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Revision History:
This document is the original version published October 26, 2012.

Supersedes History
Initial release

Effective Date
October 26, 2012
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Overview

HP Service Pack for ProLiant (SPP) is a comprehensive systems software and firmware solution delivered as a single ISO. This solution uses HP Smart Update Manager (HP SUM) as the deployment tool and is tested on all supported ProLiant servers including the new HP ProLiant Gen8 servers.

The SPP is delivered as a family of ISO images and bundles which are documented in the following table:

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Note:</strong> The full SPP is now delivered as an ISO file and no longer delivered as a Zip file. The SPP subsets are still delivered as ZIP files.</td>
</tr>
</tbody>
</table>
| HP Service Pack for ProLiant | Full SPP ISO  
Bootable ISO  
Filename: SPP2012100.2012_1005.37.iso |
| HP Service Pack for ProLiant - BladeSystem Red Hat Enterprise Linux Pack 2012.10.0 | Subset SPP ISO  
Non-bootable ISO  
Filename: SPPBLRH-2012.10.0-0.zip |
| HP Service Pack for ProLiant - BladeSystem SUSE Linux Enterprise Server Pack 2012.10.0 | Subset SPP ISO  
Non-bootable ISO  
Filename: SPPBLSL-2012.10.0-0.zip |
| HP Service Pack for ProLiant - BladeSystem Microsoft Windows Server Pack 2012.10.0 | Subset SPP ISO  
Non-bootable ISO  
Filename: SPPBLWIN-2012.10.0-0.zip |
| HP Service Pack for ProLiant - ProLiant ML/DL/SL Red Hat Enterprise Linux Pack 2012.10.0 | Subset SPP ISO  
Non-bootable ISO  
Filename: SPPMDSLRH-2012.10.0-0.zip |
| HP Service Pack for ProLiant - ProLiant ML/DL/SL SUSE Linux Enterprise Server Pack 2012.10.0 | Subset SPP ISO  
Non-bootable ISO  
Filename: SPPMDSLSL-2012.10.0-0.zip |
| HP Service Pack for ProLiant - ProLiant ML/DL/SL Microsoft Windows Server Pack 2012.10.0 | Subset SPP ISO;  
Non-bootable ISO  
Filename: SPPMDSLWIN-2012.10.0-0.zip |

**Update recommendation:**

**Optional** - Users should update to this version if their system is affected by one of the documented fixes or if there is a desire to utilize any of the enhanced functionality provided by this version.
Supersedes:
HP Service Pack for ProLiant 2012.08.0

Web Experience

<table>
<thead>
<tr>
<th>Web Page</th>
<th>Information/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resources on the SPP Download Page:</td>
<td><strong><a href="http://www.hp.com/go/spp/download">www.hp.com/go/spp/download</a></strong></td>
</tr>
<tr>
<td>Hot Fixes and Customer Advisory Listing</td>
<td>Information on Hot Fixes and their associated Customer Advisories (CA), Resolved CAs, and Open CAs is available online by clicking the “Hot Fixes and Advisories” button on the SPP Download page. This web page will be updated on a regular basis as new information becomes available.</td>
</tr>
<tr>
<td>SPP Release Archive</td>
<td>Downloads and Hot Fixes and CAs for all versions of the SPP within the one year support window are available for access here. If there are any Supplements corresponding with any SPP on this page, each Supplement can be downloaded from the link with the Supplement’s name in the SPP highlights section of the corresponding SPP.</td>
</tr>
<tr>
<td>HP Smart Update Video Library</td>
<td>A series of videos is available that offers information about the SPP, HP SUM, and firmware best practices including how you can plan and perform updates in your environment. The videos can be found online by clicking the “Smart Update Video Library” link on the SPP Download page or using the vanity URL, <a href="http://www.hp.com/go/smartupdate/video">http://www.hp.com/go/smartupdate/video</a>.</td>
</tr>
<tr>
<td>SPP Supplement Download</td>
<td>SPP Supplements can be downloaded from the link with the Supplement’s name in the SPP highlights section.</td>
</tr>
<tr>
<td>Resources on the SPP Documentation Page:</td>
<td><strong><a href="http://www.hp.com/go/spp/documentation">www.hp.com/go/spp/documentation</a></strong></td>
</tr>
<tr>
<td>SPP Server Support Guide</td>
<td>The SPP Server Support Guide lists all of the components included in the SPP and the servers that they are supported on and is available online on the SPP Documentation page.</td>
</tr>
<tr>
<td>SPP Contents Report</td>
<td>The SPP Contents Report documents all of the software and firmware on this SPP by the product name, version number, and the associated filename and is available online on the SPP Documentation page.</td>
</tr>
<tr>
<td>Linux SDR</td>
<td>The Linux SDR, <a href="http://downloads.linux.hp.com/SDR/">http://downloads.linux.hp.com/SDR/</a>, contains the software and firmware contents of the SPP. It provides a way for the user to deploy the software components of the SPP using native Linux tools.</td>
</tr>
<tr>
<td>VMware SDR - vibsdepot</td>
<td>The VMware SDR - vibsdepot, <a href="http://vibsdepot.hp.com/">http://vibsdepot.hp.com/</a>, is a one-stop repository that provides access to HP developed bundles along with device drivers that are part of the HP Customized VMware images. There are also links to the VMware recipe documents that are associated with an SPP.</td>
</tr>
<tr>
<td>Resources on HP SUM Documentation Page:</td>
<td><a href="http://www.hp.com/go/hpsum/documentation">http://www.hp.com/go/hpsum/documentation</a></td>
</tr>
<tr>
<td>HP SUM Release Notes</td>
<td>The HP SUM Release Notes provides information including fixes, enhancements, and known limitations for HP SUM. Reference the</td>
</tr>
</tbody>
</table>

HP Service Pack for ProLiant 2012.10.0
Summary of Changes

**Important Note**

When the terms, Service Pack for ProLiant or SPP are used throughout this document, they refer to all of the deliverables in Table in the Overview Section unless explicitly stated. Documented limitations that mention Windows, apply to the full SPP as well as the Windows subset ISOs. Documented limitations that mention Linux, apply to the full SPP as well as the Linux subset ISOs.

The full SPP ISO is supported in both online and offline modes and is a bootable ISO. Some components on this ISO only apply to offline mode.

All subset ISOs are supported in online mode only. They are non-bootable ISOs.

**IMPORTANT:** Before deploying any components to a system, be sure that a recent backup of the system is available in the event the deployment procedure fails.

The firmware and software components for the Fibre Channel Host Bus Adapter (HBA) and Converged Network Adapter (CNA) options are delivered with the SPP and are qualified and supported for use in configurations with HP ProLiant servers, HP storage networking products, and HP storage systems only. For HP ProLiant servers connected to third party storage systems using HP or other vendor’s storage networking products, contact the third party storage array vendor for information about qualified and supported installation tools, firmware, and drivers.

When updating firmware on non-Windows and Linux systems, please validate that the firmware is supported with the software stack prior to updating the firmware. For example, when updating the firmware offline on a Solaris system, make sure the firmware is supported by the Solaris drivers.

Firmware support for the HP 1/10Gb Virtual Connect Ethernet Module for c-Class BladeSystem (399593-B22) and the HP 1/10Gb-F Virtual Connect Ethernet Module for c-Class BladeSystem (447047-B21) was baselined with the Virtual Connect firmware version 3.60 release which was delivered with SPP 2012.06.0 (B). Virtual Connect firmware version 3.70 is included in this SPP.

**Release Summary**

The summary of this SPP release is:

- Added support for Microsoft Windows Server 2012 and Microsoft Windows Server 2012 Essentials
- Added offline support for HP Diagnostics and Array Configuration Utility (ACU)
 Modified the user interface when booting a server to the SPP
 Updated to HP Smart Update Manager 5.3.0
   o Added custom baseline functionality
   o Reports in comma-separated values (CSV) format
   o Linux RPM support
   o Fibre Channel switch firmware update support (B-series and H-series only)
   o Microsoft Windows Server 2012 support
   o Support for HP Integrity I/O card online firmware updates
   o Schedule pull from web repository downloads (not applicable to Fibre Channel switches)
   o Support for 16G Fibre Channel QLogic HBA
   o The ability to use the UNC format to identify file paths

**Fixes**
The following Known Issues from SPP 2012.08.0 have been fixed in SPP 2012.10.0:

- HP SUM for Windows will present and select by default the component, HP H2xx SAS/SATA Host Bus Adapter Driver for Windows Server 2008 x64 Editions (cp017858.exe) for installation when running on Windows Server 2008 R2

The following HP SUM issues from version 5.2.0 and earlier have been fixed in version 5.3.0:

- When using the Japanese version of HP SUM for Microsoft Windows, if you enter incorrect CLI parameters, HP SUM returns a corrupted string
- Error messages on the Select Targets page are not localized
- During a silent installation, HP SUM does not update components that are already up to date
- HP SUM might not install Intel Thermal Agents for HP361T NICs
- When using HP SUM on a Linux host, iLO components are not included when using the Check for Latest Updates from ftp.hp.com repository
- HP SUM for Linux version 5.2.0 might show some components installation results as “Update returned an error”
- HP SUM displays Installation not needed for HP ProLiant Smart Array SAS/SATA Controller Driver version 6.24.0.32 for Windows Server 2008

See the [HP Service Pack for ProLiant Release Notes 2012.08.0](#), Known Issues section, for more information about these resolved issues.

Information on fixes for individual components can be found in the component release note section.

**Enhancements**

**Added support for Microsoft Windows Server 2012 and Microsoft Windows Server 2012 Essentials**

- For more information on Microsoft Windows Server 2012 and HP ProLiant servers, please review the whitepaper, Implementing Microsoft Windows Server 2012 on HP

- There is no separate HP-provided Network Configuration Utility for Microsoft Windows Server 2012 because NIC teaming functionality is included in the operating system.
- There is no Combined Chipset Identifier for Microsoft Windows Server 2012 as it is no longer needed. R2
- There is no HP NC-Series Mellanox 10GbE Driver for Microsoft Windows Server 2012 so you must use the inbox driver.
- There is no HP QLogic P3P Multifunction Driver for Microsoft Windows Server 2012 so you must use the inbox driver.
- There are some drivers and firmware components which do not yet have support for Microsoft Windows Server 2012. This will be resolved in a future release of the SPP.

**Modified the SPP offline graphical user interface to include support for HP Diagnostics and Array Configuration Utility (ACU)**

Support for the HP Diagnostics and Array Configuration Utility (ACU) has been added to the SPP in offline mode. As part of this implementation, the SPP offline user interface was changed to align with the look and feel of other HP products. You will see the new user interface, if you decide to use the interactive mode when your server is booted to the SPP.

There are three functionality areas:
1. Firmware Update – Update server and option firmware using HP SUM
2. Array Configuration Utility – Configuration, management, and diagnostics for Smart Array
3. Insight Diagnostics – Conduct system diagnostic tests

**Added Firmware**

Added or updated firmware for the following server or options:

- HP Gen8 Server Backplane Expanders for HP Smart Array Controllers and HP HBA Controllers
- MB0500GCEHF, MB1000GCEHH, and MB2000GCEHK Drives
- MM0500GBKAK and MM1000GBKAL Drives

Added the following firmware:

- Supplemental Update / Online ROM Flash Component for Linux – HP Gen8 Server Backplane Expander Firmware for HP Smart Array Controllers and HP HBA Controllers
- Online ROM Flash Component for Windows - HP Gen8 Server Backplane Expander Firmware for HP Smart Array Controllers
- Supplemental Update / Online ROM Flash Component for Linux - MB0500GCEHF, MB1000GCEHH, and MB2000GCEHK Drives
- Supplemental Update / Online ROM Flash Component for Linux - MM0500GBKAK and MM1000GBKAL Drives
- Online ROM Flash Component for Windows - MB0500GCEHF, MB1000GCEHH, and MB2000GCEHK Drives
- Online ROM Flash Component for Windows - MM0500GBKAK and MM1000GBKAL Drives

**Added Software**

Added the following software for Microsoft Windows Server 2012 support:

- HP H2xx SAS/SATA Host Bus Adapter Driver for Windows Server 2012 x64 Editions
- HP ProLiant Smart Array SAS/SATA Controller Driver for Windows Server 2012 x64 Edition
- HP NC-Series Intel E1Q Driver for Windows Server 2012
- HP Intel E1R Driver for Windows Server 2012
- HP QLogic P3P iSCSI Driver for Windows Server 2012
- HP Emulex 10GbE Driver for Windows Server 2012
- HP Emulex 10GbE iSCSI Driver for Windows Server 2012
- HP Intel ixn Driver for Windows Server 2012
- HP ProLiant Channel Interface Device Driver for iLO for Red Hat Enterprise Linux 5 (x86)
- HP ProLiant Channel Interface Device Driver for iLO for Red Hat Enterprise Linux 5 (AMD64/EM64T)
- HP ProLiant Channel Interface Device Driver for iLO for SUSE LINUX Enterprise Server 10 (x86)
- HP ProLiant Channel Interface Device Driver for iLO for SUSE LINUX Enterprise Server 10 (AMD64/EM64T)
- HP ProLiant Dynamic Smart Array RAID Controller Driver for Windows 2012 x64 Editions
- HP Storage Fibre Channel Adapter Kit for the Emulex Storport Driver for Windows Server 2012
- HP Storage Fibre Channel Over Ethernet Adapter Kit for the Emulex Storport Driver for Windows Server 2012
- HP Storage Fibre Channel Adapter Kit for the QLogic Storport Driver for Windows Server 2012
- HP Storage Fibre Channel Over Ethernet Adapter Kit for the QLogic Storport Driver for Windows Server 2012
- HP Storage Brocade Storport Fibre Channel Host Bus Adapter Driver for Microsoft Windows Server 2012
- Matrox G200eH Video Controller Driver for Windows Server 2012 X64

Replaced Components

The following components were replaced in this version of the SPP:

- None

Removed Components

The following components were removed from this version of the SPP:

- None

For a complete list of components on the ISO, see the contents report on the ISO or the SPP documentation page.

Driver Update Disks (DUD) for Linux

You will find DUDs for the following controllers for all Red Hat and SUSE supported operating systems in the directory, DUD on the root of the ISO.

- HP Dynamic Smart Array SATA RAID Controller
- HP Smart Array B110i SATA RAID Controller

Components Changes

Critical Components:

The following components are considered to be critical updates that released with this SPP. If a component is marked critical and was initially release with a previous version of the SPP it will not be listed here. Please see the SPP Contents Report for a complete list of critical components.

Critical firmware components for Systems running a supported version of Windows:

- Online ROM Flash Component for Windows - MB0500EAMZD, MB1000EAMZE and MB2000EAMZF Drives
- Online ROM Flash Component for Windows - MB0500CBEPQ and MB1000CBEPR Drives
- Online ROM Flash Component for Windows - MM0500EBKAЕ and MM1000EBKAЕ drives
Online ROM Flash Component for Windows - MB0500CBZQD and MB1000CBZQE Drives
Online ROM Flash Component for Windows - MB0500EBZQA, MB1000EBZQB, and MB2000EBZQC Drives
Online ROM Flash Component for Windows - MB0500GCEHF, MB1000GCEHH, and MB2000GCEHK Drives
Online ROM Flash Component for Windows - MM0500GBKAK and MM1000GBKAL Drives

Critical firmware components for Systems running a supported version of Linux:
- HP ProLiant Smart Array Controller (x86/AMD32) Driver for Red Hat Enterprise Linux 6 (x86)
- HP ProLiant Smart Array Controller (AMD64/EM64T) Driver for Red Hat Enterprise Linux 6 (AMD64/EM64T)
- HP ProLiant Smart Array Controller (x86/AMD32) Driver for SUSE LINUX Enterprise Server 11 (x86)
- HP ProLiant Smart Array Controller (AMD64/EM64T) Driver for SUSE LINUX Enterprise Server 11 (AMD64/EM64T)
- Supplemental Update / Online ROM Flash Component for Linux - MB0500CBEPQ and MB1000CBEPR Drives
- Supplemental Update / Online ROM Flash Component for Linux - MB0500EAMZD, MB1000EAMZE and MB2000EAMZF Drives
- Supplemental Update / Online ROM Flash Component for Linux - MM0500EBKAEM and MM1000EBKAF drives
- Supplemental Update / Online ROM Flash Component for Linux - MB0500CBZQD and MB1000CBZQE Drives
- Supplemental Update / Online ROM Flash Component for Linux - MB0500EBZQA, MB1000EBZQB, and MB2000EBZQC Drives
- Supplemental Update / Online ROM Flash Component for Linux - MB0500GCEHF, MB1000GCEHH, and MB2000GCEHK Drives
- Supplemental Update / Online ROM Flash Component for Linux - MM0500GBKAK and MM1000GBKAL Drives

Compatibility
HP SUM and all components delivered in this Service Pack for ProLiant are tested together and meet the dependencies of the other components in the Service Pack for ProLiant.

Systems using software and firmware components delivered with the following products should be able to easily migrate to the components in this SPP:

<table>
<thead>
<tr>
<th>Product</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Pack for ProLiant</td>
<td>2012.08.0</td>
</tr>
<tr>
<td></td>
<td>2012.06.0 (B) + Supplements</td>
</tr>
<tr>
<td></td>
<td>2012.02.0</td>
</tr>
<tr>
<td></td>
<td>2012.01.0</td>
</tr>
<tr>
<td></td>
<td>2011.09.0</td>
</tr>
<tr>
<td>Product</td>
<td>Version</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>HP Smart Update Firmware DVD</td>
<td>10.10</td>
</tr>
<tr>
<td></td>
<td>10.00</td>
</tr>
<tr>
<td></td>
<td>9.30</td>
</tr>
<tr>
<td>ProLiant Support Pack for Windows</td>
<td>9.10</td>
</tr>
<tr>
<td></td>
<td>9.00</td>
</tr>
<tr>
<td></td>
<td>8.70</td>
</tr>
<tr>
<td>ProLiant Support Pack for Linux</td>
<td>9.10</td>
</tr>
<tr>
<td></td>
<td>9.00</td>
</tr>
<tr>
<td></td>
<td>8.7x</td>
</tr>
</tbody>
</table>

**Note:** When migrating directly from an older version of the SPP, PSP, or Smart Update Firmware DVD to the latest SPP, please review the release notes for the SPP versions being skipped so you can be up to date on changes that have occurred during those releases.

**Support**

HP supports each SPP version for 12 months. Customers may choose to update their SPP from an earlier version to this version as long as the earlier version is within its 12 month support period. This means that customers may directly update their SPP by skipping intermediate releases within the 12 month support period. See the table in the Compatibility section for details on the components contained in earlier SPPs that can migrate to this SPP.

You can tell when your support period ends by the version number of the release. For example, if you have installed the content of SPP 2012.10.0, your support would end the last day of October, 2013 based on version 2012=year, 10= month, 0=full release id number. Sometimes it is necessary to release an SPP with a version that would have less than 12 months of support per the information noted above. In these cases, you can use the table below to see when the support period ends:

<table>
<thead>
<tr>
<th>SPP Version</th>
<th>End of Support Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012.10.0</td>
<td>October 31, 2013</td>
</tr>
<tr>
<td>2012.08.0</td>
<td>September 30, 2013</td>
</tr>
<tr>
<td>2012.06.0 (B)</td>
<td>June 30, 2013</td>
</tr>
<tr>
<td>2012.02.0</td>
<td>March 31, 2013</td>
</tr>
<tr>
<td>2012.01.0</td>
<td>February 28, 2013</td>
</tr>
<tr>
<td>2011.09.0</td>
<td>October 31, 2012</td>
</tr>
</tbody>
</table>

- **IMPORTANT:** SPP 2011.09.0 moves out of the support window on October 31, 2012.
Operating Systems

Supported Operating Systems

The following operating systems are supported for system software and firmware support:

- Microsoft Windows Server 2012
- Microsoft Windows Server 2012 Essentials
- Microsoft Windows Server 2008 R2 Standard, Enterprise, Datacenter, Hyper-V, HPC and Web x64 Editions
- Microsoft Windows Server 2008 Foundation & Foundation R2 - supported on Single Socket Servers, check server QuickSpecs
- Microsoft Windows Essential Business Server 2008
- Microsoft Windows Web Server 2008 Standard and Premium
- Microsoft Windows Server 2008 Standard Edition Server Core
  **NOTE:** SPP will not run on Server Core locally. The SPP can be run from another supported Windows OS and deploy remotely to a system running Server Core.
- Microsoft Windows Server 2008 Standard and Enterprise x64 Editions
- Microsoft Windows Server 2008 Data Center Edition x86x64 on select platforms
- Red Hat Enterprise Linux 5 for x86
- Red Hat Enterprise Linux 5 for AMD64 and Intel EM64T
- Red Hat Enterprise Linux 6 for x86
- Red Hat Enterprise Linux 6 for AMD64 and Intel EM64T
- SUSE LINUX Enterprise Server (SLES) 11 for x86
- SUSE LINUX Enterprise Server (SLES) 11 for AMD64 and Intel EM64T
- SUSE LINUX Enterprise Server (SLES) 10 for x86
- SUSE LINUX Enterprise Server (SLES) 10 for AMD64 and Intel EM64T

Firmware-only Support:

- VMware vSphere 5.1 (offline only)
- VMware ESXi 5.0 U1 (offline only)
- Novell Open Enterprise Server (Linux) (offline only)
- Novell SUSE Open Linux (offline only)
- Oracle Enterprise Linux (offline only)
- Debian Linux (all releases) (offline only)

For more information on HP Operating Systems and Virtualization Software Support for ProLiant Servers, please visit our OS Support Site at: [www.hp.com/go/ossupport](http://www.hp.com/go/ossupport).

Additional Information for using the SPP on Linux Operating Systems

The following operating systems are supported for system software and firmware support:

- Red Hat Enterprise Linux 5.8 and 5.7
- Red Hat Enterprise Linux 6.3 and 6.2
- SUSE LINUX Enterprise Server 10 SP4 and SP3
- SUSE LINUX Enterprise Server 11 SP2 and SP1
HP ProLiant Gen8 servers require one of the following operations systems as a minimum requirement:

- Red Hat Enterprise Linux 5.7
- Red Hat Enterprise Linux 6.1
- SUSE LINUX Enterprise Server 10 SP4
- SUSE LINUX Enterprise Server 11 SP1


For more information about SLES 11 SP1 with HP ProLiant Gen8 Servers refer to this CA article: Installation of SUSE Linux Enterprise Server 11 SP1 Does Not Recognize the Chipset on HP ProLiant Gen8-Series Servers, use the kISO for installation (Document ID: c03237878)

You have a choice when using the SPP on a supported Linux operating system:

- You can use the software and firmware provided in the SPP.
- You can use the firmware provided in the SPP and get the software from the Software Delivery Repository (SDR) at http://downloads.linux.hp.com/SDR.
- You can use the firmware provided in the SPP, software utilities provided in the SPP or SDR, and get the drivers from the operating system distro.

