\_64.rpm; kmod-hpdsa-1.2.10-123.rhel7u4.x86\_64.rpm

## **Fixes**

The following issue has been resolved:

In a system configured with the HPE Dynamic Smart Array B140i Controller and higher than 128 CPU (cores), a system failure event would occur.

## **Enhancements**

Added support for Red Hat Enterprise LINUX 7 Update 4

## **Supported Devices and Features**

SUPPORTED KERNELS:

The kernels of Red Hat Enterprise Linux 7 (64-bit) supported by this binary rpm are:

3.10.0-514.el7- Red Hat Enterprise Linux 7 Update 3 (64-bit) and future errata kernels for update 3.

3.10.0-693.el7- Red Hat Enterprise Linux 7 Update 4 (64-bit) and future errata kernels for update 4.

---

HPE Dynamic Smart Array B140i SATA RAID Controller Driver for SUSE LINUX Enterprise Server 11 (64-bit)

Version: 1.2.10-120 **(Recommended)**

Filename: hpdsa-kmp-default-1.2.10-120.sles11sp3.x86\_64.rpm; hpdsa-kmp-default-1.2.10-120.sles11sp4.x86\_64.rpm; hpdsa-kmp-xen-1.2.10-120.sles11sp3.x86\_64.rpm;

hpdsa-kmp-xen-1.2.10-120.sles11sp4.x86\_64.rpm

## **Fixes**

The following issue has been resolved:

In a system configured with the HPE Dynamic Smart Array B140i Controller and higher than 128 CPU (cores), a system failure event would occur.

## **Supported Devices and Features**

SUPPORTED KERNELS:

The kernels of SUSE LINUX Enterprise Server 11 (64-bit) supported by this binary rpm are:

3.0.76-0.11.1 - SUSE LINUX Enterprise Server 11 SP 3 (64-bit) and future errata kernels for SP 3.

3.0.101-63-default - SUSE LINUX Enterprise Server 11 SP 4 (64-bit) and future errata kernels for SP 4.

---

HPE Dynamic Smart Array B140i SATA RAID Controller Driver for SUSE LINUX Enterprise Server 12 (64-bit)

Version: 1.2.10-123 **(Recommended)**

Filename: hpdsa-kmp-default-1.2.10-123.sles12sp2.x86\_64.rpm; hpdsa-kmp-default-1.2.10-123.sles12sp3.x86\_64.rpm

### **Fixes**

The following issue has been resolved:

In a system configured with the HPE Dynamic Smart Array B140i Controller and higher than 128 CPU (cores), a system failure event would occur.

### **Enhancements**

Added support for SUSE LINUX Enterprise Server 12 SP3

### **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 Dynamic Smart Array B140i SATA RAID Controller Driver for SUSE LINUX Enterprise Server 12 (64-bit)

Version: 1.2.10-115 (A) **(Recommended)**

Filename: hpdsa-kmp-default-1.2.10-115.sles12sp1.x86\_64.rpm; hpdsa-kmp-default-1.2.10-115.sles12sp2.x86\_64.rpm; hpdsa-kmp-xen-1.2.10-115.sles12sp1.x86\_64.rpm

### **Fixes**

#### **Change implemented in version 1.2.10-115(A):**

- Changed versioning control for component deployment.
- Updated to support Service Pack for ProLiant version 2017.07.0.  
Note: If driver version 1.2.10-115 was previously installed, then it is not necessary to upgrade to version 1.2.10-115(A).

#### **Issues resolved in version 1.2.10-115:**

- Fixes an issue with the previous driver where it was causing panic

### **Supported Devices and Features**

SUPPORTED KERNELS:

The kernels of SUSE LINUX Enterprise Server 12 (64-bit) supported by this driver diskette are:

3.12.49-11.1- SUSE LINUX Enterprise Server 12 (64-bit) SP1 plus future errata.

4.4.21-69-default - SUSE LINUX Enterprise Server 12 (64-bit) SP2 plus future errata.

---

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

Version: 5.5.0.54-1 **(Recommended)**

Filename: hpdsa-5.5.0.54.zip

### **Enhancements**

Added VMware vSphere 6.5 support.

---

HPE H2xx SAS/SATA Host Bus Adapter (64-bit) Driver for vSphere 6.0 (Driver Component).

Version: 2016.03.21 (A) **(Optional)**

Filename: cp031478.compsig; cp031478.zip  
Driver Name and Version:  
scsi-mpt2sas:15.10.06.00-1OEM.550.0.0.1331820

### **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 vibstest.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

### **Fixes**

#### **Change implemented in version 2016.03.21(A):**

- Changed versioning control for component deployment.
- Updated to support Service Pack for ProLiant version 2017.07.0.

**Note:** If component version 2016.03.21 was previously installed, then it is not necessary to upgrade to version 2016.03.21(A).

#### **Issues resolved in version 2016.03.21:**

- None

### **Enhancements**

#### **Change implemented in version 2016.03.21(A):**

- Updated to support Service Pack for ProLiant version 2017.07.0.

**Note:** If component version 2016.03.21 was previously installed, then it is not necessary to upgrade to version 2016.03.21(A).

#### **Enhancements/New Features implemented in version 2016.03.21:**

- Added support for VMWare ESXi 6.0 Update 1

### **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  
Version: 15.10.07.00-1 (A) **(Optional)**  
Filename: mpt2sas-15.10.07.00-esxi5.5-4778920.zip

### **Fixes**

#### **Change implemented in version 15.10.07.00-1(A):**

- Updated to support Service Pack for ProLiant version 2017.07.0.

**Note:** If driver version 15.10.07.00-1 was previously installed, then it is not necessary to upgrade to version 15.10.07.00-1(A).

#### **Issues resolved in version 15.10.07.00-1:**

- Fixes minor installation issue with the driver on VMware vSphere 6.5.

### **Supported Devices and Features**

NOTE: HPE H221 Host Bus Adapter does not support connection to D2600, D2700, and D6000 Disk Enclosures with Gen9 servers.

---

HPE H2xx SAS/SATA Host Bus Adapter (64-bit) Driver for vSphere 6.5 (Driver Component).  
Version: 2017.01.20 (A) **(Optional)**

Filename: cp032277.zip  
Driver Name and Version:  
scsi-mpf2sas:15.1007.00-10EM.550.00.1331820

### **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 vibstdepot.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 (B) **(Optional)**  
Filename: cp032270.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**

#### **Change implemented in version 2.68.64.2(B):**

- Updated to support Service Pack for ProLiant version 2017.07.0.  
**Note:** If component version 2.68.64.2(A) was previously installed, then it is not necessary to upgrade to version 2.68.64.2(B).

#### **Enhancements/New Features implemented in version 2.68.64.2(A):**

Added support for:

- Microsoft Windows Server 2016 - Server Core and Server with a Desktop.
- Revised component package. No change to driver functionality resulting from the change. If system has previously updated to driver version 2.68.64.2, then it is not necessary to update to 2.68.64.2(A).

### **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 64-bit Editions

Version: 2.68.64.0 (B) **(Recommended)**

Filename: cp032610.exe

### **Enhancements**

#### **Change implemented in version 2.68.64.0(B):**

- Updated to support Service Pack for ProLiant version 2017.07.0.

**Note:** If driver version 2.68.64.0 was previously installed, then it is not necessary to upgrade to version 2.68.64.0 (B).

#### **Enhancements/New Features implemented in version 2.68.64.0:**

- Updated for Version Control across all LSI\_sas2 Windows Drivers.

### **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 6 (64-bit)

Version: 15.10.05.00-6 **(Recommended)**

Filename: kmod-mpt2sas-15.10.04.00-10.rhel6u8.x86\_64.rpm; kmod-mpt2sas-15.10.05.00-6.rhel6u9.x86\_64.rpm

### **Enhancements**

Added support for Red Hat Enterprise Linux 6 Update 9.

### **Supported Devices and Features**

SUPPORTED KERNELS:

The kernels of Red Hat Enterprise Linux 6 (64-bit) supported by this binary rpm are:

2.6.32-642.el6 - Red Hat Enterprise Linux 6 Update 8(64-bit) and future errata kernels for update 8.

2.6.32-696.el6 - Red Hat Enterprise Linux 6 Update 9(64-bit) and future errata kernels for update 9.

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 Red Hat Enterprise Linux 7 (64-bit)

Version: 15.10.06.00-5 (**Recommended**)

Filename: kmod-mpt2sas-15.10.05.00-3.rhel7u3.x86\_64.rpm; kmod-mpt2sas-15.10.06.00-5.rhel7u4.x86\_64.rpm

### **Enhancements**

Added support for Red Hat Enterprise LINUX 7 Update 4.

### **Supported Devices and Features**

SUPPORTED KERNELS:

The kernels of Red Hat Enterprise Linux 7 (64-bit) supported by this binary rpm are:

3.10.0-514.el7- Red Hat Enterprise Linux 7 Update 3 (64-bit) and future errata kernels for update 3.

3.10.0-693.el7- Red Hat Enterprise Linux 7 Update 4 (64-bit) and future errata kernels for update 4.

**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 11 (64-bit)

Version: 15.10.04.00-5 (B) (**Recommended**)

Filename: lsi-mpt2sas-kmp-default-15.10.02.00-6.sles11sp3.x86\_64.rpm; lsi-mpt2sas-kmp-default-15.10.04.00-5.sles11sp4.x86\_64.rpm; lsi-mpt2sas-kmp-xen-15.10.02.00-6.sles11sp3.x86\_64.rpm; lsi-mpt2sas-kmp-xen-15.10.04.00-5.sles11sp4.x86\_64.rpm

### **Enhancements**

#### **Change implemented in version 15.10.04.00-5(B):**

- Updated to support Service Pack for ProLiant version 2017.07.0.

**Note:** If driver version 15.10.04.00-5(A) was previously installed, then it is not necessary to upgrade to version 15.10.04.00-5(B).

#### **Enhancements/New Features implemented in version 15.10.04.00-5(A):**

- Added HPE digital signatures to RPM packages and included kernel objects. No functional changes were made to the driver. If driver version 15.10.04.00-5 is installed on the target system, then it is not necessary to update to driver version 15.10.04.00-5(A).

### **Supported Devices and Features**

SUPPORTED KERNELS:

The kernels of SUSE LINUX Enterprise Server 11 (64-bit) supported by this driver diskette are:

3.0.76-0.11.1 - SUSE LINUX Enterprise Server 11 SP 3 (64-bit) plus future errata.

3.0.101-63-default - SUSE LINUX Enterprise Server 11 SP 4 (64-bit) 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 H2xx SAS/SATA Host Bus Adapter Driver for SUSE LINUX Enterprise Server 12 (64-bit)

Version: 15.10.04.00-7 (B) (**Recommended**)

Filename: lsi-mpt2sas-kmp-default-15.10.04.00-7.sles12sp1.x86\_64.rpm; lsi-mpt2sas-kmp-xen-15.10.04.00-7.sles12sp1.x86\_64.rpm

## **Enhancements**

### **Change implemented in version 15.10.04.00-7(B):**

- Updated to support Service Pack for ProLiant version 2017.07.0.  
**Note:** If driver version 15.10.04.00-7(A) was previously installed, then it is not necessary to upgrade to version 15.10.04.00-7(B).

### **Enhancements/New Features implemented in version 15.10.04.00-7(A):**

- Added HPE digital signatures to RPM packages and included kernel objects. No functional changes were made to the driver. If driver version 15.10.04.00-7 is installed on the target system, then it is not necessary to update to driver version 15.10.04.00-7(A).

## **Supported Devices and Features**

### SUPPORTED KERNELS:

The kernels of SUSE LINUX Enterprise Server 12 (64-bit) supported by this binary rpm are:

3.12.49-11.1- SUSE LINUX Enterprise Server 12 (64-bit) SP1 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 H2xx SAS/SATA Host Bus Adapter Driver for SUSE LINUX Enterprise Server 12 (64-bit)

Version: 15.10.06.00-6 (**Recommended**)

Filename: lsi-mpf2sas-kmp-default-15.10.06.00-2.sles12sp2.x86\_64.rpm; lsi-mpf2sas-kmp-default-15.10.06.00-6.sles12sp3.x86\_64.rpm

## **Enhancements**

Added support for SUSE LINUX Enterprise Server 12 SP2 and SP3.

## **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.

**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 (AMD64/EM64T)

Version: 15.10.05.00-4 (**Recommended**)

Filename: lsi-mpf2sas-kmp-default-15.10.05.00-4.sles12sp2.x86\_64.rpm

## **Enhancements**

Added support for SUSE Linux Enterprise Server 12 SP2.

## **Supported Devices and Features**

### SUPPORTED KERNELS:

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

3.12.28-4 - SUSE LINUX Enterprise Server 12 (AMD64/EM64T) and future update kernels.

3.12.49-11.1- SUSE LINUX Enterprise Server 12 (AMD64/EM64T) SP1 plus future errata.

4.4.21-69-default - SUSE LINUX Enterprise Server 12 (AMD64/EM64T) SP2 plus future errata.

---

HPE ProLiant Gen10 Smart Array Controller (64-bit) Driver for Red Hat Enterprise Linux 6 (64-bit)

Version: 1.0.4-101 (A) **(Recommended)**

Filename: kmod-smartpqi-1.0.4-101.rhel6u9.x86\_64.compsig; kmod-smartpqi-1.0.4-101.rhel6u9.x86\_64.rpm

### **Enhancements**

Added support for the following Gen10 servers:

HPE ProLiant XL190r Gen10 Server  
HPE ProLiant XL170r Gen10 Server  
HPE ProLiant DL180 Gen10 Server  
HPE ProLiant DL160 Gen10 Server  
HPE ProLiant DL580 Gen10 Server  
HPE ProLiant ML110 Gen10 Server  
HPE ProLiant ML350 Gen10 Server  
HPE ProLiant XL450 Gen10 Server  
HPE ProLiant DL120 Gen10 Server

### **Supported Devices and Features**

SUPPORTED KERNELS:

The kernels of Red Hat Enterprise Linux 6 (64-bit) supported by this driver rpm are:

2.6.32-696.el6 - Red Hat Enterprise Linux 6 Update 9(64-bit) and future errata kernels for update 9.

---

HPE ProLiant Gen10 Smart Array Controller (64-bit) Driver for Red Hat Enterprise Linux 7 (64-bit)

Version: 1.1.2-120 **(Recommended)**

Filename: kmod-smartpqi-1.1.2-120.rhel7u3.x86\_64.compsig; kmod-smartpqi-1.1.2-120.rhel7u3.x86\_64.rpm; kmod-smartpqi-1.1.2-120.rhel7u4.x86\_64.compsig; kmod-smartpqi-1.1.2-120.rhel7u4.x86\_64.rpm

### **Enhancements**

Added support for Red Hat Enterprise Linux 7 Update 4.

Added support for the following Gen10 servers:

- o HPE ProLiant XL190r Gen10 Server
- o HPE ProLiant XL170r Gen10 Server
- o HPE ProLiant DL180 Gen10 Server
- o HPE ProLiant DL160 Gen10 Server
- o HPE ProLiant DL580 Gen10 Server
- o HPE ProLiant ML110 Gen10 Server
- o HPE ProLiant ML350 Gen10 Server
- o HPE ProLiant XL450 Gen10 Server
- o HPE ProLiant DL120 Gen10 Server

### **Supported Devices and Features**

SUPPORTED KERNELS:

The kernels of Red Hat Enterprise Linux7 (64-bit) supported by this binary rpms are:

3.10.0-514.el7- Red Hat Enterprise Linux 7 Update 3 (64-bit) and future errata kernels for update 3.

3.10.0-693.el7 - Red Hat Enterprise Linux 7 Update 4 (64-bit) and future errata kernels for update 4.

---

HPE ProLiant Gen10 Smart Array Controller (64-bit) Driver for SUSE LINUX Enterprise Server 11 (64-bit)

Version: 1.0.4-101 (A) **(Recommended)**

Filename: smartpqi-kmp-default-1.0.4-101.sles11sp4.x86\_64.compsig; smartpqi-kmp-default-1.0.4-101.sles11sp4.x86\_64.rpm; smartpqi-kmp-xen-1.0.4-101.sles11sp4.x86\_64.compsig; smartpqi-kmp-xen-1.0.4-101.sles11sp4.x86\_64.rpm

### **Enhancements**

Added support for the following Gen10 servers:

- HPE ProLiant XL190r Gen10 Server
- HPE ProLiant XL170r Gen10 Server
- HPE ProLiant DL180 Gen10 Server
- HPE ProLiant DL160 Gen10 Server
- HPE ProLiant DL580 Gen10 Server
- HPE ProLiant ML110 Gen10 Server
- HPE ProLiant ML350 Gen10 Server
- HPE ProLiant XL450 Gen10 Server
- HPE ProLiant DL120 Gen10 Server

### **Supported Devices and Features**

The kernels of SUSE LINUX Enterprise Server 11 (64-bit) supported by this driver diskette are:

3.0.101-63-default - SUSE LINUX Enterprise Server 11 SP 4 (64-bit) and future errata kernels for SP 4.

---

HPE ProLiant Gen10 Smart Array Controller (64-bit) Driver for SUSE LINUX Enterprise Server 12 (64-bit)

Version: 1.0.4-101 **(Recommended)**

Filename: smartpqi-kmp-default-1.0.4-101.sles12sp2.x86\_64.compsig; smartpqi-kmp-default-1.0.4-101.sles12sp2.x86\_64.rpm

### **Fixes**

- Initial driver release for HPE P/E-Class SR Gen10 controllers.

### **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.

---

HPE ProLiant Gen10 Smart Array Controller (64-bit) Driver for SUSE LINUX Enterprise Server 12 (64-bit)

Version: 1.1.2-120 **(Recommended)**

Filename: smartpqi-kmp-default-1.1.2-120.sles12sp2.x86\_64.compsig; smartpqi-kmp-default-1.1.2-120.sles12sp2.x86\_64.rpm; smartpqi-kmp-default-1.1.2-120.sles12sp3.x86\_64.compsig; smartpqi-kmp-default-1.1.2-120.sles12sp3.x86\_64.rpm

### **Enhancements**

Added support for SUSE Linux Enterprise Server 12 SP3.

Added support for the following Gen10 servers:

- HPE ProLiant XL190r Gen10 Server
- HPE ProLiant XL170r Gen10 Server
- HPE ProLiant DL180 Gen10 Server
- HPE ProLiant DL160 Gen10 Server

- HPE ProLiant DL580 Gen10 Server
- HPE ProLiant ML110 Gen10 Server
- HPE ProLiant ML350 Gen10 Server
- HPE ProLiant XL450 Gen10 Server
- HPE ProLiant DL120 Gen10 Server

### **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 Red Hat Enterprise Linux 6 (64-bit)

Version: 3.4.20-110 (**Recommended**)

Filename: kmod-hpsa-3.4.20-110.rhel6u8.x86\_64.rpm; kmod-hpsa-3.4.20-110.rhel6u9.x86\_64.rpm

### **Fixes**

SmartPath might not be enabled in some situations.

### **Enhancements**

Added support for:

HPE Smart Array P830 Controller

HPE Smart Array P830i Controller

### **Supported Devices and Features**

#### SUPPORTED KERNELS:

The kernels of Red Hat Enterprise Linux 6 (64-bit) supported by this driver diskette are:

2.6.32-642.el6 - Red Hat Enterprise Linux 6 Update 8(64-bit) and future errata kernels for update 8.

2.6.32-696.el6 - Red Hat Enterprise Linux 6 Update 9(64-bit) and future errata kernels for update 9.

HPE ProLiant Smart Array Controller (64-bit) Driver for Red Hat Enterprise Linux 7 (64-bit)

Version: 3.4.20-113 (A) (**Recommended**)

Filename: kmod-hpsa-3.4.20-113.rhel7u3.x86\_64.rpm; kmod-hpsa-3.4.20-113.rhel7u4.x86\_64.rpm

### **Fixes**

Following issues were resolved in version 3.4.20-113

- In a multipath configuration with heavy IO running, the controller might not switch all traffic to the active path when one path fails.
- SmartPath might not be enabled in some situations.

### **Enhancements**

Added support for Red Hat Enterprise LINUX 7 Update 4.

The following changes are included in version 3.4.20.113(A)

Added support for:

HPE Smart Array P830 Controller  
HPE Smart Array P830i Controller

## **Supported Devices and Features**

### SUPPORTED KERNELS:

The kernels of Red Hat Enterprise Linux 7 (64-bit) supported by this binary rpm are:

3.10.0-514.el7- Red Hat Enterprise Linux 7 Update 3 (64-bit) and future errata kernels for update 3.

3.10.0-693.el7- Red Hat Enterprise Linux 7 Update 4 (64-bit) and future errata kernels for update 4.

---

HPE ProLiant Smart Array Controller (64-bit) Driver for SUSE LINUX Enterprise Server 11 (64-bit)

Version: 3.4.20-110 **(Recommended)**

Filename: hpsa-kmp-default-3.4.20-110.sles11sp3.x86\_64.rpm; hpsa-kmp-default-3.4.20-110.sles11sp4.x86\_64.rpm; hpsa-kmp-xen-3.4.20-110.sles11sp3.x86\_64.rpm;  
hpsa-kmp-xen-3.4.20-110.sles11sp4.x86\_64.rpm

## **Fixes**

SmartPath might not be enabled in some situations.

## **Enhancements**

Added support for:

HPE Smart Array P830 Controller

HPE Smart Array P830i Controller

## **Supported Devices and Features**

The kernels of SUSE LINUX Enterprise Server 11 (64-bit) supported by this driver diskette are:

3.0.76-0.11.1 - SUSE LINUX Enterprise Server 11 SP 3 (64-bit) and future errata kernels for SP 3.

3.0.101-63-default - SUSE LINUX Enterprise Server 11 SP 4 (64-bit) and future errata kernels for SP 4.

---

HPE ProLiant Smart Array Controller (64-bit) Driver for SUSE LINUX Enterprise Server 12 (64-bit)

Version: 3.4.20-100 **(Recommended)**

Filename: hpsa-kmp-default-3.4.20-100.sles12sp1.x86\_64.rpm; hpsa-kmp-default-3.4.20-100.sles12sp2.x86\_64.rpm; hpsa-kmp-xen-3.4.20-100.sles12sp1.x86\_64.rpm

## **Fixes**

Fixed the below:

In a multipath configuration with heavy IO running, the controller might not switch all traffic to the active path when one path fails.

## **Enhancements**

Updated to support Service Pack for ProLiant version 2017.07.0.

## **Supported Devices and Features**

### SUPPORTED KERNELS:

The kernels of SUSE LINUX Enterprise Server 12 (64-bit) supported by this binary rpm are:

3.12.49-11.1- SUSE LINUX Enterprise Server 12 (64-bit) SP1 plus future errata.

4.4.21-69-default - SUSE LINUX Enterprise Server 12 (64-bit) SP2 plus future errata.

---

HPE ProLiant Smart Array Controller (64-bit) Driver for SUSE LINUX Enterprise Server 12 (64-bit)

Version: 3.4.20-113 (A) **(Recommended)**

Filename: hpsa-kmp-default-3.4.20-113.sles12sp2.x86\_64.rpm; hpsa-kmp-default-3.4.20-113.sles12sp3.x86\_64.rpm

### **Fixes**

Following issues were resolved in version 3.4.20-113

- In a multipath configuration with heavy IO running, the controller might not switch all traffic to the active path when one path fails.
- SmartPath might not be enabled in some situations.

### **Enhancements**

Added support for SUSE Linux Enterprise Server 12 SP3.

The following changes are included in version 3.4.20.113(A)

Added support for:

HPE Smart Array P830 Controller

HPE Smart Array P830i Controller

### **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 Driver for VMware vSphere 6.0 (Bundle file)

Version: 6.0.0.128-1 (A) **(Recommended)**

Filename: hpsa-6.0.0.128-5996683.zip

### **Fixes**

The following issue was resolved in version 6.0.0.128-1

Add new VSANmode module parameter. When enabled this parameter turns off HPE Smart Path feature on all controllers operating in RAID mode and adjust queue depths for logical disks to be compatible with VSAN operations.

### **Enhancements**

The following changes are included in version 6.0.0.128-1(A)

Added support for:

HPE Smart Array P830 Controller

HPE Smart Array P830i Controller

---

HPE ProLiant Smart Array Controller Driver for VMware vSphere 6.0 (Driver Component).

Version: 2017.09.25 (A) **(Recommended)**

Filename: cp033242.zip

Driver Name and Version:

scsi-hpsa:6.0.0.128-1OEM.600.0.0.2494585

### **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 <http://vibsdepot.hpe.com/> webpages, plus an HPE specific CPXXXX.xml file.

### **Fixes**

The following issue was resolved in version 2017.09.25

Add new VSANmode module parameter. When enabled this parameter turns off HPE Smart Path feature on all controllers operating in RAID mode and adjust queue depths for logical disks to be compatible with VSAN operations.

### **Enhancements**

The following changes are included in version 2017.09.25(A)

Added support for:

- HPE Smart Array P830 Controller
- HPE Smart Array P830i Controller

---

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

Version: 2.0.18-1 **(Recommended)**

Filename: VMW-ESX-6.5.0-nhpsa-2.0.18-6004969.zip

### **Fixes**

Resolved an issue where duplicate SCSI ID is seen when running the "nhpsa" driver on HPE Synergy Gen9 Compute Modules with a SATA Drive in Bay 1 of a Synergy D3940 Storage Module.

Refer to HPE Customer Advisory for more details: [http://h20566.www2.hpe.com/hpsc/doc/public/display?docId=emr\\_na-a00009526en\\_us](http://h20566.www2.hpe.com/hpsc/doc/public/display?docId=emr_na-a00009526en_us)

### **Enhancements**

Added support for:

- HPE Smart Array P830 Controller
- HPE Smart Array P830i Controller

---

HPE ProLiant Smart Array Controller Driver for VMware vSphere 6.5 (Driver Component).

Version: 2017.09.25 **(Recommended)**

Filename: cp032480.zip

Driver Name and Version:

nhpsa:2.0.18-10EM.650.0.0.4598673

### **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**

Resolved an issue where duplicate SCSI ID is seen when running the "nhpsa" driver on HPE Synergy Gen9 Compute Modules with a SATA Drive in Bay 1 of a Synergy D3940 Storage Module.

Refer to HPE Customer Advisory for more details: [http://h20566.www2.hpe.com/hpsc/doc/public/display?docId=emr\\_na-a00009526en\\_us](http://h20566.www2.hpe.com/hpsc/doc/public/display?docId=emr_na-a00009526en_us)

## Enhancements

Added support for:

- HPE Smart Array P830 Controller
- HPE Smart Array P830i Controller

---

HPE ProLiant Smart Array HPCISSS3 Controller Driver for 64-bit Microsoft Windows Server 2012/2012 R2/2016 Editions

Version: 100.20.0.64 **(Recommended)**

Filename: cp032801.exe

## Fixes

This release resolves the following issues:

- Operating system becomes unresponsive when server is configured with > 512 GB of memory and Smart Path is enabled.
- Windows blue screen can occur for HPE Smart Array controllers configured with RAID volumes if the operating system performs a LUN reset after encountering an I/O timeout.

---

HPE Smart Array Gen10 Controller Driver for Windows Server 2012 R2 and Windows Server 2016

Version: 63.32.0.64 (A) **(Recommended)**

Filename: cp032849.compsig; cp032849.exe

## Enhancements

Added support for the following Gen10 servers:

- HPE ProLiant XL190r Gen10 Server
- HPE ProLiant XL170r Gen10 Server
- HPE ProLiant DL180 Gen10 Server
- HPE ProLiant DL160 Gen10 Server
- HPE ProLiant DL580 Gen10 Server
- HPE ProLiant ML110 Gen10 Server
- HPE ProLiant ML350 Gen10 Server
- HPE ProLiant XL450 Gen10 Server
- HPE ProLiant DL120 Gen10 Server

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

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HPE Storage Fibre Channel Adapter Kit for the QLogic Storport Driver for Windows Server 2012 and 2012 R2

Version: 9.2.5.20 **(Recommended)**

Filename: cp032437.compsig; cp032437.exe

## Important Note!

Release Notes:

[HPE StoreFabric 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

This driver version resolves the following:

- Remote Desktop Protocol (RDP) print out of speed capabilities.
- Fibre Channel (FC) driver not completing w32 driver install process with the Fibre Channel (FC ) storage connected.
- Windows unexpected termination on upgrading/downgrading Windows driver.
- Windows Memory Dump generated by Multipath Input/output (MPIO) configuration.

### **Enhancements**

Updated to driver version 9.2.5.20

- Initialized Original Equipment Manufacturer (OEM) Quality of Service(QOS) memory.

### **Supported Devices and Features**

This driver supports the following HPE adapters:

#### **8Gb FC:**

- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

#### **16Gb FC:**

- HP QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

#### **32Gb FC:**

- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

---

HPE Storage Fibre Channel Adapter Kit for the QLogic Storport Driver for Windows Server 2016

Version: 9.2.5.20 **(Recommended)**

Filename: cp032438.compsig; cp032438.exe

### **Important Note!**

Release Notes:

[HPE StoreFabric 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**

This driver version resolves the following:

- Remote Desktop Protocol (RDP) print out of speed capabilities.
- Fibre Channel (FC) driver not completing w32 driver install process with the Fibre Channel (FC ) storage connected.
- Windows unexpected termination on upgrading/downgrading Windows driver.
- Windows Memory Dump generated by Multipath Input/output (MPIO) configuration.

## **Enhancements**

Updated to driver version 9.2.5.20

- Initialized Original Equipment Manufacturer (OEM) Quality of Service(QOS) memory.

## **Supported Devices and Features**

This driver supports the following HPE adapters:

### **8Gb FC:**

- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

### **16Gb FC:**

- HP QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

### **32Gb FC:**

- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

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HPE Storage Fibre Channel Adapter Kit for the x64 Emulex Storport Driver

Version: 11.2.139.0 (b) **(Recommended)**

Filename: cp032472.compsig; cp032472.exe

## **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **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 11.2.139.0

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:

```
elxdrv-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\win2012
```

## **Supported Devices and Features**

### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class

### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

---

HPE Storage Fibre Channel Over Ethernet Adapter Kit for the x64 Emulex Storport Driver

Version: 11.2.1135.0 (b) **(Recommended)**

Filename: cp032471.compsig; cp032471.exe

## **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **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 11.2.1135.0

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 driver supports the following HPE adapters:

### **XE100 Series:**

- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

---

Red Hat Enterprise Linux 6 Server (x86-64) FC Driver Kit for HPE Emulex HBAs and mezzanine HBAs

Version: 11.2.307.13 (**Recommended**)

Filename: kmod-elx-lpfc-11.2.307.13-1.rhel6u8.x86\_64.compsig; kmod-elx-lpfc-11.2.307.13-1.rhel6u8.x86\_64.rpm; kmod-elx-lpfc-11.2.307.13-1.rhel6u9.x86\_64.compsig; kmod-elx-lpfc-11.2.307.13-1.rhel6u9.x86\_64.rpm

## **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Prerequisites**

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

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

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Enhancements**

Driver version 11.2.307.13

## **Supported Devices and Features**

### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

Version: 8.07.00.50.06.0-k4 **(Recommended)**

Filename: kmod-qlgc-qla2xxx-8.07.00.50.06.0\_k4-1.rhel6u8.x86\_64.compsig; kmod-qlgc-qla2xxx-8.07.00.50.06.0\_k4-1.rhel6u8.x86\_64.rpm; kmod-qlgc-qla2xxx-8.07.00.50.06.0\_k4-1.rhel6u9.x86\_64.compsig; kmod-qlgc-qla2xxx-8.07.00.50.06.0\_k4-1.rhel6u9.x86\_64.rpm

### **Important Note!**

Release Notes

[HPE StoreFabric QLogic Adapters Release Notes](#)

Note: The rpm base-name for the QLogic driver has been changed to "qlgc". Upgrades from the earlier "hpqlgc" driver are supported.

### **Prerequisites**

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

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

### **Fixes**

This driver version resolves the following:

- Snoop Inquiry response spanning multiple scatter/gather elements.

### **Enhancements**

Updated to version 8.07.00.50.06.0-k4

### **Supported Devices and Features**

This driver supports the following HPE adapters:

#### **8Gb FC:**

- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

#### **16Gb FC:**

- HP QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

#### **32Gb FC:**

- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

### **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

### **Prerequisites**

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

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

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

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2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

### **Enhancements**

Updated to Driver version 11.2.1263.16

### **Supported Devices and Features**

#### **XE100 Series:**

- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

### **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

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1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

### **Prerequisites**

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

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

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

### **Enhancements**

Driver version 11.2.307.13

Added support for RHEL7.4

### **Supported Devices and Features**

#### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

#### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

**LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

Red Hat Enterprise Linux 7 Server FC Driver Kit for HPE QLogic HBAs and mezzanine HBAs

Version: 8.07.00.50.07.0-k4 **(Recommended)**

Filename: kmod-qlgc-qla2xxx-8.07.00.50.07.0\_k4-1.rhel7u3.x86\_64.compsig; kmod-qlgc-qla2xxx-8.07.00.50.07.0\_k4-1.rhel7u3.x86\_64.rpm; kmod-qlgc-qla2xxx-8.07.00.50.07.0\_k4-1.rhel7u4.x86\_64.compsig; kmod-qlgc-qla2xxx-8.07.00.50.07.0\_k4-1.rhel7u4.x86\_64.rpm

**Important Note!**

Release Notes:

[HPE StoreFabric QLogic Adapters Release Notes](#)

Note: The rpm base-name for the QLogic driver has been changed to "qlgc". Upgrades from the earlier "hpqlgc" driver are supported.

**Prerequisites**

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

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

**Fixes**

This driver version resolves the following:

- Snoop Inquiry response spanning multiple scatter/gather elements.

**Enhancements**

Updated driver to version 8.07.00.50.07.0-k4

**Supported Devices and Features**

This driver supports the following HPE adapters:

**8Gb FC:**

- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

**16Gb FC:**

- HP QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter

- HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

### **32Gb FC:**

- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

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Red Hat Enterprise Linux 7 Server FCoE Driver Kit for HPE Emulex(BRCM) CNAs and mezzanine CNAs

Version: 11.2.1263.16 (**Recommended**)

Filename: kmod-brcmfcoe-11.2.1263.16-1.rhel7u3.x86\_64.compsig; kmod-brcmfcoe-11.2.1263.16-1.rhel7u3.x86\_64.rpm; kmod-brcmfcoe-11.2.1263.16-1.rhel7u4.x86\_64.compsig; kmod-brcmfcoe-11.2.1263.16-1.rhel7u4.x86\_64.rpm

### **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

### **Prerequisites**

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

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

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

### **Enhancements**

Updated to Driver version 11.2.1263.16

Added support for Rhel7u4

### **Supported Devices and Features**

## **XE100 Series:**

- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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SUSE Linux Enterprise Server 11 (AMD64/EM64T) FC Driver Kit for HPE Emulex HBAs and mezzanine HBAs

Version: 11.2.307.13 **(Recommended)**

Filename: elx-lpfc-kmp-default-11.2.307.13\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; elx-lpfc-kmp-default-11.2.307.13\_3.0.101\_63-1.sles11sp4.x86\_64.rpm; elx-lpfc-kmp-default-11.2.307.13\_3.0.76\_011-1.sles11sp3.x86\_64.compsig; elx-lpfc-kmp-default-11.2.307.13\_3.0.76\_011-1.sles11sp3.x86\_64.rpm; elx-lpfc-kmp-trace-11.2.307.13\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; elx-lpfc-kmp-trace-11.2.307.13\_3.0.101\_63-1.sles11sp4.x86\_64.rpm; elx-lpfc-kmp-trace-11.2.307.13\_3.0.76\_011-1.sles11sp3.x86\_64.compsig; elx-lpfc-kmp-trace-11.2.307.13\_3.0.76\_011-1.sles11sp3.x86\_64.rpm; elx-lpfc-kmp-xen-11.2.307.13\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; elx-lpfc-kmp-xen-11.2.307.13\_3.0.101\_63-1.sles11sp4.x86\_64.rpm; elx-lpfc-kmp-xen-11.2.307.13\_3.0.76\_011-1.sles11sp3.x86\_64.compsig; elx-lpfc-kmp-xen-11.2.307.13\_3.0.76\_011-1.sles11sp3.x86\_64.rpm

### **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

### **Prerequisites**

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

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

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

### **Enhancements**

Driver version 11.2.307.13

## **Supported Devices and Features**

### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

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SUSE Linux Enterprise Server 11 (AMD64/EM64T) FC Driver Kit for HPE Qlogic HBAs and mezzanine HBAs

Version: 8.07.00.50.11.3-k3 (b) **(Recommended)**

Filename: qlgc-qla2xxx-kmp-default-8.07.00.50.11.3\_k3\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; qlgc-qla2xxx-kmp-default-8.07.00.50.11.3\_k3\_3.0.101\_63-1.sles11sp4.x86\_64.rpm; qlgc-qla2xxx-kmp-xen-8.07.00.50.11.3\_k3\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; qlgc-qla2xxx-kmp-xen-8.07.00.50.11.3\_k3\_3.0.101\_63-1.sles11sp4.x86\_64.rpm

### **Important Note!**

Release Notes

[HPE StoreFabric QLogic Adapters Release Notes](#)

Note: The rpm base-name for the QLogic driver has been changed to "qlgc". Upgrades from the earlier "hpqlgc" driver are supported.

### **Prerequisites**

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

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

### **Fixes**

This driver version resolves the following:

- Snoop Inquiry response spanning multiple scatter/gather elements.

### **Enhancements**

Updated driver version 8.07.00.50.11.3-k3

## Supported Devices and Features

This driver supports the following HPE adapters:

### 8Gb FC:

- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

### 16Gb FC:

- HP QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

### 32Gb FC:

- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

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SUSE Linux Enterprise Server 11 (AMD64/EM64T) FCoE Driver Kit for HPE Emulex(BRCM) CNAs and mezzanine CNAs

Version: 11.2.1263.16 **(Recommended)**

Filename: brcmfcoe-kmp-default-11.2.1263.16\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; brcmfcoe-kmp-default-11.2.1263.16\_3.0.101\_63-1.sles11sp4.x86\_64.rpm; brcmfcoe-kmp-default-11.2.1263.16\_3.0.76\_0.11-1.sles11sp3.x86\_64.compsig; brcmfcoe-kmp-default-11.2.1263.16\_3.0.76\_0.11-1.sles11sp3.x86\_64.rpm; brcmfcoe-kmp-trace-11.2.1263.16\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; brcmfcoe-kmp-trace-11.2.1263.16\_3.0.101\_63-1.sles11sp4.x86\_64.rpm; brcmfcoe-kmp-trace-11.2.1263.16\_3.0.76\_0.11-1.sles11sp3.x86\_64.compsig; brcmfcoe-kmp-trace-11.2.1263.16\_3.0.76\_0.11-1.sles11sp3.x86\_64.rpm; brcmfcoe-kmp-xen-11.2.1263.16\_3.0.101\_63-1.sles11sp4.x86\_64.compsig; brcmfcoe-kmp-xen-11.2.1263.16\_3.0.101\_63-1.sles11sp4.x86\_64.rpm; brcmfcoe-kmp-xen-11.2.1263.16\_3.0.76\_0.11-1.sles11sp3.x86\_64.compsig; brcmfcoe-kmp-xen-11.2.1263.16\_3.0.76\_0.11-1.sles11sp3.x86\_64.rpm

### Important Note!

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > .

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

### Prerequisites

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

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

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Enhancements**

Updated to Driver version 11.2.1263.16

Please note: For SLES 11 sp4 x64 Operating System manual rebuild of initrd after Driver installation is required before rebooting the Server. To rebuild initrd, please take backup of current initrd

```
cp initrdxxxx initrdxxxx.bak
```

```
Example: $cp /boot/initrd-3.0.101-63-default /boot/initrd-3.0.101-63-default.bak
```

Then rebuild initrd by using mkinitrd

```
mkinitrd
```

```
Example: $mkinitrd
```

## **Supported Devices and Features**

### **XE100 Series:**

- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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SUSE Linux Enterprise Server 12 FC Driver Kit for HPE Emulex HBAs and mezzanine HBAs

Version: 11.2.254.6 (**Recommended**)

Filename: elx-lpfc-kmp-default-11.2.254.6\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; elx-lpfc-kmp-default-11.2.254.6\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; elx-lpfc-kmp-default-11.2.254.6\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; elx-lpfc-kmp-default-11.2.254.6\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; elx-lpfc-kmp-xen-11.2.254.6\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; elx-lpfc-kmp-xen-11.2.254.6\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm

### **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Prerequisites**

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

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

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Enhancements**

Initial driver for separate out of box (OOB) driver for Fibre Channel. Driver version 11.2.254.6

## **Supported Devices and Features**

### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

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SUSE Linux Enterprise Server 12 FC Driver Kit for HPE Emulex HBAs and mezzanine HBAs

Version: 11.2.307.13 **(Recommended)**

Filename: elx-lpfc-kmp-default-11.2.307.13\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; elx-lpfc-kmp-default-11.2.307.13\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; elx-lpfc-kmp-default-11.2.307.13\_k4.4.73\_5-1.sles12sp3.x86\_64.compsig; elx-lpfc-kmp-default-11.2.307.13\_k4.4.73\_5-1.sles12sp3.x86\_64.rpm

## **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Prerequisites**

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

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

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Enhancements**

Driver version 11.2.307.13

Added support for Sles12sp3

## **Supported Devices and Features**

### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

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SUSE Linux Enterprise Server 12 FC Driver Kit for HPE QLogic HBAs and mezzanine HBAs

Version: 8.07.00.50.12.0-k3 **(Recommended)**

Filename: qlgc-qla2xxx-kmp-default-8.07.00.50.12.0\_k3\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; qlgc-qla2xxx-kmp-default-8.07.00.50.12.0\_k3\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; qlgc-qla2xxx-kmp-default-8.07.00.50.12.2\_k3\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; qlgc-qla2xxx-kmp-default-8.07.00.50.12.2\_k3\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; qlgc-qla2xxx-kmp-xen-8.07.00.50.12.0\_k3\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; qlgc-qla2xxx-kmp-xen-8.07.00.50.12.0\_k3\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm

### **Important Note!**

Release Notes:

[HPE StoreFabric QLogic Adapters Release Notes](#)

Note: The rpm base-name for the QLogic driver has been changed to "qlgc". Upgrades from the earlier "hpqlgc" driver are supported.

### **Prerequisites**

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

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

### **Fixes**

This driver version resolves the following:

- Increase the driver login retry count to 30.
- Mark Data Integrity Field (DIF) errors from target as re-tryable errors.
- Reduced excessive debug print during 27xx fwdump.
- Avoid crashing on null cred pointer in exit\_creds().
- Fixed mbx pointer error in classic fwdump.
- Added check for different type of Register State Change Notification (RSCN).
- Fixed improper fcport\_count accounting.
- Corrected supported Fibre Channel (FC) speed for sysfs.
- Corrected supported Fibre Channel (FC) speed for Fabric Device Management Interface (FDMI) / Remote Desktop Protocol (RDP).

### **Enhancements**

Updated to version 8.07.00.50.12.0-k3

- Implement LUN level Data Integrity Field (DIF) for 3PAR array on RHEL 6, RHEL7, SLES12
- Simplified printk format for portid's
- Set Fabric Login (FLOGI) retry in additional firmware options for Point to Point (P2P/N2N) mode.

### **Supported Devices and Features**

This driver supports the following HPE adapters:

**8Gb FC:**

- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

**16Gb FC:**

- HP QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

**32Gb FC:**

- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

---

SUSE Linux Enterprise Server 12 FC Driver Kit for HPE QLogic HBAs and mezzanine HBAs

Version: 8.07.00.50.12.2-k4 **(Recommended)**

Filename: qlgc-qla2xxx-kmp-default-8.07.00.50.12.2\_k4\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; qlgc-qla2xxx-kmp-default-8.07.00.50.12.2\_k4\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; qlgc-qla2xxx-kmp-default-8.07.00.50.12.3\_k4\_k4.4.73\_5-1.sles12sp3.x86\_64.compsig; qlgc-qla2xxx-kmp-default-8.07.00.50.12.3\_k4\_k4.4.73\_5-1.sles12sp3.x86\_64.rpm

**Important Note!**

Release Notes:

[HPE StoreFabric QLogic Adapters Release Notes](#)

Note: The rpm base-name for the QLogic driver has been changed to "qlgc". Upgrades from the earlier "hpqlgc" driver are supported.

**Prerequisites**

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

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

**Fixes**

This driver version resolves the following:

- Snoop Inquiry response spanning multiple scatter/gather elements.

**Enhancements**

Updated to version 8.07.00.50.12.2-k4

**Supported Devices and Features**

This driver supports the following HPE adapters:

**8Gb FC:**

- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

#### **16Gb FC:**

- HP QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

#### **32Gb FC:**

- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

---

SUSE Linux Enterprise Server 12 FCoE Driver Kit for HPE Emulex(BRCM) CNAs and mezzanine CNAs

Version: 11.2.1226.2 **(Recommended)**

Filename: brcmfcoe-kmp-default-11.2.1226.2\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; brcmfcoe-kmp-default-11.2.1226.2\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm; brcmfcoe-kmp-default-11.2.1226.2\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; brcmfcoe-kmp-default-11.2.1226.2\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; brcmfcoe-kmp-xen-11.2.1226.2\_k3.12.49\_11-1.sles12sp1.x86\_64.compsig; brcmfcoe-kmp-xen-11.2.1226.2\_k3.12.49\_11-1.sles12sp1.x86\_64.rpm

#### **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

#### **Prerequisites**

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

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

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

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This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox

drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Enhancements**

Initial driver for new, separate out of box (OOB) driver for Fibre Channel over Ethernet (FCoE). Driver version 11.2.1226.2

Added support for the following:

- Linux Device Driver Specification.
- Firmware Install Library v0.81 - Driver Support

## **Supported Devices and Features**

### **XE100 Series:**

- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

---

SUSE Linux Enterprise Server 12 FCoE Driver Kit for HPE Emulex(BRCM) CNAs and mezzanine CNAs

Version: 11.2.1263.16 **(Recommended)**

Filename: brcmfcoe-kmp-default-11.2.1263.16\_k4.4.21\_69-1.sles12sp2.x86\_64.compsig; brcmfcoe-kmp-default-11.2.1263.16\_k4.4.21\_69-1.sles12sp2.x86\_64.rpm; brcmfcoe-kmp-default-11.2.1263.16\_k4.4.73\_5-1.sles12sp3.x86\_64.compsig; brcmfcoe-kmp-default-11.2.1263.16\_k4.4.73\_5-1.sles12sp3.x86\_64.rpm

## **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Prerequisites**

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

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

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>

2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

**Enhancements**

Updated to Driver version 11.2.1263.16

Added support for Sles12sp3

**Supported Devices and Features**

**XE100 Series:**

- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

**Driver - Storage Tape**

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HPE StoreEver Tape Drivers for Microsoft Windows

Version: 4.2.0.0 **(Recommended)**

Filename: cp030019.exe

**Enhancements**

- New LTO Tape Drive driver version 1.0.9.1
  - Added support for Microsoft Windows Server 2016 x64
- New MSL Library and 1/8 G2 autoloader driver version 3.0.0.4
  - Added support for Microsoft Windows Server 2016 x64
- New ESL G3 Tape Library driver version 7.5.8.3
  - Added support for Microsoft Windows Server 2016 x64
- Use previous versions of this driver installer if older drivers are required.
- See table below for operating system support and driver versions
  - **bold** - new driver versions
  - \* - not supported

	Microsoft Windows Client Operating Systems				
Driver Description (HP and HPE branded products are supported)	7 x86	7 x64	8 x64	8.1 x64	10 x64
LTO Tape Drive - (LTO-7 drives require version 1.0.9.1)	1.0.9.1	1.0.9.1	1.0.9.1	1.0.9.1	1.0.9.1
MSL6480 Tape Library for 1/8 G2 Tape Autoloader					
MSL2024 Tape Library	3.0.0.0	3.0.0.0	3.0.0.0	3.0.0.3	3.0.0.4
MSL4048 Tape Library					
MSL8096 Tape Library					
DAT Tape Drive	1.7.1.0	1.7.1.0	1.7.1.0	1.7.2.0	*
USB Mass Storage Controller - (DAT 72 & 160 only)	6.07.2010	6.07.2010	7.00.2012	8.00.2014	*

	Microsoft Windows Server Operating Systems			
Driver Description (HP and HPE branded products are supported)	Server 2008 R2 x64	Server 2012 x64	Server 2012 R2 x64	Server 2016 x64
LTO Tape Drive - (LTO-7 drives require version 1.0.9.1)	1.0.9.1	1.0.9.1	1.0.9.1	<b>1.0.9.1</b>
MSL6480 Tape Library for 1/8 G2 Tape Autoloader MSL2024 Tape Library MSL4048 Tape Library MSL8096 Tape Library	3.0.0.0	3.0.0.0	3.0.0.3	<b>3.0.0.4</b>
ESL G3 Tape Library	7.5.7.1	7.5.8.1	7.5.8.2	<b>7.5.8.3</b>
ESL E Tape Library	1.5.1.0	1.5.1.1	*	*
DAT Tape Drive	1.7.1.0	1.7.1.0	1.7.2.0	*
USB Mass Storage Controller - (DAT 72 & 160 only)	6.07.2010	7.00.2012	8.00.2014	*

#### Driver - System

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HPE NVDIMM-N Drivers for Microsoft Windows Server 2012 and 2012 R2

Version: 2.0.0.2 **(Recommended)**

Filename: cp031329.compsig; cp031329.exe

#### Enhancements

These NVDIMM-N drivers enable support for Persistent Memory technology on select HPE Servers running Microsoft Windows Server 2012 and 2012 R2.

- Added support for HPE 16GB NVDIMM devices.
- Changed block sector size from 512B to 4096B. Old data won't be accessible and must be backed up first if it needs to be preserved.

For more information about Persistent Memory technology offered on HPE Servers, please consult the following links:

- <https://www.hpe.com/us/en/servers/persistent-memory.html>
- <http://h20195.www2.hpe.com/V2/GetDocument.aspx?docname=4AA6-4681ENW&cc=us&lc=en>

#### Driver - System Management

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HP ProLiant iLO 3/4 Channel Interface Driver for Windows X64

Version: 3.10.0.0 (J) **(Optional)**

Filename: cp028042.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

Updated to support installation under Windows 8.1 on the HP ProLiant WS460c Gen9.

HPE ProLiant Gen9 Chipset Identifier for Windows

Version: 10.1.2.77 **(Optional)**  
Filename: cp030228.exe

### **Enhancements**

Add support for Windows Server 2016.

---

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 3/4 Channel Interface Driver for Windows Server 2016  
Version: 3.30.0.0 **(Optional)**  
Filename: cp030671.exe

### **Enhancements**

Initial release to support Windows Server 2016.

---

iLO 3/4 Management Controller Driver Package for Windows Server 2008 to Server 2012 R2  
Version: 3.30.0.0 **(Optional)**  
Filename: cp029429.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**

The support provided by the ProLiant System Shutdown service has been merged into the ProLiant Monitor service. The ProLiant System Shutdown service will no longer appear as a separate item in the list of services on the system.

---

iLO 3/4 Management Controller Driver Package for Windows Server 2016  
Version: 3.30.0.0 **(Optional)**  
Filename: cp030672.exe

### **Prerequisites**

The *iLO 3/4 Channel Interface Driver for Windows Server 2016* must be installed prior to this component.

### **Enhancements**

Initial release to support Windows Server 2016.

---

iLO 5 Channel Interface Driver for Windows Server 2012 R2

Version: 4.0.0.0 **(Optional)**

Filename: cp030976.compsig; cp030976.exe

#### **Enhancements**

Initial release.

---

iLO 5 Channel Interface Driver for Windows Server 2016

Version: 4.0.0.0 **(Optional)**

Filename: cp030977.compsig; cp030977.exe

#### **Enhancements**

Initial release.

---

### **Driver - Video**

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Matrox G200eH Video Controller Driver for Windows Server 2012 and Server 2012 R2

Version: 9.15.1.184 **(Optional)**

Filename: cp032302.exe

#### **Enhancements**

Improved video performance compared to the 9.15.1.174 release.

---

Matrox G200eH Video Controller Driver for Windows Server 2016

Version: 9.15.1.184 **(Optional)**

Filename: cp032303.exe

#### **Enhancements**

Improved video performance compared to the 9.15.1.174 release.

---

Matrox G200eH3 Video Controller Driver for Windows Server 2012 R2

Version: 9.15.1.184 **(Optional)**

Filename: cp032304.compsig; cp032304.exe

#### **Enhancements**

Initial release.

---

Matrox G200eH3 Video Controller Driver for Windows Server 2016

Version: 9.15.1.184 **(Optional)**

Filename: cp032305.compsig; cp032305.exe

#### **Enhancements**

Initial release.

---

Online Flash Component for Linux - NVMe Backplane PIC Firmware

Version: 8.4 (B) **(Optional)**

Filename: RPMS/i386/firmware-nvmebackplane-8.4-2.1.i386.rpm

#### **Prerequisites**

iLO 4 version 2.50 or later is required.

#### **Enhancements**

- Updated to support Service Pack for ProLiant version 2017.07.0

**Note:** If version 8.4 was previously installed, then it is not necessary to upgrade to version 8.4 (B).

---

Online Flash Component for VMware - NVMe Backplane PIC Firmware

Version: 8.4 (B) **(Optional)**

Filename: CP031381.zip

#### **Important Note!**

- **Customers who already installed firmware version 8.4 do not need to update to 8.4 (B).**

#### **Prerequisites**

iLO 4 version 2.50 or later is required.

#### **Enhancements**

- Updated to support Service Pack for ProLiant version 2017.07.0

**Note:** If version 8.4 was previously installed, then it is not necessary to upgrade to version 8.4 (B).

---

Online Flash Component for Windows x64 - NVMe Backplane PIC Firmware

Version: 8.4 (B) **(Optional)**

Filename: cp032381.exe

#### **Prerequisites**

iLO 4 version 2.50 or later is required.

#### **Enhancements**

- Updated to support Service Pack for ProLiant version 2017.07.0

**Note:** If version 8.4 was previously installed, then it is not necessary to upgrade to version 8.4 (B).

---

Synergy 10/20 Gb Interconnect Link Module Firmware

Version: 1.08 **(Recommended)**

Filename: RPMS/i586/hp-firmware-icmlm-1.08-1.1.i586.rpm

#### **Important Note!**

This package contains firmware version 1.08.

## **Enhancements**

This product contains the firmware version 1.08 for the following Interconnect Modules:

- 10 Gb Interconnect Link Module
- 20 Gb Interconnect Link Module

## **Supported Devices and Features**

HPE Synergy 10 Gb Interconnect Link Module

HPE Synergy 20 Gb Interconnect Link Module

---

Synergy 10Gb Pass-Thru Module

Version: 1.08 **(Recommended)**

Filename: RPMS/i586/hp-firmware-icmpt-1.08-1.1.i586.rpm

## **Important Note!**

See release note

## **Fixes**

See release note

## **Supported Devices and Features**

Synergy 10Gb Pass-Thru Module

---

Virtual Connect SE 16Gb FC Module for Synergy

Version: 1.05.24 **(Recommended)**

Filename: RPMS/i586/hp-firmware-icmvc16gbfc-1.05.24-1.1.i586.rpm

## **Important Note!**

This wraps the file in an RPM. It does not install the \*.ipe file.

## **Fixes**

Please refer to release notes.

---

## **Firmware - Blade Infrastructure**

[Top](#)

Firmware for the HPE Synergy Virtual Connect SE 40Gb F8 Module

Version: 1.1.1.1003 **(Optional)**

Filename: hpe\_icm\_fv1.pkg; package.json; pininstall.sh

## **Prerequisites**

OneView 3.10.00

For more details on OneView, please open : <https://www.hpe.com/us/en/integrated-systems/software.html>

## **Enhancements**

Requires OneView 3.10.00 or higher to support these enhancements

- Support for HPE 3PAR Storage Direct Attach

### **Supported Devices and Features**

HPE VC 40Gb F8 Module

---

HPE BladeSystem c-Class Virtual Connect Firmware, Ethernet plus 8Gb 20-port and 8/16Gb 24-port FC Edition Component for Windows

Version: 4.50 **(Recommended)**

Filename: cp028428.exe

### **Prerequisites**

The latest 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 latest list of issues resolved can be found in the HPE Virtual Connect Release Notes that can be found in the following URL: <http://www.hpe.com/info/vc/manuals>

### **Enhancements**

The latest list of enhancements can be found in the HPE Virtual Connect Release Notes that can be found in the following URL: <http://www.hpe.com/info/vc/manuals>

### **Supported Devices and Features**

HPE Flex-10 10Gb Virtual Connect Ethernet Module for c-Class BladeSystem

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 HP 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: 4.50 **(Recommended)**

Filename: CP028427.md5; CP028427.scexe; RPMS/i386/hp-firmware-vceth-4.50-1.1.i386.rpm

### **Prerequisites**

The latest version of HPE Virtual Connect Release Notes contains the prerequisites and can be found in the following URL: <http://www.hpe.com/info/vc/manuals>

### **Fixes**

The latest list of issues resolved can be found in the HPE Virtual Connect Release Notes that can be found in the following URL: <http://www.hpe.com/info/vc/manuals>

### **Enhancements**

The latest list of enhancements can be found in the HPE Virtual Connect Release Notes that can be found in the following URL: <http://www.hpe.com/info/vc/manuals>

## **Supported Devices and Features**

HPE Flex-10 10Gb Virtual Connect Ethernet Module for c-Class BladeSystem

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 HP BladeSystem c-Class

HPE Virtual Connect 16Gb 24-port Fibre Channel Module for c-Class BladeSystem

---

HPE Virtual Connect SE 40Gb F8 Module for Synergy Firmware install package  
Version: 1.1.1.1003 **(Optional)**  
Filename: RPMS/i586/hp-firmware-icmvc40gbf8-1.1.1.1003-1.1.i586.rpm

## **Important Note!**

This package contains firmware version 1.1.1

## **Prerequisites**

OneView 3.10.00

For more details on OneView, please open : <https://www.hpe.com/us/en/integrated-systems/software.html>

## **Enhancements**

Requires OneView 3.10.00 or higher to support these enhancements

- Support for HPE 3PAR Storage Direct Attach

## **Supported Devices and Features**

HPE Synergy VC SE 40GB F8 Module

---

Online HPE BladeSystem c-Class Onboard Administrator Firmware Component for Linux  
Version: 4.70 **(Optional)**  
Filename: RPMS/x86\_64/firmware-oa-4.70-1.1.x86\_64.rpm

## **Important Note!**

Update to this firmware version if any documented fixes or enhanced functionality provided by this version would be useful to your system.

## **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 HP 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 HP SUM information can be found via HPE Smart Update Manager online help or at [www.hpe.com/info/hpsum/documentation](http://www.hpe.com/info/hpsum/documentation).
- **FIPS**
    - OA 3.71 is in active evaluation for FIPS as referenced in the 140-2 In Process list located at <http://csrc.nist.gov/groups/STM/cmvp/documents/140-1/140InProcess.pdf>
  - **IPv6**
    - When the Enable DHCPv6 or Enable SLAAC enclosure IPv6 settings are disabled on the Onboard Administrator, the respective DHCPv6 or SLAAC addresses of the iLOs in the enclosure are retained until these addresses expire automatically based on their respective configurations. A manual reset of the iLO releases these addresses immediately

## **Prerequisites**

The Onboard Administrator Smart Component contains 32-bit executable binaries. As a result, the client operating system upon which the OA Smart Component is installed and executed must either have native support for 32-bit executables or must have the 32-bit compatibility libraries installed.

## **Fixes**

### **General**

- Addressed an issue where OA "update iLO all" command fails in an enclosure with maximum Blades.
- Addressed an issue where a Warning Alert was wrongly sent when a fan is reseated in an enclosure
- Addressed an issue where the port mapping information for 560M Izzy adapter Mezz controller was not displayed correctly.
- Addressed an issue where Remote Syslog logging would fail when OA failover happened in an IPv6 only environment.
- Enhanced OA to bring the server from a power throttled state back to normal power state upon an OA reboot to circumvent an unwarranted emergency brake.
- Fixed an issue where the Active and Standby OAs can have the same IP address in some rare situations.
- Resolved an issue where a Gen9 server's host name gets cleared when the blade is rebooted.
- Addressed an issue where server blade Power ON will be delayed in enclosures with OA Firmware Version 4.60 and managed by HPE OneView, when the OA module is reset until OneView refreshes the servers.

### **Security**

The following security vulnerabilities were fixed:

- CVE-2016-5387- Addressed a vulnerability which might allow remote attackers to redirect an application's outbound HTTP traffic to an arbitrary proxy server via a crafted Proxy header in an HTTP request.
- CVE-2016-2183- Addressed a vulnerability against TLS ciphers with 64bit block size in which makes it easier for remote attackers to obtain cleartext data via an attack against a long-duration encrypted session
- CVE-2016-6515 - Addressed a vulnerability in OpenSSH which did not limit password lengths for password authentication, which allows remote attackers to cause a denial of service via a long string.
- CVE-2015-8215 - Addressed a vulnerability IPv6 stack which does not validate attempted changes to the MTU value, which allows context-dependent attackers to cause a denial of service.
- Addressed issue where in Onboard Administrator was vulnerable to Buffer overflow.
- Added the HSTS[HTTP strict transport security] support in OA.
- Addressed a memory corruption vulnerability in the post-authentication sshd process.

### **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 Explorer 11 on Windows 8. On a Windows 8 system with Internet Explorer 10 or Internet Explorer 11, if the OA web GUI session is loaded using a host name instead of an IP address, an attempt to open an iLO window using SSO from the OA web GUI might result in the iLO page loading in the OA web GUI window instead of the intended new window. This issue was determined to

be a bug in Internet Explorer and is expected to be fixed in a future release or update for Internet Explorer. To work around this issue, either use an IP address to load the OA Web GUI, or turn off Protected Mode for the appropriate zone in Internet Explorer's settings. This issue occurs only on Internet Explorer browsers.

## FIPS

Certificates smaller than 2048 bits in size are not compliant with FIPS requirements as enforced by the OA firmware starting with OA 4.20. When the OA running OA firmware version 4.40 or greater is operating in FIPS Mode ON/DEBUG and is configured with a 1024-bit LDAP certificate that was installed when running a previous version of OA firmware, FIPS Mode ON/DEBUG is considered to be operating in a degraded state due to the presence of the non-compliant certificate. While operating in this FIPS-Degraded Mode operational state, attempts to set FIPS Mode OFF from the OA GUI Network Access>FIPS tab will fail and show the error message The selected FIPS mode is already enabled. When the non-compliant certificate is removed, the FIPS-Degraded operational status is cleared, FIPS Mode can then be successfully set to OFF from the GUI interface. Note that the OA CLI command SET FIPS MODE OFF can be successfully used to set FIPS Mode OFF even with non-compliant 1024-bit LDAP certificates installed in the OA.

## IRC

Unable to open .net IRC console for Gen10 Blades, Gen9 Blades also have the same issue. The Java applet and Webstart however, loads but the virtual media mounting fails. The work around is to launch the IRC through IRC Application (HP 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 HPSUM 8.0.0. Please refer to HPSUM 8.0.0 User guide for further details.

## Enhancements

Onboard Administrator 4.70 provides support for the following enhancements:

### Hardware additions

- BL460c Gen 10.
- HPE 10GbE Pass-Thru Module.
- Qualified support for HPE Integrity BL8x0c i6 Server Blade.

Features: **additions and changes**

### General

- Added support for Gen 10 Server and iLO5 features.
- Added support for the enhanced KVM functionality in iLO5
- Added support for HTTP boot option in the server boot options
- Add support for HPE 10GbE Pass-Thru interconnect module.
- Added support for HPE Integrity BL8x0c i6 Server Blade.
- GUI, CLI, Smart components, help files, URLs, and product names rebranded to align with HPE branding guidelines.
- Added a new SNMP trap to indicate that the power redundancy is restored in the enclosure.
- Enhanced "SHOW ENCLOSURE TEMP" command output, to display the temperature readings like Current, Caution and Critical temperature threshold values for interconnect modules.
- Added a provision to make sysName field to be set to DNS host name for the traps sent from Onboard Administrator.

### Security

- Adding support for CNSA approved algorithms and a new security mode - TOP\_SECRET.
- Added the ability to Enable/Disable cipher/protocol in FIPS OFF mode.
- Added support for secured communication between HPE Embedded Remote Support functionality and the HPE Support Datacenters with the use of SHA-2 certificates.

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Online HPE BladeSystem c-Class Onboard Administrator Firmware Component for Windows

Version: 4.70 **(Optional)**

Filename: cp030712.exe

## Important Note!

Update to this firmware version if any documented fixes or enhanced functionality provided by this version would be useful to your system.

## 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 HP 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 HP SUM information can be found via HPE Smart Update Manager online help or at [www.hpe.com/info/hpsum/documentation](http://www.hpe.com/info/hpsum/documentation).

### ■ FIPS

- OA 3.71 is in active evaluation for FIPS as referenced in the 140-2 In Process list located at <http://csrc.nist.gov/groups/STM/cmvp/documents/140-1/140InProcess.pdf>.

### ■ IPv6

- When the Enable DHCPv6 or Enable SLAAC enclosure IPv6 settings are disabled on the Onboard Administrator, the respective DHCPv6 or SLAAC addresses of the iLOs in the enclosure are retained until these addresses expire automatically based on their respective configurations. A manual reset of the iLO releases these addresses immediately.

## Prerequisites

The Onboard Administrator Smart Component contains 32-bit executable binaries. As a result, the client operating system upon which the OA Smart Component is installed and executed must either have native support for 32-bit executables or must have the 32-bit compatibility libraries installed.

## Fixes

### General

- Addressed an issue where OA "update iLO all" command fails in an enclosure with maximum Blades.
- Addressed an issue where a Warning Alert was wrongly sent when a fan is reseated in an enclosure
- Addressed an issue where the port mapping information for 560M Izzy adapter Mezz controller was not displayed correctly.
- Addressed an issue where Remote Syslog logging would fail when OA failover happened in an IPv6 only environment.
- Enhanced OA to bring the server from a power throttled state back to normal power state upon an OA reboot to circumvent an unwarranted emergency brake.
- Fixed an issue where the Active and Standby OAs can have the same IP address in some rare situations.
- Resolved an issue where a Gen9 server's host name gets cleared when the blade is rebooted.
- Addressed an issue where server blade Power ON will be delayed in enclosures with OA Firmware Version 4.60 and managed by HPE OneView, when the OA module is reset until OneView refreshes the servers.

### Security

The following security vulnerabilities were fixed:

- CVE-2016-5387– Addressed a vulnerability which might allow remote attackers to redirect an application's outbound HTTP traffic to an arbitrary proxy server via a crafted Proxy header in an HTTP request.
- CVE-2016-2183- Addressed a vulnerability against TLS ciphers with 64bit block size in which makes it easier for remote attackers to obtain cleartext data via an attack against a long-duration encrypted session
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- Enhanced “SHOW ENCLOSURE TEMP” command output, to display the temperature readings like Current, Caution and Critical temperature threshold values for interconnect modules.
- Added a provision to make sysName field to be set to DNS host name for the traps sent from Onboard Administrator.

### Security

- Adding support for CNSA approved algorithms and a new security mode - TOP\_SECRET.
- Added the ability to Enable/Disable cipher/protocol in FIPS OFF mode.
- Added support for secured communication between HPE Embedded Remote Support functionality and the HPE Support Datacenters with the use of SHA-2 certificates.

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Smart Component for HPE Synergy D3940 Storage Module firmware

Version: 2.07 (B) **(Optional)**

Filename: RPMS/i586/firmware-synergy-d3940-storage-module-2.07-2.1.i586.rpm

### **Enhancements**

- Updated to support Service Pack for ProLiant version 2017.07.0

**Note:** If version 2.07 was previously installed, then it is not necessary to upgrade to version 2.07 (B).

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Smart Component for HPE Synergy Frame Link Module Firmware

Version: 2.01.00 **(Optional)**

Filename: RPMS/i586/firmware-em-2.01.00-1.1.i586.rpm

### **Important Note!**

- HPE OneView 3.10 (or later) must be installed before upgrading to the frame link module firmware version 2.00.00 (or later). This is due to an HPE OneView incompatibility which prevents the frame link module firmware smart component from executing properly.

### **Fixes**

- Fixed an issue where an error could occur on a Frame Link Module during a firmware upgrade causing the firmware update to fail and possibly requiring a manual reboot to fully recover.
- Fixed an issue where the Frame Link Module could not communicate with HPE OneView after user installation of a CA signed certificate chain with more than 8 total certificates (inclusive of root and intermediate certificates). This issue caused the connection to OneView from the Synergy Console to fail. Frame status events would also not be delivered and updated in OneView.
- Fixed an issue where the Frame Link Module could unexpectedly shutdown in extreme operating environments where the ambient temperature was below 0 degrees Celsius.
- Fixed an issue where HPE OneView could indicate an iLO communication timeout for an HPE Synergy compute module when the iLO setting for HPE iLO Federation Multicast Announcement Interval is set to Disabled, 30s, or 60s.

### **Enhancements**

- Added CNSA Suite B support.
- Added display of Frame Link Module SSL host certificate and SSH public key fingerprints to the Synergy Console to allow user verification of Frame Link Module identity within HPE OneView.

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USB Recovery Image for HPE Synergy Frame Link Module Firmware

Version: 2.01.00 **(Optional)**

Filename: FLM.tars

### **Important Note!**

- HPE OneView 3.10 must be installed before upgrading to the frame link module firmware version 2.00.00. This is due to an HPE OneView incompatibility.

### **Fixes**

- Fixed an issue where an error could occur on a Frame Link Module during a firmware upgrade causing the firmware update to fail and possibly requiring a manual reboot to fully recover.
- Fixed an issue where the Frame Link Module could not communicate with HPE OneView after user installation of a CA signed certificate chain with more than 8 total certificates (inclusive of root and intermediate certificates).

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- Fixed an issue where the Frame Link Module could unexpectedly shutdown in extreme operating environments where the ambient temperature was below 0 degrees Celsius.
- Fixed an issue where HPE OneView could indicate an iLO communication timeout for an HPE Synergy compute module when the iLO setting for HPE iLO Federation Multicast Announcement Interval is set to Disabled, 30s, or 60s.

### **Enhancements**

- Added CNSA Suite B support.
- Added display of Frame Link Module SSL host certificate and SSH public key fingerprints to the Synergy Console to allow user verification of Frame Link Module identity within HPE OneView.

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### **Firmware - Frame Infrastructure**

[Top](#)

Smart Component for HPE Synergy 12Gb SAS Connection Module Firmware

Version: 1.2.4.0 **(Optional)**

Filename: RPMS/i586/firmware-synergy-12gb-connection-module-1.2.4.0-1.1.i586.rpm

### **Fixes**

- Fixed an issue where HPE OneView may time out or show stale information while creating a very large number of zone groups.

### **Enhancements**

- Added support for Drive Sanitize feature.

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### **Firmware - Lights-Out Management**

[Top](#)

Online ROM Flash Component for Linux - HPE Integrated Lights-Out 4

Version: 2.55 **(Recommended)**

Filename: CP032487.scexe; RPMS/i386/hp-firmware-ilo4-2.55-1.1.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
- DDNS Client
- RIBCL over IPv6
- SNMP
- AlertMail
- Remote Syslog
- WinDBG Support
- CPQLOCFG/HPLMIG 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**

The addition of IPv6 support for iLO scripting interfaces requires the use of new versions of several iLO utilities. Customers using previous versions of these utilities must upgrade to the new versions:

- HPQLOCFG v5.1
- Lights-Out XML Scripting Sample bundle 5.0.0
- HPONCFG Windows 5.1.0
- HPONCFG Linux 5.1.0
- LOCFG v5.0.0
- HPLMIG 5.1.0

## **Fixes**

The following issues are resolved in this version:

- Masked out errant failures due to charging of storage battery.
- Implemented cell voltage separation pre-failure warning for storage battery.
- iLO RESTful API output might display incorrect power supply information.
- iLO Federation group authentication errors might occur if you repeatedly add and remove groups during a query.
- An iLO RESTful API event subscription might be lost when DELETE and CREATE subscriptions occur at the same time that the transmitter waits to retry an action.
- During CAC smartcard authentication, the iLO RESTful API returns a session URI that incorrectly contains uppercase letters.
- In certain conditions, the Rest server becomes unavailable during a GET of the IELs.
- The iLO web interface language pack redirects to English.
- The iLO RESTful API output text represents upper threshold values as lower thresholds.
- The Linux openipmi driver does not poll the receive message queue if KCS host irq not enabled.
- The iLO RESTful API EthernetInterfaces link should be under the system/1 root resource, and not in the OEM section.
- SNMPv3 Engine Boot is not getting incremented on iLO reset.
- IPMI FRU read returns incorrect completion code for response too long.
- IPMI Get PEF Capabilities returns the number of valid table entries instead of the total number of table entries.
- IPMI Set Boot Options for one time change for boot mode UEFI/Legacy fixed.
- iLO restserver suspends when patching bad payload to external provider array.
- iLO REST API returned 500 internal error for a GET of systems/1/ leading to failed One View Profile Apply.
- iLO RESTful API events are sending incorrect "Host" header when using IPv6.
- iLO time becomes Unset after update from 2.50 or prior to 2.54.

## **Enhancements**

This version adds support for the following features and enhancements:

- The Self-signed SSL certificate can now be regenerated.
- New iLO RESTful API command to allow an auxiliary power cycle of the server on the next host power down.
- Added THERM\_TRIP events, OS\_STOP\_SHUTDOWN, OS\_NMI, ACPI, PCI-E Bus Error and CPU error logs to the SEL.
- Added OEM type SEL event with IML info on critical events.
- Improved reliability of Embedded Media attach and diagnostics.

### **Important Note!**

Users should update to this firmware 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.

IPv6 network communications - Dedicated network connection only

Supported Networking Features

- IPv6 Static Address Assignment
- IPv6 SLAAC Address Assignment
- IPv6 Static Route Assignment
- IPv6 Static Default Gateway Entry
- DHCPv6 Stateful Address Assignment
- DHCPv6 Stateless DNS, Domain Name, and NTP Configuration
- Integrated Remote Console
- OA Single Sign-On
- HP-SIM Single Sign-On
- Web Server
- SSH Server
- SNTP Client
- DDNS Client
- RIBCL over IPv6
- SNMP
- AlertMail
- Remote Syslog
- WinDBG Support
- CPQLOCFG/HPLMIG 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**

For best performance, IPv6 support, and TLS v1.1 or later support, Hewlett Packard Enterprise requires the following versions of the iLO utilities:

- HPQLOCFG v5.1
- Lights-Out XML Scripting Sample bundle 5.0.0
- HPONCFG Windows 5.1.0
- HPONCFG Linux 5.1.0
- LOCFG v5.0.0
- HPLMIG 5.1.0

NOTE: Updated utilities and system libraries are required to support the iLO HighSecurity, FIPS, and SuiteB security states. The HPONCFG Windows utility does not currently support the SuiteB security state.

### **Fixes**

No traps from the System Management Assistant are received when SNMP is disabled in the iLO web interface.

- The power profile cannot be changed through the iLO web interface.
- Network transmission graph data is not populated in Active Health System logs.
- The NVDIMM firmware version is not displayed on the iLO web interface Installed Firmware page.
- The iLO web interface intermittently displays incorrect memory status after a system reset.
- The iLO RESTful API does not provide a method to get current cipher information.
- The Server Power page stalls when loading the server power information.
- Nothing happens when you click the Import button on the HPE SSO page.
- Secure boot cannot be configured through the iLO RESTful API, even if the pending configuration is in UEFI mode.
- The maximum available power is displayed incorrectly.
- If the IML contains a maintenance note, the first attempt to clear the log fails.
- Certificate-based authentication returns a session URL with inconsistent case.
- Onetimeboot and Continuousboot do not take effect in iLOrest.
- Virtual Media status is not displayed in the Java IRC.
- The local client keyboard might get disabled when the Java IRC is in use.
- An iLO Federation authentication error might occur when group names with unsupported characters are used in URLs without correct encoding.
- An issue occurs when copying or restoring certificate mapping entries using fingerprints.
- An iLO web interface error occurs after an installed certificate was deleted by using the iLO RESTful API.
- An Internal Error occurs when HPONCFG for Linux is used with a server that uses the SuiteB security state.
- SNMPv3 user details cannot be modified through RIBCL.
- A false positive "Insecure Cache Management Policy" issue is reported by some security scanners.

## **Enhancements**

- iLO backup and restore—This feature allows you to restore the iLO configuration on a system with the same hardware configuration as the system that was backed up. For example, you could use this feature if the system board is replaced, an accidental or incorrect configuration change occurred, or iLO was set to the factory default settings. This feature is not meant to duplicate a configuration and apply it to a different iLO system.
- AMD platform support
- Support for diffie-hellman-group-exchange-sha256.
- Support for multiple destination AlertMail email addresses. Enter the addresses separated by a semicolon.
- iLO RESTful API features:
  - Aux Power Reset
  - Jitter Control features to get and set Jitter Control Mode and Frequency
- New iLO RESTful API properties to bridge the gap between RIBCL and iLO RESTful API features:
  - High Efficiency Mode
  - Encryption-related properties and Cache Module Serial Number
  - Login Security Banner
  - Current Power on Time (provides the time since the system was last powered on).
  - Persistent Mouse/Keyboard Enabled
- New iLO RESTful API events for NVDIMM Init Error and Runtime Firmware Authentication Error.

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Online ROM Flash Component for VMware ESXi - HPE Integrated Lights-Out 4

Version: 2.55 **(Recommended)**

Filename: CP032489.compsig; CP032489.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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Web Server  
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### **Prerequisites**

The addition of IPv6 support for iLO scripting interfaces requires the use of new versions of several iLO utilities. Customers using previous versions of these utilities must upgrade to the new versions:

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### **Fixes**

The following issues are resolved in this version:

- Masked out errant failures due to charging of storage battery.
- Implemented cell voltage separation pre-failure warning for storage battery.
- iLO RESTful API output might display incorrect power supply information.
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This version adds support for the following features and enhancements:

- The Self-signed SSL certificate can now be regenerated.
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- Added OEM type SEL event with IML info on critical events.
- Improved reliability of Embedded Media attach and diagnostics.

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Online ROM Flash Component for Windows x64 - HPE Integrated Lights-Out 4

Version: 2.55 **(Recommended)**

Filename: cp032488.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
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- HPLMIG 5.1.0

## Fixes

The following issues are resolved in this version:

- Masked out errant failures due to charging of storage battery.
- Implemented cell voltage separation pre-failure warning for storage battery.
- iLO RESTful API output might display incorrect power supply information.
- iLO Federation group authentication errors might occur if you repeatedly add and remove groups during a query.
- An iLO RESTful API event subscription might be lost when DELETE and CREATE subscriptions occur at the same time that the transmitter waits to retry an action.
- During CAC smartcard authentication, the iLO RESTful API returns a session URI that incorrectly contains uppercase letters.
- In certain conditions, the Rest server becomes unavailable during a GET of the IELs.
- The iLO web interface language pack redirects to English.
- The iLO RESTful API output text represents upper threshold values as lower thresholds.
- The Linux openipmi driver does not poll the receive message queue if KCS host irq not enabled.
- The iLO RESTful API EthernetInterfaces link should be under the system/1 root resource, and not in the OEM section.
- SNMPv3 Engine Boot is not getting incremented on iLO reset.
- IPMI FRU read returns incorrect completion code for response too long.
- IPMI Get PEF Capabilities returns the number of valid table entries instead of the total number of table entries.
- IPMI Set Boot Options for one time change for boot mode UEFI/Legacy fixed.
- iLO restserver suspends when patching bad payload to external provider array.
- iLO REST API returned 500 internal error for a GET of systems/1/ leading to failed One View Profile Apply.
- iLO RESTful API events are sending incorrect "Host" header when using IPv6.
- iLO time becomes Unset after update from 2.50 or prior to 2.54.

## Enhancements

This version adds support for the following features and enhancements:

- The Self-signed SSL certificate can now be regenerated.
- New iLO RESTful API command to allow an auxiliary power cycle of the server on the next host power down.
- Added THERM\_TRIP events, OS\_STOP\_SHUTDOWN, OS\_NMI, ACPI, PCI-E Bus Error and CPU error logs to the SEL.
- Added OEM type SEL event with IML info on critical events.
- Improved reliability of Embedded Media attach and diagnostics.

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Online ROM Flash Component for Windows x64 - HPE Integrated Lights-Out 5

Version: 1.15 **(Recommended)**

Filename: cp032360.compsig; cp032360.exe

## Important Note!

Users should update to this firmware 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.

IPv6 network communications - Dedicated network connection only

Supported Networking Features

- IPv6 Static Address Assignment
- IPv6 SLAAC Address Assignment
- IPv6 Static Route Assignment
- IPv6 Static Default Gateway Entry
- DHCPv6 Stateful Address Assignment
- DHCPv6 Stateless DNS, Domain Name, and NTP Configuration
- Integrated Remote Console
- OA Single Sign-On
- HP-SIM Single Sign-On
- Web Server
- SSH Server
- SNTP Client

DDNS Client  
RIBCL over IPv6  
SNMP  
AlertMail  
Remote Syslog  
WinDBG Support  
CPQLOCFG/HPLMIG 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**

For best performance, IPv6 support, and TLS v1.1 or later support, Hewlett Packard Enterprise requires the following versions of the iLO utilities:

- HPQLOCFG v5.1
- Lights-Out XML Scripting Sample bundle 5.0.0
- HPONCFG Windows 5.1.0
- HPONCFG Linux 5.1.0
- LOCFG v5.0.0
- HPLMIG 5.1.0

NOTE: Updated utilities and system libraries are required to support the iLO HighSecurity, FIPS, and SuiteB security states. The HPONCFG Windows utility does not currently support the SuiteB security state.

## **Fixes**

- No traps from the System Management Assistant are received when SNMP is disabled in the iLO web interface.
- The power profile cannot be changed through the iLO web interface.
- Network transmission graph data is not populated in Active Health System logs.
- The NVDIMM firmware version is not displayed on the iLO web interface Installed Firmware page.
- The iLO web interface intermittently displays incorrect memory status after a system reset.
- The iLO RESTful API does not provide a method to get current cipher information.
- The Server Power page stalls when loading the server power information.
- Nothing happens when you click the Import button on the HPE SSO page.
- Secure boot cannot be configured through the iLO RESTful API, even if the pending configuration is in UEFI mode.
- The maximum available power is displayed incorrectly.
- If the IML contains a maintenance note, the first attempt to clear the log fails.
- Certificate-based authentication returns a session URL with inconsistent case.
- Onetimeboot and Continuousboot do not take effect in iLOrest.
- Virtual Media status is not displayed in the Java IRC.
- The local client keyboard might get disabled when the Java IRC is in use.
- An iLO Federation authentication error might occur when group names with unsupported characters are used in URLs without correct encoding.
- An issue occurs when copying or restoring certificate mapping entries using fingerprints.
- An iLO web interface error occurs after an installed certificate was deleted by using the iLO RESTful API.
- An Internal Error occurs when HPONCFG for Linux is used with a server that uses the SuiteB security state.
- SNMPv3 user details cannot be modified through RIBCL.
- A false positive "Insecure Cache Management Policy" issue is reported by some security scanners.