**HP SUM as an RPM package**

In addition to getting the HP SUM deliverable from the /hp/swpackages directory on the SPP, you can also find hpsum-*.rpm in native RPM format on the SDR. There is a version of the hpsum-*.rpm for each supported OS and architecture type. Here is some additional information:

Since the SDR is a yum based repository, you can search for the HP SUM package:

```
yum search hpsum
```

Or, immediately install it by executing the following command:

```
yum install hpsum
```

Since the SDR is web based, users are capable of browsing and downloading the package manually, then they can utilize rpm to perform the install:

```
rpm --Uvh hpsum-5.3.0-<version>.<OS>.i386.rpm
```

There’s a plugin for yum that will enable users to use the yum download only HP SUM in order to obtain a copy of it without an install action. In order to utilize this functionality, the following package must be installed:

```
yum-downloadonly
```

Yum Command:
yum install yum-downloadonly

Once the yum-downloadonly package is installed, there are two available options to use with yum:
--downloadonly : don't update, just download a rpm file
--downloaddir=/path/to/dir : specifies an alternate directory to store packages such as /tmp

This will also be more applicable for SLES versions.

**Additional Information for using the SPP on VMware Operating Systems**

The following operating systems are supported for offline system software and firmware support:

- VMware vSphere 5.1
- VMware ESXi 5.0 U1

The SPP can deploy firmware to a system running a supported VMware operating system in an offline mode. Since the VMware drivers are not part of the SPP, you will need to get them from the VMware base image or HP Custom image, available from VMware.com, [www.hp.com/go/esxidownload](http://www.hp.com/go/esxidownload), or available on the [HP vibsdepot](http://www.hp.com/go/esxidownload) for this release. For a consolidated recipe of firmware and driver support, please review the [October 2012 VMware FW and Software Recipe](http://www.hp.com/go/esxidownload) document.

The HP ProLiant Gen8 servers require the use of an HP custom image of HP ProLiant. This image contains the network and storage drivers that are required to install on the HP ProLiant Gen8 servers. Because the current VMware images do not contain the latest drivers, they cannot be used to install on HP ProLiant Gen8 servers. This same requirement was in place for the HP ProLiant Blade System servers.

To determine if your server supports one of these OS, see the HP ProLiant Server VMware Support Matrix at: [http://h18004.www1.hp.com/products/servers/vmware/supportmatrix/hpvmware.html](http://h18004.www1.hp.com/products/servers/vmware/supportmatrix/hpvmware.html)

**Prerequisites**

**Component Prerequisites**

**Note:** This is not a complete listing of all the prerequisites listed in the SPP Release Notes. Check the individual component notes listed below for a complete listing.

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Prerequisite Note</th>
</tr>
</thead>
</table>
| HP Firmware Online Flash for Emulex Fibre Channel Host Bus and Converged Network Adapters - Windows 2003/2008 | The HP supplied Emulex driver must be installed prior to this firmware component being identified by HP SUM for deployment. Use the appropriate driver included in this SPP:  
  - HP Storage Fibre Channel Adapter Kit for the x86 Emulex Storport Driver v1.23.0.0 cp018010.exe  
  - HP Storage Fibre Channel Adapter Kit for the x64 Emulex |
<table>
<thead>
<tr>
<th>Product Name</th>
<th>Prerequisite Note</th>
</tr>
</thead>
</table>
| x86: cp017577.exe | Storport Driver v3.23.0.0 cp018009.exe  
• HP Storage Fibre Channel Adapter Kit for the Emulex Storport Driver for Windows Server 2012 v 2.72.12.1 cp017892.exe |
| x64: cp018000.exe | The HP supplied NIC driver must be installed prior to this firmware component if you want to update the firmware for the CNA. Use the appropriate driver included in this SPP:  
• HP Emulex 10GbE Driver for Windows Server 2008 v4.1.450.5 cp017752.exe  
• HP Emulex 10GbE Driver for Windows Server 2008 x64 Editions v4.1.450.5 cp017753.exe  
• HP Emulex 10GbE Driver for Windows Server 2008 R2 v4.1.450.5 cp017754.exe  
• HP Emulex 10GbE Driver for Windows Server 2012 v4.2.313.0 cp017926.exe |
| HP ProLiant iLO 3/4 Management Controller Driver Package for Windows Server 2008 | The appropriate version of the HP ProLiant iLO 3/4 Channel Interface Driver (version 3.4.0.0 or later) must be installed prior to this component. Use the appropriate driver included in this SPP:  
• x86: HP ProLiant iLO 3/4 Channel Interface Driver for Windows X86 v3.5.0.0 cp016735.exe  
• x64: HP ProLiant iLO 3/4 Channel Interface Driver for Windows X64 v3.7.0.0 cp017930.exe |

Running HP SUM on Windows

Prerequisites for running HP SUM on a system running a supported Window OS:

The minimum requirements when running HP SUM or deploying components to systems running a Microsoft Windows operating system include the following:

• A local administrative system with 1 GB of memory  
• Sufficient hard-drive space of at least twice the file size of the components to be deployed  
• WMI enabled  
• All remote targets must be visible by the administrative system running HP SUM  
• An account with administrator privileges on each target server  
• The beginning and ending IP addresses entered for the range of targets must both be on the same subnet.  
• Enable the network ports that HP SUM uses. For further information on the networking ports that HP SUM uses, see the HP SUM User Guide.

HP recommends that the user name and password for the administrator account on each target server be the same as those on the local administrative system. If administrator privileges are
not set up in this Introduction 8 manner, you must have the user name and password available for each remote server available. Alternatively, you can use a domain account on the local administrative system that has administrator privileges on the target servers.

**NOTE:** HP Smart Update Manager requires the user to be logged in using Administrator credentials. A user account elevated to “Run as administrator” in most cases does not have sufficient rights because access to protected system files and the Windows registry is restricted. This access is needed to deploy most firmware and driver updates. If the logged-in account is unable to perform the net use * \server\ADMIN$ for Microsoft Windows targets, you do not have sufficient privileges to run HP SUM to remote targets. Deployment of some software updates on a local server may still be possible in some instances, but is not recommended.

**NOTE:** When attempting to use the remote deployment functionality of HP SUM on any edition of Windows Server 2008 or Windows Vista, you must ensure that the File and Print Services feature is enabled and that the File and Print Services exception has been enabled in the Windows firewall. Failure to do so prevents HP SUM from deploying remote Windows targets.

**Running HP SUM on Linux**

**Prerequisites for running HP SUM on a system running a supported Linux OS:**

The minimum requirements when running HP SUM or deploying components to systems running a Linux operating system include the following:

- A local administrative system with 1 GB of memory
- For Linux deployments, a root equivalent user account must be used.
- SSH support must be enabled and the firewall opened to allow SSH communications on remote Linux servers or HP SUM cannot deploy updates. By default, SUSE LINUX Enterprise Server 10 and 11 block SSH support through the firewall. To enable SSH support if it has been disabled in the firewall, use the `yast2` command to open the necessary ports in the Linux firewall.
- Enable the network ports that HP SUM uses. For further information on the networking ports that HP SUM uses, see the [HP SUM User Guide](#).
- Ensure that each NIC has an IP address assigned. To get the IP address assigned to a NIC, enter the `dhclient` command in the console, which launches the NIC interfaces and retrieves an IP address. If a NIC does not have an IP address, HP SUM appears to hang on start up.

- `glibc 2.2.4-26 or later`
- `gawk 3.1.0-3 or later`
- `sed 3.02-10 or later`
- `pcius-1.8-25.i386.rpm or later`

The following RPMs are also required:

- On Red Hat servers:
  - `rpm 4.0.4 or later`
  - `rpm-build 4.0.4 or later`
  - `rpm-devel 4.0.4 or later`
On SUSE Linux servers:

- rpm 3.0.6 or later

To successfully deploy HP SUM on remote target systems based on a Linux operating system, the following packages must be available:

- tcl-8.x package
- expect-5.x package

In addition, components that are compiled from source code (such as NIC drivers) require the presence of the following build tools:

- gcc-2.96-108.1 or later
- cpp-2.96-108.1 or later
- binutils-2.11.90.0.8 or later
- glibc-devel-2.2.4-26 or later
- kernel-headers- (The version number depends on which kernel is used.)

Installing these updates requires legacy compatibility libraries be loaded.

The command interpreter (shell) /bin/bash must be installed.

**Note:** Please ensure the following RPMs are also installed.

For Red Hat Enterprise Linux 5 x86 servers:

- compat-libstdc++-296-2.96-132.7.2.i386 or later
- lm_sensors-2.8.7-2.i386 or later
- net-snmp-5.3.1-14.el5.i386 or later
- perl (needed to provide the libperl.so)
- libnl (needed for QLogic and Emulex drivers)

For Red Hat Enterprise Linux 5 AMD64/EM64T servers:

- compat-libstdc++-296-2.96-132.7.2.i386 or later
- lm_sensors-2.8.7-2.x86_64 or later
- net-snmp-5.3.1-14.el5.x86_64 or later
- perl (needed to provide the libperl.so)
- libnl (needed for QLogic and Emulex drivers)

For Red Hat Enterprise Linux 6 x86 servers:

- lm-sensors-libs-3.1.1-10.el6.i686.rpm
- net-snmp-libs-5.5-27.el6.i686.rpm
- net-snmp-5.5.27.el6.i686.rpm
- libstdc++-4.4.4-13.el6.i686.rpm

For Red Hat Enterprise Linux 6 AMD64/EM64T servers:

- lm-sensors-libs-3.1.1-10.el6.x86_64.rpm
- net-snmp-libs-5.5-27.el6.x86_64.rpm
The following RPMs are needed only on the local Linux system running HP SUM to perform builds of NIC source RPMs:

- gcc-2.96-108.1 or later
- kernel-devel (needed to build RPMs from source. Especially for Red Hat Enterprise Server 5.3 and later, please be sure to install the kernel-devel in addition to any kernel specific devel package such as kernel-xen-devel or kernel-PAE-devel)
- kernel-syms
- RPM build tools

**NOTE:** Be sure to include the version of the compatibility libraries that is appropriate for your architecture. In some cases, there are separate 32-bit and 64-bit compatibility libraries for a given distribution.
For servers running Red Hat Enterprise Linux 6 - RHEL6 Console Mode:

NOTE: No X console in either x86 or x86_64 - User installs base server with defaults and the following RPMs to run HP SUM in silent mode.

NOTE: The following versions of RPMs are needed as a minimum. Later versions of these RPMs can probably be used as well.

- lm_sensors-libs-3.1.1-10.el6.ARCH.rpm
- net-snmp-libs-5.5-27.el6.ARCH.rpm
- net-snmp-5.5.27.el6.ARCH.rpm
- kernel-headers-2.6.32-71.el6.ARCH.rpm
- redhat-rpm-config-9.0.3-25.el6.noarch.rpm
- kernel-devel-2.6.32-71.el6.ARCH.rpm
- rpm-build-4.8.0-12.el6.ARCH.rpm
- gcc-4.4.4-13.el6.ARCH.rpm

NOTE: The version below is recommended as a minimum. Later versions of these can probably be used as well.

ncurses-libs-5.7-3.20090208.el6.i686.rpm

For servers running Red Hat Enterprise Linux 6 - RHEL6 Graphical Mode:

NOTE: This applies to both x86 and x86_64 if the user elects to install the XWindows support.

NOTE: These must be the 32-bit version even under x86_64 architecture as HP SUM and several of the RPMs require 32-bit libraries installed.

NOTE: Ensure that each NIC has an IP address assigned. To get the IP address assigned to a NIC, enter the dhclient command in the console, which enables the NIC interfaces and retrieves an IP address. If a NIC does not have an IP address, HP SUM appears to hang on start up.

NOTE: The following versions are needed as a minimum. Later versions of these rpms can probably be used as well.

- libuuid-2.17.2-6.el6.i686.rpm
- freetype-2.3.11-5.el6.i686.rpm
- libSM-1.1.0-7.1.el6.i686.rpm
- libICE-1.0.6-1.el6.i686.rpm
- libXi-1.3-3.el6.i686.rpm
- libX11-1.3-2.el6.i686.rpm
- libXext-1.1-3.el6.i686.rpm
- libxcb-1.5-1.el6.i686.rpm
- libXau-1.0.5-1.el6.i686.rpm
- libXrender-0.9.5-1.el6.i686.rpm
- libXrender-1.3-0-4.el6.i686.rpm
- libXrender-4.0.4-1.el6.i686.rpm
- libXcursor-1.1.10-2.el6.i686.rpm
- fontconfig-2.8.0-3.el6.i686.rpm
- expat-2.0.1-9.1.el6.i686.rpm
- expect-5.44.1.15-2.el6..rpm
- zlib-1.2.3-25.el6.i686.rpm
HP Service Pack for ProLiant 2012.10.0 Release Notes

- libstdc++-4.4.4-13.el6.i686.rpm
- net-snmp-5.5-27.el6.ARCH.rpm

**NOTE:** The following version is recommended as a minimum. Later versions of this rpm can probably be used as well.

ncurses-libs-5.7-3.20090208.el6.i686.rpm

In addition, the build directory for RPMs built from source has changed, depending on the name of the user building them. Up through RHEL5, the directory had been /usr/src/redhat/RPMS/. Under RHEL6, the directory is /root/rpmbuild/RPMS/ if the user is logged in as root and /$USER/home/rpmbuild/RPMS/ for users other than root.

**Deployment Instructions**

**General**

Follow these steps to install the components found on this SPP:

1. Download the SPP 2012.10.0.iso or subset Zip file from the SPP download page, [www.hp.com/go/spp/download](http://www.hp.com/go/spp/download).
2. If a subset SPP was downloaded, do the following:
   a. Open the zip file and review README.txt.
   b. Extract the ISO to a file share.
3. Determine how you want to access the data on the ISO – bootable USB key, mounted ISO, mounted DVD, etc. Use the appropriate tool to get the ISO in the format you want to access it.

   **Note:** You should use [HP USB Key Utility for Windows version 1.7.0.0](http://www.hp.com/go/spp/download) or later if you want to put this SPP on a bootable USB key and is also found on the SPP ISO.
4. Determine how you want to initiate deployment to your targets using the SPP – Offline mode or Online mode:
   a. Online mode - Runs on a Windows® or Linux hosted operating system
   b. Offline mode - Server boots to the SPP ISO (Bootable ISO only)
      i. Automatic mode - Firmware components update without interaction
      ii. Interactive mode - Onscreen instructions guide the user to update firmware components
5. Initiate deployment.

To initiate deployment in **Online mode**:

- You can go directly to the HP SUM deliverable to launch it:
  o Windows: /hp/swpackages/hpsum.exe
  o Linux: /hp/swpackages/hpsum
- To review the EULA, locate Start.htm which is found in the root of the ISO.
- Open the html file in one of the supported browsers:
  o Microsoft Internet Explorer 8.0
  o Microsoft Internet Explorer 7.0
  o Mozilla Firefox 3.0.10 or later
  o Mozilla Firefox 3.1
  o Mozilla Firefox 3.5
- Follow the instructions on the screen.
To initiate deployment in **Offline mode**:

- Boot the server to the SPP using one of the supported methods including mounting the ISO or DVD or using a bootable USB key.
- Select whether you want to use Automatic mode or Interactive mode.
  - If you select Automatic mode, the firmware will be automatically updated on your server without any further interaction.
  - If you select Interactive mode, you should follow the instructions on the screen.
- Select the **Firmware Update** option on the screen to start HP SUM

### Using a PXE Server to Deploy Components from the full SPP ISO over a network

Follow these steps to use a PXE server to deploy components from the full SPP ISO over a network.

**Prerequisites**

The following is required before proceeding with the configuration:

- You must have a good working knowledge of PXE and TFTP.
- A network with a DHCP server on it.
- A TFTP server configured on the same network as the DHCP server.
- A network file server hosting the ISO images and can be accessed by a PXE booted system.

It is assumed that you are using a Linux TFTP server and the TFTP package ([http://www.kernel.org/pub/software/network/tftp](http://www.kernel.org/pub/software/network/tftp)). Other TFTP servers should work similarly.

**Setup**

Before proceeding with the configuration, ensure that your TFTP server and PXELinux configuration are setup and configured properly. To set up PXE boot for the SPP:

1. Copy the SPP ISO image to the network file system, and note its location. NFS and Windows® file shares are supported.
2. For this example, the NFS and path to the ISO image used is 192.168.0.99/path/to/spp/image/SPP2012100.2012_1005.37.iso. Test your network file system to ensure that is accessible before proceeding.
3. You will need to access the /system directory of the ISO image, either by burning the ISO image, mounting the ISO image, or extracting it using a third-party tool.
4. Copy all the files from the /system directory of the ISO image to your TFTP server so that it is accessible by the TFTP software.

**Configuring PXELINUX**

Follow these steps to configure PXELINUX:

1. Using the isolinux.cfg file from the /system/ directory of the ISO as a guide, copy the labeled targets to your PXELinux configuration file. You do not need to include the entire file:

   - label sos
     - MENU LABEL Automatic Firmware Update Version 2012.10.0
     - kernel hpboot_v.c32
append vmlinuz initrd=initrd.img media=cdrom rw root=/dev/ram0 ramdisk_size=
init=/bin/init loglevel=3 ide=nodma ide=noraid nopat pnpbios=off vga=791
splash=silent hp_fibre showopts noexec32=off numa=off nox2apic
TYPE=AUTOMATIC AUTOPOWEROFFONSUCCESS=no
AUTOREBOOTONSUCCESS=yes

label vsos
MENU LABEL Interactive Firmware Update Version 2012.10.0
kernel hpboot_v.c32
append vmlinuz initrd=initrd.img media=cdrom rw root=/dev/ram0 ramdisk_size=
init=/bin/init loglevel=3 ide=nodma ide=noraid nopat pnpbios=off vga=791
splash=silent hp_fibre showopts noexec32=off numa=off nox2apic TYPE=MANUAL

label sos_poweroff
MENU HIDE Automatic & POWEROFF Firmware Update Version 2012.10.0
kernel hpboot_v.c32
append vmlinuz initrd=initrd.img media=cdrom rw root=/dev/ram0 ramdisk_size=
init=/bin/init loglevel=3 ide=nodma ide=noraid nopat pnpbios=off vga=791
splash=silent hp_fibre showopts noexec32=off numa=off nox2apic TYPE=AUTOMATIC

2. Replace the lines "kernel hpboot_v.c32" with "kernel vmlinuz".
3. Remove vmlinuz from the append line.

Note: The paths to files on the TFTP server are vmlinuz and initrd.img. You must modify
them to include any directories or naming conventions you may have on your TFTP
server.

4. Replace "media=cdrom" with "media=net" on the append line
5. Specify the ISO image path. For the PXE booted server to find the ISO Image, you must
add the ISO Image path to the append line in the PXELINUX configuration file. Add the
following arguments:

    iso1=nfs://192.168.0.99/path/to/spp/image/SPP2012100.2012_1005.37.iso
    iso1mnt=/mnt/bootdevice

The iso1 parameter helps the PXE booted SPP locate the ISO image. The iso1mnt
parameter tells the PXE booted FWDVD where the iso1 image must be mounted.

Your final configuration file must be similar to the following example:

label sos
MENU LABEL Automatic Firmware Update Version 2012.10.0
kernel vmlinuz
append initrd=initrd.img media=net rw root=/dev/ram0 ramdisk_size= init=/bin/init
loglevel=3 ide=nodma ide=noraid nopat pnpbios=off vga=791 splash=silent hp_fibre
showopts noexec32=off numa=off nox2apic TYPE=AUTOMATIC
AUTOPOWEROFFONSUCCESS=no AUTOREBOOTONSUCCESS=yes
iso1=nfs://192.168.0.99:/path/to/spp/image/SPP2012100.2012_1005.37.iso
iso1mnt=/mnt/bootdevice

label vsos
MENU LABEL Interactive Firmware Update Version 2012.10.0
kernel vmlinuz
append initrd=initrd.img media=net rw root=/dev/ram0 ramdisk_size= init=/bin/init loglevel=3 ide=nodma ide=noraid nopat pnpbios=off vga=791 splash=silent hp_fibre showopts noexec32=off numa=off nox2apic TYPE=MANUAL AUTOPOWEROFFONSUCCESS=no iso1=nfs://192.168.0.99:/path/to/spp/image/SPP2012100.2012_1005.37.iso iso1mnt=/mnt/bootdevice

label sos_poweroff
MENU HIDE Automatic & POWEROFF Firmware Update Version 2012.10.0
kernel vmlinuz
append initrd=initrd.img media=net rw root=/dev/ram0 ramdisk_size= init=/bin/init loglevel=3 ide=nodma ide=noraid nopat pnpbios=off vga=791 splash=silent hp_fibre showopts noexec32=off numa=off nox2apic TYPE=AUTOMATIC iso1=nfs://192.168.0.99:/path/to/spp/image/SPP2012100.2012_1005.37.iso iso1mnt=/mnt/bootdevice

You can add additional ISO images by specifying the additional iso# and iso#mnt arguments, for example, iso2=/path/to/iso2.iso iso2mnt=/mnt/iso2.

Supported network file systems

The following network file systems are supported for use with PXE booting:

NFS:

iso1=nfs://192.168.0.99/path/to/spp/image/SPP2012100.2012_1005.37.iso
iso1mnt=/mnt/bootdevice

NFS volumes are mounted with the following options:

- -o ro
- nolock

You may also explicitly set the mount options with the iso#opts parameter:

iso1opts="rsize=32768,ro,nolock"

Windows® operating systems:

iso1=smbfs://192.168.0.99/share/path/to/spp/image/SPP2012100.2012_1005.37.iso
iso1mnt=/mnt/bootdevice

Windows® operating systems with login credentials:

iso1=smbfs://user:password@192.168.0.99/share/path/to/spp/image/SPP2012100.2012_1005.37.iso iso1mnt=/mnt/bootdevice

Once you have completed these steps, you should be ready to deploy the SPP components using the PXE boot functionality.

Known Limitations

The following are known issues and limitations with the smart components and the version of HP SUM delivered with this SPP. In addition to reviewing the content presented here, please review the Customer Advisories found on the “Hot Fixes & Advisories” page which is available by selecting the “Hot Fixes & Advisories” button (for the most recently released SPP) or by...
selecting the “SPP Release Archive” button (for all released SPPs) on the SPP Download page, www.hp.com/go/spp/download.

**General**

**Drivers and/or enablement kits must be installed prior to detecting and updating some hardware and firmware - HP SUM may need to be run twice for all firmware components to be presented for installation**

Drivers and/or enablement kits must be installed prior to detecting and updating some hardware and firmware. There are several scenarios when HP SUM may need to be run twice for all firmware components to be presented for installation. This is due to a requirement that drivers are needed in order for HP SUM to discover some hardware and thus the needed firmware. After the drivers are installed for the first time and the system rebooted, HP SUM needs to be run again for all of the firmware components to be presented for installation. The scenarios are:

1) **When performing online updates with HP SUM on a fresh installation of a supported Windows® or Linux OS**, all of the appropriate drivers are listed on the Select Bundle or Select Components screen but not all of the applicable firmware components may be listed.

2) **Network Adapters (NIC's), Host Bus Adapters (HBA's), and iLO require a driver or enablement kit to be installed in order to be recognized by HP SUM.**

3) **When running HP SUM on Windows, if the iLO Channel Interface Driver is not installed, the iLO FW will show a version of ‘None’ as the installed version and ‘Ready for Installation’ as the status on the Select Bundle or Select Component page. This applies to firmware for iLO 2, 3, and 4. When you try to update the firmware, it may fail to update if it is already up to date.**

4) **Broadcom NICs are not discovered by HP SUM unless the appropriate driver is installed and all Ethernet ports are up.** You can bring up the Ethernet port by using the following command:

   ```bash
   # ifup ethx
   
   or
   
   # ifconfig ethx up
   ```

   To update the firmware for Broadcom NIC, use the following steps:

   - Install the appropriate Windows or Linux driver found in the SPP. If updating a Linux server, the driver can also be retrieved from the SDR or the Linux distro.
   - Enable all the Ethernet ports
   - Run the Broadcom FW upgrade component

**HP Insight Control Server Migration does not support SPP**

HP Insight Control Server Migration does not support SPP at this time. It continues to support the PSPs which were baselined in June 2012.

**Components**

**The HP Insight Foundation Agent Service does not start automatically after installation on Microsoft Windows Server 2012**
The HP Insight Foundation Agent Service does not start automatically after installation on Microsoft Windows Server 2012. To work around this issue, manually start the HP Insight Foundation Agents Service.

**QLogic cards must be flashed twice**

When flashing a server with a QLogic card, HP SUM will display a pop-up message stating that hpqlafwupdate has stopped working. After selecting option 2, close the program, installation proceeds and the QLogic component displays as 'Unable to run the component'. After rebooting the server and restarting HP SUM, the QLogic component displays as already up-to-date. When a forced installation is given, no such pop-up is observed and the installation proceeds successfully.

**The QLogic-QMH2572 8GB FC Mezzanine card is not detected during online flashing in RHEL 6 32-bit environments**

The QLogic-QMH2572 component is not being detected during online flashing in RHEL 6 32-bit environments. RHEL6 32-bit environments are currently not supported by the QLogic drivers.

**The HP Firmware Flash for Brocade Fibre Channel Host Bus Adapters for Linux components cannot be installed on SLES 11 SP2**

These components cannot be installed either from the command line or from HP SUM on SLES 11 SP2. During online flashing in HP SUM the HP Firmware Flash for Brocade Fibre Channel Host Bus Adapters for Linux displays the status as 'Update Returned an Error' on the Installation Results page. Users will need to use the Host Connectivity Manager (HCM) or Brocade CLI Utility (BCU) to perform the BIOS update for these components. These utilities can be found at the Support and Drivers web site on hp.com.

**HP ProLiant Gen8 servers, running RHEL 6.2 with HP H221 or H220i HBA are not supported in either the SPP or HP SUM**

HP ProLiant Gen8 servers, running RHEL 6.2 with the HP H221 or H220i HBA can be installed with drivers using the RHEL 6.2 distribution. These drivers however, do not include ProLiant manageability features.

**Power Management Controller Firmware for HP ProLiant Gen8 servers - Server performance is significantly affected when updating this firmware if the server has the Dynamic Power Cap enabled**

If a server has a Dynamic Power Cap enabled, the server’s performance may be significantly affected during the duration of the flash update of the Power Management Controller Firmware. To prevent the impact to performance, the Dynamic Power Cap can be disabled prior to the flash update process.

**Running hp-health, hp-snmp-agents, and hp-ams will consume all eight available iLO 4 channels on HP ProLiant Gen8 servers and prevent other applications from Communicating With HP iLO 4**

If Linux users install and start hp-health-9.10 (or later), hp-snmp-agents-9.10 (or later) and hp-ams-1.1.0 (or later), the utilities will consume all of the available iLO 4 channels on HP ProLiant Gen8 servers. This can result in the inability to flash firmware on the server or execute other utilities which need to use the iLO such as hponcfg or hpsum. ([Document ID: c03280665])
HP SUM for Windows will present and select by default the component, HP ProLiant Array Configuration Utility for Windows (cp017430.exe) for installation when running any 64-bit version of a Windows operating system

The component, HP ProLiant Array Configuration Utility for Windows (cp017430.exe) claims support for 64-bit versions of Windows operating systems. This support causes HP SUM when running on a 64-bit version of a Windows operating system to present it and the component, HP ProLiant Array Configuration Utility for Windows 64-bit (cp017431.exe) on the “Select Bundle” and “Select Component” screens. cp017430.exe is selected by default. Since both components will install, you can select either component. HP SUM will only permit one of these two components to be installed at a time.

HP SUM for Windows will present and select by default the component, HP ProLiant Array Configuration Utility (CLI) for Windows (cp017432.exe) for installation when running any 64-bit version of a Windows operating system

The component, HP ProLiant Array Configuration Utility (CLI) for Windows (cp017432.exe) claims support for 64-bit versions of Windows operating systems. This support causes HP SUM when running on a 64-bit version of a Windows operating system to present it and the component, HP ProLiant Array Configuration Utility (CLI) for Windows 64-bit (cp017433.exe) on the “Select Bundle” and “Select Component” screens. cp017432.exe is selected by default. Since both components will install, you can select either component. HP SUM will only permit one of these two components to be installed at a time.

HP Insight Diagnostics Online Edition for Windows no longer displays properties of Logical Drives that are attached to Smart Array Controllers

Under HP Insight Diagnostics Online Edition for Windows, the Survey feature no longer displays properties of Logical Drives that are attached to certain Smart Array controllers, either directly or through an enclosure (such as an HP 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 HP Insight Diagnostics.

As a work-around, HP Insight Diagnostics Online Edition for Windows, version 8.5 or earlier, may be used to display logical drive properties in Survey. The HP Array Configuration Utility can also display information about logical drives attached to these controllers.

**HP SUM**

- **Note:** Please review the HP SUM 5.3.0 Release Notes for additional information including known limitations on HP SUM.

*The following issues are permanent restrictions within HP SUM:*  
Component Configuration: HP SUM and the components that need to be configured must be on writable media.
HP SUM and the components that need to be configured must be on writable media in order for the configuration to occur. Copy the entire SPP contents to writeable media. This means that if the ISO has been mounted, the components will not be able to be configured.

**Certain HDD firmware components may fail to update**

Some HDD FW components might fail to install when trying to deploy them in online mode. This may occur because flashing hard drive firmware in online mode when attached to an array controller requires cache memory be attached to the controller. If you do not have cache memory on the array controller, the hard drive firmware can be flashed in offline mode only. Flashing the controller firmware itself is not affected and can be flashed online without the cache memory. The affected smart array controllers requiring cache memory are Smart Array P212, P410, P410i, P411, P711m, P712m, P812, P220i, P222, P420, P420i, and P421. If you are deploying the hard drive firmware using HP Smart Update Manager and this failure occurs, the message, "Not updated – already current" will be reported as the hard drive firmware installation status on the HP SUM Installation Log screen after the installation process completes. The following message will be reported in the hard drive firmware component log file:

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.
There were no devices found that could be loaded with the ROM Image.
Installation will not continue.

*The following are known issues with HP SUM:*

**HP SUM may display the pop-up message “Qt : Untested Windows version 6.2 detected!” when starting up on a server running Microsoft Windows Server 2012**

HP SUM may display the pop-up message “Qt : Untested Windows version 6.2 detected!” when starting up on Microsoft Windows Server 2012. This issue occurs because HP SUM detects the version of Windows incorrectly. You can disregard the warning and continue with the HP SUM session.

**The driver hp qla4xxx fails to install on RHEL 5.8 and 5.7 using HP SUM**

The HP NC-Series QLogic iSCSI Driver for Linux will fail to install using HP SUM on RHEL 5.8 and 5.7 OS. The drivers fail due to dependencies in HP SUM; however, outside of HP SUM the components will install successfully.

**Hardware discovery intermittently fails in HP SUM on HP ProLiant DL380p Gen8 with Windows OS**

When an HP ProLiant DL380p Gen8 is flashed for the second time, HP SUM will intermittently show that hardware discovery has failed. This issue occurs on all Windows OS. If the hard drives are connected to H22x HBA’s, the issue will not occur.

**HP NC523SFP card is not detected by HP SUM on Windows OS**

When performing online flashing on an HP ProLiant DL380p Gen8 server with Windows OS installed, HP SUM does not detect the HP NC523SFP card. Thus, the firmware for the HP NC523SFP card will not be presented for selection for installation on the Select Bundle or Select Components screen. When offline flashing is used, the card is detected and installed correctly.
The reported number of components installed does not match on the HP SUM Review/Install Updates and the HP SUM Installation Log screens

When HP SUM completes installing components, the number of installed components shown on the Review/Install Updates screen differs from that shown on the Installation Log screen.

Online deployment from Linux CMS via HP SUM fails

Linux to Linux deployments via HP SUM will fail when the CMS is on 2 networks and the target server is only on one of the networks. There is no issue when only one network is involved.

HP SUM reports available version as "NA" for HP SAS Expander Card firmware during offline upgrade

If the HP SAS Expander Card firmware is selected for installation and the user selects the "View Devices" link, on the next screen, the available firmware version is reported as "NA". The firmware version is the same as the component version.

Hot Fixes

Hot Fixes and their associated Customer Advisories are released between SPP releases. These components are tested against this SPP.

You can find the Hot Fixes and the Customer Advisories for the latest SPP by selecting the “Hot Fixes & Advisories” button on the SPP Download page, www.hp.com/go/spp/download. On this page, you will be able to review the Customer Advisory to determine if the Hot Fix applies to your configuration and determine which component(s) you need to download.

To update your configuration with a Hot Fix:

1. Click the blue triangle to the left of the Hot Fix CA to expand the list of associated downloadable component(s).
2. Click the Download button to download the component to a repository of your choice.
3. Deploy it using HP SUM.

These documented Hot Fixes are supported as part of the SPP throughout the SPP support period.

If you are looking for Hot Fixes for SPPs other than the latest one, go to the SPP Release Archive page, which is available from the SPP Download page, www.hp.com/go/spp/download. Find the entry for the SPP and select the link to the CA page for that SPP.

SPP Supplements

An SPP Supplement is a bundle containing software and/or firmware components with HP SUM as the deployment tool. It may include support for a new operating system update or functionality that is not included in the SPP but works with the components in the SPP. The software and firmware included in the Supplement will provide support for functionality that is required outside a normal SPP release cycle. Supplements allow HP to deliver support when it is needed so customers do not have to wait on a full SPP’s availability. Support for SPP Supplements are included as part of the associated SPP’s support period.
Each SPP Supplement’s version number will match the version of its corresponding SPP. Supplement Release Notes will be available and will include information on the components in the bundle. If the Supplement’s contents include Linux components, the components will also be available on the SDR. Once released, the functionality of the SPP Supplement supporting new operating system support content is included in the next available SPP.

SPP Supplements can be downloaded from the SPP Information section on the SPP Download (http://www.hp.com/go/spp/download) or SPP Release Archive web pages. The Release Notes can be found on the SPP Information Library site, (http://www.hp.com/go/spp/documentation).

There are no Supplements associated with this SPP at the time this document was published. To see if a Supplement is available, please check the SPP Download (http://www.hp.com/go/spp/download) or SPP Release Archive web pages.
Component Release Notes

Information for all of the firmware and software components included in the /hp/swpackages directory is documented here. The following is a list of the information included for the components. A section is included only if the component has corresponding information.

- Component name
- Component version
- Upgrade Requirement
- Important Notes
- Prerequisites
- Fixes
- Enhancements
- Supported Devices and Features

BIOS - System ROM
Driver - Chipset
Driver - Lights-Out Management
Driver - Network
Driver - Storage
Driver - Storage Controller
Driver - Storage Fibre Channel
Driver - Storage Tape
Driver - System Management
Driver - Video
Firmware
Firmware - Blade Infrastructure
Firmware - Lights-Out Management
Firmware - Network
Firmware - Power Management
Firmware - SAS Storage Disk
Firmware - SATA Storage Disk
Firmware - Storage Controller
Firmware - Storage Fibre Channel
Firmware - Storage Tape
Software - Lights-Out Management
Software - Storage Controller
Software - Storage Fibre Channel HBA
Software - System Management
### System ROM Components for Linux

#### HP ProLiant BL Servers

<table>
<thead>
<tr>
<th>Model</th>
<th>ROM Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP ProLiant BL260c G5 (I20)</td>
<td>HP ProLiant BL280c G6 (I22)</td>
</tr>
<tr>
<td>HP ProLiant BL2x220c G6 (I26)</td>
<td>HP ProLiant BL2x220c G7 (I29)</td>
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<tr>
<td>HP ProLiant BL460c (I15)</td>
<td>HP ProLiant BL460c G5 (I23)</td>
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<tr>
<td>HP ProLiant BL460c G7 (I27)</td>
<td>HP ProLiant BL460c Gen8 (I31)</td>
</tr>
<tr>
<td>HP ProLiant BL465c G7 (A19)</td>
<td>HP ProLiant BL465c Gen8 (A26)</td>
</tr>
<tr>
<td>HP ProLiant BL490c G6 (I21)</td>
<td>HP ProLiant BL490c G7 (I28)</td>
</tr>
<tr>
<td>HP ProLiant BL660c Gen8 (I32)</td>
<td>HP ProLiant BL680c G5 (I17)</td>
</tr>
<tr>
<td>HP ProLiant BL685c G1/G5 (A08)</td>
<td>HP ProLiant BL685c G6 (A17)</td>
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<td>HP ProLiant BL685c G7 (A20)</td>
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#### HP ProLiant DL Servers

<table>
<thead>
<tr>
<th>Model</th>
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<tr>
<td>HP ProLiant DL160 Gen8 (J03)</td>
<td>HP ProLiant DL320 G5/DL320s (W04)</td>
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<td>HP ProLiant DL360 G5 (P58)</td>
<td>HP ProLiant DL360 G6 (P64)</td>
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<td>HP ProLiant DL360e Gen8/DL380e Gen8 (P73)</td>
<td>HP ProLiant DL360p Gen8 (P71)</td>
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<td>HP ProLiant DL380 G5 (P56)</td>
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<td>HP ProLiant DL380p Gen8 (P70)</td>
<td>HP ProLiant DL385 G2/G5 (A09)</td>
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<td>HP ProLiant DL385 G7 (A18)</td>
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<td>HP ProLiant DL585 G7 (A16)</td>
<td>HP ProLiant DL785 G5/G6 (A15)</td>
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<tr>
<td>HP ProLiant DL120/ML110 G7/G7 (J01)</td>
<td>HP ProLiant DL320 G5p/ML310 G5 (W05)</td>
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#### HP ProLiant ML Servers

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<th>Model</th>
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<td>HP ProLiant ML110 G7/DL120 G7 (J01)</td>
<td>HP ProLiant ML310/DL320 G5p G5 (W05)</td>
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<td>HP ProLiant ML350 G5 (D21)</td>
<td>HP ProLiant ML350 G6 (D22)</td>
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<td>HP ProLiant ML350p Gen8 (P72)</td>
<td>HP ProLiant ML370 G5 (P57)</td>
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#### HP ProLiant SL Servers

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<th>Model</th>
<th>ROM Components</th>
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<tr>
<td>HP ProLiant SL230s/SL250s Gen8 (P75)</td>
<td>HP ProLiant SL335s G7 (A24)</td>
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<td>HP ProLiant SL4540 Gen8 (P74)</td>
<td>HP ProLiant SL4545 G7 (A31)</td>
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### System ROM Components for Windows

#### HP ProLiant BL Servers

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</tr>
<tr>
<td>HP ProLiant BL2x220c G8 (I27)</td>
<td>HP ProLiant BL2x220c Gen8 (I30)</td>
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</table>
## Online ROM Flash Component for Linux - HP ProLiant BL260c G5 (I20) Servers

**Version:** 2010.10.25 (Critical)

### Important Note!

**Important Notes:**

None

**Deliverable Name:**
HP ProLiant BL260c G5 System ROM - I20

Release Date:
10/25/2010

Last Recommended or Critical Revision:
10/25/2010

Previous Revision:
04/26/2010

Firmware Dependencies:
None

Enhancements/New Features:
None

Problems Fixed:

Resolved a processor issue where an unlikely and complex sequence of conditions operating in 64-bit mode could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon 5100-series, Intel Xeon 5200-series, Intel Xeon 5300-series, and Intel Xeon 5400-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue. 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. HP strongly recommends immediate update to firmware revisions with required critical fixes.

Note: This processor issue has resulted in the following error being logged to the Integrated Management Log on servers configured with the HP ProLiant Health Management Agents when configured in a Microsoft Virtual Server environment with large numbers of Virtual Machines (VM) simultaneously subjected to a heavy I/O workload (and may occur in other operating system environments): "An Unrecoverable System Error has occurred (Error code 0x0000002D, 0x00000000)".

Known Issues:

None

Fixes

Important Notes:

None

Firmware Dependencies:
Problems Fixed:

Resolved a processor issue where an unlikely and complex sequence of conditions operating in 64-bit mode could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon 5100-series, Intel Xeon 5200-series, Intel Xeon 5300-series, and Intel Xeon 5400-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue. 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. HP strongly recommends immediate update to firmware revisions with required critical fixes.

Note: This processor issue has resulted in the following error being logged to the Integrated Management Log on servers configured with the HP ProLiant Health Management Agents when configured in a Microsoft Virtual Server environment with large numbers of Virtual Machines (VM) simultaneously subjected to a heavy I/O workload (and may occur in other operating system environments): "An Unrecoverable System Error has occurred (Error code 0x0000002D, 0x00000000)."

Known Issues:

None

Online ROM Flash Component for Linux - HP ProLiant BL280c G6 (I22) Servers
Version: 2011.05.05 (Critical)

Important Note!

Important Notes:

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant BL280c G6 System ROM - I22

Release Date:

05/05/2011

Last Recommended or Critical Revision:

05/05/2011
Previous Revision:

01/29/2011

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.
Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Resolved an issue where the 2nd embedded NIC port may become disabled after flashing to the January 29, 2011 System ROM. After flashing to this revision of the System ROM or later, it may be necessary for the user to restore System Defaults from the ROM Based Setup Utility (RBSU) in order for the 2nd NIC port to be enabled again for systems that had experienced this issue.

**Known Issues:**

None

**Fixes**

**Important Notes:**

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

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**Known Issues:**

None

**Enhancements**

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


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Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

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**Online ROM Flash Component for Linux - HP ProLiant BL2x220c G5 (I19) Servers**

Version: 2010.10.25 (Critical)
**Important Note**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant BL2x220c G5 System ROM - I19

**Release Date:**

10/25/2010

**Last Recommended or Critical Revision:**

10/25/2010

**Previous Revision:**

04/26/2010

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Resolved a processor issue where an unlikely and complex sequence of conditions operating in 64-bit mode could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon 5100-series, Intel Xeon 5200-series, Intel Xeon 5300-series, and Intel Xeon 5400-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue. 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. HP strongly recommends immediate update to firmware revisions with required critical fixes. Note: This processor issue has resulted in the following error being logged to the Integrated Management Log on servers configured with the HP ProLiant Health Management Agents when configured in a Microsoft Virtual Server environment with large numbers of Virtual Machines (VM) simultaneously subjected to a heavy I/O workload (and may occur in other operating system environments): "An Unrecoverable System Error has occurred (Error code 0x0000002D, 0x00000000).

**Known Issues:**

None
**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved a processor issue where an unlikely and complex sequence of conditions operating in 64-bit mode could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon 5100-series, Intel Xeon 5200-series, Intel Xeon 5300-series, and Intel Xeon 5400-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue. 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. HP strongly recommends immediate update to firmware revisions with required critical fixes.

Note: This processor issue has resulted in the following error being logged to the Integrated Management Log on servers configured with the HP ProLiant Health Management Agents when configured in a Microsoft Virtual Server environment with large numbers of Virtual Machines (VM) simultaneously subjected to a heavy I/O workload (and may occur in other operating system environments): "An Unrecoverable System Error has occurred (Error code 0x0000002D, 0x000000000)".

**Known Issues:**

None

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**Online ROM Flash Component for Linux - HP ProLiant BL2x220c G6 (I26) Servers**

Version: 2011.05.05 (Critical)

**Important Note!**

**Important Notes:**

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Deliverable Name:**

HP ProLiant BL2x220c G6 System ROM - I26
Release Date:

05/05/2011

Last Recommended or Critical Revision:

05/05/2011

Previous Revision:

01/30/2011

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

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Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding,
unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

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Known Issues:

None

Fixes

Important Notes:

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

Firmware Dependencies:

None

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the
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**Known Issues:**

None

**Enhancements**

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap...
information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

**Online ROM Flash Component for Linux - HP ProLiant BL2x220c G7 (I29) Servers**

Version: 2011.05.05 (Critical)

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant BL2x220c G7 System ROM - I29

**Release Date:**

05/05/2011

**Last Recommended or Critical Revision:**

05/05/2011

**Previous Revision:**

01/30/2011

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).
Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSOd) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:

None

Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the
system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

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Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoD) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

**Known Issues:**

None

**Enhancements**

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

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**Online ROM Flash Component for Linux - HP ProLiant BL420c Gen8 (I30) Servers**

Version: 2012.08.20 (Optional)

**Important Note!**

Important Notes:
**Deliverable Name:**

HP ProLiant BL420c Gen8 System ROM - i30

**Release Date:**

08/20/2012

**Last Recommended or Critical Revision:**

04/04/2012

**Previous Revision:**

07/15/2012

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel’s DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.
Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

**Problems Fixed:**

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain
commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMU on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:
None

Enhancements

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel’s DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.
Online ROM Flash Component for Linux - HP ProLiant BL460c (I15) Servers
Version: 2011.05.02 (Critical)

Important Note!