## Enhancements

- iLO backup and restore—This feature allows you to restore the iLO configuration on a system with the same hardware configuration as the system that was backed up. For example, you could use this feature if the system board is replaced, an accidental or incorrect configuration change occurred, or iLO was set to the factory default settings. This feature is not meant to duplicate a configuration and apply it to a different iLO system.
- AMD platform support
- Support for diffie-hellman-group-exchange-sha256.
- Support for multiple destination AlertMail email addresses. Enter the addresses separated by a semicolon.
- iLO RESTful API features:
  - Aux Power Reset
  - Jitter Control features to get and set Jitter Control Mode and Frequency
- New iLO RESTful API properties to bridge the gap between RIBCL and iLO RESTful API features:
  - High Efficiency Mode
  - Encryption-related properties and Cache Module Serial Number
  - Login Security Banner
  - Current Power on Time (provides the time since the system was last powered on).
  - Persistent Mouse/Keyboard Enabled
- New iLO RESTful API events for NVDIMM Init Error and Runtime Firmware Authentication Error.

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## Firmware - Network

[Top](#)

HPE Broadcom NetXtreme-E Online Firmware Upgrade Utility for Linux x86\_64

Version: 1.1.7 **(Optional)**

Filename: firmware-nic-bcm-nxe-1.1.7-1.1.x86\_64.compsig; firmware-nic-bcm-nxe-1.1.7-1.1.x86\_64.rpm

## Important Note!

HPE recommends the *HPE Broadcom NetXtreme-E Drivers for Linux*, versions 1.8.1-1 or later, for use with this firmware.

## 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 corrects an issue where a prompt to save configuration changes is displayed when no changes have been made from the adapter's configuration menu.  
This product addresses an issue where an adapter fails to boot to PXE with VLAN ID enabled.

## Enhancements

This product now supports Red Hat Enterprise Linux 7 Update 4.  
This product now supports SUSE Linux Enterprise Server 12 SP3.

## 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

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HPE Broadcom NetXtreme-E Online Firmware Upgrade Utility for Windows Server x64 Editions

Version: 5.1.1.0 **(Optional)**

Filename: cp032627.compsig; cp032627.exe

### **Important Note!**

HPE recommends *HPE Broadcom NetXtreme-E Driver for Windows*, versions 20.6.123.0 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 corrects an issue where a prompt to save configuration changes is displayed when no changes have been made from the adapter's configuration menu.

This product addresses an issue where an adapter fails to boot to PXE with VLAN ID enabled.

### **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

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HPE Broadcom NX1 Online Firmware Upgrade Utility for Linux x86\_64

Version: 2.19.6 **(Optional)**

Filename: firmware-nic-broadcom-2.19.6-1.1.x86\_64.compsig; firmware-nic-broadcom-2.19.6-1.1.x86\_64.rpm

### **Important Note!**

HPE recommends *HPE Broadcom tg3 Ethernet Drivers*, versions 3.137s-1 or later, for use with this firmware.

### **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 negative temperatures on the adapter are incorrectly displayed in Integrated Lights Out (iLO).

This product addresses an issue where an incorrect firmware image is landed on an adapter.

This product addresses an issue where an adapter's configuration menu doesn't correctly prompt for reboot after changes are made that require a reboot.

### **Enhancements**

This product now supports Red Hat Enterprise Linux 7 Update 4.

This product now supports SUSE Linux Enterprise Server 12 SP3.

### **Supported Devices and Features**

This driver supports the following network adapters:

- HP Ethernet 1Gb 2-port 330i Adapter (22BD)
- HP Ethernet 1Gb 4-port 331i Adapter (22BE)
- HPE Ethernet 1Gb 4-port 331FLR Adapter
- HPE Ethernet 1Gb 4-port 331T Adapter
- HP Ethernet 1Gb 2-port 332i Adapter (2133)

HP Ethernet 1Gb 2-port 332i Adapter (22E8)

- HPE Ethernet 1Gb 2-port 332T Adapter

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HPE Broadcom NX1 Online Firmware Upgrade Utility for VMware

Version: 1.19.5 **(Optional)**

Filename: CP032621.compsig; CP032621.zip

### **Important Note!**

HPE recommends *HP Broadcom tg3 Ethernet Drivers for VMware*, versions 2015.10.01, for use with this firmware.

This software package contains combo image v20.6.61 with the following firmware versions:

<b>NIC</b>	<b>Boot Code Version</b>	<b>PXE Version</b>	<b>NCSI Version</b>	<b>UEFI Version</b>	<b>CCM Version</b>
HP Ethernet 1Gb 2-port 330i Adapter (22BD)	2.10	20.6.1	1.4.16	20.6.54	20.6.106
HP Ethernet 1Gb 4-port 331i Adapter (22BE) HP Ethernet 1Gb 4-port 331FLR Adapter HP Ethernet 1Gb 4-port 331T Adapter	1.46	20.6.1	1.4.16	20.6.54	20.6.106
HP Ethernet 1Gb 2-port 332i Adapter (2133)	1.39	20.6.1	1.4.16	n/a	20.6.106
HP Ethernet 1Gb 2-port 332i Adapter (22E8) HP Ethernet 1Gb 2-port 332T Adapter	1.39	20.6.1	1.4.16	20.6.54	20.6.106

### **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 negative temperatures on the adapter are incorrectly displayed in Integrated Lights Out (iLO).

This product addresses an issue where an incorrect firmware image is landed on an adapter.

This product addresses an issue where an adapter's configuration menu doesn't correctly prompt for reboot after changes are made that require a reboot.

### **Supported Devices and Features**

This driver supports the following network adapters:

- HP Ethernet 1Gb 2-port 330i Adapter (22BD)
- HP Ethernet 1Gb 4-port 331i Adapter (22BE)
- HPE Ethernet 1Gb 4-port 331FLR Adapter
- HPE Ethernet 1Gb 4-port 331T Adapter
- HP Ethernet 1Gb 2-port 332i Adapter (2133)
- HP Ethernet 1Gb 2-port 332i Adapter (22E8)
- HPE Ethernet 1Gb 2-port 332T Adapter

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HPE Broadcom NX1 Online Firmware Upgrade Utility for Windows Server x64 Editions

Version: 5.1.1.0 **(Optional)**

Filename: cp032626.compsig; cp032626.exe

### **Important Note!**

HPE recommends *HPE Broadcom 1Gb Driver for Windows Server x64 Editions*, version 20.6.0.5 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 negative temperatures on the adapter are incorrectly displayed in Integrated Lights Out (iLO).

This product addresses an issue where an incorrect firmware image is landed on an adapter.

This product addresses an issue where an adapter's configuration menu doesn't correctly prompt for reboot after changes are made that require a reboot.

## **Supported Devices and Features**

This driver supports the following network adapters:

- HP Ethernet 1Gb 2-port 330i Adapter (22BD)
- HP Ethernet 1Gb 4-port 331i Adapter (22BE)
- HPE Ethernet 1Gb 4-port 331FLR Adapter
- HPE Ethernet 1Gb 4-port 331T Adapter
- HP Ethernet 1Gb 2-port 332i Adapter (2133)
- HP Ethernet 1Gb 2-port 332i Adapter (22E8)
- HPE Ethernet 1Gb 2-port 332T Adapter

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HPE Firmware Flash for Emulex Converged Network Adapters - Linux (x64)

Version: 2017.09.01 **(Recommended)**

Filename: RPMS/x86\_64/firmware-cna-emulex-2017.09.01-1.10.x86\_64.compsig; RPMS/x86\_64/firmware-cna-emulex-2017.09.01-1.10.x86\_64.rpm

## **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Prerequisites**

Firmware updates may be accomplished using the inbox or Out of Box (OOB) drivers. Please consult SPOCK for a list of supported configurations available at the following link:

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

The OOB NIC driver is available on the Service Pack for ProLiant (SPP) which is available at <http://www.hpe.com/servers/spp/download>.

Additional requirements:

The target environment must have the libsysfs or sysfsutils package installed prior to the installation of the firmware update kit. If not already present, the libsysfs or sysfsutils package can be obtained from the operating system installation media.

Environment must have 32-bit netlink library (libnl.so) installed for component to be able to discover Emulex HBAs/CNAs  
Environment must be running the syslog daemon for the flash engine to run

Note: To enable the FCoE/iSCSI protocol on devices that support it, please install the appropriate Emulex FCoE/iSCSI driver. The FCoE protocol also requires the HPE Emulex FCoE Enablement Kit be installed. The drivers and enablement kit are also available on the Service Pack for ProLiant (SPP) which is available at <http://www.hpe.com/servers/spp/download>.

The Enablement Kit requires that the target environment have the libHBAAPI package installed from your OS installation media.

Install the FCoE Driver Kit, reboot, and then install the Enablement Kit.

## **Fixes**

Fixed the following:

- Resolves unexpected behavior where 650 FLB and M adapters throw "PCIe Link Bandwidth Reduction" events
- Resolves unexpected behavior where 650M adapter goes missing from OS post Hotfix FW flash of 11.1.183 build 32
- Fixed the unexpected behavior where HP BL460c Gen10 system is powered off after flashing 11.2.1223.0 firmware and iLO5 Thermal tab is reporting Overheating temperature 122C for 650FLB adapter
- Resolves an unexpected behavior where Network adapters has no network information in Active Health System (AHS) logs.

## **Enhancements**

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

Updated CNA (XE100 series) firmware

### **Firmware**

Contains:

CNA (XE100 series) firmware 11.2.1263.19

## **Supported Devices and Features**

### **XE100 Series:**

- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HP Ethernet 10Gb 2-port 557SFP+ Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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HPE Firmware Flash for Emulex Converged Network Adapters - Windows (x64)

Version: 2017.09.01 **(Recommended)**

Filename: cp032466.compsig; cp032466.exe

### **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>

2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Prerequisites**

Firmware updates may be accomplished using the inbox or Out of Box (OOB) drivers. Please consult SPOCK for a list of supported configurations available at the following link:

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

The HPE supplied Emulex NIC driver must be installed prior to this firmware component being identified by SUM for deployment. The latest driver is available on the HPE.com website at <http://www.hpe.com/>.

The FCoE/iSCSI OOB driver and FCoE enablement kit are available on the Service Pack for ProLiant (SPP) which is available at <http://www.hpe.com/servers/spp/download>.

## **Fixes**

Fixed the following:

- Resolves unexpected behavior where 650 FLB and M adapters throw "PCIe Link Bandwidth Reduction" events
- Resolves unexpected behavior where 650M adapter goes missing from OS post Hotfix FW flash of 11.1.183 build 32
- Fixed the unexpected behavior where HP BL460c Gen10 system is powered off after flashing 11.2.1223.0 firmware and iLO5 Thermal tab is reporting Overheating temperature 122C for 650FLB adapter
- Resolves an unexpected behavior where Network adapters has no network information in Active Health System (AHS) logs.

## **Enhancements**

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

Updated CNA (XE100 series) firmware

Contains:

CNA (XE100 series) firmware 11.2.1263.19

## **Supported Devices and Features**

### **XE100 Series:**

- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HP Ethernet 10Gb 2-port 557SFP+ Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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HPE Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.5

Version: 2017.09.01 **(Recommended)**

Filename: CP032464.compsig; CP032464.zip

## **Important Note!**

Release Notes:

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **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:

- Resolves unexpected behavior where 650 FLB and M adapters throw "PCIe Link Bandwidth Reduction" events
- Resolves unexpected behavior where 650M adapter goes missing from OS post Hotfix FW flash of 11.1.183 build 32
- Fixed the unexpected behavior where HP BL460c Gen10 system is powered off after flashing 11.2.1223.0 firmware and iLO5 Thermal tab is reporting Overheating temperature 122C for 650FLB adapter
- Resolves an unexpected behavior where Network adapters has no network information in Active Health System (AHS) logs.

## **Enhancements**

Updated CNA (XE100 series) firmware

### **Firmware**

#### **Contains:**

CNA (XE100 series) firmware 11.2.1263.19

## **Supported Devices and Features**

### **XE100 Series:**

- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HP Ethernet 10Gb 2-port 557SFP+ Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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HPE Firmware Flash for Emulex Converged Network Adapters for VMware vSphere 6.0

Version: 2017.09.01 **(Recommended)**

Filename: CP032463.compsig; CP032463.zip

### **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapter Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **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:

- Resolves unexpected behavior where 650 FLB and M adapters throw "PCIe Link Bandwidth Reduction" events
- Resolves unexpected behavior where 650M adapter goes missing from OS post Hotfix FW flash of 11.1.183 build 32
- Fixed the unexpected behavior where HP BL460c Gen10 system is powered off after flashing 11.2.1223.0 firmware and iLO5 Thermal tab is reporting Overheating temperature 122C for 650FLB adapter
- Resolves an unexpected behavior where Network adapters has no network information in Active Health System (AHS) logs.

## **Enhancements**

Updated CNA (XE100 series) firmware

Contains:

CNA (XE100 series) firmware 11.2.1263.19

## **Supported Devices and Features**

### **XE100 Series:**

- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HP Ethernet 10Gb 2-port 557SFP+ Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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HPE Intel Online Firmware Upgrade Utility for Linux x86\_64

Version: 1.13.12 **(Optional)**

Filename: firmware-nic-intel-1.13.12-1.1.x86\_64.compsig; firmware-nic-intel-1.13.12-1.1.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 5.3.5.9 or later
- HPE Intel ixgbe Drivers for Linux , versions 5.2.1 or later
- HPE Intel i40e Drivers for Linux, versions 2.0.29 or later

## **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 Update 4.

This product now supports SUSE Linux Enterprise Server 12 SP3.

This product now 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-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter

## **Supported Devices and Features**

This package supports the following 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 1-port 364i Adapter
- HP Ethernet 1Gb 4-port 366FLR Adapter
- HP Ethernet 1Gb 4-port 366i Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HP Ethernet 1Gb 4-port 366M Adapter
- HP Ethernet 1Gb 4-port 366T Adapter
- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter
- HP Ethernet 10Gb 2-port 560M Adapter
- HP Ethernet 10Gb 2-port 561FLR-T Adapter
- HP Ethernet 10Gb 2-port 561T 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 568i Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter

**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 VMware, versions 2017.07.07 or later
- HPE Intel ixgbe Drivers for VMware, versions 2017.09.25 or later
- HPE Intel i40e Drivers for VMware, versions 2017.09.25 or later

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

NIC	EEPROM/NVM Version	OROM Version
HP Ethernet 1Gb 2-port 361i Adapter	80000CD5	1.1752.0
HP Ethernet 1Gb 2-port 361T Adapter	80000E82	
HP Ethernet 1Gb 2-port 363i Adapter	80000D00	
HP Ethernet 1Gb 1-port 364i Adapter	80000BEE	
HP Ethernet 1Gb 4-port 366FLR Adapter	80000F44	
HP Ethernet 1Gb 4-port 366i Adapter	80000E24	
HPE Ethernet 1Gb 4-port 366i Communication Board	80000EBF	
HP Ethernet 1Gb 4-port 366M Adapter	80000DA9	
HP Ethernet 1Gb 4-port 366T Adapter	80000E81	
HPE Ethernet 1Gb 2-port 368i Adapter	80000C75	
HPE Ethernet 1Gb 4-port 369i Adapter	80000C76	
HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter	80000C74	
HP Ethernet 10Gb 2-port 560FLB Adapter	800008C7	
HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	80000838	
HP Ethernet 10Gb 2-port 560SFP+ Adapter	80000835	
HP Ethernet 10Gb 2-port 560M Adapter	8000083D	
HP Ethernet 10Gb 2-port 561FLR-T Adapter	800005B6	
HP Ethernet 10Gb 2-port 561T Adapter	800005D3	
HPE Ethernet 10Gb 2-port 562FLR-SFP+ Adapter	800033B1	
HPE Ethernet 10Gb 2-port 562SFP+ Adapter	800033B0	
HPE Ethernet 10Gb 2-port 563i Adapter	80002B0F	
HPE Ethernet 10Gb 2-port 568i Adapter	80000C77	
HPE Ethernet 10Gb 2-port 562T Adapter	8000090C	
HPE Ethernet 10Gb 2-port 562FLR-T Adapter	8000090D	
HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter	80000C74	
HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter	80000C74	

The combo image v1.1752.0 includes: Boot Agent: 1GbE - v1.5.84, 10GbE - v2.3.98, 40GbE - v1.0.60 & UEFI Drivers: 1GbE - v7.5.14, 10GbE - v5.9.22, 40GbE - v2.2.26.

**Prerequisites**

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

## **Enhancements**

This product now 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-T Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter

## **Supported Devices and Features**

This package supports the following 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 1-port 364i Adapter
- HP Ethernet 1Gb 4-port 366FLR Adapter
- HP Ethernet 1Gb 4-port 366i Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HP Ethernet 1Gb 4-port 366M Adapter
- HP Ethernet 1Gb 4-port 366T Adapter
- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter
- HP Ethernet 10Gb 2-port 560M Adapter
- HP Ethernet 10Gb 2-port 561FLR-T Adapter
- HP Ethernet 10Gb 2-port 561T 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 568i Adapter
- HPE Ethernet 10Gb 2-port 562T Adapter
- HPE Ethernet 10Gb 2-port 562FLR-T Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter

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HPE Intel Online Firmware Upgrade Utility for Windows Server x64 Editions

Version: 5.1.1.0 **(Optional)**

Filename: cp032236.compsig; cp032236.exe

## **Important Note!**

HPE recommends at least one of the following, as appropriate for your device, for use with this firmware:

- *HPE Intel E1R Driver for Windows Server 2012*, versions 12.14.8.0 or later
- *HPE Intel E1R Driver for Windows Server 2016*, version 12.15.184.0(B) or later
- *HPE Intel ixn Driver for Windows Server 2012*, versions 3.9.58.9103(B) or later
- *HPE Intel ixn Driver for Windows Server 2016*, version 4.0.217.1(B) or later
- *HPE Intel ixt Driver for Windows Server 2012*, versions 3.9.58.9103 or later
- *HPE Intel ixt Driver for Windows Server 2016*, version 4.0.215.1 or later
- *HPE Intel i4Oea Driver for Windows*, versions 1.6.102.0 or later

- *HPE Intel i40Eb Driver for Windows*, versions 1.6.104.0(B) or later

## **Prerequisites**

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

## **Enhancements**

This product now 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 568FLR-MMSFP+ Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter

## **Supported Devices and Features**

This package supports the following 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 1-port 364i Adapter
- HP Ethernet 1Gb 4-port 366FLR Adapter
- HP Ethernet 1Gb 4-port 366i Adapter
- HPE Ethernet 1Gb 4-port 366i Communication Board
- HP Ethernet 1Gb 4-port 366M Adapter
- HP Ethernet 1Gb 4-port 366T Adapter
- HPE Ethernet 1Gb 2-port 368i Adapter
- HPE Ethernet 1Gb 2-port 368FLR-MMT Adapter
- HPE Ethernet 1Gb 4-port 369i Adapter
- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter
- HP Ethernet 10Gb 2-port 560M Adapter
- HP Ethernet 10Gb 2-port 561FLR-T Adapter
- HP Ethernet 10Gb 2-port 561T 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 568i Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMSFP+ Adapter
- HPE Ethernet 10Gb 2-port 568FLR-MMT Adapter

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HPE QLogic FastLinQ Online Firmware Upgrade Utility for Linux x86\_64

Version: 1.2.14 **(Optional)**

Filename: firmware-nic-qlogic-flq-1.2.14-1.1.x86\_64.compsig; firmware-nic-qlogic-flq-1.2.14-1.1.x86\_64.rpm

## **Important Note!**

HPE recommends *HPE QLogic FastLinQ 10/25/50GbE Drivers for Linux*, versions 8.22.3.0-1 or later, for use with the firmware in this product.

## **Prerequisites**

This package requires the appropriate driver for your network adapter be installed 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 Wake-On-Lan setting on the second port isn't correctly enabled when the network adapter's configuration settings are restored to default in the 'System Utilities' (F9 on POST) under the 'System Configuration' menu.

**Enhancements**

This product now supports Red Hat Enterprise Linux 7 Update 4.  
This product now supports SUSE Linux Enterprise Server 12 SP3.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter
- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter

HPE QLogic FastLinQ Online Firmware Upgrade Utility for VMware  
Version: 4.4.14 **(Optional)**  
Filename: CP031575.compsig; CP031575.zip

**Important Note!**

HPE recommends *HPE QLogic FastLinQ 10/25/50GbE Multifunction Drivers for VMware*, versions 2017.09.25 or later, for use with this firmware.

This software package contains the following firmware versions:

NIC	Boot Code (MFW) Version	UEFI Version	PXE Version	Combo Image Version
HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter	8.22.6.0	4.1.2.5	2.0.13	8.22.07
HPE Synergy 6810C 25/50Gb Ethernet Adapter				
HPE Ethernet 10Gb 2-port 521T Adapter	8.22.6.0	4.1.2.5	2.0.13	8.22.07
HPE Ethernet 10Gb 2-port 522FLR-T Converged Network Adapter				
HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter				
HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter				

**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 Wake-On-Lan setting on the second port isn't correctly enabled when the network adapter's configuration settings are restored to default in the 'System Utilities' (F9 on POST) under the 'System Configuration' menu.

**Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter
- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter

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HPE QLogic FastLinQ Online Firmware Upgrade Utility for Windows Server x64 Editions

Version: 5.1.1.0 **(Optional)**

Filename: cp032442.compsig; cp032442.exe

### **Important Note!**

HPE recommends *HPE QLogic FastLinQ 10/25/50GbE Driver for Windows Server x64 Editions*, version 8.22.6.0 or later, for use with the firmware in this package.

### **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 Wake-On-Lan setting on the second port isn't correctly enabled when the network adapter's configuration settings are restored to default in the 'System Utilities' (F9 on POST) under the 'System Configuration' menu.

### **Supported Devices and Features**

This product supports the following network adapters:

- HPE Ethernet 10Gb 2-port 521T Adapter
- HPE Ethernet 10Gb 2-port 522FLR-T Converged Network Adapter
- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 621SFP28 Adapter
- HPE Ethernet 10/25Gb 2-port 622FLR-SFP28 Converged Network Adapter
- HPE Synergy 6810C 25/50Gb Ethernet Adapter

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HPE QLogic NC382i/NC532x Online Firmware Upgrade Utility for Linux x86\_64

Version: 2.18.1 **(Optional)**

Filename: CP028811.scexe; CP028811.txt; hp-firmware-nic-qlogic-57xx-2.18.1-1.1.x86\_64.rpm

### **Important Note!**

HPE recommends the *HPE QLogic NX2 1/10/20 GbE Multifunction Drivers*, version 7.13.59-1 or later, for use with the firmware in this product.

### **Prerequisites**

This package can be used with the HP Smart Update Manager (HPSUM) version 7.0.0.0 or later. Earlier versions of HPSUM cannot install this package correctly.

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.

### **Enhancements**

Initial release.

## **Supported Devices and Features**

This product supports the following network adapters:

- HP NC382i Integrated Dual Port Multifunction Gigabit Server Adapter
- HP NC532i Dual Port 10GbE Multifunction BL-c Adapter (3654)
- HP NC532i Dual Port 10GbE Multifunction BL-c Adapter (7058)
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter

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HPE QLogic NC382i/NC532x Online Firmware Upgrade Utility for VMware

Version: 1.15.1 **(Optional)**

Filename: CP028840.zip

### **Important Note!**

HPE recommends the *HPE QLogic NX2 1/10/20 GbE Multifunction Drivers for VMware*, version 2016.10.07 or later, for use with the firmware in this package.

### **Prerequisites**

This package requires the appropriate HPE QLogic NX2 driver for VMware for your device to be installed before firmware can be updated.

### **Enhancements**

Initial release.

## **Supported Devices and Features**

This product supports the following network adapters:

- HP NC382i Integrated Dual Port Multifunction Gigabit Server Adapter
- HP NC532i Dual Port 10GbE Multifunction BL-c Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter

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HPE QLogic NC382i/NC532x Online Firmware Upgrade Utility for Windows Server x64 Editions

Version: 4.1.0.25 **(Optional)**

Filename: cp028813.exe

### **Important Note!**

HPE recommends the following drivers, as applicable, for use with the firmware in this product:

- *HP Broadcom 1Gb Multifunction Drivers for Windows Server 2008 x64 Editions*, version 7.8.50.0(D) or later
- *HPE QLogic NX2 10/20GbE Multifunction Driver for Windows Server 2008 x64 Editions*, version 7.13.60.0 or later

### **Prerequisites**

This package requires the appropriate driver for your network adapter be installed before firmware can be updated.

### **Enhancements**

Initial release.

## **Supported Devices and Features**

This product supports the following network adapters:

- HP NC382i Integrated Dual Port Multifunction Gigabit Server Adapter
- HP NC532i Dual Port 10GbE Multifunction BL-c Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter

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HPE QLogic NX2 Online Firmware Upgrade Utility for Linux x86\_64

Version: 2.20.4 **(Optional)**

Filename: firmware-nic-qlogic-nx2-2.20.4-1.1.x86\_64.compsig; firmware-nic-qlogic-nx2-2.20.4-1.1.x86\_64.rpm

### **Important Note!**

HPE recommends *HPE QLogic NX2 10/20GbE Multifunction Drivers for Linux*, versions 7.14.29-2 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 a network adapter cannot be re-added to a NIC bond after being removed from the bond.

This product addresses an issue where adapters are not reporting the correct temperature in the Integrated Lights Out (iLO) webpage.

This product addresses an issue where the value set for Maximum Transmission Unit (MTU) setting wasn't preserved and instead gets reverted back to default value on system reboot.

### **Enhancements**

This product now supports Red Hat Enterprise Linux 7 Update 4.

This product now supports SUSE Linux Enterprise Server 12 SP3.

### **Supported Devices and Features**

This driver supports the following network adapters:

- HP Flex-10 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- HP Ethernet 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE Synergy 10Gb 2820C Ethernet Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

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HPE QLogic NX2 Online Firmware Upgrade Utility for VMware

Version: 1.19.5 **(Optional)**

Filename: CP032533.compsig; CP032533.zip

### **Important Note!**

HPE recommends *HPE QLogic NX2 10/20GbE Multifunction Drivers for VMware*, versions 2017.07.07 or later, for use with this firmware.

This software package contains combo image v7.15.64 with the following firmware versions:

NIC	Boot Code Version	PXE Version	UEFI Version	iSCSI Version	FCoE Version	CCM Version	L2 Version
HP Flex-10 10Gb 2-port 530FLB Adapter HP Ethernet 10Gb 2-port 530SFP+ Adapter HP Ethernet 10Gb 2-port 530T Adapter	7.14.62	7.14.10	8.0.0	n/a	n/a	7.14.4	7.12.25
HP Ethernet 10Gb 2-port 533FLR-T Adapter HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter HP FlexFabric 10Gb 2-port 534M Adapter HP FlexFabric 10Gb 2-port 536FLB Adapter HPE FlexFabric 10Gb 4-port 536FLR-T Adapter HP FlexFabric 20Gb 2-port 630FLB Adapter HP FlexFabric 20Gb 2-port 630M Adapter HP StoreFabric CN1100R Dual Port Converged Network Adapter HPE StoreFabric CN1100R-T Converged Network Adapter HPE Synergy 3820C 10/20Gb Converged Network Adapter HPE Synergy 10Gb 2-port 2820C Converged Network Adapter	7.14.62	7.14.10	8.0.0	7.14.0	7.14.3	7.14.4	7.12.25

### **Prerequisites**

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

### **Fixes**

This product addresses an issue where a network adapter cannot be re-added to a NIC bond after being removed from the bond.

### **Supported Devices and Features**

This driver supports the following network adapters:

- HP Flex-10 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- HP Ethernet 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE Synergy 10Gb 2820C Ethernet Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

Version: 5.1.1.0 (Optional)

Filename: cp032570.compsig; cp032570.exe

### **Important Note!**

HPE recommends *HPE QLogic NX2 10/20GbE Multifunction Drivers for Windows Server x64 Editions*, version 7.13.115.0 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 a network adapter cannot be re-added to a NIC bond after being removed from the bond.

This product addresses an issue where a change to the MTU size is not retained in Windows Server 2016.

### **Supported Devices and Features**

This driver supports the following network adapters:

- HP Flex-10 10Gb 2-port 530FLB Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- HP Ethernet 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE Synergy 10Gb 2820C Ethernet Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

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Online Firmware Upgrade Utility (ESXi 6.0) for HPE Mellanox Ethernet only adapters

Version: 1.0.5 (A) (Recommended)

Filename: CP032806.compsig; CP032806.zip

### **Important Note!**

#### **Known Issues for FW version 2.40.7000:**

- 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.
- 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.  
**Workaround:** Production SL230 should be used for PCIe Gen3 operation.
- 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.  
**Workaround:** Enable SR-IOV in the BIOS

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.

**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.  
**Workaround:** Upgrade to MLNX\_OFED-2.1-x.x.x or later.
- VPD read-only fields are writable.  
**Workaround:** Do not write to readonly fields if you wish to preserve them.
- 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.  
**Workaround:** Use the physical function device ID to identify the device.
- 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.  
**Workaround:**
  1. Unplug the cable from the switch
  2. Restart driver
  3. Change the protocol via the appropriate tools.
- 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\_drinfo() that is called from asynchronous event handler.
- AHS reports wrong MTU size.

#### Known Issues for FW version 14.18.2030:

- To raise links with platforms based on the following ICs, comply with the following firmware version requirements:
  - ConnectX®-3 - 2.32.5100
  - SwitchX® - 9.2.7300 (or MLNX-OS 3.3.5006)
- Interoperability issue between ConnectX-4 or ConnectX-4 Lx adapter cards and ConnectX-2 adapter card when trying to raise a 10GbE link.
- PCIe capability "Device S/N" returns false value.
- When the link is Gen2, entering or exiting L1 state may cause bad CRC or DLLP indication.
- Configuration space power management capability PME\_EN cannot be set.
- During server reset (not a power-cycle), a non-maskable interrupt (NMI) might occur due to an Option Card Black Box (OCBB) issue causing PCIe access.
- PF direct pass-through is not supported (since PF FLR is not supported)
- Some Port Control Register do not return to the default value after the last portowner host restarts the driver.  
**Workaround:** Reboot or reset the driver.
- Older MFT versions (4.0.0 and 3.8.0) may indicate that the latest GA firmware is old or that it cannot be compared with the existing firmware.  
A message similar to the below will be displayed upon firmware upgrade stage:  
# flint -d <mst device> -i <image> burn  
Current FW version on flash: 12.1100.6630  
New FW version:  
12.0012.0572  
Note: The new FW version is not newer than the current FW version on flash.  
Do you want to continue ? (y/n) [n] : y  
**Workaround:** Choose one of the options below to upgrade firmware:
  - Upgrade to the latest MFT version (4.1.0)
  - Type "y" after the note flint provides Run flint with the "-force" flag
- Traffic that is loopbacked due to QP.force\_loopback being equaled to 1, is steered to the PF.

- o A minimum of 200 LFM is required in order to cool the MCX4411A-ACAN adapter card.
- o mlxfwreset does not function properly in old MFT versions after upgrading the firmware image  
**Workaround:** Upgrade MFT to the latest release or use reboot/power cycle after upgrading firmware.
- o Windows Server 2016 Inbox driver cannot work with firmware v14.12.0780  
**Workaround:** Use WinOF-2 v1.20 out-of-box driver.
- o Flashing the firmware requires server reboot. Firmware cannot be flashed twice without server reboot after first flashing  
**Workaround:** Reboot the server after firmware flashing.
- o When arming SRQ for limit event, the device might issue an event with context\_index=0.
- o The value of log\_max\_ra\_res\_qp in set\_hca\_cap command should be the same in all functions.
- o Function (PF/VF) TX port counters are not supported.
- o PF driver must work with pages event queue.
- o SR-IOV Ethernet supports up to 18 VFs per port only.
- o Privileged Vport egress traffic is not blocked when Vport is not active
- o Any local (internal) loopbacked packet is counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport.
- o Vport number in virtual trap might be reported incorrectly
- o Single FTE that catches both untagged and prio-tagged packets (by giving an FTE with match\_value.vlan\_tag = 0 and match\_value.vid = 0) is currently not supported.
- o Configuring the SM with VL weight 0 on some VL, and running traffic on it, causes the driver to hang during unload.
- o OCBB is not displayed in the latest iLO versions.
- o Some 10GbE cables are not SFF-8472 compliant. "SFP+ Cable Technology" bits are cleared.
- o When Clause 74 Fire-Code FEC is active, and there are FC corrected errors, both the FC\_correctable counter and the FC\_uncorrectable counter are increment.
- o Windows NMI may occur upon reboot cycle as a result of OCBB memory access transactions.
- o end\_padding\_mode is required in CREATE\_QP and not in INIT\_2\_RTR command as defined in the PRM
- o LR4 cable events are sent although the port is up.
- o On rare occasions during UEFI boot cycles system got stuck while winPE is loaded. (OS WinPE, system DL160) **Workaround:** Power cycle revives the system.
- o QoS must be configured the same for both ports in order for RoCE LAG to function properly.
- o Modifying the encap\_id of FTE is not supported.
- o Flow Counter is supported only for FTE that does not include a flow\_tag or for FTE that have TIR as destination.
- o Using Flow Counters in the FDB Flow Table causes the transmitted IB traffic vport counters to not function properly.
- o When a steering rule in the e-sw FDB includes an encap action and an external port as destination, a transmitted multicast packet that matches the rule is sent to the wire and the loopback and the locally looped back packet will also have an encap header.
- o Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- o When e-switch FDB is not created, the VF functional loopback traffic is send to vport 0 (PF).
- o Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- o Updating a non-volatile configuration of port type TLV more than 50 times might cause system to hang. **Workaround:** Run mlxconfig reset after every 50 consecutive updates of port type TLV.
- o In order to raise 50GbE link when using ConnectX-4 Lx firmware v14.16.1006 or newer, the following conditions must be met:
  - The minimum ConnectX-4 firmware version should be 12.16.1006
  - The minimum ConnectX-4 Lx firmware version should be 14.16.1006
  - The minimum MLNX-OS version should be 3.6.1000 (firmware v13.1100.0026)
- o Performing warm reboot during firmware image burning for VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe. **Workaround:** Cold reboot the device instead
- o Pressing the Power Down button resets the server and does not initiate the Standby flow (as init 0 does). As a result, both ports are up due to keep\_link\_up, which opens the port when the firmware is loaded. **Workaround:** Use init 0 to start the Standby flow.
- o In an InfiniBand Multihost and SR-IOV setups, traffic should contain GRH (GID index) if the grh\_required bit is set in the query\_hca\_vport\_context command. OpenSM should be configured as follow (opensm.conf):
  - virt\_enable should be 2
  - Enable Qos:
  - qos TRUE
 Note: In this case, traffic without GRH will be forwarded to vport0 ("Host0")
- o Performing warm reboot during firmware image burning in VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe. **Workaround:** Power Cycle the server (cold reboot). Once a cold reboot is performed, the device will reboot with the previous image that was already burned.
- o The firmware and the hardware do not reset the physical link upon CPortState=down.  
According to the IB Specification, MANAGEMENT STATE CHANGE COMMANDS: "CPortState... when phy\_link=up and CPortState=down, the state machine will transition to the LinkDown state which will reset other link state machines. Since phy\_link=up, this will be followed by a transition to the LinkInitialize state. Thus a command to change link port state to down provides a way to re-initialize the link layer..." **Workaround:** In order to re-train the physical link, sendbug PortInfo.physical\_port\_state = POLLING is required.
- o Local loopback traffic might effect vport counters.
- o Stopping the Rate Limiter while traffic is being transmitted might cause the adapter card to hang. **Workaround:** Stop traffic before:

- setting rate 0 to the last non-default-rate vport.
- issuing destroy\_scheduling\_element command for the last vport with non-default-rate vport.
- o Mapping an SL to VL 15 is currently not supported. Trying to do so, will cause a health buffer fatal internal error report.
- o Running the modify\_scheduling\_context command does not include checking whether the scheduling element was created or not. **Workaround:** Do not modify non-existing elements.
- o Setting/modifying the max\_average\_bw rate for a function, or setting speeds over the maximum supported speed (as indicated in INI) may result in inaccurate rates, and in an assert. **Workaround:** Set the max\_avergae\_bw in scheduling\_context commands to equal or less than the supported wire speed.
- o Although the ref counter design is to increment on every max\_average\_bw != 0 (limited), the eSwitch max\_average\_bw ref counter decrements in TEARDOWN\_HCA/ FLR VF regardless of the max\_average\_bw value set. **Workaround:** Verify all rates for all VFs are set to \*0\* before running TEARDOWN\_HCA/ FLR VF. This is applicable only if a rate is set for any VF.
- o FDR link can raise with symbol errors on optic EDR cable longer than 30M.
- o When running the modify\_scheduling\_context command, scheduling\_context.element\_type is taken into consideration with performing verifications, although the field is reserved. **Workaround:** Use the correct element\_type when issuing modify\_scheduling\_context command.

## Fixes

### Fixes in 2.40.7000:

- o Fixed a race between the firmware and the hardware during driver start which blocked outbound completions.
- o Fixed an issue which caused the firmware not to send link\_down event to the driver when running the close\_port command.
- o Fixed an issue where in rare cases the Auto Sense failed to detect the right protocol.
- o Fixed signal integrity issue when connecting a WCS ConnectX4 mezz card to Pikes peak FPGA.
- o Added the option to transmit corrupted DME pages for a very short period of time at the beginning of the Auto-Negotiation flow.
- o Fixed an incorrect report of the PortRcvDataVLExtended / PortXmitDataVLExtended counters by the firmware.
- o Fixed a rare issue which caused firmware's packet injector to cut off packets when the TX was congested.
- o Fixed an issue that caused the response to TX requests to take up to 10 mili-seconds in IEEE clause 72 Link Training.
- o Fixed a race between 2 iriscs which caused a QP to get stuck in burst control limit state.
- o When a QP was in error state, the firmware generated too many err CQEs at once, thus causing the cmdif responsiveness to be too slow. To prevent the above, the number of err CQEs was limited to 16 at a time.
- o Fixed an issue that caused the MAC address that was set from the OS using ifconfig to be not reflected in the OCBB buffer.
- o Fixed an issue where the ibdump got broken when running with loopback traffic.
- o Fixed an issue where the firmware took QP to firmware ownership and then released it to the hardware ownership without checking if another firmware flow owns the same QP.
- o Fixed an issue which occurred after disconnecting cable which showed the link type as IB even if the link type of the port is ETH.
- o Fixed an issue related to the HCA PoerXmitWait counter on port 2 (connected to port 2 on Switch-IB) where it started counting and reached 0xFF's regardless of connection to switch.
- o Fixed a completion error issue when ECN was enabled. The ECN usage caused ordering errors in completion queues (CQ).
- o Fixed the length calculation of UDP. The incorrect UDP length in the CNP packet caused miss-calculation of the ICRC.
- o Fixed a wrong returned status in cable info MAD when the cable was not connected
- o Fixed failure instances when initiating FLR in the Physical Function.
- o Disabled High Rate Steering mode in the INI to enable its compatibility with NC-SI over VLAN.
- o Fixed a default hardware configuration issue which caused RDP over IPv4 traffic to be dropped.
- o MLNX\_OEM command GET\_TEMP returned a wrong value in the max\_temp field.
- o Fixed an issue which caused TX traffic to stop when the message MTU size was larger than QP.mtu.
- o Fixed an issue which caused NVCONFIG to fail when the number of sector was set to 1 and the sector was zeroed.
- o Fixed a race in handling a duplicated "read request from middle".
- o Fixed an issue which caused lack of IB traffic on SR-IOV VPI.
- o Fixed an issue which caused NVRAM to get stuck when it filled non-valid information in TLV.
- o Fixed an issue which caused an internal firmware error when APM changed the QPs port mapping.
- o Fixed an issue which caused a firmware internal error when handling QP alternative context.
- o Fixed an issue which caused packet transmission to get stuck when the software tried to send pause frames with dmac equal to one of the device's MAC addresses.
- o Fixed a wrong reporting of section 5 event 8 - LSO support.
- o Fixed a mistakenly dropped ETH packet with ethertype 0x600 by the NIC.
- o Fixed a case preventing broadcast traffic from arriving to their destination after detaching high priority broadcast rule on a port where NC-SI was enabled.
- o Fixed an issue where the port raised as SDR vs. InfiniScale IV QDR Switch
- o Fixed a rare case of completion Error with Bad Opcode sequence status which occurred when retransmitting read requests
- o Fixed a case where the actual bandwidth did not match the user settings in VM QoS.
- o Fixed a case where on rare cases, communication to BMC was lost during driver initialization.

- o Fixed an issue with cable reading, which caused the link not to raise.
- o Set the maximum EQN number to 1024.
- o Fixed a rare issue with VPD init flow which caused read failures.
- o Fixed an issue with RX size counter not being reported.
- o Fixed promiscuous mode compatibility with AO-DMFS steering.
- o Fixed promiscuous mode compatibility when NC-SI is enabled and configured.
- o Fixed sending/receiving OEM temp commands (set/get) with channel ID 0x1f failure.
- o Fixed an issue which caused packets to drop on a port when changing the interface state of the other port.
- o Fixed long management communication loss and SOL hang during reboot cycles.
- o Fixed wrong processing of inbound traffic towards BMC which caused communication loss.
- o Fixed management link loss upon closing port interface through the driver.
- o Fixed a false indication in firmware of an expander presence causing delay in EEPROM reading.
- o Fixed an issue which caused a link down on a port when the cable was removed from the other port.
- o Fixed a rare case where packet with length zero got stuck in hardware queues.
- o Fixed an issue which caused InfiniBand congestion control packet (CNP) to hang in hardware.
- o Fixed an issue which caused AEN to be sent after channel reset.
- o Fixed an issue which prevented the restoring of QoS setting to its default consequently causing bandwidth degradation.
- o Fixed an occasional long link up time with 10GbE based devices.
- o Fixed an issue preventing cable readings from i2c slave address 0x51
- o Fixed a wrong parity bit calculation when transmitting PCIe TS1 packets.
- o Fixed a possible deadlock in PM turnoff request transmission and ack acceptance flow.
- o Fixed a rare case with alignments state machines which caused occasional width degradation.
- o Fixed an issue where the transmit queues hanged while congestion control was enabled and operational (EQC/QCN)
- o Fixed an unexpected work completion syndrome with vendor syndrome 0x77 received when running RDMA SEN/WRITE traffic with retransmissions.
- o Fixed an issue which caused SetPortInfo to return a good status when receiving invalid LinkSpeedEnabled value.
- o Fixed an issue which caused dual port SFPP module cards to be automatically mapped with expander.
- o Fixed an issue where firmware overrides the steering mode that was chosen by the driver.
- o Fixed invalid return sensing results occurred when the link was up.
- o Fixed an issue causing the sensing result to be delayed when cable was unplugged.
- o Fixed an issue causing the link type to be displayed as ETH when set to AUTO.
- o Fixed an issue causing ARP not to reply when connected to Hyper-V vSwitch.

#### Fixes in 14.18.2030:

- o On rare occasions during UEFI boot cycles system got stuck while WinPE is loaded. (OS WinPE, system DL160).
- o Single FTE that catches both untagged and prio-tagged packets (by giving an FTE with match\_value.vlan\_tag = 0 and match\_value.vid = 0) is currently not supported.
- o Flashing the firmware requires server reboot. Firmware cannot be flashed twice without server reboot after first flashing
- o If the vport state is DOWN and a packet is sent in local loopback, the sx\_sniffer tool will not function.
- o Fixed an issue causing bubbles to appear as symbol errors when link raised FDR 1x.
- o When Clause 74 Fire-Code FEC is active, and there are FC corrected errors, both the FC\_correctable counter and the FC\_uncorrectable counter are increment.
- o Some Port Control Register do not return to the default value after the last port owner host restarts the driver.
- o Fixed an issue which caused RX to hang when the UDP packet had a reserved UDP destination port.
- o Fixed DMAC reporting mapping per host.
- o Fixed an EEH error from PCI which caused firmware to hang.
- o Fixed the default value of the PCIe target\_link\_speed to Gen3 in link control2.
- o Fixed an issue which prevented LEDs from blinking when the traffic was less than 0.1% of the link speed.
- o Fixed an issue which caused the mlxconfig configuration of VF\_LOG\_BAR\_SIZE to be ignored and to be set to 5 (32MB).
- o A server getting into a Standby mode while Packet-Pacing is enabled might cause firmware to hang and driver call-trace.
- o Fixed an issue which caused unexpected QoS functionality in case of multiple sources to single destination traffic transmission.
- o Fixed an issue which occasionally caused the RX traffic to hang in DC when received a PCI error on WQE fetch.
- o Fixed OOB connection issue during Intel's ITP inject errors test.
- o Fixed an issue which prevented MAC address changes by to driver to be reflected in the OBCC and NC-SI interfaces.
- o Added protection from IOPX thermal diode destabilization to prevent UEFI IPv6 PXE boot failure on ConnectX-4 Lx 25GE cards.
- o Fixed an issue which caused a link down in Port 2 when unplugging the cable from Port 1.
- o In some cases, a Bit Error Rate is not optimal on 10G/40G links.
- o Instability of Link Training Flow occurs during 100G Auto-Negotiation.
- o Fixed a rare issue which caused the command to hang when moved the QP to RESET and back to RTS.
- o Improved RDMA READ bandwidth under packet lost scenario.
- o Added support for pnat = 1 in HCA access\_reg command as required by the ibdiagnet tool.
- o Fixed the LLDP OCBB response: return value is now ascii.

- Fixed a very rare NMI issue during PXE cycles.
- Increased the steering hash tables static size from 128 to a maximum of 32K entries.
- Prevented miscalculation of module temperature when using 100Gb/s cables (OPN: MFA1A00-Cxxx for 100GbE).
- Reduced one hop for Unicast RX steering, steering pipes balancing.
- Non-volatile configuration of Port Type TLV more than 50 times might cause system hang.
- Enabled RoCE IPv4 Multicast. This prevents MCG command from failing when an IPv4 is mapped to an IPv6 address.
- If the PF driver or the tool (e.g. ethtool) use PAOS DOWN command (e.g. by ifconfig down or ip link set down), loopback traffic is blocked for all functions on this port (PF<->VFs / VF<->VF) In Multihost loopback, the traffic will be blocked once the firmware receives the PAOS down command from all PFs. However, the loopback traffic will not be blocked when the port is down due to the physical link (for example: cable plugged out, switch port down).
- Fixed a 25G and 50G link issue when Clause 91 RS FEC was active.
- Added a missing invalidation of eSwitch cache upon FLR which caused the upcoming driver load to either fail or not to be able to transmit.
- Fixed a UEFI IPv6 PXE boot failure on ConnectX-4 Lx 25GbE OCP card.
- Fixed an issue which prevented Vport counters from counting local loopback packets. Packets now are filter by the self-loopback prevention.
- Reported INTX as unsupported to allow PFs Passthrough on PowerKVM.
- SR-IOV Ethernet supports up to 18 VFs per port only.
- Fixed and incident what allowed local (internal) loopbacked packets to be counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport.
- Fixed an issue preventing driver loading or TX traffic sending upon reboot, after ungraceful driver unload.
- Fixed casting of BMC MAC before steering API.
- Fixed the PCI write flow to take into consideration the PCI MTU. This fix eliminates the need for NOPs in the flow, which resulted from PPC larger PCI MTU. The single queue limitation for READ is due to a hardware limitation of the number of READ request in a given time.
- Fixed a case that caused FlexBoot to not work as expected with systems that run with "large bar" enabled (Above 4G Decoding) over Connect-IB or ConnectX-4 HCAs.
- Fixed an issue which prevented link creation when connected to IXIA 25G.

## **Enhancements**

### **Firmware for the following devices are updated to 2.40.7000:**

779799-B21 (HP Ethernet 10G 2-port 546FLR-SFP+ Adapter)

779793-B21 (HP Ethernet 10G 2-port 546SFP+ Adapter)

### **New features and changes in version 2.40.7000:**

- Added Ethernet Link down counter.
- Enables steering packets to receive queues according to Ethertype matching
- Adds support for additional rate values.
- Counters that count the number of repeated Send WQE cache lookups that resulted in a miss.
- Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image.
- New performance and back-pressure counters command via PRM (For further information, please refer to the PRM)
- Support for Multicast/Unicast sniffer rules (For further information, please refer to the PRM)
- Support for VLAN in VLAN encapsulation (For further information, please refer to the PRM)
- CQ creation offload by software
- Support for rst2rts command
- Invalidates a TLV during the firmware boot stage
- A new counter for the diag\_rprt PRM command to count packet drops due to noreceive buffer
- Support for Ethernet TX lifetime cycle control (Head of Queue)
- A new register (PPLR) that allows egress and external loopback control (For further information, please refer to the PRM)
- A watchdog mechanism to track ingress traffic stalls to prevent flooding the network with Flow Control packets
- Inspur LED scheme: A new LED scheme controlled by the INI which causes constant traffic LED indication even without traffic.
- Added support for multiple RoCE modes (RoCE v1+v2) on the same port: RoCE mode is per connection now.
- Added a new QP command "INIT2RTS\_QP" to enhance QP connection readiness time.
- Disabled FCS checks to support switches that replace FCS with Timestamp.
- Added RX Port identification for direct rout packets.
- Improved RDMA WRITE/SEND performance with retransmissions.
- Enabled firmware burning/querying using the PRM ACCESS\_REG command.
- Added support for VAM. • Enabled bad cable EEPROM reporting to the driver.
- Added support for Platform Level Data Model (PLDM) sideband protocol.
- Added support for priority based AO-DMFS mode (For further information, please refer to the PRM).
- Added support for Unicast/Multicast loopback disablement by the driver. (For further information, please refer to the PRM)

- o Removed the source IP from the hash calculation (For further information, please refer to the PRM)
- o Added support for Inline Receive mode up to 2KB.
- o Added support for multiple RoCE modes (RoCE v1+v2) on the same port: RoCE mode is per connection now.
- o Added a new QP command "INIT2RTS\_QP" to enhance QP connection readiness time.
- o Disabled FCS checks to support switches that replace FCS with Timestamp.
- o Added RX Port identification for direct rout packets.
- o Improved RDMA WRITE/SEND performance with retransmissions.
- o Enabled firmware burning/querying using the PRM ACCESS\_REG command.
- o Added support for VAM. • Enabled bad cable EEPROM reporting to the driver.
- o Added support for Platform Level Data Model (PLDM) sideband protocol.
- o Added support for priority based AO-DMFS mode (For further information, please refer to the PRM).
- o Added support for Unicast/Multicast loopback disablement by the driver. (For further information, please refer to the PRM)
- o Removed the source IP from the hash calculation (For further information, please refer to the PRM)
- o Added support for Inline Receive mode up to 2KB.
- o Sideband moved to port 0
- o Added MCTP command support
- o Changed the HP LED scheme for the 779799-B21 adapter.

**Firmware for the following devices are updated to 14.18.2030:**

817749-B21 (HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter)

817753-B21 (HPE Ethernet 25Gb 2-port 640SFP28 Adapter)

- o Added logical link indication in SFP to BaseT modules and disabled logical link when peer port is down.
- o Added support for 10GbE in 25GbE SFP optical modules.
- o Enables mixlink tool to collect data on the PHY link status and provides link down reasons and additional link related information.
- o Enabled TX configuration response and movement during Link Training in Ethernet.
- o Added support at lane rate of 12.89Gb.
- o Limits the amount of time a packet may head a Traffic Class (TC) transmission queue, without being transmitted. Stale packets are discarded. Active by default for TCs adhering to link level flow control.
- o UAR page size currently is set to 4KB and not according to what the system page size determines.
- o Improved performance of:
  - Doorbell from User Access Region (UAR)
  - Clear interrupt from User Access Region (UAR)
- o Added support for additional transport counters.
- o Added ODP support for DC.
- o Enabled scatter-to-CQE for sent packets for DC.
- o Enabled moderation period modification in CQ modify command.
- o Added support for minimum/maximum rate limit per vport in SR-IOV.
- o Enabled network traffic between UEFI-Shell and OS.
- o Enabled the PF to force disable RoCE for its VFs.
- o Added 2 new access registers:
  - Management Capabilities Mask Register
  - Ports Capabilities Mask Register Fields
 For further information, please refer to the PRM.
- o Enabled VNIC the control to enable/disable its local loopback traffic.
- o Added the option to open a receive RDMA Flow Table and to forward RoCE traffic to some destination QP.
- o Added support for Multi-Host LID base routing. This feature requires a new OpenSM (v4.7.1 and above which comes with MLNX\_OFED 3.3-2.0.0.0) with the following attributes:
  - qos TRUE
  - lmc 2 (if there is no quad host in the fabric, you can set the lmc to 1)
  - virt\_enabled 2 Note: Multi-Host LID base routing can be configured by the INI only. The default is 0
- o Resilient RoCE is the ability to send RoCE traffic over a lossy network (a network without flow control enabled), without the need to enable flow control on the network. The ability is accomplished by enabling ECN on both the Switch and the Host.
- o Enables load balancing in the Multi PF Switch layer (MPFS) based on the L3/L4 headers
- o Increased the number of VFs from 64 to 95 per Physical Function (PF). Note: When increasing the number of VFs, the following limitations must be taken into consideration:  $server\_total\_bar\_size \geq (num\_pfs) * (2log\_pf\_uar\_bar\_size + 2log\_vf\_uar\_bar\_size * total\_vfs)$   $server\_total\_msix \geq (num\_pfs) * (num\_pf\_msix + num\_vfs\_msix * total\_vfs)$  Note: For the maximum number of VFs supported by your driver, please refer to your drivers' Release Notes or User Manual.
- o Added support for Port Flap Counter.
- o Limits the buffer size for all entries to improve performance. KSM is used when associating Key Length My Virtual Address (KLMs) with fixed memory size.
- o This entry (null\_mkey) is use to indicate non-present KLM/KSM entries. When accessing is, it causes the device to generate page fault event.

- o PLDM firmware burning is based on the DMTF spec DSP0267 (draft 9). The feature enables upgrading firmware and expansion ROM images using the PLDM protocol over MCTP (over PCIe). By doing so, a supporting BMC can query and upgrade the firmware without using OS based tools.
- o Added a new physical layer statistics counters group. The new group includes BER counters, FEC error correction, clear time, and additional physical layer counters. For further information, please refer to the Ethernet Adapters Programming Manual (PRM).
- o Enables the user to set a certain link up state for an unlimited period of time. This mode has 3 states:
  - Aux power (standby)
  - Reboot/boot/driver unloaded - the server is active and no driver is up
  - Driver is up - at least one driver is up (the time between init HCA and teardown or FLR)
- o Added support for Doorbell from User Access Region (UAR).
- o [Beta] Added support for maximum rate limit per function in SR-IOV.
- o Allows the user to configure the adapter card to stop sending pauses after x when the receive port is unavailable (in a hang state).
- o [Beta] Added support for new performance counters.
- o DCBX is used by DCB devices to exchange configuration information with directly connected peers. DCBX uses Link Layer Discovery Protocol (LLDP) to exchange parameters between two link peers. For further information, please refer to the PRM.
- o Allows network port registers to revert to their default values when the driver is restarted or the host is rebooted.
- o Added additional network link up modes. The new modes decide when to keep the network link up. The new modes are:
  - keep\_eth\_link\_up
  - keep\_ib\_link\_up
  - keep\_link\_up\_on\_boot
  - keep\_link\_up\_on\_standby
- o Added v1, v3, v6 tags to VPD read only tag
- o Enables software to scatter or strip FCS in RQ.
- o Keeps track of the creation of a packet. A time-stamping service supports assertions of proof that a datum existed before a particular time.
- o Applies pause functionality to specific classes of traffic on the Ethernet link
- o Custom port counters provide the user a clear indication about RDMA send/receive statistics and errors
- o The Link Layer Discovery Protocol (LLDP) is a vendor-neutral Link Layer protocol in the Internet Protocol Suite used by network devices for advertising their identity, capabilities, and neighbors on a IEEE 802 LAN. The protocol is formally defined in IEEE 802.1AB.
- o ConnectX-4 adapters now support 1Gb/s and 56GbE Ethernet connectivity in addition to 10GigE, 25GigE, 40GigE, 50GigE, and 100GigE.
- o Provides a clear indication of Flow Steering statistics and errors.
- o The minimal amount of packet headers inlined in the WQE's Eth Segment.
- o A flow table may include a table-miss flow entry, which renders all Match Fields wildcards. If a packet does not match a flow entry in a flow table, this is a table miss. The behavior on a table miss depends on the table configuration. A table-miss flow entry in the flow table may specify how to process unmatched packets.
- o Single Root IO Virtualization (SR-IOV) is a technology that allows a physical PCIe device to present itself multiple times through the PCIe bus.
- o Uses the HCA for offloading erasure coding calculations.
- o Enables the administrator to add a timestamp to the firmware they want to upgrade to avoid situations where one host tries to upgrade the firmware and another tries to downgrade; which may lead to two or more unnecessary server reboots. For further information, please refer to MFT User Manual.
- o The change includes the following:
  1. Changed port configuration which required link re-training (such as speed)
  2. PAOS down
  3. PAOS up
 This change, will cause the link to toggle and new configurations to take effect.
- o Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image. For further information, please refer to MFT User Manual.
- o Improved TX signal integrity for Electromagnetic Induction (EMI) compliance.
- o Optic modules thermal sensing - Enables the firmware to read and report the temperature of the module.
- o PLDM for module thermal sensing - Supports platform-level data models and platform functions in a platform management subsystem. PLDM is designed to be an effective interface and data model that provides efficient access to low-level platform inventory, monitoring, control, event, and data/parameters transfer functions.
- o Low power boot state - Enables u-boot to put non-boot CPUs into a low power status. To enable low power boot using iLO debugger use the following commands.
  - #12c b
  - #12c a 0x82
  - #12c w 0x03 0xfe
  - #12c w 0x01 0xfe
- o Port shutdown due to optic thermal event - Enables the firmware to close the power cage in case of high temperature in the module.
- o Reduced the port link-up time when negotiating according to Clause 73 (DME)
- o Large Receive Offload (LRO) • Large Send Offload (LSO)
- o Receive Side Scaling (RSS)
- o Global Pause • RoCEv1.0/RoCEv2.0

- Flow Steering
- Sniffer Ethernet
- Rate Limiter (at Beta level)
- Multi packet WQE
- Enhanced Transmission Selection standard (ETS)
- Explicit Congestion Notification (ECN)
- Priority Flow Control (PFC)
- CQE time stamping
- PCIe Function Level Reset (FLR)
- Power Management L2/L3 flow support
- Strided SRQ
- Self Loopback support
- Transport Domain support
- CQ2EQ remapping
- Added support for the following commands:
  - MODIFY/QUERY\_ESW\_VPORT\_CONTEXT
  - QUERY/MODIFY\_CONG\_STATUS
  - QUERY/MODIFY\_CkONG\_PARAMS
  - QUERY\_CONG\_STATISTICS
  - ADD/DELETE\_VXLAN\_UDP\_DPORT

### Supported Devices and Features

HP Part Number	InfiniBand Card Type	PSID
779793-B21	HP Ethernet 10Gb 2-port 546SFP+ Adapter	HP_1200111023
779799-B21	HP Ethernet 10Gb 2-port 546FLR-SFP+ Adapter	HP_2240110004
817749-B21	HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter	HP_2690110034
817753-B21	HPE Ethernet 25Gb 2-port 640SFP28 Adapter	HP_2420110034

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Online Firmware Upgrade Utility (ESXi 6.0) for HPE Mellanox VPI (Ethernet and Infiniband mode) ConnectX4 devices on VMware ESXi 6.0

Version: 1.0.1 **(Recommended)**

Filename: CP030284.compsig; CP030284.zip

### Important Note!

#### Known Issues:

- Bit error rate is not optimal on QDR links
- A low link speed issue occurs when connecting a ConnectX®-4 EDR adapter card with a QDR InfiniScale® IV based switch. The link is raised as DDR.
- To raise links with platforms based on the following ICs, comply with the following firmware version requirements:
  - Connect-IB® - 10.10.4000
  - Switch-IBTM - 11.200.120 (or MLNX-OS 3.4.3050)
  - ConnectX®-3 - 2.32.5100
  - SwitchX® - 9.2.7300 (or MLNX-OS 3.3.5006)
- Interoperability issue between ConnectX-4 or ConnectX-4 Lx adapter cards and ConnectX-2 adapter card when trying to raise a 10GbE link.
- If QDR is not enabled for the switch's InfiniBand Port Speed while connected to ConnectX-3/ConnectX-3Pro or Connect-IB® FDR adapters or to SwitchX® /SwitchX-2 FDR switches, links will rise at SDR or DDR (even if FDR is enabled)
 

**Workaround:** Enable QDR (in addition to FDR) when connecting to peer ports running at FDR
- Qualified EDR cables currently work with EDR networks (EDR devices, Switch®-IB and ConnectX®-4) only.
- PCIe capability "Device S/N" returns false value.
- When the link is Gen2, entering or exiting L1 state may cause bad CRC or DLLP indication.
- Configuration space power management capability PME\_EN cannot be set.
- During server reset (not a power-cycle), a non-maskable interrupt (NMI) might occur due to an Option Card Black Box (OCBB) issue causing PCIe access
- Subsystem class code is reported as IB instead of VPI.
- MultiHost InfiniBand: OpenSM is supported over host0 only and the MAD\_IFC usage is limited to host0 only.
 

**Workaround:** Activate OpenSM and the MFT tools via host0
- OCBB compliance with iLO versions: OCBB is not displayed in the latest iLO versions.

- o PF direct pass-through is not supported (since PF FLR is not supported).
- o Some Port Control Register do not return to the default value after the last port owner host restarts the driver.  
**Workaround:** Reboot or reset the driver.  
*reboot / mlxfwreset*
- o Older MFT versions (4.0.0 and 3.8.0) may indicate that the latest GA firmware is old or that it cannot be compared with the existing firmware. A message similar to the below will be displayed upon firmware upgrade stage:  
# flint -d <mst device> -i <image> burn  
Current FW version on flash: 12.1100.6630  
New FW version: 12.0012.0572  
Note: The new FW version is not newer than the current FW version on flash.  
Do you want to continue ? (y/n) [n] : y  
**Workaround:** Choose one of the options below to upgrade firmware:
  - Upgrade to the latest MFT version (4.1.0)
  - Type "y" after the note flint provides  
Run flint with the  
"-force" flag
- o Traffic that is loopbacked due to QP.force\_loopback being equaled to 1, is steered to the PF.
- o A minimum of 200 LFM is required in order to cool the MCX4411A-ACAN adapter card.
- o mlxfwreset does not function properly in old MFT versions after upgrading the firmware image.  
**Workaround:** Upgrade MFT to the latest release or use reboot/power cycle after upgrading firmware.
- o Windows Server 2016 Inbox driver cannot work with firmware v12.12.0780  
**Workaround:** Use WinOF-2 v1.20 out-of-box driver
- o Flashing the firmware requires server reboot.  
Firmware cannot be flashed twice without server reboot after first flashing  
**Workaround:** Reboot the server after firmware flashing
- o When arming SRQ for limit event, the device might issue an event with context\_index=0.
- o **[For customers developing custom low level drivers]**  
VFs internal FLR is not supported in PF teardown HCA command.  
**Workaround:** Before unloading the PF driver, PF driver must disable all its active VFs by performing the following:
  1. Run the disable\_hca command on all the function\_ids
  2. Wait until firmware returns all VFs allocated pages.
- o Function (PF/VF) TX port counters are not supported.
- o PF driver must work with pages event queue.
- o Privileged Vport egress traffic is not blocked when Vport is not active
- o Any local (internal) loopbacked packet is counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport
- o Vport number in virtual trap might be reported incorrectly
- o Some 10GbE cables are not SFF-8472 compliant. "SFP+ Cable Technology" bits are cleared.
- o In a Multihost setup, when running a single TCP stream, you might experience sub optimal throughput.  
**Workaround:** Use multiple streams to reach optimal results
- o end\_padding\_mode is required in CREATE\_QP and not in INIT\_2\_RTR command as defined in the PRM
- o LR4 cable events are sent although the port is up
- o QoS must be configured the same for both ports in order for RoCE LAG to function properly.
- o Modifying the encap\_id of FTE is not supported.
- o Flow Counter is supported only for FTE that does not include a flow\_tag or for FTE that have TIR as destination.
- o Using Flow Counters in the FDB Flow Table causes the transmitted IB traffic vport counters to not function properly.
- o When a steering rule in the e-sw FDB includes an encap action and an external port as destination, a transmitted multicast packet that matches the rule is sent to the wire and the loopback and the locally looped back packet will also have an encap header.
- o Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- o When e-switch FDB is not created, the VF functional loopback traffic is send to vport 0 (PF).
- o On some VLs, configuring the SM with a VL weight 0 and running traffic on it will cause the driver to hang during unload.
- o Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- o Updating a non-volatile configuration of port type TLV more than 50 times might cause system to hang.  
**Workaround:** Run mlxconfig reset after every 50 consecutive updates of port type TLV.
- o In order to raise 50GbE link when using firmware v.16. or newer, the following conditions must be met:
  - The minimum ConnectX-4 firmware version should be 12.16.
  - The minimum ConnectX-4 Lx firmware version should be 14.16.
  - The minimum MLNX-OS version should be 3.6.1000 (firmware v13.1100.0026)
- o Performing warm reboot during firmware image burning for VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe.  
**Workaround:** Cold reboot the device instead

- Pressing the Power Down button resets the server and does not initiate the Standby flow (as init 0 does). As a result, both ports are up due to keep\_link\_up, which opens the port when the firmware is loaded.  
**Workaround:** Use init 0 to start the Standby flow.
- In an InfiniBand Multihost and SR-IOV setups, traffic should contain GRH (GID index) if the grh\_required bit is set in the query\_hca\_vport\_context command. OpenSM should be configured as follow (opensm.conf):
  - irt\_enable should be 2
  - Enable Qos:
  - qos TRUE
 Note: In this case, traffic without GRH will be forwarded to vport0 ("Host0")
- Performing warm reboot during firmware image burning in VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe.  
**Workaround:** Power Cycle the server (cold reboot). Once a cold reboot is performed, the device will reboot with the previous image that was already burned.
- The firmware and the hardware do not reset the physical link upon CPortState=down.  
According to the IB Specification, MANAGEMENT STATE CHANGE COMMANDS: "CPortState... when phy\_link=up and CPortState=down, the state machine will transition to the LinkDown state which will reset other link state machines. Since phy\_link=up, this will be followed by a transition to the LinkInitialize state. Thus a command to change link port state to down provides a way to re-initialize the link layer."  
**Workaround:** In order to re-train the physical link, sendbug PortInfo.physical\_port\_state = POLLING is required.
- Local loopback traffic might effect vport counters.
- Stopping the Rate Limiter while traffic is being transmitted might cause the adapter card to hang.  
**Workaround:** Stop traffic before:
  - setting rate 0 to the last non-default-rate vport.
  - issuing destroy\_scheduling\_element command for the last vport with non-default-rate vport.
- Mapping an SL to VL 15 is currently not supported. Trying to do so, will cause a health buffer fatal internal error report.
- Running the modify\_scheduling\_context command does not include checking whether the scheduling element was created or not.  
**Workaround:** Do not modify non-existing elements
- Setting/modifying the max\_average\_bw rate for a function, or setting speeds over the maximum supported speed (as indicated in INI) may result in inaccurate rates, and in an assert.  
**Workaround:** Set the max\_avergae\_bw in scheduling\_context commands to equal or less than the supported wire speed.
- Although the ref counter design is to increment on every max\_average\_bw != 0 (limited), the eSwitch max\_average\_bw ref counter decrements in TEARDOWN\_HCA/ FLR VF regardless of the max\_average\_bw value set.  
**Workaround:** Verify all rates for all VFs are set to "0" before running TEARDOWN\_HCA/ FLR VF. This is applicable only if a rate is set for any VF.
- FDR link can raise with symbol errors on optic EDR cable longer than 30M.
- When running the modify\_scheduling\_context command, scheduling\_context.element\_type is taken into consideration with performing verifications, although the field is reserved.  
**Workaround:** Use the correct element\_type when issuing modify\_scheduling\_context command.
- When using a firmware based LLDP/DCBX software based, LLDP tools (such as lldptool in Linux) should be disabled.  
When intending to use software based LLDP, firmware LLDP must be disabled by using mlxconfig.  
Using both the LLDP software and the firmware based LLDP will result in an unexpected results.  
This applies to both Physical Functions (Bare Metal OS) and Virtual Functions.  
**Workaround:** Disable the LLDP software.
- PDDR access register reports incorrect FEC request in the Phy Info page.
- Host rate limiter values are statically configured and do not change when changing the port speed.
- If multiple processes in RX RDMA Flow Table are used, vport counters may be counted more than once.
- When the Max Rate Limiter is enabled and a Teardown/FLR is issued upon the last gvmi with max\_rate\_limiter enabled Teardown/FLR, the hardware remains enabled (rate\_limiter\_en = 1).  
\*\* "max rate limiter enabled" = at least 1 (per chip). create/modify\_scheduling\_elemnt command has been issued by the driver, with max\_average\_bw != 0.  
**Workaround:** Set a default rate (modify\_scheduling\_element.max\_average\_bw=0), or destroy all the scheduling elements on the chip prior to issuing a Teardown/FLR.
- The ipoib\_enhanced\_offloads indication in the HCA capabilities reports 0 while SRIOV\_EN=1.
- Occasionally, mapping 2 SLs to a single VL results in bad results in BW allocation for both SLs.
- When SR-IOV is enabled, some multicast traffic might be lost if another vport that a listening on the same multicast GID is down.
- The first duplicated MAC address in the MPFS is prioritized (instead of the last address) under the DUP\_MAC\_ACTION=LAST\_CFG configuration (default).
- Occasionally, when the link is up at a speed of 1GbE, data traffic will not go through.
- Querying Vport/eSwitch that are not set to FOLLOW using the max\_tx\_speed command, returns information as if the FOLLOW mode is enabled.
- Diagnostic counters are not reset when enabled with on\_demand mode.  
**Workaround:** Reset the firmware.
- Enabling the s-vlan strip on a vport for which the user configured an s-vlan match on its Flow Steering tables, results in the corruption of the steering on that specific vport.
- Moving IPoIB enhanced QP to ERR or RST state results in the corruption of the service\_type and pm\_state in the QPC.
- Attaching RoCE IPv4 QPs to MCG when the vport state is set to toggle (DOWN/UP), prevents the QPs that are listed on that MCG from receiving any traffic.
- Missing invalidation upon SetQ.pkey leads to bad Pkey checks.

**Workaround:** Set PortInfo.LID after setting Pkeys.

OpenSM flow will perform such flow (first will set the Pkeys, then the PortInfo.LID)

- When performing Pkey check for IPoB enhanced traffic, the Pkey membership bit is ignored.
- Occasionally, when moving UD QP from error state to RTS, the QP re-enters the error state.
- PXE booting in RedHat 7.3 is currently not supported.
- Performance issues occur when running min\_avg\_bw and max\_avg\_bw together.  
The issue starts when configuring high proportion for min\_avg\_bw between vports.  
For example: 1:40, 1:100: the vport with the low proportion will get high deviation.
- Changing SL2VL (QTCT commands in ETH or SL2VL mad in IB) during traffic may cause the chip to hang.

**Workaround:** Run SL2VL commands before running traffic.

- Subsystem class code is reported as IB instead of VPI.

## Fixes

### Fixes in FW version 12.18.2030:

- Fixed an issue which caused bi-directional traffic 10% BW degradation in Multihost.
- Increased the COE zipping aggressive mode timer to 9000.
- Moving IPoB enhanced QP to ERR or RST state results in the corruption of the service\_type and pm\_state in the QPC.
- Attaching RoCE IPv4 QPs to MCG when the vport state is set to toggle (DOWN/UP), prevents the QPs that are listed on that MCG from receiving any traffic.
- When arming SRQ for limit event, the device might issue an event with context\_index=0.
- Occasionally, when moving UD QP from error state to RTS, the QP re-enters the error state
- When performing Pkey check for IPoB enhanced traffic, the Pkey membership bit is ignored.
- Stopping the Rate Limiter while traffic is being transmitted might cause the adapter card to hang.
- Privileged Vport egress traffic is not blocked when Vport is not active
- PF direct pass-through is not supported in InfiniBand (since PF FLR is not supported)
- Missing invalidation upon SetQ.pkey leads to bad Pkey checks.
- Fixed an issue which caused the HCA mad response to contain the incoming packet Pkey and not the matched Pkey.
- Modified PCIe Tx configuration.
- Fixed an issue that prevented the software to set ECN parameters (min\_rate, max\_rate, rate\_to\_set\_on\_first\_cnp) to values >32768.
- Fixed an issue which caused the link speed to raise as DDR when connected with certain copper cables to devices supporting up to QDR speed.
- Fixed an issue which prevented physical counters from resetting. Now the physical counters are reset on first driver start.
- Fixed possible negotiation issues with 3rd parties.
- Fixed a rare issue which caused 56GbE link to raise with errors.
- Fixed an issue which caused scheduling\_context.element\_type to be taken into consideration with performing verifications, when running the modify\_scheduling\_context command, although the field is reserved.
- Fixed an issue which caused the eSwitch max\_average\_bw ref counter to decrement in TEARDOWN\_HCA/ FLR VF regardless of the max\_average\_bw value set, although the ref counter design was to increment on every max\_average\_bw != 0 (limited).
- On rare occasions during UEFI boot cycles system got stuck while WinPE is loaded. (OS WinPE, system DL160).
- Single FTE that catches both untagged and prio-tagged packets (by giving an FTE with match\_value.vlan\_tag = 0 and match\_value.vid = 0) is currently not supported.
- Flashing the firmware requires server reboot. Firmware cannot be flashed twice without server reboot after first flashing.
- If the vport state is DOWN and a packet is sent in local loopback, the sx\_sniffer tool will not function.
- Fixed an issue causing bubbles to appear as symbol errors when link raised FDR 1x.
- When Clause 74 Fire-Code FEC is active, and there are FC corrected errors, both the FC\_correctable counter and the FC\_uncorrectable counter are increment.
- Some Port Control Register do not return to the default value after the last port owner host restarts the driver.
- Fixed an issue which caused RX to hang when the UDP packet had a reserved UDP destination port.
- Fixed DMAC reporting mapping per host.
- Fixed an EEH error from PCI which caused firmware to hang.
- Fixed the default value of the PCIe target\_link\_speed to Gen3 in link control2.
- Fixed an issue which prevented LEDs from blinking when the traffic was less than 0.1% of the link speed.
- Fixed an issue which caused the mlxconfig configuration of VF\_LOG\_BAR\_SIZE to be ignored and to be set to 5 (32MB).
- Fixed an issues which occasionally caused the driver to hang during unload on some VLs when configuring the SM with a VL weight 0 and running traffic on it.
- A server getting into a Standby mode while Packet-Pacing is enabled might cause firmware to hang and driver call-trace.
- Fixed an issue which caused unexpected QoS functionality in case of multiple sources to single destination traffic transmission.
- Fixed an issue which occasionally caused the RX traffic to hang in DC when received a PCI error on WQE fetch.
- Fixed OOB connection issue during Intel's ITP inject errors test.
- Fixed an issue in IEEE Auto-Negotiation where 25G FireCode FEC and 25G Reed-Solomon FEC bits were reversed.
- Fixed an issue which caused RX to hang when a UDP packet with destination port of RoCE v2 arrived and the data matched the DC transport service.

- o Added protection from IOPX thermal diode destabilization to prevent UEFI IPv6 PXE boot failure on ConnectX-4 Lx 25GE OCP card.
- o Fixed an issue causing single port devices to query and write Physical Port TLVs to Port 2.
- o Enabled mlxfwreset to work using the PCIe Secondary Bus Reset.
- o Fixed an issue causing link flapping as a result, incorrect link settings.
- o Fixed an issue causing wrong alignment markers to be used when running 50G with Clause91 FEC enabled.
- o Reduced the default BAR size for VF (SR-IOV) from 5 (32 MB) to 1 (2MB).
- o Added legacy interrupts support in FlexBoot.
- o Modified the TX configuration to support EMI crossing margins in 16Ghz.
- o In some cases, a Bit Error Rate is not optimal on 10G/40G links.
- o Instability of Link Training Flow occurs during 100G Auto-Negotiation.
- o Fixed a rare issue which caused the command to hang when moved the QP to RESET and back to RTS.
- o Improved RDMA READ bandwidth under packet lost scenario.
- o Added support for pnat = 1 in HCA access\_reg command as required by the ibdiagnet tool.
- o Fixed the LLDP OCBB response: return value is now ascii.
- o Fixed a very rare NMI issue during PXE cycles.
- o Increased the steering hash tables static size from 128 to a maximum of 32K entries.
- o Prevented miscalculation of module temperature when using 100Gb/s cables (OPN: MFA1A00-Cxxx for 100GbE and MFA1A00-Exxx for IB EDR).
- o Fixed an issue which caused the device to hang when resetting qkey/pkey violation counter via port\_info mad.
- o Changed the MTU size in OCBB report. Now MTU size does not include the packet headers.
- o Reduced one hop for Unicast RX steering, steering pipes balancing.
- o Non-volatile configuration of Port Type TLV more than 50 times might cause system hang.
- o Fixed a 25G and 50G link issue when Clause 91 RS FEC was active.
- o Added a missing invalidation of SwitchX cache upon FLR which caused the upcoming driver load to either fail or not to be able to transmit.
- o Fixed an issue which prevented Vport counters from counting local loopback packets. Packets now are filter by the self-loopback prevent
- o Reported INTx as unsupported to allow PFs Passthrough on PowerKVM.
- o SR-IOV Ethernet supports up to 18 VFs per port only.
- o Fixed and incident what allowed local (internal) loopbacked packets to be counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport.
- o Fixed an issue preventing driver loading or TX traffic sending upon reboot, after ungraceful driver unload.
- o Fixed casting of BMC MAC before steering API.
- o Fixed the PCI write flow to take into consideration the PCI MTU. This fix eliminates the need for NOPs in the flow, which resulted from PPC larger PCI MTU. The single queue limitation for READ is due to a hardware limitation of the number of READ request in a given time.
- o Fixed a case that caused FlexBoot to not work as expected with systems that run with "large bar" enabled (Above 4G Decoding) over Connect-IB or ConnectX-4 HCAs.
- o Fixed PLDM support for single port NICs. Currently port's relevant sensors/states are reported only for a single port.

## **Enhancements**

### **Firmware Version 12.18.2030:**

825110-B21 (HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter)

825111-B21 (HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter)

### **New features and changes in version 12.18.2030:**

- o Added logical link indication in SFP to BaseT modules and disabled logical link when peer port is down.
- o Added support for 10GbE in 25GbE SFP optical modules.
- o Enables mixlink tool to collect data on the PHY link status and provides link down reasons and additional link related information.
- o Enabled TX configuration response and movement during Link Training in Ethernet.
- o Added support at lane rate of 12.89Gb.
- o Limits the amount of time a packet may head a Traffic Class (TC) transmission queue, without being transmitted. Stale packets are discarded. Active by default for TCs adhering to link level flow control.
- o UAR page size currently is set to 4KB and not according to what the system page size determines.
- o Improved performance of:
  - Doorbell from User Access Region (UAR)
  - Clear interrupt from User Access Region (UAR)
- o Added support for additional transport counters.
- o Added ODP support for DC.
- o Enabled scatter-to-CQE for sent packets for DC.
- o Enabled moderation period modification in CQ modify command.

- o Added support for minimum/maximum rate limit per vport in SR-IOV.
- o Enabled network traffic between UEFI-Shell and OS.
- o Enabled the PF to force disable RoCE for its VFs.
- o Added 2 new access registers:
  - Management Capabilities Mask Register
  - Ports Capabilities Mask Register Fields
 For further information, please refer to the PRM.
- o Enabled VNIC the control to enable/disable its local loopback traffic.
- o Added the option to open a receive RDMA Flow Table and to forward RoCE traffic to some destination QP.
- o Added support for Multi-Host LID base routing. This feature requires a new OpenSM (v4.7.1 and above which comes with MLNX\_OFED 3.3-2.0.0.0) with the following attributes:
  - qos TRUE
  - lmc 2 (if there is no quad host in the fabric, you can set the lmc to 1)
  - virt\_enabled 2 Note: Multi-Host LID base routing can be configured by the INI only. The default is 0
- o Resilient RoCE is the ability to send RoCE traffic over a lossy network (a network without flow control enabled), without the need to enable flow control on the network. The ability is accomplished by enabling ECN on both the Switch and the Host.
- o Enables load balancing in the Multi PF Switch layer (MPFS) based on the L3/L4 headers.
- o Enabled isolation between separate Hosts using the same HCA. All the Hosts can be rebooted, the driver can be stopped and the FLR signal can be sent independently.
- o Increased the number of VFs from 64 to 95 per Physical Function (PF). Note: When increasing the number of VFs, the following limitations must be taken into consideration:  $server\_total\_bar\_size \geq (num\_pfs) * (2log\_pf\_uar\_bar\_size + 2log\_vf\_uar\_bar\_size * total\_vfs)$   $server\_total\_msix \geq (num\_pfs) * (num\_pf\_msix + num\_vfs\_msix * total\_vfs)$  Note: For the maximum number of VFs supported by your driver, please refer to your drivers' Release Notes or User Manual.
- o [InfiniBand Only] Added support for multiple VLs in SR-IOV/multihost environments. Note: The number of VLs can be configured by the NVCONFIG. The default VL number is 4 VLs.
- o Added support for QP Rate Limit in InfiniBand.
- o Added support for Port Flap Counter.
- o Limits the buffer size for all entries to improve performance. KSM is used when associating Key Length My Virtual Address (KLMs) with fixed memory size.
- o This entry (null\_mkey) is use to indicate non-present KLM/KSM entries. When accessing is, it causes the device to generate page fault event.
- o PLDM firmware burning is based on the DMTF spec DSPO267 (draft 9). The feature enables upgrading firmware and expansion ROM images using the PLDM protocol over MCTP (over PCIe). By doing so, a supporting BMC can query and upgrade the firmware without using OS based tools.
- o Added a new physical layer statistics counters group. The new group includes BER counters, FEC error correction, clear time, and additional physical layer counters. For further information, please refer to the Ethernet Adapters Programming Manual (PRM).
- o Enables the user to set a certain link up state for an unlimited period of time. This mode has 3 states:
  - Aux power (standby)
  - Reboot/boot/driver unloaded - the server is active and no driver is up
  - Driver is up - at least one driver is up (the time between init HCA and teardown or FLR)
- o Added support for Doorbell from User Access Region (UAR).
- o [Beta] Added support for maximum rate limit per function in SR-IOV.
- o Allows the user to configure the adapter card to stop sending pauses after x when the receive port is unavailable (in a hang state).
- o [Beta] Added support for new performance counters.
- o DCBX is used by DCB devices to exchange configuration information with directly connected peers. DCBX uses Link Layer Discovery Protocol (LLDP) to exchange parameters between two link peers. For further information, please refer to the PRM.
- o Allows network port registers to revert to their default values when the driver is restarted or the host is rebooted.
- o Added additional network link up modes. The new modes decide when to keep the network link up. The new modes are:
  - keep\_eth\_link\_up
  - keep\_ib\_link\_up
  - keep\_link\_up\_on\_boot
  - keep\_link\_up\_on\_standby
- o [Beta] Explicit Congestion Notification (ECN) is an extension to the Internet Protocol and to the Transmission Control Protocol. ECN allows end-to-end notification of network congestion without dropping packets.
- o Increased the number of VFs from 32 to 64 per PF. Note: When increasing the number of VFs, the following limitations must be taken into consideration:  $server\_total\_bar\_size \geq (num\_pfs) * (2log\_pf\_uar\_bar\_size + 2log\_vf\_uar\_bar\_size * total\_vfs)$   $server\_total\_msix \geq (num\_pfs) * (num\_pf\_msix + num\_vfs\_msix * total\_vfs)$
- o [Beta] RoCE Link Aggregation provides failover and link aggregation capabilities. In this mode, only one IB port, that represents the two physical ports, is exposed to the application layer. For further information, please refer to the PRM.
- o Mellanox Accelerated Switching And Packet Processing (ASAP2 ) Direct technology allows to offload OVS by handling OVS data-plane in Mellanox ConnectX-4 / ConnectX-4 Lx NIC hardware (Mellanox Embedded Switch or eSwitch) while maintaining OVS control-plane unmodified. The current actions supported by ASAP2 Direct include packet parsing and matching, forward, drop along with VLAN push/pop or VXLAN encap/decap and HW based packet/byte flow statistics.
- o Virtual Extensible LAN (VXLAN) is a network virtualization technology that improves scalability problems associated with large cloud computing deployments.