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant BL460c System ROM - I15

Release Date:

05/02/2011

Last Recommended or Critical Revision:

05/02/2011

Previous Revision:

10/25/2010

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Problems Fixed:
Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

**Known Issues:**

None

**Fixes**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

**Known Issues:**

None

**Enhancements**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

**Online ROM Flash Component for Linux - HP ProLiant BL460c G5 (I23) Servers**

Version: 2011.05.02 (Critical)

**Important Note!**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Deliverable Name:**

HP ProLiant BL460c GS System ROM - I23

**Release Date:**

05/02/2011

**Last Recommended or Critical Revision:**

05/02/2011

**Previous Revision:**

10/25/2010

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Problems Fixed:**
Resolves a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

**Known Issues:**

None

**Fixes**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Firmware Dependencies:**

None

**Problems Fixed:**

Resolves a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

**Known Issues:**

None

**Enhancements**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Online ROM Flash Component for Linux - HP ProLiant BL460c G6/WS460c G6 (I24) Servers
Version: 2011.12.02 (Optional)

Important Notes:

Important Notes:
None

Deliverable Name:

HP ProLiant BL460c G6/WS460c G6 System ROM - I24

Release Date:

12/02/2011

Last Recommended or Critical Revision:

05/05/2011

Previous Revision:

05/05/2011

Firmware Dependencies:

None

Enhancements/New Features:

Added support to the HP ProLiant WS460c G6 for Nvidia Quadro 3000/1000 MXM Graphics Cards on a Multi-MXM PCIe card.

Problems Fixed:

None

Known Issues:

None

Enhancements

Important Notes:

None
Firmware Dependencies:

None

Enhancements/New Features:

Added support to the HP ProLiant WS460c G6 for Nvidia Quadro 3000/1000 MXM Graphics Cards on a Multi-MXM PCIe card.

Known Issues:

None

Online ROM Flash Component for Linux - HP ProLiant BL460c G7 (I27) Servers

Version: 2011.05.05 (Critical)

Important Note!

Important Notes:

None

Deliverable Name:

HP ProLiant BL460c G7 System ROM - I27

Release Date:

05/05/2011

Last Recommended or Critical Revision:

05/05/2011

Previous Revision:

01/29/2011

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would
result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoD) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None
Firmware Dependencies:
None

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

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Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:
None

Enhancements

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

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resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Online ROM Flash Component for Linux - HP ProLiant BL460c Gen8/WS460c Gen8 (I31) Servers
Version: 2012.08.20 (Optional)

Important Note!

Important Notes:

None

Deliverable Name:

HP ProLiant BL460c/WS460c Gen8 System ROM - I31

Release Date:

08/20/2012

Last Recommended or Critical Revision:

02/25/2012

Previous Revision:

07/15/2012

Firmware Dependencies:

None

Enhancements/New Features:

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.
Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Added support for HP SmartMemory 24 GB PC3L-10600R (DDR3-1333) DIMMs.

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMU on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None

Fixes

Important Notes:

None
**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

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**Known Issues:**

None

**Enhancements**

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled,
certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Added support for HP SmartMemory 24 GB PC3L-10600R (DDR3-1333) DIMMs.

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**Online ROM Flash Component for Linux - HP ProLiant BL465c G1/BL465c G5/BL465c G6 (A13) Servers**

Version: 2011.05.02 (Critical)

**Important Note!**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Deliverable Name:**

HP ProLiant BL465c G1/G5/G6 System ROM - A13

**Release Date:**

05/02/2011

**Last Recommended or Critical Revision:**

05/02/2011

**Previous Revision:**

12/08/2009

**Firmware Dependencies:**

None
Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Problems Fixed:

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Known Issues:

None

Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:

None

Problems Fixed:

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Known Issues:

None

Enhancements:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM
revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

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**Online ROM Flash Component for Linux - HP ProLiant BL465c G7 (A19) Servers**

Version: 2012.08.15 *(Recommended)*

**Important Note**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant BL465c G7 System ROM - A19

**Release Date:**

08/15/2012

**Last Recommended or Critical Revision:**

08/15/2012

**Previous Revision:**

05/08/2012

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

**Problems Fixed:**

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".
Known Issues:

None

Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Known Issues:

None

Enhancements

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Online ROM Flash Component for Linux - HP ProLiant BL465c Gen8 (A26) Servers

Version: 2012.08.14 (Recommended)

Important Note

Important Notes:

None

Deliverable Name:

HP ProLiant BL465c Gen8 System ROM - A26

Release Date:

08/14/2012
Last Recommended or Critical Revision:

08/14/2012

Previous Revision:

06/18/2012

Firmware Dependencies:

None

Enhancements/New Features:

Added support for AMD Opteron Series 6300 processors.

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configuration.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to utilize 1 Terabyte or more memory. The option defaults to limiting memory addressing to just below 1TB because some Operating Systems will not operate correctly with 1 Terabyte or more available memory. If more than 1 Terabyte of memory is installed in the system and an Operating System that supports more than 1 Terabyte of memory is being used, configure the "One Terabyte Memory Limit" option to "Enable all memory" to allow use of all installed memory.

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

Problems Fixed:

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where the platform may experience a virtualization fault (which may result in a NMI or Machine Check Exception) when Input/Output Memory Management Unit (IOMMU) is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Resolved an issue where systems configured with 1TB or more memory would reset unexpectedly after
running for approximately 90 hours. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot". Systems configured with 1TB or more memory must update to this version of the system BIOS.

Resolved an issue where the system clock may become inaccurate by up to few seconds per day.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where the platform may experience a virtualization fault (which may result in a NMI or Machine Check Exception) when Input/Output Memory Management Unit (IOMMU) is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Resolved an issue where systems configured with 1TB or more memory would reset unexpectedly after running for approximately 90 hours. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot". Systems configured with 1TB or more memory must update to this version of the system BIOS.

Resolved an issue where the system clock may become inaccurate by up to few seconds per day.

**Known Issues:**

None

**Enhancements**

Added support for AMD Opteron Series 6300 processors.

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This
functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configuration.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to utilize 1 Terabyte or more memory. The option defaults to limiting memory addressing to just below 1TB because some Operating Systems will not operate correctly with 1 Terabyte or more available memory. If more than 1 Terabyte of memory is installed in the system and an Operating System that supports more than 1 Terabyte of memory is being used, configure the "One Terabyte Memory Limit" option to "Enable all memory" to allow use of all installed memory.

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

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**Online ROM Flash Component for Linux - HP ProLiant BL480c (I14) Server**

Version: 2011.05.02 (*Critical*)

**Important Note!**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Deliverable Name:**

HP ProLiant BL480c G1 System ROM - I14

**Release Date:**

05/02/2011

**Last Recommended or Critical Revision:**

05/02/2011

**Previous Revision:**


10/25/2010

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

**Problems Fixed:**

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

**Known Issues:**

None

**Fixes**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as
the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

**Known Issues:**

None

**Enhancements**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

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**Online ROM Flash Component for Linux - HP ProLiant BL490c G6 (I21) Servers**

**Version:** 2011.05.05 *(Critical)*

**Important Notes:**

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

**Deliverable Name:**

HP ProLiant BL490c G6 System ROM - I21

**Release Date:**

05/05/2011

**Last Recommended or Critical Revision:**

05/05/2011

**Previous Revision:**
01/29/2011

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced HP's Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum
PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

**Known Issues:**

None

**Fixes**

**Important Notes:**

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.
Known Issues:

None

Enhancements

Enhanced HP's Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Online ROM Flash Component for Linux - HP ProLiant BL490c G7 (I28) Servers
Version: 2011.05.05 (Critical)

Important Note!

Important Notes:

None

Deliverable Name:

HP ProLiant BL490c G7 System ROM - I28

Release Date:
Enhancements/New Features:

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum
Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoD) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoD) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed
in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

**Known Issues:**

None

**Enhancements**

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

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**Online ROM Flash Component for Linux - HP ProLiant BL495c G5/BL495c G6 (A14) Servers**

Version: 2011.05.02 (Critical)

**Important Note!**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Deliverable Name:**
HP ProLiant BL495c G5/G6 System ROM - A14

Release Date:
05/02/2011

Last Recommended or Critical Revision:
05/02/2011

Previous Revision:
12/09/2009

Firmware Dependencies:
None

Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Added latest product names for display in the ROM-Based Setup Utility (RBSU).

Problems Fixed:

Resolved an issue where the system may not be able to install an operating system to an iSCSI-based storage solution when using the local DVD drive.

Known Issues:

None

Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
Firmware Dependencies:
None

Problems Fixed:
Resolved an issue where the system may not be able to install an operating system to an iSCSI-based storage solution when using the local DVD drive.

Known Issues:
None

Enhancements
Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Added latest product names for display in the ROM-Based Setup Utility (RBSU).

Online ROM Flash Component for Linux - HP ProLiant BL660c Gen8 (I32) Servers
Version: 2012.08.20 (Optional)

Important Note!

Important Notes:
None

Deliverable Name:
HP ProLiant BL660c Gen8 System ROM - I32

Release Date:
08/20/2012

Last Recommended or Critical Revision:
05/30/2012

Previous Revision:

05/30/2012

Firmware Dependencies:

None

Enhancements/New Features:

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting.
Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None

Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor
are accessing resources on the other processor when the other processor is in a low power state.

**Known Issues:**

None

**Enhancements**

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel’s DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

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**Online ROM Flash Component for Linux - HP ProLiant BL680c G5 (I17) Servers**

Version: 2011.05.02 (Critical)

**Important Note!**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant BL680c G5 System ROM - I17

Release Date:

05/02/2011

Last Recommended or Critical Revision:

05/02/2011

Previous Revision:

10/25/2010

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


Problems Fixed:

Resolved an issue where the system may hang when trying to apply custom settings using the ROM Based Setup Utility (RBSU) User Defined Defaults Option.

Known Issues:

None

Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in
Advisory C02838375 available at the following link:

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue where the system may hang when trying to apply custom settings using the ROM Based Setup Utility (RBSU) User Defined Defaults Option.

**Known Issues:**

None

**Enhancements**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

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**Online ROM Flash Component for Linux - HP ProLiant BL680c G7/BL620c G7 (I25) Servers**

**Version:** 2012.08.04 *(Optional)*

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant BL680c G7/BL620c G7 System ROM - I25

**Release Date:**

08/04/2012

**Last Recommended or Critical Revision:**

04/20/2012
Enhancements/New Features:

Added support for a ROM Based Setup Utility (RBSU) option called SMI Link Power Management that allows the user to disable power management on the Intel Scalable Memory Interconnect (SMI) link. This option is Enabled by Default. Disabling this functionality will increase the server’s idle power usage. While corrected events are considered normal and are expected on the SMI Link and do not affect operation of the platform, the occurrence of these corrected events can be reduced significantly by disabling SMI Link Power Management. These events are logged as correctable Machine Check Bank 8 and 9 errors in the operating system logs for certain operating systems. While these events can be ignored, SMI Link Power Management can be disabled to reduce or prevent their occurrence if desired.

Problems Fixed:

None

Known Issues:

None

Enhancements

Important Notes:

None

Firmware Dependencies:

None

Enhancements/New Features:

Added support for a ROM Based Setup Utility (RBSU) option called SMI Link Power Management that allows the user to disable power management on the Intel Scalable Memory Interconnect (SMI) link. This option is Enabled by Default. Disabling this functionality will increase the server’s idle power usage. While corrected events are considered normal and are expected on the SMI Link and do not affect operation of the platform, the occurrence of these corrected events can be reduced significantly by disabling SMI Link Power Management. These events are logged as correctable Machine Check Bank 8 and 9 errors in the operating system logs for certain operating systems. While these events can be ignored, SMI Link Power Management can be disabled to reduce or prevent their occurrence if desired.

Known Issues:
Important Note!

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant BL685c G1/G5 System ROM - A08

Release Date:

05/02/2011

Last Recommended or Critical Revision:

05/02/2011

Previous Revision:

12/14/2009

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
Problems Fixed:

Added latest product names for display in the ROM-Based Setup Utility (RBSU).

Known Issues:

None

Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

Firmware Dependencies:

None

Problems Fixed:

Added latest product names for display in the ROM-Based Setup Utility (RBSU).

Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

Online ROM Flash Component for Linux - HP ProLiant BL685c G6 (A17) Servers

Version: 2011.05.02 (Critical)

Important Note!
Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant BL685c G6 System ROM - A17

Release Date:

05/02/2011

Last Recommended or Critical Revision:

05/02/2011

Previous Revision:

12/09/2009

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Added latest product names for display in the ROM-Based Setup Utility (RBSU).

Problems Fixed:

Resolved an issue where the system may not be able to install an operating system to an iSCSI-based storage solution when using the local DVD drive.
Known Issues:

None

Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:

None

Problems Fixed:

Resolved an issue where the system may not be able to install an operating system to an iSCSI-based storage solution when using the local DVD drive.

Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Added latest product names for display in the ROM-Based Setup Utility (RBSU).

Online ROM Flash Component for Linux - HP ProLiant BL685c G7 (A20) Servers
Version: 2012.08.15 (Recommended)

Important Note!
Important Notes:

None

Deliverable Name:

HP ProLiant BL685c G7 System ROM - A20

Release Date:

08/15/2012

Last Recommended or Critical Revision:

08/15/2012

Previous Revision:

05/09/2012

Firmware Dependencies:

None

Enhancements/New Features:

Added support for AMD Opteron Series 6300 processors.

Added support for Input/Output Memory Management Unit (IOMMU). When used with an operating system/hypervisor that support this functionality, IOMMU provides performance and security benefits. This functionality is disabled by default and is controlled via a ROM-Based Setup Utility (RBSU) option.

Added support for Load-Reduced DIMM (LRDIMM) memory modules. This revision of the System ROM must be installed on the server prior to installing LRDIMMs as the server will not boot with previous revisions of the System ROM with these DIMMs installed.

Added a new ROM-Based Setup Utility (RBSU) Advanced System ROM Options menu that allows the user to enable the ACPI System Locality Distance Information Table (SLIT). This industry standard ACPI mechanism provides operating systems with the ability to read processor and I/O affinity to allow the operating system to intelligently distribute workloads to improve performance.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to utilize 1 Terabyte or more memory. The option defaults to limiting memory addressing to just below 1TB because some Operating Systems will not operate correctly with 1 Terabyte or more available memory. If more than 1 Terabyte of memory is installed in the system and an Operating System that supports more than 1 Terabyte of memory is being used, configure the "One Terabyte Memory Limit" option to "Enable all memory" to allow use of all installed memory.

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have
resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

**Problems Fixed:**

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where systems configured with 1TB or more memory would reset unexpectedly after running for approximately 90 hours. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot". Systems configured with 1TB or more memory must update to this version of the system BIOS.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where systems configured with 1TB or more memory would reset unexpectedly after running for approximately 90 hours. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot". Systems configured with 1TB or more memory must update to this version of the system BIOS.

**Known Issues:**

None

**Enhancements**
Added support for AMD Opteron Series 6300 processors.

Added support for Input/Output Memory Management Unit (IOMMU). When used with an operating system/hypervisor that support this functionality, IOMMU provides performance and security benefits. This functionality is disabled by default and is controlled via a ROM-Based Setup Utility (RBSU) option.

Added support for Load-Reduced DIMM (LRDIMM) memory modules. This revision of the System ROM must be installed on the server prior to installing LRDIMMs as the server will not boot with previous revisions of the System ROM with these DIMMs installed.

Added a new ROM-Based Setup Utility (RBSU) Advanced System ROM Options menu that allows the user to enable the ACPI System Locality Distance Information Table (SLIT). This industry standard ACPI mechanism provides operating systems with the ability to read processor and I/O affinity to allow the operating system to intelligently distribute workloads to improve performance.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to utilize 1 Terabyte or more memory. The option defaults to limiting memory addressing to just below 1TB because some Operating Systems will not operate correctly with 1 Terabyte or more available memory. If more than 1 Terabyte of memory is installed in the system and an Operating System that supports more than 1 Terabyte of memory is being used, configure the "One Terabyte Memory Limit" option to "Enable all memory" to allow use of all installed memory.

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

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**Online ROM Flash Component for Linux - HP ProLiant DL160 Gen8 (J03) Servers**

Version: 2012.08.20 *(Optional)*

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant DL160 Gen8 System ROM - J03

**Release Date:**

08/20/2012
HP Service Pack for ProLiant 2012.10.0 Release Notes

Last Recommended or Critical Revision:

04/04/2012

Previous Revision:

07/02/2012

Firmware Dependencies:

None

Enhancements/New Features:

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel’s DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain
commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None

Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.
Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:
None

Enhancements

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

Online ROM Flash Component for Linux - HP ProLiant DL320 G5/DL320s (W04) Servers
Version: 2008.06.10 (Optional)

Enhancements

Added support for Generation 2 (3.0 Gb/s) SATA Hard Drives. This revision of the System ROM is required for proper operation of the embedded SATA solution when a Generation 2 (3.0 Gb/s) SATA hard drive is installed in the server (DL320 G5 only).

Online ROM Flash Component for Linux - HP ProLiant DL320 G6/ML330 G6 (W07) Servers
Version: 2011.05.05 (Critical)
Important Note!

Important Notes:

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant ML330 G6 and DL320 G6 System ROM - W07

Release Date:

05/05/2011

Last Recommended or Critical Revision:

05/05/2011

Previous Revision:

01/29/2011

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor's power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:

None

Fixes

Important Notes:

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
Firmware Dependencies:

None

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:

None

Enhancements

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed...
(with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

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**Online ROM Flash Component for Linux - HP ProLiant DL320e Gen8 (J05) Servers**

Version: 2012.08.14 *(Recommended)*

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant DL320e Gen8 System ROM - J05

**Release Date:**

08/14/2012

**Last Recommended or Critical Revision:**

08/14/2012

**Previous Revision:**

06/01/2012

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

**Problems Fixed:**

Resolved a processor issue where certain instructions and conditions could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon E3-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of
Intel’s microcode for affected processors that addresses this issue.

Resolved an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Resolved a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved a processor issue where certain instructions and conditions could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon E3-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue.

Resolved an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Resolved a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

**Known Issues:**

None

**Enhancements**

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.
Online ROM Flash Component for Linux - HP ProLiant DL360 G5 (P58) Servers
Version: 2011.05.02 (Critical)

Important Note:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant DL360 G5 System ROM - P58

Release Date:

05/02/2011

Last Recommended or Critical Revision:

05/02/2011

Previous Revision:

10/25/2010

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Problems Fixed:
Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

Known Issues:

None

Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:

None

Problems Fixed:

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
Online ROM Flash Component for Linux - HP ProLiant DL360 G6 (P64) Servers
Version: 2011.05.05 (Critical)

Important Note!

Important Notes:

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:
HP ProLiant DL360 G6 System ROM - P64

Release Date:
05/05/2011

Last Recommended or Critical Revision:
05/05/2011

Previous Revision:
01/29/2011

Firmware Dependencies:
None

Enhancements/New Features:

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating.
to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

**Known Issues:**

None

**Fixes**

**Important Notes:**

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375.
Firmware Dependencies:

None

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:

None

Enhancements

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Enhanced HP's Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining

**Online ROM Flash Component for Linux - HP ProLiant DL360 G7 (P68) Servers**

Version: 2011.05.05 *(Critical)*

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant DL360 G7 System ROM - P68

**Release Date:**

05/05/2011

**Last Recommended or Critical Revision:**

05/05/2011

**Previous Revision:**

01/28/2011

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Enhanced HP's Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining
when a server administrator should schedule planned maintenance to replace DIMMs preventing
unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed
(with those DIMM(s) not available to the operating system) in some instances that would have previously
resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility
(RBSU).

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding,
unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic
when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be
displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue
occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the
system resets before the operating system displays an error message and instances where the IML
contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle
State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default
Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather
than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum
PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged
to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These
errors will result in a fatal error (Purple Screen of Death - PSOД) under VMware ESX, but there will not be
any indication of the error type (including no indication of an uncorrectable memory error or what DIMM
has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed
in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors
to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based
on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator
Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would
always run in its maximum power/performance state rather than modifying the power state based on the
workload.

Known Issues:

None

Fixes

Important Notes:

None
Firmware Dependencies:

None

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoD) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:

None

Enhancements

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously
HP Service Pack for ProLiant 2012.10.0 Release Notes

resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

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**Online ROM Flash Component for Linux - HP ProLiant DL360e Gen8/DL380e Gen8 (P73) Servers**
Version: 2012.08.20 *(Optional)*

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant DL360e/DL380e Gen8 System ROM - P73

**Release Date:**

08/20/2012

**Last Recommended or Critical Revision:**

04/04/2012

**Previous Revision:**

06/01/2012

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel’s DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is
Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

**Problems Fixed:**

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

**Known Issues:**

None

**Fixes**

None

**Important Notes:**

None
Firmware Dependencies:

None

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None

Enhancements

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled,
certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

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**Online ROM Flash Component for Linux - HP ProLiant DL360p Gen8 (P71) Servers**

Version: 2012.08.20 *(Optional)*

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant DL360p Gen8 System ROM - P71

**Release Date:**

08/20/2012

**Last Recommended or Critical Revision:**

02/25/2012

**Previous Revision:**

07/15/2012

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter
documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None
Important Notes:
None

Firmware Dependencies:
None

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:
None

Enhancements

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is
supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Online ROM Flash Component for Linux - HP ProLiant DL365 G1/DL365 G5 (A10) Servers
Version: 2011.05.02 (Critical)

Important Note!

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant DL365 G1/G5 System ROM - A10

Release Date:

05/02/2011

Last Recommended or Critical Revision:

05/02/2011

Previous Revision:

07/17/2009

Firmware Dependencies:

None
Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

Problems Fixed:

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Known Issues:

None

Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

Firmware Dependencies:

None

Problems Fixed:

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Known Issues:

None

Enhancements:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM
revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

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**Online ROM Flash Component for Linux - HP ProLiant DL380 G5 (P56) Server**

Version: 2011.05.02 *(Critical)*

**Important Note!**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

**Deliverable Name:**

HP ProLiant DL380 G5 System ROM - P56

**Release Date:**

05/02/2011

**Last Recommended or Critical Revision:**

05/02/2011

**Previous Revision:**

10/25/2010

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash
component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

Problems Fixed:

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

Known Issues:

None

Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

Firmware Dependencies:

None

Problems Fixed:

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM
revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

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**Online ROM Flash Component for Linux - HP ProLiant DL380 G6 (P62) Servers**

**Version:** 2011.05.05 (Critical)

**Important Note!**

**Important Notes:**

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

**Deliverable Name:**

HP ProLiant DL380 G6 System ROM - P62

**Release Date:**

05/05/2011

**Last Recommended or Critical Revision:**

05/05/2011

**Previous Revision:**

01/30/2011

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining
when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:

None
Important Notes:

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


Firmware Dependencies:

None

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:

None

Enhancements

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and
decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

**Online ROM Flash Component for Linux - HP ProLiant DL380 G7 (P67) Servers**

**Version:** 2011.05.05 *(Critical)*

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant DL380 G7 System ROM - P67

**Release Date:**

05/05/2011

**Last Recommended or Critical Revision:**

05/05/2011

**Previous Revision:**

01/30/2011

**Firmware Dependencies:**

None
Enhancements/New Features:

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoD) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Known Issues:

None

Fixes

Important Notes:

None
Firmware Dependencies:
None

Problems Fixed:
Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PS0D) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Known Issues:
None

Enhancements
Enhanced HP's Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).
Online ROM Flash Component for Linux - HP ProLiant DL380p Gen8 (P70) Servers
Version: 2012.08.20 (Optional)

Important Note!

Important Notes:
None

Deliverable Name:
HP ProLiant DL380p Gen8 System ROM - P70

Release Date:
08/20/2012

Last Recommended or Critical Revision:
02/25/2012

Previous Revision:
07/15/2012

Firmware Dependencies:
None

Enhancements/New Features:

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.
Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

**Problems Fixed:**

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing
these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

**Known Issues:**

None

**Enhancements**

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.
Online ROM Flash Component for Linux - HP ProLiant DL385 G2/DL385 G5 (A09) Servers
Version: 2011.05.02 (Critical)

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant DL385 G2/G5 System ROM - A09

Release Date:

05/02/2011

Last Recommended or Critical Revision:

05/02/2011

Previous Revision:

07/11/2009

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
Problems Fixed:

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Known Issues:

None

Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:

None

Problems Fixed:

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Online ROM Flash Component for Linux - HP ProLiant DL385 G5p/DL385 G6 (A22) Servers
Version: 2011.05.02 (Critical)
Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant DL385 G5p/G6 System ROM - A22

Release Date:

05/02/2011

Last Recommended or Critical Revision:

05/02/2011

Previous Revision:

02/09/2010

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Problems Fixed:

Resolved an issue where the in PCI Slot number, as reported under the operating system, would not be reported correctly when a three slot PCI-E riser is installed in the platform.
Known Issues:

None

Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:

None

Problems Fixed:

Resolved an issue where the in PCI Slot number, as reported under the operating system, would not be reported correctly when a three slot PCI-E riser is installed in the platform.

Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Online ROM Flash Component for Linux - HP ProLiant DL385 G7 (A18) Servers

Version: 2012.08.15 (Recommended)

Important Note!

Important Notes:

None
Deliverable Name:
HP ProLiant DL385 G7 System ROM - A18

Release Date:
08/15/2012

Last Recommended or Critical Revision:
08/15/2012

Previous Revision:
05/08/2012

Firmware Dependencies:
None

Enhancements/New Features:
Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Problems Fixed:
Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Known Issues:
None

Fixes

Important Notes:
None

Firmware Dependencies:
None
Problems Fixed:

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Known Issues:

None

Enhancements

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Online ROM Flash Component for Linux - HP ProLiant DL385p Gen8 (A28) Servers

Version: 2012.08.14 (Recommended)

Important Notes:

None

Deliverable Name:

HP ProLiant DL385p Gen8 System ROM - A28

Release Date:

08/14/2012

Last Recommended or Critical Revision:

08/14/2012

Previous Revision:

06/18/2012

Firmware Dependencies:

None

Enhancements/New Features:
Added support for AMD Opteron Series 6300 processors.

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configuration.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to utilize 1 Terabyte or more memory. The option defaults to limiting memory addressing to just below 1TB because some Operating Systems will not operate correctly with 1 Terabyte or more available memory. If more than 1 Terabyte of memory is installed in the system and an Operating System that supports more than 1 Terabyte of memory is being used, configure the "One Terabyte Memory Limit" option to "Enable all memory" to allow use of all installed memory.

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

Problems Fixed:

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where the platform may experience a virtualization fault (which may result in a NMI or Machine Check Exception) when Input/Output Memory Management Unit (IOMMU) is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Resolved an issue where systems configured with 1TB or more memory would reset unexpectedly after running for approximately 90 hours. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot". Systems configured with 1TB or more memory must update to this version of the system BIOS.

Resolved an issue where the system clock may become inaccurate by up to few seconds per day.

Known Issues:

None

Fixes

Important Notes:
None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where the platform may experience a virtualization fault (which may result in a NMI or Machine Check Exception) when Input/Output Memory Management Unit (IOMMU) is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Resolved an issue where systems configured with 1TB or more memory would reset unexpectedly after running for approximately 90 hours. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot". Systems configured with 1TB or more memory must update to this version of the system BIOS.

Resolved an issue where the system clock may become inaccurate by up to few seconds per day.

**Known Issues:**

None

**Enhancements**

Added support for AMD Opteron Series 6300 processors.

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configuration.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to utilize 1 Terabyte or more memory. The option defaults to limiting memory addressing to just below 1TB because some Operating Systems will not operate correctly with 1 Terabyte or more available memory. If more than 1 Terabyte of memory is installed in the system and an Operating System that supports more than 1 Terabyte of memory is being used, configure the "One Terabyte Memory Limit" option to "Enable all memory" to allow use of all installed memory.

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error...
type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

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**Online ROM Flash Component for Linux - HP ProLiant DL560 Gen8 (P77) Servers**

Version: 2012.08.20 (Optional)

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant DL560 Gen8 System ROM - P77

**Release Date:**

08/20/2012

**Last Recommended or Critical Revision:**

05/30/2012

**Previous Revision:**

05/30/2012

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.
Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

**Problems Fixed:**

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None
Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None

Enhancements

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to
disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Online ROM Flash Component for Linux - HP ProLiant DL580 G5 (P61) Servers
Version: 2011.05.02 (Critical)

Important Note:

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectId=c02838375

Deliverable Name:

HP ProLiant DL580 G5 System ROM - P61

Release Date:

05/02/2011

Last Recommended or Critical Revision:

05/02/2011

Previous Revision:

10/25/2010

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the
following link:

Problems Fixed:

Resolved an issue where the system may hang when trying to apply custom settings using the ROM Based Setup Utility (RBSU) User Defined Defaults Option.

Known Issues:

None

Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:

None

Problems Fixed:

Resolved an issue where the system may hang when trying to apply custom settings using the ROM Based Setup Utility (RBSU) User Defined Defaults Option.

Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

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Online ROM Flash Component for Linux - HP ProLiant DL580 G7 (P65) Servers
Version: 2012.08.04 (Optional)

Important Notes:
None

Deliverable Name:
HP ProLiant DL580 G7 System ROM - P65

Release Date:
08/04/2012

Last Recommended or Critical Revision:
04/20/2012

Previous Revision:
05/03/2012

Firmware Dependencies:
None

Enhancements/New Features:

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added support for a ROM Based Setup Utility (RBSU) option called SMI Link Power Management that allows the user to disable power management on the Intel Scalable Memory Interconnect (SMI) link. This option is Enabled by Default. Disabling this functionality will increase the server’s idle power usage. While corrected events are considered normal and are expected on the SMI Link and do not affect operation of the platform, the occurrence of these corrected events can be reduced significantly by disabling SMI Link Power Management. These events are logged as correctable Machine Check Bank 8 and 9 errors in the operating system logs for certain operating systems. While these events can be ignored, SMI Link Power Management can be disabled to reduce or prevent their occurrence if desired.

Problems Fixed:
None

**Known Issues:**

None

**Enhancements**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added support for a ROM Based Setup Utility (RBSU) option called SMI Link Power Management that allows the user to disable power management on the Intel Scalable Memory Interconnect (SMI) link. This option is Enabled by Default. Disabling this functionality will increase the server’s idle power usage. While corrected events are considered normal and are expected on the SMI Link and do not affect operation of the platform, the occurrence of these corrected events can be reduced significantly by disabling SMI Link Power Management. These events are logged as correctable Machine Check Bank 8 and 9 errors in the operating system logs for certain operating systems. While these events can be ignored, SMI Link Power Management can be disabled to reduce or prevent their occurrence if desired.

**Known Issues:**

None

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Version: 2011.05.02 (Critical)

**Important Note!**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the
System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant DL585 G2/G5/G6 System ROM - A07

Release Date:

05/02/2011

Last Recommended or Critical Revision:

05/02/2011

Previous Revision:

04/30/2010

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Problems Fixed:

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Known Issues:

None

Fixes

Important Notes:
As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:

None

Problems Fixed:

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Online ROM Flash Component for Linux - HP ProLiant DL585 G7 (A16) Servers
Version: 2012.08.15 (Recommended)

Important Note!

Important Notes:

None

Deliverable Name:

HP ProLiant DL585 G7 System ROM - A16

Release Date:

08/15/2012
Last Recommended or Critical Revision:

08/15/2012

Previous Revision:

05/08/2012

Firmware Dependencies:

None

Enhancements/New Features:

Added support for AMD Opteron Series 6300 processors.

Added support for Input/Output Memory Management Unit (IOMMU). When used with an operating system/hypervisor that support this functionality, IOMMU provides performance and security benefits. This functionality is disabled by default and is controlled via a ROM-Based Setup Utility (RBSU) option.

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added support for Load-Reduced DIMM (LRDIMM) memory modules. This revision of the System ROM must be installed on the server prior to installing LRDIMMs as the server will not boot with previous revisions of the System ROM with these DIMMs installed.

Added support for the HP ProLiant DL585 G7 with the NC331i embedded NIC. This revision of the System ROM supports ProLiant DL585 G7 servers with the NC331i embedded NIC and ProLiant DL585 G7 servers with the NC375i embedded NIC. The DL585 G7 with the NC331i embedded NIC is not supported with previous revisions of the System ROM.

Added a new ROM-Based Setup Utility (RBSU) Advanced System ROM Options menu that allows the user to enable the ACPI System Locality Distance Information Table (SLIT). This industry standard ACPI mechanism provides operating systems with the ability to read processor and I/O affinity to allow the operating system to intelligently distribute workloads to improve performance.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to utilize 1 Terabyte or more memory. The option defaults to limiting memory addressing to just below 1TB because some Operating Systems will not operate correctly with 1 Terabyte or more available memory. If more than 1 Terabyte of memory is installed in the system and an Operating System that supports more than 1 Terabyte of memory is being used, configure the "One Terabyte Memory Limit" option to "Enable all memory" to allow use of all installed memory.

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error
Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

**Problems Fixed:**

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where systems configured with 1TB or more memory would reset unexpectedly after running for approximately 90 hours. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot". Systems configured with 1TB or more memory must update to this version of the system BIOS.

Resolved an issue where the system clock may become inaccurate by up to few seconds per day.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where systems configured with 1TB or more memory would reset unexpectedly after running for approximately 90 hours. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot". Systems configured with 1TB or more memory must update to this version of the system BIOS.

Resolved an issue where the system clock may become inaccurate by up to few seconds per day.

**Known Issues:**

None
Enhancements

Added support for AMD Opteron Series 6300 processors.

Added support for Input/Output Memory Management Unit (IOMMU). When used with an operating system/hypervisor that support this functionality, IOMMU provides performance and security benefits. This functionality is disabled by default and is controlled via a ROM-Based Setup Utility (RBSU) option.

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added support for Load-Reduced DIMM (LRDIMM) memory modules. This revision of the System ROM must be installed on the server prior to installing LRDIMMs as the server will not boot with previous revisions of the System ROM with these DIMMs installed.

Added support for the HP ProLiant DL585 G7 with the NC331i embedded NIC. This revision of the System ROM supports ProLiant DL585 G7 servers with the NC331i embedded NIC and ProLiant DL585 G7 servers with the NC375i embedded NIC. The DL585 G7 with the NC331i embedded NIC is not supported with previous revisions of the System ROM.

Added a new ROM-Based Setup Utility (RBSU) Advanced System ROM Options menu that allows the user to enable the ACPI System Locality Distance Information Table (SLIT). This industry standard ACPI mechanism provides operating systems with the ability to read processor and I/O affinity to allow the operating system to intelligently distribute workloads to improve performance.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to utilize 1 Terabyte or more memory. The option defaults to limiting memory addressing to just below 1TB because some Operating Systems will not operate correctly with 1 Terabyte or more available memory. If more than 1 Terabyte of memory is installed in the system and an Operating System that supports more than 1 Terabyte of memory is being used, configure the "One Terabyte Memory Limit" option to "Enable all memory" to allow use of all installed memory.

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).
Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant DL785 G5/G6 System ROM - A15

Release Date:

05/02/2011

Last Recommended or Critical Revision:

05/02/2011

Previous Revision:

12/04/2009

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Problems Fixed:

Resolved an issue where the System ROM would not populate the System Enclosure or Chassis (type 3) SMBIOS record with text entered by the user in the Server Asset Tag Text Line in the ROM-Based Setup Utility (RBSU).

Resolved an issue where the user may be unable to select and use the '57600' and '115200' options in the
"BIOS Serial Console Baud Rate" menu in the ROM-Based Setup Utility (RBSU).

**Known Issues:**

None

**Fixes**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue where the System ROM would not populate the System Enclosure or Chassis (type 3) SMBIOS record with text entered by the user in the Server Asset Tag Text Line in the ROM-Based Setup Utility (RBSU).

Resolved an issue where the user may be unable to select and use the '57600' and '115200' options in the "BIOS Serial Console Baud Rate" menu in the ROM-Based Setup Utility (RBSU).

**Known Issues:**

None

**Enhancements**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375
Important Note!

Important Notes:
None

Deliverable Name:
HP ProLiant DL980 G7 System ROM - P66

Release Date:
07/30/2012

Last Recommended or Critical Revision:
07/30/2012

Previous Revision:
05/01/2012

Firmware Dependencies:
None

Enhancements/New Features:
None

Problems Fixed:
Addressed an issue where system may stop responding during Red Hat Enterprise Linux 6.X x86-64 (RHEL6.0 or later) startup or installation when the ROM-Based Setup Utility (RBSU) setting Advanced Options->Advanced System ROM Options->x2APIC is set to "Auto" and there are 8 Intel Xeon E7 family processors installed.

Addressed an issue where system may reboot unexpectedly during Operating System boot or run time without any processor event logged to the Integrated Management Log (IML) due to one or more faulty cores in processors installed.

Addressed an issue where Emulex LUNs might not all been discovered in disk management after running Windows Server 2008 R2 or Windows Server 2008 R2 SP1 Emulex adapters (drivers and tools).

Known Issues:
None

Fixes
HP Service Pack for ProLiant 2012.10.0 Release Notes

Important Notes:
None

Firmware Dependencies:
None

Problems Fixed:

Addressed an issue where system may stop responding during Red Hat Enterprise Linux 6.X x86-64 (RHEL6.0 or later) startup or installation when the ROM-Based Setup Utility (RBSU) setting Advanced Options->Advanced System ROM Options->x2APIC is set to "Auto" and there are 8 Intel Xeon E7 family processors installed.

Addressed an issue where system may reboot unexpectedly during Operating System boot or run time without any processor event logged to the Integrated Management Log (IML) due to one or more faulty cores in processors installed.

Addressed an issue where Emulex LUNs might not all been discovered in disk management after running Windows Server 2008 R2 or Windows Server 2008 R2 SP1 Emulex adapters (drivers and tools).

Known Issues:
None

Online ROM Flash Component for Linux - HP ProLiant ML110 G7/DL120 G7 (J01) Servers
Version: 2012.08.10 (Recommended)

Important Note!

Important Notes:
None

Deliverable Name:
HP ProLiant ML110 G7/DL120 G7 System ROM - J01

Release Date:
08/10/2012

Last Recommended or Critical Revision:
08/10/2012
Previous Revision:
02/01/2012

Firmware Dependencies:
None

Enhancements/New Features:
None

Problems Fixed:

Resolved a processor issue where certain instructions and conditions could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon E3-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue.

Resolved an issue where disabling the serial port in the ROM-Based Setup Utility (RBSU) would cause Windows Device Manager to show a yellow exclamation point for the serial port.

Resolved an issue where the system may experience a Red Screen Illegal Op Code when the embedded SATA Controller has been disabled from the ROM Based Setup Utility (RBSU.)

Known Issues:
None

Fixes

Important Notes:
None

Firmware Dependencies:
None

Problems Fixed:

Resolved a processor issue where certain instructions and conditions could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon E3-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue.

Resolved an issue where disabling the serial port in the ROM-Based Setup Utility (RBSU) would cause
Windows Device Manager to show a yellow exclamation point for the serial port.

Resolved an issue where the system may experience a Red Screen Illegal Op Code when the embedded SATA Controller has been disabled from the ROM Based Setup Utility (RBSU.)

Known Issues:
None

**Online ROM Flash Component for Linux - HP ProLiant ML310 G5/DL320 G5p (W05) Servers**

Version: 2010.10.25 (Critical)

**Important Note!**

Important Notes:
None

Deliverable Name:
HP ProLiant DL320 G5p/ML310 G5 System ROM - W05

Release Date:
10/25/2010

Last Recommended or Critical Revision:
10/25/2010

Previous Revision:
07/11/2009

Firmware Dependencies:
None

Enhancements/New Features:
None

Problems Fixed:
Resolved a processor issue where an unlikely and complex sequence of conditions operating in 64-bit mode could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon 3100-series, Intel Xeon 3200-series, Intel Xeon 3300-series, Intel Pentium Dual-Core Desktop E2000-series, and Intel Core 2 Duo Desktop E4000-series.
processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue. 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. HP strongly recommends immediate update to firmware revisions with required critical fixes. Note: This processor issue has resulted in the following error being logged to the Integrated Management Log on servers configured with the HP ProLiant Health Management Agents when configured in a Microsoft Virtual Server environment with large numbers of Virtual Machines (VM) simultaneously subjected to a heavy I/O workload (and may occur in other operating system environments): "An Unrecoverable System Error has occurred (Error code 0x0000002D, 0x00000000)".

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved a processor issue where an unlikely and complex sequence of conditions operating in 64-bit mode could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon 3100-series, Intel Xeon 3200-series, Intel Xeon 3300-series, Intel Pentium Dual-Core Desktop E2000-series, and Intel Core 2 Duo Desktop E4000-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue. 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. HP strongly recommends immediate update to firmware revisions with required critical fixes. Note: This processor issue has resulted in the following error being logged to the Integrated Management Log on servers configured with the HP ProLiant Health Management Agents when configured in a Microsoft Virtual Server environment with large numbers of Virtual Machines (VM) simultaneously subjected to a heavy I/O workload (and may occur in other operating system environments): "An Unrecoverable System Error has occurred (Error code 0x0000002D, 0x00000000)".

**Known Issues:**

None

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*Online ROM Flash Component for Linux - HP ProLiant ML310 G5p (W08) Servers*

*Version: 2010.10.25 (Critical)*

*Important Note!*
Important Notes:

None

Deliverable Name:

HP ProLiant ML310 G5p System ROM - W08

Release Date:

10/25/2010

Last Recommended or Critical Revision:

10/25/2010

Previous Revision:

07/12/2009

Firmware Dependencies:

None

Enhancements/New Features:

None

Problems Fixed:

Resolved a processor issue where an unlikely and complex sequence of conditions operating in 64-bit mode could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon 3100-series, Intel Xeon 3300-series, Intel Pentium Dual-Core Desktop E2000-series, Intel Core 2 Duo Desktop E6000-series, Intel Core 2 Duo E8000-series, and Intel Core 2 Quad Q9000-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue. 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. HP strongly recommends immediate update to firmware revisions with required critical fixes. Note: This processor issue has resulted in the following error being logged to the Integrated Management Log on servers configured with the HP ProLiant Health Management Agents when configured in a Microsoft Virtual Server environment with large numbers of Virtual Machines (VM) simultaneously subjected to a heavy I/O workload (and may occur in other operating system environments): "An Unrecoverable System Error has occurred (Error code 0x0000002D, 0x00000000)".

Known Issues:

None
**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved a processor issue where an unlikely and complex sequence of conditions operating in 64-bit mode could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon 3100-series, Intel Xeon 3300-series, Intel Pentium Dual-Core Desktop E2000-series, Intel Core 2 Duo Desktop E6000-series, Intel Core 2 Duo E8000-series, and Intel Core 2 Quad Q9000-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue. 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. HP strongly recommends immediate update to firmware revisions with required critical fixes. Note: This processor issue has resulted in the following error being logged to the Integrated Management Log on servers configured with the HP ProLiant Health Management Agents when configured in a Microsoft Virtual Server environment with large numbers of Virtual Machines (VM) simultaneously subjected to a heavy I/O workload (and may occur in other operating system environments): "An Unrecoverable System Error has occurred (Error code 0x0000002D, 0x00000000)".

**Known Issues:**

None

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**Online ROM Flash Component for Linux - HP ProLiant ML310e Gen8 (J04) Servers**

Version: 2012.08.14 (Recommended)

**Important Note**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant ML310e Gen8 System ROM - J04

**Release Date:**

08/14/2012
HP Service Pack for ProLiant 2012.10.0 Release Notes

Last Recommended or Critical Revision:

08/14/2012

Previous Revision:

06/01/2012

Firmware Dependencies:

None

Enhancements/New Features:

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

Problems Fixed:

Resolved a processor issue where certain instructions and conditions could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon E3-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel's microcode for affected processors that addresses this issue.

Resolved an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Resolved a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Known Issues:

None

Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Resolved a processor issue where certain instructions and conditions could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms
utilizing Intel Xeon E3-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel's microcode for affected processors that addresses this issue.