It tunnels Ethernet frames within Ethernet + IP + UDP frames. Mellanox implements VXLAN encapsulation and decapsulation in the hardware.

- [Beta] DCBX is used by DCB devices to exchange configuration information with directly connected peers. DCBX uses Link Layer Discovery Protocol (LLDP) to exchange parameters between two link peers. For further information, please refer to the PRM.
- Enables the user to control whether or not to scatter Frame Check Sequence (FCS) or to check FCS functionality.
- [Beta] Send Queues (SQ/ Send queue of QP) may be individually rate limited, thus, allowing granular rate control over specific SW-defined flows. A rate-limited flow is allowed to transmit a few packets before its transmission rate is evaluated, and the next packet is scheduled for transmission accordingly.
- A new PHY test mode in which the device can generate different PRBS patterns for SerDes tuning purpose. For further information, please refer to PRM registers: PPAOS, PPTT, PPRT.
- Added support for MCTP host management over PCI
- Added support for OCBB/OCSD memory pointers restoration after mlxfwreset
- Added support for MCTP media migration between SMBUS and PCI
- Added v1, v3, v6 tags to VPD read only tag.
- Added IPoIB checksum and LSO offload support.
- Enables software to scatter or strip FCS in RQ.
- Keeps track of the creation of a packet. A time-stamping service supports assertions of proof that a datum existed before a particular time.
- Applies pause functionality to specific classes of traffic on the Ethernet link.
- Custom port counters provide the user a clear indication about RDMA send/receive statistics and errors.
- The Link Layer Discovery Protocol (LLDP) is a vendor-neutral Link Layer protocol in the Internet Protocol Suite used by network devices for advertising their identity, capabilities, and neighbors on a IEEE 802 LAN. The protocol is formally defined in IEEE 802.1AB.
- ConnectX-4 adapters now support 1Gb/s and 56GbE Ethernet connectivity in addition to 10GigE, 25GigE, 40GigE, 50GigE, and 100GigE
- Provides a clear indication of Flow Steering statistics and errors.
- The minimal amount of packet headers inlined in the WQE's Eth Segment.
- A flow table may include a table-miss flow entry, which renders all Match Fields wildcards. If a packet does not match a flow entry in a flow table, this is a table miss. The behavior on a table miss depends on the table configuration. A table-miss flow entry in the flow table may specify how to process unmatched packets.
- Enables connecting multiple compute or storage hosts into a single interconnect adapter by separating the adapter PCIe interface into multiple and independent PCIe interfaces.
- Single Root IO Virtualization (SR-IOV) is a technology that allows a physical PCIe device to present itself multiple times through the PCIe bus.
- Uses the HCA for offloading erasure coding calculations.
- Enables the administrator to add a timestamp to the firmware they want to upgrade to avoid situations where one host tries to upgrade the firmware and another tries to downgrade; which may lead to two or more unnecessary server reboots. For further information, please refer to MFT User Manual.
- The change includes the following:
  1. Changed port configuration which required link re-training (such as speed)
  2. PAOS down
  3. PAOS up This change, will cause the link to toggle and new configurations to take effect.  
This change, will cause the link to toggle and new configurations to take effect
- Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image. For further information, please refer to MFT User Manual
- Improved TX signal integrity for Electromagnetic Induction (EMI) compliance. Rev. 12
- Large Receive Offload (LRO)
- Large Send Offload (LSO)
- Receive Side Scaling (RSS)
- Global Pause
- RoCEv1.0/RoCEv2.0
- Flow Steering
- Sniffer Ethernet
- Rate Limiter (at Beta level)
- Multi packet WQE
- Minimal Bandwidth Guarantee (ETS)
- Explicit Congestion Notification (ECN)
- Priority Flow Control (PFC)
- PCIe Function Level Reset (FLR)
- Power Management L2/L3 flow support
- Self Loopback support
- Transport Domain support
- CQ2EQ remapping
- Added support for the following commands:
  - MODIFY/QUERY\_ESW\_VPORT\_CONTEXT
  - QUERY/MODIFY\_CONG\_STATUS
  - QUERY/MODIFY\_CONG\_PARAMS

- QUERY\_CONG\_STATISTICS
- ADD/DELETE\_VXLAN\_UDP\_DPORT
- VXLAN/NVGRE Stateless offload In this release, this feature is supported through Windows ONLY
- SR-IOV EN (at Beta level)
- CQE zipping
- Dynamically Connected (DC) transport
- Wake-on-Lane/Standby
- FlexBoot/UEFI support
- Optic modules thermal sensing support
- PLDM commands support
- Improved robustness during negotiation of Clause 73 (DME)
- Non-Volatile Configuration (NVConfig). For the complete list, lease
- Enabled port management. Now one port can be set as Ethernet and one as InfiniBand.

## Supported Devices and Features

### Supported Devices:

HP Part Number	Device Name	PSID
825110-B21	HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter	HP_2180110032
825111-B21	HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter	HP_2190110032

Online Firmware Upgrade Utility (ESXi 6.0) for HPE Mellanox VPI (Ethernet and Infiniband mode) devices on VMware ESXi 6.0

Version: 1.0.5 **(Recommended)**

Filename: CP030127.compsig; CP030127.zip

### Important Note!

#### Known Issues 2.40.5030 and 2.40.5072:

- 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 cards 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:** 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.
- 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.  
**Workaround:** Enable SR-IOV in the BIOS.
- 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.  
**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, Release the following message is displayed due to the mlxconfig tool:  
DMFS steering mode with IB in Linux You are trying to override configurable FW by non-configurable FW. If you continue, old FW con-figurations will be cleared, do youwant 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.

**Workaround:** Upgrade to MLNX\_OFED-2.1-x.x.x. or later.

- o VPD read-only fields are writable.

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

- o When working in 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 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 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:**

- Unplug the cable from the switch
- Restart driver
- Change the protocol via the appropriate tools.

- o 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 Cisco bi-directional transceiver is not supported in the following HCAs: 764284-B21.

#### Known Issues 2.40.5072:

- o Ambient sensor does not report via PLDM in GEN10 connectX3.

#### Fixes

#### Fixes in 2.40.5030 and 2.40.5072:

- o Fixed a race between the firmware and the hardware during driver start which blocked outbound completions.
- o Fixed an issue which caused the firmware not to send `link_down` event to the driver when running the `close_port` command.
- o Fixed an issue where in rare cases the Auto Sense failed to detect the right protocol.
- o Fixed signal integrity issue when connecting a WCS ConnectX4 mezz card to Pikes peak FPGA.
- o Added the option to transmit corrupted DME pages for a very short period of time at the beginning of the Auto-Negotiation flow.
- o Fixed an incorrect report of the `PortRcvDataVLExtended/PortXmitDataVLExtended` counters by the firmware.
- o Fixed a rare issue which caused firmware's packet injector to cut off packets when the TX was congested.
- o Fixed an issue that caused the response to TX requests to take up to 10 milliseconds in IEEE clause 72 Link Training.
- o Fixed a race between 2 iriscs which caused a QP to get stuck in burst control limit state.
- o When a QP was in error state, the firmware generated too many err CQEs at once, thus causing the `cmdif` responsiveness to be too slow. To prevent the above, the number of err CQEs was limited to 16 at a time.
- o Fixed an issue that caused the MAC address that was set from the OS using `ifconfig` to be not reflected in the OCBB buffer.
- o Fixed an issue where the `ibdump` got broken when running with loopback traffic.
- o Fixed an issue where the firmware took QP to firmware ownership and then released it to the hardware ownership without checking if another firmware flow owns the same QP.
- o Fixed an issue which occurred after disconnecting cable which showed the link type as IB even if the link type of the port is ETH.
- o Fixed an issue related to the HCA `PoerXmitWait` counter on port 2 (connected to port 2 on Switch-IB) where it started counting and reached `0xFF`'s regardless of connection to switch.
- o Fixed a completion error issue when ECN was enabled. The ECN usage caused ordering errors in completion queues (CQ).
- o Fixed the length calculation of UDP. The incorrect UDP length in the CNP packet caused miss-calculation of the ICRC.
- o Fixed a wrong returned status in cable info MAD when the cable was not connected.
- o Fixed failure instances when initiating FLR in the Physical Function.
- o Disabled High Rate Steering mode in the INI to enable its compatibility with NC-SI over VLAN.
- o Fixed performance issues causing slow performance when running in NO-DRAM-NIC mode.
- o Fixed a default hardware configuration issue which caused RDP over IPv4 traffic to be dropped.
- o Prevented a Virtual Function from injecting pause frames into the network.
- o MLNX\_OEM command `GET_TEMP` returned a wrong value in the `max_temp` field.

- Fixed an issue which caused TX traffic to stop when the message MTU size was larger than QP.mtu.
- o Fixed an issue which caused NVCONFIG to fail when the number of sector was set to 1 and the sector was zeroed.
  - o Fixed a race in handling a duplicated "read request from middle".
  - o Fixed an issue which caused lack of IB traffic on SR-IOV VPI.
  - o Fixed an issue which caused NVRAM to get stuck when it filled non-valid information in TLV.
  - o Fixed an issue which caused an internal firmware error when APM changed the QPs port mapping.
  - o Fixed an issue which caused a firmware internal error when handling QP alternative context.
  - o Fixed an issue which caused packet transmission to get stuck when the software tried to send pause frames with dmac equal to one of the device's MAC addresses.
  - o Fixed a mistakenly dropped ETH packet with ethertype 0x600 by the NIC.
  - o Fixed a case preventing broadcast traffic from arriving to their destination after detaching high priority broadcast rule on a port where NC-SI was enabled.
  - o Fixed a failure to update RSS QP in steering rules.
  - o Fixed an issue where the port raised as SDR vs. InfiniScale IV QDR Switch.
  - o Fixed a rare case of completion Error with Bad Opcode sequence status which occurred when retransmitting read requests.
  - o Fixed a case where the actual bandwidth did not match the user settings in VM QoS.
  - o Fixed a case where on rare cases, communication to BMC was lost during driver initialization.
  - o Fixed an issue with cable reading, which caused the link not to raise.
  - o Set the maximum EQN number to 1024.
  - o Fixed a rare issue with VPD init flow which caused read failures.
  - o Fixed an issue with RX size counter not being reported.
  - o The first Read response was not treated as implicit ACK.
  - o Reduced a long 40GbE link up time with Cisco Nexus3064 and Arista-7050S.
  - o Fixed promiscuous mode compatibility with AO-DMFS steering.
  - o Fixed promiscuous mode compatibility when NC-SI is enabled and configured.
  - o Fixed sending/receiving OEM temp commands (set/get) with channel ID 0x1f failure.
  - o Fixed an issue which caused packets to drop on a port when changing the interface state of the other port.
  - o Fixed long management communication loss and SOL hang during reboot cycles.
  - o Fixed wrong processing of inbound traffic towards BMC which caused communication loss.
  - o Fixed management link loss upon closing port interface through the driver.
  - o Fixed a false indication in firmware of an expander presence causing delay in EEPROM reading.
  - o Fixed an issue which caused a link down on a port when the cable was removed from the other port.
  - o Fixed a rare case where packet with length zero got stuck in hardware queues.
  - o Fixed an issue which caused InfiniBand congestion control packet (CNP) to hang in hardware.
  - o Fixed an issue which caused AEN to be sent after channel reset.
  - o Fixed an issue which prevented the restoring of QoS setting to its default consequently causing bandwidth degradation.
  - o Fixed an occasional long link up time with 10GbE based devices.
  - o Fixed an issue preventing cable readings from i2c slave address 0x51.
  - o Fixed a possible deadlock in PM turnoff request transmission and ack acceptance flow.
  - o Fixed a rare case with alignments state machines which caused occasional width degradation.
  - o Fixed an issue where the transmit queues hanged while congestion control was enabled and operational (EQC/QCN).
  - o Fixed an unexpected work completion syndrome with vendor syndrome 0x77 received when running RDMA SEN/WRITE traffic with retransmissions.
  - o Fixed an issue which caused SetPortInfo to return a good status when receiving invalid LinkSpeedEnabled value.
  - o Fixed an issue which caused dual port SFPP module cards to be automatically mapped with expander. Fixed an issue where firmware overrides the steering mode that was chosen by the driver.
  - o Fixed invalid return sensing results occurred when the link was up.
  - o Fixed an issue causing the sensing result to be delayed when cable was unplugged.
  - o Fixed an issue causing the link type to be displayed as ETH when set to AUTO.
  - o Fixed 2us glitch in Wake Up signal.
  - o Fixed performance degradation when running IBDump.
  - o Occasionally, a link training timeout occurred in EQ phase0 during disable/enable test.
  - o Improved strict bandwidth mode functionality.
  - o Fixed an issue with the PortRcvPkts counter always displaying zero value.
  - o Fixed an issue with processing GMP MADs with SET method in SecureHost mode.
  - o Fixed an issue causing a wrong usage of MCG size when configuring Global Multicast filter.
  - o Disabling the first port occasionally causes second port TX failure.
  - o Fixed a mismatch in links status reported. The adapter reports links as down while the switch perceives them as up.
  - o Fixed an occasional 40GbE link failure with SCM5 Switch blade.
  - o Fixed a wrong FDR10 speed reporting in MAD.
  - o Fixed an issue preventing theports to to rise up when set to FDR10 vs QDR.
  - o Fixed an occasional link failure vs Arista switch.

- Retransmission started from the first PSN of message instead of the last acknowledged PSN.
- Firmware hangs when receiving GeneralInfoMad during inline firmware burning.
- L1 flow adjustments and threshold tuning.
- Fixed a rare hanging issue during PERST\_ assertion.
- Wrong coefficients were reported during phase3.
- Fixed an issue causing wrong behavior due to reset timing.
- Fixed lack of steering options.
- Fixed long timeout issues.
- Fixed NVRAM write issues in driver-less mode.
- Fixed 40GbE link support in aux mode.
- Dropped commands with non-existing channel ID.
- Fixed issues in extended speed reporting.
- Fixed bad QP reporting in trap 257/8.
- Fixed an issue causing false bad q\_key error messages.
- Fixed Pause Frame opcode mismatch.
- Fixed communication loss upon PCIe error detection.
- Fixed wrong channel value in the SELECT/ DESELECT PACKAGE commands.
- Fixed an issue caused response packet to include 4 extra bytes.
- Fixed wrong reason code value returned when using Set Link command with unsupported speed.
- Added protection from bad MAC address given by BMC. Removed false TX pulse after PERST\_ deassertion.
- Fixed FLR capability bit inconsistency when SR-IOV is enabled.
- Fixed an issue with the device not reporting PCIe related errors.
- When a link is configured to DDR in a setup of ConnectX-3 to SX6036, SDR link is established instead.
- VXLAN used the wrong default UDP port. The UDP port number was changed to 4789.
- Fixed wrong setting of the UDP destination port for VXLAN.
- Fixed an internal error caused when moving to the DMS mode with IPMI/NC-SI enabled.
- In a back-to-back setup of FDR cards connected with a 0.5m FDR cable, a link may be established as FDR10 instead of FDR.
- Fixed issues related to working with PCI legacy interrupts.
- Wrong checksum calculation for short packets which are padded by the software.
- Reading PCIe configuration space after using the MFT flint tool caused the device to crash.
- Fixed occasional packet loss over IPMI.
- Fixed wrong values reported in the Eye opening MAD.
- Fixed occasional link width degrades during link negotiation and link transitions from L1 state.
- Fixed adjust signal detect thresholds.
- PortExtendedSpeedsCounters MAD counters were mistakenly increased while LLR was active.
- Lane reversal was not considered when configured TX parameters.
- Fixed ROL factory MAC usage when a Flex- Boot address was given.
- Fixed Pause frames factory MAC usage when FlexBoot address was given.
- The device did not differ between WOL/ROL packets.
- Fixed a set of extended fields in PortInfo MAD which did not function.
- Adjusted LLR cell size according to the MLPN negotiation of ib\_128b\_llr.
- The max speed restriction was active in full power mode instead of standby mode only.
- The InfiniBand Path migration did not work with GRH. <http://webdev01:8080/commit/ConnectX.git/a9c37ee4c31038f2c1179d4d9e79c9337e0ab5c7>
- Reading MGM after writing it returned wrong members count.
- Fixed corruption of the RSS hash key given by the driver.
- Fixed QoS rate limit BW offset.
- Fixed FDR10 speed\_en reporting.
- Fixed long management link com loss.
- The command results reported both link types active at the same time. Fixed collision between forcing phy type and port sensing. Fixed a wrong core clock freq reporting in QUERY\_HCA command.
- Fixed occasional link failure when 56GbE is enabled.
- Fixed max eye margins to be per protocol.
- perfquery reported wrong error symbol on ConnectX©-3 VPI mode: IB, ETH.
- On ConnectX-3Pro dual-port QDR and FDR/FDR10 switch setups, symbol errors may occur with MC2207312-030 AOCs.
- Symbol errors occur on ConnectX-3Pro dualport QDR connected to FDR switches with MC2207126-004 copper cables.
- Driver restart required when switching from InfiniBand FDR link with LLR enabled to InfiniBand link w/o LLR (for example: between SwitchX® and GD4036).
- On rare occasions, the adapter card may fail to link up when performing parallel detect to 40GbE.
- Automatic Path Migration (APM) did not update the new MGIDs from the Alternate Path.

## Enhancements

### Firmware for the following devices are updated to 2.40.5030:

644161-B21  
644160-B21  
649282-B21  
649281-B21  
649283-B21  
764282-B21  
764286-B21

### Firmware for the following devices are updated to 2.40.5072

764283-B21  
764284-B21  
764285-B21

### New features in firmware version 2.40.5030:

- Added temperature thresholds high/low default for MAD sensing and NCSI/IPMI OEM commands.
- Added a new field to "set port" command which notifies the firmware what is the user\_mtu size.
- Added a protection mechanism which ensures the firmware drops packets which are received in internal QPs and disables the WQE producer fetching.
- Added Ethernet Link down counter.
- Enables steering packets to receive queues according to Ethertype
- Adds support for additional rate values.
- Counters that count the number of repeated Send WQE cache lookups that resulted in a miss.
- Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image.
- New performance and back-pressure counters command via PRM (For further information, please refer to the PRM)
- Support for Multicast/Unicast sniffer rules (For further information, please refer to the PRM)
- Support for VLAN in VLAN encapsulation (For further information, please refer to the PRM)
- CQ creation offload by software
- Support for rst2rts command
- Invalidates a TLV during the firmware boot stage
- A new counter for the diag\_rprt PRM command to count packet drops due to no-receive buffer
- Support for Ethernet TX lifetime cycle control (Head of Queue)
- A new register (PPLR) that allows egress and external loopback control (For further information, please refer to the PRM)
- A watchdog mechanism to track ingress traffic stalls to prevent flooding the network with Flow Control packets
- A new LED scheme controlled by the INI which causes constant traffic LED indication even without traffic.
- Added support for multiple RoCE modes (RoCE v1+v2) on the same port: RoCE mode is per connection now.
- Added a new QP command "INIT2RTS\_QP" to enhance QP connection readiness time.
- Disabled FCS checks to support switches that replace FCS with Timestamp.
- Added RX Port identification for direct rout packets.
- Improved RDMA WRITE/SEND performance with retransmissions.
- Enabled firmware burning/querying using the PRM ACCESS\_REG command.
- Added support for VAM.
- Enabled bad cable EEPROM reporting to the driver.
- Added support for Platform Level Data Model (PLDM) sideband protocol.
- Added support for priority based AO-DMFS mode (For further information, please refer to the PRM).
- Added support for Unicast/Multicast loopback disablement by the driver. (For further information, please refer to the PRM)
- Removed the source IP from the hash calculation (For further information, please refer to the PRM)
- Added support for Inline Receive mode up to 2KB.

## Supported Devices and Features

### Supported Devices:

HP Part Number	Device Name	PSID
644161-B21	HP InfiniBand FDR/EN 10/40Gb Dual Port 544M Adapter	HP_0240230019

644160-B21	HP InfiniBand QDR/EN 10Gb Dual Port 544M Adapter	HP_0250230018
649281-B21	HP InfiniBand FDR/EN 10/40Gb Dual Port 544QSFP Adapter	HP_0280210019
649282-B21	HP InfiniBand FDR/EN 10/40Gb Dual Port 544FLR-QSFP Adapter	HP_0230240019 HP_0230220019
649283-B21	HP InfiniBand QDR/EN 10Gb Dual Port 544FLR-QSFP Adapter	HP_0230240009 HP_0230220009
764282-B21	HP InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter	HP_1350110023
764283-B21	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter	HP_1360110017
764284-B21	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	HP_1370110017
764285-B21	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter	HP_1380110017
764286-B21	HP InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter	HP_1390110023

Online Firmware Upgrade Utility (ESXi 6.5) for HPE Mellanox Ethernet only adapters

Version: 1.0.0 (A) **(Recommended)**

Filename: CP032807.compsig; CP032807.zip

### **Important Note!**

#### **Known Issues for FW version 2.40.7000**

- 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.
- 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.  
**Workaround:** Production SL230 should be used for PCIe Gen3 operation.
- 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.  
**Workaround:** Enable SR-IOV in the BIOS
- 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.  
**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.  
**Workaround:** Upgrade to MLNX-\_OFED-2.1-x.x.x or later.
- VPD read-only fields are writable.  
**Workaround:** Do not write to readonly fields if you wish to preserve them.
- 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.  
**Workaround:** Use the physical function device ID to identify the device.
- 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.  
**Workaround:**
  1. Unplug the cable from the switch
  2. Restart driver
  3. Change the protocol via the appropriate tools.
- 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.
- AHS reports wrong MTU size.

#### Known Issues for FW version 14.18.2030:

- To raise links with platforms based on the following ICs, comply with the following firmware version requirements:
  - ConnectX®-3 - 2.32.5100
  - SwitchX® - 9.2.7300 (or MLNX-OS 3.3.5006)
- Interoperability issue between ConnectX-4 or ConnectX-4 Lx adapter cards and ConnectX-2 adapter card when trying to raise a 10GbE link.
- PCIe capability "Device S/N" returns false value.
- When the link is Gen2, entering or exiting L1 state may cause bad CRC or DLLP indication.
- Configuration space power management capability PME\_EN cannot be set.
- During server reset (not a power-cycle), a non-maskable interrupt (NMI) might occur due to an Option Card Black Box (OCBB) issue causing PCIe access.
- PF direct pass-through is not supported (since PF FLR is not supported)
- Some Port Control Register do not return to the default value after the last portowner host restarts the driver.  
**Workaround:** Reboot or reset the driver.
- Older MFT versions (4.0.0 and 3.8.0) may indicate that the latest GA firmware is old or that it cannot be compared with the existing firmware.  
A message similar to the below will be displayed upon firmware upgrade stage:  
# flint -d <mst device> -i <image> burn  
Current FW version on flash: 12.1100.6630  
New FW version:  
12.0012.0572  
Note: The new FW version is not newer than the current FW version on flash.  
Do you want to continue ? (y/n) [n] : y  
**Workaround:** Choose one of the options below to upgrade firmware:
  - Upgrade to the latest MFT version (4.1.0)
  - Type "y" after the note flint provides Run flint with the "-force" flag
- Traffic that is loopbacked due to `QP.force_loopback` being equaled to 1, is steered to the PF.
- A minimum of 200 LFM is required in order to cool the MCX4411A-ACAN adapter card.
- `mlxfwreset` does not function properly in old MFT versions after upgrading the firmware image  
**Workaround:** Upgrade MFT to the latest release or use reboot/power cycle after upgrading firmware.
- Windows Server 2016 Inbox driver cannot work with firmware v14.12.0780  
**Workaround:** Use WinOF-2 v1.20 out-of-box driver.
- Flashing the firmware requires server reboot. Firmware cannot be flashed twice without server reboot after first flashing  
**Workaround:** Reboot the server after firmware flashing.
- When arming SRQ for limit event, the device might issue an event with `context_index=0`.
- The value of `log_max_ra_res_qp` in `set_hca_cap` command should be the same in all functions.
- Function (PF/VF) TX port counters are not supported.
- PF driver must work with pages event queue.
- SR-IOV Ethernet supports up to 18 VFs per port only.
- Privileged Vport egress traffic is not blocked when Vport is not active
- Any local (internal) loopbacked packet is counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport.
- Vport number in virtual trap might be reported incorrectly
- Single FTE that catches both untagged and prio-tagged packets (by giving an FTE with `match_value.vlan_tag = 0` and `match_value.vid = 0`) is currently not

supported.

- Configuring the SM with VL weight 0 on some VL, and running traffic on it, causes the driver to hang during unload.
- OCBB is not displayed in the latest iLO versions.
- Some 10GbE cables are not SFF-8472 compliant. "SFP+ Cable Technology" bits are cleared.
- When Clause 74 Fire-Code FEC is active, and there are FC corrected errors, both the FC\_correctable counter and the FC\_uncorrectable counter are incremented.
- Windows NMI may occur upon reboot cycle as a result of OCBB memory access transactions.
- end\_padding\_mode is required in CREATE\_QP and not in INIT\_2\_RTR command as defined in the PRM
- LR4 cable events are sent although the port is up.
- On rare occasions during UEFI boot cycles system got stuck while winPE is loaded. (OS WinPE, system DL160). **Workaround:** Power cycle revives the system.
- QoS must be configured the same for both ports in order for RoCE LAG to function properly.
- Modifying the encap\_id of FTE is not supported.
- Flow Counter is supported only for FTE that does not include a flow\_tag or for FTE that have TIR as destination.
- Using Flow Counters in the FDB Flow Table causes the transmitted IB traffic vport counters to not function properly.
- When a steering rule in the e-sw FDB includes an encap action and an external port as destination, a transmitted multicast packet that matches the rule is sent to the wire and the loopback and the locally looped back packet will also have an encap header.
- Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- When e-switch FDB is not created, the VF functional loopback traffic is sent to vport 0 (PF).
- Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- Updating a non-volatile configuration of port type TLV more than 50 times might cause system to hang. **Workaround:** Run mlxconfig reset after every 50 consecutive updates of port type TLV.
- In order to raise 50GbE link when using ConnectX-4 Lx firmware v14.16.1006 or newer, the following conditions must be met:
  - The minimum ConnectX-4 firmware version should be 12.16.1006
  - The minimum ConnectX-4 Lx firmware version should be 14.16.1006
  - The minimum MLNX-OS version should be 3.6.1000 (firmware v13.1100.0026)
- Performing warm reboot during firmware image burning for VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe. **Workaround:** Cold reboot the device instead
- Pressing the Power Down button resets the server and does not initiate the Standby flow (as init 0 does). As a result, both ports are up due to keep\_link\_up, which opens the port when the firmware is loaded. **Workaround:** Use init 0 to start the Standby flow.
- In an InfiniBand Multihost and SR-IOV setups, traffic should contain GRH (GID index) if the grh\_required bit is set in the query\_hca\_vport\_context command. OpenSM should be configured as follow (opensm.conf):
  - virt\_enable should be 2
  - Enable Qos:
  - qos TRUENote: In this case, traffic without GRH will be forwarded to vport0 ("Host0")
- Performing warm reboot during firmware image burning in VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe. **Workaround:** Power Cycle the server (cold reboot). Once a cold reboot is performed, the device will reboot with the previous image that was already burned.
- The firmware and the hardware do not reset the physical link upon CPortState=down. According to the IB Specification, MANAGEMENT STATE CHANGE COMMANDS: "CPortState... when phy\_link=up and CPortState=down, the state machine will transition to the LinkDown state which will reset other link state machines. Since phy\_link=up, this will be followed by a transition to the LinkInitialize state. Thus a command to change link port state to down provides a way to re-initialize the link layer..." **Workaround:** In order to re-train the physical link, sendbug PortInfo.physical\_port\_state = POLLING is required.
- Local loopback traffic might affect vport counters.
- Stopping the Rate Limiter while traffic is being transmitted might cause the adapter card to hang. **Workaround:** Stop traffic before:
  - setting rate 0 to the last non-default-rate vport.
  - issuing destroy\_scheduling\_element command for the last vport with non-default-rate vport.
- Mapping an SL to VL 15 is currently not supported. Trying to do so, will cause a health buffer fatal internal error report.
- Running the modify\_scheduling\_context command does not include checking whether the scheduling element was created or not. **Workaround:** Do not modify non-existing elements.
- Setting/modifying the max\_average\_bw rate for a function, or setting speeds over the maximum supported speed (as indicated in INI) may result in inaccurate rates, and in an assert. **Workaround:** Set the max\_average\_bw in scheduling\_context commands to equal or less than the supported wire speed.
- Although the ref counter design is to increment on every max\_average\_bw != 0 (limited), the eSwitch max\_average\_bw ref counter decrements in TEARDOWN\_HCA/ FLR VF regardless of the max\_average\_bw value set. **Workaround:** Verify all rates for all VFs are set to '0' before running TEARDOWN\_HCA/ FLR VF. This is applicable only if a rate is set for any VF.
- FDR link can raise with symbol errors on optic EDR cable longer than 30M.
- When running the modify\_scheduling\_context command, scheduling\_context.element\_type is taken into consideration with performing verifications, although the field is reserved. **Workaround:** Use the correct element\_type when issuing modify\_scheduling\_context command.

## Fixes

### Fixes in 2.40.7000:

- Fixed a race between the firmware and the hardware during driver start which blocked outbound completions.
- Fixed an issue which caused the firmware not to send link\_down event to the driver when running the close\_port command.
- Fixed an issue where in rare cases the Auto Sense failed to detect the right protocol.
- Fixed signal integrity issue when connecting a WCS ConnectX4 mezz card to Pikes peak FPGA.
- Added the option to transmit corrupted DME pages for a very short period of time at the beginning of the Auto-Negotiation flow.
- Fixed an incorrect report of the PortRcvDataVLExtended / PortXmitDataVLExtended counters by the firmware.
- Fixed a rare issue which caused firmware's packet injector to cut off packets when the TX was congested.
- Fixed an issue that caused the response to TX requests to take up to 10 milli-seconds in IEEE clause 72 Link Training.
- Fixed a race between 2 iriscs which caused a QP to get stuck in burst control limit state.
- When a QP was in error state, the firmware generated too many err CQEs at once, thus causing the cmdif responsiveness to be too slow. To prevent the above, the number of err CQEs was limited to 16 at a time.
- Fixed an issue that caused the MAC address that was set from the OS using ifconfig to be not reflected in the OCBB buffer.
- Fixed an issue where the ibdump got broken when running with loopback traffic.
- Fixed an issue where the firmware took QP to firmware ownership and then released it to the hardware ownership without checking if another firmware flow owns the same QP.
- Fixed an issue which occurred after disconnecting cable which showed the link type as IB even if the link type of the port is ETH.
- Fixed an issue related to the HCA PoerXmitWait counter on port 2 (connected to port 2 on Switch-IB) where it started counting and reached 0xFF's regardless of connection to switch.
- Fixed a completion error issue when ECN was enabled. The ECN usage caused ordering errors in completion queues (CQ).
- Fixed the length calculation of UDP. The incorrect UDP length in the CNP packet caused miss-calculation of the ICRC.
- Fixed a wrong returned status in cable info MAD when the cable was not connected
- Fixed failure instances when initiating FLR in the Physical Function.
- Disabled High Rate Steering mode in the INI to enable its compatibility with NC-SI over VLAN.
- Fixed a default hardware configuration issue which caused RDP over IPv4 traffic to be dropped.
- MLNX\_OEM command GET\_TEMP returned a wrong value in the max\_temp field.
- Fixed an issue which caused TX traffic to stop when the message MTU size was larger than QP.mtu.
- Fixed an issue which caused NVCONFIG to fail when the number of sector was set to 1 and the sector was zeroed.
- Fixed a race in handling a duplicated "read request from middle".
- Fixed an issue which caused lack of IB traffic on SR-IOV VPI.
- Fixed an issue which caused NVRAM to get stuck when it filled non-valid information in TLV.
- Fixed an issue which caused an internal firmware error when APM changed the QPs port mapping.
- Fixed an issue which caused a firmware internal error when handling QP alternative context.
- Fixed an issue which caused packet transmission to get stuck when the software tried to send pause frames with dmac equal to one of the device's MAC addresses.
- Fixed a wrong reporting of section 5 event 8 - LSO support.
- Fixed a mistakenly dropped ETH packet with ethertype 0x600 by the NIC.
- Fixed a case preventing broadcast traffic from arriving to their destination after detaching high priority broadcast rule on a port where NC-SI was enabled.
- Fixed an issue where the port raised as SDR vs. InfiniScale IV QDR Switch
- Fixed a rare case of completion Error with Bad Opcode sequence status which occurred when retransmitting read requests
- Fixed a case where the actual bandwidth did not match the user settings in VM QoS.
- Fixed a case where on rare cases, communication to BMC was lost during driver initialization.
- Fixed an issue with cable reading, which caused the link not to raise.
- Set the maximum EQN number to 1024.
- Fixed a rare issue with VPD init flow which caused read failures.
- Fixed an issue with RX size counter not being reported.
- Fixed promiscuous mode compatibility with AO-DMFS steering.
- Fixed promiscuous mode compatibility when NC-SI is enabled and configured.
- Fixed sending/receiving OEM temp commands (set/get) with channel ID 0x1f failure.
- Fixed an issue which caused packets to drop on a port when changing the interface state of the other port.
- Fixed long management communication loss and SOL hang during reboot cycles.
- Fixed wrong processing of inbound traffic towards BMC which caused communication loss.
- Fixed management link loss upon closing port interface through the driver.
- Fixed a false indication in firmware of an expander presence causing delay in EEPROM reading.
- Fixed an issue which caused a link down on a port when the cable was removed from the other port.
- Fixed a rare case where packet with length zero got stuck in hardware queues.
- Fixed an issue which caused InfiniBand congestion control packet (CNP) to hang in hardware.
- Fixed an issue which caused AEN to be sent after channel reset.

- Fixed an issue which prevented the restoring of QoS setting to its default consequently causing bandwidth degradation.
- Fixed an occasional long link up time with 10GbE based devices.
- Fixed an issue preventing cable readings from i2c slave address 0x51
- Fixed a wrong parity bit calculation when transmitting PCIe TS1 packets.
- Fixed a possible deadlock in PM turnoff request transmission and ack acceptance flow.
- Fixed a rare case with alignments state machines which caused occasional width degradation.
- Fixed an issue where the transmit queues hanged while congestion control was enabled and operational (EQC/QCN)
- Fixed an unexpected work completion syndrome with vendor syndrome 0x77 received when running RDMA SEN/WRITE traffic with retransmissions.
- Fixed an issue which caused SetPortInfo to return a good status when receiving invalid LinkSpeedEnabled value.
- Fixed an issue which caused dual port SFPP module cards to be automatically mapped with expander.
- Fixed an issue where firmware overrides the steering mode that was chosen by the driver.
- Fixed invalid return sensing results occurred when the link was up.
- Fixed an issue causing the sensing result to be delayed when cable was unplugged.
- Fixed an issue causing the link type to be displayed as ETH when set to AUTO.
- Fixed an issue causing ARP not to reply when connected to Hyper-V vSwitch.

#### Fixes in 14.18.2030:

- On rare occasions during UEFI boot cycles system got stuck while WinPE is loaded. (OS WinPE, system DL160).
- Single FTE that catches both untagged and prio-tagged packets (by giving an FTE with match\_value.vlan\_tag = 0 and match\_value.vid = 0) is currently not supported.
- Flashing the firmware requires server reboot. Firmware cannot be flashed twice without server reboot after first flashing
- If the vport state is DOWN and a packet is sent in local loopback, the sx\_sniffer tool will not function.
- Fixed an issue causing bubbles to appear as symbol errors when link raised FDR 1x.
- When Clause 74 Fire-Code FEC is active, and there are FC corrected errors, both the FC\_correctable counter and the FC\_uncorrectable counter are increment.
- Some Port Control Register do not return to the default value after the last port owner host restarts the driver.
- Fixed an issue which caused RX to hang when the UDP packet had a reserved UDP destination port.
- Fixed DMAC reporting mapping per host.
- Fixed an EEH error from PCI which caused firmware to hang.
- Fixed the default value of the PCIe target\_link\_speed to Gen3 in link control2.
- Fixed an issue which prevented LEDs from blinking when the traffic was less than 0.1% of the link speed.
- Fixed an issue which caused the mlxconfig configuration of VF\_LOG\_BAR\_SIZE to be ignored and to be set to 5 (32MB).
- A server getting into a Standby mode while Packet-Pacing is enabled might cause firmware to hang and driver call-trace.
- Fixed an issue which caused unexpected QoS functionality in case of multiple sources to single destination traffic transmission.
- Fixed an issue which occasionally caused the RX traffic to hang in DC when received a PCI error on WQE fetch.
- Fixed OOB connection issue during Intel's ITP inject errors test.
- Fixed an issue which prevented MAC address changes by to driver to be reflected in the OBCC and NC-SI interfaces.
- Added protection from IOPX thermal diode destabilization to prevent UEFI IPv6 PXE boot failure on ConnectX-4 Lx 25GE cards.
- Fixed an issue which caused a link down in Port 2 when unplugging the cable from Port 1.
- In some cases, a Bit Error Rate is not optimal on 10G/40G links.
- Instability of Link Training Flow occurs during 100G Auto-Negotiation.
- Fixed a rare issue which caused the command to hang when moved the QP to RESET and back to RTS.
- Improved RDMA READ bandwidth under packet lost scenario.
- Added support for pnat = 1 in HCA access\_reg command as required by the ibdiagnet tool.
- Fixed the LLDP OCBP response: return value is now ascii.
- Fixed a very rare NMI issue during PXE cycles.
- Increased the steering hash tables static size from 128 to a maximum of 32K entries.
- Prevented miscalculation of module temperature when using 100Gb/s cables (OPN: MFA1A00-Cxxx for 100GbE).
- Reduced one hop for Unicast RX steering, steering pipes balancing.
- Non-volatile configuration of Port Type TLV more than 50 times might cause system hang.
- Enabled RoCE IPv4 Multicast. This prevents MCG command from failing when an IPv4 is mapped to an IPv6 address.
- If the PF driver or the tool (e.g. ethtool) use PAOS DOWN command (e.g. by ifconfig down or ip link set down), loopback traffic is blocked for all functions on this port (PF<->VFs / VF<->VF) In Multihost loopback, the traffic will be blocked once the firmware receives the PAOS down command from all PFs. However, the loopback traffic will not be blocked when the port is down due to the physical link (for example: cable plugged out, switch port down).
- Fixed a 25G and 50G link issue when Clause 91 RS FEC was active.
- Added a missing invalidation of eSwitch cache upon FLR which caused the upcoming driver load to either fail or not to be able to transmit.
- Fixed a UEFI IPv6 PXE boot failure on ConnectX-4 Lx 25GbE OCP card.
- Fixed an issue which prevented Vport counters from counting local loopback packets. Packets now are filter by the self-loopback prevention.
- Reported INTx as unsupported to allow PFs Passthrough on PowerKVM.
- SR-IOV Ethernet supports up to 18 VFs per port only.

Fixed and incident what allowed local (internal) loopbacked packets to be counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport.

- Fixed an issue preventing driver loading or TX traffic sending upon reboot, after ungraceful driver unload.
- Fixed casting of BMC MAC before steering API.
- Fixed the PCI write flow to take into consideration the PCI MTU. This fix eliminates the need for NOPs in the flow, which resulted from PPC larger PCI MTU. The single queue limitation for READ is due to a hardware limitation of the number of READ request in a given time.
- Fixed a case that caused FlexBoot to not work as expected with systems that run with "large bar" enabled (Above 4G Decoding) over Connect-IB or ConnectX-4 HCAs.
- Fixed an issue which prevented link creation when connected to IXIA 25G.

## **Enhancements**

### **Firmware for the following devices are updated to 2.40.7000:**

779799-B21 (HP Ethernet 10G 2-port 546FLR-SFP+ Adapter)

779793-B21 (HP Ethernet 10G 2-port 546SFP+ Adapter)

### **New features and changes in version 2.40.7000:**

- Added Ethernet Link down counter.
- Enables steering packets to receive queues according to Ethertype matching
- Adds support for additional rate values.
- Counters that count the number of repeated Send WQE cache lookups that resulted in a miss.
- Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image.
- New performance and back-pressure counters command via PRM (For further information, please refer to the PRM)
- Support for Multicast/Unicast sniffer rules (For further information, please refer to the PRM)
- Support for VLAN in VLAN encapsulation (For further information, please refer to the PRM)
- CQ creation offload by software
- Support for rst2rts command
- Invalidates a TLV during the firmware boot stage
- A new counter for the diag\_rprt PRM command to count packet drops due to noreceive buffer
- Support for Ethernet TX lifetime cycle control (Head of Queue)
- A new register (PPLR) that allows egress and external loopback control (For further information, please refer to the PRM)
- A watchdog mechanism to track ingress traffic stalls to prevent flooding the network with Flow Control packets
- Inspur LED scheme: A new LED scheme controlled by the INI which causes constant traffic LED indication even without traffic.
- Added support for multiple RoCE modes (RoCE v1+v2) on the same port: RoCE mode is per connection now.
- Added a new QP command "INIT2RTS\_QP" to enhance QP connection readiness time.
- Disabled FCS checks to support switches that replace FCS with Timestamp.
- Added RX Port identification for direct rout packets.
- Improved RDMA WRITE/SEND performance with retransmissions.
- Enabled firmware burning/querying using the PRM ACCESS\_REG command.
- Added support for VAM. • Enabled bad cable EEPROM reporting to the driver.
- Added support for Platform Level Data Model (PLDM) sideband protocol.
- Added support for priority based AO-DMFS mode (For further information, please refer to the PRM).
- Added support for Unicast/Multicast loopback disablement by the driver. (For further information, please refer to the PRM)
- Removed the source IP from the hash calculation (For further information, please refer to the PRM)
- Added support for Inline Receive mode up to 2KB.
- Added support for multiple RoCE modes (RoCE v1+v2) on the same port: RoCE mode is per connection now.
- Added a new QP command "INIT2RTS\_QP" to enhance QP connection readiness time.
- Disabled FCS checks to support switches that replace FCS with Timestamp.
- Added RX Port identification for direct rout packets.
- Improved RDMA WRITE/SEND performance with retransmissions.
- Enabled firmware burning/querying using the PRM ACCESS\_REG command.
- Added support for VAM. • Enabled bad cable EEPROM reporting to the driver.
- Added support for Platform Level Data Model (PLDM) sideband protocol.
- Added support for priority based AO-DMFS mode (For further information, please refer to the PRM).
- Added support for Unicast/Multicast loopback disablement by the driver. (For further information, please refer to the PRM)
- Removed the source IP from the hash calculation (For further information, please refer to the PRM)
- Added support for Inline Receive mode up to 2KB.
- Sideband moved to port 0

- Added MCTP command support
- Changed the HP LED scheme for the 779799-B21 adapter.

**Firmware for the following devices are updated to 14.18.2030:**

817749-B21 (HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter)

817753-B21 (HPE Ethernet 25Gb 2-port 640SFP28 Adapter)

- Added logical link indication in SFP to BaseT modules and disabled logical link when peer port is down.
- Added support for 10GbE in 25GbE SFP optical modules.
- Enables mixlink tool to collect data on the PHY link status and provides link down reasons and additional link related information.
- Enabled TX configuration response and movement during Link Training in Ethernet.
- Added support at lane rate of 12.89Gb.
- Limits the amount of time a packet may head a Traffic Class (TC) transmission queue, without being transmitted. Stale packets are discarded. Active by default for TCs adhering to link level flow control.
- UAR page size currently is set to 4KB and not according to what the system page size determines.
- Improved performance of:
  - Doorbell from User Access Region (UAR)
  - Clear interrupt from User Access Region (UAR)
- Added support for additional transport counters.
- Added ODP support for DC.
- Enabled scatter-to-CQE for sent packets for DC.
- Enabled moderation period modification in CQ modify command.
- Added support for minimum/maximum rate limit per vport in SR-IOV.
- Enabled network traffic between UEFI-Shell and OS.
- Enabled the PF to force disable RoCE for its VFs.
- Added 2 new access registers:
  - Management Capabilities Mask Register
  - Ports Capabilities Mask Register Fields
 For further information, please refer to the PRM.
- Enabled VNIC the control to enable/disable its local loopback traffic.
- Added the option to open a receive RDMA Flow Table and to forward RoCE traffic to some destination QP.
- Added support for Multi-Host LID base routing. This feature requires a new OpenSM (v4.7.1 and above which comes with MLNX\_OFED 3.3-2.0.0.0) with the following attributes:
  - qos TRUE
  - lmc 2 (if there is no quad host in the fabric, you can set the lmc to 1)
  - virt\_enabled 2 Note: Multi-Host LID base routing can be configured by the INI only. The default is 0
- Resilient RoCE is the ability to send RoCE traffic over a lossy network (a network without flow control enabled), without the need to enable flow control on the network. The ability is accomplished by enabling ECN on both the Switch and the Host.
- Enables load balancing in the Multi PF Switch layer (MPFS) based on the L3/L4 headers
- Increased the number of VFs from 64 to 95 per Physical Function (PF). Note: When increasing the number of VFs, the following limitations must be taken into consideration:  $server\_total\_bar\_size \geq (num\_pfs) * (2 \log\_pf\_uar\_bar\_size + 2 \log\_vf\_uar\_bar\_size * total\_vfs)$   $server\_total\_msix \geq (num\_pfs) * (num\_pf\_msix + num\_vfs\_msix * total\_vfs)$  Note: For the maximum number of VFs supported by your driver, please refer to your drivers' Release Notes or User Manual.
- Added support for Port Flap Counter.
- Limits the buffer size for all entries to improve performance. KSM is used when associating Key Length My Virtual Address (KLMs) with fixed memory size.
- This entry (null\_mkey) is use to indicate non-present KLM/KSM entries. When accessing is, it causes the device to generate page fault event.
- PLDM firmware burning is based on the DMTF spec DSP0267 (draft 9). The feature enables upgrading firmware and expansion ROM images using the PLDM protocol over MCTP (over PCIe). By doing so, a supporting BMC can query and upgrade the firmware without using OS based tools.
- Added a new physical layer statistics counters group. The new group includes BER counters, FEC error correction, clear time, and additional physical layer counters. For further information, please refer to the Ethernet Adapters Programming Manual (PRM).
- Enables the user to set a certain link up state for an unlimited period of time. This mode has 3 states:
  - Aux power (standby)
  - Reboot/boot/driver unloaded - the server is active and no driver is up
  - Driver is up - at least one driver is up (the time between init HCA and teardown or FLR)
- Added support for Doorbell from User Access Region (UAR).
- [Beta] Added support for maximum rate limit per function in SR-IOV.
- Allows the user to configure the adapter card to stop sending pauses after x when the receive port is unavailable (in a hang state).
- [Beta] Added support for new performance counters.
- DCBX is used by DCB devices to exchange configuration information with directly connected peers. DCBX uses Link Layer Discovery Protocol (LLDP) to exchange parameters between two link peers. For further information, please refer to the PRM.
- Allows network port registers to revert to their default values when the driver is restarted or the host is rebooted.

- Added additional network link up modes. The new modes decide when to keep the network link up. The new modes are:
  - keep\_eth\_link\_up
  - keep\_ib\_link\_up
  - keep\_link\_up\_on\_boot
  - keep\_link\_up\_on\_standby
- Added v1, v3, v6 tags to VPD read only tag
- Enables software to scatter or strip FCS in RQ.
- Keeps track of the creation of a packet. A time-stamping service supports assertions of proof that a datum existed before a particular time.
- Applies pause functionality to specific classes of traffic on the Ethernet link
- Custom port counters provide the user a clear indication about RDMA send/receive statistics and errors
- The Link Layer Discovery Protocol (LLDP) is a vendor-neutral Link Layer protocol in the Internet Protocol Suite used by network devices for advertising their identity, capabilities, and neighbors on a IEEE 802 LAN. The protocol is formally defined in IEEE 802.1AB.
- ConnectX-4 adapters now support 1Gb/s and 56GbE Ethernet connectivity in addition to 10GigE, 25GigE, 40GigE, 50GigE, and 100GigE.
- Provides a clear indication of Flow Steering statistics and errors.
- The minimal amount of packet headers inlined in the WQE's Eth Segment.
- A flow table may include a table-miss flow entry, which renders all Match Fields wildcards. If a packet does not match a flow entry in a flow table, this is a table miss. The behavior on a table miss depends on the table configuration. A table-miss flow entry in the flow table may specify how to process unmatched packets.
- Single Root IO Virtualization (SR-IOV) is a technology that allows a physical PCIe device to present itself multiple times through the PCIe bus.
- Uses the HCA for offloading erasure coding calculations.
- Enables the administrator to add a timestamp to the firmware they want to upgrade to avoid situations where one host tries to upgrade the firmware and another tries to downgrade; which may lead to two or more unnecessary server reboots. For further information, please refer to MFT User Manual.
- The change includes the following:
  1. Changed port configuration which required link re-training (such as speed)
  2. PAOS down
  3. PAOS up
 This change, will cause the link to toggle and new configurations to take effect.
- Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image. For further information, please refer to MFT User Manual.
- Improved TX signal integrity for Electromagnetic Induction (EMI) compliance.
- Optic modules thermal sensing - Enables the firmware to read and report the temperature of the module.
- PLDM for module thermal sensing - Supports platform-level data models and platform functions in a platform management subsystem. PLDM is designed to be an effective interface and data model that provides efficient access to low-level platform inventory, monitoring, control, event, and data/parameters transfer functions.
- Low power boot state - Enables u-boot to put non-boot CPUs into a low power status. To enable low power boot using iLO debugger use the following commands.
  - #12c b
  - #12c a 0x82
  - #12c w 0x03 0xfe
  - #12c w 0x01 0xfe
- Port shutdown due to optic thermal event - Enables the firmware to close the power cage in case of high temperature in the module.
- Reduced the port link-up time when negotiating according to Clause 73 (DME)
- Large Receive Offload (LRO) • Large Send Offload (LSO)
- Receive Side Scaling (RSS)
- Global Pause • RoCEv1.0/RoCEv2.0
- Flow Steering
- Sniffer Ethernet
- Rate Limiter (at Beta level)
- Multi packet WQE
- Enhanced Transmission Selection standard (ETS)
- Explicit Congestion Notification (ECN)
- Priority Flow Control (PFC)
- CQE time stamping
- PCIe Function Level Reset (FLR)
- Power Management L2/L3 flow support
- Strided SRQ
- Self Loopback support
- Transport Domain support
- CQ2EQ remapping
- Added support for the following commands:

- MODIFY/QUERY\_ESW\_VPORT\_CONTEXT
- QUERY/MODIFY\_CONG\_STATUS
- QUERY/MODIFY\_CKONG\_PARAMS
- QUERY\_CONG\_STATISTICS
- ADD/DELETE\_VXLAN\_UDP\_DPORT

## Supported Devices and Features

HP Part Number	InfiniBand Card Type	PSID
779793-B21	HP Ethernet 10Gb 2-port 546SFP+ Adapter	HP_1200111023
779799-B21	HP Ethernet 10Gb 2-port 546FLR-SFP+ Adapter	HP_2240110004
817749-B21	HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter	HP_2690110034
817753-B21	HPE Ethernet 25Gb 2-port 640SFP28 Adapter	HP_2420110034

Online Firmware Upgrade Utility (ESXi 6.5) for HPE Mellanox VPI (Ethernet and Infiniband mode) ConnectX4 devices on VMware ESXi 6.5

Version: 1.0.0 (Recommended)

Filename: CP031434.compsig; CP031434.zip

## Important Note!

### Known Issues:

- Bit error rate is not optimal on QDR links
- A low link speed issue occurs when connecting a ConnectX®-4 EDR adapter card with a QDR InfiniScale® IV based switch. The link is raised as DDR.
- To raise links with platforms based on the following ICs, comply with the following firmware version requirements:
  - Connect-IB® - 10.10.4000
  - Switch-IBTM - 11.200.120 (or MLNX-OS 3.4.3050)
  - ConnectX®-3 - 2.32.5100
  - SwitchX® - 9.2.7300 (or MLNX-OS 3.3.5006)
- Interoperability issue between ConnectX-4 or ConnectX-4 Lx adapter cards and ConnectX-2 adapter card when trying to raise a 10GbE link.
- If QDR is not enabled for the switch's InfiniBand Port Speed while connected to ConnectX-3/ConnectX-3Pro or Connect-IB® FDR adapters or to SwitchX® /SwitchX-2 FDR switches, links will rise at SDR or DDR (even if FDR is enabled)
 

**Workaround:** Enable QDR (in addition to FDR) when connecting to peer ports running at FDR
- Qualified EDR cables currently work with EDR networks (EDR devices, Switch®-IB and ConnectX®-4) only.
- PCIe capability "Device S/N" returns false value.
- When the link is Gen2, entering or exiting L1 state may cause bad CRC or DLLP indication.
- Configuration space power management capability PME\_EN cannot be set.
- During server reset (not a power-cycle), a non-maskable interrupt (NMI) might occur due to an Option Card Black Box (OCBB) issue causing PCIe access
- Subsystem class code is reported as IB instead of VPI.
- MultiHost InfiniBand: OpenSM is supported over host0 only and the MAD\_IFC usage is limited to host0 only.
 

**Workaround:** Activate OpenSM and the MFT tools via host0
- OCBB compliance with iLO versions: OCBB is not displayed in the latest iLO versions.
- PF direct pass-through is not supported (since PF FLR is not supported).
- Some Port Control Register do not return to the default value after the last port owner host restarts the driver.
 

**Workaround:** Reboot or reset the driver.

```
reboot / mlxfwreset
```
- Older MFT versions (4.0.0 and 3.8.0) may indicate that the latest GA firmware is old or that it cannot be compared with the existing firmware. A message similar to the below will be displayed upon firmware upgrade stage:
 

```
# flint -d <mst device> -i <image> burn
Current FW version on flash: 12.1100.6630
New FW version: 12.0012.0572
Note: The new FW version is not newer than the current FW version on flash.
Do you want to continue ? (y/n) [n] : y
```

**Workaround:** Choose one of the options below to upgrade firmware:

  - Upgrade to the latest MFT version (4.1.0)
  - Type "y" after the note flint provides

Run flint with the

"-force" flag

- Traffic that is loopbacked due to QP.force\_loopback being equaled to 1, is steered to the PF.
- A minimum of 200 LFM is required in order to cool the MCX4411A-ACAN adapter card.
- mlxfwreset does not function properly in old MFT versions after upgrading the firmware image.  
**Workaround:** Upgrade MFT to the latest release or use reboot/power cycle after upgrading firmware.
- Windows Server 2016 Inbox driver cannot work with firmware v12.12.0780  
**Workaround:** Use WinOF-2 v1.20 out-of-box driver
- Flashing the firmware requires server reboot.  
Firmware cannot be flashed twice without server reboot after first flashing  
**Workaround:** Reboot the server after firmware flashing
- When arming SRQ for limit event, the device might issue an event with context\_index=0.
- **[For customers developing custom low level drivers]**  
VFs internal FLR is not supported in PF teardown HCA command.  
**Workaround:** Before unloading the PF driver, PF driver must disable all its active VFs by performing the following:
  1. Run the disable\_hca command on all the function\_ids
  2. Wait until firmware returns all VFs allocated pages.
- Function (PF/VF) TX port counters are not supported.
- PF driver must work with pages event queue.
- Privileged Vport egress traffic is not blocked when Vport is not active
- Any local (internal) loopbacked packet is counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport
- Vport number in virtual trap might be reported incorrectly
- Some 10GbE cables are not SFF-8472 compliant. "SFP+ Cable Technology" bits are cleared.
- In a Multihost setup, when running a single TCP stream, you might experience sub optimal throughput.  
**Workaround:** Use multiple streams to reach optimal results
- end\_padding\_mode is required in CREATE\_QP and not in INIT\_2\_RTR command as defined in the PRM
- LR4 cable events are sent although the port is up
- QoS must be configured the same for both ports in order for RoCE LAG to function properly.
- Modifying the encaps\_id of FTE is not supported.
- Flow Counter is supported only for FTE that does not include a flow\_tag or for FTE that have TIR as destination.
- Using Flow Counters in the FDB Flow Table causes the transmitted IB traffic vport counters to not function properly.
- When a steering rule in the e-sw FDB includes an encaps action and an external port as destination, a transmitted multicast packet that matches the rule is sent to the wire and the loopback and the locally looped back packet will also have an encaps header.
- Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- When e-switch FDB is not created, the VF functional loopback traffic is sent to vport 0 (PF).
- On some VLs, configuring the SM with a VL weight 0 and running traffic on it will cause the driver to hang during unload.
- Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- Updating a non-volatile configuration of port type TLV more than 50 times might cause system to hang.  
**Workaround:** Run mlxconfig reset after every 50 consecutive updates of port type TLV.
- In order to raise 50GbE link when using firmware v.16. or newer, the following conditions must be met:
  - The minimum ConnectX-4 firmware version should be 12.16.
  - The minimum ConnectX-4 Lx firmware version should be 14.16.
  - The minimum MLNX-OS version should be 3.6.1000 (firmware v13.1100.0026)
- Performing warm reboot during firmware image burning for VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe.  
**Workaround:** Cold reboot the device instead
- Pressing the Power Down button resets the server and does not initiate the Standby flow (as init 0 does). As a result, both ports are up due to keep\_link\_up, which opens the port when the firmware is loaded.  
**Workaround:** Use init 0 to start the Standby flow.
- In an InfiniBand Multihost and SR-IOV setups, traffic should contain GRH (GID index) if the grh\_required bit is set in the query\_hca\_vport\_context command. OpenSM should be configured as follow (opensm.conf):
  - irt\_enable should be 2
  - Enable Qos:
  - qos TRUENote: In this case, traffic without GRH will be forwarded to vport0 ("Host0")
- Performing warm reboot during firmware image burning in VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe.  
**Workaround:** Power Cycle the server (cold reboot). Once a cold reboot is performed, the device will reboot with the previous image that was already burned.
- The firmware and the hardware do not reset the physical link upon CPortState=down.  
According to the IB Specification, MANAGEMENT STATE CHANGE COMMANDS: "CPortState... when phy\_link=up and CPortState=down, the state machine will transition to the LinkDown state which will reset other link state machines. Since phy\_link=up, this will be followed by a transition to the LinkInitialize state. Thus a command to change link port state to down provides a way to re-initialize the link layer..."

- Workaround:** In order to re-train the physical link, sendbug PortInfo.physical\_port\_state = POLLING is required.

  - Local loopback traffic might effect vport counters.
  - Stopping the Rate Limiter while traffic is being transmitted might cause the adapter card to hang.
    - Workaround:** Stop traffic before:
      - setting rate 0 to the last non-default-rate vport.
      - issuing destroy\_scheduling\_element command for the last vport with non-default-rate vport.
  - Mapping an SL to VL 15 is currently not supported. Trying to do so, will cause a health buffer fatal internal error report.
  - Running the modify\_scheduling\_context command does not include checking whether the scheduling element was created or not.
    - Workaround:** Do not modify non-existing elements
  - Setting/modifying the max\_average\_bw rate for a function, or setting speeds over the maximum supported speed (as indicated in INI) may result in inaccurate rates, and in an assert.
    - Workaround:** Set the max\_avergae\_bw in scheduling\_context commands to equal or less than the supported wire speed.
  - Although the ref counter design is to increment on every max\_average\_bw != 0 (limited), the eSwitch max\_average\_bw ref counter decrements in TEARDOWN\_HCA/ FLR VF regardless of the max\_average\_bw value set.
    - Workaround:** Verify all rates for all VFs are set to "0" before running TEARDOWN\_HCA/ FLR VF. This is applicable only if a rate is set for any VF.
  - FDR link can raise with symbol errors on optic EDR cable longer than 30M.
  - When running the modify\_scheduling\_context command, scheduling\_context.element\_type is taken into consideration with performing verifications, although the field is reserved.
    - Workaround:** Use the correct element\_type when issuing modify\_scheduling\_context command.
  - When using a firmware based LLDP/DCBX software based, LLDP tools (such as lldptool in Linux) should be disabled. When intending to use software based LLDP, firmware LLDP must be disabled by using mlxconfig. Using both the LLDP software and the firmware based LLDP will result in an unexpected results. This applies to both Physical Functions (Bare Metal OS) and Virtual Functions.
    - Workaround:** Disable the LLDP software.
  - PDDR access register reports incorrect FEC request in the Phy Info page.
  - Host rate limiter values are statically configured and do not change when changing the port speed.
  - If multiple processes in RX RDMA Flow Table are used, vport counters may be counted more than once.
  - When the Max Rate Limiter is enabled and a Teardown/FLR is issued upon the last gvmi with max\_rate\_limiter enabled Teardown/FLR, the hardware remains enabled (rate\_limiter\_en = 1).
    - \*\* "max rate limiter enabled" = at least 1 (per chip). create/modify\_scheduling\_elemnt command has been issued by the driver, with max\_average\_bw != 0.
  - **Workaround:** Set a default rate (modify\_scheduling\_element.max\_average\_bw=0), or destroy all the scheduling elements on the chip prior to issuing a Teardown/FLR.
  - The ipoib\_enhanced\_offloads indication in the HCA capabilities reports 0 while SRIOV\_EN=1.
  - Occasionally, mapping 2 SLs to a single VL results in bad results in BW allocation for both SLs.
  - When SR-IOV is enabled, some multicast traffic might be lost if another vport that a listening on the same multicast GID is down.
  - The first duplicated MAC address in the MPFS is prioritized (instead of the last address) under the DUP\_MAC\_ACTION=LAST\_CFG configuration (default).
  - Occasionally, when the link is up at a speed of 1GbE, data traffic will not go through.
  - Querying Vport/eSwitch that are not set to FOLLOW using the max\_tx\_speed command, returns information as if the FOLLOW mode is enabled.
  - Diagnostic counters are not reset when enabled with on\_demand mode.
    - Workaround:** Reset the firmware.
  - Enabling the s-vlan strip on a vport for which the user configured an s-vlan match on its Flow Steering tables, results in the corruption of the steering on that specific vport.
  - Moving IPoIB enhanced QP to ERR or RST state results in the corruption of the service\_type and pm\_state in the QPC.
  - Attaching RoCE IPv4 QPs to MCG when the vport state is set to toggle (DOWN/UP), prevents the QPs that are listed on that MCG from receiving any traffic.
  - Missing invalidation upon SetQ.pkey leads to bad Pkey checks.
    - Workaround:** Set PortInfo.LID after setting Pkeys. OpenSM flow will perform such flow (first will set the Pkeys, then the PortInfo.LID)
  - When performing Pkey check for IPoIB enhanced traffic, the Pkey membership bit is ignored.
  - Occasionally, when moving UD QP from error state to RTS, the QP re-enters the error state.
  - PXE booting in RedHat 7.3 is currently not supported.
  - Performance issues occur when running min\_avg\_bw and max\_avg\_bw together. The issue starts when configuring high proportion for min\_avg\_bw between vports. For example: 1:40, 1:100: the vport with the low proportion will get high deviation.
  - Changing SL2VL (QTCT commands in ETH or SL2VL mad in IB) during traffic may cause the chip to hang.
    - Workaround:** Run SL2VL commands before running traffic.
  - Subsystem class code is reported as IB instead of VPI.

## Fixes

### Fixes in FW version 12.18.2030:

- Fixed an issue which caused bi-directional traffic 10% BW degradation in Multihost.
- Increased the COE zipping aggressive mode timer to 9000.
- Moving IPoB enhanced QP to ERR or RST state results in the corruption of the service\_type and pm\_state in the QPC.
- Attaching RoCE IPv4 QPs to MCG when the vport state is set to toggle (DOWN/UP), prevents the QPs that are listed on that MCG from receiving any traffic.
- When arming SRQ for limit event, the device might issue an event with context\_index=0.
- Occasionally, when moving UD QP from error state to RTS, the QP re-enters the error state
- When performing Pkey check for IPoB enhanced traffic, the Pkey membership bit is ignored.
- Stopping the Rate Limiter while traffic is being transmitted might cause the adapter card to hang.
- Privileged Vport egress traffic is not blocked when Vport is not active
- PF direct pass-through is not supported in InfiniBand (since PF FLR is not supported)
- Missing invalidation upon SetQ.pkey leads to bad Pkey checks.
- Fixed an issue which caused the HCA mad response to contain the incoming packet Pkey and not the matched Pkey.
- Modified PCIe Tx configuration.
- Fixed an issue that prevented the software to set ECN parameters (min\_rate, max\_rate, rate\_to\_set\_on\_first\_cnp) to values >32768.
- Fixed an issue which caused the link speed to raise as DDR when connected with certain copper cables to devices supporting up to QDR speed.
- Fixed an issue which prevented physical counters from resetting. Now the physical counters are reset on first driver start.
- Fixed possible negotiation issues with 3rd parties.
- Fixed a rare issue which caused 56GbE link to raise with errors.
- Fixed an issue which caused scheduling\_context.element\_type to be taken into consideration with performing verifications, when running the modify\_scheduling\_context command, although the field is reserved.
- Fixed an issue which caused the eSwitch max\_average\_bw ref counter to decrement in TEARDOWN\_HCA/ FLR VF regardless of the max\_average\_bw value set, although the ref counter design was to increment on every max\_average\_bw != 0 (limited).
- On rare occasions during UEFI boot cycles system got stuck while WinPE is loaded. (OS WinPE, system DL160).
- Single FTE that catches both untagged and prio-tagged packets (by giving an FTE with match\_value.vlan\_tag = 0 and match\_value.vid = 0) is currently not supported.
- Flashing the firmware requires server reboot. Firmware cannot be flashed twice without server reboot after first flashing.
- If the vport state is DOWN and a packet is sent in local loopback, the sx\_sniffer tool will not function.
- Fixed an issue causing bubbles to appear as symbol errors when link raised FDR 1x.
- When Clause 74 Fire-Code FEC is active, and there are FC corrected errors, both the FC\_correctable counter and the FC\_uncorrectable counter are increment.
- Some Port Control Register do not return to the default value after the last port owner host restarts the driver.
- Fixed an issue which caused RX to hang when the UDP packet had a reserved UDP destination port.
- Fixed DMAC reporting mapping per host.
- Fixed an EEH error from PCI which caused firmware to hang.
- Fixed the default value of the PCIe target\_link\_speed to Gen3 in link control2.
- Fixed an issue which prevented LEDs from blinking when the traffic was less than 0.1% of the link speed.
- Fixed an issue which caused the mlxconfig configuration of VF\_LOG\_BAR\_SIZE to be ignored and to be set to 5 (32MB).
- Fixed an issues which occasionally caused the driver to hang during unload on some VLs when configuring the SM with a VL weight 0 and running traffic on it.
- A server getting into a Standby mode while Packet-Pacing is enabled might cause firmware to hang and driver call-trace.
- Fixed an issue which caused unexpected QoS functionality in case of multiple sources to single destination traffic transmission.
- Fixed an issue which occasionally caused the RX traffic to hang in DC when received a PCI error on WQE fetch.
- Fixed OOB connection issue during Intel's ITP inject errors test.
- Fixed an issue in IEEE Auto-Negotiation where 25G FireCode FEC and 25G Reed-Solomon FEC bits were reversed.
- Fixed an issue which caused RX to hang when a UDP packet with destination port of RoCE v2 arrived and the data matched the DC transport service.
- Added protection from IOPX thermal diode destabilization to prevent UEFI IPv6 PXE boot failure on ConnectX-4 Lx 25GE OCP card.
- Fixed an issue causing single port devices to query and write Physical Port TLVs to Port 2.
- Enabled mlxfwreset to work using the PCIe Secondary Bus Reset.
- Fixed an issue causing link flapping as a result, incorrect link settings.
- Fixed an issue causing wrong alignment markers to be used when running 50G with Clause91 FEC enabled.
- Reduced the default BAR size for VF (SR-IOV) from 5 (32 MB) to 1 (2MB).
- Added legacy interrupts support in FlexBoot.
- Modified the TX configuration to support EMI crossing margins in 16Ghz.
- In some cases, a Bit Error Rate is not optimal on 10G/40G links.
- Instability of Link Training Flow occurs during 100G Auto-Negotiation.
- Fixed a rare issue which caused the command to hang when moved the QP to RESET and back to RTS.
- Improved RDMA READ bandwidth under packet lost scenario.
- Added support for pnat = 1 in HCA access\_reg command as required by the ibdiagnet tool.
- Fixed the LLDP OCBB response: return value is now ascii.
- Fixed a very rare NMI issue during PXE cycles.

- Increased the steering hash tables static size from 128 to a maximum of 32K entries.
- Prevented miscalculation of module temperature when using 100Gb/s cables (OPN: MFA1A00-Cxxx for 100GbE and MFA1A00-Exxx for IB EDR).
- Fixed an issue which caused the device to hang when resetting qkey/pkey violation counter via port\_info mad.
- Changed the MTU size in OCBB report. Now MTU size does not include the packet headers.
- Reduced one hop for Unicast RX steering, steering pipes balancing.
- Non-volatile configuration of Port Type TLV more than 50 times might cause system hang.
- Fixed a 25G and 50G link issue when Clause 91 RS FEC was active.
- Added a missing invalidation of SwitchX cache upon FLR which caused the upcoming driver load to either fail or not to be able to transmit.
- Fixed an issue which prevented Vport counters from counting local loopback packets. Packets now are filter by the self-loopback prevent
- Reported INTX as unsupported to allow PFs Passthrough on PowerKVM.
- SR-IOV Ethernet supports up to 18 VFs per port only.
- Fixed and incident what allowed local (internal) loopbacked packets to be counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport.
- Fixed an issue preventing driver loading or TX traffic sending upon reboot, after ungraceful driver unload.
- Fixed casting of BMC MAC before steering API.
- Fixed the PCI write flow to take into consideration the PCI MTU. This fix eliminates the need for NOPs in the flow, which resulted from PPC larger PCI MTU. The single queue limitation for READ is due to a hardware limitation of the number of READ request in a given time.
- Fixed a case that caused FlexBoot to not work as expected with systems that run with "large bar" enabled (Above 4G Decoding) over Connect-IB or ConnectX-4 HCAs.
- Fixed PLDM support for single port NICs. Currently port's relevant sensors/states are reported only for a single port.

## **Enhancements**

### **Firmware Version 12.18.2030:**

825110-B21 (HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter)

825111-B21 (HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter)

### **New features and changes in version 12.18.2030:**

- Added logical link indication in SFP to BaseT modules and disabled logical link when peer port is down.
- Added support for 10GbE in 25GbE SFP optical modules.
- Enables mlxlink tool to collect data on the PHY link status and provides link down reasons and additional link related information.
- Enabled TX configuration response and movement during Link Training in Ethernet.
- Added support at lane rate of 12.89Gb.
- Limits the amount of time a packet may head a Traffic Class (TC) transmission queue, without being transmitted. Stale packets are discarded. Active by default for TCs adhering to link level flow control.
- UAR page size currently is set to 4KB and not according to what the system page size determines.
- Improved performance of:
  - Doorbell from User Access Region (UAR)
  - Clear interrupt from User Access Region (UAR)
- Added support for additional transport counters.
- Added ODP support for DC.
- Enabled scatter-to-CQE for sent packets for DC.
- Enabled moderation period modification in CQ modify command.
- Added support for minimum/maximum rate limit per vport in SR-IOV.
- Enabled network traffic between UEFI-Shell and OS.
- Enabled the PF to force disable RoCE for its VFs.
- Added 2 new access registers:
  - Management Capabilities Mask Register
  - Ports Capabilities Mask Register Fields
 For further information, please refer to the PRM.
- Enabled VNIC the control to enable/disable its local loopback traffic.
- Added the option to open a receive RDMA Flow Table and to forward RoCE traffic to some destination QP.
- Added support for Multi-Host LID base routing. This feature requires a new OpenSM (v4.7.1 and above which comes with MLNX\_OFED 3.3-2.0.0.0) with the following attributes:
  - qos TRUE
  - lmc 2 (if there is no quad host in the fabric, you can set the lmc to 1)
  - virt\_enabled 2 Note: Multi-Host LID base routing can be configured by the INI only. The default is 0
- Resilient RoCE is the ability to send RoCE traffic over a lossy network (a network without flow control enabled), without the need to enable flow control on the

network. The ability is accomplished by enabling ECN on both the Switch and the Host.

- Enables load balancing in the Multi PF Switch layer (MPFS) based on the L3/L4 headers.
- Enabled isolation between separate Hosts using the same HCA. All the Hosts can be rebooted, the driver can be stopped and the FLR signal can be sent independently.
- Increased the number of VFs from 64 to 95 per Physical Function (PF). Note: When increasing the number of VFs, the following limitations must be taken into consideration:  $server\_total\_bar\_size \geq (num\_pfs) * (2log\_pf\_uar\_bar\_size + 2log\_vf\_uar\_bar\_size * total\_vfs)$   $server\_total\_msix \geq (num\_pfs) * (num\_pf\_msix + num\_vfs\_msix * total\_vfs)$  Note: For the maximum number of VFs supported by your driver, please refer to your drivers' Release Notes or User Manual.
- [InfiniBand Only] Added support for multiple VLs in SR-IOV/multihost environments. Note: The number of VLs can be configured by the NVCONFIG. The default VL number is 4 VLs.
- Added support for QP Rate Limit in InfiniBand.
- Added support for Port Flap Counter.
- Limits the buffer size for all entries to improve performance. KSM is used when associating Key Length My Virtual Address (KLMs) with fixed memory size.
- This entry (null\_mkey) is use to indicate non-present KLM/KSM entries. When accessing is, it causes the device to generate page fault event.
- PLDM firmware burning is based on the DMTF spec DSP0267 (draft 9). The feature enables upgrading firmware and expansion ROM images using the PLDM protocol over MCTP (over PCIe). By doing so, a supporting BMC can query and upgrade the firmware without using OS based tools.
- Added a new physical layer statistics counters group. The new group includes BER counters, FEC error correction, clear time, and additional physical layer counters. For further information, please refer to the Ethernet Adapters Programming Manual (PRM).
- Enables the user to set a certain link up state for an unlimited period of time. This mode has 3 states:
  - Aux power (standby)
  - Reboot/boot/driver unloaded - the server is active and no driver is up
  - Driver is up - at least one driver is up (the time between init HCA and teardown or FLR)
- Added support for Doorbell from User Access Region (UAR).
- [Beta] Added support for maximum rate limit per function in SR-IOV.
- Allows the user to configure the adapter card to stop sending pauses after x when the receive port is unavailable (in a hang state).
- [Beta] Added support for new performance counters.
- DCBX is used by DCB devices to exchange configuration information with directly connected peers. DCBX uses Link Layer Discovery Protocol (LLDP) to exchange parameters between two link peers. For further information, please refer to the PRM.
- Allows network port registers to revert to their default values when the driver is restarted or the host is rebooted.
- Added additional network link up modes. The new modes decide when to keep the network link up. The new modes are:
  - keep\_eth\_link\_up
  - keep\_ib\_link\_up
  - keep\_link\_up\_on\_boot
  - keep\_link\_up\_on\_standby
- [Beta] Explicit Congestion Notification (ECN) is an extension to the Internet Protocol and to the Transmission Control Protocol. ECN allows end-to-end notification of network congestion without dropping packets.
- Increased the number of VFs from 32 to 64 per PF. Note: When increasing the number of VFs, the following limitations must be taken into consideration:  $server\_total\_bar\_size \geq (num\_pfs) * (2log\_pf\_uar\_bar\_size + 2log\_vf\_uar\_bar\_size * total\_vfs)$   $server\_total\_msix \geq (num\_pfs) * (num\_pf\_msix + num\_vfs\_msix * total\_vfs)$
- [Beta] RoCE Link Aggregation provides failover and link aggregation capabilities. In this mode, only one IB port, that represents the two physical ports, is exposed to the application layer. For further information, please refer to the PRM.
- Mellanox Accelerated Switching And Packet Processing (ASAP2 ) Direct technology allows to offload OVS by handling OVS data-plane in Mellanox ConnectX-4 / ConnectX-4 Lx NIC hardware (Mellanox Embedded Switch or eSwitch) while maintaining OVS control-plane unmodified. The current actions supported by ASAP2 Direct include packet parsing and matching, forward, drop along with VLAN push/pop or VXLAN encap/decap and HW based packet/byte flow statistics.
- Virtual Extensible LAN (VXLAN) is a network virtualization technology that improves scalability problems associated with large cloud computing deployments. It tunnels Ethernet frames within Ethernet + IP + UDP frames. Mellanox implements VXLAN encapsulation and decapsulation in the hardware.
- [Beta] DCBX is used by DCB devices to exchange configuration information with directly connected peers. DCBX uses Link Layer Discovery Protocol (LLDP) to exchange parameters between two link peers. For further information, please refer to the PRM.
- Enables the user to control whether or not to scatter Frame Check Sequence (FCS) or to check FCS functionality.
- [Beta] Send Queues (SQ/ Send queue of QP) may be individually rate limited, thus, allowing granular rate control over specific SW-defined flows. A rate-limited flow is allowed to transmit a few packets before its transmission rate is evaluated, and the next packet is scheduled for transmission accordingly.
- A new PHY test mode in which the device can generate different PRBS patterns for SerDes tuning purpose. For further information, please refer to PRM registers: PPAOS, PPTT, PPRT.
- Added support for MCTP host management over PCI
- Added support for OCBP/OCSD memory pointers restoration after mlxfwreset
- Added support for MCTP media migration between SMBUS and PCI
- Added v1, v3, v6 tags to VPD read only tag.
- Added IPoB checksum and LSO offload support.
- Enables software to scatter or strip FCS in RQ.
- Keeps track of the creation of a packet. A time-stamping service supports assertions of proof that a datum existed before a particular time.

- Applies pause functionality to specific classes of traffic on the Ethernet link.
- Custom port counters provide the user a clear indication about RDMA send/receive statistics and errors.
- The Link Layer Discovery Protocol (LLDP) is a vendor-neutral Link Layer protocol in the Internet Protocol Suite used by network devices for advertising their identity, capabilities, and neighbors on a IEEE 802 LAN. The protocol is formally defined in IEEE 802.1AB.
- ConnectX-4 adapters now support 1Gb/s and 56GbE Ethernet connectivity in addition to 10GigE, 25GigE, 40GigE, 50GigE, and 100GigE
- Provides a clear indication of Flow Steering statistics and errors.
- The minimal amount of packet headers inlined in the WQE's Eth Segment.
- A flow table may include a table-miss flow entry, which renders all Match Fields wildcards. If a packet does not match a flow entry in a flow table, this is a table miss. The behavior on a table miss depends on the table configuration. A table-miss flow entry in the flow table may specify how to process unmatched packets.
- Enables connecting multiple compute or storage hosts into a single interconnect adapter by separating the adapter PCIe interface into multiple and independent PCIe interfaces.
- Single Root IO Virtualization (SR-IOV) is a technology that allows a physical PCIe device to present itself multiple times through the PCIe bus.
- Uses the HCA for offloading erasure coding calculations.
- Enables the administrator to add a timestamp to the firmware they want to upgrade to avoid situations where one host tries to upgrade the firmware and another tries to downgrade; which may lead to two or more unnecessary server reboots. For further information, please refer to MFT User Manual.
- The change includes the following:
  1. Changed port configuration which required link re-training (such as speed)
  2. PAOS down
  3. PAOS up This change, will cause the link to toggle and new configurations to take effect.
 This change, will cause the link to toggle and new configurations to take effect
- Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image. For further information, please refer to MFT User Manual
- Improved TX signal integrity for Electromagnetic Induction (EMI) compliance. Rev. 12
- Large Receive Offload (LRO)
- Large Send Offload (LSO)
- Receive Side Scaling (RSS)
- Global Pause
- RoCEv1.0/RoCEv2.0
- Flow Steering
- Sniffer Ethernet
- Rate Limiter (at Beta level)
- Multi packet WQE
- Minimal Bandwidth Guarantee (ETS)
- Explicit Congestion Notification (ECN)
- Priority Flow Control (PFC)
- PCIe Function Level Reset (FLR)
- Power Management L2/L3 flow support
- Self Loopback support
- Transport Domain support
- CQ2EQ remapping
- Added support for the following commands:
  - MODIFY/QUERY\_ESW\_VPORT\_CONTEXT
  - QUERY/MODIFY\_CONG\_STATUS
  - QUERY/MODIFY\_CONG\_PARAMS
  - QUERY\_CONG\_STATISTICS
  - ADD/DELETE\_VXLAN\_UDP\_DPORT
- VXLAN/NVGRE Stateless offload In this release, this feature is supported through Windows ONLY
- SR-IOV EN (at Beta level)
- CQE zipping
- Dynamically Connected (DC) transport
- Wake-on-Lane/Standby
- FlexBoot/UEFI support
- Optic modules thermal sensing support
- PLDM commands support
- Improved robustness during negotiation of Clause 73 (DME)
- Non-Volatile Configuration (NVConfig). For the complete list, please refer to the MFT User Manual.
- Enabled port management. Now one port can be set as Ethernet and one as InfiniBand.

## Supported Devices and Features

### Supported Devices:

HP Part Number	Device Name	PSID
825110-B21	HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter	HP_2180110032
825111-B21	HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter	HP_2190110032

Online Firmware Upgrade Utility (ESXi 6.5) for HPE Mellanox VPI (Ethernet and Infiniband mode) devices on VMware ESXi 6.5

Version: 1.0.0 (**Recommended**)

Filename: CP031449.compsig; CP031449.zip

### Important Note!

#### Known Issues 2.40.5030 and 2.40.5072:

- 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 cards 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:** 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.
- 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.  
**Workaround:** Enable SR-IOV in the BIOS.
- 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.  
**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, Release the following message is displayed due to the mlxconfig tool:  
DMFS steering mode with IB in Linux You are trying to override configurable FW by non-configurable FW. If you continue, old FW con-figurations 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.  
**Workaround:** Upgrade to MLNX\_OFED-2.1-x.xx. or later.
- VPD read-only fields are writable.  
**Workaround:** Do not write to read- only fields if you wish to preserve them.
- 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.  
**Workaround:** Use the physical function device ID to identify the device.
- 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:**
  - Unplug the cable from the switch
  - Restart driver
  - Change the protocol via the appropriate tools.
- 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.
- Cisco bi-directional transceiver is not supported in the following HCAs: 764284-B21.

#### Known Issues 2.40.5072:

- Ambient sensor does not report via PLDM in GEN10 connectX3.

#### Fixes

#### Fixes in 2.40.5030 and 2.40.5072:

- Fixed a race between the firmware and the hardware during driver start which blocked outbound completions.
- Fixed an issue which caused the firmware not to send `link_down` event to the driver when running the `close_port` command.
- Fixed an issue where in rare cases the Auto Sense failed to detect the right protocol.
- Fixed signal integrity issue when connecting a WCS ConnectX4 mezz card to Pikes peak FPGA.
- Added the option to transmit corrupted DME pages for a very short period of time at the beginning of the Auto-Negotiation flow.
- Fixed an incorrect report of the `PortRcvDataVLExtended/PortXmitDataVLExtended` counters by the firmware.
- Fixed a rare issue which caused firmware's packet injector to cut off packets when the TX was congested.
- Fixed an issue that caused the response to TX requests to take up to 10 milliseconds in IEEE clause 72 Link Training.
- Fixed a race between 2 iriscs which caused a QP to get stuck in burst control limit state.
- When a QP was in error state, the firmware generated too many err CQEs at once, thus causing the `cmdif` responsiveness to be too slow. To prevent the above, the number of err CQEs was limited to 16 at a time.
- Fixed an issue that caused the MAC address that was set from the OS using `ifconfig` to be not reflected in the OCBB buffer.
- Fixed an issue where the `ibdump` got broken when running with loopback traffic.
- Fixed an issue where the firmware took QP to firmware ownership and then released it to the hardware ownership without checking if another firmware flow owns the same QP.
- Fixed an issue which occurred after disconnecting cable which showed the link type as IB even if the link type of the port is ETH.
- Fixed an issue related to the HCA `PoerXmitWait` counter on port 2 (connected to port 2 on Switch-IB) where it started counting and reached `0xFF`'s regardless of connection to switch.
- Fixed a completion error issue when ECN was enabled. The ECN usage caused ordering errors in completion queues (CQ).
- Fixed the length calculation of UDP. The incorrect UDP length in the CNP packet caused miss-calculation of the ICRC.
- Fixed a wrong returned status in cable info MAD when the cable was not connected.
- Fixed failure instances when initiating FLR in the Physical Function.
- Disabled High Rate Steering mode in the INI to enable its compatibility with NC-SI over VLAN.
- Fixed performance issues causing slow performance when running in NO-DRAM-NIC mode.
- Fixed a default hardware configuration issue which caused RDP over IPv4 traffic to be dropped.
- Prevented a Virtual Function from injecting pause frames into the network.
- `MLNX_OEM` command `GET_TEMP` returned a wrong value in the `max_temp` field.
- Fixed an issue which caused TX traffic to stop when the message MTU size was larger than `QP.mtu`.
- Fixed an issue which caused `NVCONFIG` to fail when the number of sector was set to 1 and the sector was zeroed.
- Fixed a race in handling a duplicated "read request from middle".
- Fixed an issue which caused lack of IB traffic on SR-IOV VPI.
- Fixed an issue which caused `NVRAM` to get stuck when it filled non-valid information in TLV.
- Fixed an issue which caused an internal firmware error when APM changed the QPs port mapping.
- Fixed an issue which caused a firmware internal error when handling QP alternative context.
- Fixed an issue which caused packet transmission to get stuck when the software tried to send pause frames with `dmac` equal to one of the device's MAC addresses.
- Fixed a mistakenly dropped ETH packet with `ethertype 0x600` by the NIC.
- Fixed a case preventing broadcast traffic from arriving to their destination after detaching high priority broadcast rule on a port where NC-SI was enabled.
- Fixed a failure to update RSS QP in steering rules.
- Fixed an issue where the port raised as SDR vs. InfiniScale IV QDR Switch.
- Fixed a rare case of completion Error with Bad Opcode sequence status which occurred when retransmitting read requests.
- Fixed a case where the actual bandwidth did not match the user settings in VM QoS.

- Fixed a case where on rare cases, communication to BMC was lost during driver initialization.
- o Fixed an issue with cable reading, which caused the link not to raise.
- o Set the maximum EQN number to 1024.
- o Fixed a rare issue with VPD init flow which caused read failures.
- o Fixed an issue with RX size counter not being reported.
- o The first Read response was not treated as implicit ACK.
- o Reduced a long 40GbE link up time with Cisco Nexus3064 and Arista-7050S.
- o Fixed promiscuous mode compatibility with A0-DMFS steering.
- o Fixed promiscuous mode compatibility when NC-SI is enabled and configured.
- o Fixed sending/receiving OEM temp commands (set/get) with channel ID 0x1f failure.
- o Fixed an issue which caused packets to drop on a port when changing the interface state of the other port.
- o Fixed long management communication loss and SOL hang during reboot cycles.
- o Fixed wrong processing of inbound traffic towards BMC which caused communication loss.
- o Fixed management link loss upon closing port interface through the driver.
- o Fixed a false indication in firmware of an expander presence causing delay in EEPROM reading.
- o Fixed an issue which caused a link down on a port when the cable was removed from the other port.
- o Fixed a rare case where packet with length zero got stuck in hardware queues.
- o Fixed an issue which caused InfiniBand congestion control packet (CNP) to hang in hardware.
- o Fixed an issue which caused AEN to be sent after channel reset.
- o Fixed an issue which prevented the restoring of QoS setting to its default consequently causing bandwidth degradation.
- o Fixed an occasional long link up time with 10GbE based devices.
- o Fixed an issue preventing cable readings from i2c slave address 0x51.
- o Fixed a possible deadlock in PM turnoff request transmission and ack acceptance flow.
- o Fixed a rare case with alignments state machines which caused occasional width degradation.
- o Fixed an issue where the transmit queues hanged while congestion control was enabled and operational (EQC/QCN).
- o Fixed an unexpected work completion syndrome with vendor syndrome 0x77 received when running RDMA SEN/WRITE traffic with retransmissions.
- o Fixed an issue which caused SetPortInfo to return a good status when receiving invalid LinkSpeedEnabled value.
- o Fixed an issue which caused dual port SFPP module cards to be automatically mapped with expander. Fixed an issue where firmware overrides the steering mode that was chosen by the driver.
- o Fixed invalid return sensing results occurred when the link was up.
- o Fixed an issue causing the sensing result to be delayed when cable was unplugged.
- o Fixed an issue causing the link type to be displayed as ETH when set to AUTO.
- o Fixed 2us glitch in Wake Up signal.
- o Fixed performance degradation when running IBDump.
- o Occasionally, a link training timeout occurred in EQ phase0 during disable/enable test.
- o Improved strict bandwidth mode functionality.
- o Fixed an issue with the PortRcvPkts counter always displaying zero value.
- o Fixed an issue with processing GMP MADs with SET method in SecureHost mode.
- o Fixed an issue causing a wrong usage of MCG size when configuring Global Multicast filter.
- o Disabling the first port occasionally causes second port TX failure.
- o Fixed a mismatch in links status reported. The adapter reports links as down while the switch perceives them as up.
- o Fixed an occasional 40GbE link failure with SCM5 Switch blade.
- o Fixed a wrong FDR10 speed reporting in MAD.
- o Fixed an issue preventing the ports to rise up when set to FDR10 vs QDR.
- o Fixed an occasional link failure vs Arista switch.
- o Retransmission started from the first PSN of message instead of the last acknowledged PSN.
- o Firmware hangs when receiving GeneralInfoMad during inline firmware burning.
- o L1 flow adjustments and threshold tuning.
- o Fixed a rare hanging issue during PERST\_ assertion.
- o Wrong coefficients were reported during phase3.
- o Fixed an issue causing wrong behavior due to reset timing.
- o Fixed lack of steering options.
- o Fixed long timeout issues.
- o Fixed NVRAM write issues in driver-less mode.
- o Fixed 40GbE link support in aux mode.
- o Dropped commands with non-existing channel ID.
- o Fixed issues in extended speed reporting.
- o Fixed bad QP reporting in trap 257/8.
- o Fixed an issue causing false bad q\_key error messages.
- o Fixed Pause Frame opcode mismatch.

- Fixed communication loss upon PCIe error detection.
- Fixed wrong channel value in the SELECT/ DESELECT PACKAGE commands.
- Fixed an issue caused response packet to include 4 extra bytes.
- Fixed wrong reason code value returned when using Set Link command with unsupported speed.
- Added protection from bad MAC address given by BMC. Removed false TX pulse after PERST\_ deassertion.
- Fixed FLR capability bit inconsistency when SR-IOV is enabled.
- Fixed an issue with the device not reporting PCIe related errors.
- When a link is configured to DDR in a setup of ConnectX-3 to SX6036, SDR link is established instead.
- VXLAN used the wrong default UDP port. the UDP port number was changed to 4789.
- Fixed wrong setting of the UDP destination port for VXLAN.
- Fixed an internal error caused when moving to the DMS mode with IPMI/NC-SI enabled.
- In a back-to-back setup of FDR cards connected with a 0.5m FDR cable, a link may be established as FDR10 instead of FDR.
- Fixed issues related to working with PCI legacy interrupts.
- Wrong checksum calculation for short packets which are padded by the software.
- Reading PCIe configuration space after using the MFT flint tool caused the device to crash.
- Fixed occasional packet loss over IPMI.
- Fixed wrong values reported in the Eye opening MAD.
- Fixed occasional link width degrades during link negotiation and link transitions from L1 state.
- Fixed adjust signal detect thresholds.
- PortExtendedSpeedsCounters MAD counters were mistakenly increased while LLR was active.
- Lane reversal was not considered when configured TX parameters.
- Fixed ROL factory MAC usage when a Flex- Boot address was given.
- Fixed Pause frames factory MAC usage when FlexBoot address was given.
- The device did not different between WOL/ROL packets.
- Fixed a set of extended fields in PortInfo MAD which did not function.
- Adjusted LLR cell size according to the MLPN negotiation of ib\_128b\_llr.
- The max speed restriction was active in full power mode instead of standby mode only.
- The InfiniBand Path migration did not work with GRH. <http://webdev01:8080/commit/ConnectX.git/a9c37ee4c31038f2c1179d4d9e79c9337e0ab5c7>
- Reading MGM after writing it returned wrong members count.
- Fixed corruption of the RSS hash key given by the driver.
- Fixed QoS rate limit BW offset.
- Fixed FDR10 speed\_en reporting.
- Fixed long management link com loss.
- The command results reported both link types active at the same time. Fixed collision between forcing phy type and port sensing. Fixed a wrong core clock freq reporting in QUERY\_HCA command.
- Fixeds occasional link failure when 56GbE is enabled.
- Fixed max eye margins to be per protocol.
- perfquery reported wrong error symbol on ConnectX©-3 VPI mode: IB, ETH.
- On ConnectX-3Pro dual-port QDR and FDR/FDR10 switch setups, symbol errors may occur with MC2207312-030 AOCs.
- Symbol errors occur on ConnectX-3Pro dualport QDR connected to FDR switches with MC2207126-004 copper cables.
- Driver restart required when switching from InfiniBand FDR link with LLR enabled to InfiniBand link w/o LLR (for example: between SwitchX® and GD4036).
- On rare occasions, the adapter card may fail to link up when performing parallel detect to 40GbE.
- Automatic Path Migration (APM) did not update the new MGIDs from the Alternate Path.

## **Enhancements**

### **Firmware for the following devices are updated to 2.40.5030:**

644161-B21  
 644160-B21  
 649282-B21  
 649281-B21  
 649283-B21  
 764282-B21  
 764286-B21

### **Firmware for the following devices are updated to 2.40.5072**

764283-B21  
 764284-B21

**New features in firmware version 2.40.5030:**

- Added temperature thresholds high/low default for MAD sensing and NCSI/IPMI OEM commands.
- Added a new field to "set port" command which notifies the firmware what is the user\_mtu size.
- Added a protection mechanism which ensures the firmware drops packets which are received in internal QPs and disables the WQE producer fetching.
- Added Ethernet Link down counter.
- Enables steering packets to receive queues according to Ethertype
- Adds support for additional rate values.
- Counters that count the number of repeated Send WQE cache lookups that resulted in a miss.
- Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image.
- New performance and back-pressure counters command via PRM (For further information, please refer to the PRM)
- Support for Multicast/Unicast sniffer rules (For further information, please refer to the PRM)
- Support for VLAN in VLAN encapsulation (For further information, please refer to the PRM)
- CQ creation offload by software
- Support for rst2rts command
- Invalidates a TLV during the firmware boot stage
- A new counter for the diag\_rprt PRM command to count packet drops due to no-receive buffer
- Support for Ethernet TX lifetime cycle control (Head of Queue)
- A new register (PPLR) that allows egress and external loopback control (For further information, please refer to the PRM)
- A watchdog mechanism to track ingress traffic stalls to prevent flooding the network with Flow Control packets
- A new LED scheme controlled by the INI which causes constant traffic LED indication even without traffic.
- Added support for multiple RoCE modes (RoCE v1+v2) on the same port: RoCE mode is per connection now.
- Added a new QP command "INIT2RTS\_QP" to enhance QP connection readiness time.
- Disabled FCS checks to support switches that replace FCS with Timestamp.
- Added RX Port identification for direct rout packets.
- Improved RDMA WRITE/SEND performance with retransmissions.
- Enabled firmware burning/querying using the PRM ACCESS\_REG command.
- Added support for VAM.
- Enabled bad cable EEPROM reporting to the driver.
- Added support for Platform Level Data Model (PLDM) sideband protocol.
- Added support for priority based AO-DMFS mode (For further information, please refer to the PRM).
- Added support for Unicast/Multicast loopback disablement by the driver. (For further information, please refer to the PRM)
- Removed the source IP from the hash calculation (For further information, please refer to the PRM)
- Added support for Inline Receive mode up to 2KB.

**Supported Devices and Features****Supported Devices:**

HP Part Number	Device Name	PSID
644161-B21	HP InfiniBand FDR/EN 10/40Gb Dual Port 544M Adapter	HP_0240230019
644160-B21	HP InfiniBand QDR/EN 10Gb Dual Port 544M Adapter	HP_0250230018
649281-B21	HP InfiniBand FDR/EN 10/40Gb Dual Port 544QSFP Adapter	HP_0280210019
649282-B21	HP InfiniBand FDR/EN 10/40Gb Dual Port 544FLR-QSFP Adapter	HP_0230240019 HP_0230220019
649283-B21	HP InfiniBand QDR/EN 10Gb Dual Port 544FLR-QSFP Adapter	HP_0230240009 HP_0230220009
764282-B21	HP InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter	HP_1350110023
764283-B21	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter	HP_1360110017
764284-B21	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	HP_1370110017
764285-B21	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter	HP_1380110017

Online Firmware Upgrade Utility (Linux x86\_64) for HPE Apollo A10 InfiniBand EDR (100Gb) 2-port Adapter (HPE Part number: 843400-B21) on Linux x86\_64 platform  
Version: 1.0.0 (A) (**Recommended**)

Filename: firmware-nic-mellanox-nic-1.0.0-2.1.x86\_64.compsig; firmware-nic-mellanox-nic-1.0.0-2.1.x86\_64.rpm

### **Important Note!**

#### **Known Issues for FW version 12.18.1000:**

- Bit Error Rate is not optimal on QDR links.
- A low link speed issue occurs when connecting a ConnectX®-4 EDR adapter card with a QDR InfiniScale® IV based switch. The link is raised as DDR.
- To raise links with platforms based on the following ICs, comply with the following firmware version requirements:
  - Connect-IB® - 10.10.4000
  - Switch-IB™ - 11.200.120 (or MLNX-OS 3.4.3050)
  - Spectrum™ MLNX-OS - 3.5.1000
  - ConnectX®-3 - 2.32.5100
  - SwitchX® - 9.2.7300 (or MLNX-OS 3.3.5006)
- Interoperability issue between ConnectX-4 or ConnectX-4 Lx adapter cards and ConnectX-2 adapter card when trying to raise a 10GbE link.
- If QDR is not enabled for the switch's InfiniBand Port Speed while connected to ConnectX-3/ConnectX-3 Pro or Connect-IB® FDR adapters or to SwitchX® /SwitchX-2 FDR switches, links will rise at SDR or DDR (even if FDR is enabled).
 

**Workaround:** Enable QDR (in addition to FDR) when connecting to peer ports running at FDR
- Qualified EDR cables currently work with EDR networks (EDR devices, Switch®-IB and ConnectX®-4) only.
- PCIe capability "Device S/N" returns false value.
- When the link is Gen2, entering or exiting L1 state may cause bad CRC or DLLP indication.
- Configuration of space power management capability PME\_EN cannot be set, thus preventing the driver from activating the wake signal.
- During server reset (not a power-cycle), a non-maskable interrupt (NMI) might occur due to an Option Card Black Box (OCBB) issue causing PCIe access.
- MultiHost InfiniBand: OpenSM is supported over host0 only and the MAD\_IFC usage is limited to host0 only.
 

**Workaround:** Activate OpenSM and the MFT tools via host0
- OCBB compliance with iLO versions: OCBB is not displayed in the latest iLO versions.
- PF direct pass-through is not supported (since PF FLR is not supported).
- Older MFT versions (4.0.0 and 3.8.0) may indicate that the latest GA firmware is old or that it cannot be compared with the existing firmware. A message similar to the below will be displayed upon firmware upgrade stage:
 

```
# flint -d <mst device> -i <image> burn
Current FW version on flash: 12.1100.6630
New FW version: 12.0012.0572
Note: The new FW version is not newer than the current FW version on flash.
Do you want to continue ? (y/n) [n] : y
```

**Workaround:** Choose one of the options below to upgrade firmware:

  - Upgrade to the latest MFT version (4.1.0)
  - Type "y" after the note flint provides

Run flint with the "-force" flag
- Traffic that is loopbacked due to QP.force\_loopback being equaled to 1, is steered to the PF
- A minimum of 200 LFM is required in order to cool the MCX4411A-ACAN adapter card.
- mlxfwreset does not function properly in old MFT versions after upgrading the firmware image
 

**Workaround:** Upgrade MFT to the latest release or use reboot/power cycle after upgrading firmware
- Windows Server 2016 Inbox driver cannot work with firmware v12.12.0780
 

**Workaround:** Use WinOF-2 v1.20 out-of-box driver
- Flashing the firmware requires server reboot. Firmware cannot be flashed twice without server reboot after first flashing
 

**Workaround:** Reboot the server after firmware flashing
- When arming SRQ for limit event, the device might issue an event with context\_index=0
- **[For customers developing custom low level drivers]** Description: VFs internal FLR is not supported in PF teardown HCA command.
 

**Workaround:** Before unloading the PF driver, PF driver must disable all its active VFs by performing the following:

  1. Run the disable\_hca command on all the function\_ids
  2. Wait until firmware returns all VFs allocated pages.

- Function (PF/VF) TX port counters are not supported.
- PF driver must work with pages event queue.
- Privileged Vport egress traffic is not blocked when Vport is not active
- Any local (internal) loopbacked packet is counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport.
- Vport number in virtual trap might be reported incorrectly
- Some 10GbE cables are not SFF-8472 compliant. "SFP+ Cable Technology" bits are cleared.
- In a Multihost setup, when running a single TCP stream, you might experience sub optimal throughput.
  - **Workaround:** Use multiple streams to reach optimal results
- end\_padding\_mode is required in CREATE\_QP and not in INIT\_2\_RTR command as defined in the PRM
- LR4 cable events are sent although the port is up.
- QoS must be configured the same for both ports in order for RoCE LAG to function properly.
- Modifying the encap\_id of FTE is not supported.
- Flow Counter is supported only for FTE that does not include a flow\_tag or for FTE that have TIR as a destination.
- Using Flow Counters in the FDB Flow Table causes the transmitted IB traffic vport counters not to function properly.
- When a steering rule in the e-sw FDB includes an encap action and an external port as destination, a transmitted multicast packet that matches the rule is sent to the wire and the loopback and the locally looped back packet will also have an encap header
- Burning firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- When e-switch FDB is not created, the VF functional loopback traffic is send to vport 0 (PF).
- Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- Updating a non-volatile configuration of port type TLV more than 50 times might cause system to hang
  - **Workaround:** Run mlxconfig reset after every 50 consecutive updates of port type TLV.
- In order to raise 50GbE link when using ConnectX-4 firmware v12.16.1006 or newer, the following conditions must be met:
  - The minimum ConnectX-4 firmware version should be 12.16.1006
  - The minimum ConnectX-4 Lx firmware version should be 14.16.1006
  - The minimum MLNX-OS version should be 3.6.1000 (firmware v13.1100.0026)
- Performing warm reboot during firmware image burning for VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe
  - **Workaround:** Cold reboot the device instead
- Pressing the Power Down button resets the server and does not initiate the Standby flow (as init 0 does). As a result, both ports are up due to keep\_link\_up, which opens the port when the firmware is loaded.
  - **Workaround:** Use init 0 to start the Standby flow.
- In an InfiniBand Multihost and SR-IOV setups, traffic should contain GRH (GID index) if the grh\_required bit is set in the query\_hca\_vport\_context command. OpenSM should be configured as follow (opensm.conf):
  - virt\_enable should be 2
  - Enable Qos:
  - qos TRUE
- Performing warm reboot during firmware image burning in VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe
  - **Workaround:** Power Cycle the server (cold reboot). Once a cold reboot is performed, the device will reboot with the previous image that was already burned.
- The firmware and the hardware do not reset the physical link upon CPortState=down.
 

According to the IB Specification, MANAGEMENT STATE CHANGE COMMANDS:

"CPortState... when phy\_link=up and CPortState=down, the state machine will transition to the LinkDown state which will reset other link state machines. Since phy\_link=up, this will be followed by a transition to the LinkInitialize state. Thus a command to change link port state to down provides a way to re-initialize the link layer..."

  - **Workaround:** In order to re-train the physical link, sendbug PortInfo.physical\_port\_state = POLLING is required.
- Local loopback traffic might effect vport counters.
- Stopping the Rate Limiter while traffic is being transmitted might cause the adapter card to hang.
  - **Workaround:** Stop traffic before:
    - setting rate 0 to the last non-default-rate vport.
    - issuing destroy\_scheduling\_element command for the last vport with non-default-rate vport.
- Mapping an SL to VL 15 is currently not supported. Trying to do so, will cause a health buffer fatal internal error report.
- Running the modify\_scheduling\_context command does not include checking whether the scheduling element was created or not.
  - **Workaround:** Do not modify non-existing elements
- Setting/modifying the max\_average\_bw rate for a function, or setting speeds over the maximum supported speed (as indicated in INI) may result in inaccurate rates, and in an assert
  - **Workaround:** Set the max\_avergae\_bw in scheduling\_context commands to equal or less than the supported wire speed.
- Although the ref counter design is to increment on every max\_average\_bw != 0 (limited), the eSwitch max\_average\_bw ref counter decrements in TEARDOWN\_HCA/ FLR VF regardless of the max\_average\_bw value set.
  - **Workaround:** Verify all rates for all VFs are set to "0" before running TEARDOWN\_HCA/ FLR VF. This is applicable only if a rate is set for any VF.
- FDR link can raise with symbol errors on optic EDR cable longer than 30M.
- When running the modify\_scheduling\_context command, scheduling\_context.element\_type is taken into consideration with performing verifications, although the field is reserved.

**Workaround:** Use the correct element\_type when issuing modify\_scheduling\_context command.

- When using a firmware based LLDP/DCBX software based, LLDP tools (such as lldptool in Linux) should be disabled. When intending to use software based LLDP, firmware LLDP must be disabled by using mlxconfig. Using both the LLDP software and the firmware based LLDP will result in an unexpected results. This applies to both Physical Functions (Bare Metal OS) and Virtual Functions.

**Workaround:** Disable the LLDP software.

- Host rate limiter values are statically configured and do not change when changing the port speed.
- If multiple processes in RX RDMA Flow Table are used, vport counters may be counted more than once.
- When the Max Rate Limiter is enabled and a Teardown/FLR is issued upon the last gvmi with max\_rate\_limiter enabled Teardown/FLR, the hardware remains enabled (rate\_limiter\_en = 1).

\*\* "max rate limiter enabled" = at least 1 (per chip). create/modify\_scheduling\_element command has been issued by the driver, with max\_average\_bw != 0.

**Workaround:** Set a default rate (modify\_scheduling\_element.max\_average\_bw=0), or destroy all the scheduling elements on the chip prior to issuing a Teardown/FLR.

- The ipoib\_enhanced\_offloads indication in the HCA capabilities reports 0 while SRIOV\_EN=1.
- Occasionally, mapping 2 SLs to a single VL results in bad results in BW allocation for both SLs.
- When SR-IOV is enabled, some multicast traffic might be lost if another vport that a listening on the same multicast GID is down.
- The first duplicated MAC address in the MPFS is prioritized (instead of the last address) under the DUP\_MAC\_ACTION=LAST\_CFG configuration (default).
- Occasionally, when the link is up at a speed of 1GbE, data traffic will not go through.
- Querying Vport/eSwitch that are not set to FOLLOW using the max\_tx\_speed command, returns information as if the FOLLOW mode is enabled.
- Diagnostic counters are not reset when enabled with on\_demand mode.

**Workaround:** Reset the firmware.

- Enabling the s-vlan strip on a vport for which the user configured an s-vlan match on its Flow Steering tables, results in the corruption of the steering on that specific vport.
- Moving IPoIB enhanced QP to ERR or RST state results in the corruption of the service\_type and pm\_state in the QPC.
- Attaching RoCE IPv4 QPs to MCG when the vport state is set to toggle (DOWN/UP), prevents the QPs that are listed on that MCG from receiving any traffic.
- Missing invalidation upon SetQPkey leads to bad Pkey checks.

**Workaround:** Set PortInfo.LID after setting Pkeys.

OpenSM flow will perform such flow (first will set the Pkeys, then the PortInfo.LID)

- When performing Pkey check for IPoIB enhanced traffic, the Pkey membership bit is ignored.
- Occasionally, when moving UD QP from error state to RTS, the QP re-enters the error state.
- PXE booting in RedHat 7.3 is currently not supported.
- Performance issues occur when running min\_avg\_bw and max\_avg\_bw together.

The issue starts when configuring high proportion for min\_avg\_bw between vports.

For example: 1:40, 1:100: the vport with the low proportion will get high deviation.

## Fixes

### Fixes in 12.18.1000:

- Fixed an issue which caused the HCA mad response to contain the incoming packet Pkey and not the matched Pkey.
- Modified PCIe Tx configuration.
- Fixed an issue that prevented the software to set ECN parameters (min\_rate, max\_rate, rate\_to\_set\_on\_first\_cnp) to values >32768.
- Fixed an issue which caused the link speed to raise as DDR when connected with certain copper cables to devices supporting up to QDR speed.
- Fixed an issue which prevented physical counters from resetting. Now the physical counters are reset on first driver start.
- Fixed possible negotiation issues with 3rd parties.
- Fixed a rare issue which caused 56GbE link to raise with errors.
- Fixed an issue which caused scheduling\_context.element\_type to be taken into consideration with performing verifications, when running the modify\_scheduling\_context command, although the field is reserved.
- Fixed an issue which caused the eSwitch max\_average\_bw ref counter to decrement in TEARDOWN\_HCA/ FLR VF regardless of the max\_average\_bw value set, although the ref counter design was to increment on every max\_average\_bw != 0 (limited).

## Enhancements

### Firmware Version 12.18.1000:

843400-B21 (HPE Apollo A10 InfiniBand EDR (100Gb) 2-port Adapter)

### New features and changes in version 12.18.1000:

- Updated the ambient sensor warning thermal threshold.

Added logical link indication in SFP to BaseT modules and disabled logical link when peer port is down.

- Added support for 10GbE in 25GbE SFP optical modules.
- Enables mxlink tool to collect data on the PHY link status and provides link down reasons and additional link related information.
- Enabled TX configuration response and movement during Link Training in Ethernet.
- Added support at lane rate of 12.89Gb.
- Limits the amount of time a packet may head a Traffic Class (TC) transmission queue, without being transmitted. Stale packets are discarded. Active by default for TCs adhering to link level flow control.
- UAR page size currently is set to 4KB and not according to what the system page size determines.
- Improved performance of:
  - Doorbell from User Access Region (UAR)
  - Clear interrupt from User Access Region (UAR)
- Added support for additional transport counters.
- Added ODP support for DC.
- Enabled scatter-to-CQE for sent packets for DC.
- Enabled moderation period modification in CQ modify command.
- [Beta] Added support for minimum/maximum rate limit per vport in SR-IOV.
- Enabled network traffic between UEFI-Shell and OS.
- Enabled the PF to force disable RoCE for its VFs.
- Added 2 new access registers:
  - Management Capabilities Mask Register
  - Ports Capabilities Mask Register Fields
 For further information, please refer to the PRM.
- Enabled VNIC the control to enable/disable its local loopback traffic.
- Added the option to open a receive RDMA Flow Table and to forward RoCE traffic to some destination QP.

**Supported Devices and Features**

**Supported Devices:**

HP Part Number	Device Name	PSID
843400-B21	HPE Apollo A10 InfiniBand EDR (100Gb) 2-port Adapter	HPE2920111032

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Online Firmware Upgrade Utility (Linux x86\_64) for HPE Infiniband FDR 2P 545QSFP Adapter (HP Part # 702211-B21), HPE Infiniband FDR 2P 545FLR-QSFP Adapter (HP Part # 702212-B21) and HPE Infiniband FDR 2P 545M Adapter (HP Part #702213-B21)

Version: 1.0.6 **(Recommended)**

Filename: firmware-hca-mellanox-infiniband-only-1.0.6-1.1.x86\_64.compsig; firmware-hca-mellanox-infiniband-only-1.0.6-1.1.x86\_64.rpm

**Important Note!**

**Known Issues:**

- Setting the port to 'sleep' state is not supported.
- Link width x1 might get Replay Timer Timeout, on speed change.
- L1 power state enter requests are ignored by the device.
- **[For customers developing custom low level drivers]**  
The device does not recover if the requested number of pages are not supplied during device initialization.
- On rare occasions, SL to VL modification with functioning QPs results in traffic hangs.
- Vport transmit packets are not blocked if vport policy is Down.
- DC transport is not supported when SR-IOV is enabled.
- ibstat reports the link speed as FDR instead of FDR10.

- When connected to an InfiniScale4 based QDR switch, the link might come up as an SDR speed instead of QDR.
- MTUSB communication via I2C header on primary I2C bus is supported only in live-fish mode.
- mlxconfig tool displays some Ethernet only configuration such as RoCE status.
- PF direct pass-through is not supported (since PF FLR is not supported).
- Some Port Control Register do not return to the default value after the last port owner host restarts the driver.

**Workaround:** Reboot or reset the driver.

reboot / mlxfwreset

- Older MFT versions (4.0.0 and 3.8.0) may indicate that the latest GA firmware is old or that it cannot be compared with the existing firmware. A message similar to the below will be displayed upon firmware upgrade stage:

```
# flint -d <mst device> -i <image> burn
```

```
Current FW version on flash: 12.1100.6630
```

```
New FW version:
```

```
12.0012.0572
```

```
Note: The new FW version is not newer than the current FW version on flash.
```

```
Do you want to continue ? (y/n) [n] : y
```

**Workaround:** Choose one of the options below to upgrade firmware:

Upgrade to the latest MFT version (4.1.0)

Type "y" after the note flint provides

Run flint with the "-force" flag

- Flashing the firmware requires server reboot. Firmware cannot be flashed twice without server reboot after first flashing

**Workaround:** Reboot the server after firmware flashing

- **[For customers developing custom low level drivers]**

VF's internal FLR is not supported in PF teardown HCA command.

**Workaround:** Before unloading the PF driver, PF driver must disable all its active VF's by performing the following:

1. Run the disable\_hca command on all the function\_ids
2. Wait until firmware returns all VF's allocated pages.

- **[For customers developing custom low level drivers]**

VNodeInfo and VPortGuidInfo virtualization Attributes MADs are not supported.

- **[For customers developing custom low level drivers]**

The value of log\_max\_ra\_res\_qp in set\_hca\_cap command should be the same in all functions.

- Function (PF/VF) TX port counters are not supported.
- Configuring the SM with VL weight 0 on some VL, and running traffic on it, causes the driver to hang during unload.
- Privileged Vport egress traffic is not blocked when Vport is not active.
- When all SLs are mapped to non-VLO, the firmware might hang.

**Workaround:** Fix the SL configuration and power cycle the system.

- In an SR-IOV setup, traffic should contain GRH (GID index), traffic without GRH will be forwarded to vport0 ("Host0"). OpenSM should be configured as follow (opensm.conf):
  - virt\_enable should be 2
  - Enable Qos:
 

```
qos TRUE
```

- end\_padding\_mode is required in CREATE\_QP and not in INIT\_2\_RTR command as defined in the PRM.

- Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.

- Updating a non-volatile configuration of port type TLV more than 50 times might cause system to hang.

**Workaround:** Run mlxconfig reset after every 50 consecutive updates of port type TLV.

- mlxconfig configuration of VF\_LOG\_BAR\_SIZE and PF\_LOG\_BAR\_SIZE are ignored and set to 5 (32MB).

- Performing warm reboot during firmware image burning for VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe.

**Workaround:** Cold reboot the device instead

## Fixes

### The following issues are fixed in firmware version 10.16.1058:

- Fixed an issue which caused system fail when enabled SR-IOV.
- Fixed a rare issue which caused the RX to hang when triggered the SRQ limit event.
- Fixed an issue which occasionally caused the RX traffic to hang in DC when received a PCI error on WQE fetch.
- Fixed an issue which caused the mlxconfig configuration of VF\_LOG\_BAR\_SIZE to be ignored and to be set to 5 (32MB).
- Fixed an EEH error from PCI which caused firmware to hang.
- Fixed an issues which occasionally caused the driver to hang during unload on some VLs when configuring the SM with a VL weight 0 and running traffic on

it.

- o Fixed a rare case which caused an assert reported to the driver when the DC transport was enabled in the following cases: retransmission occurred and the RX received the same packet twice
- o Fixed an issue which caused the HCA to hang when enabled /disabled the VFs vports when the VFs GUIDs configuration were overloaded in the steering table.

#### The following issues are fixed in firmware version 10.16.1038:

- Fixed RSOD bug.
- Fixed an issue causing single port devices to query and write Physical Port TLVs to Port 2.
- Fixed an issue which caused the device to hang when resetting qkey/pkey violation counter via port\_info mad.
- Improved RDMA READ bandwidth under packet lost scenario.
- If the PF driver or the tool (e.g. ethtool) use PAOS DOWN command (e.g. by ifconfig down or ip link set down), loopback traffic is blocked for all functions on this port (PF<->VFs / VF<->VF)  
In Multihost loopback, the traffic will be blocked once the firmware receives the PAOS down command from all PFs. However, the loopback traffic will not be blocked when the port is down due to the physical link (for example: cable plugged out, switch port down).
- Fixed an issue which prevented QP permission for reserve lkey to be passed to the memop machine.
- Fixed a MLX QP SL mismatch handling which occurred when the SL in the WQE was different than the SL in the QP.
- Fixed wrongly implementation of SM SL2VL configuration.
- Fixed a DC re-connect flow which in some cases sent bad completion.
- Fixed a DC performance issue; separated DCRs SQ from the DCI SQs.
- Fixed an issue causing the firmware to hang when running ibdiagnet. The received DiagData MAD included the following values:
  - Clear\_all = 1
  - PageNum = 0
  - Port\_select = 0To prevent the firmware from hanging, a port check was added to SetQ as well.
- Fixed an issue which caused hardware fatal error when running ibdump.
- Fixed an FDR10 incorrect speed indication reported due to the usage of a translation function from the hardware speed to the PRM speed twice.
- Fixed a Phy manager PCS event handling when the port's next state was disable.
- Fixed an issue that caused invalid data returned by EyeOpening MAD.
- Reduced the VF ICM footprint for VFs.
- Increased the number of regular memory region from 2\*21 to 2\*22.
- Fixed improper handling of sequential connect packets.
- On rare occasions, after PXE boot, the port speed came up as SDR instead of a higher speed.
- On very rare occasions, firmware wrongly reported board over-temperature warning.
- destroy-DCT command handling may experience delays while the DCT port is down.
- Fixed an issue causing diagnostic counters VS-MAD page offset to start at a wrong address.
- Fixed stability issue in the event of no-local-DC-resources.
- Fixed improper handling of multiple DCT errors.
- Fixed bad handling of DC RNR state.
- Reduced DCT destroy firmware handling time.
- Fixed link flapping issue which occurred when LLR was active.
- Deprecated code 0x0c0600 was changed to 0x020700 (InfiniBand network adapter).
- Atomic response endianness is always a big endian.
- **[Documentation fix in PRM v2.01, no changes to the firmware code.]**  
Port asynchronous events documentation are different from the PRM. All port events have a type value of 0x9.  
The following subtype values are used for the following events:
  - link down=0x1
  - link up=0x4
  - link initialized=0x5
  - lid change=0x6
  - PKEY change=0x7
  - GUID change=0x8
  - client reregister=0x9
- Alternate Path Migration (APM) triggers only a single affiliated asynchronous error event in the case of a path migration failure.
- Using a min\_rnr\_nak value of 0x5 will cause failures when creating reliable connection (RC) QPs.
- On rare occasions DC Initiator completions might be lost.
- The following signature rules are not supported (Numbering based on "signature rules table" in PRM):
  - Rule #12: T10 DIF
  - Rule #13: T10 DIF CS
  - Rule #14 T10 DIF CS

- VL arbitration configuration does not ensure minimum bandwidth for VL as configured.
- On very rare occasions, a false firmware “hanged” report is printed in the dmesg.
- CQ buffer resize not supported.
- When connecting to InfiniScale family switches and non-Mellanox InfiniBand switches DDR and QDR speeds may show line errors and in some cases might downgrade to SDR speed.

## Enhancements

### Firmware for the following devices are updated to 10.16.1038:

702211-B21 (HP Infiniband FDR 2P 545QSFP Adapter)  
702212-B21 (HP Infiniband FDR 2P 545FLR-QSFP Adapter)

### Firmware for the following devices are updated to 10.16.1058:

702213-B21 (HP Infiniband FDR 2P 545M Adapter)

### New features in firmware version 10.16.1038:

- Increased the number of VFs from 32 to 64 per PF.
  - Note:** When increasing the number of VFs, the following limitations must be taken into consideration:
    - $server\_total\_bar\_size \geq (num\_pfs) * (2log\_pf\_uar\_bar\_size + 2log\_vf\_uar\_bar\_size * total\_vfs)$
    - $server\_total\_msix \geq (num\_pfs) * (num\_pf\_msix + num\_vfs\_msix * total\_vfs)$
- Added v1, v3, v6 tags to VPD read only tag.

## Supported Devices and Features

### Supported Devices:

HP Part #	Device Name	PSID
702211-B21	HPE Infiniband FDR 2P 545QSFP Adapter	HP_02B0110019
702212-B21	HPE Infiniband FDR 2P 545FLR-QSFP Adapter	HP_02C0110019
702213-B21	HPE Infiniband FDR 2P 545M Adapter	HP_02A0110019

Online Firmware Upgrade Utility (Linux x86\_64) for HPE Mellanox Ethernet only adapters

Version: 1.0.5 (C) **(Recommended)**

Filename: firmware-nic-mellanox-ethernet-only-1.0.5-4.1.x86\_64.compsig; firmware-nic-mellanox-ethernet-only-1.0.5-4.1.x86\_64.rpm

## Important Note!

### Known Issues for FW version 2.40.7000:

- 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.
- SBR should be asserted for a minimum of 50 milliseconds for the ConnectX<sup>®</sup>-3 adapters.
- On Pilot1 SL230, PCIe link occasionally does not come up at Gen3 speed.
  - Workaround:** Production SL230 should be used for PCIe Gen3 operation.
- 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.

**Workaround:** Enable SR-IOV in the BIOS

- 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.

**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.

**Workaround:** Upgrade to MLNX-\_OFED-2.1-x.x.x or later.

- VPD read-only fields are writable.  
**Workaround:** Do not write to readonly fields if you wish to preserve them.
- 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.  
**Workaround:** Use the physical function device ID to identify the device.
- 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.

**Workaround:**

1. Unplug the cable from the switch
2. Restart driver
3. Change the protocol via the appropriate tools.

- 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.
- AHS reports wrong MTU size.

#### Known Issues for FW version 14.18.2030:

- To raise links with platforms based on the following ICs, comply with the following firmware version requirements:
  - ConnectX®-3 - 2.32.5100
  - SwitchX® - 9.2.7300 (or MLNX-OS 3.3.5006)
- Interoperability issue between ConnectX-4 or ConnectX-4 Lx adapter cards and ConnectX-2 adapter card when trying to raise a 10GbE link.
- PCIe capability "Device S/N" returns false value.
- When the link is Gen2, entering or exiting L1 state may cause bad CRC or DLLP indication.
- Configuration space power management capability PME\_EN cannot be set.
- During server reset (not a power-cycle), a non-maskable interrupt (NMI) might occur due to an Option Card Black Box (OCBB) issue causing PCIe access.
- PF direct pass-through is not supported (since PF FLR is not supported)
- Some Port Control Register do not return to the default value after the last portowner host restarts the driver.

**Workaround:** Reboot or reset the driver.

- Older MFT versions (4.0.0 and 3.8.0) may indicate that the latest GA firmware is old or that it cannot be compared with the existing firmware. A message similar to the below will be displayed upon firmware upgrade stage:

```
# flint -d <mst device> -i <image> burn  
Current FW version on flash: 12.1100.6630
```

New FW version:

12.0012.0572

Note: The new FW version is not newer than the current FW version on flash.

Do you want to continue ? (y/n) [n] : y

**Workaround:** Choose one of the options below to upgrade firmware:

- Upgrade to the latest MFT version (4.1.0)

- Type "y" after the note flint provides Run flint with the "-force" flag
- Traffic that is loopbacked due to QP.force\_loopback being equaled to 1, is steered to the PF.
- A minimum of 200 LFM is required in order to cool the MCX4411A-ACAN adapter card.
- mlxwreset does not function properly in old MFT versions after upgrading the firmware image  
**Workaround:** Upgrade MFT to the latest release or use reboot/power cycle after upgrading firmware.
- Windows Server 2016 Inbox driver cannot work with firmware v14.12.0780  
**Workaround:** Use WinOF-2 v1.20 out-of-box driver.
- Flashing the firmware requires server reboot.Firmware cannot be flashed twice without server reboot after first flashing  
**Workaround:** Reboot the server after firmware flashing.
- When arming SRQ for limit event, the device might issue an event with context\_index=0.
- The value of log\_max\_ra\_res\_qp in set\_hca\_cap command should be the same in all functions.
- Function (PF/VF) TX port counters are not supported.
- PF driver must work with pages event queue.
- SR-IOV Ethernet supports up to 18 VFs per port only.
- Privileged Vport egress traffic is not blocked when Vport is not active
- Any local (internal) loopbacked packet is counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport.
- Vport number in virtual trap might be reported incorrectly
- Single FTE that catches both untagged and prio-tagged packets (by giving an FTE with match\_value.vlan\_tag = 0 and match\_value.vid = 0) is currently not supported.
- Configuring the SM with VL weight 0 on some VL, and running traffic on it, causes the driver to hang during unload.
- OCBB is not displayed in the latest iLO versions.
- Some 10GbE cables are not SFF-8472 compliant. "SFP+ Cable Technology" bits are cleared.
- When Clause 74 Fire-Code FEC is active, and there are FC corrected errors, both the FC\_correctable counter and the FC\_uncorrectable counter are increment.
- Windows NMI may occur upon reboot cycle as a result of OCBB memory access transactions.
- end\_padding\_mode is required in CREATE\_QP and not in INIT\_2\_RTR command as defined in the PRM
- LR4 cable events are sent although the port is up.
- On rare occasions during UEFI boot cycles system got stuck while winPE is loaded. (OS WinPE, system DL160). **Workaround:** Power cycle revives the system.
- QoS must be configured the same for both ports in order for RoCE LAG to function properly.
- Modifying the encap\_id of FTE is not supported.
- Flow Counter is supported only for FTE that does not include a flow\_tag or for FTE that have TIR as destination.
- Using Flow Counters in the FDB Flow Table causes the transmitted IB traffic vport counters to not function properly.
- When a steering rule in the e-sw FDB includes an encap action and an external port as destination, a transmitted multicast packet that matches the rule is sent to the wire and the loopback and the locally looped back packet will also have an encap header.
- Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- When e-switch FDB is not created, the VF functional loopback traffic is send to vport 0 (PF).
- Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- Updating a non-volatile configuration of port type TLV more than 50 times might cause system to hang. **Workaround:** Run mlxconfig reset after every 50 consecutive updates of port type TLV.
- In order to raise 50GbE link when using ConnectX-4 Lx firmware v14.16.1006 or newer, the following conditions must be met:
  - The minimum ConnectX-4 firmware version should be 12.16.1006
  - The minimum ConnectX-4 Lx firmware version should be 14.16.1006
  - The minimum MLNX-OS version should be 3.6.1000 (firmware v13.1100.0026)
- Performing warm reboot during firmware image burning for VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe. **Workaround:** Cold reboot the device instead
- Pressing the Power Down button resets the server and does not initiate the Standby flow (as init 0 does). As a result, both ports are up due to keep\_link\_up, which opens the port when the firmware is loaded. **Workaround:** Use init 0 to start the Standby flow.
- In an InfiniBand Multihost and SR-IOV setups, traffic should contain GRH (GID index) if the grh\_required bit is set in the query\_hca\_vport\_context command. OpenSM should be configured as follow (opensm.conf):
  - virt\_enable should be 2
  - Enable Qos:
  - qos TRUE
 Note: In this case, traffic without GRH will be forwarded to vport0 ("Host0")
- Performing warm reboot during firmware image burning in VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe. **Workaround:** Power Cycle the server (cold reboot). Once a cold reboot is performed, the device will reboot with the previous image that was already burned.
- The firmware and the hardware do not reset the physical link upon CPortState=down.  
According to the IB Specification, MANAGEMENT STATE CHANGE COMMANDS: "CPortState... when phy\_link=up and CPortState=down, the state machine will transition to the LinkDown state which will reset other link state machines. Since phy\_link=up, this will be followed by a transition to the LinkInitialize state. Thus a command to change link port state to down provides a way to re-initialize the link layer..." **Workaround:** In order to re-train the physical link, sendbug PortInfo.physical\_port\_state = POLLING is required.

- Local loopback traffic might effect vport counters.
- Stopping the Rate Limiter while traffic is being transmitted might cause the adapter card to hang. **Workaround:** Stop traffic before:
  - setting rate 0 to the last non-default-rate vport.
  - issuing destroy\_scheduling\_element command for the last vport with non-default-rate vport.
- Mapping an SL to VL 15 is currently not supported. Trying to do so, will cause a health buffer fatal internal error report.
- Running the modify\_scheduling\_context command does not include checking whether the scheduling element was created or not. **Workaround:** Do not modify non-existing elements.
- Setting/modifying the max\_average\_bw rate for a function, or setting speeds over the maximum supported speed (as indicated in INI) may result in inaccurate rates, and in an assert. **Workaround:** Set the max\_avergae\_bw in scheduling\_context commands to equal or less than the supported wire speed.
- Although the ref counter design is to increment on every max\_average\_bw != 0 (limited), the eSwitch max\_average\_bw ref counter decrements in TEARDOWN\_HCA/ FLR VF regardless of the max\_average\_bw value set. **Workaround:** Verify all rates for all VFs are set to '0' before running TEARDOWN\_HCA/ FLR VF. This is applicable only if a rate is set for any VF.
- FDR link can raise with symbol errors on optic EDR cable longer than 30M.
- When running the modify\_scheduling\_context command, scheduling\_context.element\_type is taken into consideration with performing verifications, although the field is reserved. **Workaround:** Use the correct element\_type when issuing modify\_scheduling\_context command.

## Fixes

### Fixes in 2.40.7000:

- Fixed a race between the firmware and the hardware during driver start which blocked outbound completions.
- Fixed an issue which caused the firmware not to send link\_down event to the driver when running the close\_port command.
- Fixed an issue where in rare cases the Auto Sense failed to detect the right protocol.
- Fixed signal integrity issue when connecting a WCS ConnectX4 mezz card to Pikes peak FPGA.
- Added the option to transmit corrupted DME pages for a very short period of time at the beginning of the Auto-Negotiation flow.
- Fixed an incorrect report of the PortRcvDataVLExtended / PortXmitDataVLExtended counters by the firmware.
- Fixed a rare issue which caused firmware's packet injector to cut off packets when the TX was congested.
- Fixed an issue that caused the response to TX requests to take up to 10 mili-seconds in IEEE clause 72 Link Training.
- Fixed a race between 2 iriscs which caused a QP to get stuck in burst control limit state.
- When a QP was in error state, the firmware generated too many err CQEs at once, thus causing the cmdif responsiveness to be too slow. To prevent the above, the number of err CQEs was limited to 16 at a time.
- Fixed an issue that caused the MAC address that was set from the OS using ifconfig to be not reflected in the OCBB buffer.
- Fixed an issue where the ibdump got broken when running with loopback traffic.
- Fixed an issue where the firmware took QP to firmware ownership and then released it to the hardware ownership without checking if another firmware flow owns the same QP.
- Fixed an issue which occurred after disconnecting cable which showed the link type as IB even if the link type of the port is ETH.
- Fixed an issue related to the HCA PoerXmitWait counter on port 2 (connected to port 2 on Switch-IB) where it started counting and reached 0xFF's regardless of connection to switch.
- Fixed a completion error issue when ECN was enabled. The ECN usage caused ordering errors in completion queues (CQ).
- Fixed the length calculation of UDP. The incorrect UDP length in the CNP packet caused miss-calculation of the ICRC.
- Fixed a wrong returned status in cable info MAD when the cable was not connected
- Fixed failure instances when initiating FLR in the Physical Function.
- Disabled High Rate Steering mode in the INI to enable its compatibility with NC-SI over VLAN.
- Fixed a default hardware configuration issue which caused RDP over IPv4 traffic to be dropped.
- MLNX\_OEM command GET\_TEMP returned a wrong value in the max\_temp field.
- Fixed an issue which caused TX traffic to stop when the message MTU size was larger than QP.mtu.
- Fixed an issue which caused NVCONFIG to fail when the number of sector was set to 1 and the sector was zeroed.
- Fixed a race in handling a duplicated "read request from middle".
- Fixed an issue which caused lack of IB traffic on SR-IOV VPI.
- Fixed an issue which caused NVRAM to get stuck when it filled non-valid information in TLV.
- Fixed an issue which caused an internal firmware error when APM changed the QPs port mapping.
- Fixed an issue which caused a firmware internal error when handling QP alternative context.
- Fixed an issue which caused packet transmission to get stuck when the software tried to send pause frames with dmac equal to one of the device's MAC addresses.
- Fixed a wrong reporting of section 5 event 8 - LSO support.
- Fixed a mistakenly dropped ETH packet with ethertype 0x600 by the NIC.
- Fixed a case preventing broadcast traffic from arriving to their destination after detaching high priority broadcast rule on a port where NC-SI was enabled.
- Fixed an issue where the port raised as SDR vs. InfiniScale IV QDR Switch
- Fixed a rare case of completion Error with Bad Opcode sequence status which occurred when retransmitting read requests

- Fixed a case where the actual bandwidth did not match the user settings in VM QoS.
- Fixed a case where on rare cases, communication to BMC was lost during driver initialization.
- Fixed an issue with cable reading, which caused the link not to raise.
- Set the maximum EQN number to 1024.
- Fixed a rare issue with VPD init flow which caused read failures.
- Fixed an issue with RX size counter not being reported.
- Fixed promiscuous mode compatibility with AO-DMFS steering.
- Fixed promiscuous mode compatibility when NC-SI is enabled and configured.
- Fixed sending/receiving OEM temp commands (set/get) with channel ID 0x1f failure.
- Fixed an issue which caused packets to drop on a port when changing the interface state of the other port.
- Fixed long management communication loss and SOL hang during reboot cycles.
- Fixed wrong processing of inbound traffic towards BMC which caused communication loss.
- Fixed management link loss upon closing port interface through the driver.
- Fixed a false indication in firmware of an expander presence causing delay in EEPROM reading.
- Fixed an issue which caused a link down on a port when the cable was removed from the other port.
- Fixed a rare case where packet with length zero got stuck in hardware queues.
- Fixed an issue which caused InfiniBand congestion control packet (CNP) to hang in hardware.
- Fixed an issue which caused AEN to be sent after channel reset.
- Fixed an issue which prevented the restoring of QoS setting to its default consequently causing bandwidth degradation.
- Fixed an occasional long link up time with 10GbE based devices.
- Fixed an issue preventing cable readings from i2c slave address 0x51
- Fixed a wrong parity bit calculation when transmitting PCIe TS1 packets.
- Fixed a possible deadlock in PM turnoff request transmission and ack acceptance flow.
- Fixed a rare case with alignments state machines which caused occasional width degradation.
- Fixed an issue where the transmit queues hanged while congestion control was enabled and operational (EQC/QCN)
- Fixed an unexpected work completion syndrome with vendor syndrome 0x77 received when running RDMA SEN/WRITE traffic with retransmissions.
- Fixed an issue which caused SetPortInfo to return a good status when receiving invalid LinkSpeedEnabled value.
- Fixed an issue which caused dual port SFPP module cards to be automatically mapped with expander.
- Fixed an issue where firmware overrides the steering mode that was chosen by the driver.
- Fixed invalid return sensing results occurred when the link was up.
- Fixed an issue causing the sensing result to be delayed when cable was unplugged.
- Fixed an issue causing the link type to be displayed as ETH when set to AUTO.
- Fixed an issue causing ARP not to reply when connected to Hyper-V vSwitch.

#### Fixes in 14.18.2030:

- On rare occasions during UEFI boot cycles system got stuck while WinPE is loaded. (OS WinPE, system DL160).
- Single FTE that catches both untagged and prio-tagged packets (by giving an FTE with match\_value.vlan\_tag = 0 and match\_value.vid = 0) is currently not supported.
- Flashing the firmware requires server reboot. Firmware cannot be flashed twice without server reboot after first flashing
- If the vport state is DOWN and a packet is sent in local loopback, the sx\_sniffer tool will not function.
- Fixed an issue causing bubbles to appear as symbol errors when link raised FDR 1x.
- When Clause 74 Fire-Code FEC is active, and there are FC corrected errors, both the FC\_correctable counter and the FC\_uncorrectable counter are incremented.
- Some Port Control Register do not return to the default value after the last port owner host restarts the driver.
- Fixed an issue which caused RX to hang when the UDP packet had a reserved UDP destination port.
- Fixed DMAC reporting mapping per host.
- Fixed an EEH error from PCI which caused firmware to hang.
- Fixed the default value of the PCIe target\_link\_speed to Gen3 in link control2.
- Fixed an issue which prevented LEDs from blinking when the traffic was less than 0.1% of the link speed.
- Fixed an issue which caused the mlxconfig configuration of VF\_LOG\_BAR\_SIZE to be ignored and to be set to 5 (32MB).
- A server getting into a Standby mode while Packet-Pacing is enabled might cause firmware to hang and driver call-trace.
- Fixed an issue which caused unexpected QoS functionality in case of multiple sources to single destination traffic transmission.
- Fixed an issue which occasionally caused the RX traffic to hang in DC when received a PCI error on WQE fetch.
- Fixed OOB connection issue during Intel's ITP inject errors test.
- Fixed an issue which prevented MAC address changes by to driver to be reflected in the OBCC and NC-SI interfaces.
- Added protection from IOPX thermal diode destabilization to prevent UEFI IPv6 PXE boot failure on ConnectX-4 Lx 25GE cards.
- Fixed an issue which caused a link down in Port 2 when unplugging the cable from Port 1.
- In some cases, a Bit Error Rate is not optimal on 10G/40G links.
- Instability of Link Training Flow occurs during 100G Auto-Negotiation.
- Fixed a rare issue which caused the command to hang when moved the QP to RESET and back to RTS.
- Improved RDMA READ bandwidth under packet lost scenario.

- Added support for pnat = 1 in HCA access\_reg command as required by the ibdiagnet tool.
- Fixed the LLDP OCBB response: return value is now ascii.
- Fixed a very rare NMI issue during PXE cycles.
- Increased the steering hash tables static size from 128 to a maximum of 32K entries.
- Prevented miscalculation of module temperature when using 100Gb/s cables (OPN: MFA1A00-Cxxx for 100GbE).
- Reduced one hop for Unicast RX steering, steering pipes balancing.
- Non-volatile configuration of Port Type TLV more than 50 times might cause system hang.
- Enabled RoCE IPv4 Multicast. This prevents MCG command from failing when an IPv4 is mapped to an IPv6 address.
- If the PF driver or the tool (e.g. ethtool) use PAOS DOWN command (e.g. by ifconfig down or ip link set down), loopback traffic is blocked for all functions on this port (PF<->VFs / VF<->VF). In Multihost loopback, the traffic will be blocked once the firmware receives the PAOS down command from all PFs. However, the loopback traffic will not be blocked when the port is down due to the physical link (for example: cable plugged out, switch port down).
- Fixed a 25G and 50G link issue when Clause 91 RS FEC was active.
- Added a missing invalidation of eSwitch cache upon FLR which caused the upcoming driver load to either fail or not to be able to transmit.
- Fixed a UEFI IPv6 PXE boot failure on ConnectX-4 Lx 25GbE OCP card.
- Fixed an issue which prevented Vport counters from counting local loopback packets. Packets now are filter by the self-loopback prevention.
- Reported INTX as unsupported to allow PFs Passthrough on PowerKVM.
- SR-IOV Ethernet supports up to 18 VFs per port only.
- Fixed and incident what allowed local (internal) loopbacked packets to be counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport.
- Fixed an issue preventing driver loading or TX traffic sending upon reboot, after ungraceful driver unload.
- Fixed casting of BMC MAC before steering API.
- Fixed the PCI write flow to take into consideration the PCI MTU. This fix eliminates the need for NOPs in the flow, which resulted from PPC larger PCI MTU. The single queue limitation for READ is due to a hardware limitation of the number of READ request in a given time.
- Fixed a case that caused FlexBoot to not work as expected with systems that run with "large bar" enabled (Above 4G Decoding) over Connect-IB or ConnectX-4 HCAs.
- Fixed an issue which prevented link creation when connected to IXIA 25G.

## **Enhancements**

### **Firmware for the following devices are updated to 2.40.7000:**

779799-B21 (HP Ethernet 10G 2-port 546FLR-SFP+ Adapter)

779793-B21 (HP Ethernet 10G 2-port 546SFP+ Adapter)

### **New features and changes in version 2.40.7000:**

- Added Ethernet Link down counter.
- Enables steering packets to receive queues according to Ethertype matching
- Adds support for additional rate values.
- Counters that count the number of repeated Send WQE cache lookups that resulted in a miss.
- Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image.
- New performance and back-pressure counters command via PRM (For further information, please refer to the PRM)
- Support for Multicast/Unicast sniffer rules (For further information, please refer to the PRM)
- Support for VLAN in VLAN encapsulation (For further information, please refer to the PRM)
- CQ creation offload by software
- Support for rst2rts command
- Invalidates a TLV during the firmware boot stage
- A new counter for the diag\_rprt PRM command to count packet drops due to noreceive buffer
- Support for Ethernet TX lifetime cycle control (Head of Queue)
- A new register (PPLR) that allows egress and external loopback control (For further information, please refer to the PRM)
- A watchdog mechanism to track ingress traffic stalls to prevent flooding the network with Flow Control packets
- Inspur LED scheme: A new LED scheme controlled by the INI which causes constant traffic LED indication even without traffic.
- Added support for multiple RoCE modes (RoCE v1+v2) on the same port: RoCE mode is per connection now.
- Added a new QP command "INIT2RTS\_QP" to enhance QP connection readiness time.
- Disabled FCS checks to support switches that replace FCS with Timestamp.
- Added RX Port identification for direct rout packets.
- Improved RDMA WRITE/SEND performance with retransmissions.
- Enabled firmware burning/querying using the PRM ACCESS\_REG command.
- Added support for VAM. • Enabled bad cable EEPROM reporting to the driver.
- Added support for Platform Level Data Model (PLDM) sideband protocol.

- Added support for priority based AO-DMFS mode (For further information, please refer to the PRM).
- Added support for Unicast/Multicast loopback disablement by the driver. (For further information, please refer to the PRM)
- Removed the source IP from the hash calculation (For further information, please refer to the PRM)
- Added support for Inline Receive mode up to 2KB.
- Added support for multiple RoCE modes (RoCE v1+v2) on the same port: RoCE mode is per connection now.
- Added a new QP command "INIT2RTS\_QP" to enhance QP connection readiness time.
- Disabled FCS checks to support switches that replace FCS with Timestamp.
- Added RX Port identification for direct rout packets.
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- Added support for VAM. • Enabled bad cable EEPROM reporting to the driver.
- Added support for Platform Level Data Model (PLDM) sideband protocol.
- Added support for priority based AO-DMFS mode (For further information, please refer to the PRM).
- Added support for Unicast/Multicast loopback disablement by the driver. (For further information, please refer to the PRM)
- Removed the source IP from the hash calculation (For further information, please refer to the PRM)
- Added support for Inline Receive mode up to 2KB.
- Sideband moved to port 0
- Added MCTP command support
- Changed the HP LED scheme for the 779799-B21 adapter.

**Firmware for the following devices are updated to 14.18.2030:**

817749-B21 (HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter)

817753-B21 (HPE Ethernet 25Gb 2-port 640SFP28 Adapter)

- Added logical link indication in SFP to BaseT modules and disabled logical link when peer port is down.
- Added support for 10GbE in 25GbE SFP optical modules.
- Enables mixlink tool to collect data on the PHY link status and provides link down reasons and additional link related information.
- Enabled TX configuration response and movement during Link Training in Ethernet.
- Added support at lane rate of 12.89Gb.
- Limits the amount of time a packet may head a Traffic Class (TC) transmission queue, without being transmitted. Stale packets are discarded. Active by default for TCs adhering to link level flow control.
- UAR page size currently is set to 4KB and not according to what the system page size determines.
- Improved performance of:
  - Doorbell from User Access Region (UAR)
  - Clear interrupt from User Access Region (UAR)
- Added support for additional transport counters.
- Added ODP support for DC.
- Enabled scatter-to-CQE for sent packets for DC.
- Enabled moderation period modification in CQ modify command.
- Added support for minimum/maximum rate limit per vport in SR-IOV.
- Enabled network traffic between UEFI-Shell and OS.
- Enabled the PF to force disable RoCE for its VFs.
- Added 2 new access registers:
  - Management Capabilities Mask Register
  - Ports Capabilities Mask Register Fields
 For further information, please refer to the PRM.
- Enabled VNIC the control to enable/disable its local loopback traffic.
- Added the option to open a receive RDMA Flow Table and to forward RoCE traffic to some destination QP.
- Added support for Multi-Host LID base routing. This feature requires a new OpenSM (v4.7.1 and above which comes with MLNX\_OFED 3.3-2.0.0.0) with the following attributes:
  - qos TRUE
  - lmc 2 (if there is no quad host in the fabric, you can set the lmc to 1)
  - virt\_enabled 2 Note: Multi-Host LID base routing can be configured by the INI only. The default is 0
- Resilient RoCE is the ability to send RoCE traffic over a lossy network (a network without flow control enabled), without the need to enable flow control on the network. The ability is accomplished by enabling ECN on both the Switch and the Host.
- Enables load balancing in the Multi PF Switch layer (MPFS) based on the L3/L4 headers
- Increased the number of VFs from 64 to 95 per Physical Function (PF). Note: When increasing the number of VFs, the following limitations must be taken into consideration:  $server\_total\_bar\_size \geq (num\_pfs) * (2log\_pf\_uar\_bar\_size + 2log\_vf\_uar\_bar\_size * total\_vfs)$   $server\_total\_msix \geq (num\_pfs) * (num\_pf\_msix + num\_vfs\_msix * total\_vfs)$  Note: For the maximum number of VFs supported by your driver, please refer to your drivers' Release Notes or User Manual.
- Added support for Port Flap Counter.

- Limits the buffer size for all entries to improve performance. KSM is used when associating Key Length My Virtual Address (KLMs) with fixed memory size.
- This entry (null\_mkey) is use to indicate non-present KLM/KSM entries. When accessing is, it causes the device to generate page fault event.
- PLDM firmware burning is based on the DMTF spec DSP0267 (draft 9). The feature enables upgrading firmware and expansion ROM images using the PLDM protocol over MCTP (over PCIe). By doing so, a supporting BMC can query and upgrade the firmware without using OS based tools.
- Added a new physical layer statistics counters group. The new group includes BER counters, FEC error correction, clear time, and additional physical layer counters. For further information, please refer to the Ethernet Adapters Programming Manual (PRM).
- Enables the user to set a certain link up state for an unlimited period of time. This mode has 3 states:
  - Aux power (standby)
  - Reboot/boot/driver unloaded - the server is active and no driver is up
  - Driver is up - at least one driver is up (the time between init HCA and teardown or FLR)
- Added support for Doorbell from User Access Region (UAR).
- [Beta] Added support for maximum rate limit per function in SR-IOV.
- Allows the user to configure the adapter card to stop sending pauses after x when the receive port is unavailable (in a hang state).
- [Beta] Added support for new performance counters.
- DCBX is used by DCB devices to exchange configuration information with directly connected peers. DCBX uses Link Layer Discovery Protocol (LLDP) to exchange parameters between two link peers. For further information, please refer to the PRM.
- Allows network port registers to revert to their default values when the driver is restarted or the host is rebooted.
- Added additional network link up modes. The new modes decide when to keep the network link up. The new modes are:
  - keep\_eth\_link\_up
  - keep\_ib\_link\_up
  - keep\_link\_up\_on\_boot
  - keep\_link\_up\_on\_standby
- Added v1, v3, v6 tags to VPD read only tag
- Enables software to scatter or strip FCS in RQ.
- Keeps track of the creation of a packet. A time-stamping service supports assertions of proof that a datum existed before a particular time.
- Applies pause functionality to specific classes of traffic on the Ethernet link.
- Custom port counters provide the user a clear indication about RDMA send/receive statistics and errors
- The Link Layer Discovery Protocol (LLDP) is a vendor-neutral Link Layer protocol in the Internet Protocol Suite used by network devices for advertising their identity, capabilities, and neighbors on a IEEE 802 LAN. The protocol is formally defined in IEEE 802.1AB.
- ConnectX-4 adapters now support 1Gb/s and 56GbE Ethernet connectivity in addition to 10GigE, 25GigE, 40GigE, 50GigE, and 100GigE.
- Provides a clear indication of Flow Steering statistics and errors.
- The minimal amount of packet headers inlined in the WQE's Eth Segment.
- A flow table may include a table-miss flow entry, which renders all Match Fields wildcards. If a packet does not match a flow entry in a flow table, this is a table miss. The behavior on a table miss depends on the table configuration. A table-miss flow entry in the flow table may specify how to process unmatched packets.
- Single Root IO Virtualization (SR-IOV) is a technology that allows a physical PCIe device to present itself multiple times through the PCIe bus.
- Uses the HCA for offloading erasure coding calculations.
- Enables the administrator to add a timestamp to the firmware they want to upgrade to avoid situations where one host tries to upgrade the firmware and another tries to downgrade; which may lead to two or more unnecessary server reboots. For further information, please refer to MFT User Manual.
- The change includes the following:
  1. Changed port configuration which required link re-training (such as speed)
  2. PAOS down
  3. PAOS up
 This change, will cause the link to toggle and new configurations to take effect.
- Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image. For further information, please refer to MFT User Manual.
- Improved TX signal integrity for Electromagnetic Induction (EMI) compliance.
- Optic modules thermal sensing - Enables the firmware to read and report the temperature of the module.
- PLDM for module thermal sensing - Supports platform-level data models and platform functions in a platform management subsystem. PLDM is designed to be an effective interface and data model that provides efficient access to low-level platform inventory, monitoring, control, event, and data/parameters transfer functions.
- Low power boot state - Enables u-boot to put non-boot CPUs into a low power status. To enable low power boot using iLO debugger use the following commands.
  - #12c b
  - #12c a 0x82
  - #12c w 0x03 0xfe
  - #12c w 0x01 0xfe
- Port shutdown due to optic thermal event - Enables the firmware to close the power cage in case of high temperature in the module.
- Reduced the port link-up time when negotiating according to Clause 73 (DME)
- Large Receive Offload (LRO) • Large Send Offload (LSO)

- Receive Side Scaling (RSS)
- Global Pause • RoCEv1.0/RoCEv2.0
- Flow Steering
- Sniffer Ethernet
- Rate Limiter (at Beta level)
- Multi packet WQE
- Enhanced Transmission Selection standard (ETS)
- Explicit Congestion Notification (ECN)
- Priority Flow Control (PFC)
- CQE time stamping
- PCIe Function Level Reset (FLR)
- Power Management L2/L3 flow support
- Strided SRQ
- Self Loopback support
- Transport Domain support
- CQ2EQ remapping
- Added support for the following commands:
  - MODIFY/QUERY\_ESW\_VPORT\_CONTEXT
  - QUERY/MODIFY\_CONG\_STATUS
  - QUERY/MODIFY\_CKONG\_PARAMS
  - QUERY\_CONG\_STATISTICS
  - ADD/DELETE\_VXLAN\_UDP\_DPORT

### Supported Devices and Features

HP Part Number	InfiniBand Card Type	PSID
779793-B21	HP Ethernet 10Gb 2-port 546SFP+ Adapter	HP_1200111023
779799-B21	HP Ethernet 10Gb 2-port 546FLR-SFP+ Adapter	HP_2240110004
817749-B21	HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter	HP_2690110034
817753-B21	HPE Ethernet 25Gb 2-port 640SFP28 Adapter	HP_2420110034

Online Firmware Upgrade Utility (Linux x86\_64) for HPE Mellanox VPI (Ethernet and Infiniband mode) ConnectX4 devices on Linux x86\_64 platform

Version: 1.0.1 **(Recommended)**

Filename: firmware-hca-mellanox-vpi-connectx4-1.0.1-1.1.x86\_64.compsig; firmware-hca-mellanox-vpi-connectx4-1.0.1-1.1.x86\_64.rpm

### Important Note!

#### Known Issues:

- Bit error rate is not optimal on QDR links
- A low link speed issue occurs when connecting a ConnectX®-4 EDR adapter card with a QDR InfiniScale® IV based switch. The link is raised as DDR.
- To raise links with platforms based on the following ICs, comply with the following firmware version requirements:
  - Connect-IB® - 10.10.4000
  - Switch-IBTM - 11.200.120 (or MLNX-OS 3.4.3050)
  - ConnectX®-3 - 2.32.5100
  - SwitchX® - 9.2.7300 (or MLNX-OS 3.3.5006)
- Interoperability issue between ConnectX-4 or ConnectX-4 Lx adapter cards and ConnectX-2 adapter card when trying to raise a 10GbE link.
- If QDR is not enabled for the switch's InfiniBand Port Speed while connected to ConnectX-3/ConnectX-3Pro or Connect-IB® FDR adapters or to SwitchX® /SwitchX-2 FDR switches, links will rise at SDR or DDR (even if FDR is enabled)
 

**Workaround:** Enable QDR (in addition to FDR) when connecting to peer ports running at FDR
- Qualified EDR cables currently work with EDR networks (EDR devices, Switch®-IB and ConnectX®-4) only.
- PCIe capability "Device S/N" returns false value.
- When the link is Gen2, entering or exiting L1 state may cause bad CRC or DLLP indication.
- Configuration space power management capability PME\_EN cannot be set.
- During server reset (not a power-cycle), a non-maskable interrupt (NMI) might occur due to an Option Card Black Box (OCBB) issue causing PCIe access
- Subsystem class code is reported as IB instead of VPI.
- MultiHost InfiniBand: OpenSM is supported over host0 only and the MAD\_IFC usage is limited to host0 only.

**Workaround:** Activate OpenSM and the MFT tools via host0

- OCBB compliance with iLO versions: OCBB is not displayed in the latest iLO versions.
- PF direct pass-through is not supported (since PF FLR is not supported).
- Some Port Control Register do not return to the default value after the last port owner host restarts the driver.

**Workaround:** Reboot or reset the driver.

*reboot / mlxfwreset*

- Older MFT versions (4.0.0 and 3.8.0) may indicate that the latest GA firmware is old or that it cannot be compared with the existing firmware. A message similar to the below will be displayed upon firmware upgrade stage:

```
# flint -d <mst device> -i <image> burn
```

```
Current FW version on flash: 12.1100.6630
```

```
New FW version: 12.0012.0572
```

```
Note: The new FW version is not newer than the current FW version on flash.
```

```
Do you want to continue ? (y/n) [n] : y
```

**Workaround:** Choose one of the options below to upgrade firmware:

- Upgrade to the latest MFT version (4.1.0)
- Type "y" after the note flint provides  
Run flint with the  
"-force" flag

- Traffic that is loopbacked due to QP.force\_loopback being equaled to 1, is steered to the PF.
- A minimum of 200 LFM is required in order to cool the MCX4411A-ACAN adapter card.
- mlxfwreset does not function properly in old MFT versions after upgrading the firmware image.

**Workaround:** Upgrade MFT to the latest release or use reboot/power cycle after upgrading firmware.

- Windows Server 2016 Inbox driver cannot work with firmware v12.12.0780

**Workaround:** Use WinOF-2 v1.20 out-of-box driver

- Flashing the firmware requires server reboot.  
Firmware cannot be flashed twice without server reboot after first flashing

**Workaround:** Reboot the server after firmware flashing

- When arming SRQ for limit event, the device might issue an event with context\_index=0.

- **[For customers developing custom low level drivers]**

VFs internal FLR is not supported in PF teardown HCA command.

**Workaround:** Before unloading the PF driver, PF driver must disable all its active VFs by performing the following:

1. Run the disable\_hca command on all the function\_ids
2. Wait until firmware returns all VFs allocated pages.

- Function (PF/VF) TX port counters are not supported.
- PF driver must work with pages event queue.
- Privileged Vport egress traffic is not blocked when Vport is not active
- Any local (internal) loopbacked packet is counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport
- Vport number in virtual trap might be reported incorrectly
- Some 10GbE cables are not SFF-8472 compliant. "SFP+ Cable Technology" bits are cleared.
- In a Multihost setup, when running a single TCP stream, you might experience sub optimal throughput.

**Workaround:** Use multiple streams to reach optimal results

- end\_padding\_mode is required in CREATE\_QP and not in INIT\_2\_RTR command as defined in the PRM
- LR4 cable events are sent although the port is up
- QoS must be configured the same for both ports in order for RoCE LAG to function properly.
- Modifying the encap\_id of FTE is not supported.
- Flow Counter is supported only for FTE that does not include a flow\_tag or for FTE that have TIR as destination.
- Using Flow Counters in the FDB Flow Table causes the transmitted IB traffic vport counters to not function properly.
- When a steering rule in the e-sw FDB includes an encap action and an external port as destination, a transmitted multicast packet that matches the rule is sent to the wire and the loopback and the locally looped back packet will also have an encap header.
- Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- When e-switch FDB is not created, the VF functional loopback traffic is send to vport 0 (PF).
- On some VLs, configuring the SM with a VL weight 0 and running traffic on it will cause the driver to hang during unload.
- Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- Updating a non-volatile configuration of port type TLV more than 50 times might cause system to hang.

**Workaround:** Run mlxconfig reset after every 50 consecutive updates of port type TLV.

- In order to raise 50GbE link when using firmware v.16. or newer, the following conditions must be met:
  - The minimum ConnectX-4 firmware version should be 12.16.
  - The minimum ConnectX-4 Lx firmware version should be 14.16.
  - The minimum MLNX-OS version should be 3.6.1000 (firmware v13.1100.0026)
- Performing warm reboot during firmware image burning for VPI/IB devices configured with IB port protocol, might cause the device to disappear from the

PCIe.

**Workaround:** Cold reboot the device instead

- Pressing the Power Down button resets the server and does not initiate the Standby flow (as init 0 does). As a result, both ports are up due to keep\_link\_up, which opens the port when the firmware is loaded.

**Workaround:** Use init 0 to start the Standby flow.

- In an InfiniBand Multihost and SR-IOV setups, traffic should contain GRH (GID index) if the grh\_required bit is set in the query\_hca\_vport\_context command. OpenSM should be configured as follow (opensm.conf):

- irt\_enable should be 2
- Enable Qos:
- qos TRUE

Note: In this case, traffic without GRH will be forwarded to vport0 ("Host0")

- Performing warm reboot during firmware image burning in VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe.

**Workaround:** Power Cycle the server (cold reboot). Once a cold reboot is performed, the device will reboot with the previous image that was already burned.

- The firmware and the hardware do not reset the physical link upon CPortState=down.

According to the IB Specification, MANAGEMENT STATE CHANGE COMMANDS: "CPortState... when phy\_link=up and CPortState=down, the state machine will transition to the LinkDown state which will reset other link state machines. Since phy\_link=up, this will be followed by a transition to the LinkInitialize state. Thus a command to change link port state to down provides a way to re-initialize the link layer..."

**Workaround:** In order to re-train the physical link, sendbug PortInfo.physical\_port\_state = POLLING is required.

- Local loopback traffic might effect vport counters.
- Stopping the Rate Limiter while traffic is being transmitted might cause the adapter card to hang.

**Workaround:** Stop traffic before:

- setting rate 0 to the last non-default-rate vport.
- issuing destroy\_scheduling\_element command for the last vport with non-default-rate vport.

- Mapping an SL to VL 15 is currently not supported. Trying to do so, will cause a health buffer fatal internal error report.
- Running the modify\_scheduling\_context command does not include checking whether the scheduling element was created or not.

**Workaround:** Do not modify non-existing elements

- Setting/modifying the max\_average\_bw rate for a function, or setting speeds over the maximum supported speed (as indicated in INI) may result in inaccurate rates, and in an assert.

**Workaround:** Set the max\_avergae\_bw in scheduling\_context commands to equal or less than the supported wire speed.

- Although the ref counter design is to increment on every max\_average\_bw != 0 (limited), the eSwitch max\_average\_bw ref counter decrements in TEARDOWN\_HCA/ FLR VF regardless of the max\_average\_bw value set.

**Workaround:** Verify all rates for all VFs are set to "0" before running TEARDOWN\_HCA/ FLR VF. This is applicable only if a rate is set for any VF.

- FDR link can raise with symbol errors on optic EDR cable longer than 30M.
- When running the modify\_scheduling\_context command, scheduling\_context.element\_type is taken into consideration with performing verifications, although the field is reserved.

**Workaround:** Use the correct element\_type when issuing modify\_scheduling\_context command.

- When using a firmware based LLDP/DCBX software based, LLDP tools (such as lldptool in Linux) should be disabled. When intending to use software based LLDP, firmware LLDP must be disabled by using mlxconfig. Using both the LLDP software and the firmware based LLDP will result in an unexpected results. This applies to both Physical Functions (Bare Metal OS) and Virtual Functions.

**Workaround:** Disable the LLDP software.

- PDDR access register reports incorrect FEC request in the Phy Info page.
- Host rate limiter values are statically configured and do not change when changing the port speed.
- If multiple processes in RX RDMA Flow Table are used, vport counters may be counted more than once.
- When the Max Rate Limiter is enabled and a Teardown/FLR is issued upon the last gvmi with max\_rate\_limiter enabled Teardown/FLR, the hardware remains enabled (rate\_limiter\_en = 1).

\*\* "max rate limiter enabled" = at least 1 (per chip). create/modify\_scheduling\_elemnt command has been issued by the driver, with max\_average\_bw != 0.

**Workaround:** Set a default rate (modify\_scheduling\_element.max\_average\_bw=0), or destroy all the scheduling elements on the chip prior to issuing a Teardown/FLR.

- The ipoib\_enhanced\_offloads indication in the HCA capabilities reports 0 while SRIOV\_EN=1.
- Occasionally, mapping 2 SLs to a single VL results in bad results in BW allocation for both SLs.
- When SR-IOV is enabled, some multicast traffic might be lost if another vport that a listening on the same multicast GID is down.
- The first duplicated MAC address in the MPFS is prioritized (instead of the last address) under the DUP\_MAC\_ACTION=LAST\_CFG configuration (default).
- Occasionally, when the link is up at a speed of 1GbE, data traffic will not go through.
- Querying Vport/eSwitch that are not set to FOLLOW using the max\_tx\_speed command, returns information as if the FOLLOW mode is enabled.
- Diagnostic counters are not reset when enabled with on\_demand mode.

**Workaround:** Reset the firmware.

- Enabling the s-vlan strip on a vport for which the user configured an s-vlan match on its Flow Steering tables, results in the corruption of the steering on that specific vport.
- Moving IPoIB enhanced QP to ERR or RST state results in the corruption of the service\_type and pm\_state in the QPC.

- Attaching RoCE IPv4 QPs to MCG when the vport state is set to toggle (DOWN/UP), prevents the QPs that are listed on that MCG from receiving any traffic.
- Missing invalidation upon SetQ.pkey leads to bad Pkey checks.  
**Workaround:** Set PortInfo.LID after setting Pkeys.  
OpenSM flow will perform such flow (first will set the Pkeys, then the PortInfo.LID)
- When performing Pkey check for IPoB enhanced traffic, the Pkey membership bit is ignored.
- Occasionally, when moving UD QP from error state to RTS, the QP re-enters the error state.
- PXE booting in RedHat 7.3 is currently not supported.
- Performance issues occur when running min\_avg\_bw and max\_avg\_bw together.  
The issue starts when configuring high proportion for min\_avg\_bw between vports.  
For example: 1:40, 1:100: the vport with the low proportion will get high deviation.
- Changing SL2VL (QTCT commands in ETH or SL2VL mad in IB) during traffic may cause the chip to hang.  
**Workaround:** Run SL2VL commands before running traffic.
- Subsystem class code is reported as IB instead of VPI.