Resolved an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Resolved a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

**Known Issues:**

None

**Enhancements**

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

**Online ROM Flash Component for Linux - HP ProLiant ML350 G5 (D21) Servers**

Version: 2011.05.02 (Critical)

**Important Note!**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Deliverable Name:**

HP ProLiant ML350 G5 System ROM - D21

**Release Date:**

05/02/2011

**Last Recommended or Critical Revision:**

05/02/2011

**Previous Revision:**
Firmware Dependencies:
None

Enhancements/New Features:
Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Problems Fixed:
Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

Known Issues:
None

Fixes

Important Notes:
As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:
None

Problems Fixed:
Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as
the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

**Known Issues:**

None

**Enhancements**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Online ROM Flash Component for Linux - HP ProLiant ML350 G6 (D22) Servers**

Version: 2011.05.05 *(Critical)*

**Important Note!**

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Deliverable Name:**

HP ProLiant ML350 G6 System ROM - D22

**Release Date:**

05/05/2011

**Last Recommended or Critical Revision:**

05/05/2011

**Previous Revision:**
Firmware Dependencies:
None

Enhancements/New Features:
Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Problems Fixed:
Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum
PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

**Known Issues:**

None

**Fixes**

**Important Notes:**

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.
Known Issues:

None

Enhancements

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Online ROM Flash Component for Linux - HP ProLiant ML350e Gen8 (J02) Servers
Version: 2012.08.20 (Optional)

Important Note!

Important Notes:

None

Deliverable Name:

HP ProLiant ML350e Gen8 System ROM - J02

Release Date:
08/20/2012

Last Recommended or Critical Revision:

04/04/2012

Previous Revision:

05/30/2012

Firmware Dependencies:

None

Enhancements/New Features:

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel’s DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.
Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the
Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

**Known Issues:**

None

**Enhancements**

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

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**Online ROM Flash Component for Linux - HP ProLiant ML350p Gen8 (P72) Servers**

Version: 2012.08.20 *(Optional)*

**Important Note!**

**Important Notes:**

None
Deliverable Name:

HP ProLiant ML350p Gen8 System ROM - P72

Release Date:

08/20/2012

Last Recommended or Critical Revision:

02/25/2012

Previous Revision:

07/15/2012

Firmware Dependencies:

None

Enhancements/New Features:

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Problems Fixed:
Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI Express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.
properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None

Enhancements

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.
Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant ML370 G5 System ROM - P57

Release Date:

05/02/2011

Last Recommended or Critical Revision:

05/02/2011

Previous Revision:

10/25/2010

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Problems Fixed:

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-
Known Issues:

None

Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:

None

Problems Fixed:

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
Important Notes:

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant ML370 G6 and DL370 G6 System ROM - P63

Release Date:

05/05/2011

Last Recommended or Critical Revision:

05/05/2011

Previous Revision:

01/29/2011

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced HP's Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:

None

Fixes

Important Notes:

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

HP | Service Pack for ProLiant 2012.10.0
Firmware Dependencies:

None

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor's power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:

None

Enhancements

Enhanced HP's Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed.
(with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

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**Online ROM Flash Component for Linux - HP ProLiant SL230s/SL250s Gen8 (P75) Servers**

Version: 2012.08.20 *(Optional)*

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant SL230s/SL250s Gen8 System ROM - P75

**Release Date:**

08/20/2012

**Last Recommended or Critical Revision:**

04/04/2012

**Previous Revision:**

06/02/2012

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user
to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

Added support for NVIDIA Tesla K10 Dual GPU cards for the HP ProLiant SL250s Gen8.

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Addressed a rare issue where SL250s nodes installed in an SL6500 chassis may experience an unexpected power loss due to the power supplies in the chassis overheating and shutting down.

Known Issues:
Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Addressed a rare issue where SL250s nodes installed in an SL6500 chassis may experience an unexpected power loss due to the power supplies in the chassis overheating and shutting down.

Known Issues:

None

Enhancements

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a
supported Operating System. Please consult the proper Operating System and Network Adapter
documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user
to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain
networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload
network activity. Please consult documentation from the network adapter to determine if this feature is
supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user
to disable Memory Power Management functionality. This option is enabled by default. When disabled,
certain memory power savings modes are disabled which can result in lower latency responses from
memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user
to disable the default System ROM functionality that continually searches for bootable devices when a boot
device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep
searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

Added support for NVIDIA Tesla K10 Dual GPU cards for the HP ProLiant SL250s Gen8.

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**Online ROM Flash Component for Linux - HP ProLiant SL335s G7 (A24) Servers**
Version: 2012.08.15 *(Recommended)*

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant SL335s G7 System ROM - A24

**Release Date:**

08/15/2012

**Last Recommended or Critical Revision:**

08/15/2012

**Previous Revision:**
05/11/2012

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

**Problems Fixed:**

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

**Known Issues:**

None

**Enhancements**

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.
Enhanced HP's Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should...
take when the battery or super-cap is not installed, requires replacement, or is charging.

Added support for Nvidia M2090 GPUs. This ROM update is required to provide adequate cooling for customers running a M2090 in a 2U SL390 G7 or running more than 4 M2090 GPUs in a 4U SL390 G7.

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSOd) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Resolved an issue where the MAC address reported in the ROM Based Setup Utility (RBSU) for embedded NIC Port 4 would be reported as Unknown.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None
Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoD) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Resolved an issue where the MAC address reported in the ROM Based Setup Utility (RBSU) for embedded NIC Port 4 would be reported as Unknown.

Known Issues:

None

Enhancements

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.
Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Added support for Nvidia M2090 GPUs. This ROM update is required to provide adequate cooling for customers running a M2090 in a 2U SL390 G7 or running more than 4 M2090 GPUs in a 4U SL390 G7.

Online ROM Flash Component for Linux - HP ProLiant SL4540 Gen8 (P74) Servers
Version: 2012.08.20 (Optional)

Important Notes:

None

Deliverable Name:
HP ProLiant SL4540 Gen8 System ROM - P74

Release Date:
08/20/2012

Last Recommended or Critical Revision:
05/30/2012

Previous Revision:
05/30/2012

Firmware Dependencies:
None

Enhancements/New Features:

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user
to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

**Problems Fixed:**

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

**Known Issues:**

None

**Fixes**
HP Service Pack for ProLiant 2012.10.0 Release Notes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None

Enhancements

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel’s DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is
supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

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**Online ROM Flash Component for Linux - HP ProLiant SL4545 G7 (A31) Servers**

Version: 2012.08.15 *(Recommended)*

**Important Notes:**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant SL4545 G7 System ROM - A31

**Release Date:**

08/15/2012

**Last Recommended or Critical Revision:**

08/15/2012

**Previous Revision:**

06/15/2012

**Firmware Dependencies:**

None
**Enhancements/New Features:**

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

**Problems Fixed:**

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where the platform may experience a virtualization fault (which may result in a NMI or Machine Check Exception) when Input/Output Memory Management Unit (IOMMU) is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where the platform may experience a virtualization fault (which may result in a NMI or Machine Check Exception) when Input/Output Memory Management Unit (IOMMU) is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

**Known Issues:**

None
Enhancements

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

Online ROM Flash Component for Windows - HP ProLiant BL260c G5 (I20) Servers
Version: 2010.10.25 (Critical)

Important Note!

Important Notes:
None

Deliverable Name:
HP ProLiant BL260c G5 System ROM - I20

Release Date:
10/25/2010

Last Recommended or Critical Revision:
10/25/2010

Previous Revision:
04/26/2010

Firmware Dependencies:
None

Enhancements/New Features:
None

Problems Fixed:
Resolved a processor issue where an unlikely and complex sequence of conditions operating in 64-bit mode could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon 5100-series, Intel Xeon 5200-series, Intel Xeon
5300-series, and Intel Xeon 5400-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue. 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. HP strongly recommends immediate update to firmware revisions with required critical fixes. Note: This processor issue has resulted in the following error being logged to the Integrated Management Log on servers configured with the HP ProLiant Health Management Agents when configured in a Microsoft Virtual Server environment with large numbers of Virtual Machines (VM) simultaneously subjected to a heavy I/O workload (and may occur in other operating system environments): "An Unrecoverable System Error has occurred (Error code 0x0000002D, 0x00000000)".

Known Issues:
None

Fixes

Important Notes:
None

Firmware Dependencies:
None

Problems Fixed:
Resolved a processor issue where an unlikely and complex sequence of conditions operating in 64-bit mode could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon 5100-series, Intel Xeon 5200-series, Intel Xeon 5300-series, and Intel Xeon 5400-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue. 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. HP strongly recommends immediate update to firmware revisions with required critical fixes. Note: This processor issue has resulted in the following error being logged to the Integrated Management Log on servers configured with the HP ProLiant Health Management Agents when configured in a Microsoft Virtual Server environment with large numbers of Virtual Machines (VM) simultaneously subjected to a heavy I/O workload (and may occur in other operating system environments): "An Unrecoverable System Error has occurred (Error code 0x0000002D, 0x00000000)".

Known Issues:
None
Important Notes:

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant BL280c G6 System ROM - I22

Release Date:

05/05/2011

Last Recommended or Critical Revision:

05/05/2011

Previous Revision:

01/29/2011

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Resolved an issue where the 2nd embedded NIC port may become disabled after flashing to the January 29, 2011 System ROM. After flashing to this revision of the System ROM or later, it may be necessary for the user to restore System Defaults from the ROM Based Setup Utility (RBSU) in order for the 2nd NIC port to be enabled again for systems that had experienced this issue.

**Known Issues:**

None

**Fixes**

**Important Notes:**

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System...
ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Resolved an issue where the 2nd embedded NIC port may become disabled after flashing to the January 29, 2011 System ROM. After flashing to this revision of the System ROM or later, it may be necessary for the user to restore System Defaults from the ROM Based Setup Utility (RBSU) in order for the 2nd NIC port to be enabled again for systems that had experienced this issue.

**Known Issues:**

None

**Enhancements**

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade
process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

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**Online ROM Flash Component for Windows - HP ProLiant BL2x220c G5 (I19) Servers**

Version: 2010.10.25 (Critical)

**Important Note**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant BL2x220c G5 System ROM - I19

**Release Date:**

10/25/2010

**Last Recommended or Critical Revision:**

10/25/2010

**Previous Revision:**

04/26/2010

**Firmware Dependencies:**

None
**Enhancements/New Features:**

None

**Problems Fixed:**

Resolved a processor issue where an unlikely and complex sequence of conditions operating in 64-bit mode could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon 5100-series, Intel Xeon 5200-series, Intel Xeon 5300-series, and Intel Xeon 5400-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue. 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. HP strongly recommends immediate update to firmware revisions with required critical fixes. Note: This processor issue has resulted in the following error being logged to the Integrated Management Log on servers configured with the HP ProLiant Health Management Agents when configured in a Microsoft Virtual Server environment with large numbers of Virtual Machines (VM) simultaneously subjected to a heavy I/O workload (and may occur in other operating system environments): "An Unrecoverable System Error has occurred (Error code 0x0000002D, 0x00000000)".

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved a processor issue where an unlikely and complex sequence of conditions operating in 64-bit mode could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon 5100-series, Intel Xeon 5200-series, Intel Xeon 5300-series, and Intel Xeon 5400-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue. 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. HP strongly recommends immediate update to firmware revisions with required critical fixes. Note: This processor issue has resulted in the following error being logged to the Integrated Management Log on servers configured with the HP ProLiant Health Management Agents when configured in a Microsoft Virtual Server environment with large numbers of Virtual Machines (VM) simultaneously subjected to a heavy I/O workload (and may occur in other operating system environments): "An Unrecoverable System Error has occurred (Error code 0x0000002D, 0x00000000)".
**Known Issues:**

None

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**Online ROM Flash Component for Windows - HP ProLiant BL2x220c G6 (I26) Servers**

**Version:** 2011.05.05 *(Critical)*

**Important Note!**

**Important Notes:**

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Deliverable Name:**

HP ProLiant BL2x220c G6 System ROM - I26

**Release Date:**

05/05/2011

**Last Recommended or Critical Revision:**

05/05/2011

**Previous Revision:**

01/30/2011

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.
Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Resolved an issue where the 2nd embedded NIC port may become disabled after flashing to the January 29, 2011 System ROM. After flashing to this revision of the System ROM or later, it may be necessary for the user to restore System Defaults from the ROM Based Setup Utility (RBSU) in order for the 2nd NIC port to be enabled again for systems that had experienced this issue.

**Known Issues:**
HP Service Pack for ProLiant 2012.10.0 Release Notes

None

**Fixes**

**Important Notes:**

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor's power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Resolved an issue where the 2nd embedded NIC port may become disabled after flashing to the January 29, 2011 System ROM. After flashing to this revision of the System ROM or later, it may be necessary for the user to restore System Defaults from the ROM Based Setup Utility (RBSU) in order for the 2nd NIC port to be enabled again for systems that had experienced this issue.

**Known Issues:**

None

**Enhancements**

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology.
This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

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**Online ROM Flash Component for Windows - HP ProLiant BL2x220c G7 (I29) Servers**

Version: 2011.05.05 [Critical]

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant BL2x220c G7 System ROM - I29

**Release Date:**

05/05/2011

**Last Recommended or Critical Revision:**

05/05/2011
Enhancement/New Features:

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoD) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator
Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoD) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

**Known Issues:**

None
Enhancements

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Online ROM Flash Component for Windows - HP ProLiant BL420c Gen8 (I30) Servers
Version: 2012.08.20 (Optional)

Important Notes:

Important Notes:
None

Deliverable Name:
HP ProLiant BL420c Gen8 System ROM - I30

Release Date:
08/20/2012

Last Recommended or Critical Revision:
04/04/2012

Previous Revision:
07/15/2012

Firmware Dependencies:
None

Enhancements/New Features:
Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in
virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMU on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.
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Known Issues:
None

Fixes

Important Notes:
None

Firmware Dependencies:
None

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:
None

Enhancements

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter
documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel’s DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

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**Online ROM Flash Component for Windows - HP ProLiant BL460c (I15) Servers**

Version: 2011.05.02 (Critical)

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Deliverable Name:**

HP ProLiant BL460c System ROM - I15

**Release Date:**

05/02/2011

**Last Recommended or Critical Revision:**

05/02/2011
Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Problems Fixed:

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

Known Issues:

None

Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
Problems Fixed:

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Online ROM Flash Component for Windows - HP ProLiant BL460c G5 (I23) Servers
Version: 2011.05.02 (Critical)

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant BL460c G5 System ROM - I23

Release Date:

05/02/2011
Last Recommended or Critical Revision:

05/02/2011

Previous Revision:

10/25/2010

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Problems Fixed:

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

Known Issues:

None

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

**Known Issues:**

None

**Enhancements**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


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**Online ROM Flash Component for Windows - HP ProLiant BL460c G6/WS460c G6 (I24) Servers**

Version: 2011.12.02 *(Optional)*

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant BL460c G6/WS460c G6 System ROM - I24

**Release Date:**

12/02/2011

**Last Recommended or Critical Revision:**
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05/05/2011

Previous Revision:

05/05/2011

Firmware Dependencies:

None

Enhancements/New Features:

Added support to the HP ProLiant WS460c G6 for Nvidia Quadro 3000/1000 MXM Graphics Cards on a Multi-MXM PCIe card.

Problems Fixed:

None

Known Issues:

None

Enhancements

Important Notes:

None

Firmware Dependencies:

None

Enhancements/New Features:

Added support to the HP ProLiant WS460c G6 for Nvidia Quadro 3000/1000 MXM Graphics Cards on a Multi-MXM PCIe card.

Known Issues:

None

Online ROM Flash Component for Windows - HP ProLiant BL460c G7 (I27) Servers

Version: 2011.05.05 (Critical)

Important Note!
Important Notes:
None

Deliverable Name:
HP ProLiant BL460c G7 System ROM - I27

Release Date:
05/05/2011

Last Recommended or Critical Revision:
05/05/2011

Previous Revision:
01/29/2011

Firmware Dependencies:
None

Enhancements/New Features:

Enhanced HP's Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML
contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoD) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:
None

Fixes

Important Notes:
None

Firmware Dependencies:
None

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum
PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoD) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

**Known Issues:**

None

**Enhancements**

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

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**Online ROM Flash Component for Windows - HP ProLiant BL460c Gen8/WS460c Gen8 (I31) Servers**

Version: 2012.08.20 (Optional)

**Important Notes:**

**Important Notes:**

None

**Deliverable Name:**
Release Date:
08/20/2012

Last Recommended or Critical Revision:
02/25/2012

Previous Revision:
07/15/2012

Enhancements/New Features:

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Added support for HP SmartMemory 24 GB PC3L-10600R (DDR3-1333) DIMMs.

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for
Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting...
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properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMU on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None

Enhancements

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Added support for HP SmartMemory 24 GB PC3L-10600R (DDR3-1333) DIMMs.

Version: 2011.05.02 (Critical)
Important Note!

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

Deliverable Name:

HP ProLiant BL465c G1/G5/G6 System ROM - A13

Release Date:

05/02/2011

Last Recommended or Critical Revision:

05/02/2011

Previous Revision:

12/08/2009

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

Problems Fixed:

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).
Known Issues:
None

Fixes

Important Notes:
As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:
None

Problems Fixed:

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Known Issues:
None

Enhancements
Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

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Online ROM Flash Component for Windows - HP ProLiant BL465c G7 (A19) Servers
Version: 2012.08.15 (Recommended)

Important Note!

Important Notes:
None
Deliverable Name:
HP ProLiant BL465c G7 System ROM - A19

Release Date:
08/15/2012

Last Recommended or Critical Revision:
08/15/2012

Previous Revision:
05/08/2012

Firmware Dependencies:
None

Enhancements/New Features:
Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Problems Fixed:
Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Known Issues:
None

Fixes

Important Notes:
None

Firmware Dependencies:
None
Problems Fixed:

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Known Issues:

None

Enhancements

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Online ROM Flash Component for Windows - HP ProLiant BL465c Gen8 (A26) Servers
Version: 2012.08.14 (Recommended)

Important Note:

Important Notes:

None

Deliverable Name:

HP ProLiant BL465c Gen8 System ROM - A26

Release Date:

08/14/2012

Last Recommended or Critical Revision:

08/14/2012

Previous Revision:

06/18/2012

Firmware Dependencies:

None

Enhancements/New Features:
Added support for AMD Opteron Series 6300 processors.

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configuration.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to utilize 1 Terabyte or more memory. The option defaults to limiting memory addressing to just below 1TB because some Operating Systems will not operate correctly with 1 Terabyte or more available memory. If more than 1 Terabyte of memory is installed in the system and an Operating System that supports more than 1 Terabyte of memory is being used, configure the "One Terabyte Memory Limit" option to "Enable all memory" to allow use of all installed memory.

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

**Problems Fixed:**

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where the platform may experience a virtualization fault (which may result in a NMI or Machine Check Exception) when Input/Output Memory Management Unit (IOMMU) is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMU on the platform.

Resolved an issue where systems configured with 1TB or more memory would reset unexpectedly after running for approximately 90 hours. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot". Systems configured with 1TB or more memory must update to this version of the system BIOS.

Resolved an issue where the system clock may become inaccurate by up to few seconds per day.

**Known Issues:**

None

**Fixes**

**Important Notes:**
None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where the platform may experience a virtualization fault (which may result in a NMI or Machine Check Exception) when Input/Output Memory Management Unit (IOMMU) is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Resolved an issue where systems configured with 1TB or more memory would reset unexpectedly after running for approximately 90 hours. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot". Systems configured with 1TB or more memory must update to this version of the system BIOS.

Resolved an issue where the system clock may become inaccurate by up to few seconds per day.

**Known Issues:**

None

**Enhancements**

Added support for AMD Opteron Series 6300 processors.

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configuration.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to utilize 1 Terabyte or more memory. The option defaults to limiting memory addressing to just below 1TB because some Operating Systems will not operate correctly with 1 Terabyte or more available memory. If more than 1 Terabyte of memory is installed in the system and an Operating System that supports more than 1 Terabyte of memory is being used, configure the "One Terabyte Memory Limit" option to "Enable all memory" to allow use of all installed memory.

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error.
type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

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**Online ROM Flash Component for Windows - HP ProLiant BL480c (I14) Server**

Version: 2011.05.02 (Critical)

**Important Note!**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Deliverable Name:**

HP ProLiant BL480c G1 System ROM - I14

**Release Date:**

05/02/2011

**Last Recommended or Critical Revision:**

05/02/2011

**Previous Revision:**

10/25/2010

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
Problems Fixed:

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

Known Issues:

None

Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:

None

Problems Fixed:

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component.
Online ROM Flash Component for Windows - HP ProLiant BL490c G6 (I21) Servers
Version: 2011.05.05 (Critical)

Important Note!

Important Notes:

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant BL490c G6 System ROM - I21

Release Date:

05/05/2011

Last Recommended or Critical Revision:

05/05/2011

Previous Revision:

01/29/2011

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.
Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:

None

Fixes
Important Notes:

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:

None

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:

None

Enhancements

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and
decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

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**Online ROM Flash Component for Windows - HP ProLiant BL490c G7 (I28) Servers**

Version: 2011.05.05 (Critical)

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant BL490c G7 System ROM - I28

**Release Date:**

05/05/2011

**Last Recommended or Critical Revision:**

05/05/2011

**Previous Revision:**

01/29/2011

**Firmware Dependencies:**

None
Enhancements/New Features:

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoD) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the
Known Issues:

None

Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoD) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:

None

Enhancements
Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

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**Online ROM Flash Component for Windows - HP ProLiant BL495c G5/BL495c G6 (A14) Servers**

Version: 2011.05.02 (Critical)

**Important Note**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Deliverable Name:**

HP ProLiant BL495c G5/G6 System ROM - A14

**Release Date:**

05/02/2011

**Last Recommended or Critical Revision:**

05/02/2011

**Previous Revision:**
HP Service Pack for ProLiant 2012.10.0 Release Notes

12/09/2009

Firmware Dependencies:
None

Enhancements/New Features:
Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Added latest product names for display in the ROM-Based Setup Utility (RBSU).

Problems Fixed:
Resolved an issue where the system may not be able to install an operating system to an iSCSI-based storage solution when using the local DVD drive.

Known Issues:
None

Fixes

Important Notes:
As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:
None

Problems Fixed:
Resolved an issue where the system may not be able to install an operating system to an iSCSI-based storage solution when using the local DVD drive.
Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Added latest product names for display in the ROM-Based Setup Utility (RBSU).

Online ROM Flash Component for Windows - HP ProLiant BL660c Gen8 (I32) Servers
Version: 2012.08.20 (Optional)

Important Note!

Important Notes:

None

Deliverable Name:

HP ProLiant BL660c Gen8 System ROM - I32

Release Date:

08/20/2012

Last Recommended or Critical Revision:

05/30/2012

Previous Revision:

05/30/2012

Firmware Dependencies:

None

Enhancements/New Features:
Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMU on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.
Known Issues:

None

Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None

Enhancements

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter
documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel’s DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

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**Online ROM Flash Component for Windows - HP ProLiant BL680c G5 (I17) Servers**

Version: 2011.05.02 *(Critical)*

**Important Note!**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Deliverable Name:**

HP ProLiant BL680c G5 System ROM - I17

**Release Date:**

05/02/2011

**Last Recommended or Critical Revision:**

05/02/2011

**Previous Revision:**
10/25/2010

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Problems Fixed:**

Resolved an issue where the system may hang when trying to apply custom settings using the ROM Based Setup Utility (RBSU) User Defined Defaults Option.

**Known Issues:**

None

**Fixes**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue where the system may hang when trying to apply custom settings using the ROM Based Setup Utility (RBSU) User Defined Defaults Option.

**Known Issues:**
Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Online ROM Flash Component for Windows - HP ProLiant BL680c G7/BL620c G7 (I25) Servers
Version: 2012.08.04 (Optional)

Important Note!

Important Notes:

None

Deliverable Name:

HP ProLiant BL680c G7/BL620c G7 System ROM - I25

Release Date:

08/04/2012

Last Recommended or Critical Revision:

04/20/2012

Previous Revision:

04/20/2012

Firmware Dependencies:

None

Enhancements/New Features:

Added support for a ROM Based Setup Utility (RBSU) option called SMI Link Power Management that allows the user to disable power management on the Intel Scalable Memory Interconnect (SMI) link. This option is Enabled by Default. Disabling this functionality will increase the server’s idle power usage. While corrected events are considered normal and are expected on the SMI Link and do not affect operation of the platform, the occurrence of these corrected events can be reduced significantly by
disabling SMI Link Power Management. These events are logged as correctable Machine Check Bank 8 and 9 errors in the operating system logs for certain operating systems. While these events can be ignored, SMI Link Power Management can be disabled to reduce or prevent their occurrence if desired.

Problems Fixed:

None

Known Issues:

None

Enhancements

Important Notes:

None

Firmware Dependencies:

None

Enhancements/New Features:

Added support for a ROM Based Setup Utility (RBSU) option called SMI Link Power Management that allows the user to disable power management on the Intel Scalable Memory Interconnect (SMI) link. This option is Enabled by Default. Disabling this functionality will increase the server’s idle power usage. While corrected events are considered normal and are expected on the SMI Link and do not affect operation of the platform, the occurrence of these corrected events can be reduced significantly by disabling SMI Link Power Management. These events are logged as correctable Machine Check Bank 8 and 9 errors in the operating system logs for certain operating systems. While these events can be ignored, SMI Link Power Management can be disabled to reduce or prevent their occurrence if desired.

Known Issues:

None

Online ROM Flash Component for Windows - HP ProLiant BL685c G1/BL685c G5 (A08) Servers
Version: 2011.05.02 (Critical)

Important Note!

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
Deliverable Name:

HP ProLiant BL685c G1/G5 System ROM - A08

Release Date:

05/02/2011

Last Recommended or Critical Revision:

05/02/2011

Previous Revision:

12/14/2009

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


Problems Fixed:

Added latest product names for display in the ROM-Based Setup Utility (RBSU).

Known Issues:

None

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the
Firmware Dependencies:

None

Problems Fixed:

Added latest product names for display in the ROM-Based Setup Utility (RBSU).

Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


Online ROM Flash Component for Windows - HP ProLiant BL685c G6 (A17) Servers

Version: 2011.05.02 (Critical)

Important Note!

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


Deliverable Name:

HP ProLiant BL685c G6 System ROM - A17

Release Date:
Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Added latest product names for display in the ROM-Based Setup Utility (RBSU).

Resolved an issue where the system may not be able to install an operating system to an iSCSI-based storage solution when using the local DVD drive.

None

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
Firmware Dependencies:
None

Problems Fixed:
Resolved an issue where the system may not be able to install an operating system to an iSCSI-based storage solution when using the local DVD drive.

Known Issues:
None

Enhancements
Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
Added latest product names for display in the ROM-Based Setup Utility (RBSU).

Online ROM Flash Component for Windows - HP ProLiant BL685c G7 (A20) Servers
Version: 2012.08.15 (Recommended)

Important Note!

Important Notes:
None

Deliverable Name:
HP ProLiant BL685c G7 System ROM - A20

Release Date:
08/15/2012

Last Recommended or Critical Revision:
08/15/2012
Previous Revision:

05/09/2012

Firmware Dependencies:

None

Enhancements/New Features:

Added support for AMD Opteron Series 6300 processors.

Added support for Input/Output Memory Management Unit (IOMMU). When used with an operating system/hypervisor that support this functionality, IOMMU provides performance and security benefits. This functionality is disabled by default and is controlled via a ROM-Based Setup Utility (RBSU) option.

Added support for Load-Reduced DIMM (LRDIMM) memory modules. This revision of the System ROM must be installed on the server prior to installing LRDIMMs as the server will not boot with previous revisions of the System ROM with these DIMMs installed.

Added a new ROM-Based Setup Utility (RBSU) Advanced System ROM Options menu that allows the user to enable the ACPI System Locality Distance Information Table (SLIT). This industry standard ACPI mechanism provides operating systems with the ability to read processor and I/O affinity to allow the operating system to intelligently distribute workloads to improve performance.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to utilize 1 Terabyte or more memory. The option defaults to limiting memory addressing to just below 1TB because some Operating Systems will not operate correctly with 1 Terabyte or more available memory. If more than 1 Terabyte of memory is installed in the system and an Operating System that supports more than 1 Terabyte of memory is being used, configure the "One Terabyte Memory Limit" option to "Enable all memory" to allow use of all installed memory.

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

Problems Fixed:

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where systems configured with 1TB or more memory would reset unexpectedly after running for approximately 90 hours. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot". Systems configured
with 1TB or more memory must update to this version of the system BIOS.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as “The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot”.

Resolved an issue where systems configured with 1TB or more memory would reset unexpectedly after running for approximately 90 hours. The unexpected reset would be reported in the Integrated Management Log (IML) as “The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot”. Systems configured with 1TB or more memory must update to this version of the system BIOS.

**Known Issues:**

None

**Enhancements**

Added support for AMD Opteron Series 6300 processors.

Added support for Input/Output Memory Management Unit (IOMMU). When used with an operating system/hypervisor that support this functionality, IOMMU provides performance and security benefits. This functionality is disabled by default and is controlled via a ROM-Based Setup Utility (RBSU) option.

Added support for Load-Reduced DIMM (LRDIMM) memory modules. This revision of the System ROM must be installed on the server prior to installing LRDIMMs as the server will not boot with previous revisions of the System ROM with these DIMMs installed.

Added a new ROM-Based Setup Utility (RBSU) Advanced System ROM Options menu that allows the user to enable the ACPI System Locality Distance Information Table (SLIT). This industry standard ACPI mechanism provides operating systems with the ability to read processor and I/O affinity to allow the operating system to intelligently distribute workloads to improve performance.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to
utilize 1 Terabyte or more memory. The option defaults to limiting memory addressing to just below 1TB because some Operating Systems will not operate correctly with 1 Terabyte or more available memory. If more than 1 Terabyte of memory is installed in the system and an Operating System that supports more than 1 Terabyte of memory is being used, configure the "One Terabyte Memory Limit" option to "Enable all memory" to allow use of all installed memory.

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

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**Online ROM Flash Component for Windows - HP ProLiant DL160 Gen8 (J03) Servers**
Version: 2012.08.20 (Optional)

**Important Note!**

**Important Notes:**
None

**Deliverable Name:**
HP ProLiant DL160 Gen8 System ROM - J03

**Release Date:**
08/20/2012

**Last Recommended or Critical Revision:**
04/04/2012

**Previous Revision:**
07/02/2012

**Firmware Dependencies:**
None

**Enhancements/New Features:**

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a
supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None
Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None

Enhancements

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain
networking devices may see an improvement in performance by utilizing Intel’s DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

Online ROM Flash Component for Windows - HP ProLiant DL320 G5/DL320s (W04) Servers
Version: 2008.06.10 (Optional)

Enhancements
Added support for Generation 2 (3.0 Gb/s) SATA Hard Drives. This revision of the System ROM is required for proper operation of the embedded SATA solution when a Generation 2 (3.0 Gb/s) SATA hard drive is installed in the server (DL320 G5 only).

Online ROM Flash Component for Windows - HP ProLiant DL320 G6/ML330 G6 (W07) Servers
Version: 2011.05.05 (Critical)

Important Note!

Important Notes:

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant ML330 G6 and DL320 G6 System ROM - W07

Release Date:
Enhancements/New Features:

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue
occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:

None

Fixes

Important Notes:

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


Firmware Dependencies:

None

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum
PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

**Known Issues:**

None

**Enhancements**

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.
Deliverable Name:

HP ProLiant DL320e Gen8 System ROM - J05

Release Date:

08/14/2012

Last Recommended or Critical Revision:

08/14/2012

Previous Revision:

06/01/2012

Firmware Dependencies:

None

Enhancements/New Features:

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

Problems Fixed:

Resolved a processor issue where certain instructions and conditions could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon E3-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel's microcode for affected processors that addresses this issue.

Resolved an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Resolved a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Known Issues:

None

Important Notes:

None
**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved a processor issue where certain instructions and conditions could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon E3-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel's microcode for affected processors that addresses this issue.

Resolved an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Resolved a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

**Known Issues:**

None

**Enhancements**

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

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**Online ROM Flash Component for Windows - HP ProLiant DL360 G5 (P58) Servers**

Version: 2011.05.02 (Critical)

**Important Note!**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

**Deliverable Name:**

HP ProLiant DL360 G5 System ROM - P58
Release Date:
05/02/2011

Last Recommended or Critical Revision:
05/02/2011

Previous Revision:
10/25/2010

Firmware Dependencies:
None

Enhancements/New Features:
Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Problems Fixed:
Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

Known Issues:
None

Fixes

Important Notes:
As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
Firmware Dependencies:
None

Problems Fixed:
Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

Known Issues:
None

Enhancements
Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Online ROM Flash Component for Windows - HP ProLiant DL360 G6 (P64) Servers
Version: 2011.05.05 (Critical)

Important Note!

Important Notes:
Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:
HP ProLiant DL360 G6 System ROM - P64

Release Date:
05/05/2011

Last Recommended or Critical Revision:
05/05/2011

Previous Revision:
01/29/2011

Firmware Dependencies:
None

Enhancements/New Features:

Enhanced HP's Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.
Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:

None

Fixes

Important Notes:

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:

None

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle
State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

**Known Issues:**

None

**Enhancements**

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.
Important Note!

Important Notes:
None

Deliverable Name:
HP ProLiant DL360 G7 System ROM - P68

Release Date:
05/05/2011

Last Recommended or Critical Revision:
05/05/2011

Previous Revision:
01/28/2011

Firmware Dependencies:
None

Enhancements/New Features:
Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Problems Fixed:
Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the
system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSOD) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.
PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoD) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

**Known Issues:**

None

**Enhancements**

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

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**Online ROM Flash Component for Windows - HP ProLiant DL360e Gen8/DL380e Gen8 (P73) Servers**

Version: 2012.08.20 (Optional)

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**
Release Date:
08/20/2012

Last Recommended or Critical Revision:
04/04/2012

Previous Revision:
06/01/2012

Firmware Dependencies:
None

Enhancements/New Features:

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for
HP Service Pack for ProLiant 2012.10.0 Release Notes

Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None

Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.
properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMM on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

**Known Issues:**

None

**Enhancements**

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel’s DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

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**Online ROM Flash Component for Windows - HP ProLiant DL360p Gen8 (P71) Servers**

Version: 2012.08.20 (Optional)

**Important Note**
Important Notes:

None

Deliverable Name:

HP ProLiant DL360p Gen8 System ROM - P71

Release Date:

08/20/2012

Last Recommended or Critical Revision:

02/25/2012

Previous Revision:

07/15/2012

Firmware Dependencies:

None

Enhancements/New Features:

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel’s DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.
Increased memory speeds for certain DIMM configurations using HP SmartMemory.

**Problems Fixed:**

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain
commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

**Known Issues:**

None

**Enhancements**

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.
**Important Note!**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Deliverable Name:**

HP ProLiant DL365 G1/G5 System ROM - A10

**Release Date:**

05/02/2011

**Last Recommended or Critical Revision:**

05/02/2011

**Previous Revision:**

07/17/2009

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Problems Fixed:**

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).
HP Service Pack for ProLiant 2012.10.0 Release Notes

**Known Issues:**

None

**Fixes**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Firmware Dependencies:**

None

**Problems Fixed:**

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

**Known Issues:**

None

**Enhancements**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Online ROM Flash Component for Windows - HP ProLiant DL380 G5 (P56) Servers**

Version: 2011.05.02 (Critical)

**Important Note!**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash
update utility, the System ROM revision cannot be downgraded with the flash components available on
the HP Support site after updating to this revision of the System ROM. A customer can downgrade the
System ROM by creating a new flash component with the older System ROM revision as indicated in
Advisory C02838375 available at the following link:

**Deliverable Name:**

HP ProLiant DL380 G5 System ROM - P56

**Release Date:**

05/02/2011

**Last Recommended or Critical Revision:**

05/02/2011

**Previous Revision:**

10/25/2010

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and
decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade
process requires modifications to both the System ROM and the flash update utility, the System ROM
revision cannot be downgraded with the flash components available on the HP Support site after updating
to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash
component with the older System ROM revision as indicated in Advisory C02838375 available at the
following link:

**Problems Fixed:**

Resolved a very rare issue where the system may either hang during system boot or boot with
configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as
the system hanging during system boot without anything displayed to video. Once the system gets into
this state, the maintenance jumper can be utilized to recover operation of the system and restore
configuration defaults. This revision of the System ROM will restore configuration defaults when non-
volatile storage becomes corrupt.

**Known Issues:**
Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:

None

Problems Fixed:

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

**Deliverable Name:**

HP ProLiant DL380 G6 System ROM - P62

**Release Date:**

05/05/2011

**Last Recommended or Critical Revision:**

05/05/2011

**Previous Revision:**

01/30/2011

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously
resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:

None

 Fixes

Important Notes:

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


Firmware Dependencies:

None
Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:

None

Enhancements

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility.
HP Service Pack for ProLiant 2012.10.0 Release Notes

(RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Online ROM Flash Component for Windows - HP ProLiant DL380 G7 (P67) Servers
Version: 2011.05.05 (Critical)

Important Note!

Important Notes:

None

Deliverable Name:

HP ProLiant DL380 G7 System ROM - P67

Release Date:

05/05/2011

Last Recommended or Critical Revision:

05/05/2011

Previous Revision:

01/30/2011

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.
Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoS) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.
Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoD) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Known Issues:

None

Enhancements

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Online ROM Flash Component for Windows - HP ProLiant DL380p Gen8 (P70) Servers

Version: 2012.08.20 (Optional)

Important Note!

Important Notes:

None

Deliverable Name:

HP ProLiant DL380p Gen8 System ROM - P70

Release Date:
08/20/2012

Last Recommended or Critical Revision:

02/25/2012

Previous Revision:

07/15/2012

Firmware Dependencies:

None

Enhancements/New Features:

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel’s DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain
commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.
Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

**Known Issues:**

None

**Enhancements**

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

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**Online ROM Flash Component for Windows - HP ProLiant DL385 G2/DL385 G5 (A09) Servers**

Version: 2011.05.02 (Critical)

**Important Note!**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:
HP ProLiant DL385 G2/G5 System ROM - A09

Release Date:
05/02/2011

Last Recommended or Critical Revision:
05/02/2011

Previous Revision:
07/11/2009

Firmware Dependencies:
None

Enhancements/New Features:
Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Problems Fixed:
Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Known Issues:
None

Fixes

Important Notes:
As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in
Advisory C02838375 available at the following link:

**Firmware Dependencies:**

None

**Problems Fixed:**

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

**Known Issues:**

None

**Enhancements**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

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**Online ROM Flash Component for Windows - HP ProLiant DL385 G5p/DL385 G6 (A22) Servers**

Version: 2011.05.02 *(Critical)*

**Important Note!**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

**Deliverable Name:**

HP ProLiant DL385 G5p/G6 System ROM - A22

**Release Date:**
Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


Problems Fixed:

Resolved an issue where the in PCI Slot number, as reported under the operating system, would not be reported correctly when a three slot PCI-E riser is installed in the platform.

Known Issues:

None

Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


Firmware Dependencies:

None
Problems Fixed:

Resolved an issue where the PCI Slot number, as reported under the operating system, would not be reported correctly when a three slot PCI-E riser is installed in the platform.

Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

Online ROM Flash Component for Windows - HP ProLiant DL385 G7 (A18) Servers

Version: 2012.08.15 (Recommended)

Important Note!

Important Notes:

None

Deliverable Name:

HP ProLiant DL385 G7 System ROM - A18

Release Date:

08/15/2012

Last Recommended or Critical Revision:

08/15/2012

Previous Revision:

05/08/2012

Firmware Dependencies:

None
Enhancements/New Features:

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Problems Fixed:

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Known Issues:

None

Firmware Dependencies:

None

Problems Fixed:

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Known Issues:

None

Enhancements

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Online ROM Flash Component for Windows - HP ProLiant DL385p Gen8 (A28) Servers
Version: 2012.08.14 (Recommended)

Important Note!
Important Notes:

None

Deliverable Name:

HP ProLiant DL385p Gen8 System ROM - A28

Release Date:

08/14/2012

Last Recommended or Critical Revision:

08/14/2012

Previous Revision:

06/18/2012

Firmware Dependencies:

None

Enhancements/New Features:

Added support for AMD Opteron Series 6300 processors.

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configuration.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to utilize 1 Terabyte or more memory. The option defaults to limiting memory addressing to just below 1TB because some Operating Systems will not operate correctly with 1 Terabyte or more available memory. If more than 1 Terabyte of memory is installed in the system and an Operating System that supports more than 1 Terabyte of memory is being used, configure the "One Terabyte Memory Limit" option to "Enable all memory" to allow use of all installed memory.

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Added latest product names of optional expansion cards and updated language translations (for non-
English modes) in the ROM-Based Setup Utility (RBSU).

**Problems Fixed:**

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where the platform may experience a virtualization fault (which may result in a NMI or Machine Check Exception) when Input/Output Memory Management Unit (IOMMU) is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Resolved an issue where systems configured with 1TB or more memory would reset unexpectedly after running for approximately 90 hours. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot". Systems configured with 1TB or more memory must update to this version of the system BIOS.

Resolved an issue where the system clock may become inaccurate by up to few seconds per day.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where the platform may experience a virtualization fault (which may result in a NMI or Machine Check Exception) when Input/Output Memory Management Unit (IOMMU) is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Resolved an issue where systems configured with 1TB or more memory would reset unexpectedly after running for approximately 90 hours. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot". Systems configured
with 1TB or more memory must update to this version of the system BIOS.

Resolved an issue where the system clock may become inaccurate by up to few seconds per day.

**Known Issues:**

None

**Enhancements**

Added support for AMD Opteron Series 6300 processors.

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configuration.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to utilize 1 Terabyte or more memory. The option defaults to limiting memory addressing to just below 1TB because some Operating Systems will not operate correctly with 1 Terabyte or more available memory. If more than 1 Terabyte of memory is installed in the system and an Operating System that supports more than 1 Terabyte of memory is being used, configure the "One Terabyte Memory Limit" option to "Enable all memory" to allow use of all installed memory.

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

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**Online ROM Flash Component for Windows - HP ProLiant DL560 Gen8 (P77) Servers**
Version: 2012.08.20 *(Optional)*

**Important Note**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant DL560 Gen8 System ROM - P77

**Release Date:**
Last Recommended or Critical Revision:
05/30/2012

Previous Revision:
05/30/2012

Firmware Dependencies:
None

Enhancements/New Features:

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel’s DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain
commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None

Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.
Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None

Enhancements

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Online ROM Flash Component for Windows - HP ProLiant DL580 G5 (P61) Servers
Version: 2011.05.02 (Critical)

Important Note!

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
Deliverable Name:
HP ProLiant DL580 G5 System ROM - P61

Release Date:
05/02/2011

Last Recommended or Critical Revision:
05/02/2011

Previous Revision:
10/25/2010

Firmware Dependencies:
None

Enhancements/New Features:
Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Problems Fixed:
Resolved an issue where the system may hang when trying to apply custom settings using the ROM Based Setup Utility (RBSU) User Defined Defaults Option.

Known Issues:
None

Fixes

Important Notes:
As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in...
HP Service Pack for ProLiant 2012.10.0 Release Notes

Advisory C02838375 available at the following link:

Firmware Dependencies:

None

Problems Fixed:

Resolved an issue where the system may hang when trying to apply custom settings using the ROM Based Setup Utility (RBSU) User Defined Defaults Option.

Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Online ROM Flash Component for Windows - HP ProLiant DL580 G7 (P65) Servers
Version: 2012.08.04 (Optional)

Important Note!

Important Notes:

None

Deliverable Name:

HP ProLiant DL580 G7 System ROM - P65

Release Date:

08/04/2012

Last Recommended or Critical Revision:

04/20/2012
Enhancements/New Features:

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added support for a ROM Based Setup Utility (RBSU) option called SMI Link Power Management that allows the user to disable power management on the Intel Scalable Memory Interconnect (SMI) link. This option is Enabled by Default. Disabling this functionality will increase the server’s idle power usage. While corrected events are considered normal and are expected on the SMI Link and do not affect operation of the platform, the occurrence of these corrected events can be reduced significantly by disabling SMI Link Power Management. These events are logged as correctable Machine Check Bank 8 and 9 errors in the operating system logs for certain operating systems. While these events can be ignored, SMI Link Power Management can be disabled to reduce or prevent their occurrence if desired.

Problems Fixed:

None

Known Issues:

None

Enhancements

Important Notes:

None

Firmware Dependencies:

None

Enhancements/New Features:

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use...
under a supported Operating System. Please consult the proper Operating System and Network Adapter
documentation for a list of supported configurations.

Added support for a ROM Based Setup Utility (RBSU) option called SMI Link Power Management that
allows the user to disable power management on the Intel Scalable Memory Interconnect (SMI) link. This
option is Enabled by Default. Disabling this functionality will increase the server’s idle power usage.
While corrected events are considered normal and are expected on the SMI Link and do not affect
operation of the platform, the occurrence of these corrected events can be reduced significantly by
disabling SMI Link Power Management. These events are logged as correctable Machine Check Bank 8
and 9 errors in the operating system logs for certain operating systems. While these events can be
ignored, SMI Link Power Management can be disabled to reduce or prevent their occurrence if desired.