## Fixes

### Fixes in FW version 12.18.2030:

- Fixed an issue which caused bi-directional traffic 10% BW degradation in Multihost.
- Increased the COE zipping aggressive mode timer to 9000.
- Moving IPoB enhanced QP to ERR or RST state results in the corruption of the service\_type and pm\_state in the QPC.
- Attaching RoCE IPv4 QPs to MCG when the vport state is set to toggle (DOWN/UP), prevents the QPs that are listed on that MCG from receiving any traffic.
- When arming SRQ for limit event, the device might issue an event with context\_index=0.
- Occasionally, when moving UD QP from error state to RTS, the QP re-enters the error state
- When performing Pkey check for IPoB enhanced traffic, the Pkey membership bit is ignored.
- Stopping the Rate Limiter while traffic is being transmitted might cause the adapter card to hang.
- Privileged Vport egress traffic is not blocked when Vport is not active
- PF direct pass-through is not supported in InfiniBand (since PF FLR is not supported)
- Missing invalidation upon SetQ.pkey leads to bad Pkey checks.
- Fixed an issue which caused the HCA mad response to contain the incoming packet Pkey and not the matched Pkey.
- Modified PCIe Tx configuration.
- Fixed an issue that prevented the software to set ECN parameters (min\_rate, max\_rate, rate\_to\_set\_on\_first\_cnp) to values >32768.
- Fixed an issue which caused the link speed to raise as DDR when connected with certain copper cables to devices supporting up to QDR speed.
- Fixed an issue which prevented physical counters from resetting. Now the physical counters are reset on first driver start.
- Fixed possible negotiation issues with 3rd parties.
- Fixed a rare issue which caused 56GbE link to raise with errors.
- Fixed an issue which caused scheduling\_context.element\_type to be taken into consideration with performing verifications, when running the modify\_scheduling\_context command, although the field is reserved.
- Fixed an issue which caused the eSwitch max\_average\_bw ref counter to decrement in TEARDOWN\_HCA/ FLR VF regardless of the max\_average\_bw value set, although the ref counter design was to increment on every max\_average\_bw != 0 (limited).
- On rare occasions during UEFI boot cycles system got stuck while WinPE is loaded. (OS WinPE, system DL160).
- Single FTE that catches both untagged and prio-tagged packets (by giving an FTE with match\_value.vlan\_tag = 0 and match\_value.vid = 0) is currently not supported.
- Flashing the firmware requires server reboot. Firmware cannot be flashed twice without server reboot after first flashing.
- If the vport state is DOWN and a packet is sent in local loopback, the sx\_sniffer tool will not function.
- Fixed an issue causing bubbles to appear as symbol errors when link raised FDR 1x.
- When Clause 74 Fire-Code FEC is active, and there are FC corrected errors, both the FC\_correctable counter and the FC\_uncorrectable counter are increment.
- Some Port Control Register do not return to the default value after the last port owner host restarts the driver.
- Fixed an issue which caused RX to hang when the UDP packet had a reserved UDP destination port.
- Fixed DMAC reporting mapping per host.
- Fixed an EEH error from PCI which caused firmware to hang.
- Fixed the default value of the PCIe target\_link\_speed to Gen3 in link control2.
- Fixed an issue which prevented LEDs from blinking when the traffic was less than 0.1% of the link speed.
- Fixed an issue which caused the mlxconfig configuration of VF\_LOG\_BAR\_SIZE to be ignored and to be set to 5 (32MB).
- Fixed an issues which occasionally caused the driver to hang during unload on some VLs when configuring the SM with a VL weight 0 and running traffic on it.
- A server getting into a Standby mode while Packet-Pacing is enabled might cause firmware to hang and driver call-trace.
- Fixed an issue which caused unexpected QoS functionality in case of multiple sources to single destination traffic transmission.
- Fixed an issue which occasionally caused the RX traffic to hang in DC when received a PCI error on WQE fetch.
- Fixed OOB connection issue during Intel's ITP inject errors test.

- Fixed an issue in IEEE Auto-Negotiation where 25G FireCode FEC and 25G Reed-Solomon FEC bits were reversed.
- Fixed an issue which caused RX to hang when a UDP packet with destination port of RoCE v2 arrived and the data matched the DC transport service.
- Added protection from IOPX thermal diode destabilization to prevent UEFI IPv6 PXE boot failure on ConnectX-4 Lx 25GE OCP card.
- Fixed an issue causing single port devices to query and write Physical Port TLVs to Port 2.
- Enabled mlxfwreset to work using the PCIe Secondary Bus Reset.
- Fixed an issue causing link flapping as a result, incorrect link settings.
- Fixed an issue causing wrong alignment markers to be used when running 50G with Clause91 FEC enabled.
- Reduced the default BAR size for VF (SR-IOV) from 5 (32 MB) to 1 (2MB).
- Added legacy interrupts support in FlexBoot.
- Modified the TX configuration to support EMI crossing margins in 16Ghz.
- In some cases, a Bit Error Rate is not optimal on 10G/40G links.
- Instability of Link Training Flow occurs during 100G Auto-Negotiation.
- Fixed a rare issue which caused the command to hang when moved the QP to RESET and back to RTS.
- Improved RDMA READ bandwidth under packet lost scenario.
- Added support for pnat = 1 in HCA access\_reg command as required by the ibdiagnet tool.
- Fixed the LLDP OCBB response: return value is now ascii.
- Fixed a very rare NMI issue during PXE cycles.
- Increased the steering hash tables static size from 128 to a maximum of 32K entries.
- Prevented miscalculation of module temperature when using 100Gb/s cables (OPN: MFA1A00-Cxxx for 100GbE and MFA1A00-Exxx for IB EDR).
- Fixed an issue which caused the device to hang when resetting qkey/pkey violation counter via port\_info mad.
- Changed the MTU size in OCBB report. Now MTU size does not include the packet headers.
- Reduced one hop for Unicast RX steering, steering pipes balancing.
- Non-volatile configuration of Port Type TLV more than 50 times might cause system hang.
- Fixed a 25G and 50G link issue when Clause 91 RS FEC was active.
- Added a missing invalidation of SwitchX cache upon FLR which caused the upcoming driver load to either fail or not to be able to transmit.
- Fixed an issue which prevented Vport counters from counting local loopback packets. Packets now are filter by the self-loopback prevent
- Reported INTX as unsupported to allow PFs Passthrough on PowerKVM.
- SR-IOV Ethernet supports up to 18 VFs per port only.
- Fixed and incident what allowed local (internal) loopbacked packets to be counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport.
- Fixed an issue preventing driver loading or TX traffic sending upon reboot, after ungraceful driver unload.
- Fixed casting of BMC MAC before steering API.
- Fixed the PCI write flow to take into consideration the PCI MTU. This fix eliminates the need for NOPS in the flow, which resulted from PPC larger PCI MTU. The single queue limitation for READ is due to a hardware limitation of the number of READ request in a given time.
- Fixed a case that caused FlexBoot to not work as expected with systems that run with "large bar" enabled (Above 4G Decoding) over Connect-IB or ConnectX-4 HCAs.
- Fixed PLDM support for single port NICs. Currently port's relevant sensors/states are reported only for a single port.

## **Enhancements**

### **Firmware Version 12.18.2030:**

825110-B21 (HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter)

825111-B21 (HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter)

### **New features and changes in version 12.18.2030:**

- Added logical link indication in SFP to BaseT modules and disabled logical link when peer port is down.
- Added support for 10GbE in 25GbE SFP optical modules.
- Enables mixlink tool to collect data on the PHY link status and provides link down reasons and additional link related information.
- Enabled TX configuration response and movement during Link Training in Ethernet.
- Added support at lane rate of 12.89Gb.
- Limits the amount of time a packet may head a Traffic Class (TC) transmission queue, without being transmitted. Stale packets are discarded. Active by default for TCs adhering to link level flow control.
- UAR page size currently is set to 4KB and not according to what the system page size determines.
- Improved performance of:
  - Doorbell from User Access Region (UAR)
  - Clear interrupt from User Access Region (UAR)
- Added support for additional transport counters.
- Added ODP support for DC.

- Enabled scatter-to-CQE for sent packets for DC.
- Enabled moderation period modification in CQ modify command.
- Added support for minimum/maximum rate limit per vport in SR-IOV.
- Enabled network traffic between UEFI-Shell and OS.
- Enabled the PF to force disable RoCE for its VFs.
- Added 2 new access registers:
  - Management Capabilities Mask Register
  - Ports Capabilities Mask Register Fields
 For further information, please refer to the PRM.
- Enabled VNIC the control to enable/disable its local loopback traffic.
- Added the option to open a receive RDMA Flow Table and to forward RoCE traffic to some destination QP.
- Added support for Multi-Host LID base routing. This feature requires a new OpenSM (v4.7.1 and above which comes with MLNX\_OFED 3.3-2.0.0.0) with the following attributes:
  - qos TRUE
  - lmc 2 (if there is no quad host in the fabric, you can set the lmc to 1)
  - virt\_enabled 2 Note: Multi-Host LID base routing can be configured by the INI only. The default is 0
- Resilient RoCE is the ability to send RoCE traffic over a lossy network (a network without flow control enabled), without the need to enable flow control on the network. The ability is accomplished by enabling ECN on both the Switch and the Host.
- Enables load balancing in the Multi PF Switch layer (MPFS) based on the L3/L4 headers.
- Enabled isolation between separate Hosts using the same HCA. All the Hosts can be rebooted, the driver can be stopped and the FLR signal can be sent independently.
- Increased the number of VFs from 64 to 95 per Physical Function (PF). Note: When increasing the number of VFs, the following limitations must be taken into consideration:  $server\_total\_bar\_size \geq (num\_pfs) * (2log\_pf\_uar\_bar\_size + 2log\_vf\_uar\_bar\_size * total\_vfs)$   $server\_total\_msix \geq (num\_pfs) * (num\_pf\_msix + num\_vfs\_msix * total\_vfs)$  Note: For the maximum number of VFs supported by your driver, please refer to your drivers' Release Notes or User Manual.
- [InfiniBand Only] Added support for multiple VLs in SR-IOV/multihost environments. Note: The number of VLs can be configured by the NVCONFIG. The default VL number is 4 VLs.
- Added support for QP Rate Limit in InfiniBand.
- Added support for Port Flap Counter.
- Limits the buffer size for all entries to improve performance. KSM is used when associating Key Length My Virtual Address (KLMs) with fixed memory size.
- This entry (null\_mkey) is use to indicate non-present KLM/KSM entries. When accessing is, it causes the device to generate page fault event.
- PLDM firmware burning is based on the DMTF spec DSPO267 (draft 9). The feature enables upgrading firmware and expansion ROM images using the PLDM protocol over MCTP (over PCIe). By doing so, a supporting BMC can query and upgrade the firmware without using OS based tools.
- Added a new physical layer statistics counters group. The new group includes BER counters, FEC error correction, clear time, and additional physical layer counters. For further information, please refer to the Ethernet Adapters Programming Manual (PRM).
- Enables the user to set a certain link up state for an unlimited period of time. This mode has 3 states:
  - Aux power (standby)
  - Reboot/boot/driver unloaded - the server is active and no driver is up
  - Driver is up - at least one driver is up (the time between init HCA and teardown or FLR)
- Added support for Doorbell from User Access Region (UAR).
- [Beta] Added support for maximum rate limit per function in SR-IOV.
- Allows the user to configure the adapter card to stop sending pauses after x when the receive port is unavailable (in a hang state).
- [Beta] Added support for new performance counters.
- DCBX is used by DCB devices to exchange configuration information with directly connected peers. DCBX uses Link Layer Discovery Protocol (LLDP) to exchange parameters between two link peers. For further information, please refer to the PRM.
- Allows network port registers to revert to their default values when the driver is restarted or the host is rebooted.
- Added additional network link up modes. The new modes decide when to keep the network link up. The new modes are:
  - keep\_eth\_link\_up
  - keep\_ib\_link\_up
  - keep\_link\_up\_on\_boot
  - keep\_link\_up\_on\_standby
- [Beta] Explicit Congestion Notification (ECN) is an extension to the Internet Protocol and to the Transmission Control Protocol. ECN allows end-to-end notification of network congestion without dropping packets.
- Increased the number of VFs from 32 to 64 per PF. Note: When increasing the number of VFs, the following limitations must be taken into consideration:  $server\_total\_bar\_size \geq (num\_pfs) * (2log\_pf\_uar\_bar\_size + 2log\_vf\_uar\_bar\_size * total\_vfs)$   $server\_total\_msix \geq (num\_pfs) * (num\_pf\_msix + num\_vfs\_msix * total\_vfs)$
- [Beta] RoCE Link Aggregation provides failover and link aggregation capabilities. In this mode, only one IB port, that represents the two physical ports, is exposed to the application layer. For further information, please refer to the PRM.
- Mellanox Accelerated Switching And Packet Processing (ASAP2 ) Direct technology allows to offload OVS by handling OVS data-plane in Mellanox ConnectX-4 / ConnectX-4 Lx NIC hardware (Mellanox Embedded Switch or eSwitch) while maintaining OVS control-plane unmodified. The current actions supported by ASAP2 Direct include packet parsing and matching, forward, drop along with VLAN push/pop or VXLAN encaps/decap and HW based packet/byte flow

statistics.

- Virtual Extensible LAN (VXLAN) is a network virtualization technology that improves scalability problems associated with large cloud computing deployments. It tunnels Ethernet frames within Ethernet + IP + UDP frames. Mellanox implements VXLAN encapsulation and decapsulation in the hardware.
- [Beta] DCBX is used by DCB devices to exchange configuration information with directly connected peers. DCBX uses Link Layer Discovery Protocol (LLDP) to exchange parameters between two link peers. For further information, please refer to the PRM.
- Enables the user to control whether or not to scatter Frame Check Sequence (FCS) or to check FCS functionality.
- [Beta] Send Queues (SQ/ Send queue of QP) may be individually rate limited, thus, allowing granular rate control over specific SW-defined flows. A rate-limited flow is allowed to transmit a few packets before its transmission rate is evaluated, and the next packet is scheduled for transmission accordingly.
- A new PHY test mode in which the device can generate different PRBS patterns for SerDes tuning purpose. For further information, please refer to PRM registers: PPAOS, PPTT, PPRT.
- Added support for MCTP host management over PCI
- Added support for OCBB/OCSD memory pointers restoration after mlxfwreset
- Added support for MCTP media migration between SMBUS and PCI
- Added v1, v3, v6 tags to VPD read only tag.
- Added IPoB checksum and LSO offload support.
- Enables software to scatter or strip FCS in RQ.
- Keeps track of the creation of a packet. A time-stamping service supports assertions of proof that a datum existed before a particular time.
- Applies pause functionality to specific classes of traffic on the Ethernet link
- Custom port counters provide the user a clear indication about RDMA send/receive statistics and errors.
- The Link Layer Discovery Protocol (LLDP) is a vendor-neutral Link Layer protocol in the Internet Protocol Suite used by network devices for advertising their identity, capabilities, and neighbors on a IEEE 802 LAN. The protocol is formally defined in IEEE 802.1AB.
- ConnectX-4 adapters now support 1Gb/s and 56GbE Ethernet connectivity in addition to 10GigE, 25GigE, 40GigE, 50GigE, and 100GigE
- Provides a clear indication of Flow Steering statistics and errors.
- The minimal amount of packet headers inlined in the WQE's Eth Segment.
- A flow table may include a table-miss flow entry, which renders all Match Fields wildcards. If a packet does not match a flow entry in a flow table, this is a table miss. The behavior on a table miss depends on the table configuration. A table-miss flow entry in the flow table may specify how to process unmatched packets.
- Enables connecting multiple compute or storage hosts into a single interconnect adapter by separating the adapter PCIe interface into multiple and independent PCIe interfaces.
- Single Root IO Virtualization (SR-IOV) is a technology that allows a physical PCIe device to present itself multiple times through the PCIe bus.
- Uses the HCA for offloading erasure coding calculations.
- Enables the administrator to add a timestamp to the firmware they want to upgrade to avoid situations where one host tries to upgrade the firmware and another tries to downgrade; which may lead to two or more unnecessary server reboots. For further information, please refer to MFT User Manual.
- The change includes the following:
  1. Changed port configuration which required link re-training (such as speed)
  2. PAOS down
  3. PAOS up This change, will cause the link to toggle and new configurations to take effect.This change, will cause the link to toggle and new configurations to take effect
- Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image. For further information, please refer to MFT User Manual
- Improved TX signal integrity for Electromagnetic Induction (EMI) compliance. Rev. 12
- Large Receive Offload (LRO)
- Large Send Offload (LSO)
- Receive Side Scaling (RSS)
- Global Pause
- RoCEv1.0/RoCEv2.0
- Flow Steering
- Sniffer Ethernet
- Rate Limiter (at Beta level)
- Multi packet WQE
- Minimal Bandwidth Guarantee (ETS)
- Explicit Congestion Notification (ECN)
- Priority Flow Control (PFC)
- PCIe Function Level Reset (FLR)
- Power Management L2/L3 flow support
- Self Loopback support
- Transport Domain support
- CQ2EQ remapping
- Added support for the following commands:
  - MODIFY/QUERY\_ESW\_VPORT\_CONTEXT

- QUERY/MODIFY\_CONG\_STATUS
- QUERY/MODIFY\_CONG\_PARAMS
- QUERY\_CONG\_STATISTICS
- ADD/DELETE\_VXLAN\_UDP\_DPORT
- VXLAN/NVGRE Stateless offload In this release, this feature is supported through Windows ONLY
- SR-IOV EN (at Beta level)
- CQE zipping
- Dynamically Connected (DC) transport
- Wake-on-Lane/Standby
- FlexBoot/UEFI support
- Optic modules thermal sensing support
- PLDM commands support
- Improved robustness during negotiation of Clause 73 (DME)
- Non-Volatile Configuration (NVConfig). For the complete list, lease
- Enabled port management. Now one port can be set as Ethernet and one as InfiniBand.

## Supported Devices and Features

### Supported Devices:

HP Part Number	Device Name	PSID
825110-B21	HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter	HP_2180110032
825111-B21	HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter	HP_2190110032

Online Firmware Upgrade Utility (Linux x86\_64) for HPE Mellanox VPI (Ethernet and Infiniband mode) devices on Linux x86\_64 platform

Version: 1.0.5 (**Recommended**)

Filename: firmware-hca-mellanox-vpi-eth-ib-1.0.5-1.1.x86\_64.compsig; firmware-hca-mellanox-vpi-eth-ib-1.0.5-1.1.x86\_64.rpm

### Important Note!

#### Known Issues 2.40.5030 and 2.40.5072:

- 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 cards 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:** 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.
- 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.  
**Workaround:** Enable SR-IOV in the BIOS.
- 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.  
**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, Release the following message is displayed due to the mlxconfig tool:  
DMFS steering mode with IB in Linux You are trying to override configurable FW by non-configurable FW. If you continue, old FW con-figurations 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.

**Workaround:** Upgrade to MLNX\_OFED-2.1-x.x.x. or later.

- VPD read-only fields are writable.

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

- 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.

**Workaround:** Use the physical function device ID to identify the device.

- 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:**

- Unplug the cable from the switch
- Restart driver
- Change the protocol via the appropriate tools.

- 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.
- Cisco bi-directional transceiver is not supported in the following HCAs: 764284-B21.

#### Known Issues 2.40.5072:

- Ambient sensor does not report via PLDM in GEN10 connectX3.

#### Fixes

##### Fixes in 2.40.5030 and 2.40.5072:

- Fixed a race between the firmware and the hardware during driver start which blocked outbound completions.
- Fixed an issue which caused the firmware not to send `link_down` event to the driver when running the `close_port` command.
- Fixed an issue where in rare cases the Auto Sense failed to detect the right protocol.
- Fixed signal integrity issue when connecting a WCS ConnectX4 mezz card to Pikes peak FPGA.
- Added the option to transmit corrupted DME pages for a very short period of time at the beginning of the Auto-Negotiation flow.
- Fixed an incorrect report of the `PortRcvDataVLExtended/PortXmitDataVLExtended` counters by the firmware.
- Fixed a rare issue which caused firmware's packet injector to cut off packets when the TX was congested.
- Fixed an issue that caused the response to TX requests to take up to 10 milliseconds in IEEE clause 72 Link Training.
- Fixed a race between 2 iriscs which caused a QP to get stuck in burst control limit state.
- When a QP was in error state, the firmware generated too many err CQEs at once, thus causing the `cmdif` responsiveness to be too slow. To prevent the above, the number of err CQEs was limited to 16 at a time.
- Fixed an issue that caused the MAC address that was set from the OS using `ifconfig` to be not reflected in the OCB buffer.
- Fixed an issue where the `ibdump` got broken when running with loopback traffic.
- Fixed an issue where the firmware took QP to firmware ownership and then released it to the hardware ownership without checking if another firmware flow owns the same QP.
- Fixed an issue which occurred after disconnecting cable which showed the link type as IB even if the link type of the port is ETH.
- Fixed an issue related to the HCA `PoerXmitWait` counter on port 2 (connected to port 2 on Switch-IB) where it started counting and reached 0xFF's regardless of connection to switch.
- Fixed a completion error issue when ECN was enabled. The ECN usage caused ordering errors in completion queues (CQ).
- Fixed the length calculation of UDP. The incorrect UDP length in the CNP packet caused miss-calculation of the ICRC.
- Fixed a wrong returned status in cable info MAD when the cable was not connected.
- Fixed failure instances when initiating FLR in the Physical Function.
- Disabled High Rate Steering mode in the INI to enable its compatibility with NC-SI over VLAN.
- Fixed performance issues causing slow performance when running in NO-DRAM-NIC mode.
- Fixed a default hardware configuration issue which caused RDP over IPv4 traffic to be dropped.

- Prevented a Virtual Function from injecting pause frames into the network.
- MLNX\_OEM command GET\_TEMP returned a wrong value in the max\_temp field.
- Fixed an issue which caused TX traffic to stop when the message MTU size was larger than QP.mtu.
- Fixed an issue which caused NVCONFIG to fail when the number of sector was set to 1 and the sector was zeroed.
- Fixed a race in handling a duplicated "read request from middle".
- Fixed an issue which caused lack of IB traffic on SR-IOV VPI.
- Fixed an issue which caused NVRAM to get stuck when it filled non-valid information in TLV.
- Fixed an issue which caused an internal firmware error when APM changed the QPs port mapping.
- Fixed an issue which caused a firmware internal error when handling QP alternative context.
- Fixed an issue which caused packet transmission to get stuck when the software tried to send pause frames with dmac equal to one of the device's MAC addresses.
- Fixed a mistakenly dropped ETH packet with ethertype 0x600 by the NIC.
- Fixed a case preventing broadcast traffic from arriving to their destination after detaching high priority broadcast rule on a port where NC-SI was enabled.
- Fixed a failure to update RSS QP in steering rules.
- Fixed an issue where the port raised as SDR vs. InfiniScale IV QDR Switch.
- Fixed a rare case of completion Error with Bad Opcode sequence status which occurred when retransmitting read requests.
- Fixed a case where the actual bandwidth did not match the user settings in VM QoS.
- Fixed a case where on rare cases, communication to BMC was lost during driver initialization.
- Fixed an issue with cable reading, which caused the link not to raise.
- Set the maximum EQN number to 1024.
- Fixed a rare issue with VPD init flow which caused read failures.
- Fixed an issue with RX size counter not being reported.
- The first Read response was not treated as implicit ACK.
- Reduced a long 40GbE link up time with Cisco Nexus3064 and Arista-7050S.
- Fixed promiscuous mode compatibility with AO-DMFS steering.
- Fixed promiscuous mode compatibility when NC-SI is enabled and configured.
- Fixed sending/receiving OEM temp commands (set/get) with channel ID 0x1f failure.
- Fixed an issue which caused packets to drop on a port when changing the interface state of the other port.
- Fixed long management communication loss and SOL hang during reboot cycles.
- Fixed wrong processing of inbound traffic towards BMC which caused communication loss.
- Fixed management link loss upon closing port interface through the driver.
- Fixed a false indication in firmware of an expander presence causing delay in EEPROM reading.
- Fixed an issue which caused a link down on a port when the cable was removed from the other port.
- Fixed a rare case where packet with length zero got stuck in hardware queues.
- Fixed an issue which caused InfiniBand congestion control packet (CNP) to hang in hardware.
- Fixed an issue which caused AEN to be sent after channel reset.
- Fixed an issue which prevented the restoring of QoS setting to its default consequently causing bandwidth degradation.
- Fixed an occasional long link up time with 10GbE based devices.
- Fixed an issue preventing cable readings from i2c slave address 0x51.
- Fixed a possible deadlock in PM turnoff request transmission and ack acceptance flow.
- Fixed a rare case with alignments state machines which caused occasional width degradation.
- Fixed an issue where the transmit queues hanged while congestion control was enabled and operational (EQC/QCN).
- Fixed an unexpected work completion syndrome with vendor syndrome 0x77 received when running RDMA SEN/WRITE traffic with retransmissions.
- Fixed an issue which caused SetPortInfo to return a good status when receiving invalid LinkSpeedEnabled value.
- Fixed an issue which caused dual port SFPP module cards to be automatically mapped with expander. Fixed an issue where firmware overrides the steering mode that was chosen by the driver.
- Fixed invalid return sensing results occurred when the link was up.
- Fixed an issue causing the sensing result to be delayed when cable was unplugged.
- Fixed an issue causing the link type to be displayed as ETH when set to AUTO.
- Fixed 2us glitch in Wake Up signal.
- Fixed performance degradation when running IBDump.
- Occasionally, a link training timeout occurred in EQ phase0 during disable/enable test.
- Improved strict bandwidth mode functionality.
- Fixed an issue with the PortRcvPkts counter always displaying zero value.
- Fixed an issue with processing GMP MADs with SET method in SecureHost mode.
- Fixed an issue causing a wrong usage of MCG size when configuring Global Multicast filter.
- Disabling the first port occasionally causes second port TX failure.
- Fixed a mismatch in links status reported. The adapter reports links as down while the switch perceives them as up.
- Fixed an occasional 40GbE link failure with SCM5 Switch blade.
- Fixed a wrong FDR10 speed reporting in MAD.

- Fixed an issue preventing the ports to rise up when set to FDR10 vs QDR.
- Fixed an occasional link failure vs Arista switch.
- Retransmission started from the first PSN of message instead of the last acknowledged PSN.
- Firmware hangs when receiving GeneralInfoMad during inline firmware burning.
- L1 flow adjustments and threshold tuning.
- Fixed a rare hanging issue during PERST\_ assertion.
- Wrong coefficients were reported during phase3.
- Fixed an issue causing wrong behavior due to reset timing.
- Fixed lack of steering options.
- Fixed long timeout issues.
- Fixed NVRAM write issues in driver-less mode.
- Fixed 40GbE link support in aux mode.
- Dropped commands with non-existing channel ID.
- Fixed issues in extended speed reporting.
- Fixed bad QP reporting in trap 257/8.
- Fixed an issue causing false bad q\_key error messages.
- Fixed Pause Frame opcode mismatch.
- Fixed communication loss upon PCIe error detection.
- Fixed wrong channel value in the SELECT/ DESELECT PACKAGE commands.
- Fixed an issue caused response packet to include 4 extra bytes.
- Fixed wrong reason code value returned when using Set Link command with unsupported speed.
- Added protection from bad MAC address given by BMC. Removed false TX pulse after PERST\_ deassertion.
- Fixed FLR capability bit inconsistency when SR-IOV is enabled.
- Fixed an issue with the device not reporting PCIe related errors.
- When a link is configured to DDR in a setup of ConnectX-3 to SX6036, SDR link is established instead.
- VXLAN used the wrong default UDP port. the UDP port number was changed to 4789.
- Fixed wrong setting of the UDP destination port for VXLAN.
- Fixed an internal error caused when moving to the DMS mode with IPMI/NC-SI enabled.
- In a back-to-back setup of FDR cards connected with a 0.5m FDR cable, a link may be established as FDR10 instead of FDR.
- Fixed issues related to working with PCI legacy interrupts.
- Wrong checksum calculation for short packets which are padded by the software.
- Reading PCIe configuration space after using the MFT flint tool caused the device to crash.
- Fixed occasional packet loss over IPMI.
- Fixed wrong values reported in the Eye opening MAD.
- Fixed occasional link width degrades during link negotiation and link transitions from L1 state.
- Fixed adjust signal detect thresholds.
- PortExtendedSpeedsCounters MAD counters were mistakenly increased while LLR was active.
- Lane reversal was not considered when configured TX parameters.
- Fixed ROL factory MAC usage when a Flex- Boot address was given.
- Fixed Pause frames factory MAC usage when FlexBoot address was given.
- The device did not differ between WOL/ROL packets.
- Fixed a set of extended fields in PortInfo MAD which did not function.
- Adjusted LLR cell size according to the MLPN negotiation of ib\_128b\_llr.
- The max speed restriction was active in full power mode instead of standby mode only.
- The InfiniBand Path migration did not work with GRH. <http://webdev01:8080/commit/ConnectX.git/a9c37ee4c31038f2c1179d4d9e79c9337e0ab5c7>
- Reading MGM after writing it returned wrong members count.
- Fixed corruption of the RSS hash key given by the driver.
- Fixed QoS rate limit BW offset.
- Fixed FDR10 speed\_en reporting.
- Fixed long management link com loss.
- The command results reported both link types active at the same time. Fixed collision between forcing phy type and port sensing. Fixed a wrong core clock freq reporting in QUERY\_HCA command.
- Fixed occasional link failure when 56GbE is enabled.
- Fixed max eye margins to be per protocol.
- perfquery reported wrong error symbol on ConnectX©-3 VPI mode: IB, ETH.
- On ConnectX-3Pro dual-port QDR and FDR/FDR10 switch setups, symbol errors may occur with MC2207312-030 AOCs.
- Symbol errors occur on ConnectX-3Pro dualport QDR connected to FDR switches with MC2207126-004 copper cables.
- Driver restart required when switching from InfiniBand FDR link with LLR enabled to InfiniBand link w/o LLR (for example: between SwitchX® and GD4036).
- On rare occasions, the adapter card may fail to link up when performing parallel detect to 40GbE.
- Automatic Path Migration (APM) did not update the new MGIDs from the Alternate Path.

## **Enhancements**

### **Firmware for the following devices are updated to 2.40.5030:**

644161-B21  
644160-B21  
649282-B21  
649281-B21  
649283-B21  
764282-B21  
764286-B21

### **Firmware for the following devices are updated to 2.40.5072**

764283-B21  
764284-B21  
764285-B21

### **New features in firmware version 2.40.5030:**

- Added temperature thresholds high/low default for MAD sensing and NCSI/IPMI OEM commands.
- Added a new field to "set port" command which notifies the firmware what is the user\_mtu size.
- Added a protection mechanism which ensures the firmware drops packets which are received in internal QPs and disables the WQE producer fetching.
- Added Ethernet Link down counter.
- Enables steering packets to receive queues according to Ethertype
- Adds support for additional rate values.
- Counters that count the number of repeated Send WQE cache lookups that resulted in a miss.
- Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image.
- New performance and back-pressure counters command via PRM (For further information, please refer to the PRM)
- Support for Multicast/Unicast sniffer rules (For further information, please refer to the PRM)
- Support for VLAN in VLAN encapsulation (For further information, please refer to the PRM)
- CQ creation offload by software
- Support for rst2rts command
- Invalidates a TLV during the firmware boot stage
- A new counter for the diag\_rprt PRM command to count packet drops due to no-receive buffer
- Support for Ethernet TX lifetime cycle control (Head of Queue)
- A new register (PPLR) that allows egress and external loopback control (For further information, please refer to the PRM)
- A watchdog mechanism to track ingress traffic stalls to prevent flooding the network with Flow Control packets
- A new LED scheme controlled by the INI which causes constant traffic LED indication even without traffic.
- Added support for multiple RoCE modes (RoCE v1+v2) on the same port: RoCE mode is per connection now.
- Added a new QP command "INIT2RTS\_QP" to enhance QP connection readiness time.
- Disabled FCS checks to support switches that replace FCS with Timestamp.
- Added RX Port identification for direct rout packets.
- Improved RDMA WRITE/SEND performance with retransmissions.
- Enabled firmware burning/querying using the PRM ACCESS\_REG command.
- Added support for VAM.
- Enabled bad cable EEPROM reporting to the driver.
- Added support for Platform Level Data Model (PLDM) sideband protocol.
- Added support for priority based AO-DMFS mode (For further information, please refer to the PRM).
- Added support for Unicast/Multicast loopback disablement by the driver. (For further information, please refer to the PRM)
- Removed the source IP from the hash calculation (For further information, please refer to the PRM)
- Added support for Inline Receive mode up to 2KB.

## **Supported Devices and Features**

### **Supported Devices:**

HP Part Number	Device Name	PSID
644161-B21	HP InfiniBand FDR/EN 10/40Gb Dual Port 544M Adapter	HP_0240230019
644160-B21	HP InfiniBand QDR/EN 10Gb Dual Port 544M Adapter	HP_0250230018
649281-B21	HP InfiniBand FDR/EN 10/40Gb Dual Port 544QSFP Adapter	HP_0280210019
649282-B21	HP InfiniBand FDR/EN 10/40Gb Dual Port 544FLR-QSFP Adapter	HP_0230240019 HP_0230220019
649283-B21	HP InfiniBand QDR/EN 10Gb Dual Port 544FLR-QSFP Adapter	HP_0230240009 HP_0230220009
764282-B21	HP InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter	HP_1350110023
764283-B21	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter	HP_1360110017
764284-B21	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	HP_1370110017
764285-B21	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter	HP_1380110017
764286-B21	HP InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter	HP_1390110023
SL4540 & SL4545 LOM	HP Infiniband QDR/Ethernet 10Gb 2P 544i Adapter	HP_0280110018
778509-B21	HP Infiniband FDR/Ethernet 10Gb/40Gb 2-port 544+A8L Adapter	HP_2010110021

Online Firmware Upgrade Utility (Windows x64) for HPE Apollo A10 InfiniBand EDR (100Gb) 2-port Adapter (HPE Part number: 843400-B21) on Windows x86\_64 platform  
Version: 1.0.0.1 **(Recommended)**  
Filename: cp032585.compsig; cp032585.exe

### **Important Note!**

#### **Known Issues for FW version 12.18.1000:**

- Bit Error Rate is not optimal on QDR links.
- A low link speed issue occurs when connecting a ConnectX®-4 EDR adapter card with a QDR InfiniScale® IV based switch. The link is raised as DDR.
- To raise links with platforms based on the following ICs, comply with the following firmware version requirements:
  - Connect-IB® - 10.10.4000
  - Switch-IB™ - 11.200.120 (or MLNX-OS 3.4.3050)
  - Spectrum™ MLNX-OS - 3.5.1000
  - ConnectX®-3 - 2.32.5100
  - SwitchX® - 9.2.7300 (or MLNX-OS 3.3.5006)
- Interoperability issue between ConnectX-4 or ConnectX-4 Lx adapter cards and ConnectX-2 adapter card when trying to raise a 10GbE link.
- If QDR is not enabled for the switch's InfiniBand Port Speed while connected to ConnectX-3/ConnectX-3 Pro or Connect-IB® FDR adapters or to SwitchX® /SwitchX-2 FDR switches, links will rise at SDR or DDR (even if FDR is enabled).  
**Workaround:** Enable QDR (in addition to FDR) when connecting to peer ports running at FDR
- Qualified EDR cables currently work with EDR networks (EDR devices, Switch®-IB and ConnectX®-4) only.
- PCIe capability "Device S/N" returns false value.
- When the link is Gen2, entering or exiting L1 state may cause bad CRC or DLLP indication.
- Configuration of space power management capability PME\_EN cannot be set, thus preventing the driver from activating the wake signal.
- During server reset (not a power-cycle), a non-maskable interrupt (NMI) might occur due to an Option Card Black Box (OCBB) issue causing PCIe access.
- MultiHost InfiniBand: OpenSM is supported over host0 only and the MAD\_IFC usage is limited to host0 only.  
**Workaround:** Activate OpenSM and the MFT tools via host0
- OCBB compliance with iLO versions: OCBB is not displayed in the latest iLO versions.
- PF direct pass-through is not supported (since PF FLR is not supported).
- Older MFT versions (4.0.0 and 3.8.0) may indicate that the latest GA firmware is old or that it cannot be compared with the existing firmware.  
A message similar to the below will be displayed upon firmware upgrade stage:  
# flint -d <mst device> -i <image> burn  
Current FW version on flash: 12.1100.6630

New FW version: 12.0012.0572

Note: The new FW version is not newer than the current FW version on flash.

Do you want to continue ? (y/n) [n] : y

**Workaround:** Choose one of the options below to upgrade firmware:

- Upgrade to the latest MFT version (4.1.0)
  - Type "y" after the note flint provides
- Run flint with the "-force" flag

- Traffic that is loopbacked due to QP.force\_loopback being equaled to 1, is steered to the PF
- A minimum of 200 LFM is required in order to cool the MCX4411A-ACAN adapter card.
- mlxfwreset does not function properly in old MFT versions after upgrading the firmware image
- **Workaround:** Upgrade MFT to the latest release or use reboot/power cycle after upgrading firmware
- Windows Server 2016 Inbox driver cannot work with firmware v12.12.0780
- **Workaround:** Use WinOF-2 v1.20 out-of-box driver
- Flashing the firmware requires server reboot. Firmware cannot be flashed twice without server reboot after first flashing
- **Workaround:** Reboot the server after firmware flashing
- When arming SRQ for limit event, the device might issue an event with context\_index=0
- **[For customers developing custom low level drivers]** Description: VFs internal FLR is not supported in PF teardown HCA command.
- **Workaround:** Before unloading the PF driver, PF driver must disable all its active VFs by performing the following:
  1. Run the disable\_hca command on all the function\_ids
  2. Wait until firmware returns all VFs allocated pages.
- Function (PF/VF) TX port counters are not supported.
- PF driver must work with pages event queue.
- Privileged Vport egress traffic is not blocked when Vport is not active
- Any local (internal) loopbacked packet is counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport.
- Vport number in virtual trap might be reported incorrectly
- Some 10GbE cables are not SFF-8472 compliant. "SFP+ Cable Technology" bits are cleared.
- In a Multihost setup, when running a single TCP stream, you might experience sub optimal throughput.
- **Workaround:** Use multiple streams to reach optimal results
- end\_padding\_mode is required in CREATE\_QP and not in INIT\_2\_RTR command as defined in the PRM
- LR4 cable events are sent although the port is up.
- QoS must be configured the same for both ports in order for RoCE LAG to function properly.
- Modifying the encap\_id of FTE is not supported.
- Flow Counter is supported only for FTE that does not include a flow\_tag or for FTE that have TIR as a destination.
- Using Flow Counters in the FDB Flow Table causes the transmitted IB traffic vport counters not to function properly.
- When a steering rule in the e-sw FDB includes an encap action and an external port as destination, a transmitted multicast packet that matches the rule is sent to the wire and the loopback and the locally looped back packet will also have an encap header
- Burning firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- When e-switch FDB is not created, the VF functional loopback traffic is sent to vport 0 (PF).
- Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- Updating a non-volatile configuration of port type TLV more than 50 times might cause system to hang
- **Workaround:** Run mlxconfig reset after every 50 consecutive updates of port type TLV.
- In order to raise 50GbE link when using ConnectX-4 firmware v12.16.1006 or newer, the following conditions must be met:
  - The minimum ConnectX-4 firmware version should be 12.16.1006
  - The minimum ConnectX-4 Lx firmware version should be 14.16.1006
  - The minimum MLNX-OS version should be 3.6.1000 (firmware v13.1100.0026)
- Performing warm reboot during firmware image burning for VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe
- **Workaround:** Cold reboot the device instead
- Pressing the Power Down button resets the server and does not initiate the Standby flow (as init 0 does). As a result, both ports are up due to keep\_link\_up, which opens the port when the firmware is loaded.
- **Workaround:** Use init 0 to start the Standby flow.
- In an InfiniBand Multihost and SR-IOV setups, traffic should contain GRH (GID index) if the grh\_required bit is set in the query\_hca\_vport\_context command. OpenSM should be configured as follow (opensm.conf):
  - virt\_enable should be 2
  - Enable Qos:
  - qos TRUE
- Performing warm reboot during firmware image burning in VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe
- **Workaround:** Power Cycle the server (cold reboot). Once a cold reboot is performed, the device will reboot with the previous image that was already burned.
- The firmware and the hardware do not reset the physical link upon CPortState=down.

According to the IB Specification, MANAGEMENT STATE CHANGE COMMANDS:

"CPortState... when phy\_link=up and CPortState=down, the state machine will transition to the LinkDown state which will reset other link state machines. Since

phy\_link=up, this will be followed by a transition to the LinkInitialize state. Thus a command to change link port state to down provides a way to re-initialize the link layer..”

**Workaround:** In order to re-train the physical link, sendbug PortInfo.physical\_port\_state = POLLING is required.

- Local loopback traffic might effect vport counters.
- Stopping the Rate Limiter while traffic is being transmitted might cause the adapter card to hang.

**Workaround:** Stop traffic before:

- setting rate 0 to the last non-default-rate vport.
- issuing destroy\_scheduling\_element command for the last vport with non-default-rate vport.
- Mapping an SL to VL 15 is currently not supported. Trying to do so, will cause a health buffer fatal internal error report.
- Running the modify\_scheduling\_context command does not include checking whether the scheduling element was created or not.

**Workaround:** Do not modify non-existing elements

- Setting/modifying the max\_average\_bw rate for a function, or setting speeds over the maximum supported speed (as indicated in INI) may result in inaccurate rates, and in an assert

**Workaround:** Set the max\_avergae\_bw in scheduling\_context commands to equal or less than the supported wire speed.

- Although the ref counter design is to increment on every max\_average\_bw != 0 (limited), the eSwitch max\_average\_bw ref counter decrements in TEARDOWN\_HCA/ FLR VF regardless of the max\_average\_bw value set.

**Workaround:** Verify all rates for all VFs are set to "0" before running TEARDOWN\_HCA/ FLR VF. This is applicable only if a rate is set for any VF.

- FDR link can raise with symbol errors on optic EDR cable longer than 30M.
- When running the modify\_scheduling\_context command, scheduling\_context.element\_type is taken into consideration with performing verifications, although the field is reserved.

**Workaround:** Use the correct element\_type when issuing modify\_scheduling\_context command.

- When using a firmware based LLDP/DCBX software based, LLDP tools (such as lldptool in Linux) should be disabled.

When intending to use software based LLDP, firmware LLDP must be disabled by using mlxconfig.

Using both the LLDP software and the firmware based LLDP will result in an unexpected results.

This applies to both Physical Functions (Bare Metal OS) and Virtual Functions.

**Workaround:** Disable the LLDP software.

- Host rate limiter values are statically configured and do not change when changing the port speed.
- If multiple processes in RX RDMA Flow Table are used, vport counters may be counted more than once.
- When the Max Rate Limiter is enabled and a Teardown/FLR is issued upon the last gvmi with max\_rate\_limiter enabled Teardown/FLR, the hardware remains enabled (rate\_limiter\_en = 1).

\*\* "max rate limiter enabled" = at least 1 (per chip). create/modify\_scheduling\_elemnt command has been issued by the driver, with max\_average\_bw != 0.

**Workaround:** Set a default rate (modify\_scheduling\_element.max\_average\_bw=0), or destroy all the scheduling elements on the chip prior to issuing a Teardown/FLR.

- The ipoib\_enhanced\_offloads indication in the HCA capabilities reports 0 while SRIOV\_EN=1.
- Occasionally, mapping 2 SLs to a single VL results in bad results in BW allocation for both SLs.
- When SR-IOV is enabled, some multicast traffic might be lost if another vport that a listening on the same multicast GID is down.
- The first duplicated MAC address in the MPFS is prioritized (instead of the last address) under the DUP\_MAC\_ACTION=LAST\_CFG configuration (default).
- Occasionally, when the link is up at a speed of 1GbE, data traffic will not go through.
- Querying Vport/eSwitch that are not set to FOLLOW using the max\_tx\_speed command, returns information as if the FOLLOW mode is enabled.
- Diagnostic counters are not reset when enabled with on\_demand mode.

**Workaround:** Reset the firmware.

- Enabling the s-vlan strip on a vport for which the user configured an s-vlan match on its Flow Steering tables, results in the corruption of the steering on that specific vport.
- Moving IPoIB enhanced QP to ERR or RST state results in the corruption of the service\_type and pm\_state in the QPC.
- Attaching RoCE IPv4 QPs to MCG when the vport state is set to toggle (DOWN/UP), prevents the QPs that are listed on that MCG from receiving any traffic.
- Missing invalidation upon SetQ.pkey leads to bad Pkey checks.

**Workaround:** Set PortInfo.LID after setting Pkeys.

OpenSM flow will perform such flow (first will set the Pkeys, then the PortInfo.LID)

- When performing Pkey check for IPoIB enhanced traffic, the Pkey membership bit is ignored.
- Occasionally, when moving UD QP from error state to RTS, the QP re-enters the error state.
- PXE booting in RedHat 7.3 is currently not supported.
- Performance issues occur when running min\_avg\_bw and max\_avg\_bw together.  
The issue starts when configuring high proportion for min\_avg\_bw between vports.  
For example: 1:40, 1:100: the vport with the low proportion will get high deviation.

## Fixes

### Fixes in 12.18.1000:

- Fixed an issue which caused the HCA mad response to contain the incoming packet Pkey and not the matched Pkey.

- Modified PCIe Tx configuration.
- Fixed an issue that prevented the software to set ECN parameters (min\_rate, max\_rate, rate\_to\_set\_on\_first\_cnp) to values > 32768.
- Fixed an issue which caused the link speed to raise as DDR when connected with certain copper cables to devices supporting up to QDR speed.
- Fixed an issue which prevented physical counters from resetting. Now the physical counters are reset on first driver start.
- Fixed possible negotiation issues with 3rd parties.
- Fixed a rare issue which caused 56GbE link to raise with errors.
- Fixed an issue which caused scheduling\_context.element\_type to be taken into consideration with performing verifications, when running the modify\_scheduling\_context command, although the field is reserved.
- Fixed an issue which caused the eSwitch max\_average\_bw ref counter to decrement in TEARDOWN\_HCA/ FLR VF regardless of the max\_average\_bw value set, although the ref counter design was to increment on every max\_average\_bw != 0 (limited).

## Enhancements

### Firmware for the following device has been updated to 12.18.1000:

843400-B21 (HPE Apollo A10 InfiniBand EDR (100Gb) 2-port Adapter)

### New features and changes in version 12.18.1000:

- Updated the ambient sensor warning thermal threshold.
- Added logical link indication in SFP to BaseT modules and disabled logical link when peer port is down.
- Added support for 10GbE in 25GbE SFP optical modules.
- Enables mixlink tool to collect data on the PHY link status and provides link down reasons and additional link related information.
- Enabled TX configuration response and movement during Link Training in Ethernet.
- Added support at lane rate of 12.89Gb.
- Limits the amount of time a packet may head a Traffic Class (TC) transmission queue, without being transmitted. Stale packets are discarded. Active by default for TCs adhering to link level flow control.
- UAR page size currently is set to 4KB and not according to what the system page size determines.
- Improved performance of:
  - Doorbell from User Access Region (UAR)
  - Clear interrupt from User Access Region (UAR)
- Added support for additional transport counters.
- Added ODP support for DC.
- Enabled scatter-to-CQE for sent packets for DC.
- Enabled moderation period modification in CQ modify command.
- [Beta] Added support for minimum/maximum rate limit per vport in SR-IOV.
- Enabled network traffic between UEFI-Shell and OS.
- Enabled the PF to force disable RoCE for its VFs.
- Added 2 new access registers:
  - Management Capabilities Mask Register
  - Ports Capabilities Mask Register Fields
 For further information, please refer to the PRM.
- Enabled VNIC the control to enable/disable its local loopback traffic.
- Added the option to open a receive RDMA Flow Table and to forward RoCE traffic to some destination QP.

## Supported Devices and Features

### Supported Devices:

HP Part Number	Device Name	PSID
843400-B21	HPE Apollo A10 InfiniBand EDR (100Gb) 2-port Adapter	HPE2920111032

## **Important Note!**

### **Known Issues:**

- Bit error rate is not optimal on QDR links
- A low link speed issue occurs when connecting a ConnectX®-4 EDR adapter card with a QDR InfiniScale® IV based switch. The link is raised as DDR.
- To raise links with platforms based on the following ICs, comply with the following firmware version requirements:
  - Connect-IB® - 10.10.4000
  - Switch-IBTM - 11.200.120 (or MLNX-OS 3.4.3050)
  - ConnectX®-3 - 2.32.5100
  - SwitchX® - 9.2.7300 (or MLNX-OS 3.3.5006)
- Interoperability issue between ConnectX-4 or ConnectX-4 Lx adapter cards and ConnectX-2 adapter card when trying to raise a 10GbE link.
- If QDR is not enabled for the switch's InfiniBand Port Speed while connected to ConnectX-3/ConnectX-3Pro or Connect-IB® FDR adapters or to SwitchX® /SwitchX-2 FDR switches, links will rise at SDR or DDR (even if FDR is enabled)  
**Workaround:** Enable QDR (in addition to FDR) when connecting to peer ports running at FDR
- Qualified EDR cables currently work with EDR networks (EDR devices, Switch®-IB and ConnectX®-4) only.
- PCIe capability "Device S/N" returns false value.
- When the link is Gen2, entering or exiting L1 state may cause bad CRC or DLLP indication.
- Configuration space power management capability PME\_EN cannot be set.
- During server reset (not a power-cycle), a non-maskable interrupt (NMI) might occur due to an Option Card Black Box (OCBB) issue causing PCIe access
- Subsystem class code is reported as IB instead of VPI.
- MultiHost InfiniBand: OpenSM is supported over host0 only and the MAD\_IFC usage is limited to host0 only.  
**Workaround:** Activate OpenSM and the MFT tools via host0
- OCBB compliance with iLO versions: OCBB is not displayed in the latest iLO versions.
- PF direct pass-through is not supported (since PF FLR is not supported).
- Some Port Control Register do not return to the default value after the last port owner host restarts the driver.  
**Workaround:** Reboot or reset the driver.  
*reboot / mlxfwreset*
- Older MFT versions (4.0.0 and 3.8.0) may indicate that the latest GA firmware is old or that it cannot be compared with the existing firmware. A message similar to the below will be displayed upon firmware upgrade stage:  
# flint -d <mst device> -i <image> burn  
Current FW version on flash: 12.1100.6630  
New FW version: 12.0012.0572  
Note: The new FW version is not newer than the current FW version on flash.  
Do you want to continue ? (y/n) [n] : y  
**Workaround:** Choose one of the options below to upgrade firmware:
  - Upgrade to the latest MFT version (4.1.0)
  - Type "y" after the note flint provides  
Run flint with the  
"-force" flag
- Traffic that is loopbacked due to QP.force\_loopback being equaled to 1, is steered to the PF.
- A minimum of 200 LFM is required in order to cool the MCX4411A-ACAN adapter card.
- mlxfwreset does not function properly in old MFT versions after upgrading the firmware image.  
**Workaround:** Upgrade MFT to the latest release or use reboot/power cycle after upgrading firmware.
- Windows Server 2016 Inbox driver cannot work with firmware v12.12.0780  
**Workaround:** Use WinOF-2 v1.20 out-of-box driver
- Flashing the firmware requires server reboot.  
Firmware cannot be flashed twice without server reboot after first flashing  
**Workaround:** Reboot the server after firmware flashing
- When arming SRQ for limit event, the device might issue an event with context\_index=0.
- **[For customers developing custom low level drivers]**  
VFs internal FLR is not supported in PF teardown HCA command.  
**Workaround:** Before unloading the PF driver, PF driver must disable all its active VFs by performing the following:
  1. Run the disable\_hca command on all the function\_ids
  2. Wait until firmware returns all VFs allocated pages.
- Function (PF/VF) TX port counters are not supported.

PF driver must work with pages event queue.

- Privileged Vport egress traffic is not blocked when Vport is not active
- Any local (internal) loopbacked packet is counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport
- Vport number in virtual trap might be reported incorrectly
- Some 10GbE cables are not SFF-8472 compliant. "SFP+ Cable Technology" bits are cleared.
- In a Multihost setup, when running a single TCP stream, you might experience sub optimal throughput.

**Workaround:** Use multiple streams to reach optimal results

- end\_padding\_mode is required in CREATE\_OP and not in INIT\_2\_RTR command as defined in the PRM
- LR4 cable events are sent although the port is up
- QoS must be configured the same for both ports in order for RoCE LAG to function properly.
- Modifying the encap\_id of FTE is not supported.
- Flow Counter is supported only for FTE that does not include a flow\_tag or for FTE that have TIR as destination.
- Using Flow Counters in the FDB Flow Table causes the transmitted IB traffic vport counters to not function properly.
- When a steering rule in the e-sw FDB includes an encap action and an external port as destination, a transmitted multicast packet that matches the rule is sent to the wire and the loopback and the locally looped back packet will also have an encap header.
- Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- When e-switch FDB is not created, the VF functional loopback traffic is send to vport 0 (PF).
- On some VLs, configuring the SM with a VL weight 0 and running traffic on it will cause the driver to hang during unload.
- Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- Updating a non-volatile configuration of port type TLV more than 50 times might cause system to hang.

**Workaround:** Run mlxconfig reset after every 50 consecutive updates of port type TLV.

- In order to raise 50GbE link when using firmware v.16. or newer, the following conditions must be met:
  - The minimum ConnectX-4 firmware version should be 12.16.
  - The minimum ConnectX-4 Lx firmware version should be 14.16.
  - The minimum MLNX-OS version should be 3.6.1000 (firmware v13.1100.0026)
- Performing warm reboot during firmware image burning for VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe.

**Workaround:** Cold reboot the device instead

- Pressing the Power Down button resets the server and does not initiate the Standby flow (as init 0 does). As a result, both ports are up due to keep\_link\_up, which opens the port when the firmware is loaded.

**Workaround:** Use init 0 to start the Standby flow.

- In an InfiniBand Multihost and SR-IOV setups, traffic should contain GRH (GID index) if the grh\_required bit is set in the query\_hca\_vport\_context command. OpenSM should be configured as follow (opensm.conf):
  - irt\_enable should be 2
  - Enable Qos:
  - qos TRUE

Note: In this case, traffic without GRH will be forwarded to vport0 ("Host0")

- Performing warm reboot during firmware image burning in VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe.

**Workaround:** Power Cycle the server (cold reboot). Once a cold reboot is performed, the device will reboot with the previous image that was already burned.

- The firmware and the hardware do not reset the physical link upon CPortState=down.  
According to the IB Specification, MANAGEMENT STATE CHANGE COMMANDS: "CPortState... when phy\_link=up and CPortState=down, the state machine will transition to the LinkDown state which will reset other link state machines. Since phy\_link=up, this will be followed by a transition to the LinkInitialize state. Thus a command to change link port state to down provides a way to re-initialize the link layer..."

**Workaround:** In order to re-train the physical link, sendbug PortInfo.physical\_port\_state = POLLING is required.

- Local loopback traffic might effect vport counters.
- Stopping the Rate Limiter while traffic is being transmitted might cause the adapter card to hang.

**Workaround:** Stop traffic before:

- setting rate 0 to the last non-default-rate vport.
- issuing destroy\_scheduling\_element command for the last vport with non-default-rate vport.
- Mapping an SL to VL 15 is currently not supported. Trying to do so, will cause a health buffer fatal internal error report.
- Running the modify\_scheduling\_context command does not include checking whether the scheduling element was created or not.

**Workaround:** Do not modify non-existing elements

- Setting/modifying the max\_average\_bw rate for a function, or setting speeds over the maximum supported speed (as indicated in INI) may result in inaccurate rates, and in an assert.

**Workaround:** Set the max\_avergae\_bw in scheduling\_context commands to equal or less than the supported wire speed.

- Although the ref counter design is to increment on every max\_average\_bw != 0 (limited), the eSwitch max\_average\_bw ref counter decrements in TEARDOWN\_HCA/ FLR VF regardless of the max\_average\_bw value set.

**Workaround:** Verify all rates for all VFs are set to "0" before running TEARDOWN\_HCA/ FLR VF. This is applicable only if a rate is set for any VF.

- FDR link can raise with symbol errors on optic EDR cable longer than 30M.
- When running the modify\_scheduling\_context command, scheduling\_context.element\_type is taken into consideration with performing verifications, although

the field is reserved.

**Workaround:** Use the correct element\_type when issuing modify\_scheduling\_context command.

- When using a firmware based LLDP/DCBX software based, LLDP tools (such as lldptool in Linux) should be disabled. When intending to use software based LLDP, firmware LLDP must be disabled by using mlxconfig. Using both the LLDP software and the firmware based LLDP will result in an unexpected results. This applies to both Physical Functions (Bare Metal OS) and Virtual Functions.

**Workaround:** Disable the LLDP software.

- PDDR access register reports incorrect FEC request in the Phy Info page.
- Host rate limiter values are statically configured and do not change when changing the port speed.
- If multiple processes in RX RDMA Flow Table are used, vport counters may be counted more than once.
- When the Max Rate Limiter is enabled and a Teardown/FLR is issued upon the last gvmi with max\_rate\_limiter enabled Teardown/FLR, the hardware remains enabled (rate\_limiter\_en = 1).

\*\* "max rate limiter enabled" = at least 1 (per chip). create/modify\_scheduling\_element command has been issued by the driver, with max\_average\_bw != 0.

**Workaround:** Set a default rate (modify\_scheduling\_element.max\_average\_bw=0), or destroy all the scheduling elements on the chip prior to issuing a Teardown/FLR.

- The ipoib\_enhanced\_offloads indication in the HCA capabilities reports 0 while SRIOV\_EN=1.
- Occasionally, mapping 2 SLs to a single VL results in bad results in BW allocation for both SLs.
- When SR-IOV is enabled, some multicast traffic might be lost if another vport that a listening on the same multicast GID is down.
- The first duplicated MAC address in the MPFS is prioritized (instead of the last address) under the DUP\_MAC\_ACTION=LAST\_CFG configuration (default).
- Occasionally, when the link is up at a speed of 1GbE, data traffic will not go through.
- Querying Vport/eSwitch that are not set to FOLLOW using the max\_tx\_speed command, returns information as if the FOLLOW mode is enabled.
- Diagnostic counters are not reset when enabled with on\_demand mode.

**Workaround:** Reset the firmware.

- Enabling the s-vlan strip on a vport for which the user configured an s-vlan match on its Flow Steering tables, results in the corruption of the steering on that specific vport.
- Moving IPoIB enhanced QP to ERR or RST state results in the corruption of the service\_type and pm\_state in the QPC.
- Attaching RoCE IPv4 QPs to MCG when the vport state is set to toggle (DOWN/UP), prevents the QPs that are listed on that MCG from receiving any traffic.
- Missing invalidation upon SetQ.pkey leads to bad Pkey checks.

**Workaround:** Set PortInfo.LID after setting Pkeys.

OpenSM flow will perform such flow (first will set the Pkeys, then the PortInfo.LID)

- When performing Pkey check for IPoIB enhanced traffic, the Pkey membership bit is ignored.
- Occasionally, when moving UD QP from error state to RTS, the QP re-enters the error state.
- PXE booting in RedHat 7.3 is currently not supported.
- Performance issues occur when running min\_avg\_bw and max\_avg\_bw together. The issue starts when configuring high proportion for min\_avg\_bw between vports. For example: 1:40, 1:100: the vport with the low proportion will get high deviation.
- Changing SL2VL (QTCT commands in ETH or SL2VL mad in IB) during traffic may cause the chip to hang.

**Workaround:** Run SL2VL commands before running traffic.

- Subsystem class code is reported as IB instead of VPI.

## Fixes

### Fixes in FW version 12.18.2030:

- Fixed an issue which caused bi-directional traffic 10% BW degradation in Multihost.
- Increased the COE zipping aggressive mode timer to 9000.
- Moving IPoIB enhanced QP to ERR or RST state results in the corruption of the service\_type and pm\_state in the QPC.
- Attaching RoCE IPv4 QPs to MCG when the vport state is set to toggle (DOWN/UP), prevents the QPs that are listed on that MCG from receiving any traffic.
- When arming SRQ for limit event, the device might issue an event with context\_index=0.
- Occasionally, when moving UD QP from error state to RTS, the QP re-enters the error state
- When performing Pkey check for IPoIB enhanced traffic, the Pkey membership bit is ignored.
- Stopping the Rate Limiter while traffic is being transmitted might cause the adapter card to hang.
- Privileged Vport egress traffic is not blocked when Vport is not active
- PF direct pass-through is not supported in InfiniBand (since PF FLR is not supported)
- Missing invalidation upon SetQ.pkey leads to bad Pkey checks.
- Fixed an issue which caused the HCA mad response to contain the incoming packet Pkey and not the matched Pkey.
- Modified PCIe Tx configuration.
- Fixed an issue that prevented the software to set ECN parameters (min\_rate, max\_rate, rate\_to\_set\_on\_first\_cnp) to values >32768.
- Fixed an issue which caused the link speed to raise as DDR when connected with certain copper cables to devices supporting up to QDR speed.
- Fixed an issue which prevented physical counters from resetting. Now the physical counters are reset on first driver start.

- Fixed possible negotiation issues with 3rd parties.
- Fixed a rare issue which caused 56GbE link to raise with errors.
- Fixed an issue which caused scheduling\_context.element\_type to be taken into consideration with performing verifications, when running the modify\_scheduling\_context command, although the field is reserved.
- Fixed an issue which caused the eSwitch max\_average\_bw ref counter to decrement in TEARDOWN\_HCA/ FLR VF regardless of the max\_average\_bw value set, although the ref counter design was to increment on every max\_average\_bw != 0 (limited).
- On rare occasions during UEFI boot cycles system got stuck while WinPE is loaded. (OS WinPE, system DL160).
- Single FTE that catches both untagged and prio-tagged packets (by giving an FTE with match\_value.vlan\_tag = 0 and match\_value.vid = 0) is currently not supported.
- Flashing the firmware requires server reboot. Firmware cannot be flashed twice without server reboot after first flashing.
- If the vport state is DOWN and a packet is sent in local loopback, the sx\_sniffer tool will not function.
- Fixed an issue causing bubbles to appear as symbol errors when link raised FDR 1x.
- When Clause 74 Fire-Code FEC is active, and there are FC corrected errors, both the FC\_correctable counter and the FC\_uncorrectable counter are increment.
- Some Port Control Register do not return to the default value after the last port owner host restarts the driver.
- Fixed an issue which caused RX to hang when the UDP packet had a reserved UDP destination port.
- Fixed DMAC reporting mapping per host.
- Fixed an EEH error from PCI which caused firmware to hang.
- Fixed the default value of the PCIe target\_link\_speed to Gen3 in link control2.
- Fixed an issue which prevented LEDs from blinking when the traffic was less than 0.1% of the link speed.
- Fixed an issue which caused the mlxconfig configuration of VF\_LOG\_BAR\_SIZE to be ignored and to be set to 5 (32MB).
- Fixed an issues which occasionally caused the driver to hang during unload on some VLs when configuring the SM with a VL weight 0 and running traffic on it.
- A server getting into a Standby mode while Packet-Pacing is enabled might cause firmware to hang and driver call-trace.
- Fixed an issue which caused unexpected QoS functionality in case of multiple sources to single destination traffic transmission.
- Fixed an issue which occasionally caused the RX traffic to hang in DC when received a PCI error on WQE fetch.
- Fixed OOB connection issue during Intel's ITP inject errors test.
- Fixed an issue in IEEE Auto-Negotiation where 25G FireCode FEC and 25G Reed-Solomon FEC bits were reversed.
- Fixed an issue which caused RX to hang when a UDP packet with destination port of RoCE v2 arrived and the data matched the DC transport service.
- Added protection from IOPX thermal diode destabilization to prevent UEFI IPv6 PXE boot failure on ConnectX-4 Lx 25GE OCP card.
- Fixed an issue causing single port devices to query and write Physical Port TLVs to Port 2.
- Enabled mlxfwreset to work using the PCIe Secondary Bus Reset.
- Fixed an issue causing link flapping as a result, incorrect link settings.
- Fixed an issue causing wrong alignment markers to be used when running 50G with Clause91 FEC enabled.
- Reduced the default BAR size for VF (SR-IOV) from 5 (32 MB) to 1 (2MB).
- Added legacy interrupts support in FlexBoot.
- Modified the TX configuration to support EMI crossing margins in 16Ghz.
- In some cases, a Bit Error Rate is not optimal on 10G/40G links.
- Instability of Link Training Flow occurs during 100G Auto-Negotiation.
- Fixed a rare issue which caused the command to hang when moved the QP to RESET and back to RTS.
- Improved RDMA READ bandwidth under packet lost scenario.
- Added support for pnat = 1 in HCA access\_reg command as required by the ibdiagnet tool.
- Fixed the LLDP OCBB response: return value is now ascii.
- Fixed a very rare NMI issue during PXE cycles.
- Increased the steering hash tables static size from 128 to a maximum of 32K entries.
- Prevented miscalculation of module temperature when using 100Gb/s cables (OPN: MFA1A00-Cxxx for 100GbE and MFA1A00-Exxx for IB EDR).
- Fixed an issue which caused the device to hang when resetting qkey/pkey violation counter via port\_info mad.
- Changed the MTU size in OCBB report. Now MTU size does not include the packet headers.
- Reduced one hop for Unicast RX steering, steering pipes balancing.
- Non-volatile configuration of Port Type TLV more than 50 times might cause system hang.
- Fixed a 25G and 50G link issue when Clause 91 RS FEC was active.
- Added a missing invalidation of SwitchX cache upon FLR which caused the upcoming driver load to either fail or not to be able to transmit.
- Fixed an issue which prevented Vport counters from counting local loopback packets. Packets now are filter by the self-loopback prevent
- Reported INTx as unsupported to allow PFs Passthrough on PowerKVM.
- SR-IOV Ethernet supports up to 18 VFs per port only.
- Fixed and incident what allowed local (internal) loopbacked packets to be counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport.
- Fixed an issue preventing driver loading or TX traffic sending upon reboot, after ungraceful driver unload.
- Fixed casting of BMC MAC before steering API.
- Fixed the PCI write flow to take into consideration the PCI MTU. This fix eliminates the need for NOPs in the flow, which resulted from PPC larger PCI MTU. The single queue limitation for READ is due to a hardware limitation of the number of READ request in a given time.

- Fixed a case that caused FlexBoot to not work as expected with systems that run with "large bar" enabled (Above 4G Decoding) over Connect-IB or ConnectX-4 HCAs.
- Fixed PLDM support for single port NICs. Currently port's relevant sensors/states are reported only for a single port.

## Enhancements

### Firmware Version 12.18.2030:

825110-B21 (HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter)

825111-B21 (HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter)

### New features and changes in version 12.18.2030:

- Added logical link indication in SFP to BaseT modules and disabled logical link when peer port is down.
- Added support for 10GbE in 25GbE SFP optical modules.
- Enables mlxlink tool to collect data on the PHY link status and provides link down reasons and additional link related information.
- Enabled TX configuration response and movement during Link Training in Ethernet.
- Added support at lane rate of 12.89Gb.
- Limits the amount of time a packet may head a Traffic Class (TC) transmission queue, without being transmitted. Stale packets are discarded. Active by default for TCs adhering to link level flow control.
- UAR page size currently is set to 4KB and not according to what the system page size determines.
- Improved performance of:
  - Doorbell from User Access Region (UAR)
  - Clear interrupt from User Access Region (UAR)
- Added support for additional transport counters.
- Added ODP support for DC.
- Enabled scatter-to-CQE for sent packets for DC.
- Enabled moderation period modification in CQ modify command.
- Added support for minimum/maximum rate limit per vport in SR-IOV.
- Enabled network traffic between UEFI-Shell and OS.
- Enabled the PF to force disable RoCE for its VFs.
- Added 2 new access registers:
  - Management Capabilities Mask Register
  - Ports Capabilities Mask Register Fields
 For further information, please refer to the PRM.
- Enabled VNIC the control to enable/disable its local loopback traffic.
- Added the option to open a receive RDMA Flow Table and to forward RoCE traffic to some destination QP.
- Added support for Multi-Host LID base routing. This feature requires a new OpenSM (v4.7.1 and above which comes with MLNX\_OFED 3.3-2.0.0.0) with the following attributes:
  - qos TRUE
  - lmc 2 (if there is no quad host in the fabric, you can set the lmc to 1)
  - virt\_enabled 2 Note: Multi-Host LID base routing can be configured by the INI only. The default is 0
- Resilient RoCE is the ability to send RoCE traffic over a lossy network (a network without flow control enabled), without the need to enable flow control on the network. The ability is accomplished by enabling ECN on both the Switch and the Host.
- Enables load balancing in the Multi PF Switch layer (MPFS) based on the L3/L4 headers.
- Enabled isolation between separate Hosts using the same HCA. All the Hosts can be rebooted, the driver can be stopped and the FLR signal can be sent independently.
- Increased the number of VFs from 64 to 95 per Physical Function (PF). Note: When increasing the number of VFs, the following limitations must be taken into consideration:  $server\_total\_bar\_size \geq (num\_pfs) * (2log\_pf\_uar\_bar\_size + 2log\_vf\_uar\_bar\_size * total\_vfs)$   $server\_total\_msix \geq (num\_pfs) * (num\_pf\_msix + num\_vfs\_msix * total\_vfs)$  Note: For the maximum number of VFs supported by your driver, please refer to your drivers' Release Notes or User Manual.
- [InfiniBand Only] Added support for multiple VLs in SR-IOV/multihost environments. Note: The number of VLs can be configured by the NVCONFIG. The default VL number is 4 VLs.
- Added support for QP Rate Limit in InfiniBand.
- Added support for Port Flap Counter.
- Limits the buffer size for all entries to improve performance. KSM is used when associating Key Length My Virtual Address (KLMs) with fixed memory size.
- This entry (null\_mkey) is use to indicate non-present KLM/KSM entries. When accessing is, it causes the device to generate page fault event.
- PLDM firmware burning is based on the DMTF spec DSPO267 (draft 9). The feature enables upgrading firmware and expansion ROM images using the PLDM protocol over MCTP (over PCIe). By doing so, a supporting BMC can query and upgrade the firmware without using OS based tools.
- Added a new physical layer statistics counters group. The new group includes BER counters, FEC error correction, clear time, and additional physical layer counters. For further information, please refer to the Ethernet Adapters Programming Manual (PRM).

- Enables the user to set a certain link up state for an unlimited period of time. This mode has 3 states:
  - Aux power (standby)
  - Reboot/boot/driver unloaded - the server is active and no driver is up
  - Driver is up - at least one driver is up (the time between init HCA and teardown or FLR)
- Added support for Doorbell from User Access Region (UAR).
- [Beta] Added support for maximum rate limit per function in SR-IOV.
- Allows the user to configure the adapter card to stop sending pauses after x when the receive port is unavailable (in a hang state).
- [Beta] Added support for new performance counters.
- DCBX is used by DCB devices to exchange configuration information with directly connected peers. DCBX uses Link Layer Discovery Protocol (LLDP) to exchange parameters between two link peers. For further information, please refer to the PRM.
- Allows network port registers to revert to their default values when the driver is restarted or the host is rebooted.
- Added additional network link up modes. The new modes decide when to keep the network link up. The new modes are:
  - keep\_eth\_link\_up
  - keep\_ib\_link\_up
  - keep\_link\_up\_on\_boot
  - keep\_link\_up\_on\_standby
- [Beta] Explicit Congestion Notification (ECN) is an extension to the Internet Protocol and to the Transmission Control Protocol. ECN allows end-to-end notification of network congestion without dropping packets.
- Increased the number of VFs from 32 to 64 per PF. Note: When increasing the number of VFs, the following limitations must be taken into consideration:
 
$$\text{server\_total\_bar\_size} \geq (\text{num\_pfs}) * (2 \log_{2} \text{pf\_uar\_bar\_size} + 2 \log_{2} \text{vf\_uar\_bar\_size} * \text{total\_vfs})$$

$$\text{server\_total\_msix} \geq (\text{num\_pfs}) * (\text{num\_pf\_msix} + \text{num\_vfs\_msix} * \text{total\_vfs})$$
- [Beta] RoCE Link Aggregation provides failover and link aggregation capabilities. In this mode, only one IB port, that represents the two physical ports, is exposed to the application layer. For further information, please refer to the PRM.
- Mellanox Accelerated Switching And Packet Processing (ASAP2 ) Direct technology allows to offload OVS by handling OVS data-plain in Mellanox ConnectX-4 / ConnectX-4 Lx NIC hardware (Mellanox Embedded Switch or eSwitch) while maintaining OVS control-plain unmodified. The current actions supported by ASAP2 Direct include packet parsing and matching, forward, drop along with VLAN push/pop or VXLAN encap/decap and HW based packet/byte flow statistics.
- Virtual Extensible LAN (VXLAN) is a network virtualization technology that improves scalability problems associated with large cloud computing deployments. It tunnels Ethernet frames within Ethernet + IP + UDP frames. Mellanox implements VXLAN encapsulation and decapsulation in the hardware.
- [Beta] DCBX is used by DCB devices to exchange configuration information with directly connected peers. DCBX uses Link Layer Discovery Protocol (LLDP) to exchange parameters between two link peers. For further information, please refer to the PRM.
- Enables the user to control whether or not to scatter Frame Check Sequence (FCS) or to check FCS functionality.
- [Beta] Send Queues (SQ/ Send queue of QP) may be individually rate limited, thus, allowing granular rate control over specific SW-defined flows. A rate-limited flow is allowed to transmit a few packets before its transmission rate is evaluated, and the next packet is scheduled for transmission accordingly.
- A new PHY test mode in which the device can generate different PRBS patterns for SerDes tuning purpose. For further information, please refer to PRM registers: PPAOS, PPTT, PPRT.
- Added support for MCTP host management over PCI
- Added support for OCBB/OCSD memory pointers restoration after mlxfwreset
- Added support for MCTP media migration between SMBUS and PCI
- Added v1, v3, v6 tags to VPD read only tag.
- Added IPoB checksum and LSO offload support.
- Enables software to scatter or strip FCS in RQ.
- Keeps track of the creation of a packet. A time-stamping service supports assertions of proof that a datum existed before a particular time.
- Applies pause functionality to specific classes of traffic on the Ethernet link.
- Custom port counters provide the user a clear indication about RDMA send/receive statistics and errors.
- The Link Layer Discovery Protocol (LLDP) is a vendor-neutral Link Layer protocol in the Internet Protocol Suite used by network devices for advertising their identity, capabilities, and neighbors on a IEEE 802 LAN. The protocol is formally defined in IEEE 802.1AB.
- ConnectX-4 adapters now support 1Gb/s and 56GbE Ethernet connectivity in addition to 10GigE, 25GigE, 40GigE, 50GigE, and 100GigE
- Provides a clear indication of Flow Steering statistics and errors.
- The minimal amount of packet headers inlined in the WQE's Eth Segment.
- A flow table may include a table-miss flow entry, which renders all Match Fields wildcards. If a packet does not match a flow entry in a flow table, this is a table miss. The behavior on a table miss depends on the table configuration. A table-miss flow entry in the flow table may specify how to process unmatched packets.
- Enables connecting multiple compute or storage hosts into a single interconnect adapter by separating the adapter PCIe interface into multiple and independent PCIe interfaces.
- Single Root IO Virtualization (SR-IOV) is a technology that allows a physical PCIe device to present itself multiple times through the PCIe bus.
- Uses the HCA for offloading erasure coding calculations.
- Enables the administrator to add a timestamp to the firmware they want to upgrade to avoid situations where one host tries to upgrade the firmware and another tries to downgrade; which may lead to two or more unnecessary server reboots. For further information, please refer to MFT User Manual.
- The change includes the following:

1. Changed port configuration which required link re-training (such as speed)
2. PAOS down
3. PAOS up This change, will cause the link to toggle and new configurations to take effect.

This change, will cause the link to toggle and new configurations to take effect

- Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image. For further information, please refer to MFT User Manual
- Improved TX signal integrity for Electromagnetic Induction (EMI) compliance. Rev. 12
- Large Receive Offload (LRO)
- Large Send Offload (LSO)
- Receive Side Scaling (RSS)
- Global Pause
- RoCEv1.0/RoCEv2.0
- Flow Steering
- Sniffer Ethernet
- Rate Limiter (at Beta level)
- Multi packet WQE
- Minimal Bandwidth Guarantee (ETS)
- Explicit Congestion Notification (ECN)
- Priority Flow Control (PFC)
- PCIe Function Level Reset (FLR)
- Power Management L2/L3 flow support
- Self Loopback support
- Transport Domain support
- CQ2EQ remapping
- Added support for the following commands:
  - MODIFY/QUERY\_ESW\_VPORT\_CONTEXT
  - QUERY/MODIFY\_CONG\_STATUS
  - QUERY/MODIFY\_CONG\_PARAMS
  - QUERY\_CONG\_STATISTICS
  - ADD/DELETE\_VXLAN\_UDP\_DPORT
- VXLAN/NVGRE Stateless offload In this release, this feature is supported through Windows ONLY
- SR-IOV EN (at Beta level)
- CQE zipping
- Dynamically Connected (DC) transport
- Wake-on-Lane/Standby
- FlexBoot/UEFI support
- Optic modules thermal sensing support
- PLDM commands support
- Improved robustness during negotiation of Clause 73 (DME)
- Non-Volatile Configuration (NVConfig). For the complete list, please refer to the NVConfig User Manual
- Enabled port management. Now one port can be set as Ethernet and one as InfiniBand.

## **Supported Devices and Features**

### **Supported Devices:**

HP Part Number	Device Name	PSID
825110-B21	HPE InfiniBand EDR/Ethernet 100Gb 1-port 840QSFP28 Adapter	HP_2180110032
825111-B21	HPE InfiniBand EDR/Ethernet 100Gb 2-port 840QSFP28 Adapter	HP_2190110032

Online Firmware Upgrade Utility (Windows x64) for HPE Mellanox Ethernet only adapters

Version: 1.0.0.5 (A) **(Recommended)**

Filename: cp032808.compsig; cp032808.exe

## **Important Note!**

### **Known Issues for FW version 2.40.7000:**

- 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.
- 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.  
**Workaround:** Production SL230 should be used for PCIe Gen3 operation.
- 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.  
**Workaround:** Enable SR-IOV in the BIOS
- 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.  
**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.  
**Workaround:** Upgrade to MLNX-\_OFED-2.1-xxx or later.
- VPD read-only fields are writable.  
**Workaround:** Do not write to readonly fields if you wish to preserve them.
- 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.  
**Workaround:** Use the physical function device ID to identify the device.
- 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.  
**Workaround:**
  1. Unplug the cable from the switch
  2. Restart driver
  3. Change the protocol via the appropriate tools.
- 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.
- AHS reports wrong MTU size.

### **Known Issues for FW version 14.18.2030:**

- To raise links with platforms based on the following ICs, comply with the following firmware version requirements:
  - ConnectX®-3 - 2.32.5100
  - SwitchX® - 9.2.7300 (or MLNX-OS 3.3.5006)
- Interoperability issue between ConnectX-4 or ConnectX-4 Lx adapter cards and ConnectX-2 adapter card when trying to raise a 10GbE link.
- PCIe capability "Device S/N" returns false value.
- When the link is Gen2, entering or exiting L1 state may cause bad CRC or DLLP indication.
- Configuration space power management capability `PME_EN` cannot be set.

- During server reset (not a power-cycle), a non-maskable interrupt (NMI) might occur due to an Option Card Black Box (OCBB) issue causing PCIe access.
- PF direct pass-through is not supported (since PF FLR is not supported)
- Some Port Control Register do not return to the default value after the last portowner host restarts the driver.

**Workaround:** Reboot or reset the driver.

- Older MFT versions (4.0.0 and 3.8.0) may indicate that the latest GA firmware is old or that it cannot be compared with the existing firmware.

A message similar to the below will be displayed upon firmware upgrade stage:

```
# flint -d <mst device> -i <image> burn
```

```
Current FW version on flash: 12.1100.6630
```

```
New FW version:
```

```
12.0012.0572
```

```
Note: The new FW version is not newer than the current FW version on flash.
```

```
Do you want to continue ? (y/n) [n] : y
```

**Workaround:** Choose one of the options below to upgrade firmware:

- Upgrade to the latest MFT version (4.1.0)
- Type "y" after the note flint provides Run flint with the "-force" flag
- Traffic that is loopbacked due to QP.force\_loopback being equaled to 1, is steered to the PF.
- A minimum of 200 LFM is required in order to cool the MCX4411A-ACAN adapter card.
- mlxfwreset does not function properly in old MFT versions after upgrading the firmware image
- Workaround:** Upgrade MFT to the latest release or use reboot/power cycle after upgrading firmware.
- Windows Server 2016 Inbox driver cannot work with firmware v14.12.0780
- Workaround:** Use WinOF-2 v1.20 out-of-box driver.
- Flashing the firmware requires server reboot. Firmware cannot be flashed twice without server reboot after first flashing
- Workaround:** Reboot the server after firmware flashing.
- When arming SRQ for limit event, the device might issue an event with context\_index=0.
- The value of log\_max\_ra\_res\_qp in set\_hca\_cap command should be the same in all functions.
- Function (PF/VF) TX port counters are not supported.
- PF driver must work with pages event queue.
- SR-IOV Ethernet supports up to 18 VFs per port only.
- Privileged Vport egress traffic is not blocked when Vport is not active
- Any local (internal) loopbacked packet is counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport.
- Vport number in virtual trap might be reported incorrectly
- Single FTE that catches both untagged and prio-tagged packets (by giving an FTE with match\_value.vlan\_tag = 0 and match\_value.vid = 0) is currently not supported.
- Configuring the SM with VL weight 0 on some VL, and running traffic on it, causes the driver to hang during unload.
- OCBB is not displayed in the latest iLO versions.
- Some 10GbE cables are not SFF-8472 compliant. "SFP+ Cable Technology" bits are cleared.
- When Clause 74 Fire-Code FEC is active, and there are FC corrected errors, both the FC\_correctable counter and the FC\_uncorrectable counter are increment.
- Windows NMI may occur upon reboot cycle as a result of OCBB memory access transactions.
- end\_padding\_mode is required in CREATE\_QP and not in INIT\_2\_RTR command as defined in the PRM
- LR4 cable events are sent although the port is up.
- On rare occasions during UEFI boot cycles system got stuck while winPE is loaded. (OS WinPE, system DL160) **Workaround:** Power cycle revives the system.
- QoS must be configured the same for both ports in order for RoCE LAG to function properly.
- Modifying the encap\_id of FTE is not supported.
- Flow Counter is supported only for FTE that does not include a flow\_tag or for FTE that have TIR as destination.
- Using Flow Counters in the FDB Flow Table causes the transmitted IB traffic vport counters to not function properly.
- When a steering rule in the e-sw FDB includes an encap action and an external port as destination, a transmitted multicast packet that matches the rule is sent to the wire and the loopback and the locally looped back packet will also have an encap header.
- Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- When e-switch FDB is not created, the VF functional loopback traffic is send to vport 0 (PF).
- Burning in firmware on the same device in parallel from multiple interfaces (e.g. PCIe and MTUSB) is not supported.
- Updating a non-volatile configuration of port type TLV more than 50 times might cause system to hang. **Workaround:** Run mlxconfig reset after every 50 consecutive updates of port type TLV.
- In order to raise 50GbE link when using ConnectX-4 Lx firmware v14.16.1006 or newer, the following conditions must be met:
  - The minimum ConnectX-4 firmware version should be 12.16.1006
  - The minimum ConnectX-4 Lx firmware version should be 14.16.1006
  - The minimum MLNX-OS version should be 3.6.1000 (firmware v13.1100.0026)
- Performing warm reboot during firmware image burning for VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe. **Workaround:** Cold reboot the device instead
- Pressing the Power Down button resets the server and does not initiate the Standby flow (as init 0 does). As a result, both ports are up due to keep\_link\_up,

which opens the port when the firmware is loaded. **Workaround:** Use init 0 to start the Standby flow.

- In an InfiniBand Multihost and SR-IOV setups, traffic should contain GRH (GID index) if the grh\_required bit is set in the query\_hca\_vport\_context command. OpenSM should be configured as follow (opensm.conf):
  - virt\_enable should be 2
  - Enable Qos:
  - qos TRUENote: In this case, traffic without GRH will be forwarded to vport0 ("Host0")
- Performing warm reboot during firmware image burning in VPI/IB devices configured with IB port protocol, might cause the device to disappear from the PCIe. **Workaround:** Power Cycle the server (cold reboot). Once a cold reboot is performed, the device will reboot with the previous image that was already burned.
- The firmware and the hardware do not reset the physical link upon CPortState=down. According to the IB Specification, MANAGEMENT STATE CHANGE COMMANDS: "CPortState... when phy\_link=up and CPortState=down, the state machine will transition to the LinkDown state which will reset other link state machines. Since phy\_link=up, this will be followed by a transition to the LinkInitialize state. Thus a command to change link port state to down provides a way to re-initialize the link layer..." **Workaround:** In order to re-train the physical link, sendbug PortInfo.physical\_port\_state = POLLING is required.
- Local loopback traffic might effect vport counters.
- Stopping the Rate Limiter while traffic is being transmitted might cause the adapter card to hang. **Workaround:** Stop traffic before:
  - setting rate 0 to the last non-default-rate vport.
  - issuing destroy\_scheduling\_element command for the last vport with non-default-rate vport.
- Mapping an SL to VL 15 is currently not supported. Trying to do so, will cause a health buffer fatal internal error report.
- Running the modify\_scheduling\_context command does not include checking whether the scheduling element was created or not. **Workaround:** Do not modify non-existing elements.
- Setting/modifying the max\_average\_bw rate for a function, or setting speeds over the maximum supported speed (as indicated in INI) may result in inaccurate rates, and in an assert. **Workaround:** Set the max\_avergae\_bw in scheduling\_context commands to equal or less than the supported wire speed.
- Although the ref counter design is to increment on every max\_average\_bw != 0 (limited), the eSwitch max\_average\_bw ref counter decrements in TEARDOWN\_HCA/ FLR VF regardless of the max\_average\_bw value set. **Workaround:** Verify all rates for all VFs are set to "0" before running TEARDOWN\_HCA/ FLR VF. This is applicable only if a rate is set for any VF.
- FDR link can raise with symbol errors on optic EDR cable longer than 30M.
- When running the modify\_scheduling\_context command, scheduling\_context.element\_type is taken into consideration with performing verifications, although the field is reserved. **Workaround:** Use the correct element\_type when issuing modify\_scheduling\_context command.

## Fixes

### Fixes in 2.40.7000:

- Fixed a race between the firmware and the hardware during driver start which blocked outbound completions.
- Fixed an issue which caused the firmware not to send link\_down event to the driver when running the close\_port command.
- Fixed an issue where in rare cases the Auto Sense failed to detect the right protocol.
- Fixed signal integrity issue when connecting a WCS ConnectX4 mezz card to Pikes peak FPGA.
- Added the option to transmit corrupted DME pages for a very short period of time at the beginning of the Auto-Negotiation flow.
- Fixed an incorrect report of the PortRcvDataVLExtended / PortXmitDataVLExtended counters by the firmware.
- Fixed a rare issue which caused firmware's packet injector to cut off packets when the TX was congested.
- Fixed an issue that caused the response to TX requests to take up to 10 milli-seconds in IEEE clause 72 Link Training.
- Fixed a race between 2 iriscs which caused a QP to get stuck in burst control limit state.
- When a QP was in error state, the firmware generated too many err CQEs at once, thus causing the cmdif responsiveness to be too slow. To prevent the above, the number of err CQEs was limited to 16 at a time.
- Fixed an issue that caused the MAC address that was set from the OS using ifconfig to be not reflected in the OCBB buffer.
- Fixed an issue where the ibdump got broken when running with loopback traffic.
- Fixed an issue where the firmware took QP to firmware ownership and then released it to the hardware ownership without checking if another firmware flow owns the same QP.
- Fixed an issue which occurred after disconnecting cable which showed the link type as IB even if the link type of the port is ETH.
- Fixed an issue related to the HCA PoerXmitWait counter on port 2 (connected to port 2 on Switch-IB) where it started counting and reached 0xFF's regardless of connection to switch.
- Fixed a completion error issue when ECN was enabled. The ECN usage caused ordering errors in completion queues (CQ).
- Fixed the length calculation of UDP. The incorrect UDP length in the CNP packet caused miss-calculation of the ICRC.
- Fixed a wrong returned status in cable info MAD when the cable was not connected
- Fixed failure instances when initiating FLR in the Physical Function.
- Disabled High Rate Steering mode in the INI to enable its compatibility with NC-SI over VLAN.
- Fixed a default hardware configuration issue which caused RDP over IPv4 traffic to be dropped.

- MLNX\_OEM command GET\_TEMP returned a wrong value in the max\_temp field.
- Fixed an issue which caused TX traffic to stop when the message MTU size was larger than QP.mtu.
- Fixed an issue which caused NVCONFIG to fail when the number of sector was set to 1 and the sector was zeroed.
- Fixed a race in handling a duplicated "read request from middle".
- Fixed an issue which caused lack of IB traffic on SR-IOV VPI.
- Fixed an issue which caused NVRAM to get stuck when it filled non-valid information in TLV.
- Fixed an issue which caused an internal firmware error when APM changed the QPs port mapping.
- Fixed an issue which caused a firmware internal error when handling QP alternative context.
- Fixed an issue which caused packet transmission to get stuck when the software tried to send pause frames with dmac equal to one of the device's MAC addresses.
- Fixed a wrong reporting of section 5 event 8 - LSO support.
- Fixed a mistakenly dropped ETH packet with ethertype 0x600 by the NIC.
- Fixed a case preventing broadcast traffic from arriving to their destination after detaching high priority broadcast rule on a port where NC-SI was enabled.
- Fixed an issue where the port raised as SDR vs. InfiniScale IV QDR Switch
- Fixed a rare case of completion Error with Bad Opcode sequence status which occurred when retransmitting read requests
- Fixed a case where the actual bandwidth did not match the user settings in VM QoS.
- Fixed a case where on rare cases, communication to BMC was lost during driver initialization.
- Fixed an issue with cable reading, which caused the link not to raise.
- Set the maximum EQN number to 1024.
- Fixed a rare issue with VPD init flow which caused read failures.
- Fixed an issue with RX size counter not being reported.
- Fixed promiscuous mode compatibility with AO-DMFS steering.
- Fixed promiscuous mode compatibility when NC-SI is enabled and configured.
- Fixed sending/receiving OEM temp commands (set/get) with channel ID 0x1f failure.
- Fixed an issue which caused packets to drop on a port when changing the interface state of the other port.
- Fixed long management communication loss and SOL hang during reboot cycles.
- Fixed wrong processing of inbound traffic towards BMC which caused communication loss.
- Fixed management link loss upon closing port interface through the driver.
- Fixed a false indication in firmware of an expander presence causing delay in EEPROM reading.
- Fixed an issue which caused a link down on a port when the cable was removed from the other port.
- Fixed a rare case where packet with length zero got stuck in hardware queues.
- Fixed an issue which caused InfiniBand congestion control packet (CNP) to hang in hardware.
- Fixed an issue which caused AEN to be sent after channel reset.
- Fixed an issue which prevented the restoring of QoS setting to its default consequently causing bandwidth degradation.
- Fixed an occasional long link up time with 10GbE based devices.
- Fixed an issue preventing cable readings from i2c slave address 0x51
- Fixed a wrong parity bit calculation when transmitting PCIe TS1 packets.
- Fixed a possible deadlock in PM turnoff request transmission and ack acceptance flow.
- Fixed a rare case with alignments state machines which caused occasional width degradation.
- Fixed an issue where the transmit queues hanged while congestion control was enabled and operational (EQC/QCN)
- Fixed an unexpected work completion syndrome with vendor syndrome 0x77 received when running RDMA SEN/WRITE traffic with retransmissions.
- Fixed an issue which caused SetPortInfo to return a good status when receiving invalid LinkSpeedEnabled value.
- Fixed an issue which caused dual port SFPP module cards to be automatically mapped with expander.
- Fixed an issue where firmware overrides the steering mode that was chosen by the driver.
- Fixed invalid return sensing results occurred when the link was up.
- Fixed an issue causing the sensing result to be delayed when cable was unplugged.
- Fixed an issue causing the link type to be displayed as ETH when set to AUTO.
- Fixed an issue causing ARP not to reply when connected to Hyper-V vSwitch.

#### Fixes in 14.18.2030:

- On rare occasions during UEFI boot cycles system got stuck while WinPE is loaded. (OS WinPE, system DL160).
- Single FTE that catches both untagged and prio-tagged packets (by giving an FTE with match\_value.vlan\_tag = 0 and match\_value.vid = 0) is currently not supported.
- Flashing the firmware requires server reboot. Firmware cannot be flashed twice without server reboot after first flashing
- If the vport state is DOWN and a packet is sent in local loopback, the sx\_sniffer tool will not function.
- Fixed an issue causing bubbles to appear as symbol errors when link raised FDR 1x.
- When Clause 74 Fire-Code FEC is active, and there are FC corrected errors, both the FC\_correctable counter and the FC\_uncorrectable counter are increment.
- Some Port Control Register do not return to the default value after the last port owner host restarts the driver.
- Fixed an issue which caused RX to hang when the UDP packet had a reserved UDP destination port.
- Fixed DMAC reporting mapping per host.

- Fixed an EEH error from PCI which caused firmware to hang.
- Fixed the default value of the PCIe target\_link\_speed to Gen3 in link control2.
- Fixed an issue which prevented LEDs from blinking when the traffic was less than 0.1% of the link speed.
- Fixed an issue which caused the mlxconfig configuration of VF\_LOG\_BAR\_SIZE to be ignored and to be set to 5 (32MB).
- A server getting into a Standby mode while Packet-Pacing is enabled might cause firmware to hang and driver call-trace.
- Fixed an issue which caused unexpected QoS functionality in case of multiple sources to single destination traffic transmission.
- Fixed an issue which occasionally caused the RX traffic to hang in DC when received a PCI error on WQE fetch.
- Fixed OOB connection issue during Intel's ITP inject errors test.
- Fixed an issue which prevented MAC address changes by to driver to be reflected in the OBCC and NC-SI interfaces.
- Added protection from IOPX thermal diode destabilization to prevent UEFI IPv6 PXE boot failure on ConnectX-4 Lx 25GE cards.
- Fixed an issue which caused a link down in Port 2 when unplugging the cable from Port 1.
- In some cases, a Bit Error Rate is not optimal on 10G/40G links.
- Instability of Link Training Flow occurs during 100G Auto-Negotiation.
- Fixed a rare issue which caused the command to hang when moved the QP to RESET and back to RTS.
- Improved RDMA READ bandwidth under packet lost scenario.
- Added support for pnat = 1 in HCA access\_reg command as required by the ibdiagnet tool.
- Fixed the LLDP OCBB response: return value is now ascii.
- Fixed a very rare NMI issue during PXE cycles.
- Increased the steering hash tables static size from 128 to a maximum of 32K entries.
- Prevented miscalculation of module temperature when using 100Gb/s cables (OPN: MFA1A00-Cxxx for 100GbE).
- Reduced one hop for Unicast RX steering, steering pipes balancing.
- Non-volatile configuration of Port Type TLV more than 50 times might cause system hang.
- Enabled RoCE IPv4 Multicast. This prevents MCG command from failing when an IPv4 is mapped to an IPv6 address.
- If the PF driver or the tool (e.g. ethtool) use PAOS DOWN command (e.g. by ifconfig down or ip link set down), loopback traffic is blocked for all functions on this port (PF<->VFs / VF<->VF) In Multihost loopback, the traffic will be blocked once the firmware receives the PAOS down command from all PFs. However, the loopback traffic will not be blocked when the port is down due to the physical link (for example: cable plugged out, switch port down).
- Fixed a 25G and 50G link issue when Clause 91 RS FEC was active.
- Added a missing invalidation of eSwitch cache upon FLR which caused the upcoming driver load to either fail or not to be able to transmit.
- Fixed a UEFI IPv6 PXE boot failure on ConnectX-4 Lx 25GbE OCP card.
- Fixed an issue which prevented Vport counters from counting local loopback packets. Packets now are filter by the self-loopback prevention.
- Reported INTx as unsupported to allow PFs Passthrough on PowerKVM.
- SR-IOV Ethernet supports up to 18 VFs per port only.
- Fixed and incident what allowed local (internal) loopbacked packets to be counted by the Vport counters, although Vport counters should count only traffic that crosses the Vport.
- Fixed an issue preventing driver loading or TX traffic sending upon reboot, after ungraceful driver unload.
- Fixed casting of BMC MAC before steering API.
- Fixed the PCI write flow to take into consideration the PCI MTU. This fix eliminates the need for NOPs in the flow, which resulted from PPC larger PCI MTU. The single queue limitation for READ is due to a hardware limitation of the number of READ request in a given time.
- Fixed a case that caused FlexBoot to not work as expected with systems that run with "large bar" enabled (Above 4G Decoding) over Connect-IB or ConnectX-4 HCAs.
- Fixed an issue which prevented link creation when connected to IXIA 25G.

## Enhancements

### Firmware for the following devices are updated to 2.40.7000:

779799-B21 (HP Ethernet 10G 2-port 546FLR-SFP+ Adapter)

779793-B21 (HP Ethernet 10G 2-port 546SFP+ Adapter)

### New features and changes in version 2.40.7000:

- Added Etherent Link down counter.
- Enables steering packets to receive queues according to Ethertype matching
- Adds support for additional rate values.
- Counters that count the number of repeated Send WQE cache lookups that resulted in a miss.
- Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image.
- New performance and back-pressure counters command via PRM (For further information, please refer to the PRM)
- Support for Multicast/Unicast sniffer rules (For further information, please refer to the PRM)
- Support for VLAN in VLAN encapsulation (For further information, please refer to the PRM)
- CQ creation offload by software

- Support for rst2rts command
- Invalidates a TLV during the firmware boot stage
- A new counter for the diag\_rprt PRM command to count packet drops due to noreceive buffer
- Support for Ethernet TX lifetime cycle control (Head of Queue)
- A new register (PPLR) that allows egress and external loopback control (For further information, please refer to the PRM)
- A watchdog mechanism to track ingress traffic stalls to prevent flooding the network with Flow Control packets
- Inspur LED scheme: A new LED scheme controlled by the INI which causes constant traffic LED indication even without traffic.
- Added support for multiple RoCE modes (RoCE v1+v2) on the same port: RoCE mode is per connection now.
- Added a new QP command "INIT2RTS\_QP" to enhance QP connection readiness time.
- Disabled FCS checks to support switches that replace FCS with Timestamp.
- Added RX Port identification for direct rout packets.
- Improved RDMA WRITE/SEND performance with retransmissions.
- Enabled firmware burning/querying using the PRM ACCESS\_REG command.
- Added support for VAM. • Enabled bad cable EEPROM reporting to the driver.
- Added support for Platform Level Data Model (PLDM) sideband protocol.
- Added support for priority based AO-DMFS mode (For further information, please refer to the PRM).
- Added support for Unicast/Multicast loopback disablement by the driver. (For further information, please refer to the PRM)
- Removed the source IP from the hash calculation (For further information, please refer to the PRM)
- Added support for Inline Receive mode up to 2KB.
- Added support for multiple RoCE modes (RoCE v1+v2) on the same port: RoCE mode is per connection now.
- Added a new QP command "INIT2RTS\_QP" to enhance QP connection readiness time.
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- Added support for priority based AO-DMFS mode (For further information, please refer to the PRM).
- Added support for Unicast/Multicast loopback disablement by the driver. (For further information, please refer to the PRM)
- Removed the source IP from the hash calculation (For further information, please refer to the PRM)
- Added support for Inline Receive mode up to 2KB.
- Sideband moved to port 0
- Added MCTP command support
- Changed the HP LED scheme for the 779799-B21 adapter.

**Firmware for the following devices are updated to 14.18.2030:**

817749-B21 (HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter)

817753-B21 (HPE Ethernet 25Gb 2-port 640SFP28 Adapter)

- Added logical link indication in SFP to BaseT modules and disabled logical link when peer port is down.
- Added support for 10GbE in 25GbE SFP optical modules.
- Enables mlxlink tool to collect data on the PHY link status and provides link down reasons and additional link related information.
- Enabled TX configuration response and movement during Link Training in Ethernet.
- Added support at lane rate of 12.89Gb.
- Limits the amount of time a packet may head a Traffic Class (TC) transmission queue, without being transmitted. Stale packets are discarded. Active by default for TCs adhering to link level flow control.
- UAR page size currently is set to 4KB and not according to what the system page size determines.
- Improved performance of:
  - Doorbell from User Access Region (UAR)
  - Clear interrupt from User Access Region (UAR)
- Added support for additional transport counters.
- Added ODP support for DC.
- Enabled scatter-to-CQE for sent packets for DC.
- Enabled moderation period modification in CQ modify command.
- Added support for minimum/maximum rate limit per vport in SR-IOV.
- Enabled network traffic between UEFI-Shell and OS.
- Enabled the PF to force disable RoCE for its VFs.
- Added 2 new access registers:
  - Management Capabilities Mask Register
  - Ports Capabilities Mask Register Fields

For further information, please refer to the PRM.

- Enabled VNIC the control to enable/disable its local loopback traffic.
- Added the option to open a receive RDMA Flow Table and to forward RoCE traffic to some destination QP.
- Added support for Multi-Host LID base routing. This feature requires a new OpenSM (v4.7.1 and above which comes with MLNX\_OFED 3.3-2.0.0.0) with the following attributes:
  - qos TRUE
  - lmc 2 (if there is no quad host in the fabric, you can set the lmc to 1)
  - virt\_enabled 2 Note: Multi-Host LID base routing can be configured by the INI only. The default is 0
- Resilient RoCE is the ability to send RoCE traffic over a lossy network (a network without flow control enabled), without the need to enable flow control on the network. The ability is accomplished by enabling ECN on both the Switch and the Host.
- Enables load balancing in the Multi PF Switch layer (MPFS) based on the L3/L4 headers
- Increased the number of VFs from 64 to 95 per Physical Function (PF). Note: When increasing the number of VFs, the following limitations must be taken into consideration:  $server\_total\_bar\_size \geq (num\_pfs) * (2log\_pf\_uar\_bar\_size + 2log\_vf\_uar\_bar\_size * total\_vfs)$   $server\_total\_msix \geq (num\_pfs) * (num\_pf\_msix + num\_vfs\_msix * total\_vfs)$  Note: For the maximum number of VFs supported by your driver, please refer to your drivers' Release Notes or User Manual.
- Added support for Port Flap Counter.
- Limits the buffer size for all entries to improve performance. KSM is used when associating Key Length My Virtual Address (KLMs) with fixed memory size.
- This entry (null\_mkey) is use to indicate non-present KLM/KSM entries. When accessing is, it causes the device to generate page fault event.
- PLDM firmware burning is based on the DMTF spec DSP0267 (draft 9). The feature enables upgrading firmware and expansion ROM images using the PLDM protocol over MCTP (over PCIe). By doing so, a supporting BMC can query and upgrade the firmware without using OS based tools.
- Added a new physical layer statistics counters group. The new group includes BER counters, FEC error correction, clear time, and additional physical layer counters. For further information, please refer to the Ethernet Adapters Programming Manual (PRM).
- Enables the user to set a certain link up state for an unlimited period of time. This mode has 3 states:
  - Aux power (standby)
  - Reboot/boot/driver unloaded - the server is active and no driver is up
  - Driver is up - at least one driver is up (the time between init HCA and teardown or FLR)
- Added support for Doorbell from User Access Region (UAR).
- [Beta] Added support for maximum rate limit per function in SR-IOV.
- Allows the user to configure the adapter card to stop sending pauses after x when the receive port is unavailable (in a hang state).
- [Beta] Added support for new performance counters.
- DCBX is used by DCB devices to exchange configuration information with directly connected peers. DCBX uses Link Layer Discovery Protocol (LLDP) to exchange parameters between two link peers. For further information, please refer to the PRM.
- Allows network port registers to revert to their default values when the driver is restarted or the host is rebooted.
- Added additional network link up modes. The new modes decide when to keep the network link up. The new modes are:
  - keep\_eth\_link\_up
  - keep\_ib\_link\_up
  - keep\_link\_up\_on\_boot
  - keep\_link\_up\_on\_standby
- Added v1, v3, v6 tags to VPD read only tag
- Enables software to scatter or strip FCS in RQ.
- Keeps track of the creation of a packet. A time-stamping service supports assertions of proof that a datum existed before a particular time.
- Applies pause functionality to specific classes of traffic on the Ethernet link.
- Custom port counters provide the user a clear indication about RDMA send/receive statistics and errors
- The Link Layer Discovery Protocol (LLDP) is a vendor-neutral Link Layer protocol in the Internet Protocol Suite used by network devices for advertising their identity, capabilities, and neighbors on a IEEE 802 LAN. The protocol is formally defined in IEEE 802.1AB.
- ConnectX-4 adapters now support 1Gb/s and 56GbE Ethernet connectivity in addition to 10GigE, 25GigE, 40GigE, 50GigE, and 100GigE.
- Provides a clear indication of Flow Steering statistics and errors.
- The minimal amount of packet headers inlined in the WQE's Eth Segment.
- A flow table may include a table-miss flow entry, which renders all Match Fields wildcards. If a packet does not match a flow entry in a flow table, this is a table miss. The behavior on a table miss depends on the table configuration. A table-miss flow entry in the flow table may specify how to process unmatched packets.
- Single Root IO Virtualization (SR-IOV) is a technology that allows a physical PCIe device to present itself multiple times through the PCIe bus.
- Uses the HCA for offloading erasure coding calculations.
- Enables the administrator to add a timestamp to the firmware they want to upgrade to avoid situations where one host tries to upgrade the firmware and another tries to downgrade; which may lead to two or more unnecessary server reboots. For further information, please refer to MFT User Manual.
- The change includes the following:
  1. Changed port configuration which required link re-training (such as speed)
  2. PAOS down
  3. PAOS upThis change, will cause the link to toggle and new configurations to take effect.
- Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image. For further information, please refer to MFT User

Manual.

- Improved TX signal integrity for Electromagnetic Induction (EMI) compliance.
- Optic modules thermal sensing - Enables the firmware to read and report the temperature of the module.
- PLDM for module thermal sensing - Supports platform-level data models and platform functions in a platform management subsystem. PLDM is designed to be an effective interface and data model that provides efficient access to low-level platform inventory, monitoring, control, event, and data/parameters transfer functions.
- Low power boot state - Enables u-boot to put non-boot CPUs into a low power status. To enable low power boot using iLO debugger use the following commands.
  - #12c b
  - #12c a 0x82
  - #12c w 0x03 0xfe
  - #12c w 0x01 0xfe
- Port shutdown due to optic thermal event - Enables the firmware to close the power cage in case of high temperature in the module.
- Reduced the port link-up time when negotiating according to Clause 73 (DME)
- Large Receive Offload (LRO) • Large Send Offload (LSO)
- Receive Side Scaling (RSS)
- Global Pause • RoCEv1.0/RoCEv2.0
- Flow Steering
- Sniffer Ethernet
- Rate Limiter (at Beta level)
- Multi packet WQE
- Enhanced Transmission Selection standard (ETS)
- Explicit Congestion Notification (ECN)
- Priority Flow Control (PFC)
- CQE time stamping
- PCIe Function Level Reset (FLR)
- Power Management L2/L3 flow support
- Strided SRQ
- Self Loopback support
- Transport Domain support
- CQ2EQ remapping
- Added support for the following commands:
  - MODIFY/QUERY\_ESW\_VPORT\_CONTEXT
  - QUERY/MODIFY\_CONG\_STATUS
  - QUERY/MODIFY\_CKONG\_PARAMS
  - QUERY\_CONG\_STATISTICS
  - ADD/DELETE\_VXLAN\_UDP\_DPORT

### **Supported Devices and Features**

<b>HP Part Number</b>	<b>InfiniBand Card Type</b>	<b>PSID</b>
779793-B21	HP Ethernet 10Gb 2-port 546SFP+ Adapter	HP_1200111023
779799-B21	HP Ethernet 10Gb 2-port 546FLR-SFP+ Adapter	HP_2240110004
817749-B21	HPE Ethernet 25Gb 2-port 640FLR-SFP28 Adapter	HP_2690110034
817753-B21	HPE Ethernet 25Gb 2-port 640SFP28 Adapter	HP_2420110034

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Online Firmware Upgrade Utility (Windows x64) for HPE Mellanox VPI (Ethernet and Infiniband mode) devices on Windows x86\_64 platform

Version: 1.0.0.5 **(Recommended)**

Filename: cp030128.compsig; cp030128.exe

### **Important Note!**

#### **Known Issues 2.40.5030 and 2.40.5072:**

- 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 cards 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:** 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.
- 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.

**Workaround:** Enable SR-IOV in the BIOS.

- 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.

**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, Release the following message is displayed due to the `mlxconfig` tool:  
DMFS steering mode with IB in Linux You are trying to override configurable FW by non-configurable FW. If you continue, old FW con-figurations 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`.

**Workaround:** Upgrade to `MLNX_OFED-2.1-x.x.x` or later.

- VPD read-only fields are writable.  
**Workaround:** Do not write to read- only fields if you wish to preserve them.
- 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.  
**Workaround:** Use the physical function device ID to identify the device.
- 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:**

- Unplug the cable from the switch
- Restart driver
- Change the protocol via the appropriate tools.
- 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.
- Cisco bi-directional transceiver is not supported in the following HCAs: 764284-B21.

#### Known Issues 2.40.5072:

- Ambient sensor does not report via PLDM in GEN10 connectX3.

#### Fixes

##### Fixes in 2.40.5030 and 2.40.5072:

- Fixed a race between the firmware and the hardware during driver start which blocked outbound completions.
- Fixed an issue which caused the firmware not to send `link_down` event to the driver when running the `close_port` command.
- Fixed an issue where in rare cases the Auto Sense failed to detect the right protocol.
- Fixed signal integrity issue when connecting a WCS ConnectX4 mezz card to Pikes peak FPGA.
- Added the option to transmit corrupted DME pages for a very short period of time at the beginning of the Auto-Negotiation flow.
- Fixed an incorrect report of the `PortRcvDataVLExtended/PortXmitDataVLExtended` counters by the firmware.

- Fixed a rare issue which caused firmware's packet injector to cut off packets when the TX was congested.
- o Fixed an issue that caused the response to TX requests to take up to 10 milliseconds in IEEE clause 72 Link Training.
- o Fixed a race between 2 iriscs which caused a QP to get stuck in burst control limit state.
- o When a QP was in error state, the firmware generated too many err CQEs at once, thus causing the cmdif responsiveness to be too slow. To prevent the above, the number of err CQEs was limited to 16 at a time.
- o Fixed an issue that caused the MAC address that was set from the OS using ifconfig to be not reflected in the OCBB buffer.
- o Fixed an issue where the ibdump got broken when running with loopback traffic.
- o Fixed an issue where the firmware took QP to firmware ownership and then released it to the hardware ownership without checking if another firmware flow owns the same QP.
- o Fixed an issue which occurred after disconnecting cable which showed the link type as IB even if the link type of the port is ETH.
- o Fixed an issue related to the HCA PoerXmitWait counter on port 2 (connected to port 2 on Switch-IB) where it started counting and reached 0xFF's regardless of connection to switch.
- o Fixed a completion error issue when ECN was enabled. The ECN usage caused ordering errors in completion queues (CQ).
- o Fixed the length calculation of UDP. The incorrect UDP length in the CNP packet caused miss-calculation of the ICRC.
- o Fixed a wrong returned status in cable info MAD when the cable was not connected.
- o Fixed failure instances when initiating FLR in the Physical Function.
- o Disabled High Rate Steering mode in the INI to enable its compatibility with NC-SI over VLAN.
- o Fixed performance issues causing slow performance when running in NO-DRAM-NIC mode.
- o Fixed a default hardware configuration issue which caused RDP over IPv4 traffic to be dropped.
- o Prevented a Virtual Function from injecting pause frames into the network.
- o MLNX\_OEM command GET\_TEMP returned a wrong value in the max\_temp field.
- o Fixed an issue which caused TX traffic to stop when the message MTU size was larger than QP.mtu.
- o Fixed an issue which caused NVCONFIG to fail when the number of sector was set to 1 and the sector was zeroed.
- o Fixed a race in handling a duplicated "read request from middle".
- o Fixed an issue which caused lack of IB traffic on SR-IOV VPI.
- o Fixed an issue which caused NVRAM to get stuck when it filled non-valid information in TLV.
- o Fixed an issue which caused an internal firmware error when APM changed the QPs port mapping.
- o Fixed an issue which caused a firmware internal error when handling QP alternative context.
- o Fixed an issue which caused packet transmission to get stuck when the software tried to send pause frames with dmac equal to one of the device's MAC addresses.
- o Fixed a mistakenly dropped ETH packet with ethertype 0x600 by the NIC.
- o Fixed a case preventing broadcast traffic from arriving to their destination after detaching high priority broadcast rule on a port where NC-SI was enabled.
- o Fixed a failure to update RSS QP in steering rules.
- o Fixed an issue where the port raised as SDR vs. InfiniScale IV QDR Switch.
- o Fixed a rare case of completion Error with Bad Opcode sequence status which occurred when retransmitting read requests.
- o Fixed a case where the actual bandwidth did not match the user settings in VM QoS.
- o Fixed a case where on rare cases, communication to BMC was lost during driver initialization.
- o Fixed an issue with cable reading, which caused the link not to raise.
- o Set the maximum EQN number to 1024.
- o Fixed a rare issue with VPD init flow which caused read failures.
- o Fixed an issue with RX size counter not being reported.
- o The first Read response was not treated as implicit ACK.
- o Reduced a long 40GbE link up time with Cisco Nexus3064 and Arista-7050S.
- o Fixed promiscuous mode compatibility with AO-DMFS steering.
- o Fixed promiscuous mode compatibility when NC-SI is enabled and configured.
- o Fixed sending/receiving OEM temp commands (set/get) with channel ID 0x1f failure.
- o Fixed an issue which caused packets to drop on a port when changing the interface state of the other port.
- o Fixed long management communication loss and SOL hang during reboot cycles.
- o Fixed wrong processing of inbound traffic towards BMC which caused communication loss.
- o Fixed management link loss upon closing port interface through the driver.
- o Fixed a false indication in firmware of an expander presence causing delay in EEPROM reading.
- o Fixed an issue which caused a link down on a port when the cable was removed from the other port.
- o Fixed a rare case where packet with length zero got stuck in hardware queues.
- o Fixed an issue which caused InfiniBand congestion control packet (CNP) to hang in hardware.
- o Fixed an issue which caused AEN to be sent after channel reset.
- o Fixed an issue which prevented the restoring of QoS setting to its default consequently causing bandwidth degradation.
- o Fixed an occasional long link up time with 10GbE based devices.
- o Fixed an issue preventing cable readings from i2c slave address 0x51.
- o Fixed a possible deadlock in PM turnoff request transmission and ack acceptance flow.
- o Fixed a rare case with alignments state machines which caused occasional width degradation.

- Fixed an issue where the transmit queues hanged while congestion control was enabled and operational (EQC/QCN).
- Fixed an unexpected work completion syndrome with vendor syndrome 0x77 received when running RDMA SEN/WRITE traffic with retransmissions.
- Fixed an issue which caused SetPortInfo to return a good status when receiving invalid LinkSpeedEnabled value.
- Fixed an issue which caused dual port SFPP module cards to be automatically mapped with expander. Fixed an issue where firmware overrides the steering mode that was chosen by the driver.
- Fixed invalid return sensing results occurred when the link was up.
- Fixed an issue causing the sensing result to be delayed when cable was unplugged.
- Fixed an issue causing the link type to be displayed as ETH when set to AUTO.
- Fixed 2us glitch in Wake Up signal.
- Fixed performance degradation when running IBDump.
- Occasionally, a link training timeout occurred in EQ phase0 during disable/enable test.
- Improved strict bandwidth mode functionality.
- Fixed an issue with the PortRcvPkts counter always displaying zero value.
- Fixed an issue with processing GMP MADs with SET method in SecureHost mode.
- Fixed an issue causing a wrong usage of MCG size when configuring Global Multicast filter.
- Disabling the first port occasionally causes second port TX failure.
- Fixed a mismatch in links status reported. The adapter reports links as down while the switch perceives them as up.
- Fixed an occasional 40GbE link failure with SCM5 Switch blade.
- Fixed a wrong FDR10 speed reporting in MAD.
- Fixed an issue preventing the ports to rise up when set to FDR10 vs QDR.
- Fixed an occasional link failure vs Arista switch.
- Retransmission started from the first PSN of message instead of the last acknowledged PSN.
- Firmware hangs when receiving GeneralInfoMad during inline firmware burning.
- L1 flow adjustments and threshold tuning.
- Fixed a rare hanging issue during PERST\_ assertion.
- Wrong coefficients were reported during phase3.
- Fixed an issue causing wrong behavior due to reset timing.
- Fixed lack of steering options.
- Fixed long timeout issues.
- Fixed NVRAM write issues in driver-less mode.
- Fixed 40GbE link support in aux mode.
- Dropped commands with non-existing channel ID.
- Fixed issues in extended speed reporting.
- Fixed bad QP reporting in trap 257/8.
- Fixed an issue causing false bad q\_key error messages.
- Fixed Pause Frame opcode mismatch.
- Fixed communication loss upon PCIe error detection.
- Fixed wrong channel value in the SELECT/ DESELECT PACKAGE commands.
- Fixed an issue caused response packet to include 4 extra bytes.
- Fixed wrong reason code value returned when using Set Link command with unsupported speed.
- Added protection from bad MAC address given by BMC. Removed false TX pulse after PERST\_ deassertion.
- Fixed FLR capability bit inconsistency when SR-IOV is enabled.
- Fixed an issue with the device not reporting PCIe related errors.
- When a link is configured to DDR in a setup of ConnectX-3 to SX6036, SDR link is established instead.
- VXLAN used the wrong default UDP port. the UDP port number was changed to 4789.
- Fixed wrong setting of the UDP destination port for VXLAN.
- Fixed an internal error caused when moving to the DMS mode with IPMI/NC-SI enabled.
- In a back-to-back setup of FDR cards connected with a 0.5m FDR cable, a link may be established as FDR10 instead of FDR.
- Fixed issues related to working with PCI legacy interrupts.
- Wrong checksum calculation for short packets which are padded by the software.
- Reading PCIe configuration space after using the MFT flint tool caused the device to crash.
- Fixed occasional packet loss over IPMI.
- Fixed wrong values reported in the Eye opening MAD.
- Fixed occasional link width degrades during link negotiation and link transitions from L1 state.
- Fixed adjust signal detect thresholds.
- PortExtendedSpeedsCounters MAD counters were mistakenly increased while LLR was active.
- Lane reversal was not considered when configured TX parameters.
- Fixed ROL factory MAC usage when a Flex- Boot address was given.
- Fixed Pause frames factory MAC usage when FlexBoot address was given.
- The device did not differ between WOL/ROL packets.

- o Fixed a set of extended fields in PortInfo MAD which did not function.
- o Adjusted LLR cell size according to the MLPN negotiation of ib\_128b\_llr.
- o The max speed restriction was active in full power mode instead of standby mode only.
- o The InfiniBand Path migration did not work with GRH. <http://webdev01:8080/commit/ConnectX.git/a9c37ee4c31038f2c1179d4d9e79c9337e0ab5c7>
- o Reading MGM after writing it returned wrong members count.
- o Fixed corruption of the RSS hash key given by the driver.
- o Fixed QoS rate limit BW offset.
- o Fixed FDR10 speed\_en reporting.
- o Fixed long management link com loss.
- o The command results reported both link types active at the same time. Fixed collision between forcing phy type and port sensing. Fixed a wrong core clock freq reporting in QUERY\_HCA command.
- o Fixed occasional link failure when 56GbE is enabled.
- o Fixed max eye margins to be per protocol.
- o perfquery reported wrong error symbol on ConnectX@-3 VPI mode: IB, ETH.
- o On ConnectX-3Pro dual-port QDR and FDR/FDR10 switch setups, symbol errors may occur with MC2207312-030 AOCs.
- o Symbol errors occur on ConnectX-3Pro dualport QDR connected to FDR switches with MC2207126-004 copper cables.
- o Driver restart required when switching from InfiniBand FDR link with LLR enabled to InfiniBand link w/o LLR (for example: between SwitchX® and GD4036).
- o On rare occasions, the adapter card may fail to link up when performing parallel detect to 40GbE.
- o Automatic Path Migration (APM) did not update the new MGIDs from the Alternate Path.

## Enhancements

### Firmware for the following devices are updated to 2.40.5030:

644161-B21  
 644160-B21  
 649282-B21  
 649281-B21  
 649283-B21  
 764282-B21  
 764286-B21

### Firmware for the following devices are updated to 2.40.5072

764283-B21  
 764284-B21  
 764285-B21

### New features in firmware version 2.40.5030:

- Added temperature thresholds high/low default for MAD sensing and NCSI/IPMI OEM commands.
- Added a new field to "set port" command which notifies the firmware what is the user\_mtu size.
- Added a protection mechanism which ensures the firmware drops packets which are received in internal QPs and disables the WQE producer fetching.
- Added Ethernet Link down counter.
- Enables steering packets to receive queues according to Ethertype
- Adds support for additional rate values.
- Counters that count the number of repeated Send WQE cache lookups that resulted in a miss.
- Flint utility allows performing an MD5 checksum on the non-persistent sections of the firmware image.
- New performance and back-pressure counters command via PRM (For further information, please refer to the PRM)
- Support for Multicast/Unicast sniffer rules (For further information, please refer to the PRM)
- Support for VLAN in VLAN encapsulation (For further information, please refer to the PRM)
- CQ creation offload by software
- Support for rst2rts command
- Invalidates a TLV during the firmware boot stage
- A new counter for the diag\_rprt PRM command to count packet drops due to no-receive buffer
- Support for Ethernet TX lifetime cycle control (Head of Queue)
- A new register (PPLR) that allows egress and external loopback control (For further information, please refer to the PRM)
- A watchdog mechanism to track ingress traffic stalls to prevent flooding the network with Flow Control packets
- A new LED scheme controlled by the INI which causes constant traffic LED indication even without traffic.
- Added support for multiple RoCE modes (RoCE v1+v2) on the same port: RoCE mode is per connection now.
- Added a new QP command "INIT2RTS\_QP" to enhance QP connection readiness time.

- Disabled FCS checks to support switches that replace FCS with Timestamp.
- Added RX Port identification for direct rout packets.
- Improved RDMA WRITE/SEND performance with retransmissions.
- Enabled firmware burning/querying using the PRM ACCESS\_REG command.
- Added support for VAM.
- Enabled bad cable EEPROM reporting to the driver.
- Added support for Platform Level Data Model (PLDM) sideband protocol.
- Added support for priority based AO-DMFS mode (For further information, please refer to the PRM).
- Added support for Unicast/Multicast loopback disablement by the driver. (For further information, please refer to the PRM)
- Removed the source IP from the hash calculation (For further information, please refer to the PRM)
- Added support for Inline Receive mode up to 2KB.

## Supported Devices and Features

### Supported Devices:

HP Part Number	Device Name	PSID
644161-B21	HP InfiniBand FDR/EN 10/40Gb Dual Port 544M Adapter	HP_0240230019
644160-B21	HP InfiniBand QDR/EN 10Gb Dual Port 544M Adapter	HP_0250230018
649281-B21	HP InfiniBand FDR/EN 10/40Gb Dual Port 544QSFP Adapter	HP_0280210019
649282-B21	HP InfiniBand FDR/EN 10/40Gb Dual Port 544FLR-QSFP Adapter	HP_0230240019 HP_0230220019
649283-B21	HP InfiniBand QDR/EN 10Gb Dual Port 544FLR-QSFP Adapter	HP_0230240009 HP_0230220009
764282-B21	HP InfiniBand QDR/Ethernet 10Gb 2-port 544+M Adapter	HP_1350110023
764283-B21	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+M Adapter	HP_1360110017
764284-B21	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+QSFP Adapter	HP_1370110017
764285-B21	HP InfiniBand FDR/Ethernet 10Gb/40Gb 2-port 544+FLR-QSFP Adapter	HP_1380110017
764286-B21	HP InfiniBand QDR/Ethernet 10Gb 2-port 544+FLR-QSFP Adapter	HP_1390110023
SL4540 and SL4545 LOM	HP Infiniband QDR/Ethernet 10Gb 2P 544i Adapter	HP_0280110018

## Firmware - NVDIMM

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Online Flash Component for Linux - 16GB NVDIMM-N DDR4-2666

Version: 1.04 **(Recommended)**

Filename: RPMS/x86\_64/firmware-nvdim-16gb-1.04-1.1.x86\_64.compsig; RPMS/x86\_64/firmware-nvdim-16gb-1.04-1.1.x86\_64.rpm

### Fixes

Initial release.

### Enhancements

Initial release.

---

Online Flash Component for Windows x64 - 16GB NVDIMM-N DDR4-2666

Version: 1.04 **(Recommended)**

Filename: cp032705.compsig; cp032705.exe

### **Fixes**

Initial release.

### **Enhancements**

Initial release.

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## **Firmware - Power Management**

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Online ROM Flash for Linux - Advanced Power Capping Microcontroller Firmware for HPE Gen10 Servers

Version: 1.04 **(Recommended)**

Filename: RPMS/x86\_64/firmware-powerpic-gen10-1.04-1.1.x86\_64.compsig; RPMS/x86\_64/firmware-powerpic-gen10-1.04-1.1.x86\_64.rpm

### **Important Note!**

#### **Important Notes:**

None

#### **Deliverable Name:**

Advanced Power Capping Microcontroller Firmware for HPE Gen10 Servers

#### **Release Version:**

1.04

#### **Last Recommended or Critical Revision:**

1.04

#### **Previous Revision:**

1.02

#### **Firmware Dependencies:**

Integrated Lights-Out 5 (iLO 5) Firmware version 1.15 and System ROM version 1.20 or later

#### **Enhancements/New Features:**

Added support for Dynamic Power Capping. For proper operation, please ensure that Integrated Lights-Out 5 (iLO 5) Firmware version 1.15 and System ROM version 1.20 or later are updated on the server.

#### **Problems Fixed:**

None

#### **Known Issues:**

None

### **Prerequisites**

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

Integrated Lights-Out 5 (iLO 5) Firmware version 1.15 and System ROM version 1.20 or later

## **Enhancements**

### **Important Notes:**

None

### **Firmware Dependencies:**

Integrated Lights-Out 5 (iLO 5) Firmware version 1.15 and System ROM version 1.20 or later

### **Enhancements/New Features:**

Added support for Dynamic Power Capping. For proper operation, please ensure that Integrated Lights-Out 5 (iLO 5) Firmware version 1.15 and System ROM version 1.20 or later are updated on the server.

### **Known Issues:**

None

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Online ROM Flash for Linux - Advanced Power Capping Microcontroller Firmware for HPE Gen9 Servers

Version: 1.0.9 (F) **(Optional)**

Filename: RPMS/i386/hp-firmware-powerpic-gen9-1.0.9-6.1.i386.rpm

## **Important Note!**

### **Important Notes:**

Ver. 1.0.9 (F) contains support for new server products. It is functionally equivalent to ver. 1.0.9. It is not necessary to upgrade with Revision F if a previous component revision was used to upgrade the firmware to ver. 1.0.9

### **Deliverable Name:**

Advanced Power Capping Microcontroller Firmware for HPE 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 "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."

## **Fixes**

### **Important Notes:**

Ver. 1.0.9 (F) contains support for new server products. It is functionally equivalent to ver. 1.0.9. It is not necessary to upgrade with Revision F if a previous component revision was used to upgrade the firmware to ver. 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.

---

Online ROM Flash for VMware ESXi - Advanced Power Capping Microcontroller Firmware for HPE Gen9 Servers

Version: 1.0.9 (F) **(Optional)**

Filename: CP031168.zip

**Important Note!**

**Important Notes:**

Ver. 1.0.9 (F) contains support for new server products. It is functionally equivalent to ver. 1.0.9. It is not necessary to upgrade with Revision F if a previous component revision was used to upgrade the firmware to ver. 1.0.9

**Deliverable Name:**

Advanced Power Capping Microcontroller Firmware for HPE 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.

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](http://vibsdepot.hpe.com).

**Fixes**

**Important Notes:**

Ver. 1.0.9 (F) contains support for new server products. It is functionally equivalent to ver. 1.0.9. It is not necessary to upgrade with Revision F if a previous component revision was used to upgrade the firmware to ver. 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

**Enhancements**

None

**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.

---

Online ROM Flash for Windows x64 - Advanced Power Capping Microcontroller Firmware for HPE Gen10 Servers

Version: 1.0.4 **(Recommended)**

Filename: cp032953.compsig; cp032953.exe

**Important Note!****Important Notes:**

None

**Deliverable Name:**

Advanced Power Capping Microcontroller Firmware for HPE Gen10 Servers

**Release Version:**

1.0.4

**Last Recommended or Critical Revision:**

1.0.4

**Previous Revision:**

1.0.2

**Firmware Dependencies:**

Integrated Lights-Out 5 (iLO 5) Firmware version 1.15 and System ROM version 1.20 or later

**Enhancements/New Features:**

Added support for Dynamic Power Capping. For proper operation, please ensure that Integrated Lights-Out 5 (iLO 5) Firmware version 1.15 and System ROM version 1.20 or later are updated on the server.

**Problems Fixed:**

None

**Known Issues:**

None

**Prerequisites**

The "iLO 5 Channel Interface Driver" (CHIF) for Windows which is available from Service Pack for ProLiant (SPP).

Integrated Lights-Out 5 (iLO 5) Firmware version 1.15 and System ROM version 1.20 or later.

**Enhancements****Important Notes:**

None

**Firmware Dependencies:**

Integrated Lights-Out 5 (iLO 5) Firmware version 1.15 and System ROM version 1.20 or later

**Enhancements/New Features:**

Added support for Dynamic Power Capping. For proper operation, please ensure that Integrated Lights-Out 5 (iLO 5) Firmware version 1.15 and System ROM version 1.20 or later are updated on the server.

**Known Issues:**

None

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Online ROM Flash for Windows x64 - Advanced Power Capping Microcontroller Firmware for HPE Gen9 Servers

Version: 1.0.9 (F) **(Optional)**

Filename: cp031162.exe

**Important Note!****Important Notes:**

Ver. 1.0.9 (F) contains support for new server products. It is functionally equivalent to ver. 1.0.9. It is not necessary to upgrade with Revision F if a previous component revision was used to upgrade the firmware to ver. 1.0.9

**Deliverable Name:**

Advanced Power Capping Microcontroller Firmware for HPE 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 (F) contains support for new server products. It is functionally equivalent to ver. 1.0.9. It is not necessary to upgrade with Revision F if a previous component revision was used to upgrade the firmware to ver. 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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**Firmware - SAS Storage Disk**

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Online ROM Flash Component for VMware ESXi - EG000300JWBHR Drives

Version: HPD3 **(Recommended)**

Filename: CP032282.compsig; CP032282.zip

**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.**

**Fixes**

**Problems Fixed:**

- Corrects Activity LED behavior on HPE drive carrier.

**Enhancements**

**Enhancements/New Features:**

- Firmware version HPD3 supports NDU (non-disruptive update) firmware updates.
- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - EG000600JWEBH and EG000300JWEBF Drives

Version: HPD3 **(Recommended)**

Filename: CP032363.compsig; CP032363.zip

**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.**

**Fixes**

**Problems Fixed:**

- This firmware implements the Firmware Security Log Page.

## **Enhancements**

### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - EG0600JETKA, EG0900JETKB, and EG1200JETKC Drives

Version: HPD6 (**Recommended**)

Filename: CP032366.compsig; CP032366.zip

### **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.**

## **Fixes**

### **Problems Fixed:**

- Corrects Activity LED behavior on HPE drive carrier.

## **Enhancements**

### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - MB4000JEQNL and MB6000JEQNN Drives

Version: HPD7 (C) (**Critical**)

Filename: CP031950.compsig; CP031950.zip

### **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 firmware version HPD7 do not need to update to HPD7 (C).**

## **Fixes**

### **Problems Fixed:**

- This firmware fixes a potential incorrect data issue in write-cached enabled multi-initiator unaligned write environments, where reservation commands are used.

### **Problems Fixed for HPD7 (B):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.

## **Enhancements**

### **Enhancements/New Features for HPD7 (C):**

- Adds support for VMware vSphere 6.5.

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Online ROM Flash Component for VMware ESXi - MB6000JEUUV and MB8000JEUVA Drives

Version: HPDB **(Critical)**

Filename: CP032682.compsig; CP032682.zip

#### **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.**

#### **Fixes**

##### **Problems Fixed:**

- This firmware improves potential timeouts that could occur during the write error recovery process (causing the drive to internally reset), and corrects possible data mismanagement issues.

---

Online ROM Flash Component for VMware ESXi - MM1000JEFRB and MM2000JEFRC Drives

Version: HPD7 **(Recommended)**

Filename: CP032289.compsig; CP032289.zip

#### **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.**

#### **Fixes**

##### **Problems Fixed:**

- This firmware improves HDD reliability when HDDs are exposed to long periods of host inactivity that exceed 1 second. HDDs may become unresponsive when using HDD firmware prior to version HPD7.
- This firmware also contains a change which prevents an incorrect reassign status of a repaired sector from being logged.
- This firmware prevents asserts on a sequential write which can result in devices being lost from the configuration. It also preserves persistent reservation through downloads which prevents loss of performance.

#### **Enhancements**

##### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - MM1000JFJTH Drives

Version: HPD2 **(Recommended)**

Filename: CP032338.compsig; CP032338.zip

#### **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.

## **Fixes**

### **Problems Fixed:**

- This firmware prevents asserts on a sequential write which can result in devices being lost from the configuration. It also preserves persistent reservation through downloads which prevents loss of performance.

## **Enhancements**

### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - EG001800JWFVC Drives

Version: HPD2 **(Critical)**

Filename: CP033068.compsig; CP033068.zip

## **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.**

## **Fixes**

### **Problems Fixed:**

- This firmware update eliminates a data integrity risk when an unaligned WRITE and VERIFY command is sent to a bad sector. During these conditions there is a potential for data intended to be written to disk to fail to be written.

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Online ROM Flash Component for VMware ESXi - EG0300FCSPH, EG0450FCSPK, EG0600FC SPL, and EG0900FCSPN Drives

Version: HPD2 **(Recommended)**

Filename: CP032299.compsig; CP032299.zip

## **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.**

## **Fixes**

### **Problems Fixed:**

- Reliability enhancement for applications that write data to a narrow range of tracks.

## **Enhancements**

### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

### **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 firmware version HPD3 do not need to update to HPD3 (C).**

### **Fixes**

#### **Problems Fixed:**

- Self-initiated reset during ATI (Adjacent Track Interference) mitigation issue, where the drive reported a 06/29/04 (Self-Initiated Reset) to the controller. Then the controller would re-establish link with the drive and resend the command.
- Servo miscalculations that resulted in degraded drive performance.

#### **Problems Fixed for HPD3 (B):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.

### **Enhancements**

#### **Enhancements/New Features for HPD3 (C):**

- Adds support for VMware vSphere 6.5.

### **Important Note!**

- **Online firmware flashing of drives attached to an HPE Smart Array controller running in Zero Memory (ZM) mode or an HPE 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 SPP and HP SUM.**

### **Fixes**

#### **Problems Fixed:**

- This firmware improves HDD reliability when HDDs are exposed to long periods of host inactivity that exceed 1 second. HDDs may become unresponsive when using HDD firmware prior to version HPD6.
- This firmware also contains a change which prevents an incorrect reassign status of a repaired sector from being logged.
- This firmware contains a change to prevent an incorrect sense code from being posted when a Stop command is received during power-on sequence.

### **Enhancements**

#### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - EG1800JEHMD Drive

Version: HPD4 (C) **(Recommended)**

Filename: CP031935.compsig; CP031935.zip

### **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 firmware version HPD4 do not need to update to HPD4 (C).**

### **Fixes**

#### **Problems Fixed:**

- Self-initiated reset during ATI (Adjacent Track Interference) mitigation issue, where the drive reported a 06/29/04 (Self-Initiated Reset) to the controller. Then the controller would re-establish link with the drive and resend the command.
- Servo miscalculations that resulted in degraded drive performance.

#### **Problems Fixed for HPD4 (B):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.

### **Enhancements**

#### **Enhancements/New Features for HPD4 (C):**

- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - EG1800JEMDB Drives

Version: HPD3 **(Recommended)**

Filename: CP032295.compsig; CP032295.zip

### **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.**

### **Fixes**

#### **Problems Fixed:**

- Under rarely occurring conditions where a host error occurred during a write with 4K unaligned sectors, the write operation might result in stale data. Firmware HPD3 prevents the possibility of stale data occurring under these conditions.

### **Enhancements**

#### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - EG1800JFHMH Drives

Version: HPD5 (B) **(Critical)**

Filename: CP032546.compsig; CP032546.zip

### **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 firmware version HPD5 do not need to update to HPD5 (B).**

### **Fixes**

#### **Problems Fixed:**

- Fixes a data integrity risk which could occur during 4k or greater unaligned writes while the device incurs a smart trip or smart warning event. During these conditions there is a potential for data intended to be written directly to disk to fail to be written.

### **Enhancements**

#### **Enhancements/New Features:**

- Changes Light Emitting Diode (LED) behavior to match Hewlett Packard Enterprise specification.
- Strengthens link acquisition algorithm.
- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - EH000300JWCPK, EH000600JWCPL, and EH000900JWCPN Drives

Version: HPD3 **(Recommended)**

Filename: CP032356.compsig; CP032356.zip

### **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.**

### **Fixes**

#### **Problems Fixed:**

- This firmware implements the Firmware Security Log Page.
- This firmware contains a change to prevent occasional command completion times in the 4-5 second window when command is received just as the drive is transitioning from active to Idle A.

### **Enhancements**

#### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - EH000600JWCPF and EH000900JWCPH Drives

Version: HPD3 **(Recommended)**

### **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.**

### **Fixes**

#### **Problems Fixed:**

- This firmware implements the Firmware Security Log Page.
- This firmware contains a change to prevent occasional command completion times in the 4-5 second window when command is received just as the drive is transitioning from active to Idle A.

### **Enhancements**

#### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - EH0300JDXBA, EH0450JDXBB, and EH0600JDXBC Drives

Version: HPD5 **(Recommended)**

Filename: CP032369.compsig; CP032369.zip

### **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.**

### **Fixes**

#### **Problems Fixed:**

- Corrects Activity LED behavior on HPE drive carrier.

### **Enhancements**

#### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - EH0300JDYTH, EH0450JDYTK, and EH0600JDYTL Drives

Version: HPD4 (C) **(Recommended)**

Filename: CP031938.compsig; CP031938.zip

### **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 firmware version HPD4 do not need to update to HPD4 (C).**

## **Fixes**

### **Problems Fixed:**

- Self-initiated reset during ATI (Adjacent Track Interference) mitigation issue, where the drive reported a 06/29/04 (Self-Initiated Reset) to the controller. Then the controller would re-establish link with the drive and resend the command.
- Servo miscalculations that resulted in degraded drive performance.

### **Problems Fixed for HPD4 (B):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.

## **Enhancements**

### **Enhancements/New Features for HPD4 (C):**

- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - EH0300JEDHC, EH0450JEDHD, and EH0600JEDHE Drives

Version: HPD4 (B) **(Recommended)**

Filename: CP031939.compsig; CP031939.zip

## **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 firmware version HPD4 do not need to update to HPD4 (B).**

## **Fixes**

### **Problems Fixed:**

- This firmware improves HDD reliability when HDDs are exposed to long periods of host inactivity that exceed 1 second. HDDs may become unresponsive when using HDD firmware prior to version HPD4. This firmware also contains a change which prevents an incorrect reassign status of a repaired sector from being logged.

## **Enhancements**

### **Enhancements/New Features for HPD4 (B):**

- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - MB1000JVYZL, MB2000JVYZN, MB3000JVYZP, and MB4000JVYZQ Drives

Version: HPD2 **(Recommended)**

Filename: CP032347.compsig; CP032347.zip

## **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.**

## **Fixes**

### **Problems Fixed:**

- This firmware contains a change to prevent occasional command completion times in the 4-5 second window when command is received just as the drive is transitioning from active to Idle A.

## **Enhancements**

### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - MB2000JFDSL and MB4000JFDSN Drives

Version: HPD3 (B) **(Recommended)**

Filename: CP033061.compsig; CP033061.zip

## **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 firmware version HPD3 do not need to update to HPD3 (B).**

## **Enhancements**

### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.
- Improved write performance.
- A reliability enhancement for applications that write data to a narrow range of tracks.

### **Enhancements/New Features in HPD3 (B):**

- Added signature file for improved security.

---

Online ROM Flash Component for VMware ESXi - MB2000JFEPA and MB4000JFEPB Drives

Version: HPD5 **(Recommended)**

Filename: CP032376.compsig; CP032376.zip

## **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.**

## **Fixes**

### **Problems Fixed:**

- This firmware contains a change to prevent occasional command completion times in the 4-5 second window when command is received just as the drive is transitioning from active to Idle A.

## **Enhancements**

### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - MB4000JEFNC and MB6000JEFND Drives

Version: HPD9 **(Recommended)**

Filename: CP033039.compsig; CP033039.zip

### **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.**

## **Fixes**

### **Problems Fixed:**

- This firmware contains a change to prevent a drive reset issue, which may affect performance.

---

Online ROM Flash Component for VMware ESXi - MB4000JEXYA and MB6000JEXYB Drives

Version: HPD8 **(Critical)**

Filename: CP033137.compsig; CP033137.zip

### **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.**

## **Fixes**

### **Problems Fixed:**

- Fixes a data integrity risk which could occur during 4k or greater unaligned writes while the device incurs a smart trip event. During these conditions there is a potential for data intended to be written directly to disk to fail to be written.
- Eliminates a data integrity risk when an unaligned Write and Verify command is sent to a bad sector. During these conditions there is a potential for data intended to be written to disk to fail to be written.

## **Enhancements**

### **Enhancements/New Features:**

- Improves Sequential Write and Random Write Performance under certain workloads.

---

Online ROM Flash Component for VMware ESXi - MB6000JVYYV Drives

Version: HPD2 **(Recommended)**

Filename: CP032350.compsig; CP032350.zip

### **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.**

## **Fixes**

### **Problems Fixed:**

- This firmware contains a change to prevent occasional command completion times in the 4-5 second window when command is received just as the drive is transitioning from active to Idle A.

## **Enhancements**

### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

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Online ROM Flash Component for VMware ESXi - MB8000JFECO Drives

Version: HPD4 **(Recommended)**

Filename: CP031790.compsig; CP031790.zip

## **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.**

## **Fixes**

### **Problems Fixed:**

- Under rarely occurring conditions where a host error occurred during a write with 4K unaligned sectors, the write operation might result in stale data. Firmware HPD4 prevents the possibility of stale data occurring under these conditions.
- After greater than 2 seconds of idle time following a forced power transition or no activity, random seeks might not occur as required. Firmware HPD4 initiates random seeks following the device being placed into a forced power condition. Random seeks are necessary to maintain the reliability and life of the device.

## **Enhancements**

### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

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Online ROM Flash Component for VMware ESXi - MO0200JEFNV, MO0400JEFPA, MO0800JEFPB, MO1600JEFPC, EO0200JEFPD, EO0400JEFPE, and EO0800JEFPF Drives

Version: HPD3 **(Recommended)**

Filename: CP032993.compsig; CP032993.zip

## **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.**

## **Enhancements**

### **Enhancements/New Features:**

- Firmware version HPD3 supports NDU (non-disruptive update) firmware updates.

---

Online ROM Flash Component for VMware ESXi - MO0400JFFCF, MO0800JFFCH, MO1600JFFCK, and MO3200JFFCL Drives

Version: HPD4 (B) **(Optional)**

Filename: CP031958.compsig; CP031958.zip

### **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 firmware version HPD4 do not need to update to HPD4 (B).**

## **Fixes**

### **Problems Fixed:**

- This firmware contains several low level maintenance fixes including debug data retrieval through read buffer. The fixes addressed events observed in a specialized lab testing environment, and are not expected to be experienced in customer use case scenarios.

## **Enhancements**

### **Enhancements/New Features for HPD4 (B):**

- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - VO0480JFDGT, VO0960JFDGU, VO1920JFDGV, and VO3840JFDHA Drives

Version: HPD4 (B) **(Optional)**

Filename: CP031959.compsig; CP031959.zip

### **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 firmware version HPD4 do not need to update to HPD4 (B).**

## **Fixes**

### **Problems Fixed:**

- This firmware contains several low level maintenance fixes including debug data retrieval through read buffer. The fixes addressed events observed in a specialized lab testing environment, and are not expected to be experienced in customer use case scenarios.

## **Enhancements**

### **Enhancements/New Features for HPD4 (B):**

- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - VO1920JEUQQ Drives

Version: HPD3 **(Recommended)**

Filename: CP033043.compsig; CP033043.zip

#### **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.**

#### **Enhancements**

##### **Enhancements/New Features:**

- Firmware version HPD3 supports NDU (non-disruptive update) firmware updates.

---

Online ROM Flash Component for Windows (x64) - EG000300JWBHR Drives

Version: HPD3 **(Recommended)**

Filename: cp032283.compsig; cp032283.exe; cp032283.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.**

#### **Fixes**

##### **Problems Fixed:**

- Corrects Activity LED behavior on HPE drive carrier.

#### **Enhancements**

##### **Enhancements/New Features:**

- Firmware version HPD3 supports NDU (non-disruptive update) firmware updates.

---

Online ROM Flash Component for Windows (x64) - EG000600JWEBH and EG000300JWEBF Drives

Version: HPD3 **(Recommended)**

Filename: cp032365.compsig; cp032365.exe; cp032365.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.**

#### **Fixes**

##### **Problems Fixed:**

- This firmware implements the Firmware Security Log Page.

---

Online ROM Flash Component for Windows (x64) - EG001800JWFVC Drives

Version: HPD2 **(Critical)**

Filename: cp033070.compsig; cp033070.exe; cp033070.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.**

#### **Fixes**

##### **Problems Fixed:**

- This firmware update eliminates a data integrity risk when an unaligned WRITE and VERIFY command is sent to a bad sector. During these conditions there is a potential for data intended to be written to disk to fail to be written.

---

Online ROM Flash Component for Windows (x64) - EG0300FCSPH, EG0450FCSPK, EG0600FCSPK, and EG0900FCSPN Drives

Version: HPD2 **(Recommended)**

Filename: cp032300.compsig; cp032300.exe; cp032300.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.**

#### **Fixes**

##### **Problems Fixed:**

- Reliability enhancement for applications that write data to a narrow range of tracks.

#### **Enhancements**

##### **Enhancements/New Features:**

- Adds support for HPE ProLiant Gen10 servers.

---

Online ROM Flash Component for Windows (x64) - EG0300JEHLV, EG0600JEHMA, EG0900JEHMB, and EG1200JEHMC Drives

Version: HPD3 (D) **(Recommended)**

Filename: cp031896.compsig; cp031896.exe; cp031896.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 firmware version HPD3 do not need to update to HPD3 (D).**

#### **Fixes**

### Problems Fixed:

- Self-initiated reset during ATI (Adjacent Track Interference) mitigation issue, where the drive reported a 06/29/04 (Self-Initiated Reset) to the controller. Then the controller would re-establish link with the drive and resend the command.
- Servo miscalculations that resulted in degraded drive performance.

### Problems Fixed for HPD3 (B):

- The component would fail to flash drive firmware on a server with a Trusted Platform Module (TPM) enabled when using the /tpmbypass switch.

### Problems Fixed for HPD3 (C):

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.
- Component would cause an exception error when deployed on a computer with a fully qualified domain name greater than 40 characters in length.

## Enhancements

### Enhancements/New Features:

- Added support for Microsoft Windows Server 2016.

### Enhancements/New Features for HPD3 (D):

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - EG0300JFCKA, EG0600JEMCV, EG0900JFCKB, and EG1200JEMDA Drives

Version: HPD6 **(Recommended)**

Filename: cp032288.compsig; cp032288.exe; cp032288.md5

### Important Note!

- **Online firmware flashing of drives attached to an HPE Smart Array controller running in Zero Memory (ZM) mode or an HPE 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 SPP and HP SUM.**

## Fixes

### Problems Fixed:

- This firmware improves HDD reliability when HDDs are exposed to long periods of host inactivity that exceed 1 second. HDDs may become unresponsive when using HDD firmware prior to version HPD6.
- This firmware also contains a change which prevents an incorrect reassign status of a repaired sector from being logged.
- This firmware contains a change to prevent an incorrect sense code from being posted when a Stop command is received during power-on sequence.

## Enhancements

### Enhancements/New Features for:

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - EG0600JETKA, EG0900JETKB, and EG1200JETKC Drives

Version: HPD6 **(Recommended)**

Filename: cp032368.compsig; cp032368.exe; cp032368.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.**

### **Fixes**

#### **Problems Fixed:**

- Corrects Activity LED behavior on HPE drive carrier.

### **Enhancements**

#### **Enhancements/New Features:**

- Added support for Microsoft Windows Server 2016.
- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - EG1800JEHMD Drive

Version: HPD4 (D) **(Recommended)**

Filename: cp031898.compsig; cp031898.exe; cp031898.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 firmware version HPD4 do not need to update to HPD4 (D).**

### **Fixes**

#### **Problems Fixed:**

- Self-initiated reset during ATI (Adjacent Track Interference) mitigation issue, where the drive reported a 06/29/04 (Self-Initiated Reset) to the controller. Then the controller would re-establish link with the drive and resend the command.
- Servo miscalculations that resulted in degraded drive performance.

#### **Problems Fixed for HPD4 (B):**

- The component would fail to flash drive firmware on a server with a Trusted Platform Module (TPM) enabled when using the /tpmbypass switch.

#### **Problems Fixed for HPD4 (C):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.
- Component would cause an exception error when deployed on a computer with a fully qualified domain name greater than 40 characters in length.

### **Enhancements**

#### **Enhancements/New Features:**

- Added support for Microsoft Windows Server 2016.

#### **Enhancements/New Features for HPD4 (D):**

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - EG1800JEMDB Drives

Version: HPD3 **(Recommended)**

Filename: cp032293.compsig; cp032293.exe; cp032293.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.**

#### **Fixes**

##### **Problems Fixed:**

- Under rarely occurring conditions where a host error occurred during a write with 4K unaligned sectors, the write operation might result in stale data. Firmware HPD3 prevents the possibility of stale data occurring under these conditions.

#### **Enhancements**

##### **Enhancements/New Features:**

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - EG1800JFHMH Drives

Version: HPD5 (B) **(Critical)**

Filename: cp032548.compsig; cp032548.exe; cp032548.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 firmware version HPD5 do not need to update to HPD5 (B).**

#### **Fixes**

##### **Problems Fixed:**

- Fixes a data integrity risk which could occur during 4k or greater unaligned writes while the device incurs a smart trip or smart warning event. During these conditions there is a potential for data intended to be written directly to disk to fail to be written.

#### **Enhancements**

##### **Enhancements/New Features:**

- Changes Light Emitting Diode (LED) behavior to match Hewlett Packard Enterprise specification.
- Strengthens link acquisition algorithm.
- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - EH000300JWCPK, EH000600JWCPL, and EH000900JWCPN Drives

Version: HPD3 **(Recommended)**

Filename: cp032358.compsig; cp032358.exe; cp032358.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.**

### **Fixes**

#### **Problems Fixed:**

- This firmware implements the Firmware Security Log Page.
- This firmware contains a change to prevent occasional command completion times in the 4-5 second window when command is received just as the drive is transitioning from active to Idle A.

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Online ROM Flash Component for Windows (x64) - EH000600JWCPC and EH000900JWCPH Drives

Version: HPD3 **(Recommended)**

Filename: cp032355.compsig; cp032355.exe; cp032355.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.**

### **Fixes**

#### **Problems Fixed:**

- This firmware implements the Firmware Security Log Page.
- This firmware contains a change to prevent occasional command completion times in the 4-5 second window when command is received just as the drive is transitioning from active to Idle A.

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Online ROM Flash Component for Windows (x64) - EH0300JDXBA, EH0450JDXBB, and EH0600JDXBC Drives

Version: HPD5 **(Recommended)**

Filename: cp032371.compsig; cp032371.exe; cp032371.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.**

### **Fixes**

#### **Problems Fixed:**

- Corrects Activity LED behavior on HPE drive carrier.

### **Enhancements**

#### **Enhancements/New Features:**

- Adds support for HPE ProLiant Gen10 servers.

### **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 firmware version HPD4 do not need to update to HPD4 (D).**

### **Fixes**

#### **Problems Fixed:**

- Self-initiated reset during ATI (Adjacent Track Interference) mitigation issue, where the drive reported a 06/29/04 (Self-Initiated Reset) to the controller. Then the controller would re-establish link with the drive and resend the command.
- Servo miscalculations that resulted in degraded drive performance.

#### **Problems Fixed for HPD4 (B):**

- The component would fail to flash drive firmware on a server with a Trusted Platform Module (TPM) enabled when using the /tpmbypass switch.

#### **Problems Fixed for HPD4 (C):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.
- Component would cause an exception error when deployed on a computer with a fully qualified domain name greater than 40 characters in length.

### **Enhancements**

#### **Enhancements/New Features:**

- Added support for Microsoft Windows Server 2016.

#### **Enhancements/New Features for HPD4 (D):**

- Adds support for HPE ProLiant Gen10 servers.

### **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 firmware version HPD4 do not need to update to HPD4 (C).**

### **Fixes**

#### **Problems Fixed:**

- This firmware improves HDD reliability when HDDs are exposed to long periods of host inactivity that exceed 1 second. HDDs may become unresponsive

when using HDD firmware prior to version HPD4. This firmware also contains a change which prevents an incorrect reassign status of a repaired sector from being logged.

## **Enhancements**

### **Enhancements/New Features for HPD4 (B):**

- Added support for Microsoft Windows Server 2016.

### **Enhancements/New Features for HPD4 (C):**

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - MB1000JVYZL, MB2000JVYZN, MB3000JVYZP, and MB4000JVYZQ Drives

Version: HPD2 **(Recommended)**

Filename: cp032349.compsig; cp032349.exe; cp032349.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.**

## **Fixes**

### **Problems Fixed:**

- This firmware contains a change to prevent occasional command completion times in the 4-5 second window when command is received just as the drive is transitioning from active to Idle A.

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Online ROM Flash Component for Windows (x64) - MB2000JFDSL and MB4000JFDSN Drives

Version: HPD3 **(Recommended)**

Filename: cp032346.compsig; cp032346.exe; cp032346.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.**

## **Enhancements**

### **Enhancements/New Features:**

- Adds support for HPE ProLiant Gen10 servers.
- Improved write performance.
- A reliability enhancement for applications that write data to a narrow range of tracks

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Online ROM Flash Component for Windows (x64) - MB2000JFEPA and MB4000JFEPB Drives

Version: HPD5 **(Recommended)**

Filename: cp032378.compsig; cp032378.exe; cp032378.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.**

## Fixes

### Problems Fixed:

- This firmware contains a change to prevent occasional command completion times in the 4-5 second window when command is received just as the drive is transitioning from active to Idle A.

## Enhancements

### Enhancements/New Features:

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - MB4000JEFNC and MB6000JEFND Drives

Version: HPD9 **(Recommended)**

Filename: cp033040.compsig; cp033040.exe; cp033040.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.**

## Fixes

### Problems Fixed:

- This firmware contains a change to prevent a drive reset issue, which may affect performance.

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Online ROM Flash Component for Windows (x64) - MB4000JEQNL and MB6000JEQNN Drives

Version: HPD7 (D) **(Critical)**

Filename: cp031913.compsig; cp031913.exe; cp031913.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 firmware version HPD7 do not need to update to HPD7 (D).**

## Fixes

### Problems Fixed:

- This firmware fixes a potential incorrect data issue in write-cached enabled multi-initiator unaligned write environments, where reservation commands are used.

### Problems Fixed for HPD7 (B):

- The component would fail to flash drive firmware on a server with a Trusted Platform Module (TPM) enabled when using the /tpmbypass switch.

### Problems Fixed for HPD7 (C):

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.
- Component would cause an exception error when deployed on a computer with a fully qualified domain name greater than 40 characters in length.

### Enhancements

#### Enhancements/New Features:

- Added support for Microsoft Windows Server 2016.

#### Enhancements/New Features for HPD7 (D):

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - MB4000JEXYA and MB6000JEXYB Drives

Version: HPD8 **(Critical)**

Filename: cp033139.compsig; cp033139.exe; cp033139.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.**

### Fixes

#### Problems Fixed:

- Fixes a data integrity risk which could occur during 4k or greater unaligned writes while the device incurs a smart trip event. During these conditions there is a potential for data intended to be written directly to disk to fail to be written.
- Eliminates a data integrity risk when an unaligned Write and Verify command is sent to a bad sector. During these conditions there is a potential for data intended to be written to disk to fail to be written.

### Enhancements

#### Enhancements/New Features:

- Improves Sequential Write and Random Write Performance under certain workloads.

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Online ROM Flash Component for Windows (x64) - MB6000JEQUV and MB8000JEQVA Drives

Version: HPDB **(Critical)**

Filename: cp032683.compsig; cp032683.exe; cp032683.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.**

### Fixes

#### Problems Fixed:

- This firmware improves potential timeouts that could occur during the write error recovery process (causing the drive to internally reset), and corrects possible data mismanagement issues.

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Online ROM Flash Component for Windows (x64) - MB6000JVYYV Drives

Version: HPD2 **(Recommended)**

Filename: cp032352.compsig; cp032352.exe; cp032352.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.**

#### **Fixes**

##### **Problems Fixed:**

- This firmware contains a change to prevent occasional command completion times in the 4-5 second window when command is received just as the drive is transitioning from active to Idle A.

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Online ROM Flash Component for Windows (x64) - MB8000JFECQ Drives

Version: HPD4 **(Recommended)**

Filename: cp031789.compsig; cp031789.exe; cp031789.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.**

#### **Fixes**

##### **Problems Fixed:**

- Under rarely occurring conditions where a host error occurred during a write with 4K unaligned sectors, the write operation might result in stale data. Firmware HPD4 prevents the possibility of stale data occurring under these conditions.
- After greater than 2 seconds of idle time following a forced power transition or no activity, random seeks might not occur as required. Firmware HPD4 initiates random seeks following the device being placed into a forced power condition. Random seeks are necessary to maintain the reliability and life of the device.

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Online ROM Flash Component for Windows (x64) - MM1000JEFRB and MM2000JEFRC Drives

Version: HPD7 **(Recommended)**

Filename: cp032291.compsig; cp032291.exe; cp032291.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.**

#### **Fixes**

### Problems Fixed:

- This firmware improves HDD reliability when HDDs are exposed to long periods of host inactivity that exceed 1 second. HDDs may become unresponsive when using HDD firmware prior to version HPD7.
- This firmware also contains a change which prevents an incorrect reassign status of a repaired sector from being logged.
- This firmware prevents asserts on a sequential write which can result in devices being lost from the configuration. It also preserves persistent reservation through downloads which prevents loss of performance.

### Enhancements

#### Enhancements/New Features for:

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - MM1000JFJTH Drives

Version: HPD2 **(Recommended)**

Filename: cp032340.compsig; cp032340.exe; cp032340.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.**

### Fixes

#### Problems Fixed:

- This firmware prevents asserts on a sequential write which can result in devices being lost from the configuration. It also preserves persistent reservation through downloads which prevents loss of performance.

### Enhancements

#### Enhancements/New Features:

- Added support for Microsoft Windows Server 2016.
- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - MO0200JEFNV, MO0400JEFFA, MO0800JEFFB, MO1600JEFFC, EO0200JEFFD, EO0400JEFFE, and EO0800JEFFP Drives

Version: HPD3 **(Recommended)**

Filename: cp032995.compsig; cp032995.exe; cp032995.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.**

### Enhancements

#### Enhancements/New Features:

- Firmware version HPD3 supports NDU (non-disruptive update) firmware updates.

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Online ROM Flash Component for Windows (x64) - MO0400JFFCF, MO0800JFFCH, MO1600JFFCK, and MO3200JFFCL Drives

Version: HPD4 (C) (Optional)

Filename: cp031921.compsig; cp031921.exe; cp031921.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 firmware version HPD4 do not need to update to HPD4 (C).**

### **Fixes**

#### **Problems Fixed:**

- This firmware contains several low level maintenance fixes including debug data retrieval through read buffer. The fixes addressed events observed in a specialized lab testing environment, and are not expected to be experienced in customer use case scenarios.

### **Enhancements**

#### **Enhancements/New Features for HPD4 (B):**

- Added support for Microsoft Windows Server 2016.

#### **Enhancements/New Features for HPD4 (C):**

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - VO0480JFDGT, VO0960JFDGU, VO1920JFDGV, and VO3840JFDHA Drives

Version: HPD4 (C) (Optional)

Filename: cp031922.compsig; cp031922.exe; cp031922.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 firmware version HPD4 do not need to update to HPD4 (C).**

### **Fixes**

#### **Problems Fixed:**

- This firmware contains several low level maintenance fixes including debug data retrieval through read buffer. The fixes addressed events observed in a specialized lab testing environment, and are not expected to be experienced in customer use case scenarios.

### **Enhancements**

#### **Enhancements/New Features for HPD4 (B):**

- Added support for Microsoft Windows Server 2016.

#### **Enhancements/New Features for HPD4 (C):**

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - VO1920JEUQQ Drives

Version: HPD3 **(Recommended)**

Filename: cp033041.compsig; cp033041.exe; cp033041.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.**

#### **Enhancements**

##### **Enhancements/New Features:**

- Firmware version HPD3 supports NDU (non-disruptive update) firmware updates.

---

Supplemental Update / Online ROM Flash Component for Linux (x64) - EG000300JWBHR Drives

Version: HPD3 (B) **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-2e4c61fc63-HPD3-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-2e4c61fc63-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 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.**

#### **Fixes**

##### **Problems Fixed:**

- Corrects Activity LED behavior on HPE drive carrier.

#### **Enhancements**

##### **Enhancements/New Features:**

- Firmware version HPD3 supports NDU (non-disruptive update) firmware updates.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - EG000600JWEBH and EG000300JWEBF Drives

Version: HPD3 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-aa9e289524-HPD3-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-aa9e289524-HPD3-1.1.x86\_64.rpm

#### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

#### **Fixes**

##### **Problems Fixed:**

- This firmware implements the Firmware Security Log Page.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - EG0600JETKA, EG0900JETKB, and EG1200JETKC Drives

Version: HPD6 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-7505dfb5ae-HPD6-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-7505dfb5ae-HPD6-1.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

### **Fixes**

#### **Problems Fixed:**

- Corrects Activity LED behavior on HPE drive carrier.

### **Enhancements**

#### **Enhancements/New Features:**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MM1000JEFRB and MM2000JEFRC Drives

Version: HPD7 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-b04257b77b-HPD7-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-b04257b77b-HPD7-1.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

### **Fixes**

#### **Problems Fixed:**

- This firmware improves HDD reliability when HDDs are exposed to long periods of host inactivity that exceed 1 second. HDDs may become unresponsive when using HDD firmware prior to version HPD7.
- This firmware also contains a change which prevents an incorrect reassign status of a repaired sector from being logged.
- This firmware prevents asserts on a sequential write which can result in devices being lost from the configuration. It also preserves persistent reservation through downloads which prevents loss of performance.

### **Enhancements**

#### **Enhancements/New Features:**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - EG001800JWFVC Drives

Version: HPD2 **(Critical)**

### **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.**

### **Fixes**

#### **Problems Fixed:**

- This firmware update eliminates a data integrity risk when an unaligned WRITE and VERIFY command is sent to a bad sector. During these conditions there is a potential for data intended to be written to disk to fail to be written.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - EG0300FCSPH, EG0450FCSPK, EG0600FC SPL, and EG0900FCSPN Drives

Version: HPD2 (**Recommended**)

Filename: rpm/RPMS/x86\_64/firmware-hdd-7c1a1734f9-HPD2-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-7c1a1734f9-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 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.**

### **Fixes**

#### **Problems Fixed:**

- Reliability enhancement for applications that write data to a narrow range of tracks.

### **Enhancements**

#### **Enhancements/New Features:**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - EG0300JEHLV, EG0600JEHMA, EG0900JEHMB, and EG1200JEHMC Drives

Version: HPD3 (C) (**Recommended**)

Filename: rpm/RPMS/x86\_64/firmware-hdd-31f91b8622-HPD3-3.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-31f91b8622-HPD3-3.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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 firmware version HPD3 do not need to update to HPD3 (C).**

### **Fixes**

#### **Problems Fixed:**

- Self-initiated reset during ATI (Adjacent Track Interference) mitigation issue, where the drive reported a 06/29/04 (Self-Initiated Reset) to the controller. Then the controller would re-establish link with the drive and resend the command.

- o Servo miscalculations that resulted in degraded drive performance.

#### **Problems Fixed for HPD3 (B):**

- o Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.
- o Component fails to update the firmware for drives connected behind an HP Smart Array P431 controller. Component reports the firmware update was successful. However, after a power cycle, the firmware version remains unchanged.

#### **Enhancements**

##### **Enhancements/New Features for HPD3 (C):**

- o Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - EG0300JFCKA, EG0600JEMCV, EG0900JFCKB, and EG1200JEMDA Drives

Version: HPD6 (B) **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-ac3fda26eb-HPD6-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-ac3fda26eb-HPD6-2.1.x86\_64.rpm

#### **Important Note!**

- **Online firmware flashing of drives attached to an HPE Smart Array controller running in Zero Memory (ZM) mode or an HPE 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 SPP and HP SUM.**
- **Customers who already installed firmware version HPD6 do not need to update to HPD6 (B).**

#### **Fixes**

##### **Problems Fixed:**

- This firmware improves HDD reliability when HDDs are exposed to long periods of host inactivity that exceed 1 second. HDDs may become unresponsive when using HDD firmware prior to version HPD6.
- This firmware also contains a change which prevents an incorrect reassign status of a repaired sector from being logged.
- o This firmware contains a change to prevent an incorrect sense code from being posted when a Stop command is received during power-on sequence.

#### **Enhancements**

##### **Enhancements/New Features:**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - EG1800JEHMD Drive

Version: HPD4 (D) **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-8a2c06af48-HPD4-4.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-8a2c06af48-HPD4-4.1.x86\_64.rpm

#### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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 firmware version HPD4 do not need to update to HPD4 (D).**

## Fixes

### Problems Fixed:

- Self-initiated reset during ATI (Adjacent Track Interference) mitigation issue, where the drive reported a 06/29/04 (Self-Initiated Reset) to the controller. Then the controller would re-establish link with the drive and resend the command.
- Servo miscalculations that resulted in degraded drive performance.

### Problems Fixed for HPD4 (B):

- Linux Smart Component fails to update the firmware for drives connected behind an HP Smart Array P431 controller. Component reports the firmware update was successful. However, after a power cycle, the firmware version remains unchanged.

### Problems Fixed for HPD4 (C):

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.
- Component fails to update the firmware for drives connected behind an HP Smart Array P431 controller. Component reports the firmware update was successful. However, after a power cycle, the firmware version remains unchanged.

## Enhancements

### Enhancements/New Features for HPD4 (D):

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - EG1800JEMDB Drives

Version: HPD3 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-0a38b25661-HPD3-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-0a38b25661-HPD3-1.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

## Fixes

### Problems Fixed:

- Under rarely occurring conditions where a host error occurred during a write with 4K unaligned sectors, the write operation might result in stale data. Firmware HPD3 prevents the possibility of stale data occurring under these conditions.

## Enhancements

### Enhancements/New Features:

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - EG1800JFHMH Drives

Version: HPD5 (B) **(Critical)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-7fc5497116-HPD5-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-7fc5497116-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 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 firmware version HPD5 do not need to update to HPD5 (B).**

## Fixes

### Problems Fixed:

- Fixes a data integrity risk which could occur during 4k or greater unaligned writes while the device incurs a smart trip or smart warning event. During these conditions there is a potential for data intended to be written directly to disk to fail to be written.

## Enhancements

### Enhancements/New Features:

- Changes Light Emitting Diode (LED) behavior to match Hewlett Packard Enterprise specification.
- Strengthens link acquisition algorithm.
- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - EH000300JWCPK, EH000600JWCPL, and EH000900JWCPN Drives

Version: HPD3 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-3d97759111-HPD3-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-3d97759111-HPD3-1.1.x86\_64.rpm

## Important Note!

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

## Fixes

### Problems Fixed:

- This firmware implements the Firmware Security Log Page.
- This firmware contains a change to prevent occasional command completion times in the 4-5 second window when command is received just as the drive is transitioning from active to Idle A.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - EH000600JWCPF and EH000900JWCPH Drives

Version: HPD3 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-a05f29cef3-HPD3-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-a05f29cef3-HPD3-1.1.x86\_64.rpm

## Important Note!

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

## Fixes

### Problems Fixed:

- This firmware implements the Firmware Security Log Page.
- This firmware contains a change to prevent occasional command completion times in the 4-5 second window when command is received just as the drive is

transitioning from active to Idle A.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - EH0300JDXBA, EH0450JDXBB, and EH0600JDXBC Drives

Version: HPD5 (**Recommended**)

Filename: rpm/RPMS/x86\_64/firmware-hdd-1cbab97ff0-HPD5-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-1cbab97ff0-HPD5-1.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

### **Fixes**

#### **Problems Fixed:**

- Corrects Activity LED behavior on HPE drive carrier.

### **Enhancements**

#### **Enhancements/New Features:**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - EH0300JDYTH, EH0450JDYTK, and EH0600JDYTL Drives

Version: HPD4 (C) (**Recommended**)

Filename: rpm/RPMS/x86\_64/firmware-hdd-b9340d29be-HPD4-3.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-b9340d29be-HPD4-3.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode 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 firmware version HPD4 do not need to update to HPD4 (C).**

### **Fixes**

#### **Problems Fixed:**

- Self-initiated reset during ATI (Adjacent Track Interference) mitigation issue, where the drive reported a 06/29/04 (Self-Initiated Reset) to the controller. Then the controller would re-establish link with the drive and resend the command.
- Servo miscalculations that resulted in degraded drive performance.

#### **Problems Fixed for HPD4 (B):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.
- Component fails to update the firmware for drives connected behind an HP Smart Array P431 controller. Component reports the firmware update was successful. However, after a power cycle, the firmware version remains unchanged.

### **Enhancements**

#### **Enhancements/New Features for HPD4 (C):**

Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - EH0300JEDHC, EH0450JEDHD, and EH0600JEDHE Drives

Version: HPD4 (B) **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-8c4a212ff9-HPD4-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-8c4a212ff9-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 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 firmware version HPD4 do not need to update to HPD4 (B).**

### **Fixes**

#### **Problems Fixed:**

- This firmware improves HDD reliability when HDDs are exposed to long periods of host inactivity that exceed 1 second. HDDs may become unresponsive when using HDD firmware prior to version HPD4. This firmware also contains a change which prevents an incorrect reassign status of a repaired sector from being logged.

### **Enhancements**

#### **Enhancements/New Features for HPD4 (B):**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB1000JVYZL, MB2000JVYZN, MB3000JVYZP, and MB4000JVYZQ Drives

Version: HPD2 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-b85516c7d2-HPD2-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-b85516c7d2-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 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.**

### **Fixes**

#### **Problems Fixed:**

- This firmware contains a change to prevent occasional command completion times in the 4-5 second window when command is received just as the drive is transitioning from active to Idle A.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB2000JFDSL and MB4000JFDSN Drives

Version: HPD3 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-46fc43ab26-HPD3-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-46fc43ab26-HPD3-1.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

## **Enhancements**

### **Enhancements/New Features:**

- Adds support for HPE ProLiant Gen10 servers.
- Improved write performance.
- A reliability enhancement for applications that write data to a narrow range of tracks

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB2000JFEPA and MB4000JFEPB Drives

Version: HPD5 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-326de7c0f2-HPD5-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-326de7c0f2-HPD5-1.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

## **Fixes**

### **Problems Fixed:**

- This firmware contains a change to prevent occasional command completion times in the 4-5 second window when command is received just as the drive is transitioning from active to Idle A.

## **Enhancements**

### **Enhancements/New Features:**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB4000JEFNC and MB6000JEFND Drives

Version: HPD9 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-af802bb412-HPD9-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-af802bb412-HPD9-1.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

## **Fixes**

### **Problems Fixed:**

- This firmware contains a change to prevent a drive reset issue, which may affect performance.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB4000JEQNL and MB6000JEQNN Drives

Version: HPD7 (C) **(Critical)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-2cfaac41db-HPD7-3.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-2cfaac41db-HPD7-3.1.x86\_64.rpm

## **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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 firmware version HPD7 do not need to update to HPD7 (C).**

## **Fixes**

### **Problems Fixed:**

- This firmware fixes a potential incorrect data issue in write-cached enabled multi-initiator unaligned write environments, where reservation commands are used.

### **Problems Fixed for HPD7 (B):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.
- Component fails to update the firmware for drives connected behind an HP Smart Array P431 controller. Component reports the firmware update was successful. However, after a power cycle, the firmware version remains unchanged.

## **Enhancements**

### **Enhancements/New Features for HPD7 (C):**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB4000JEXYA and MB6000JEXYB Drives

Version: HPD8 **(Critical)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-0f923833e9-HPD8-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-0f923833e9-HPD8-1.1.x86\_64.rpm

## **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

## **Fixes**

### **Problems Fixed:**

- Fixes a data integrity risk which could occur during 4k or greater unaligned writes while the device incurs a smart trip event. During these conditions there is a potential for data intended to be written directly to disk to fail to be written.
- Eliminates a data integrity risk when an unaligned Write and Verify command is sent to a bad sector. During these conditions there is a potential for data intended to be written to disk to fail to be written.

## **Enhancements**

### **Enhancements/New Features:**

- Improves Sequential Write and Random Write Performance under certain workloads.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB6000JEQUV and MB8000JEQVA Drives

Version: HPDB **(Critical)**

### **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.**

### **Fixes**

#### **Problems Fixed:**

- This firmware improves potential timeouts that could occur during the write error recovery process (causing the drive to internally reset), and corrects possible data mismanagement issues.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB6000JVYV Drives

Version: HPD2 (**Recommended**)

Filename: rpm/RPMS/x86\_64/firmware-hdd-0595c2a887-HPD2-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-0595c2a887-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 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.**

### **Fixes**

#### **Problems Fixed:**

- This firmware contains a change to prevent occasional command completion times in the 4-5 second window when command is received just as the drive is transitioning from active to Idle A.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB8000JFECQ Drives

Version: HPD4 (B) (**Recommended**)

Filename: rpm/RPMS/x86\_64/firmware-hdd-252770cdda-HPD4-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-252770cdda-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 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 firmware version HPD4 do not need to update to HPD4 (B).**

### **Fixes**

#### **Problems Fixed:**

- Under rarely occurring conditions where a host error occurred during a write with 4K unaligned sectors, the write operation might result in stale data. Firmware HPD4 prevents the possibility of stale data occurring under these conditions.
- After greater than 2 seconds of idle time following a forced power transition or no activity, random seeks might not occur as required. Firmware HPD4 initiates random seeks following the device being placed into a forced power condition. Random seeks are necessary to maintain the reliability and life of the device.

### **Important Note!**

- o **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.**
- 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.**

### **Fixes**

#### **Problems Fixed:**

- o This firmware prevents asserts on a sequential write which can result in devices being lost from the configuration. It also preserves persistent reservation through downloads which prevents loss of performance.

### **Enhancements**

#### **Enhancements/New Features:**

- Adds support for HPE ProLiant Gen10 servers.

### **Important Note!**

- o **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.**
- 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.**

### **Enhancements**

#### **Enhancements/New Features:**

- Firmware version HPD3 supports NDU (non-disruptive update) firmware updates.

### **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 firmware version HPD4 do not need to update to HPD4 (B).**

### **Fixes**

#### **Problems Fixed:**

- This firmware contains several low level maintenance fixes including debug data retrieval through read buffer. The fixes addressed events observed in a specialized lab testing environment, and are not expected to be experienced in customer use case scenarios.

## **Enhancements**

### **Enhancements/New Features for HPD4 (B):**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - VO0480JFDGT, VO0960JFDGU, VO1920JFDGV, and VO3840JFDHA Drives

Version: HPD4 (B) **(Optional)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-8ed8893abd-HPD4-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-8ed8893abd-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 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 firmware version HPD4 do not need to update to HPD4 (B).**

## **Fixes**

### **Problems Fixed:**

- This firmware contains several low level maintenance fixes including debug data retrieval through read buffer. The fixes addressed events observed in a specialized lab testing environment, and are not expected to be experienced in customer use case scenarios.

## **Enhancements**

### **Enhancements/New Features for HPD4 (B):**

- Adds support for HPE ProLiant Gen10 servers.

---

Supplemental Update / Online ROM Flash Component for Linux (x64) - VO1920JEUQQ Drives

Version: HPD3 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-5d9e841607-HPD3-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-5d9e841607-HPD3-1.1.x86\_64.rpm

## **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

## **Enhancements**

### **Enhancements/New Features:**

- Firmware version HPD3 supports NDU (non-disruptive update) firmware updates.

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## **Firmware - SATA Storage Disk**

Online ROM Flash Component for VMware ESXi - MB006000GWBXQ and MB008000GWBXL Drives

Version: HPG5 (B) **(Recommended)**

### **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 firmware version HPG5 do not need to update to HPG5 (B).**

### **Fixes**

#### **Problems Fixed:**

- Fixed an occasional and potentially significant delay in completion time of the SANITIZE function, along with alignment of some settings, features and internal logging with specifications.

#### **Problems Fixed for HPG5 (B):**

- When attempting to update drive firmware in a VMware vSphere 6.5 environment, the update would fail and the event was logged as a segmentation fault error.

### **Enhancements**

#### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

---

Online ROM Flash Component for VMware ESXi - MB0500GCEHF, MB1000GCEHH, and MB2000GCEHK Drives

Version: HPGD (J) **(Critical)**

Filename: CP033005.compsig; CP033005.zip

### **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 firmware version HPGD do not need to update to HPGD (J).**

### **Fixes**

#### **Problems Fixed:**

- After long term use of the HDD, a rare condition might occur following a power cycle where the drive heads may land on areas of the disk containing data, which could potentially cause data loss or mechanical damage. Firmware version HPGD prevents this condition from occurring.

#### **Problems Fixed for HPGD (G):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.

#### **Problems Fixed for HPGD (J):**

- When attempting to update drive firmware in a VMware vSphere 6.5 environment, the update would fail and the event was logged as a segmentation fault error.

### **Enhancements**

### Enhancements/New Features:

- Added support for VMware vSphere 5.5.
- Added support for UEFI (Universal Extensible Firmware Interface) based servers.
- Added support for HP Dynamic Smart Array B140i Controller.

### Enhancements/New Features for HPGD(F):

- Updated the flash engine to standardize logging across all SATA drive components.
- Enhanced logging capability to improve the details provided in the component log file.
- VMware Firmware Smart component packaging has changed from a \*.scexe package to a \*.zip package, which contains an executable binary that provides enhanced security during installation. The functionality of the VMware Smart Component has not changed.

### Enhancements/New Features for HPGD (H):

- Adds support for VMware vSphere 6.5.

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Online ROM Flash Component for VMware ESXi - MB1000GCWCV, MB2000GCWDA, MB3000GCWDB, and MB4000GCWDC Drives

Version: HPGI (B) **(Recommended)**

Filename: CP033006.compsig; CP033006.zip

### **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 firmware version HPGI do not need to update to HPGI (B).**

### **Fixes**

#### **Problems Fixed:**

- This firmware implements a feature which performs a random seek after 100ms of host inactivity.

#### **Problems Fixed for HPGI (B):**

- When attempting to update drive firmware in a VMware vSphere 6.5 environment, the update would fail and the event was logged as a segmentation fault error.

### **Enhancements**

#### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

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Online ROM Flash Component for VMware ESXi - MB1000GVYZE, MB2000GVYZF, MB3000GVYZH, and MB4000GVYZK Drives

Version: HPG4 **(Recommended)**

Filename: CP032611.compsig; CP032611.zip

### **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.**

## **Fixes**

### **Problems Fixed:**

- Firmware version HPG4 prevents the occurrence of a rare issue which could lead to slow drive performance. This issue has the potential to impact all drives in configurations where the drives might be allowed to be idle for greater than 1 second.

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Online ROM Flash Component for VMware ESXi - MB2000GCVBR, MB3000GCVBT, and MB4000GCVBU Drives

Version: HPG5 (E) **(Critical)**

Filename: CP033008.compsig; CP033008.zip

### **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 firmware version HPG5 do not need to update to HPG5 (E).**

## **Fixes**

### **Problem Fixed:**

- Fixes a rare but potential data integrity error during low 5v drive voltage and specific sequential data streaming conditions, which could result in data written to incorrect sectors.

### **Problems Fixed for HPG5 (C):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.

### **Problems Fixed for HPG5 (E):**

- When attempting to update drive firmware in a VMware vSphere 6.5 environment, the update would fail and the event was logged as a segmentation fault error.

## **Enhancements**

### **Enhancements/New Features for HPG5 (B):**

- Updated the flash engine to standardize logging across all SATA drive components.
- Enhanced logging capability to improve the details provided in the component log file.
- VMware Firmware Smart component packaging has changed from a \*.scexe package to a \*.zip package, which contains an executable binary that provides enhanced security during installation. The functionality of the VMware Smart Component has not changed.

### **Enhancements/New Features for HPG5 (D):**

- Adds support for VMware vSphere 6.5.

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Online ROM Flash Component for VMware ESXi - MB2000GCWLT, MB3000GCWLU, and MB4000GCWLV Drives

Version: HPG4 (C) **(Recommended)**

Filename: CP033009.compsig; CP033009.zip

### **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 firmware version HPG4 do not need to update to HPG4 (C).**

## **Fixes**

### **Problems Fixed:**

- Improves the drive idle time behavior by reducing long periods of track dwell time, which if not implemented, could increase media lube depletion and reduce drive reliability.

### **Problems Fixed for HPG4 (C):**

- When attempting to update drive firmware in a VMware vSphere 6.5 environment, the update would fail and the event was logged as a segmentation fault error.

## **Enhancements**

### **Enhancements/New Features for HPG4 (B):**

- Adds support for VMware vSphere 6.5.

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Online ROM Flash Component for VMware ESXi - MB4000GEQNH and MB6000GEQNK Drives

Version: HPG7 (D) **(Recommended)**

Filename: CP033011.compsig; CP033011.zip

## **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 firmware version HPG7 do not need to update to HPG7 (D).**

## **Fixes**

### **Problems Fixed:**

- This firmware corrects possible unrecovered errors caused by the track refresh algorithm not working properly.

### **Problems Fixed for HPG7 (B):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.

### **Problems Fixed for HPG7 (D):**

- When attempting to update drive firmware in a VMware vSphere 6.5 environment, the update would fail and the event was logged as a segmentation fault error.

## **Enhancements**

### **Enhancements/New Features for HPG7 (C):**

- Adds support for VMware vSphere 6.5.

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Online ROM Flash Component for VMware ESXi - MB6000GVYYU Drives

Version: HPG2 (**Recommended**)

Filename: CP033033.compsig; CP033033.zip

### **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.**

### **Fixes**

#### **Problems Fixed:**

- Firmware version HPG2 prevents the occurrence of a rare issue which could lead to slow drive performance. This issue has the potential to impact all drives in configurations where the drives might be allowed to be idle for greater than 1 second.

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Online ROM Flash Component for VMware ESXi - MK0960GECQK Drives

Version: HPG3 (D) (**Critical**)

Filename: CP033014.compsig; CP033014.zip

### **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 firmware version HPG3 do not need to update to HPG3 (D).**

### **Fixes**

#### **Problems Fixed:**

- Firmware resolves a data mismanagement issue associated with unaligned sequential write operations.

#### **Problems Fixed for HPG3 (B):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.

#### **Problems Fixed for HPG3 (D):**

- When attempting to update drive firmware in a VMware vSphere 6.5 environment, the update would fail and the event was logged as a segmentation fault error.

### **Enhancements**

#### **Enhancements/New Features for HPG3 (C):**

- Adds support for VMware vSphere 6.5.

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Online ROM Flash Component for VMware ESXi - MM1000GEFQV and MM2000GEFRA Drives

Version: HPG5 (B) (**Recommended**)

Filename: CP033015.compsig; CP033015.zip

### **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 firmware version HPG5 do not need to update to HPG5 (B).**

## **Fixes**

### **Problems Fixed:**

- This firmware improves HDD reliability when HDDs are exposed to long periods of host inactivity that exceed 1 second. HDDs may become unresponsive when using HDD firmware prior to version HPG5. This firmware also contains a change which prevents an incorrect reassign status of a repaired sector from being logged.

### **Problems Fixed for HPG5 (B):**

- When attempting to update drive firmware in a VMware vSphere 6.5 environment, the update would fail and the event was logged as a segmentation fault error.

## **Enhancements**

### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

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Online ROM Flash Component for VMware ESXi - MM1000GFJTE Drives

Version: HPG1 (C) **(Recommended)**

Filename: CP033016.compsig; CP033016.zip

## **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 firmware version HPG1 do not need to update to HPG1 (C).**

## **Fixes**

### **Problems Fixed:**

- This firmware improves HDD reliability when HDDs are exposed to long periods of host inactivity that exceed 1 second. HDDs may become unresponsive when using HDD firmware prior to version HPG1.
- This firmware also contains a change which prevents an incorrect reassign status of a repaired sector from being logged.

### **Problems Fixed for HPG1 (C):**

- When attempting to update drive firmware in a VMware vSphere 6.5 environment, the update would fail and the event was logged as a segmentation fault error.

## **Enhancements**

### **Enhancements/New Features for HPG1 (B):**

- Adds support for VMware vSphere 6.5.

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Online ROM Flash Component for VMware ESXi - MR000240GWFLU, MR000480GWFLV, VR000480GWFMD, MR000960GWFMA, VR000960GWFME, MR001920GWFMB, and VR001920GWFMC Drives

Version: HPG4 **(Recommended)**

Filename: CP032693.compsig; CP032693.zip

### **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.**

### **Enhancements**

#### **Enhancements/New Features:**

- Production signing keys applied to code.
- Enhanced code to meet signal specification for the TX differential voltage and de-emphasis level.

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Online ROM Flash Component for VMware ESXi - VK000240GWEZB, VK000480GWEZC, VK000960GWEZD, VK001920GWEZE, MK000240GWEZF, MK000480GWEZH, MK000960GWEZK, and MK001920GWHRU Drives

Version: HPG4 **(Recommended)**

Filename: CP032691.compsig; CP032691.zip

### **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.**

### **Enhancements**

#### **Enhancements/New Features:**

- Production signing keys applied to code.
- Enhanced code to meet signal specification for the TX differential voltage and de-emphasis level.

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Online ROM Flash Component for VMware ESXi - XP0032GEFEN, XP0032GDZME, XP0064GEFEP, and XP0064GDZMF Drives

Version: HPS8 (B) **(Recommended)**

Filename: CP033019.compsig; CP033019.zip

### **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 firmware version HPS8 do not need to update to HPS8 (B).**

### **Prerequisites**

Drive models XP0032GEFEN, XP0032GDZME, XP0064GDZMF, and XP0064GEFEP must have firmware version HPS6 installed prior to updating to firmware version HPS8.

### **Fixes**

#### **Firmware Dependency:**

- Drive models XP0032GEFEN, XP0032GDZME, XP0064GDZMF, and XP0064GEFEP must have firmware version HPS6 installed prior to updating to firmware version HPS8.

#### **Problems Fixed:**

- HPS8 firmware release resolved a firmware timing issue which occurred during drive long self-test and resulted in a timeout condition that caused the drive to become unrecognized by the system.

#### **Problems Fixed for HPS8 (B):**

- When attempting to update drive firmware in a VMware vSphere 6.5 environment, the update would fail and the event was logged as a segmentation fault error.

### **Enhancements**

#### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

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Online ROM Flash Component for VMware ESXi - XP0120GFJSL and XP0240GFJSN Drives

Version: HPS4 (B) **(Recommended)**

Filename: CP033020.compsig; CP033020.zip

#### **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 firmware version HPS4 do not need to update to HPS4 (B).**

### **Fixes**

#### **Problems Fixed:**

- HPS4 firmware release resolved a firmware timing issue which occurred during drive long self-test and resulted in a timeout condition that caused the drive to become unrecognized by the system.

#### **Problems Fixed for HPS4 (B):**

- When attempting to update drive firmware in a VMware vSphere 6.5 environment, the update would fail and the event was logged as a segmentation fault error.

### **Enhancements**

#### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

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Online ROM Flash Component for Windows (x64) - XP0032GEFEN, XP0032GDZME, XP0064GEFEP, and XP0064GDZMF Drives

Version: HPS8 **(Recommended)**

Filename: cp031996.compsig; cp031996.exe; cp031996.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.**

## **Prerequisites**

Drive models XP0032GEFEN, XP0032GDZME, XP0064GDZMF, and XP0064GEFEP must have firmware version HPS6 installed prior to updating to firmware version HPS8.

## **Fixes**

### **Firmware Dependency:**

- Drive models XP0032GEFEN, XP0032GDZME, XP0064GDZMF, and XP0064GEFEP must have firmware version HPS6 installed prior to updating to firmware version HPS8.

### **Problems Fixed:**

- HPS8 firmware release resolved a firmware timing issue which occurred during drive long self-test and resulted in a timeout condition that caused the drive to become unrecognized by the system.

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Online ROM Flash Component for Windows (x64) - MB001000GWCBC and MB002000GWCBD Drives

Version: HPG4 (B) **(Critical)**

Filename: cp033049.compsig; cp033049.exe; cp033049.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 firmware version HPG4 do not need to update to HPG4 (B).**

## **Fixes**

### **Problems Fixed:**

- This firmware corrects a potential issue where the data in the reserved tracks is not properly updated, eliminating the risk of a drive not finishing the boot process on power up.
- Other maintenance fixes and updates are also included with the new firmware.

## **Enhancements**

### **Enhancements/New Features:**

- Firmware version HPG4 is designed to prevent any previous firmware revisions from being loaded onto the drive, after the drive is upgraded to HPG4 firmware.

### **Enhancements/New Features for HPG4 (B):**

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - MB001000GWFVK and MB002000GFWFL Drives

Version: HPG4 (B) **(Critical)**

Filename: cp033051.compsig; cp033051.exe; cp033051.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 firmware version HPG4 do not need to update to HPG4 (B).**

## **Fixes**

### **Problems Fixed:**

- This firmware corrects a potential issue where the data in the reserved tracks is not properly updated, eliminating the risk of a drive not finishing the boot process on power up.
- Other maintenance fixes and updates are also included with the new firmware.

## **Enhancements**

### **Enhancements/New Features:**

- Firmware version HPG4 is designed to prevent any previous firmware revisions from being loaded onto the drive, after the drive is upgraded to HPG4 firmware.

### **Enhancements/New Features for HPG4 (B):**

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - MB006000GWBXQ and MB008000GWBXL Drives

Version: HPG5 (**Recommended**)

Filename: cp032395.compsig; cp032395.exe; cp032395.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.**

## **Fixes**

### **Problems Fixed:**

- Fixed an occasional and potentially significant delay in completion time of the SANITIZE function, along with alignment of some settings, features and internal logging with specifications.

## **Enhancements**

### **Enhancements/New Features for:**

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - MB0500GCEHF, MB1000GCEHH, and MB2000GCEHK Drives

Version: HPGD (E) (**Critical**)

Filename: cp031903.compsig; cp031903.exe; cp031903.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 firmware version HPGD do not need to update to HPGD (E).**

## **Fixes**

### **Problems Fixed:**

- After long term use of the HDD, a rare condition might occur following a power cycle where the drive heads may land on areas of the disk containing data, which could potentially cause data loss or mechanical damage. Firmware version HPGD prevents this condition from occurring.

### **Problems Fixed for HPGD(C):**

- The component would fail to flash drive firmware on a server with a Trusted Platform Module (TPM) enabled when using the /tpmbypass switch.

### **Problems Fixed for HPGD (D):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.
- Component would cause an exception error when deployed on a computer with a fully qualified domain name greater than 40 characters in length.

## **Enhancements**

### **Enhancements/New Features:**

- The firmware component installer can now install the drive firmware successfully when the new HP ProLiant Smart Array HPCISS3 Controller Driver (**hpciss3.sys**) is running on the system being updated.
- Updated the flash engine to standardize logging across all SATA drive components.
- Enhanced logging capability to improve the details provided in the component log file.
- Added support for Microsoft Windows Server 2016.

### **Enhancements/New Features for HPGD (E):**

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - MB1000GCWCV, MB2000GCWDA, MB3000GCWDB, and MB4000GCWDC Drives

Version: HPGI (**Recommended**)

Filename: cp031904.compsig; cp031904.exe; cp031904.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.**

## **Fixes**

### **Problems Fixed:**

- This firmware implements a feature which performs a random seek after 100ms of host inactivity.

## **Enhancements**

### **Enhancements/New Features:**

- Adds support for HPE ProLiant Gen10 servers.

---

Online ROM Flash Component for Windows (x64) - MB1000GDUNU, MB2000GDUNV, MB3000GDUPA, and MB4000GDUPB Drives

### **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 firmware version HPG4 do not need to update to HPG4 (B).**

### **Fixes**

#### **Problems Fixed:**

- Reliability enhancement for applications that write data to a narrow range of tracks.

#### **Known Issues:**

- Firmware cannot be downgraded to HPG3 after updating to HPG4.

### **Enhancements**

#### **Enhancements/New Features:**

- Added support for Microsoft Windows Server 2016.

#### **Enhancements/New Features for HPG4 (B):**

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - MB1000GVYZE, MB2000GVYZF, MB3000GVYZH, and MB4000GVYZK Drives

### **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 firmware version HPG4 do not need to update to HPG4 (B).**

### **Fixes**

#### **Problems Fixed:**

- Firmware version HPG4 prevents the occurrence of a rare issue which could lead to slow drive performance. This issue has the potential to impact all drives in configurations where the drives might be allowed to be idle for greater than 1 second.

### **Enhancements**

#### **Enhancements/New Features for HPG4 (B):**

- Adds support for HPE ProLiant Gen10 servers.

---

Online ROM Flash Component for Windows (x64) - MB2000GCVBR, MB3000GCVBT, and MB4000GCVBU Drives

### **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 firmware version HPG5 do not need to update to HPG5 (D).**

### **Fixes**

#### **Problem Fixed:**

- Fixes a rare but potential data integrity error during low 5v drive voltage and specific sequential data streaming conditions, which could result in data written to incorrect sectors.

#### **Problems Fixed for HPG5 (B):**

- The component would fail to flash drive firmware on a server with a Trusted Platform Module (TPM) enabled when using the /tpmbypass switch.

#### **Problems Fixed for HPG5 (C):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.
- Component would cause an exception error when deployed on a computer with a fully qualified domain name greater than 40 characters in length.

### **Enhancements**

#### **Enhancements/New Features:**

- Improvements have been made to enhance drive reliability, performance and handle sudden shock situations.
- Updated the flash engine to standardize logging across all SATA drive components.
- Enhanced logging capability to improve the details provided in the component log file.
- Added support for Microsoft Windows Server 2016.

#### **Enhancements/New Features for HPG5 (D):**

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - MB2000GCWLT, MB3000GCWLU, and MB4000GCWLV Drives

Version: HPG4 (B) **(Recommended)**

Filename: cp031907.compsig; cp031907.exe; cp031907.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 firmware version HPG4 do not need to update to HPG4 (B).**

### **Fixes**

#### **Problems Fixed:**

- Improves the drive idle time behavior by reducing long periods of track dwell time, which if not implemented, could increase media lube depletion and reduce drive reliability.

## **Enhancements**

### **Enhancements/New Features:**

- Added support for Microsoft Windows Server 2016.

### **Enhancements/New Features for HPG4 (B):**

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - MB4000GEFNA and MB6000GEFNB Drives

Version: HPG6 (**Recommended**)

Filename: cp033046.compsig; cp033046.exe; cp033046.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.**

## **Fixes**

### **Problems Fixed:**

- HPG6 firmware improves drive reliability where disk drives are exposed to long periods of host inactivity which exceed 1 second.

---

Online ROM Flash Component for Windows (x64) - MB4000GEQNH and MB6000GEQNK Drives

Version: HPG7 (D) (**Recommended**)

Filename: cp031911.compsig; cp031911.exe; cp031911.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 firmware version HPG7 do not need to update to HPG7 (D).**

## **Fixes**

### **Problems Fixed:**

- This firmware corrects possible unrecovered errors caused by the track refresh algorithm not working properly.

### **Problems Fixed for HPG7 (B):**

- The component would fail to flash drive firmware on a server with a Trusted Platform Module (TPM) enabled when using the /tpmbypass switch.

### **Problems Fixed for HPG7 (C):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.
- Component would cause an exception error when deployed on a computer with a fully qualified domain name greater than 40 characters in length.

## **Enhancements**

#### Enhancements/New Features:

- Added support for Microsoft Windows Server 2016.

#### Enhancements/New Features for HPG7 (D):

- Adds support for HPE ProLiant Gen10 servers.

---

Online ROM Flash Component for Windows (x64) - MB6000GEBTP Drives

Version: HPG3 **(Recommended)**

Filename: cp033032.compsig; cp033032.exe; cp033032.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.**

#### **Fixes**

##### **Problems Fixed:**

- This firmware resolves several drive issues including internal resets, firmware download functionality, and performance issues. This firmware could improve the robustness of the system by eliminating these possible issues within the drive.

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Online ROM Flash Component for Windows (x64) - MB6000GEXXV Drives

Version: HPG2 (B) **(Recommended)**

Filename: cp031914.compsig; cp031914.exe; cp031914.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 firmware version HPG2 do not need to update to HPG2 (B).**

#### **Fixes**

##### **Problems Fixed:**

- Reliability enhancement for applications that write data to a narrow range of tracks.

#### **Enhancements**

##### **Enhancements/New Features:**

- Added support for Microsoft Windows Server 2016.

##### **Enhancements/New Features for HPG2 (B):**

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - MB6000GVYYU Drives

Version: HPG2 **(Recommended)**

Filename: cp033035.compsig; cp033035.exe; cp033035.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.**

### **Fixes**

#### **Problems Fixed:**

- Firmware version HPG2 prevents the occurrence of a rare issue which could lead to slow drive performance. This issue has the potential to impact all drives in configurations where the drives might be allowed to be idle for greater than 1 second.

---

Online ROM Flash Component for Windows (x64) - MB8000GFECR Drives

Version: HPG4 **(Recommended)**

Filename: cp032307.compsig; cp032307.exe; cp032307.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.**

### **Fixes**

#### **Problems Fixed:**

- Under rarely occurring conditions where a host error occurred during a write with 4K unaligned sectors, the write operation might result in stale data. Firmware HPx4 prevents the possibility of stale data occurring under these conditions.

### **Enhancements**

#### **Enhancements/New Features:**

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - MK0960GECQK Drives

Version: HPG3 (D) **(Critical)**

Filename: cp031916.compsig; cp031916.exe; cp031916.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 firmware version HPG3 do not need to update to HPG3 (D).**

### **Fixes**

#### **Problems Fixed:**

- Firmware resolves a data mismanagement issue associated with unaligned sequential write operations.

### Problems Fixed for HPG3 (B):

- The component would fail to flash drive firmware on a server with a Trusted Platform Module (TPM) enabled when using the /tpmbypass switch.

### Problems Fixed for HPG3 (C):

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.
- Component would cause an exception error when deployed on a computer with a fully qualified domain name greater than 40 characters in length.

## Enhancements

### Enhancements/New Features:

- Added support for Microsoft Windows Server 2016.

### Enhancements/New Features for HPG3 (D):

- Adds support for HPE ProLiant Gen10 servers.

---

Online ROM Flash Component for Windows (x64) - MM1000GEFQV and MM2000GEFRA Drives

Version: HPG5 **(Recommended)**

Filename: cp031319.compsig; cp031319.exe; cp031319.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.**

## Fixes

### Problems Fixed:

- This firmware improves HDD reliability when HDDs are exposed to long periods of host inactivity that exceed 1 second. HDDs may become unresponsive when using HDD firmware prior to version HPG5. This firmware also contains a change which prevents an incorrect reassign status of a repaired sector from being logged.

## Enhancements

### Enhancements/New Features for:

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - MM1000GFJTE Drives

Version: HPG1 (B) **(Recommended)**

Filename: cp031918.compsig; cp031918.exe; cp031918.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 firmware version HPG1 do not need to update to HPG1 (B).**

## Fixes

### **Problems Fixed:**

- This firmware improves HDD reliability when HDDs are exposed to long periods of host inactivity that exceed 1 second. HDDs may become unresponsive when using HDD firmware prior to version HPG1.
- This firmware also contains a change which prevents an incorrect reassign status of a repaired sector from being logged.

## Enhancements

### **Enhancements/New Features:**

- Added support for Microsoft Windows Server 2016.

### **Enhancements/New Features for HPG1 (B):**

- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - MR000240GWFLU, MR000480GWFLV, VR000480GWFMD, MR000960GWFMA, VR000960GWFME, MR001920GWFMB, and VR001920GWFMC Drives

Version: HPG4 **(Recommended)**

Filename: cp032695.compsig; cp032695.exe; cp032695.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.**

## Enhancements

### **Enhancements/New Features:**

- Production signing keys applied to code.
- Enhanced code to meet signal specification for the TX differential voltage and de-emphasis level.

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Online ROM Flash Component for Windows (x64) - VK000240GWEZB, VK000480GWEZC, VK000960GWEZD, VK001920GWEZE, MK000240GWEZF, MK000480GWEZH, MK000960GWEZK, and MK001920GWHRU Drives

Version: HPG4 **(Recommended)**

Filename: cp032692.compsig; cp032692.exe; cp032692.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.**

## Enhancements

### **Enhancements/New Features:**

- Production signing keys applied to code.
- Enhanced code to meet signal specification for the TX differential voltage and de-emphasis level.

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Online ROM Flash Component for Windows (x64) - VK0120GFDKE, VK0240GFDKF, VK0480GFDKH, VK0960GFDKK, VK1920GFDKL, and VK3840GFDKN Drives

Version: HPG1 **(Recommended)**

Filename: cp031374.compsig; cp031374.exe; cp031374.md5

### **Important Note!**

- **Online firmware flashing of drives attached to an HPE Smart Array controller running in Zero Memory (ZM) mode or an HPE 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 SPP and HP SUM.**

### **Fixes**

#### **Problems Fixed:**

- Firmware corrects an issue where drives were not found during Power-On Self-Test device discovery.

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Online ROM Flash Component for Windows (x64) - VK0240GEPQN, VK0480GEPQP, and VK0960GEPQQ Drives

Version: HPG1 **(Optional)**

Filename: cp032333.compsig; cp032333.exe; cp032333.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.**

### **Enhancements**

#### **Enhancements/New Features :**

- HPG1 is a maintenance firmware release with minor performance enhancements for 2.5" SSD 6Gb SATA drive models VK0240GEPQN, VK0480GEPQP, and VK0960GEPQQ .
- Adds support for HPE ProLiant Gen10 servers.

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Online ROM Flash Component for Windows (x64) - XP0120GFJSL and XP0240GFJSN Drives

Version: HPS4 **(Recommended)**

Filename: cp031999.compsig; cp031999.exe; cp031999.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.**

### **Fixes**

#### **Problems Fixed:**

- HPS4 firmware release resolved a firmware timing issue which occurred during drive long self-test and resulted in a timeout condition that caused the drive to become unrecognized by the system.

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Supplemental Update / Online ROM Flash Component for ESXi - MB001000GWCBC and MB002000GWCBD Drives

Version: HPG4 **(Critical)**

Filename: CP032591.compsig; CP032591.zip

### **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.**

### **Fixes**

#### **Problems Fixed:**

- This firmware corrects a potential issue where the data in the reserved tracks is not properly updated, eliminating the risk of a drive not finishing the boot process on power up.
- Other maintenance fixes and updates are also included with the new firmware.

### **Enhancements**

#### **Enhancements/New Features:**

- Firmware version HPG4 is designed to prevent any previous firmware revisions from being loaded onto the drive, after the drive is upgraded to HPG4 firmware.

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Supplemental Update / Online ROM Flash Component for ESXi - MB001000GWFWK and MB002000GWFWL Drives

Version: HPG4 **(Critical)**

Filename: CP032597.compsig; CP032597.zip

### **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.**

### **Fixes**

#### **Problems Fixed:**

- This firmware corrects a potential issue where the data in the reserved tracks is not properly updated, eliminating the risk of a drive not finishing the boot process on power up.
- Other maintenance fixes and updates are also included with the new firmware.

### **Enhancements**

#### **Enhancements/New Features:**

- Firmware version HPG4 is designed to prevent any previous firmware revisions from being loaded onto the drive, after the drive is upgraded to HPG4 firmware.

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Supplemental Update / Online ROM Flash Component for ESXi - MB1000GDUNU, MB2000GDUNV, MB3000GDUPA, and MB4000GDUPB Drives

Version: HPG4 (C) **(Recommended)**

Filename: CP033007.compsig; CP033007.zip

### **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 firmware version HPG4 do not need to update to HPG4 (C).**

## **Fixes**

### **Problems Fixed:**

- Reliability enhancement for applications that write data to a narrow range of tracks.

### **Problems Fixed for HPG4 (C):**

- When attempting to update drive firmware in a VMware vSphere 6.5 environment, the update would fail and the event was logged as a segmentation fault error.

### **Known Issues:**

- Firmware cannot be downgraded to HPG3 after updating to HPG4.

## **Enhancements**

### **Enhancements/New Features for HPG4 (B):**

- Adds support for VMware vSphere 6.5.

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Supplemental Update / Online ROM Flash Component for ESXi - MB4000GEFNA and MB6000GEFNB Drives

Version: HPG6 **(Recommended)**

Filename: CP033044.compsig; CP033044.zip

### **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.**

## **Fixes**

### **Problems Fixed:**

- HPG6 firmware improves drive reliability where disk drives are exposed to long periods of host inactivity which exceed 1 second.

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Supplemental Update / Online ROM Flash Component for ESXi - MB6000GEBTP Drives

Version: HPG3 **(Recommended)**

Filename: CP033030.compsig; CP033030.zip

### **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.**

## **Fixes**

### **Problems Fixed:**

- This firmware resolves several drive issues including internal resets, firmware download functionality, and performance issues. This firmware could improve the

robustness of the system by eliminating these possible issues within the drive.

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Supplemental Update / Online ROM Flash Component for ESXi - MB6000GEXXV Drives

Version: HPG2 (C) **(Recommended)**

Filename: CP033012.compsig; CP033012.zip

### **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 firmware version HPG2 do not need to update to HPG2 (C).**

### **Fixes**

#### **Problems Fixed:**

- Reliability enhancement for applications that write data to a narrow range of tracks.

#### **Problems Fixed for HPG2 (C):**

- When attempting to update drive firmware in a VMware vSphere 6.5 environment, the update would fail and the event was logged as a segmentation fault error.

### **Enhancements**

#### **Enhancements/New Features for HPG2 (B):**

- Adds support for VMware vSphere 6.5.

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Supplemental Update / Online ROM Flash Component for ESXi - MB8000GFECR Drives

Version: HPG4 (B) **(Recommended)**

Filename: CP033013.compsig; CP033013.zip

### **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 firmware version HPG4 do not need to update to HPG4 (B).**

### **Fixes**

#### **Problems Fixed:**

- Under rarely occurring conditions where a host error occurred during a write with 4K unaligned sectors, the write operation might result in stale data. Firmware HPX4 prevents the possibility of stale data occurring under these conditions.

#### **Problems Fixed for HPG4 (B):**

- When attempting to update drive firmware in a VMware vSphere 6.5 environment, the update would fail and the event was logged as a segmentation fault error.

### **Enhancements**

#### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

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Supplemental Update / Online ROM Flash Component for ESXi - VK0120GFDKE, VK0240GFDKF, VK0480GFDKH, VK0960GFDKK, VK1920GFDKL, and VK3840GFDKN Drives

Version: HPG1 (B) **(Recommended)**

Filename: CP033017.compsig; CP033017.zip

#### **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 firmware version HPG1 do not need to update to HPG1 (B).**

#### **Fixes**

##### **Problems Fixed:**

- Firmware corrects an issue where drives were not found during Power-On Self-Test device discovery.

##### **Problems Fixed for HPG1 (B):**

- When attempting to update drive firmware in a VMware vSphere 6.5 environment, the update would fail and the event was logged as a segmentation fault error.

#### **Enhancements**

##### **Enhancements/New Features:**

- Adds support for VMware vSphere 6.5.

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Supplemental Update / Online ROM Flash Component for ESXi - VK0240GEPQN, VK0480GEPQP, and VK0960GEPQQ Drives

Version: HPG1 (B) **(Optional)**

Filename: CP033018.compsig; CP033018.zip

#### **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 firmware version HPG1 do not need to update to HPG1 (B).**

#### **Fixes**

##### **Problems Fixed for HPG1 (B):**

- When attempting to update drive firmware in a VMware vSphere 6.5 environment, the update would fail and the event was logged as a segmentation fault error.

#### **Enhancements**

##### **Enhancements/New Features :**

- HPG1 is a maintenance firmware release with minor performance enhancements for 2.5" SSD 6Gb SATA drive models VK0240GEPQN, VK0480GEPQP, and VK0960GEPQQ .

- Adds support for VMware vSphere 6.5.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB001000GWCBC and MB002000GWCBD Drives

Version: HPG4 (B) **(Critical)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-68b12e54d2-HPG4-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-68b12e54d2-HPG4-2.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode 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 firmware version HPG4 do not need to update to HPG4 (B).**

### **Fixes**

#### **Problems Fixed:**

- This firmware corrects a potential issue where the data in the reserved tracks is not properly updated, eliminating the risk of a drive not finishing the boot process on power up.
- Other maintenance fixes and updates are also included with the new firmware.

### **Enhancements**

#### **Enhancements/New Features:**

- Firmware version HPG4 is designed to prevent any previous firmware revisions from being loaded onto the drive, after the drive is upgraded to HPG4 firmware.

#### **Enhancements/New Features for HPG4 (B):**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB001000GWFVK and MB002000GFWFL Drives

Version: HPG4 (B) **(Critical)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-bfc4af697b-HPG4-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-bfc4af697b-HPG4-2.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode 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 firmware version HPG4 do not need to update to HPG4 (B).**

### **Fixes**

#### **Problems Fixed:**

- This firmware corrects a potential issue where the data in the reserved tracks is not properly updated, eliminating the risk of a drive not finishing the boot process on power up.
- Other maintenance fixes and updates are also included with the new firmware.

### **Enhancements**

#### **Enhancements/New Features:**

Firmware version HPG4 is designed to prevent any previous firmware revisions from being loaded onto the drive, after the drive is upgraded to HPG4 firmware.

#### Enhancements/New Features for HPG4 (B):

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB006000GWBXQ and MB008000GWBXL Drives

Version: HPG5 (**Recommended**)

Filename: rpm/RPMS/x86\_64/firmware-hdd-a1fd19f9ca-HPG5-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-a1fd19f9ca-HPG5-1.1.x86\_64.rpm

#### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

#### **Fixes**

##### **Problems Fixed:**

- Fixed an occasional and potentially significant delay in completion time of the SANITIZE function, along with alignment of some settings, features and internal logging with specifications.

#### **Enhancements**

##### **Enhancements/New Features:**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB0500GCEHF, MB1000GCEHH, and MB2000GCEHK Drives

Version: HPGD (E) (**Critical**)

Filename: rpm/RPMS/x86\_64/firmware-hdd-b583d96f94-HPGD-5.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-b583d96f94-HPGD-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 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 firmware version HPGD do not need to update to HPGD (E).**

#### **Fixes**

##### **Problems Fixed:**

- After long term use of the HDD, a rare condition might occur following a power cycle where the drive heads may land on areas of the disk containing data, which could potentially cause data loss or mechanical damage. Firmware version HPGD prevents this condition from occurring.
- Flashing drives connected behind an HP H2xx Host Bus Adapter (HBA) no longer causes an interrupt resulting in drive firmware installation failures.
- Resolved a component installation issue where the drive model, MB2000GCEHK, was being detected, but would fail to flash.
- Linux Smart Component fails to update firmware on SATA drive connected behind a SATA HBA controller. Component reports the firmware update was successful. However, after a power cycle, the firmware version remains unchanged.

##### **Problems Fixed for HPGD (D):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware

installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.

- Component fails to update the firmware for drives connected behind an HP Smart Array P431 controller. Component reports the firmware update was successful. However, after a power cycle, the firmware version remains unchanged.

## **Enhancements**

### **Enhancements/New Features:**

- Added support for UEFI (Universal Extensible Firmware Interface) based servers.

### **Enhancements/New Features for HPGD (C):**

- Updated the flash engine to standardize logging across all SATA drive components.
- Enhanced logging capability to improve the details provided in the component log file.

### **Enhancements/New Features for HPGD (E):**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB1000GCWCV, MB2000GCWDA, MB3000GCWDB, and MB4000GCWDC Drives  
Version: HPGI (B) **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-a1b08f8a6b-HPGI-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-a1b08f8a6b-HPGI-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 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 firmware version HPGI do not need to update to HPGI (B)**

## **Fixes**

### **Problems Fixed:**

- This firmware implements a feature which performs a random seek after 100ms of host inactivity.

## **Enhancements**

### **Enhancements/New Features for HPGI (B):**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB1000GDUNU, MB2000GDUNV, MB3000GDUPA, and MB4000GDUPB Drives  
Version: HPG4 (B) **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-3ab4c70e64-HPG4-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-3ab4c70e64-HPG4-2.1.x86\_64.rpm

## **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode 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 firmware version HPG4 do not need to update to HPG4 (B).**

## **Fixes**

### **Problems Fixed:**

- Reliability enhancement for applications that write data to a narrow range of tracks.

#### Known Issues:

- Firmware cannot be downgraded to HPG3 after updating to HPG4.

#### Enhancements

##### Enhancements/New Features for HPG4 (B):

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB1000GVYZE, MB2000GVYZF, MB3000GVYZH, and MB4000GVYZK Drives

Version: HPG4 (B) **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-0a7010918e-HPG4-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-0a7010918e-HPG4-2.1.x86\_64.rpm

#### Important Note!

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode 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 firmware version HPG4 do not need to update to HPG4 (B).**

#### Fixes

##### Problems Fixed:

- Firmware version HPG4 prevents the occurrence of a rare issue which could lead to slow drive performance. This issue has the potential to impact all drives in configurations where the drives might be allowed to be idle for greater than 1 second.

#### Enhancements

##### Enhancements/New Features for HPG4 (B):

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB2000GCVBR, MB3000GCVBT, and MB4000GCVBU Drives

Version: HPG5 (C) **(Critical)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-e4f5b5c9a7-HPG5-3.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-e4f5b5c9a7-HPG5-3.1.x86\_64.rpm

#### Important Note!

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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 firmware version HPG5 do not need to update to HPG5 (C).**

#### Fixes

##### Problem Fixed:

- Fixes a rare but potential data integrity error during low 5v drive voltage and specific sequential data streaming conditions, which could result in data written to incorrect sectors.

##### Problems Fixed for HPG5 (B):

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.
- Component fails to update the firmware for drives connected behind an HP Smart Array P431 controller. Component reports the firmware update was successful. However, after a power cycle, the firmware version remains unchanged.

## **Enhancements**

### **Enhancements/New Features:**

- Added support for UEFI (Universal Extensible Firmware Interface) based servers.
- Updated the flash engine to standardize logging across all SATA drive components.
- Enhanced logging capability to improve the details provided in the component log file.

### **Enhancements/New Featuresfor HPG5 (C):**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB2000GCWLT, MB3000GCWLU, and MB4000GCWLV Drives

Version: HPG4 (B) **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-2e70ce7412-HPG4-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-2e70ce7412-HPG4-2.1.x86\_64.rpm

## **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode 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 firmware version HPG4 do not need to update to HPG4 (B).**

## **Fixes**

### **Problems Fixed:**

- Improves the drive idle time behavior by reducing long periods of track dwell time, which if not implemented, could increase media lube depletion and reduce drive reliability.

## **Enhancements**

### **Enhancements/New Featuresfor HPG4 (B):**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB4000GEFNA and MB6000GEFNB Drives

Version: HPG6 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-40277d55d3-HPG6-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-40277d55d3-HPG6-1.1.x86\_64.rpm

## **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

## **Fixes**

### **Problems Fixed:**

- HPG6 firmware improves drive reliability where disk drives are exposed to long periods of host inactivity which exceed 1 second.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB4000GEQNH and MB6000GEQNK Drives

Version: HPG7 (C) **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-bfc95f0628-HPG7-3.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-bfc95f0628-HPG7-3.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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 firmware version HPG7 do not need to update to HPG7 (C).**

### **Fixes**

#### **Problems Fixed:**

- This firmware corrects possible unrecovered errors caused by the track refresh algorithm not working properly.

#### **Problems Fixed for HPG7 (B):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.
- Component fails to update the firmware for drives connected behind an HP Smart Array P431 controller. Component reports the firmware update was successful. However, after a power cycle, the firmware version remains unchanged.

### **Enhancements**

#### **Enhancements/New Features for HPG7 (C):**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB6000GEBTP Drives

Version: HPG3 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-3243fce9a0-HPG3-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-3243fce9a0-HPG3-1.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

### **Fixes**

#### **Problems Fixed:**

- This firmware resolves several drive issues including internal resets, firmware download functionality, and performance issues. This firmware could improve the robustness of the system by eliminating these possible issues within the drive.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB6000GEXXV Drives

Version: HPG2 (B) **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-a629fcea59-HPG2-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-a629fcea59-HPG2-2.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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 firmware version HPG2 do not need to update to HPG2 (B).**

### **Fixes**

#### **Problems Fixed:**

- Reliability enhancement for applications that write data to a narrow range of tracks.

### **Enhancements**

#### **Enhancements/New Features for HPG2 (B):**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB6000GVYYU Drives

Version: HPG2 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-bdc37cb37f-HPG2-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-bdc37cb37f-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 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.**

### **Fixes**

#### **Problems Fixed:**

- Firmware version HPG2 prevents the occurrence of a rare issue which could lead to slow drive performance. This issue has the potential to impact all drives in configurations where the drives might be allowed to be idle for greater than 1 second.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MB8000GFECR Drives

Version: HPG4 (B) **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-6d922fc9a8-HPG4-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-6d922fc9a8-HPG4-2.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode 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 firmware version HPG4 do not need to update to HPG4 (B).**

### **Fixes**

#### **Problems Fixed:**

- Under rarely occurring conditions where a host error occurred during a write with 4K unaligned sectors, the write operation might result in stale data. Firmware HPX4 prevents the possibility of stale data occurring under these conditions.

## **Enhancements**

### **Enhancements/New Features:**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MK0960GECQK Drives

Version: HPG3 (C) **(Critical)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-3e34285be7-HPG3-3.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-3e34285be7-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 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 firmware version HPG3 do not need to update to HPG3 (C).**

## **Fixes**

### **Problems Fixed:**

- Firmware resolves a data mismanagement issue associated with unaligned sequential write operations.

### **Problems Fixed for HPG3 (B):**

- Component would fail to install drive firmware for drives present in a system configured with two or more external drive enclosures attached to an HP Host Bus Adapter H22x. The following message would be reported in the component log file - "Device appears more than once in tree". The drive firmware installation failure was not observed in configurations having only one external drive enclosure attached to an HP Host Bus Adapter H22x.
- Component fails to update the firmware for drives connected behind an HP Smart Array P431 controller. Component reports the firmware update was successful. However, after a power cycle, the firmware version remains unchanged.

## **Enhancements**

### **Enhancements/New Features for HPG3 (C):**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MM1000GEFQV and MM2000GEFRA Drives

Version: HPG5 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-ec908c3650-HPG5-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-ec908c3650-HPG5-1.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

## **Fixes**

### **Problems Fixed:**

- This firmware improves HDD reliability when HDDs are exposed to long periods of host inactivity that exceed 1 second. HDDs may become unresponsive when using HDD firmware prior to version HPG5. This firmware also contains a change which prevents an incorrect reassign status of a repaired sector from being logged.

## **Enhancements**

### **Enhancements/New Features:**

- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - MM1000GFJTE Drives

Version: HPG1 (B) **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-95af9a555e-HPG1-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-95af9a555e-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 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 firmware version HPG1 do not need to update to HPG1 (B).**

## **Fixes**

### **Problems Fixed:**

- This firmware improves HDD reliability when HDDs are exposed to long periods of host inactivity that exceed 1 second. HDDs may become unresponsive when using HDD firmware prior to version HPG1.
- This firmware also contains a change which prevents an incorrect reassign status of a repaired sector from being logged.

## **Enhancements**

### **Enhancements/New Features for HPG1 (B):**

- Adds support for HPE ProLiant Gen10 servers.

---

Supplemental Update / Online ROM Flash Component for Linux (x64) - MR000240GWFLU, MR000480GWFLV, VR000480GWFM, MR000960GWFMA, VR000960GWFME, MR001920GWFMB, and VR001920GWFMC Drives

Version: HPG4 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-9196d4f720-HPG4-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-9196d4f720-HPG4-1.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

## **Enhancements**

### **Enhancements/New Features:**

- Production signing keys applied to code.
- Enhanced code to meet signal specification for the TX differential voltage and de-emphasis level.

---

Supplemental Update / Online ROM Flash Component for Linux (x64) - VK000240GWEZB, VK000480GWEZC, VK000960GWEZD, VK001920GWEZE, MK000240GWEZF, MK000480GWEZH, MK000960GWEZK, and MK001920GWHRU Drives

Version: HPG4 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-3db7640485-HPG4-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-3db7640485-HPG4-1.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

### **Enhancements**

#### **Enhancements/New Features:**

- Production signing keys applied to code.
- Enhanced code to meet signal specification for the TX differential voltage and de-emphasis level.

---

Supplemental Update / Online ROM Flash Component for Linux (x64) - VK0120GFDKE, VK0240GFDKF, VK0480GFDKH, VK0960GFDKK, VK1920GFDKL, and VK3840GFDKN Drives

Version: HPG1 (B) **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-a2d4b5c742-HPG1-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-a2d4b5c742-HPG1-2.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to an HPE Smart Array controller running in Zero Memory (ZM) mode or an HPE 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 SPP and HP SUM.**

### **Fixes**

#### **Problems Fixed:**

- Firmware corrects an issue where drives were not found during Power-On Self-Test device discovery.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - VK0240GEPQN, VK0480GEPQP, and VK0960GEPQQ Drives

Version: HPG1 **(Optional)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-1a516522d1-HPG1-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-1a516522d1-HPG1-1.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

### **Enhancements**

#### **Enhancements/New Features :**

- HPG1 is a maintenance firmware release with minor performance enhancements for 2.5" SSD 6Gb SATA drive models VK0240GEPQN, VK0480GEPQP, and VK0960GEPQQ.
- Adds support for HPE ProLiant Gen10 servers.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - XP0032GEFEN, XP0032GDZME, XP0064GEFEP, and XP0064GDZMF Drives

Version: HPS8 (B) **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-f286f98973-HPS8-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-f286f98973-HPS8-2.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

### **Prerequisites**

Drive models XP0032GEFEN, XP0032GDZME, XP0064GDZMF, and XP0064GEFEP must have firmware version HPS5 installed prior to updating to firmware version HPS8.

### **Fixes**

#### **Firmware Dependency:**

- Drive models XP0032GEFEN, XP0032GDZME, XP0064GDZMF, and XP0064GEFEP must have firmware version HPS6 installed prior to updating to firmware version HPS8.

#### **Problems Fixed:**

- HPS8 firmware release resolved a firmware timing issue which occurred during drive long self-test and resulted in a timeout condition that caused the drive to become unrecognized by the system.

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Supplemental Update / Online ROM Flash Component for Linux (x64) - XP0120GFJSL and XP0240GFJSN Drives

Version: HPS4 (B) **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-hdd-d355375539-HPS4-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-hdd-d355375539-HPS4-2.1.x86\_64.rpm

### **Important Note!**

- **Online firmware flashing of drives attached to a Smart Array controller running in Zero Memory (ZM) mode or 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.**

### **Fixes**

#### **Problems Fixed:**

- HPS4 firmware release resolved a firmware timing issue which occurred during drive long self-test and resulted in a timeout condition that caused the drive to become unrecognized by the system.

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### **Firmware - Storage Controller**

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HP D6000 6Gb SAS Disk Enclosure ROM Flash Component for Windows (x64)

Version: 2.98 **(Critical)**

Filename: cp029908.exe; cp029908.md5

### **Important Note!**

**IMPORTANT:** Firmware updates must be performed during a system maintenance window, with all I/O to the system halted.

**IMPORTANT:** Power up/down sequence is important to maintain integrity of the configuration, please refer to "HP D6000 Disk Enclosure User Guide" document for more details.

**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\Verbose.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\Verbose.log and flash summary is logged to %systemdrive%\CPQSYSTEM\Log\cpqsetup.log.

### **Fixes**

#### **Following issue is fixed in this version of firmware:**

Changed the settings in the SAS Expander to support disk discovery when 12Gb SAS HDDs are installed in the enclosure

### **Supported Devices and Features**

HP D6000 Disk Enclosure can be connected behind any of the following devices :

- HP H222 Host Bus Adapter
- HP H221 Host Bus Adapter
- HP H241 Smart Host Bus Adapter
- HP Smart Array P731m Controller
- HP Smart Array P741m Controller
- HP Smart Array P721m Controller
- HP Smart Array P441 Controller
- HP Smart Array P431 Controller
- HP Smart Array P822 Controller
- HP Smart Array P841 Controller
- HP Smart Array P421 Controller

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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

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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%\CPOSYSTEM\Log\D2000.log and flash summary is logged to %systemdrive%\CPOSYSTEM\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%\CPOSYSTEM\Log\D2000.log and flash summary is logged to %systemdrive%\CPOSYSTEM\Log\cpqsetup.log.

## **Fixes**

### **The following fix is added in this version:-**

-Removed action over FAULT\_SENSED bit due to incorrect algorithm.

## **Supported Devices and Features**

The D2600/ D2700 Enclosure can be attached to any of the following HP Storage Controllers and Host Bus Adapters:

HP H222 Host Bus Adapter  
HP H221 Host Bus Adapter  
HP H241 Smart Host Bus Adapter  
HP Smart Array P812 Controller  
HP Smart Array P822 Controller  
HP Smart Array P841 Controller  
HP Smart Array P441 Controller  
HP Smart Array P431 Controller  
HP Smart Array P421 Controller  
HP Smart Array P411 Controller  
HP Smart Array P212 Controller  
HP Smart Array P222 Controller

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HP D3600/D3700/D3610/D3710 12Gb SAS Disk Enclosure ROM Flash Component for Linux (x64)

Version: 3.64 (**Recommended**)

Filename: RPMS/x86\_64/firmware-d3000-3.64-1.1.x86\_64.compsig; RPMS/x86\_64/firmware-d3000-3.64-1.1.x86\_64.rpm

## **Important Note!**

**IMPORTANT:** Firmware updates must be performed during a system maintenance window, with all I/O to the system halted. In single domain configuration, if user hosts an OS in D3000 (or any storage box) and flash the SEPs, it will hung/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 fix was incorporated in this version:**

- Fixed NVRAM CRC error

## **Enhancements**

### **The following enhancement was incorporated in this version:**

- Added support for 3610 and 3710 disk enclosures

## **Supported Devices and Features**

The D3600 / D3700 / D3610 / D3710 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 Smart Array P841 Controller
- HP Smart Array P822 Controller
- HPE Smart Array P408e-p SR Gen10 Controller
- HP Smart Array P441 Controller
- HP Smart Array P431 Controller
- Smart Array P421
- HPE Smart Array E208e-p SR Gen10 Controller
- HP Smart HBA H241

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HP D3600/D3700/D3610/D3710 12Gb SAS Disk Enclosure ROM Flash Component for VMware (esxi)

Version: 3.64 **(Recommended)**

Filename: CP032252.compsig; CP032252.md5; CP032252.zip

## **Important Note!**

**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.

## **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 fix was incorporated in this version:**

- Fixed NVRAM CRC error

## **Enhancements**

### **The following enhancement was incorporated in this version:**

- o Added support for 3610 and 3710 disk enclosures

### **Supported Devices and Features**

The D3600 / D3700 / D3610 / D3710 Enclosure can be attached to any of the following HP Storage Controllers and Host Bus Adapters :

- o HP H222 Host Bus Adapter
- o HP H221 Host Bus Adapter
- o HP H241 Smart Host Bus Adapter
- o HP Smart Array P441 Controller
- o HP Smart Array P431 Controller
- o Smart Array P421
- o HP Smart Array P822 Controller
- o HP Smart Array P841 Controller

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HP D6000 6Gb SAS Disk Enclosure ROM Flash Component for Linux (x64)

Version: 2.98 **(Critical)**

Filename: RPMS/x86\_64/hp-firmware-smartarray-d6000-2.98-1.1.x86\_64.rpm

### **Important Note!**

**IMPORTANT:** Firmware updates must be performed during a system maintenance window, with all I/O to the system halted.

**IMPORTANT:** Power up/down sequence is important to maintain integrity of the configuration, please refer to "HP D6000 Disk Enclosure User Guide" document for more details.

**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/Verbose.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/Verbose.log and flash summary is logged to /var/cpq/Component.log.

### **Fixes**

**Following issue is fixed in this version of firmware:**

Changed the settings in the SAS Expander to support disk discovery when 12Gb SAS HDDs are installed in the enclosure

### **Supported Devices and Features**

HP D6000 Disk Enclosure can be connected behind any of the following devices :

- o HP H222 Host Bus Adapter
- o HP H221 Host Bus Adapter
- o HP H241 Smart Host Bus Adapter
- o HP Smart Array P731m Controller
- o HP Smart Array P741m Controller
- o HP Smart Array P721m Controller
- o HP Smart Array P441 Controller
- o HP Smart Array P431 Controller
- o HP Smart Array P822 Controller

- HP Smart Array P841 Controller
- HP Smart Array P421 Controller

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HP D6000 6Gb SAS Disk Enclosure ROM Flash Component for VMware (esxi)

Version: 2.98 **(Critical)**

Filename: CP029051.md5; CP029051.zip

### **Important Note!**

**IMPORTANT:** Firmware updates must be performed during a system maintenance window, with all I/O to the system halted.

**IMPORTANT:** Power up/down sequence is important to maintain integrity of the configuration, please refer to HP D6000 Disk Enclosure User Guide document for more details.

**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/Verbose.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/Verbose.log and flash summary is logged to /var/cpq/Component.log.

### **Fixes**

**Following issue is fixed in this version of firmware:**

Changed the settings in the SAS Expander to support disk discovery when 12Gb SAS HDDs are installed in the enclosure

### **Supported Devices and Features**

HP D6000 Disk Enclosure can be connected behind any of the following devices :

- HP H222 Host Bus Adapter
- HP H221 Host Bus Adapter
- HP H241 Smart Host Bus Adapter
- HP Smart Array P731m Controller
- HP Smart Array P741m Controller
- HP Smart Array P721m Controller
- HP Smart Array P441 Controller
- HP Smart Array P431 Controller
- HP Smart Array P822 Controller
- HP Smart Array P841 Controller
- HP Smart Array P421 Controller

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HPE D3600/D3700/D3610/D3710 12Gb SAS Disk Enclosure ROM Flash Component for Windows (x64)

Version: 3.64 **(Recommended)**

Filename: cp032250.compsig; cp032250.exe

### **Important Note!**

**IMPORTANT:** Firmware updates must be performed during a system maintenance window, with all I/O to the system halted. In single domain configuration, if user hosts an OS in D3000 (or any storage box) and flash the SEPs, it will hang/crash everytime as SmartComponent will reset the SEPs after flash/codeload

**WARNING!** Do not power cycle or restart during the firmware update as this can result in loss of capabilities for this unit. It typically takes several minutes for the firmware to load.

**NOTE:**All firmware flash progress messages are logged to %systemdrive%\CPOSYSTEM\Log\D3000.log and flash summary is logged to %systemdrive%\CPOSYSTEM\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%\CPOSYSTEM\Log\D3000.log and flash summary is logged to %systemdrive%\CPOSYSTEM\Log\cpqsetup.log.

### **Fixes**

**The following fix was incorporated in this version:**

- o Fixed NVRAM CRC error

### **Enhancements**

**The following enhancement was incorporated in this version:**

- o Added support for 3610 and 3710 disk enclosures

### **Supported Devices and Features**

The D3600 / D3700 / D3610 / D3710 Enclosure can be attached to any of the following HP Storage Controllers and Host Bus Adapters :

- o HP H222 Host Bus Adapter
- o HP H221 Host Bus Adapter
- o HP Smart Array P841 Controller
- o HP Smart Array P822 Controller
- o HPE Smart Array P408e-p SR Gen10 Controller
- o HP Smart Array P441 Controller
- o HP Smart Array P431 Controller
- o Smart Array P421
- o HPE Smart Array E208e-p SR Gen10 Controller
- o HP Smart HBA H241

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HPE D6020 12Gb SAS Disk Enclosure ROM Flash Component for Linux (x64)

Version: 2.53 **(Recommended)**

Filename: CP032634.md5; RPMS/x86\_64/firmware-d6020-2.53-1.1.x86\_64.compsig; RPMS/x86\_64/firmware-d6020-2.53-1.1.x86\_64.rpm

### **Important Note!**

**IMPORTANT:** Firmware updates must be performed during a system maintenance window, with all I/O to the system halted. In single domain configuration, if user hosts an OS in 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 fix is added in this version:**

- Enclosure in Unexpected status: Non-critical after restoring the Encl ID.

## **Supported Devices and Features**

The D6020 Enclosure can be attached to any of the following HPE Storage Controllers and Host Bus Adapters :

- HP H222 Host Bus Adapter
- HP H221 Host Bus Adapter
- HP Smart Array P841 Controller
- HP Smart Array P822 Controller
- HP Smart Array P731m Controller
- HP Smart Array P741m Controller
- Smart Array P721m
- HPE Smart Array P408e-p Controller
- HPE Smart Array P408e-m Controller
- HP Smart Array P441 Controller
- HP Smart Array P431 Controller
- Smart Array P421
- HPE Smart Array E208e-p Controller
- HP Smart HBA H241

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HPE D6020 12Gb SAS Disk Enclosure ROM Flash Component for Windows (x64)

Version: 2.53 **(Recommended)**

Filename: cp032635.compsig; cp032635.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%\CPOSYSTEM\Log\D6020.log and flash summary is logged to %systemdrive%\CPOSYSTEM\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 fix is added in this version:**

- Enclosure in Unexpected status: Non-critical after restoring the Encl ID.

## **Supported Devices and Features**

The D6020 Enclosure can be attached to any of the following HPE Storage Controllers and Host Bus Adapters :

- HP H222 Host Bus Adapter
- HP H221 Host Bus Adapter
- HP Smart Array P841 Controller
- HP Smart Array P822 Controller
- HP Smart Array P731m Controller
- HP Smart Array P741m Controller
- Smart Array P721m
- HPE Smart Array P408e-p Controller
- HPE Smart Array P408e-m Controller
- HP Smart Array P441 Controller
- HP Smart Array P431 Controller
- Smart Array P421
- HPE Smart Array E208e-p Controller
- HP Smart HBA H241

---

Online ROM Flash Component for Linux (x64) - HPE Apollo 2000 System - SAS Expander

Version: 1.00 (B) **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-smartarray-3bf7ece88e-1.00-2.1.x86\_64.rpm

### **Important Note!**

- Customers who already installed firmware version 1.00 do not need to update to 1.00 (B).

### **Enhancements**

- Improved integration with Smart Update Manager.

Note: Upgrading to version 1.00(B) is not necessary if the Apollo 2000 SAS Expander was previously updated to version 1.00.

---

Online ROM Flash Component for Linux (x64) - HPE Apollo 4200 Gen9 Backplane Expander Firmware

Version: 1.26 (B) **(Optional)**

Filename: rpm/RPMS/x86\_64/firmware-smartarray-f18fdef0b-1.26-2.1.x86\_64.rpm

### **Important Note!**

- **Customers who already installed firmware version 1.26 do not need to update to 1.26 (B).**
- Power cycle / cold reboot is required if firmware is upgraded from version 1.03 or earlier.

### **Enhancements**

- Updated to support Service Pack for ProLiant version 2017.07.0

**Note:** If version 1.26 was previously installed, then it is not necessary to upgrade to version 1.26 (B).

---

Online ROM Flash Component for Linux - HPE Host Bus Adapters H221  
Version: 1.5.10.10.00 (A) **(Optional)**  
Filename: rpm/RPMS/i386/firmware-43d7eff89e-1.5.10.10.00-1.1.i386.rpm

### **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**

- Supports H221 on Gen9 Servers.

### **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 VMware ESXi - HPE Dual 8GB microSD USB  
Version: 1.3.2.212 **(Recommended)**  
Filename: CP032103.compsig; CP032103.zip

### **Fixes**

#### **Problems Fixed:**

- An HPE ProLiant Gen9 server upgraded to System ROM version 2.40\_02-17-2017 will stop responding during Power-On Self-Test (POST) when performing a warm boot if the system is configured with HPE Dual 8GB microSD Enterprise Midline USB Kit (741279-B21), which has controller firmware version FW 1.3.2.202. For additional information, refer to [HPE Customer Advisory a00016609en\\_us](#)

### **Enhancements**

#### **Enhancements/New Features:**

- Enables an HPE Dual 8GB microSD USB to report SD device errors that might occur after a warm boot of an HPE ProLiant Gen9 server that is configured with the device. Server system ROM version 2.40\_02-17-2017 or later must be installed on the server to enable this new feature.
- Improves reliability by updating power cycle logic to enhance Electro-static discharge tolerance.

---

Online ROM Flash Component for VMware ESXi - HPE Express Bay Enablement Switch Card  
Version: 1.73 (C) **(Optional)**  
Filename: CP031368.zip

### **Important Note!**

- **Customers who already installed firmware version 1.73 do not need to update to 1.73 (C).**
- Power cycle / cold reboot is required after installation for updates to take effect.

### **Prerequisites**

- The HP ProLiant iLO firmware version must be v2.20 or later. If the HP ProLiant iLO firmware is older than v2.20 you will receive the following error message:

*Check dependency failed.*

*Current version: iLOx.x.xx*

Minimum version required: iLO4 2.20

The software will not be installed on this system because the required hardware is not present in the system or the software/firmware doesn't apply to this system

### Enhancements

- Updated to support Service Pack for ProLiant version 2017.07.0

**Note:** If any version 1.73 was previously installed, then it is not necessary to upgrade to version 1.73 (C).

---

Online ROM Flash Component for VMware ESXi - Smart Array D2220sb Storage Blade

Version: 8.00 (C) **(Optional)**

Filename: CP032990.compsig; CP032990.zip

### Enhancements

- Updated to support Service Pack for ProLiant version 2017.07.1

**Note:** If version 8.00 was previously installed, then it is not necessary to upgrade to version 8.00 (C).

---

Online ROM Flash Component for VMware ESXi - Smart Array H240ar, H240nr, H240, H241, H244br, P240nr, P244br, P246br, P440ar, P440, P441, P542D, P741m, P840, P840ar, and P841

Version: 6.06 **(Recommended)**

Filename: CP032780.compsig; CP032780.zip

### Fixes

- Under the following conditions, the controller might stop responding:
  - During POST following an unexpected power event if there was data in the controller cache.
  - When running I/O to SATA drives. (POST Lockup 0x13)
  - When using a RAID configuration with strip size of 1024KiB. (POST Lockup 0x13)
  - When a WRITE SAME command is sent with a buffer size greater than 512 bytes. (POST Lockup 0x13)
- In a multi-path environment with nested expanders, the active path to a device might be incorrect following a path failure or restoration.

---

Online ROM Flash Component for VMware ESXi - Smart Array P230i, P430, P431, P731m, P830i, and P830

Version: 4.10 (B) **(Recommended)**

Filename: CP033237.compsig; CP033237.zip

### Fixes

The following issues were resolved in firmware version 4.10:

- If an unexpected power outage occurred, the system might stop operating during Power-On Self Test
- Controller could stop responding when Smart Cache is performing a read operation

### Enhancements

Firmware Version 4.10(B) - Added support for HPE ProLiant DL580 Gen9 server.

If firmware version 4.10 is already installed on the controller, there is no need to upgrade to firmware version 4.10(B).

---

Online ROM Flash Component for VMware ESXi - HPE 12Gb/s SAS Expander Firmware for HPE Smart Array Controllers and HPE HBA Controllers

Version: 3.17 **(Recommended)**

**Important Note!**

- Power cycle / cold reboot is required if firmware is upgraded from version 1.31 or earlier.

**Fixes**

- SATA hard disk drives connected to the HPE 12Gb/s SAS Expander card may not be detected when cold booting a HPE ProLiant server with a HPE Smart Array SR Gen10 controller

---

Online ROM Flash Component for VMware ESXi – HPE Apollo 2000 System - SAS Expander

Version: 1.00 (B) **(Recommended)**

Filename: CP031314.compsig; CP031314.zip

**Important Note!**

- **Customers who already installed firmware version 1.00 do not need to update to 1.00 (B).**

**Enhancements**

- Added support for the VMware vSphere 2016 OS.
  - Improved integration with Smart Update Manager.
- Note: Upgrading to version 1.00(B) is not necessary if the Apollo 2000 SAS Expander was previously updated to version 1.00.

---

Online ROM Flash Component for VMware ESXi – HPE Apollo 4200 Gen9 Backplane Expander Firmware

Version: 1.26 (B) **(Optional)**

Filename: CP031315.zip

**Important Note!**

- **Customers who already installed firmware version 1.26 do not need to update to 1.26 (B).**
- Power cycle / cold reboot is required if firmware is upgraded from version 1.03 or earlier.

**Enhancements**

- Updated to support Service Pack for ProLiant version 2017.07.0

**Note:** If version 1.26 was previously installed, then it is not necessary to upgrade to version 1.26 (B).

---

Online ROM Flash Component for VMware ESXi – HPE Apollo 45xx Gen9 Backplane Expander Firmware

Version: 2.08 **(Optional)**

Filename: CP031316.zip

**Important Note!**

- Please un-plug and re-plug the power cord to the server for firmware upgrade from version 1.03 or earlier to take effect.

**Enhancements**

- Enhanced debug capabilities.
- Added support for the VMware vSphere 2016 OS.
- Improved integration with Smart Update Manager.

---

Online ROM Flash Component for Windows (x64) - HPE 12Gb/s SAS Expander Firmware for HPE Smart Array Controllers and HPE HBA Controllers

Version: 3.17 **(Recommended)**

Filename: cp032986.compsig; cp032986.exe; cp032986.md5

#### **Important Note!**

- Power cycle / cold reboot is required if firmware is upgraded from version 1.31 or earlier.

#### **Fixes**

- SATA hard disk drives connected to the HPE 12Gb/s SAS Expander card may not be detected when cold booting a HPE ProLiant server with a HPE Smart Array SR Gen10 controller

---

Online ROM Flash Component for Windows (x64) - HPE Apollo 2000 System - SAS Expander

Version: 1.00 (C) **(Recommended)**

Filename: cp031608.exe; cp031608.md5

#### **Important Note!**

- **Customers who already installed firmware version 1.00 do not need to update to 1.00 (B).**

#### **Enhancements**

- Improved integration with Smart Update Manager.  
Note: Upgrading to version 1.00(C) is not necessary if the Apollo 2000 SAS Expander was previously updated to version 1.00.

---

Online ROM Flash Component for Windows (x64) - HPE Apollo 4200 Gen9 Backplane Expander Firmware

Version: 1.26 (B) **(Optional)**

Filename: cp031610.exe; cp031610.md5

#### **Important Note!**

- **Customers who already installed firmware version 1.26 do not need to update to 1.26 (B).**
- Power cycle / cold reboot is required if firmware is upgraded from version 1.03 or earlier.

#### **Enhancements**

- Updated to support Service Pack for ProLiant version 2017.07.0

**Note:** If version 1.26 was previously installed, then it is not necessary to upgrade to version 1.26 (B).

---

Online ROM Flash Component for Windows (x64) - HPE Apollo 45xx Gen10 Backplane Expander Firmware

Version: 1.00 **(Recommended)**

Filename: cp033150.compsig; cp033150.exe; cp033150.md5

#### **Enhancements**

Initial Release

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Online ROM Flash Component for Windows (x64) - HPE Apollo 45xx Gen9 Backplane Expander Firmware

Version: 2.08 **(Optional)**

Filename: cp031612.exe; cp031612.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.

### **Enhancements**

- Enhanced debug capabilities.
- Improved integration with Smart Update Manager.

---

Online ROM Flash Component for Windows (x64) - HPE Express Bay Enablement Switch Card

Version: 1.73 (D) **(Optional)**

Filename: cp032259.exe; cp032259.md5

### **Important Note!**

- 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.*

### **Fixes**

### **Enhancements**

- Updated to support Service Pack for ProLiant version 2017.07.0

**Note:** If any version 1.73 was previously installed, then it is not necessary to upgrade to version 1.73 (D).

---

Online ROM Flash Component for Windows (x64) - HPE Host Bus Adapters H221

Version: 15.10.10.00 (A) **(Optional)**

Filename: cp032389.exe; cp032389.md5

### **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**

- Supports H221 on Gen9 Servers.

## **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 Windows (x64) - HPE Smart Array P408i-p, P408e-p, P408i-a, P408i-c, E208i-p, E208e-p, E208i-c, E208i-a, P408e-m, P204i-c, P204i-b, P816i-a and P416ie-m SR Gen10

Version: 1.04 (B) **(Recommended)**

Filename: cp032842.compsig; cp032842.exe; cp032842.md5

## **Important Note!**

- Customers who already have firmware version 1.04 installed do not need to update to 1.04 (B).

## **Enhancements**

### **Version 1.04 (B)**

- Added support for new models of HPE ProLiant servers:
  - DL120 Gen10

### **Version 1.04**

- Initial firmware release for HPE P/E-Class SR Gen10 controllers.

---

Online ROM Flash Component for Windows (x64) - Smart Array D2220sb Storage Blade

Version: 8.00 (C) **(Optional)**

Filename: cp032992.exe; cp032992.md5

## **Enhancements**

- Updated to support Service Pack for ProLiant version 2017.07.1

**Note:** If version 8.00 was previously installed, then it is not necessary to upgrade to version 8.00 (C).

---

Online ROM Flash Component for Windows (x64) - Smart Array H240ar, H240nr, H240, H241, H244br, P240nr, P244br, P246br, P440ar, P440, P441, P542D, P741m, P840, P840ar, and P841

Version: 6.06 **(Recommended)**

Filename: cp032781.exe; cp032781.md5

## **Fixes**

- Under the following conditions, the controller might stop responding:
  - During POST following an unexpected power event if there was data in the controller cache.
  - When running I/O to SATA drives. (POST Lockup 0x13)
  - When using a RAID configuration with strip size of 1024KiB. (POST Lockup 0x13)
  - When a WRITE SAME command is sent with a buffer size greater than 512 bytes. (POST Lockup 0x13)
- In a multi-path environment with nested expanders, the active path to a device might be incorrect following a path failure or restoration.

---

Online ROM Flash Component for Windows (x64) - Smart Array P230i, P430, P431, P731m, P830i, and P830

Version: 4.10 (B) **(Recommended)**

## **Fixes**

The following issues were resolved in firmware version 4.10:

- If an unexpected power outage occurred, the system might stop operating during Power-On Self Test
- Controller could stop responding when Smart Cache is performing a read operation

## **Enhancements**

Firmware Version 4.10(B) - Added support for HPE ProLiant DL580 Gen9 server.

If firmware version 4.10 is already installed on the controller, there is no need to upgrade to firmware version 4.10(B).

---

Supplemental Update / Online ROM Flash Component for Linux (x64) - HPE Apollo 45xx Gen10 Backplane Expander Firmware

Version: 1.00 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-smartarray-815b1ae26d-1.00-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-smartarray-815b1ae26d-1.00-1.1.x86\_64.rpm

## **Enhancements**

Initial Release

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Supplemental Update / Online ROM Flash Component for Linux (x64) - HPE Smart Array P408i-p, P408e-p, P408i-a, P408i-c, E208i-p, E208e-p, E208i-c, E208i-a, P408e-m, P204i-c, P204i-b, P816i-a and P416ie-m SR Gen10

Version: 1.04 (B) **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-smartarray-f7c07bdbbd-1.04-2.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-smartarray-f7c07bdbbd-1.04-2.1.x86\_64.rpm

## **Important Note!**

- Customers who already have firmware version 1.04 installed do not need to update to 1.04 (B).

## **Enhancements**

### **Version 1.04 (B)**

- Added support for new models of HPE ProLiant servers:
  - DL120 Gen10

### **Version 1.04**

- Initial firmware release for HPE P/E-Class SR Gen10 controllers.

---

Supplemental Update / Online ROM Flash Component for Linux (x64) - Smart Array D2220sb Storage Blade

Version: 8.00 (C) **(Optional)**

Filename: rpm/RPMS/x86\_64/firmware-smartarray-46a4d957a7-8.00-3.1.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.

## Enhancements

- Updated to support Service Pack for ProLiant version 2017.07.1

**Note:** If version 8.00 was previously installed, then it is not necessary to upgrade to version 8.00 (C).

---

Supplemental Update / Online ROM Flash Component for Linux (x64) - Smart Array H240ar, H240nr, H240, H241, H244br, P240nr, P244br, P246br, P440ar, P440, P441, P542D, P741m, P840, P840ar, and P841

Version: 6.06 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-smartarray-ea3138d8e8-6.06-1.1.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

- Under the following conditions, the controller might stop responding:
  - During POST following an unexpected power event if there was data in the controller cache.
  - When running I/O to SATA drives. (POST Lockup 0x13)
  - When using a RAID configuration with strip size of 1024KiB. (POST Lockup 0x13)
  - When a WRITE SAME command is sent with a buffer size greater than 512 bytes. (POST Lockup 0x13)
- In a multi-path environment with nested expanders, the active path to a device might be incorrect following a path failure or restoration.

---

Supplemental Update / Online ROM Flash Component for Linux (x64) - Smart Array P230i, P430, P431, P731m, P830i, and P830

Version: 4.10 (B) **(Recommended)**

Filename: rpm/RPMS/x86\_64/hp-firmware-smartarray-112204add8-4.10-2.1.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 following issues were resolved in firmware version 4.10:

- If an unexpected power outage occurred, the system might stop operating during Power-On Self Test
- Controller could stop responding when Smart Cache is performing a read operation

## Enhancements

Firmware Version 4.10(B) - Added support for HPE ProLiant DL580 Gen9 server.

If firmware version 4.10 is already installed on the controller, there is no need to upgrade to firmware version 4.10(B).

---

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: 3.17 **(Recommended)**

Filename: rpm/RPMS/x86\_64/firmware-smartarray-2de15b6882-3.17-1.1.x86\_64.compsig; rpm/RPMS/x86\_64/firmware-smartarray-2de15b6882-3.17-1.1.x86\_64.rpm

### **Important Note!**

- Power cycle / cold reboot is required if firmware is upgraded from version 1.31 or earlier.

### **Fixes**

- SATA hard disk drives connected to the HPE 12Gb/s SAS Expander card may not be detected when cold booting a HPE ProLiant server with a HPE Smart Array SR Gen10 controller

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Supplemental Update / Online ROM Flash Component for Linux (x64) – HPE Apollo 45xx Gen9 Backplane Expander Firmware

Version: 2.08 **(Optional)**

Filename: rpm/RPMS/x86\_64/firmware-smartarray-7bdfcd246b-2.08-1.1.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.

### **Enhancements**

- Enhanced debug capabilities.
- Improved integration with Smart Update Manager.

---

Supplemental Update / Online ROM Flash Component for Linux (x64) – HPE Express Bay Enablement Switch Card

Version: 1.73 (D) **(Optional)**

Filename: firmware-smartarray-94189dca85-1.73-4.1.x86\_64.rpm

### **Important Note!**

- 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.*

### **Fixes**

### **Enhancements**

- Updated to support Service Pack for ProLiant version 2017.07.0

**Note:** If any version 1.73 was previously installed, then it is not necessary to upgrade to version 1.73 (D).

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## Firmware - Storage Fibre Channel

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HPE Firmware Flash for Emulex Fibre Channel Host Bus Adapters - Linux (x64)

Version: 2017.09.01 **(Recommended)**

Filename: RPMS/x86\_64/firmware-fc-emulex-2017.09.01-1.10.x86\_64.compsig; RPMS/x86\_64/firmware-fc-emulex-2017.09.01-1.10.x86\_64.rpm

### Important Note!

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

### Prerequisites

Firmware updates may be accomplished using the inbox or Out of Box (OOB) drivers. Please consult SPOCK for a list of supported configurations available at the following link:

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

The HPE supplied enablement kit must be installed prior to this firmware component being identified by SUM for deployment.

The OOB driver and enablement kit are available on the Service Pack for ProLiant (SPP) which is available at <http://www.hpe.com/servers/spp/download>.

The Enablement Kit requires that the target environment have the libHBAAPI package installed from your OS installation media.

Install the FC Driver Kit, reboot, and then install the Enablement Kit.

Additional requirements:

Environment must be running the syslog daemon for the flash engine to run

Environment must have 32-bit netlink library (libnl.so) installed for component to be able to discover Emulex HBAs

### Fixes

8G Firmware:

Fixed the following:

- Link down encountered during high traffic on 81E, 82E, 84E, LPe1205a

UEFI:

- Boot Device Order menu not displaying targets on HPE servers

16G Firmware:

Fixed the following:

- Incorrect adapter showed up in PCI slot 1 in Dashboard and Static Networking

16G/32G Firmware:

Fixed the following:

- Incorrect adapter showed up in PCI slot 1 in Dashboard and Static Networking

## **Enhancements**

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

Updated 16 Gb HBA/Mezz universal boot.

Updated 32 Gb HBA universal boot

Updated 8Gb HBA/Mezz boot bios.

Contains:

16 Gb HBA/Mezz universal boot 11.2.307.16

16/32 Gb HBA universal boot 11.2.307.16

8 Gb Gen8 Mezz (LPe1205A) firmware 2.03X14

8 Gb standup firmware 2.03x14

8 Gb Mezz firmware 2.03x14

8 Gb HBA/Mezz boot image 11.20A7 (11.2.241.0 BIOS, 11.2.283.0 UEFI)

## **Supported Devices and Features**

### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

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HPE Firmware Flash for Emulex Fibre Channel Host Bus Adapters for VMware vSphere 6.5

Version: 2017.09.01 **(Recommended)**

Filename: CP032468.compsig; CP032468.zip

## **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapter Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Prerequisites**

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

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

## **Fixes**

8G Firmware:

Fixed the following:

- Link down encountered during high traffic on 81E, 82E, 84E, LPe1205a

UEFI:

- Boot Device Order menu not displaying targets on HPE servers

16G Firmware:

Fixed the following:

- Incorrect adapter showed up in PCI slot 1 in Dashboard and Static Networking

16G/32G Firmware:

Fixed the following:

- Incorrect adapter showed up in PCI slot 1 in Dashboard and Static Networking

## **Enhancements**

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

Updated 16/32 Gb HBA/Mezz universal boot

Updated 16Gb firmwareHBA/Mezz universal boot

Updated 8Gb HBA/Mezz universal boot

## **Contains:**

16/32 Gb HBA/Mezz universal boot 11.2.307.16

16 Gb HBA/Mezz universal boot 11.2.307.16

8 Gb standup/mezz firmware 2.03x14

8 Gb standup/mezz universal boot image 11.20a7 (11.2.241.0 BIOS, 11.2.283.0 UEFI)

## **Supported Devices and Features**

### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

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HPE Firmware Flash for Emulex Fibre Channel Host Bus for VMware vSphere 6.0

Version: 2017.09.01 **(Recommended)**

Filename: CP032467.compsig; CP032467.zip

## **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapter Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Prerequisites**

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

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

## **Fixes**

8G Firmware:

Fixed the following:

- Link down encountered during high traffic on 81E, 82E, 84E, LPe1205a

UEFI:

- Boot Device Order menu not displaying targets on HPE servers

16G Firmware:

Fixed the following:

- Incorrect adapter showed up in PCI slot 1 in Dashboard and Static Networking

16G/32G Firmware:

Fixed the following:

- Incorrect adapter showed up in PCI slot 1 in Dashboard and Static Networking

## **Enhancements**

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

Updated 16/32 Gb HBA/Mezz universal boot

Updated 16Gb HBA/Mezz universal boot

Updated 8Gb HBA/Mezz universal boot

### **Contains:**

16/32 Gb HBA/Mezz universal boot 11.2.307.16

16 Gb HBA/Mezz universal boot 11.2.307.16

8 Gb standup/mezz firmware 2.03x14

8 Gb standup/mezz universal boot image 11.20a7 (11.2.241.0 BIOS, 11.2.283.0 UEFI)

## **Supported Devices and Features**

### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter

- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

#### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

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HPE Firmware Flash for QLogic Fibre Channel Host Bus Adapters - Linux (x86\_64)

Version: 2017.09.01 **(Recommended)**

Filename: RPMS/x86\_64/firmware-fc-qlogic-2017.09.01-1.5.x86\_64.compsig; RPMS/x86\_64/firmware-fc-qlogic-2017.09.01-1.5.x86\_64.rpm

#### **Important Note!**

Release Notes:

[HPE StoreFabric QLogic Adapter Release Notes](#)

#### **Prerequisites**

Firmware updates may be accomplished using the inbox or Out of Box (OOB) drivers. Please consult SPOCK for a list of supported configurations available at the following link:

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

The HPE supplied enablement kit must be installed prior to this firmware component being identified by SUM for deployment.

The OOB driver and enablement kit are available on the Service Pack for ProLiant (SPP) which is available at <http://www.hpe.com/servers/spp/download>

#### **Fixes**

8Gb Standup & 8Gb Mezzanine

BIOS

- Incorrect processing of Command Line Processor (CLP) 'set netport'
- Improper display of Command Line Processor (CLP) Logical Unit Number (LUN)

UEFI

- Changed Operation Mode Human Interface Infrastructure (HII) strings. The new strings match the FastUTIL strings.
- Self-certification Test (SCT) 2.4B BlockIO2 Protocol bug.
- No response during Self-certification Test (SCT) 2.4B BlockIO2 Protocol test.
- Self-certification Test (SCT) 2.4B AdapterInfo Protocol bugs.

16Gb Standup & 16Gb Mezzanine

UEFI

- Adapter not appearing in Health Summary page.
- Invalid Health message when link was down or driver was disabled.
- Adapter connection mode to change (OS install related) when the Human Interface Infrastructure (HII) Link Speed field changed.

32Gb Standup & 16Gb Mezzanine

UEFI

- Adapter not appearing in Health Summary page.
- Invalid Health message when link was down or driver was disabled.
- Added code to start operational firmware early.

## **Enhancements**

Updated the Firmware/BIOS/UEFI packages for 8 Gb, 16 Gb and 32 Gb products.

- 8 Gb HBA/Mezz
  - Package 3.76.06
  - Firmware 8.05.00
  - UEFI 6.52
  - BIOS 3.56
- 16 Gb HBA/Mezz
  - Package 6.01.41
  - Firmware 8.05.63
  - UEFI 6.54
  - BIOS 3.43
- 16/32 Gb
  - Package 01.70.51
  - Firmware 8.05.61
  - UEFI 6.36
  - BIOS 3.54

## **Supported Devices and Features**

This firmware supports the following HPE adapters:

### **8Gb FC:**

- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

### **16Gb FC:**

- HP QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

### **32Gb FC:**

- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

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HPE Firmware Flash for QLogic Fibre Channel Host Bus Adapters for VMware vSphere 6.0

Version: 2017.09.01 **(Recommended)**

Filename: CP032433.compsig; CP032433.zip

## **Important Note!**

[HPE StoreFabric QLogic Adapter Release Notes](#)

## **Prerequisites**

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

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

The HPE supplied Qlogic driver must be installed prior to this firmware component being identified by SUM for deployment. The OOB driver is available on the Service Pack for ProLiant (SPP) which is available at <http://www.hpe.com/servers/spp/download/>

## **Fixes**

8Gb Standup & 8Gb Mezzanine

BIOS

- Incorrect processing of Command Line Processor (CLP) 'set netport'
- Improper display of Command Line Processor (CLP) Logical Unit Number (LUN)

UEFI

- Changed Operation Mode Human Interface Infrastructure (HII) strings. The new strings match the FastUTIL strings.
- Self-certification Test (SCT) 2.4B BlockIO2 Protocol bug.
- No response during Self-certification Test (SCT) 2.4B BlockIO2 Protocol test.
- Self-certification Test (SCT) 2.4B AdapterInfo Protocol bugs.

16Gb Standup & 16Gb Mezzanine

UEFI

- Adapter not appearing in Health Summary page.
- Invalid Health message when link was down or driver was disabled.
- Adapter connection mode to change (OS install related) when the Human Interface Infrastructure (HII) Link Speed field changed.

32Gb Standup & 16Gb Mezzanine

UEFI

- Adapter not appearing in Health Summary page.
- Invalid Health message when link was down or driver was disabled.
- Added code to start operational firmware early.

## **Enhancements**

Updated the Firmware/BIOS/UEFI packages for 8 Gb, 16 Gb and 32 Gb products.

- 8 Gb HBA/Mezz
  - Package 3.76.06
  - Firmware 8.05.00
  - UEFI 6.52
  - BIOS 3.56
- 16 Gb HBA/Mezz
  - Package 6.01.41
  - Firmware 8.05.63
  - UEFI 6.54
  - BIOS 3.43
- 16/32 Gb
  - Package 01.70.51
  - Firmware 8.05.61

- UEFI 6.36
- BIOS 3.54

## **Supported Devices and Features**

This firmware supports the following HPE adapters:

### **8Gb FC:**

- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

### **16Gb FC:**

- HP QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

### **32Gb FC:**

- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

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HPE Firmware Flash for QLogic Fibre Channel Host Bus Adapters for VMware vSphere 6.5

Version: 2017.09.01 **(Recommended)**

Filename: CP032434.compsig; CP032434.zip

## **Important Note!**

[HPE StoreFabric QLogic Adapter Release Notes](#)

## **Prerequisites**

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

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

The HPE supplied Qlogic driver must be installed prior to this firmware component being identified by SUM for deployment. The OOB driver is available on the Service Pack for ProLiant (SPP) which is available at <http://www.hpe.com/servers/spp/download/>

## **Fixes**

8Gb Standup & 8Gb Mezzanine

BIOS

- Incorrect processing of Command Line Processor (CLP) 'set netport'
- Improper display of Command Line Processor (CLP) Logical Unit Number (LUN)

UEFI

- Changed Operation Mode Human Interface Infrastructure (HII) strings. The new strings match the FastUTIL strings.
- Self-certification Test (SCT) 2.4B BlockIO2 Protocol bug.
- No response during Self-certification Test (SCT) 2.4B BlockIO2 Protocol test.
- Self-certification Test (SCT) 2.4B AdapterInfo Protocol bugs.

## 16Gb Standup & 16Gb Mezzanine

### UEFI

- Adapter not appearing in Health Summary page.
- Invalid Health message when link was down or driver was disabled.
- Adapter connection mode to change (OS install related) when the Human Interface Infrastructure (HII) Link Speed field changed.

## 32Gb Standup & 16Gb Mezzanine

### UEFI

- Adapter not appearing in Health Summary page.
- Invalid Health message when link was down or driver was disabled.
- Added code to start operational firmware early.

## **Enhancements**

Updated the Firmware/BIOS/UEFI packages for 8 Gb, 16 Gb and 32 Gb products.

- 8 Gb HBA/Mezz
  - Package 3.76.06
  - Firmware 8.05.00
  - UEFI 6.52
  - BIOS 3.56
- 16 Gb HBA/Mezz
  - Package 6.01.41
  - Firmware 8.05.63
  - UEFI 6.54
  - BIOS 3.43
- 16/32 Gb
  - Package 01.70.51
  - Firmware 8.05.61
  - UEFI 6.36
  - BIOS 3.54

## **Supported Devices and Features**

This firmware supports the following HPE adapters:

### **8Gb FC:**

- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

### **16Gb FC:**

- HP QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

### **32Gb FC:**

- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

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HPE Firmware Online Flash for Emulex Fibre Channel Host Bus Adapters - Windows 2012/2012 R2/2016 x64

Version: 2017.09.01 **(Recommended)**

Filename: cp032470.compsig; cp032470.exe

### **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

### **Prerequisites**

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

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

The HPE supplied Emulex driver must be installed prior to this firmware component being identified by SUM for deployment. The OOB driver is available on the Service Pack for ProLiant (SPP) which is available at <http://www.hpe.com/servers/spp/download/>

### **Fixes**

8G Firmware:

Fixed the following:

- Link down encountered during high traffic on 81E, 82E, 84E, LPe1205a

UEFI:

- Boot Device Order menu not displaying targets on HPE servers

16G Firmware:

Fixed the following:

- Incorrect adapter showed up in PCI slot 1 in Dashboard and Static Networking

16G/32G Firmware:

Fixed the following:

- Incorrect adapter showed up in PCI slot 1 in Dashboard and Static Networking

## **Enhancements**

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

Updated 16 Gb HBA/Mezz universal boot.

Updated 32 Gb HBA universal boot

Updated 8Gb HBA/Mezz boot bios.

Contains:

16 Gb HBA/Mezz universal boot 11.2.307.16

16/32 Gb HBA universal boot 11.2.307.16

8 Gb Gen8 Mezz (LPe1205A) firmware 2.03X14

8 Gb standup firmware 2.03x14

8 Gb Mezz firmware 2.03x14

8 Gb HBA/Mezz boot image 11.20A7 (11.2.241.0 BIOS, 11.2.283.0 UEFI)

## **Supported Devices and Features**

### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

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HPE Firmware Online Flash for QLogic Fibre Channel Host Bus Adapters - Windows 2012/2012R2/2016 (x64)

Version: 2017.09.01 **(Recommended)**

Filename: cp032435.compsig; cp032435.exe

### **Important Note!**

Release Notes:

[HPE StoreFabric 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/>

The OOB driver is available on the Service Pack for ProLiant (SPP) which is available at <http://www.hpe.com/servers/spp/download>.

## **Fixes**

8Gb Standup & 8Gb Mezzanine

BIOS

- Incorrect processing of Command Line Processor (CLP) 'set netport'
- Improper display of Command Line Processor (CLP) Logical Unit Number (LUN)

UEFI

- Changed Operation Mode Human Interface Infrastructure (HII) strings. The new strings match the FastUTIL strings.
- Self-certification Test (SCT) 2.4B BlockIO2 Protocol bug.
- No response during Self-certification Test (SCT) 2.4B BlockIO2 Protocol test.
- Self-certification Test (SCT) 2.4B AdapterInfo Protocol bugs.

16Gb Standup & 16Gb Mezzanine

UEFI

- Adapter not appearing in Health Summary page.
- Invalid Health message when link was down or driver was disabled.
- Adapter connection mode to change (OS install related) when the Human Interface Infrastructure (HII) Link Speed field changed.

32Gb Standup & 16Gb Mezzanine

UEFI

- Adapter not appearing in Health Summary page.
- Invalid Health message when link was down or driver was disabled.
- Added code to start operational firmware early.

## **Enhancements**

Updated the Firmware/BIOS/UEFI packages for 8 Gb, 16 Gb and 32 Gb products.

- 8 Gb HBA/Mezz
  - Package 3.76.06
  - Firmware 8.05.00
  - UEFI 6.52
  - BIOS 3.56
- 16 Gb HBA/Mezz
  - Package 6.01.41
  - Firmware 8.05.63
  - UEFI 6.54
  - BIOS 3.43
- 16/32 Gb
  - Package 01.70.51
  - Firmware 8.05.61
  - UEFI 6.36
  - BIOS 3.54

## **Supported Devices and Features**

This firmware supports the following HPE adapters:

#### 8Gb FC:

- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

#### 16Gb FC:

- HP QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

#### 32Gb FC:

- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

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## Firmware - Storage Tape

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HPE StoreEver Tape Firmware for Microsoft Windows

Version: 4.2.0.0 (Optional)

Filename: cp031432.exe

### Fixes

The following issues are resolved in firmware revisions listed below:

#### StoreEver LTO-6 Ultrium 6250 SAS Tape Drive

**Drive firmware version** 35GD

**Supersedes** 35BD

- Fixed a case where the drive incorrectly issued a TapeAlert flag and lit the Tape Error LED when either an unsupported or LTO-4 WORM media was loaded. The TapeAlert flag and the LED indicated that the media had a corrupt cartridge memory.
- Fixed a rare corner case where the drive would reset after a queue space overflow while performing internal log file operations.
- Fixed a case in the unlikely scenario where multiple hosts were storing encryption keys in the drive and one of those hosts delivered keys in a wrapped format, which could cause an encryption key to be overwritten.

#### StoreEver LTO-6 Ultrium 6650 SAS Tape Drive

**Drive firmware version** O5ID

**Supersedes** O5DD

- Fixed a case where the drive incorrectly issued a TapeAlert flag and lit the Tape Error LED when either an unsupported or LTO-4 WORM media was loaded. The TapeAlert flag and the LED indicated that the media had a corrupt cartridge memory.
- Fixed a rare corner case where the drive would reset after a queue space overflow while performing internal log file operations.
- Fixed a case in the unlikely scenario where multiple hosts were storing encryption keys in the drive and one of those hosts delivered keys in a wrapped format, which could cause an encryption key to be overwritten.

### Enhancements

The enhancements below are only applicable for the following firmware revisions and devices:

#### StoreEver LTO-6 Ultrium 6250 SAS Tape Drive

**Drive firmware version** 35GD

**Supersedes** 35BD

- o Improved supportability by enhancing internal drive logging.

### StoreEver LTO-6 Ultrium 6650 SAS Tape Drive

**Drive firmware version** O5ID

**Supersedes** O5DD

- o Improved supportability by enhancing internal drive logging.

### **Supported Devices and Features**

Supported tape drives and firmware revisions included in this package

<b>Tape Drive</b>	<b>Firmware Revision</b>
HP DAT 72 USB	ZUD4
HP DAT160 USB	WU8B
HP DAT160 SAS	WSB8
HP DAT320 USB	VUA8
HP DAT320 SAS	VSA6
HP Ultrium 232 SCSI	P61D
HP Ultrium 448 SCSI	S65D
HP Ultrium 448 SAS	T65D
HP Ultrium 460 SCSI	F63D
HP Ultrium 920 SCSI	D26D
HP Ultrium 920 SAS	C26D
HP Ultrium 920 SAS	O51D
HP Ultrium 960 SCSI	G66D
HP Ultrium 1760 SAS	U64D
HP Ultrium 1760 SCSI	W62D
HP Ultrium 1840 SAS	A63D
HP Ultrium 1840 SCSI	B63D
HP Ultrium 3000 SAS	Z6ED
HP Ultrium 3280 SAS	X6ED
HP Ultrium 6250 SAS	35GD
HP Ultrium 6650 SAS	O5ID

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### **Firmware - Switch**

Synergy 10 Gb and 20 Gb Interconnect Link Module Firmware

Version: 1.08 **(Recommended)**

Filename: icmlm\_package.xml; icmlm\_r108.pkg; InstallNotes.sh

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### **Important Note!**

This package contains firmware version 1.08.

### **Enhancements**

This product contains the following firmware versions

- 10 Gb Interconnect Link Module version 1.08
- 20 Gb Interconnect Link Module version 1.08

### **Supported Devices and Features**

Synergy 10 Gb and 20 Gb Interconnect Link Modules

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Synergy 10Gb Pass-Thru Module

Version: 1.08 **(Recommended)**

Filename: icmpt\_package.xml; icmpt\_r108.pkg; InstallNote.sh

### **Important Note!**

TBD

### **Prerequisites**

Version 0.30 fw should be installed at some time prior to this release.

### **Fixes**

Refer Release notes.

### **Supported Devices and Features**

Tbird Sylvite ICM units:

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Virtual Connect SE 16Gb FC Module for Synergy

Version: 1.05.24 **(Recommended)**

Filename: icmvc16gbfc\_compatible.xml; pinstall.sh; v7.4.0\_CBN3\_GA\_Release\_Notes.docx; vcfc2.img

### **Important Note!**

Read the latest release notes for each drop of firmware.

### **Prerequisites**

OneView 3.0 with Virtual Connect SE 16Gb FC Module support

### **Fixes**

See ERRATA\_README.txt file.

### **Supported Devices and Features**

## **Firmware - System**

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Online Flash Component for Linux - Gen10 NVMe Backplane PIC Firmware

Version: 1.20 (B) **(Optional)**

Filename: RPMS/x86\_64/firmware-nvmebackplane-gen10-1.20-2.1.x86\_64.compsig; RPMS/x86\_64/firmware-nvmebackplane-gen10-1.20-2.1.x86\_64.rpm

### **Important Note!**

Note: After running this component to update the NVMe Backplane PIC firmware, a server reboot is required for iLO to display the new NVMe Backplane PIC firmware version on iLO's Firmware Information page

### **Prerequisites**

iLO 5 version 1.10 or later is required.

### **Enhancements**

Added support for the following Gen10 servers:

- HPE ProLiant XL190r Gen10 Server
- HPE ProLiant XL170r Gen10 Server
- HPE ProLiant DL180 Gen10 Server
- HPE ProLiant DL160 Gen10 Server
- HPE ProLiant DL580 Gen10 Server
- HPE ProLiant ML350 Gen10 Server
- HPE ProLiant XL450 Gen10 Server
- HPE ProLiant DL120 Gen10 Server

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Online Flash Component for Windows x64 - Gen10 NVMe Backplane PIC Firmware

Version: 1.20 **(Optional)**

Filename: cp032700.compsig; cp032700.exe

### **Important Note!**

Note: After running this component to update the NVMe Backplane PIC firmware a server reboot is required for iLO to display the new NVMe Backplane PIC firmware version on iLO's Firmware Information page

### **Prerequisites**

iLO 5 version 1.10 or later is required.

### **Enhancements**

Added support for the following Gen10 servers:

- HPE ProLiant XL190r Gen10 Server
- HPE ProLiant XL170r Gen10 Server
- HPE ProLiant DL180 Gen10 Server
- HPE ProLiant DL160 Gen10 Server
- HPE ProLiant DL580 Gen10 Server
- HPE ProLiant ML350 Gen10 Server
- HPE ProLiant XL450 Gen10 Server
- HPE ProLiant DL120 Gen10 Server

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## Software - Lights-Out Management

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HP Lights-Out Online Configuration Utility for Linux (AMD64/EM64T)

Version: 5.0.0-0 (**Optional**)

Filename: hponcfg-5.0.0-0.x86\_64.compsig; hponcfg-5.0.0-0.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 v1.10 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.

### **Enhancements**

- Introduced support for iLO 5.
- High security state support enabled in HPONCFG when iLO is set to any Security State.
- Use -u and -p command line arguments when iLO is in HIGH/FIPS/SUITE-B Security States.

Note: Command line user name and password override those which are in the script file.

---

HP Lights-Out Online Configuration Utility for Linux (AMD64/EM64T)

Version: 5.1.0-0 (**Recommended**)

Filename: hponcfg-5.1.0-0.x86\_64.compsig; hponcfg-5.1.0-0.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 v1.10 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.

### **Enhancements**

Introduced support for iLO 5 v1.15.

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HP Lights-Out Online Configuration Utility for Windows x64 Editions

Version: 5.1.0.0 (b) (**Optional**)

Filename: cp033261.compsig; cp033261.exe

### **Important Note!**

HPONCFG for Windows Server supports iLO in PRODUCTION/HIGH/FIPS security state only.

## **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 v1.10 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.

## **Enhancements**

- Added support for Gen10 servers in version 5.1.0.0(b).
- Added the following features in version 5.1.0.0
  - Higher security states support enabled in HPONCFG when iLO is set to HIGH/FIPS Security States.
  - Use /u and /p command line arguments when iLO is in HIGH/FIPS Security States.
  - HPONCFG is now signed by Hewlett Packard Enterprise.

Note: Command line user name and password override those which are in the script file.

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PFA Server Registry Update for Windows Server 2012 and Server 2012 R2

Version: 1.0.0.0 (H) **(Optional)**

Filename: cp030441.exe

## **Enhancements**

This revision will now only install on servers supporting the iLO 4 management controller.

---

PFA Server Registry Update for Windows Server 2016

Version: 1.5.0.0 (B) **(Optional)**

Filename: cp030640.exe

## **Enhancements**

This revision will now only install on servers supporting the iLO 4 management controller.

---

## **Software - Management**

HPE SDK Python Module

Version: 2.0.0 **(Optional)**

Filename: python-iloest-library-2.0.0.zip

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## **Enhancements**

Support for Gen10 Servers.

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## **Software - Network**

Broadcom Active Health System Agent for HPE ProLiant Network Adapters for Linux x86\_64

Version: 1.0.20-1 **(Optional)**

Filename: hp-tg3sd-1.0.20-1.x86\_64.rpm; hp-tg3sd-1.0.20-1.x86\_64.txt

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## **Fixes**

This product addresses an issue where the tg3sd daemon must be started after rpm installation.

### **Supported Devices and Features**

This software supports the following Broadcom network adapters:

- HP Ethernet 1Gb 2-port 330i Adapter (182D)
- HP Ethernet 1Gb 2-port 330i Adapter (22BD)
- HP Ethernet 1Gb 4-port 331i Adapter (3372)
- 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 (2133)
- HP Ethernet 1Gb 2-port 332i Adapter (22E8)
- HP Ethernet 1Gb 2-port 332T Adapter

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HPE Intel esx-provider for VMware

Version: 2017.09.25 **(Optional)**

Filename: cp032726.compsig; cp032726.zip

Driver Name and Version:

intelcim-provider:0.5-3.3

### **Enhancements**

This product has been updated to provide information to the Active Health System.

### **Supported Devices and Features**

These drivers support the following network adapters:

- HP Ethernet 1Gb 2-port 361i Adapter
- HP Ethernet 1Gb 2-port 361T Adapter
- HP Ethernet 1Gb 4-port 366FLR Adapter
- HP Ethernet 1Gb 4-port 366M Adapter
- HP Ethernet 1Gb 4-port 366T Adapter
- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HP Ethernet 10Gb 2-port 560M Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter
- HP Ethernet 10Gb 2-port 561FLR-T Adapter
- HP Ethernet 10Gb 2-port 561T Adapter
- HP Ethernet 10Gb 2-port 562FLR-SFP+ Adapter
- HP Ethernet 10Gb 2-port 562SFP+ Adapter

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HPE ProLiant Converged Network Utility for Windows Server x64 Editions

Version: 5.2.3.1 **(Optional)**

Filename: cp030269.exe

### **Enhancements**

This product now supports Windows Server 2016.

This product now supports the following network adapters:

- HP Flex-10 10Gb 2-port 530M Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter

- HP Ethernet 10Gb 2-port 530T Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP Ethernet 10Gb 2-port 557SFP+ Adapter
- HPE Ethernet 4x25Gb 1-port 620QSFP28 Adapter
- HPE Synergy 10Gb 2-port 2820C Ethernet Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

This product now provides Fibre-Channel over Ethernet N-port ID Virtualization (FCoE NPIV) configuration for following network adapters:

- HP Flex-10 10Gb 2-port 530M Adapter
- HP FlexFabric 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534FLB Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HP FlexFabric 10Gb 2-port 536FLB Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE Synergy 10Gb 2-port 2820C Converged Network Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

This product now fully supports the IPv4 Dynamic Host Configuration Protocol (DHCP).

This product now provides a OneView detection mechanism.

### **Supported Devices and Features**

This software supports the following network adapters:

- HP Flex-10 10Gb 2-port 530M Adapter
- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- HP Ethernet 10Gb 2-port 530T Adapter
- HP FlexFabric 10Gb 2-port 533FLR-T Adapter
- HP FlexFabric 10Gb 2-port 534FLB Adapter
- HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 534M Adapter
- HPE FlexFabric 10Gb 4-port 536FLR-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLB Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter
- HP Ethernet 10Gb 2-port 557SFP+ Adapter
- HPE Ethernet 25Gb 4-port 620SFP28 Adapter
- HP FlexFabric 20Gb 2-port 630FLB Adapter
- HP FlexFabric 20Gb 2-port 630M Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP StoreFabric CN1100R Dual Port Converged Network Adapter
- HPE StoreFabric CN1100R-T Converged Network Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE Synergy 10Gb 2820C Ethernet Adapter
- HPE Synergy 3820C 10/20Gb Converged Network Adapter

Version: 1.1.83.0-1 **(Optional)**

Filename: hp-ocsbbd-1.1.83.0-1.x86\_64.compsig; hp-ocsbbd-1.1.83.0-1.x86\_64.rpm; hp-ocsbbd-1.1.83.0-1.x86\_64.txt

### **Enhancements**

This product now supports Red Hat Enterprise Linux 6 Update 9.

This product now supports Red Hat Enterprise Linux 7 Update 3.

This product now supports SUSE Linux Enterprise Server 12 SP2.

This product has been updated to accommodate changes in the hardware monitoring (hwmon) API.

### **Supported Devices and Features**

This software supports the following Intel 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 2-port 364i Adapter
- HP Ethernet 1Gb 4-port 366FLR Adapter
- HP Ethernet 1Gb 4-port 366M Adapter
- HP Ethernet 1Gb 4-port 366T Adapter
- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter
- HP Ethernet 10Gb 2-port 560M Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter
- HP Ethernet 10Gb 2-port 561FLR-T Adapter
- HP Ethernet 10Gb 2-port 561T Adapter

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### **Software - Storage Controller**

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HPE ProLiant Smart Array SAS/SATA Event Notification Service for 64-bit Windows Server Editions

Version: 6.46.0.64 (C) **(Optional)**

Filename: cp032820.exe

### **Fixes**

No functionality changes.

Added SHA256 signature to the cissesrv.exe

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HPE Smart Array SR Event Notification Service for Windows Server 64-bit Editions

Version: 1.0.0.64 (A) **(Recommended)**

Filename: cp032821.compsig; cp032821.exe

### **Fixes**

No functionality changes.

Added SHA256 signature to the HPEPOIESRV.exe file

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### **Software - Storage Fibre Channel**

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Emulex Fibre Channel driver component for VMware vSphere 6.0

Version: 2017.09.01 **(Recommended)**

Filename: cp032473.compsig; cp032473.zip

Driver Name and Version:

lpfc:11.2.266.0-1OEM.6000.0.2768847

### **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 vibstdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click >>.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

### **Prerequisites**

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

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

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
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This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

### **Fixes**

Resolves the following:

- Enabling ExpressLane on LUNs caused the LUN to become inaccessible

### **Enhancements**

Driver version 11.2.266.0

### **Supported Devices and Features**

#### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

#### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

#### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

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Emulex Fibre Channel driver component for VMware vSphere 6.5

Version: 2017.09.01 **(Recommended)**

Filename: cp032474.compsig; cp032474.zip

Driver Name and Version:

lpfc.11.2.266.0-10EM.6500.0.4598673

#### **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 vibstdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

#### **Prerequisites**

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

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

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

#### **Fixes**

Resolves the following:

- Enabling ExpressLane on LUNs caused the LUN to become inaccessible

## **Enhancements**

Driver version 11.2.266.0

## **Supported Devices and Features**

### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

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Emulex(BRCM) Fibre Channel Over Ethernet driver component for VMware vSphere 6.0

Version: 2017.09.01 **(Recommended)**

Filename: cp032458.compsig; cp032458.zip

Driver Name and Version:

brcmfcoe.11.2.1213.0-10EM.600.0.0.2768847

## **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 vibseptot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Prerequisites**

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

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

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Fixes**

Fixed the following:

- Resolves an unexpected behavior where esxcfg-scsidevs -a shows the same iqn name for 2 iscsi initiator
- Resolves an unexpected behavior where loading card defaults is not getting reflected in 650FLB and 650M

## **Enhancements**

Updated to Driver version 11.2.1213.0

## **Supported Devices and Features**

### **XE100 Series:**

- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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Emulex(BRCM) Fibre Channel over Ethernet driver component for VMware vSphere 6.5

Version: 2017.09.01 **(Recommended)**

Filename: cp032459.compsig; cp032459.zip

Driver Name and Version:

brcmfcoe.11.2.1213.0-1OEM.650.0.0.4240417

## **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 vibstdepot.hpe.com webpages, plus an HPE specific CPXXXX.xml file.

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Prerequisites**

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

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

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Fixes**

Fixed the following:

- Resolves an unexpected behavior where esxcfg-scsidevs -a shows the same iqn name for 2 iscsi initiator
- Resolves an unexpected behavior where loading card defaults is not getting reflected in 650FLB and 650M

## **Enhancements**

Updated to Driver version 11.2.1213.0

## **Supported Devices and Features**

### **XE100 Series:**

- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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QLogic Fibre Channel driver component for VMware vSphere 6.0

Version: 2017.09.01 **(Recommended)**

Filename: cp032431.compsig; cp032431.zip

Driver Name and Version:

qlnativefc:2.1.57.1-10EM.6000.0.2768847

## **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**

This driver version resolves the following:

- Inquiry response snooping that didn't take into account the possibility of multiple scatter gather elements.

## **Enhancements**

Updated to driver version 2.1.57.1

## **Supported Devices and Features**

This driver supports the following HPE adapters:

### **8Gb FC:**

- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

### **16Gb FC:**

- HP QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

### **32Gb FC:**

- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

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QLLogic Fibre Channel driver component for VMware vSphere 6.5

Version: 2017.09.01 **(Recommended)**

Filename: cp032432.compsig; cp032432.zip

Driver Name and Version:

qlnativefc:2.1.57.1-10EM.600.0.0.2768847

## **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 vib depot.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

This driver version resolves the following:

- Inquiry response snooping that didn't take into account the possibility of multiple scatter gather elements.

## Enhancements

Updated to driver version 2.1.57.1

## Supported Devices and Features

This driver supports the following HPE adapters:

### 8Gb FC:

- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

### 16Gb FC:

- HP QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

### 32Gb FC:

- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

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## Software - Storage Fibre Channel HBA

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Fibreutils for HPE Storage Fibre Channel Host Bus Adapters for Linux (x86\_64)

Version: 3.3-5 **(Optional)**

Filename: fibreutils-3.3-5.x86\_64.compsig; fibreutils-3.3-5.x86\_64.rpm

## Prerequisites

- Requires the following packages to be installed: glibc libgcc libstdc++ bash perl

## Enhancements

Updated code for the following:

- Emulex CNA Driver display due to split
- Optrom version display

---

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!

To obtain the 3PAR Smart SAN User Guide to go the Storage Information Library at the following link:

[Storage Information Library](#)

(<http://www.hpe.com/info/storage/docs/>)

By default, **HP 3PAR Storage** is selected under

## **Products and Solutions.**

### **Prerequisites**

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

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

The HPE supplied fibre channel driver must be installed prior to this enablement kit component if you want to enable Smart SAN functionality. The driver is available on the HPE.com website at [www.hpe.com](http://www.hpe.com).

Linux FC Driver Kit for HPE Branded Emulex FC HBAs and mezz cards, version 11.1.183.21, for RedHat 6, RedHat 7, and Novell SUSE 11, SUSE 12

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 for the following device:

- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

### **Supported Devices and Features**

#### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

#### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

#### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

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HPE Emulex Smart SAN Enablement Kit for Windows 64 bit operating systems

Version: 1.0.0.1 (e) **(Optional)**

Filename: cp031443.compsig; cp031443.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.

To obtain the 3PAR Smart SAN User Guide to go the Storage Information Library at the following link:

[Storage Information Library](#)

(<http://www.hpe.com/info/storage/docs/>)

By default, **HP 3PAR Storage** is selected under

## **Products and Solutions**

## **Prerequisites**

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

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

The HPE supplied fibre channel driver must be installed prior to this enablement kit component if you want to enable Smart SAN functionality. The driver is available on the HPE.com website at [www.hpe.com](http://www.hpe.com).

HPE Storage Fibre Channel Adapter Kit for the x64 Emulex Storport Driver v11.1.145.16 cp030886.exe

However, if a Smart SAN enabled driver is not installed at execution time, the component will land the enablement kit files for future use after the driver has been installed.

## **Enhancements**

Added support for the following device:

- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

## **Supported Devices and Features**

### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

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HPE Fibre Channel Enablement Kit for Linux - QLogic

Version: 6.0.0.0-4 (b) **(Recommended)**

Filename: HP-CNA-FC-hpqlgc-Enablement-Kit-6.0.0.0-4.noarch.compsig; HP-CNA-FC-hpqlgc-Enablement-Kit-6.0.0.0-4.noarch.rpm

### **Important Note!**

Release Notes:

[HPE StoreFabric 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/>

### **Enhancements**

Updated the kit to version 6.0.0.0-4

### **Supported Devices and Features**

This version of the enablement kit supports the following devices:

#### **8Gb FC:**

- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

#### **16Gb FC:**

- HP QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

#### **32Gb FC:**

- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

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HPE Fibre Channel Enablement Kit for Linux - QLogic

Version: 6.0.0.0-4 (c) **(Recommended)**

Filename: HP-CNA-FC-hpqlgc-Enablement-Kit-6.0.0.0-4.noarch.compsig; HP-CNA-FC-hpqlgc-Enablement-Kit-6.0.0.0-4.noarch.rpm

### **Important Note!**

Release Notes:

[HPE StoreFabric QLogic Adapters Release Notes](#)

### **Prerequisites**

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

## **Enhancements**

Updated the kit to version 6.0.0.0-4

## **Supported Devices and Features**

This version of the enablement kit supports the following devices:

### **8Gb FC:**

- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

### **16Gb FC:**

- HP QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

### **32Gb FC:**

- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

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HPE Fibre Channel Enablement Kit for Red Hat Enterprise Linux 6 Server - Emulex

Version: 11.2.307.3 **(Recommended)**

Filename: HP-CNA-FC-Emulex-Enablement-Kit-11.2.307.3-1.rhel6.x86\_64.compsig; HP-CNA-FC-Emulex-Enablement-Kit-11.2.307.3-1.rhel6.x86\_64.rpm

## **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Enhancements**

Updated to version 11.2.307.3

## **Supported Devices and Features**

### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

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HPE Fibre Channel Enablement Kit for Red Hat Enterprise Linux 7 Server - Emulex

Version: 11.2.307.3 (**Recommended**)

Filename: HP-CNA-FC-Emulex-Enablement-Kit-11.2.307.3-1.rhel7.x86\_64.compsig; HP-CNA-FC-Emulex-Enablement-Kit-11.2.307.3-1.rhel7.x86\_64.rpm

## **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Enhancements**

Updated to version 11.2.307.3

Added support for Rhel7u4

## **Supported Devices and Features**

### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

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HPE Fibre Channel Enablement Kit for SUSE Linux Enterprise Server 11 (AMD64/EM64T) - Emulex

Version: 11.2.307.3 (**Recommended**)

Filename: HP-CNA-FC-Emulex-Enablement-Kit-11.2.307.3-1.sles11sp3.x86\_64.compsig; HP-CNA-FC-Emulex-Enablement-Kit-11.2.307.3-1.sles11sp3.x86\_64.rpm; HP-CNA-FC-Emulex-Enablement-Kit-11.2.307.3-1.sles11sp4.x86\_64.compsig; HP-CNA-FC-Emulex-Enablement-Kit-11.2.307.3-1.sles11sp4.x86\_64.rpm

## **Important Note!**

Release Notes:

[HPE StoreFabric Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Enhancements**

Updated to version 11.2.307.3

## **Supported Devices and Features**

### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA

- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

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HPE Fibre Channel Enablement Kit for SUSE Linux Enterprise Server 12- Emulex

Version: 11.2.254.6 (**Recommended**)

Filename: HP-CNA-FC-Emulex-Enablement-Kit-11.2.254.6-1.sles12sp1.x86\_64.compsig; HP-CNA-FC-Emulex-Enablement-Kit-11.2.254.6-1.sles12sp1.x86\_64.rpm; HP-CNA-FC-Emulex-Enablement-Kit-11.2.254.6-1.sles12sp2.x86\_64.compsig; HP-CNA-FC-Emulex-Enablement-Kit-11.2.254.6-1.sles12sp2.x86\_64.rpm

### **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

### **Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

### **Enhancements**

Updated to version 11.2.254.6

### **Supported Devices and Features**

#### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

#### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter

- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

#### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

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HPE Fibre Channel Enablement Kit for SUSE Linux Enterprise Server 12- Emulex

Version: 11.2.307.3 **(Recommended)**

Filename: HP-CNA-FC-Emulex-Enablement-Kit-11.2.307.3-1.sles12sp2.x86\_64.compsig; HP-CNA-FC-Emulex-Enablement-Kit-11.2.307.3-1.sles12sp2.x86\_64.rpm; HP-CNA-FC-Emulex-Enablement-Kit-11.2.307.3-1.sles12sp3.x86\_64.compsig; HP-CNA-FC-Emulex-Enablement-Kit-11.2.307.3-1.sles12sp3.x86\_64.rpm

#### **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

#### **Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

#### **Enhancements**

Updated to version 11.2.307.3

Added support for Sles12sp3

## **Supported Devices and Features**

### **8Gb FC:**

- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- HP StoreFabric 84E 4-Port Fibre Channel Host Bus Adapter

### **LPe16000 (16Gb) FC:**

- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1100E 4P 16Gb Fibre Channel Host Bus Adapter
- HP Fibre Channel 16Gb LPe1605 Mezz
- HPE Synergy 3530C 16Gb Fibre Channel Host Bus Adapter

### **LPe31000/32000 (16Gb/32Gb) FC:**

- HPE StoreFabric SN1200E 16Gb 2P FC HBA
- HPE StoreFabric SN1200E 16Gb 1P FC HBA
- HPE StoreFabric SN1600E 32Gb 2p FC HBA
- HPE StoreFabric SN1600E 32Gb 1p FC HBA

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HPE Fibre Channel Over Ethernet Enablement Kit for Red Hat Enterprise Linux 6 Server - Emulex(BRCM)

Version: 11.2.1263.2 (**Recommended**)

Filename: HP-CNA-FC-Broadcom-Enablement-Kit-11.2.1263.2-1.rhel6.x86\_64.compsig; HP-CNA-FC-Broadcom-Enablement-Kit-11.2.1263.2-1.rhel6.x86\_64.rpm

### **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

### **Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Enhancements**

Updated to version: 11.2.1263.2

## **Supported Devices and Features**

### **XE100 Series:**

- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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HPE Fibre Channel Over Ethernet Enablement Kit for Red Hat Enterprise Linux 7 Server - Emulex(BRCM)

Version: 11.2.1263.2 (**Recommended**)

Filename: HP-CNA-FC-Broadcom-Enablement-Kit-11.2.1263.2-1.rhel7.x86\_64.compsig; HP-CNA-FC-Broadcom-Enablement-Kit-11.2.1263.2-1.rhel7.x86\_64.rpm

## **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Enhancements**

Updated to version: 11.2.1263.2

## **Supported Devices and Features**

### **XE100 Series:**

- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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HPE Fibre Channel Over Ethernet Enablement Kit for SUSE Linux Enterprise Server 11 (AMD64/EM64T) - Emulex(BRCM)

Version: 11.2.1263.2 (**Recommended**)

Filename: HP-CNA-FC-Broadcom-Enablement-Kit-11.2.1263.2-1.sles11sp3.x86\_64.compsig; HP-CNA-FC-Broadcom-Enablement-Kit-11.2.1263.2-1.sles11sp3.x86\_64.rpm;  
HP-CNA-FC-Broadcom-Enablement-Kit-11.2.1263.2-1.sles11sp4.x86\_64.compsig; HP-CNA-FC-Broadcom-Enablement-Kit-11.2.1263.2-1.sles11sp4.x86\_64.rpm

## **Important Note!**

Release Notes:

[HPE StoreFabric Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Enhancements**

Updated to version: 11.2.1263.2

## **Supported Devices and Features**

### **XE100 Series:**

- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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HPE Fibre Channel Over Ethernet Enablement Kit for SUSE Linux Enterprise Server 12- Emulex(BRCM)

Version: 11.2.1224.0 (**Recommended**)

Filename: HP-CNA-FC-Broadcom-Enablement-Kit-11.2.1224.0-1.sles12sp1.x86\_64.compsig; HP-CNA-FC-Broadcom-Enablement-Kit-11.2.1224.0-1.sles12sp1.x86\_64.rpm; HP-CNA-FC-Broadcom-Enablement-Kit-11.2.1224.0-1.sles12sp2.x86\_64.compsig; HP-CNA-FC-Broadcom-Enablement-Kit-11.2.1224.0-1.sles12sp2.x86\_64.rpm

## **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox

drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Enhancements**

Initial Enablement kit for FCoE alone. Version 11.2.1224.0

## **Supported Devices and Features**

### **XE100 Series:**

- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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HPE Fibre Channel Over Ethernet Enablement Kit for SUSE Linux Enterprise Server 12- Emulex(BRCM)

Version: 11.2.1263.2 **(Recommended)**

Filename: HP-CNA-FC-Broadcom-Enablement-Kit-11.2.1263.2-1.sles12sp2.x86\_64.compsig; HP-CNA-FC-Broadcom-Enablement-Kit-11.2.1263.2-1.sles12sp2.x86\_64.rpm;  
HP-CNA-FC-Broadcom-Enablement-Kit-11.2.1263.2-1.sles12sp3.x86\_64.compsig; HP-CNA-FC-Broadcom-Enablement-Kit-11.2.1263.2-1.sles12sp3.x86\_64.rpm

## **Important Note!**

Release Notes:

[HPE StoreFabric Emulex Adapters Release Notes](#)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Prerequisites**

The target environment must have the libHBAAPI Package installed prior to the installation of the enablement kit. (If not already present, the libHBAAPI Package can be obtained from the operating system installation media.)

Beginning with software release 11.2, Fibre Channel (LightPulse) adapters and Converged Network adapters (OneConnect) have independent software kits.

It is highly recommended that you review the Broadcom Software Kit Migration User Guide for more detailed information regarding this change.

To obtain the guide:

1. Go to <http://www.hpe.com/support/manuals>
2. Using the HPE model number as your guide, enter the adapter model number in the Search products box, and then click > >.

This document provides special instructions and considerations for using the driver kits for FC and CNA adapters.

Special cases include those in which pre-11.2 (original) drivers and applications are replaced by the new 11.2 drivers and applications, and cases in which inbox drivers are replaced by the new 11.2 out-of-box (OOB) drivers.

## **Enhancements**

Updated to version: 11.2.1263.2

Added support for Sles12sp3

## **Supported Devices and Features**

### **XE100 Series:**

- HP StoreFabric CN1200E Dual Port Converged Network Adapter
- HP FlexFabric 20Gb 2-port 650FLB Adapter
- HP FlexFabric 20Gb 2-port 650M Adapter
- HP FlexFabric 10Gb 2-port 556FLR-SFP+ Adapter
- HPE StoreFabric CN1200E-T Adapter
- HPE FlexFabric 10Gb 2-port 556FLR-T Adapter

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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!**

To obtain the 3PAR Smart SAN User Guide to go the Storage Information Library at the following link:

[Storage Information Library](#)

(<http://www.hpe.com/info/storage/docs/>)

By default, **HP 3PAR Storage** is selected under

### **Products and Solutions.**

## **Prerequisites**

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

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

The HPE supplied fibre channel driver must be installed prior to this enablement kit component if you want to enable Smart SAN functionality. The driver is available on the HPE.com website at [www.hpe.com](http://www.hpe.com).

- Red Hat Enterprise Linux 6 Server (x86-64) FCoE/FC Driver Kit for HPE Qlogic CNAs, HBAs and mezzanine HBAs, version 8.07.00.42.06.0-k1
- Red Hat Enterprise Linux 7 Server FCoE/FC Driver Kit for HPE QLogic CNAs, HBAs and mezzanine HBAs and CNAs, version 8.07.00.42.07.0-k1
- SUSE Linux Enterprise Server 11 (AMD64/EM64T) FCoE/FC Driver Kit for HPE Qlogic CNAs, HBAs and mezzanine HBAs, version 8.07.00.42.11.3-k
- SUSE Linux Enterprise Server 12 FCoE/FC Driver Kit for HPE QLogic CNAs, HBAs and mezzanine HBAs and CNAs version 8.07.00.42.12.0-k1

However, if a Smart SAN enabled driver is not installed at execution time, the component will land the enablement kit files for future use after the driver has been installed.

## **Enhancements**

Added support for the following devices:

- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

### **Supported Devices and Features**

This enablement kit is supported on the following HPE adapters:

#### **8Gb FC:**

- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA

#### **16Gb FC:**

- HP QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

#### **32Gb FC:**

- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

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HPE QLogic Smart SAN Enablement Kit for Windows 64-bit operating systems

Version: 1.0.0.1 (d) **(Optional)**

Filename: cp031440.compsig; cp031440.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.

To obtain the 3PAR Smart SAN User Guide to go the Storage Information Library at the following link:

[Storage Information Library](#)

(<http://www.hpe.com/info/storage/docs/>)

By default, **HP 3PAR Storage** is selected under

### **Products and Solutions**

### **Prerequisites**

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

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

The HPE supplied fibre channel driver must be installed prior to this enablement kit component if you want to enable Smart SAN functionality. The driver is available on the HPE.com website at [www.hpe.com](http://www.hpe.com).

- HPE Storage Fibre Channel Adapter Kit for the x64 QLogic Storport Driver v9.2.2.20, cp031252.exe
- HPE Storage Fibre Channel Adapter Kit for the QLogic Storport Driver for Windows Server 2012 and 2012 R2 v9.2.2.20, cp031253.exe

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 for the following devices:

- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

## **Supported Devices and Features**

This enablement kit is supported on the following HPE adapters:

### **8Gb FC:**

- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HPE StoreFabric 84Q 4P 8Gb Fibre Channel HBA

### **16Gb FC:**

- HP QMH2672 16Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter
- HP StoreFabric SN1100Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter
- HPE Synergy 3830C 16G Fibre Channel Host Bus Adapter

### **32Gb FC:**

- HPE StoreFabric SN1600Q 32Gb Single Port Fibre Channel Host Bus Adapter
- HPE StoreFabric SN1600Q 32Gb Dual Port Fibre Channel Host Bus Adapter

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## **Software - System Management**

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Agentless Management Service (iLO 5) for Red Hat Enterprise Linux 6 Server

Version: 1.1.0 **(Optional)**

Filename: amsd-1.1.0-2576.21.rhel6.x86\_64.compsig; amsd-1.1.0-2576.21.rhel6.x86\_64.rpm

## **Prerequisites**

- **amsd only supported on HPE Gen10 Servers.**
- **amsd provides information to the iLO 5 service providing SNMP support.**
- **SNMP PASS-THRU on the iLO 5 MUST be disabled, and SNMP should be configured on the iLO 5. The iLO 5 may need to be reset after changing these settings.**
- **Requirements:**
  - Minimum iLO 5 Firmware Version = 1.1
  - Minimum supported OS Versions = Red Hat Enterprise Linux 6.9

## **Fixes**

Fixed the following items:

- Improved handling of IPV6 addresses
- Improved handling of SATA drive temperatures

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Agentless Management Service (iLO 5) for Red Hat Enterprise Linux 7 Server

Version: 1.1.0 **(Optional)**

Filename: amsd-1.1.0-2576.20.rhel7.x86\_64.compsig; amsd-1.1.0-2576.20.rhel7.x86\_64.rpm

#### **Prerequisites**

- **amsd only supported on HPE Gen10 Servers.**
- **amsd provides information to the iLO 5 service providing SNMP support.**
- **SNMP PASS-THRU on the iLO 5 MUST be disabled, and SNMP should be configured on the iLO 5. The iLO 5 may need to be reset after changing these settings.**
- **Requirements:**
  - Minimum iLO 5 Firmware Version = 1.1
  - Minimum supported OS Versions = Red Hat Enterprise Linux 7.3 Errata 3.10.0.514.6.1

#### **Fixes**

Fixed the following items:

- Improved handling of IPV6 addresses
- Updated for RHEL 7.4 support
- Improved handling of SATA drive temperatures

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Agentless Management Service (iLO 5) for SUSE Linux Enterprise Server 11

Version: 1.1.0 **(Optional)**

Filename: amsd-1.1.0-2576.23.sles11.x86\_64.compsig; amsd-1.1.0-2576.23.sles11.x86\_64.rpm

#### **Prerequisites**

- **amsd only supported on HPE Gen10 Servers.**
- **amsd provides information to the iLO 5 service providing SNMP support.**
- **SNMP PASS-THRU on the iLO 5 MUST be disabled, and SNMP should be configured on the iLO 5. The iLO 5 may need to be reset after changing these settings.**
- **Requirements:**
  - Minimum iLO 5 Firmware Version = 1.1
  - Minimum supported OS Versions = SuSE Linux Enterprise Server 11 SP4 kISO

#### **Fixes**

Fixed the following items:

- Improved handling of IPV6 addresses
- Improved handling of SATA drive temperatures

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Agentless Management Service (iLO 5) for SUSE Linux Enterprise Server 12

Version: 1.1.0 **(Optional)**

Filename: amsd-1.1.0-2576.20.sles12.x86\_64.compsig; amsd-1.1.0-2576.20.sles12.x86\_64.rpm

### **Prerequisites**

- **amsd only supported on HPE Gen10 Servers.**
- **amsd provides information to the iLO 5 service providing SNMP support.**
- **SNMP PASS-THRU on the iLO 5 MUST be disabled, and SNMP should be configured on the iLO 5. The iLO 5 may need to be reset after changing these settings.**
- **Requirements:**
  - Minimum iLO 5 Firmware Version = 1.1
  - Minimum supported OS Versions = SuSE Linux Enterprise Server 12 SP2

### **Fixes**

Fixed the following items:

- Improved handling of IPV6 addresses
- Supports SLES12 SP3
- Improved handling of SATA drive temperatures

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Agentless Management Service (iLO 5) for SUSE Linux Enterprise Server 12

Version: 1.0.0 **(Optional)**

Filename: amsd-1.0.0-2459.112.sles12.x86\_64.compsig; amsd-1.0.0-2459.112.sles12.x86\_64.rpm

### **Prerequisites**

- **amsd only supported on HPE Gen10 Servers.**
- **amsd provides information to the iLO 5 service providing SNMP support.**
- **SNMP PASS-THRU on the iLO 5 MUST be disabled, and SNMP should be configured on the iLO 5. The iLO 5 may need to be reset after changing these settings.**
- **Requirements:**
  - Minimum iLO 5 Firmware Version = 1.1
  - Minimum supported OS Versions = SuSE Linux Enterprise Server 12 SP2

### **Fixes**

Initial release to support Gen10 Servers

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Agentless Management Service for Windows X64

Version: 1.15.0.0 **(Optional)**

Filename: cp032256.compsig; cp032256.exe

### **Important Note!**

About installation and enablement of SMA service:

- During AMS installation in interactive mode, there is pop up message to selectively install SMA.
  - If Yes is selected, SMA service will be installed and set to running state.
  - If No is selected, SMA service will be installed but the service is not enabled.
- During AMS installation in silent mode, SMA is installed but the service is not enabled.
- To enable SMA service at a later time, go to the following folder: %ProgramFiles%\OEM\AMS\Service\ (Typically c:\Program Files\OEM\AMS\Service) and execute "EnableSma.bat /f"
- IMPORTANT: The SNMP service community name and permission must be also be setup. This is not done by "EnableSma.bat".
- To disable SMA after it has been enabled, go the the following folder: %ProgramFiles%\OEM\AMS\Service\ (Typically c:\Program Files\OEM\AMS\Service) and execute "DisableSma.bat /f".

### **Prerequisites**

The *Channel Interface Driver for Windows X64* must be installed prior to this component.

Microsoft SNMP Service must be enabled, if SMA (System Management Assistant) is enabled.

### **Fixes**

- The overall network and controller status are no longer shown degraded on iLO GUI when an FC/FCoE port is not connected.
- AMS no longer terminates intermittently after the service is started on systems with NVMe drives.
- AMS no longer terminates on systems with Windows Server 2012 R2 and missing KB2919355.

### **Enhancements**

- AMS extends the default data polling interval from 30 seconds to 2 minutes, consequently CPU utilization increases less frequently.

HPE Insight Management Agents for Windows Server x64 Editions

Version: 10.70.0.0 **(Optional)**

Filename: cp031262.exe

### **Prerequisites**

The HPE Insight Management Agents require the SNMP Service , HPE ProLiant iLO 3/4 Channel Interface and Management Controller Drivers for Windows x64 to be installed prior to this component.

In addition, the System Management Homepage (SMH) component is required for a single server web-based user interface.

### **Fixes**

Applied a SHA-256 digital signature to all binary files and MSI installer file packaged in agents smart component.

HPE Insight Management WBEM Providers for Windows Server x64 Editions

Version: 10.65.0.0 **(Optional)**

Filename: cp031895.exe

### **Important Note!**

Version 10.65.0.0 will be the last HPE Insight Management WBEM Providers release to support Gen9 servers. Although HPE Insight Management WBEM Providers 10.65.0.0 are available on the Gen10 SPP, it will only support Gen 9 servers.

### **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.

### **Fixes**

none

### **Enhancements**

- Applied a SHA-256 digital signature to the WBEM Providers MSI file as well as all the binary files contained in it.
- Allowed installation to proceed on systems with the Windows Remote Registry service disabled.

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HPE ProLiant Agentless Management Service for HPE Apollo, ProLiant and Synergy Gen9 servers

Version: 10.75.0.0 **(Optional)**

Filename: cp032257.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**

- The overall network and controller status are no longer shown degraded on iLO GUI when an FC/FCoE port is not connected.
- AMS no longer terminates intermittently after the service is started on systems with NVMe drives.
- AMS no longer terminates on systems with Windows Server 2012 R2 and missing KB2919355.

### **Enhancements**

- AMS extends the default data polling interval from 30 seconds to 2 minutes, consequently CPU utilization increases less frequently.

---

HPE ProLiant Agentless Management Service for Red Hat Enterprise Linux 6 (AMD64/EM64T)

Version: 2.6.2 **(Optional)**

Filename: hp-ams-2.6.2-2530.13.rhel6.x86\_64.rpm

### **Prerequisites**

- **hp-ams only supported on HP ProLiant Gen8 and Gen9 Servers.**
- **hp-ams provides information to the HP iLO 4 service providing SNMP support.**
- **SNMP PASS-THRU on the HP iLO 4 MUST be disabled, and SNMP should be configured on the HP iLO 4. The HP iLO 4 may need to be reset after changing these settings.**
- **Requirements:**
  - Minimum HP 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:

- Improved handling of IPV6 addresses
- Updated for RHEL 7.4 support

- Supports SLES12 SP3
- Improved handling of SATA drive temperatures

---

HPE ProLiant Agentless Management Service for Red Hat Enterprise Linux 7 Server

Version: 2.6.2 **(Optional)**

Filename: hp-ams-2.6.2-2530.13.rhel7.x86\_64.rpm

### **Prerequisites**

- **hp-ams supported on HP ProLiant Gen8 and Gen9 Servers.**
- **hp-ams provides information to the HP iLO 4 service providing SNMP support.**
- **SNMP PASS-THRU on the HP iLO 4 MUST be disabled, and SNMP should be configured on the HP iLO 4. The HP iLO 4 may need to be reset after changing these settings.**
- **Requirements:**
  - Minimum HP 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:

- Improved handling of IPV6 addresses
- Updated for RHEL 7.4 support
- Supports SLES12 SP3
- Improved handling of SATA drive temperatures

---

HPE ProLiant Agentless Management Service for SUSE LINUX Enterprise Server 11 (AMD64/EM64T)

Version: 2.6.2 **(Optional)**

Filename: hp-ams-2.6.2-2530.13.sles11.x86\_64.rpm

### **Prerequisites**

- **hp-ams only supported on HP ProLiant Gen8 and Gen9 Servers.**
- **hp-ams provides information to the HP iLO 4 service providing SNMP support.**
- **SNMP PASS-THRU on the HP iLO 4 MUST be disabled, and SNMP should be configured on the HP iLO 4. The HP iLO 4 may need to be reset after changing these settings.**
- **Requirements:**
  - Minimum HP 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:

- Improved handling of IPV6 addresses
- Updated for RHEL 7.4 support
- Supports SLES12 SP3
- Improved handling of SATA drive temperatures

### **Prerequisites**

- **hp-ams supported on HP ProLiant Gen8 and Gen9 Servers.**
- **hp-ams provides information to the HP iLO 4 service providing SNMP support.**
- **SNMP PASS-THRU on the HP iLO 4 MUST be disabled, and SNMP should be configured on the HP iLO 4. The HP iLO 4 may need to be reset after changing these settings.**
- **Requirements:**
  - Minimum HP 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:

- AMS now lists RPMs for more non-distro vendors
- CPQNICiflogmapphysicaladapters is now null for Loopback Interfaces
- CPQNICiflogadapterokcount equals zero when there is no link
- Fixed a segfault when more than 10 IPv6 addresses are configured on an interface.

### **Prerequisites**

- **hp-ams supported on HP ProLiant Gen8 and Gen9 Servers.**
- **hp-ams provides information to the HP iLO 4 service providing SNMP support.**
- **SNMP PASS-THRU on the HP iLO 4 MUST be disabled, and SNMP should be configured on the HP iLO 4. The HP iLO 4 may need to be reset after changing these settings.**
- **Requirements:**
  - Minimum HP 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:

- Improved handling of IPV6 addresses
- Updated for RHEL 7.4 support
- Supports SLES12 SP3
- Improved handling of SATA drive temperatures

### **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**

none

## **Enhancements**

Removed support for Windows Server 2012-R2 and Windows Server 2016. This will be a Windows Server 2012 exclusive software version on Gen9 servers.

---

HPE Smart Storage Administrator (HPE SSA) CLI for Linux 64-bit

Version: 3.10-3.0 **(Optional)**

Filename: ssacli-3.10-3.0.x86\_64.compsig; ssacli-3.10-3.0.x86\_64.rpm; ssacli-3.10-3.0.x86\_64.txt

## **Important Note!**

HPE SSACLI will allow you to configure and manage your storage as before, but now with additional features, abilities, and supported devices. Existing ACUCLI scripts should only need to make minimal changes such as calling the appropriate binary or executable in order to maintain compatibility.

## **Enhancements**

- Initial firmware release for HPE P/E-Class SR Gen10 controllers.

---

HPE Smart Storage Administrator (HPE SSA) CLI for Windows 64-bit

Version: 3.10.3.0 **(Optional)**

Filename: cp031013.compsig; cp031013.exe

## **Important Note!**

HPE SSACLI will allow you to configure and manage your storage as before, but now with additional features, abilities, and supported devices. Existing ACUCLI scripts should only need to make minimal changes such as calling the appropriate binary or executable in order to maintain compatibility.

## **Enhancements**

- Initial firmware release for HPE P/E-Class SR Gen10 controllers.

---

HPE Smart Storage Administrator (HPE SSA) for Linux 64-bit

Version: 3.10-3.0 **(Optional)**

Filename: ssa-3.10-3.0.x86\_64.compsig; ssa-3.10-3.0.x86\_64.rpm; ssa-3.10-3.0.x86\_64.txt

## **Important Note!**

HPE SSA replaces the existing HP Array Configuration Utility, or ACU, with an updated design and will deliver new features and functionality for various Smart Storage initiatives as they come online. HPE Smart Array Advanced Pack 1.0 and 2.0 features are now part of the baseline features of HPE SSA, with the appropriate firmware.

HPE SSA will allow you to configure and manage your storage as before, but now with additional features, abilities, and supported devices. Existing ACU scripts should only need to make minimal changes such as calling the appropriate binary or executable in order to maintain compatibility.

## **Prerequisites**

The HPE Smart Storage Administrator for Linux requires the HPE System Management Homepage software to be installed on the server. If the HPE System Management Homepage software is not already installed on your server, please download it from HPE.com and install it before installing the HPE Smart Storage Administrator for Linux.

**IMPORTANT UPDATE:** HPE SSA (GUI) for Linux can now be run without requiring the HPE System Management Homepage. HPE SSA now supports a Local Application Mode for Linux. The HPE System Management Homepage is still supported, but no longer required to run the HPE SSA GUI.

To invoke, enter the following at the command prompt:

```
ssa -local
```

The command will start HP SSA in a new Firefox browser window. When the browser window is closed, HP SSA will automatically stop. This is only valid for the loopback interface, and not visible to external network connections.

### **Enhancements**

- Initial firmware release for HPE P/E-Class SR Gen10 controllers.

---

HPE Smart Storage Administrator (HPE SSA) for Windows 64-bit

Version: 3.10.3.0 **(Optional)**

Filename: cp031012.compsig; cp031012.exe

### **Important Note!**

HPE SSA replaces the existing HP Array Configuration Utility, or ACU, with an updated design and will deliver new features and functionality for various Smart Storage initiatives as they come online. HPE Smart Array Advanced Pack 1.0 and 2.0 features are now part of the baseline features of HPE SSA, with the appropriate firmware.

HPE SSA will allow you to configure and manage your storage as before, but now with additional features, abilities, and supported devices. Existing ACU scripts should only need to make minimal changes such as calling the appropriate binary or executable in order to maintain compatibility.

### **Enhancements**

- Initial firmware release for HPE P/E-Class SR Gen10 controllers.

---

HPE Smart Storage Administrator Diagnostic Utility (HPE SSADU) CLI for Linux 64-bit

Version: 3.10-3.0 **(Optional)**

Filename: ssaducli-3.10-3.0.x86\_64.compsig; ssaducli-3.10-3.0.x86\_64.rpm; ssaducli-3.10-3.0.x86\_64.txt

### **Important Note!**

This stand alone version of the HPE Smart Storage Administrator's Diagnostic feature is available only in CLI form. For the GUI version of Diagnostic reports, please use HPE Smart Storage Administrator (HPE SSA).

### **Enhancements**

- Initial firmware release for HPE P/E-Class SR Gen10 controllers.

---

HPE Smart Storage Administrator Diagnostic Utility (HPE SSADU) CLI for Windows 64-bit

Version: 3.10.3.0 **(Optional)**

Filename: cp031014.compsig; cp031014.exe

### **Important Note!**

This stand alone version of the HPE Smart Storage Administrator's Diagnostic feature is available only in CLI form. For the GUI version of Diagnostic reports, please use HPE Smart Storage Administrator (HPE SSA).

### **Enhancements**

- Initial firmware release for HPE P/E-Class SR Gen10 controllers.

---

HPE SNMP Agents for Red Hat Enterprise Linux 6 (AMD64/EM64T)

Version: 10.6.1 **(Optional)**

Filename: hp-snmp-agents-10.61-2939.2.rhel6.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:

- Files in directories under /var/spool/compaq/hpasm/registry/ have SGID bit set
- Total MEM shows“OMB” w/ 32pcs 128G DIMM in SMH-System Board in Linux
- HPSUM discovery works for G7 platforms

---

HPE SNMP Agents for Red Hat Enterprise Linux 7 Server

Version: 10.6.1 **(Optional)**

Filename: hp-snmp-agents-10.61-2939.2.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:

- Files in directories under /var/spool/compaq/hpasm/registry/ have SGID bit set
- Total MEM shows“OMB” w/ 32pcs 128G DIMM in SMH-System Board in Linux
- HPSUM discovery works for G7 platforms

---

HPE SNMP Agents for SUSE LINUX Enterprise Server 11 (AMD64/EM64T)

Version: 10.6.1 **(Optional)**

Filename: hp-snmp-agents-10.61-2939.2.sles11.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:

- Files in directories under /var/spool/compaq/hpasm/registry/ have SGID bit set
- Total MEM shows“OMB” w/ 32pcs 128G DIMM in SMH-System Board in Linux
- HPSUM discovery works for G7 platforms

---

HPE SNMP Agents for SUSE LINUX Enterprise Server 12

Version: 10.6.0 **(Optional)**

Filename: hp-snmp-agents-10.6.0-2936.33.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:

- Network bonding changes now generate traps
- cpqSeTotalMemMB now shows correct value

## Enhancements

cpqnicd stability improvements

---

HPE SNMP Agents for SUSE LINUX Enterprise Server 12

Version: 10.6.1 **(Optional)**

Filename: hp-snmp-agents-10.6.1-2939.2.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:

- Files in directories under /var/spool/compaq/hpasm/registry/ have SGID bit set
- Total MEM shows“OMB” w/ 32pcs 128G DIMM in SMH-System Board in Linux
- HPSUM discovery works for G7 platforms

---

HPE System Health Application and Command Line Utilities for Red Hat Enterprise Linux 6 (AMD64/EM64T)

Version: 10.6.0 (a) **(Optional)**

Filename: hp-health-10.6.0-1838.1.rhel6.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:

- File permissions for hp-health services
- HPSUM discovery works with G7 platforms

## **Enhancements**

- Fixed hp-health to work with linux kernel versions 4.X

---

HPE System Health Application and Command Line Utilities for Red Hat Enterprise Linux 7 Server

Version: 10.6.0 (a) **(Optional)**

Filename: hp-health-10.6.0-1838.1.rhel7.x86\_64.rpm

## **Prerequisites**

The hp-health and hp-snmp-agents run as 32 bit applications in the x86\_64 environment. The Linux kernel 32 bit compatibility must be enabled (usual default for Linux) and the 32 bit compatibility libraries must be present.

To get the list of all dependency files for hp-health, type:

```
rpm -qp --requires hp-health- < version >.rpm
```

## **Fixes**

Fixed the following items:

- File permissions for hp-health services
- HPSUM discovery works with G7 platforms

## **Enhancements**

- Fixed hp-health to work with linux kernel versions 4.X

---

HPE System Health Application and Command Line Utilities for SUSE LINUX Enterprise Server 11 (AMD64/EM64T)

Version: 10.6.0 (a) **(Optional)**

Filename: hp-health-10.6.0-1838.1.sles11.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:

- File permissions for hp-health services
- HPSUM discovery works with G7 platforms

### **Enhancements**

- Fixed hp-health to work with linux kernel versions 4.X

---

HPE System Health Application and Command Line Utilities for SUSE LINUX Enterprise Server 12

Version: 10.6.0 **(Optional)**

Filename: hp-health-10.60-1833.31.sles12.x86\_64.rpm

### **Prerequisites**

The hp-health and hp-snmp-agents run as 32 bit applications in the x86\_64 environment. The Linux kernel 32 bit compatibility must be enabled (usual default for Linux) and the 32 bit compatibility libraries must be present.

To get the list of all dependency files for hp-health, type:

```
rpm -qp --requires hp-health-< version >.rpm
```

### **Fixes**

- Fixed file permissions for hp-health services

### **Enhancements**

- Fixed hp-health to work with linux kernel versions 4.X

---

HPE System Health Application and Command Line Utilities for SUSE LINUX Enterprise Server 12

Version: 10.6.0 (a) **(Optional)**

Filename: hp-health-10.60-1838.1.sles12.x86\_64.rpm

### **Prerequisites**

The hp-health and hp-snmp-agents run as 32 bit applications in the x86\_64 environment. The Linux kernel 32 bit compatibility must be enabled (usual default for Linux) and the 32 bit compatibility libraries must be present.

To get the list of all dependency files for hp-health, type:

```
rpm -qp --requires hp-health-< version >.rpm
```

### **Fixes**

Fixed the following items:

- File permissions for hp-health services
- HPSUM discovery works with G7 platforms

### **Enhancements**

- Fixed hp-health to work with linux kernel versions 4.X

Version: 7.6.1-9 **(Recommended)**  
Filename: hpsmh-7.6.1-9.x86\_64.rpm

### **Important Note!**

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](#)

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 "hpms" 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.

### **Enhancements**

- Updated the following components:
  - PHP to version 5.6.27
  - OpenSSL to version 1.0.2k
  - Apache to version 2.4.25
- Improved Security features [Please find more details in the Security Bulletin (ID: HPESBMU03753)]
- Enabled support for RHEL 6.9, RHEL 7.3 and SLES 12.2 OS

---

HPE System Management Homepage for Windows x64

Version: 7.6.2.1 **(Optional)**  
Filename: cp032867.exe

### **Important Note!**

All SMH binaries are now code signed.

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](#)

### **Enhancements**

- Updated the following components:
  - PHP to version 5.6.27
  - OpenSSL to version 1.0.2k
  - Apache to version 2.4.25
- SMH binaries are code signed
- Improved Security features [Please find more details in the Security Bulletin (ID: HPESBMU03753)]

### **Important Note!**

The HP System Health Application and Insight Management Agents (hpsm) version 8.0.0 was split into three individual rpm packages:

- HP System Health Application and Command Line Utilities (hp-health) version 8.1.0
- HP SNMP Agents (hp-snmp-agents) version 8.1.0
- HP System Management Homepage Templates (hp-smh-templates) version 8.1.0

These three packages provide equivalent functionality as hpsm v8.0.0 and allow for more modular installation choices.

### **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**

- Fixed dependencies for SLES11 SP4 installation

### **Important Note!**

The HP System Health Application and Insight Management Agents (hpsm) version 8.0.0 was split into three individual rpm packages:

- HP System Health Application and Command Line Utilities (hp-health) version 8.1.0
- HP SNMP Agents (hp-snmp-agents) version 8.1.0
- HP System Management Homepage Templates (hp-smh-templates) version 8.1.0

These three packages provide equivalent functionality as hpsm v8.0.0 and allow for more modular installation choices.

### **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**

Fixed the following items:

- NIC tab is now visible on SMH Home page after setting data source as snmp
- HPSUM discovery works for G7 platforms

---

Insight Diagnostics Online Edition for Linux (x86-64)  
Version: 10.60.2109 (A) **(Recommended)**  
Filename: hpdiaags-10.60.2109-2176.linux.x86\_64.rpm

### **Important Note!**

The online version of Insight Diagnostics provides the same functionality as the Survey Utility for Windows and Linux and does not perform any hardware tests on the system. Although not required, it is recommended that you uninstall the current Survey Utility for Windows or Linux before beginning the installation of Insight Diagnostics Online Edition.

### **Prerequisites**

The following component(s) are required for Insight Diagnostics Online Edition for Linux:

- System Management Homepage, version 7.0.0-12 or higher

The following component(s) are recommended for Insight Diagnostics Online Edition for Linux to make full use of its capabilities:

- System Health Application, version 9.0.0 or higher

You can install them by using the SPP or downloading them individually from HPE Support Center.

### **Fixes**

- No Gen10 support.
- Translations fixes.
- Fixed a problem where saving the survey with a system with 124+ luns failed.
- Fixed a problem where the crontab entry from the Insight Diagnostics schedule feature was not removed when uninstalled.

### **Enhancements**

Added support for P542D storage controller.  
Added support for NVIDIA Tesla K40 XL 12Gb Module.  
Support Wellsburg 6-Port SATA Controller.  
Support for new Gen9 systems.

See the [Service Pack for ProLiant Release Notes](#) for more information.

See the [Service Pack for ProLiant Server Support Guide](#) for information on supported servers.

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Insight Diagnostics Online Edition for Linux (x86-64)  
Version: 10.60.2199 **(Recommended)**  
Filename: hpdiaags-10.60.2199-2188.linux.x86\_64.rpm

### **Important Note!**

The online version of Insight Diagnostics provides the same functionality as the Survey Utility for Windows and Linux and does not perform any hardware tests on the system. Although not required, it is recommended that you uninstall the current Survey Utility for Windows or Linux before beginning the installation of Insight Diagnostics Online Edition.

### **Prerequisites**

The following component(s) are required for Insight Diagnostics Online Edition for Linux:

- System Management Homepage, version 7.0.0-12 or higher

The following component(s) are recommended for Insight Diagnostics Online Edition for Linux to make full use of its capabilities:

- System Health Application, version 9.0.0 or higher

You can install them by using the SPP or downloading them individually from HPE Support Center.

## **Fixes**

- XSS vulnerability in the online page
- libsgutils symlink fix

## **Enhancements**

See the [Service Pack for ProLiant Release Notes](#) for more information.

See the [Service Pack for ProLiant Server Support Guide](#) for information on supported servers.

---

Insight Diagnostics Online Edition for Windows x64 Editions

Version: 10.60.2116.0 (A) **(Recommended)**

Filename: cp031590.exe

## **Important Note!**

### **Known Limitations**

1. Under Insight Diagnostics Online Edition for Windows, the Survey feature no longer supports displaying properties of Logical Drives that are attached to certain Smart Array controllers, either directly or through an enclosure (such as an Modular Smart Array). The controllers affected are:

- Smart Array 6i Controller
- Smart Array 641 Controller
- Smart Array 642 Controller
- Smart Array 6402 Controller
- Smart Array 6404 Controller

These controllers do not support the commands used to obtain logical drive properties. There are currently no plans to add such support to the controllers, nor to add legacy support to future versions of Insight Diagnostics.

As a work-around, Insight Diagnostics Online Edition for Windows, version **8.5 or earlier**, may be used to display logical drive properties in Survey. The Array Configuration Utility, available from hpe.com, can also display information about logical drives attached to these controllers.

2. Windows Server 2008 R2 SP1 is the minimum requirement for Gen9 platforms.

3. Adaptec devices are no longer supported on this version, please use version 10.16.1650 for this.

### **Other:**

1. The online version of Insight Diagnostics provides the same functionality as the Survey Utility for Windows and Linux and does not perform any hardware tests on the system. Although not required, it is recommended that you uninstall the current Survey Utility for Windows or Linux before beginning the installation of Insight Diagnostics Online Edition.

## **Prerequisites**

The following component(s) are required for Insight Diagnostics Online Edition for Windows:

- System Management Homepage, version 7.0.0-12 or higher

The following component(s) are recommended for Insight Diagnostics Online Edition for Windows to make full use of its capabilities:

- ProLiant Agentless Management Service, version 9.0.0.0 or higher
- ProLiant Integrated Lights-Out Management Interface Driver, version 1.15.0.0 or higher

## Fixes

- No Gen10 support.
- Translations fixes.
- Fixed a problem where saving the survey with a system with 124+ luns failed.

## Enhancements

Added support for P542D storage controller.  
Added support for NVIDIA Tesla K40 XL 12Gb Module.  
Support Wellsburg 6-Port SATA Controller.  
Support for new Gen9 systems.

See the [Service Pack for ProLiant Release Notes](#) for more information.

See the [Service Pack for ProLiant Server Support Guide](#) for information on supported servers.

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Integrated Management Log Viewer for Windows Server x64 Editions

Version: 7.8.0.0 **(Optional)**

Filename: cp029435.exe

### **Important Note!**

Starting with version 7.0.0.0, this application will only install on HP ProLiant systems supporting the iLO 2, iLO 3, or iLO 4 management controllers. Installation in a virtual machine is no longer supported.

Starting with version 6.5.0.0, this application requires Administrator privileges through Windows User Account Control.

Version 6.2.0.0 of this application is the final version that will support installation under Windows Server 2003 x64 Edition.

Starting with version 6.0.0.0, the dependencies on the HP ProLiant Remote Monitor Service and the HP ProLiant Remote IML Service have been removed. This application no longer provides access to the Integrated Management Log on a remote system.

Starting with version 5.22.0.0, separate 32-bit and 64-bit releases of this application are available. If you wish to downgrade to version 5.21.0.0 or earlier, use Windows Add or Remove Programs to uninstall the 64-bit release before installing the earlier 32-bit version.

## Enhancements

Add support for Windows Server 2016.

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Integrated Smart Update Tools for Linux x64

Version: 2.0.1.0 **(Recommended)**

Filename: sut-2.0.1-3.linux.x86\_64.compsig; sut-2.0.1-3.linux.x86\_64.rpm

### **Important Note!**

Please note the following:

iSUT requires an SPP-based ISO containing SUM 7.6.0 or later. If an earlier version of SUM is used, iSUT will notify the user that SUM 7.6.0 and later is required.

iSUT uses the RESTful Interface Tool to communicate with iLO. RESTful Interface Tool is included with the SUT component, is unpacked as part of the SUT installation process, and will be used for communication.

iSUT will only service HPE ProLiant Gen9, and requires iLO 4 firmware version 2.50 or later.

iSUT integrates with iLO 5 for the Gen 10 servers to perform the updates.

iSUT requires iLO Advanced Pack license.

## **Prerequisites**

For prerequisite information, please see the [iSUT Release Notes](#).

## **Fixes**

- Online update from iLO Amplifier Pack failed due to SUM deployment failure
- SUT settings not restored in OV post upgrade from 1.6.5 to 2.0.0

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Integrated Smart Update Tools for Windows x64

Version: 2.0.1.0 **(Recommended)**

Filename: cp032917.compsig; cp032917.exe

## **Important Note!**

Please note the following:

iSUT requires an SPP-based ISO containing SUM 7.6.0 or later. If an earlier version of SUM is used, iSUT will notify the user that SUM 7.6.0 and later is required.

iSUT uses the RESTful Interface Tool to communicate with iLO. RESTful Interface Tool is included with the SUT component, is unpacked as part of the SUT installation process, and will be used for communication.

iSUT will only service HPE ProLiant Gen9, and requires iLO 4 firmware version 2.50 or later.

iSUT integrates with iLO 5 for the Gen 10 servers to perform the updates.

iSUT requires iLO Advanced Pack license.

## **Prerequisites**

For prerequisite information, please see the [iSUT Release Notes](#).

## **Fixes**

- Online update from iLO Amplifier Pack failed due to SUM deployment failure
- SUT settings not restored in OV post upgrade from 1.6.5 to 2.0.0

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NVMe Drive Eject NMI Fix for Intel Xeon Processor Scalable Family for Windows

Version: 1.1.0.0 **(Optional)**

Filename: cp031375.compsig; cp031375.exe

## **Enhancements**

Initial release.

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NVMe Drive Eject NMI Fix for Intel Xeon v3 and Xeon v4 Processors for Windows Server 2012 R2 and Server 2016

Version: 1.0.5.0 (B) **(Optional)**

Filename: cp030432.exe

## **Enhancements**

Changed component name to indicate which processors are supported. Systems that already have version 1.0.5.0 installed do not need to install this component.