Known Issues:

None

Servers
Version: 2011.05.02 (Critical)

Important Note!

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash
update utility, the System ROM revision cannot be downgraded with the flash components available on
the HP Support site after updating to this revision of the System ROM. A customer can downgrade the
System ROM by creating a new flash component with the older System ROM revision as indicated in
Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant DL585 G2/G5/G6 System ROM - A07

Release Date:

05/02/2011

Last Recommended or Critical Revision:

05/02/2011

Previous Revision:

04/30/2010
Firmware Dependencies:
None

Enhancements/New Features:
Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Problems Fixed:
Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Known Issues:
None

Fixes

Important Notes:
As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:
None

Problems Fixed:
Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Known Issues:
None
Enhancements
Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Online ROM Flash Component for Windows - HP ProLiant DL585 G7 (A16) Servers
Version: 2012.08.15 (Recommended)

Important Note!

Important Notes:
None

Deliverable Name:
HP ProLiant DL585 G7 System ROM - A16

Release Date:
08/15/2012

Last Recommended or Critical Revision:
08/15/2012

Previous Revision:
05/08/2012

Firmware Dependencies:
None

Enhancements/New Features:
Added support for AMD Opteron Series 6300 processors.

Added support for Input/Output Memory Management Unit (IOMMU). When used with an operating system/hypervisor that support this functionality, IOMMU provides performance and security benefits. This functionality is disabled by default and is controlled via a ROM-Based Setup Utility (RBSU) option.

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in
virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added support for Load-Reduced DIMM (LRDIMM) memory modules. This revision of the System ROM must be installed on the server prior to installing LRDIMMs as the server will not boot with previous revisions of the System ROM with these DIMMs installed.

Added support for the HP ProLiant DL585 G7 with the NC331i embedded NIC. This revision of the System ROM supports ProLiant DL585 G7 servers with the NC331i embedded NIC and ProLiant DL585 G7 servers with the NC375i embedded NIC. The DL585 G7 with the NC331i embedded NIC is not supported with previous revisions of the System ROM.

Added a new ROM-Based Setup Utility (RBSU) Advanced System ROM Options menu that allows the user to enable the ACPI System Locality Distance Information Table (SLIT). This industry standard ACPI mechanism provides operating systems with the ability to read processor and I/O affinity to allow the operating system to intelligently distribute workloads to improve performance.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to utilize 1 Terabyte or more memory. The option defaults to limiting memory addressing to just below 1TB because some Operating Systems will not operate correctly with 1 Terabyte or more available memory. If more than 1 Terabyte of memory is installed in the system and an Operating System that supports more than 1 Terabyte of memory is being used, configure the "One Terabyte Memory Limit" option to "Enable all memory" to allow use of all installed memory.

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

**Problems Fixed:**

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as “The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot”.

Resolved an issue where systems configured with 1TB or more memory would reset unexpectedly after running for approximately 90 hours. The unexpected reset would be reported in the Integrated Management Log (IML) as “The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot”. Systems configured with 1TB or more memory must update to this version of the system BIOS.

Resolved an issue where the system clock may become inaccurate by up to few seconds per day.

**Known Issues:**
Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where systems configured with 1TB or more memory would reset unexpectedly after running for approximately 90 hours. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot". Systems configured with 1TB or more memory must update to this version of the system BIOS.

Resolved an issue where the system clock may become inaccurate by up to few seconds per day.

Known Issues:

None

Enhancements

Added support for AMD Opteron Series 6300 processors.

Added support for Input/Output Memory Management Unit (IOMMU). When used with an operating system/hypervisor that support this functionality, IOMMU provides performance and security benefits. This functionality is disabled by default and is controlled via a ROM-Based Setup Utility (RBSU) option.

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added support for Load-Reduced DIMM (LRDIMM) memory modules. This revision of the System ROM must be installed on the server prior to installing LRDIMMs as the server will not boot with previous revisions of the System ROM with these DIMMs installed.

Added support for the HP ProLiant DL585 G7 with the NC331i embedded NIC. This revision of the System
ROM supports ProLiant DL585 G7 servers with the NC331i embedded NIC and ProLiant DL585 G7 servers with the NC375i embedded NIC. The DL585 G7 with the NC331i embedded NIC is not supported with previous revisions of the System ROM.

Added a new ROM-Based Setup Utility (RBSU) Advanced System ROM Options menu that allows the user to enable the ACPI System Locality Distance Information Table (SLIT). This industry standard ACPI mechanism provides operating systems with the ability to read processor and I/O affinity to allow the operating system to intelligently distribute workloads to improve performance.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to utilize 1 Terabyte or more memory. The option defaults to limiting memory addressing to just below 1TB because some Operating Systems will not operate correctly with 1 Terabyte or more available memory. If more than 1 Terabyte of memory is installed in the system and an Operating System that supports more than 1 Terabyte of memory is being used, configure the "One Terabyte Memory Limit" option to "Enable all memory" to allow use of all installed memory.

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

Online ROM Flash Component for Windows - HP ProLiant DL785 G5/DL785 G6 (A15) Servers
Version: 2011.05.02 (Critical)

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

Deliverable Name:

HP ProLiant DL785 G5/G6 System ROM - A15

Release Date:

05/02/2011

Last Recommended or Critical Revision:
Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Problems Fixed:

Resolved an issue where the System ROM would not populate the System Enclosure or Chassis (type 3) SMBIOS record with text entered by the user in the Server Asset Tag Text Line in the ROM-Based Setup Utility (RBSU).

Resolved an issue where the user may be unable to select and use the '57600' and '115200' options in the "BIOS Serial Console Baud Rate" menu in the ROM-Based Setup Utility (RBSU).

Known Issues:

None

Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:

None
Problems Fixed:

Resolved an issue where the System ROM would not populate the System Enclosure or Chassis (type 3) SMBIOS record with text entered by the user in the Server Asset Tag Text Line in the ROM-Based Setup Utility (RBSU).

Resolved an issue where the user may be unable to select and use the '57600' and '115200' options in the "BIOS Serial Console Baud Rate" menu in the ROM-Based Setup Utility (RBSU).

Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Online ROM Flash Component for Windows - HP ProLiant DL980 G7 (P66) Servers
Version: 2012.07.30 (Recommended)

Important Note!

Important Notes:

None

Deliverable Name:

HP ProLiant DL980 G7 System ROM - P66

Release Date:

07/30/2012

Last Recommended or Critical Revision:

07/30/2012

Previous Revision:
HP Service Pack for ProLiant 2012.10.0 Release Notes

05/01/2012

Firmware Dependencies:

None

Enhancements/New Features:

None

Problems Fixed:

Addressed an issue where system may stop responding during Red Hat Enterprise Linux 6.X x86-64 (RHEL6.0 or later) startup or installation when the ROM-Based Setup Utility (RBSU) setting Advanced Options->Advanced System ROM Options->x2APIC is set to "Auto" and there are 8 Intel Xeon E7 family processors installed.

Addressed an issue where system may reboot unexpectedly during Operating System boot or run time without any processor event logged to the Integrated Management Log (IML) due to one or more faulty cores in processors installed.

Addressed an issue where Emulex LUNs might not all been discovered in disk management after running Windows Server 2008 R2 or Windows Server 2008 R2 SP1 Emulex adapters (drivers and tools).

Known Issues:

None

Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Addressed an issue where system may stop responding during Red Hat Enterprise Linux 6.X x86-64 (RHEL6.0 or later) startup or installation when the ROM-Based Setup Utility (RBSU) setting Advanced Options->Advanced System ROM Options->x2APIC is set to "Auto" and there are 8 Intel Xeon E7 family processors installed.

Addressed an issue where system may reboot unexpectedly during Operating System boot or run time without any processor event logged to the Integrated Management Log (IML) due to one or more faulty cores in processors installed.

Addressed an issue where Emulex LUNs might not all been discovered in disk management after running Windows Server 2008 R2 or Windows Server 2008 R2 SP1 Emulex adapters (drivers and tools).
Windows Server 2008 R2 or Windows Server 2008 R2 SP1 Emulex adapters (drivers and tools).

**Known Issues:**

None

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### Online ROM Flash Component for Windows - HP ProLiant ML110 G7/DL120 G7 (J01) Servers

Version: 2012.08.10 *(Recommended)*

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant ML110 G7/DL120 G7 System ROM - J01

**Release Date:**

08/10/2012

**Last Recommended or Critical Revision:**

08/10/2012

**Previous Revision:**

02/01/2012

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Resolved a processor issue where certain instructions and conditions could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon E3-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue.

Resolved an issue where disabling the serial port in the ROM-Based Setup Utility (RBSU) would cause
Windows Device Manager to show a yellow exclamation point for the serial port.

Resolved an issue where the system may experience a Red Screen Illegal Op Code when the embedded SATA Controller has been disabled from the ROM Based Setup Utility (RBSU.)

Known Issues:

None

Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Resolved a processor issue where certain instructions and conditions could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon E3-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue.

Resolved an issue where disabling the serial port in the ROM-Based Setup Utility (RBSU) would cause Windows Device Manager to show a yellow exclamation point for the serial port.

Resolved an issue where the system may experience a Red Screen Illegal Op Code when the embedded SATA Controller has been disabled from the ROM Based Setup Utility (RBSU.)

Known Issues:

None

Online ROM Flash Component for Windows - HP ProLiant ML310 G5/DL320 G5p (W05) Servers

Version: 2010.10.25 (Critical)

Important Note!

Important Notes:

None

Deliverable Name:
HP ProLiant DL320 G5p/ML310 G5 System ROM - W05

Release Date:
10/25/2010

Last Recommended or Critical Revision:
10/25/2010

Previous Revision:
07/11/2009

Firmware Dependencies:
None

Enhancements/New Features:
None

Problems Fixed:
Resolved a processor issue where an unlikely and complex sequence of conditions operating in 64-bit mode could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon 3100-series, Intel Xeon 3200-series, Intel Xeon 3300-series, Intel Pentium Dual-Core Desktop E2000-series, and Intel Core 2 Duo Desktop E4000-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel's microcode for affected processors that addresses this issue. 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. HP strongly recommends immediate update to firmware revisions with required critical fixes. Note: This processor issue has resulted in the following error being logged to the Integrated Management Log on servers configured with the HP ProLiant Health Management Agents when configured in a Microsoft Virtual Server environment with large numbers of Virtual Machines (VM) simultaneously subjected to a heavy I/O workload (and may occur in other operating system environments): "An Unrecoverable System Error has occurred (Error code 0x0000002D, 0x00000000)".

Known Issues:
None

Fixes

Important Notes:
None
Firmware Dependencies:

None

Problems Fixed:

Resolved a processor issue where an unlikely and complex sequence of conditions operating in 64-bit mode could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon 3100-series, Intel Xeon 3200-series, Intel Xeon 3300-series, Intel Pentium Dual-Core Desktop E2000-series, and Intel Core 2 Duo Desktop E4000-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel's microcode for affected processors that addresses this issue. 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. HP strongly recommends immediate update to firmware revisions with required critical fixes. Note: This processor issue has resulted in the following error being logged to the Integrated Management Log on servers configured with the HP ProLiant Health Management Agents when configured in a Microsoft Virtual Server environment with large numbers of Virtual Machines (VM) simultaneously subjected to a heavy I/O workload (and may occur in other operating system environments): "An Unrecoverable System Error has occurred (Error code 0x0000002D, 0x00000000)".

Known Issues:

None

Online ROM Flash Component for Windows - HP ProLiant ML310 G5p (W08) Servers
Version: 2010.10.25 (Critical)

Important Note!

Important Notes:

None

Deliverable Name:

HP ProLiant ML310 G5p System ROM - W08

Release Date:

10/25/2010

Last Recommended or Critical Revision:

10/25/2010

Previous Revision:
07/12/2009

**Firmware Dependencies:**

None

**Enhancements/New Features:**

None

**Problems Fixed:**

Resolved a processor issue where an unlikely and complex sequence of conditions operating in 64-bit mode could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon 3100-series, Intel Xeon 3300-series, Intel Pentium Dual-Core Desktop E2000-series, Intel Core 2 Duo Desktop E6000-series, Intel Core 2 Duo E8000-series, and Intel Core 2 Quad Q9000-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue. 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. HP strongly recommends immediate update to firmware revisions with required critical fixes.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved a processor issue where an unlikely and complex sequence of conditions operating in 64-bit mode could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon 3100-series, Intel Xeon 3300-series, Intel Pentium Dual-Core Desktop E2000-series, Intel Core 2 Duo Desktop E6000-series, Intel Core 2 Duo E8000-series, and Intel Core 2 Quad Q9000-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue. 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. HP strongly recommends immediate update to firmware revisions with required critical fixes.

Note: This processor issue has resulted in the following error being logged to the Integrated Management Log on servers configured with the HP ProLiant Health Management Agents when configured in a Microsoft Virtual Server environment with large numbers of Virtual Machines (VM) simultaneously subjected to a heavy I/O workload (and may occur in other operating system environments): "An Unrecoverable System Error has occurred (Error code 0x0000002D, 0x00000000)".
critical fix. HP strongly recommends immediate update to firmware revisions with required critical fixes.

Note: This processor issue has resulted in the following error being logged to the Integrated Management Log on servers configured with the HP ProLiant Health Management Agents when configured in a Microsoft Virtual Server environment with large numbers of Virtual Machines (VM) simultaneously subjected to a heavy I/O workload (and may occur in other operating system environments): "An Unrecoverable System Error has occurred (Error code 0x0000002D, 0x00000000)".

**Known Issues:**

None

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**Online ROM Flash Component for Windows - HP ProLiant ML310e Gen8 (J04) Servers**

Version: 2012.08.14 *(Recommended)*

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant ML310e Gen8 System ROM - J04

**Release Date:**

08/14/2012

**Last Recommended or Critical Revision:**

08/14/2012

**Previous Revision:**

06/01/2012

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

**Problems Fixed:**

Resolved a processor issue where certain instructions and conditions could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon E3-series processors. This issue is not unique to HP ProLiant servers and could impact
any system using affected processors. This revision of the System ROM contains an updated version of Intel's microcode for affected processors that addresses this issue.

Resolved an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Resolved a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved a processor issue where certain instructions and conditions could result in an application-level error, blue screen, kernel panic, or other unpredictable system behavior. This issue affects platforms utilizing Intel Xeon E3-series processors. This issue is not unique to HP ProLiant servers and could impact any system using affected processors. This revision of the System ROM contains an updated version of Intel’s microcode for affected processors that addresses this issue.

Resolved an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Resolved a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

**Known Issues:**

None

**Enhancements**

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.
**Online ROM Flash Component for Windows - HP ProLiant ML350 G5 (D21) Servers**

Version: 2011.05.02 (Critical)

**Important Note!**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Deliverable Name:**

HP ProLiant ML350 G5 System ROM - D21

**Release Date:**

05/02/2011

**Last Recommended or Critical Revision:**

05/02/2011

**Previous Revision:**

10/25/2010

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Problems Fixed:**
Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

**Known Issues:**
None

**Fixes**

**Important Notes:**

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Firmware Dependencies:**
None

**Problems Fixed:**

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

**Known Issues:**
None

**Enhancements**

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

**Online ROM Flash Component for Windows - HP ProLiant ML350 G6 (D22) Servers**

Version: 2011.05.05 *(Critical)*

**Important Note!**

**Important Notes:**

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


**Deliverable Name:**

HP ProLiant ML350 G6 System ROM - D22

**Release Date:**

05/05/2011

**Last Recommended or Critical Revision:**

05/05/2011

**Previous Revision:**

01/30/2011

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Enhanced HP’s Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating.
Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

**Known Issues:**

None

**Fixes**

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375
C02838375 available at the following link:

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor's power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

**Known Issues:**

None

**Enhancements**

Enhanced HP's Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:
Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

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**Online ROM Flash Component for Windows - HP ProLiant ML350e Gen8 (J02) Servers**

Version: 2012.08.20 *(Optional)*

**Important Note**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant ML350e Gen8 System ROM - J02

**Release Date:**

08/20/2012

**Last Recommended or Critical Revision:**

04/04/2012

**Previous Revision:**

05/30/2012

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter.
documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel’s DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

**Problems Fixed:**

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

**Known Issues:**

None
Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

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Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None

Enhancements

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload...
network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

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**Online ROM Flash Component for Windows - HP ProLiant ML350p Gen8 (P72) Servers**

<table>
<thead>
<tr>
<th>Version: 2012.08.20 (Optional)</th>
</tr>
</thead>
</table>

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant ML350p Gen8 System ROM - P72

**Release Date:**

08/20/2012

**Last Recommended or Critical Revision:**

02/25/2012

**Previous Revision:**

07/15/2012

**Firmware Dependencies:**

None

**Enhancements/New Features:**
Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMU on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.
Known Issues:

None

Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None

Enhancements

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter
documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Online ROM Flash Component for Windows - HP ProLiant ML370 G5 (P57) Server
Version: 2011.05.02 (Critical)

Important Note!

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Deliverable Name:

HP ProLiant ML370 G5 System ROM - P57

Release Date:

05/02/2011

Last Recommended or Critical Revision:

05/02/2011

Previous Revision:
HP Service Pack for ProLiant 2012.10.0 Release Notes

10/25/2010

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Problems Fixed:

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as the system hanging during system boot without anything displayed to video. Once the system gets into this state, the maintenance jumper can be utilized to recover operation of the system and restore configuration defaults. This revision of the System ROM will restore configuration defaults when non-volatile storage becomes corrupt.

Known Issues:

None

Fixes

Important Notes:

As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Firmware Dependencies:

None

Problems Fixed:

Resolved a very rare issue where the system may either hang during system boot or boot with configuration options set incorrectly when non-volatile storage becomes corrupt. This is normally seen as
the system hanging during system boot without anything displayed to video. Once the system gets into
this state, the maintenance jumper can be utilized to recover operation of the system and restore
configuration defaults. This revision of the System ROM will restore configuration defaults when non-
volatile storage becomes corrupt.

Known Issues:

None

Enhancements

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and
decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade
process requires modifications to both the System ROM and the flash update utility, the System ROM
revision cannot be downgraded with the flash components available on the HP Support site after updating
to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash
component with the older System ROM revision as indicated in Advisory C02838375 available at the
following link:

Online ROM Flash Component for Windows - HP ProLiant ML370 G6/DL370 G6 (P63) Servers
Version: 2011.05.05 (Critical)

Important Note:

Important Notes:

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update
utility, the System ROM revision cannot be downgraded with the flash components available on the HP
Support site after updating to this revision of the System ROM. A customer can downgrade the System
ROM by creating a new flash component with the older System ROM revision as indicated in Advisory
C02838375 available at the following link:

Deliverable Name:

HP ProLiant ML370 G6 and DL370 G6 System ROM - P63

Release Date:

05/05/2011

Last Recommended or Critical Revision:

05/05/2011

Previous Revision:
Firmware Dependencies:

None

Enhancements/New Features:

Enhanced HP's Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum
Resolved an issue where the system did not properly modify the processor's power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Known Issues:

None

Fixes

Important Notes:

Enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link:


Firmware Dependencies:

None

Problems Fixed:

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue where the system did not properly modify the processor's power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.
Known Issues:

None

Enhancements

Enhanced HP's Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced the System ROM flash update process to improve the reliability of System ROM updates and decrease the probability of unintended corruption of the flash part. Note: As enhancing the flash upgrade process requires modifications to both the System ROM and the flash update utility, the System ROM revision cannot be downgraded with the flash components available on the HP Support site after updating to this revision of the System ROM. A customer can downgrade the System ROM by creating a new flash component with the older System ROM revision as indicated in Advisory C02838375 available at the following link: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c02838375

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Online ROM Flash Component for Windows - HP ProLiant SL230s/SL250s Gen8 (P75) Servers

Version: 2012.08.20 (Optional)

Important Note!

Important Notes:

None

Deliverable Name:

HP ProLiant SL230s/SL250s Gen8 System ROM - P75

Release Date:
08/20/2012

**Last Recommended or Critical Revision:**

04/04/2012

**Previous Revision:**

06/02/2012

**Firmware Dependencies:**

None

**Enhancements/New Features:**

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel’s DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

Added support for NVIDIA Tesla K10 Dual GPU cards for the HP ProLiant SL250s Gen8.

**Problems Fixed:**

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any
Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Addressed a rare issue where SL250s nodes installed in an SL6500 chassis may experience an unexpected power loss due to the power supplies in the chassis overheating and shutting down.

Known Issues:

None

Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly.
properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Addressed a rare issue where SL250s nodes installed in an SL6500 chassis may experience an unexpected power loss due to the power supplies in the chassis overheating and shutting down.

**Known Issues:**

None

**Enhancements**

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

Added support for NVIDIA Tesla K10 Dual GPU cards for the HP ProLiant SL250s Gen8.
Online ROM Flash Component for Windows - HP ProLiant SL335s G7 (A24) Servers
Version: 2012.08.15 (Recommended)

Important Note!

Important Notes:
None

Deliverable Name:
HP ProLiant SL335s G7 System ROM - A24

Release Date:
08/15/2012

Last Recommended or Critical Revision:
08/15/2012

Previous Revision:
05/11/2012

Firmware Dependencies:
None

Enhancements/New Features:
Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Problems Fixed:
Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as “The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot”.

Known Issues:
None

Fixes
Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Known Issues:

None

Enhancements

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

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**Online ROM Flash Component for Windows - HP ProLiant SL390s G7 (P69) Servers**

Version: 2011.05.05 *(Critical)*

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**

HP ProLiant SL390s G7 System ROM - P69

**Release Date:**

05/05/2011

**Last Recommended or Critical Revision:**

05/05/2011
Enhanced HP's Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Added support for Nvidia M2090 GPUs. This ROM update is required to provide adequate cooling for customers running a M2090 in a 2U SL390 G7 or running more than 4 M2090 GPUs in a 4U SL390 G7.

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoD) under VMware ESX, but there will not be
any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors to the IML.

Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Resolved an issue where the MAC address reported in the ROM Based Setup Utility (RBSU) for embedded NIC Port 4 would be reported as Unknown.

**Known Issues:**

None

**Fixes**

**Important Notes:**

None

**Firmware Dependencies:**

None

**Problems Fixed:**

Resolved an issue that may result in any of the following conditions: operating system stops responding, unexpected system reset, Blue Screen when using a Microsoft Windows operating system, kernel panic when using a Linux operating system, or Purple Screen when using VMware ESX. A message may be displayed by the operating system or logged in the HP Integrated Management Log (IML) when this issue occurs indicating an "Uncorrectable Machine Check Exception." However, there are instances where the system resets before the operating system displays an error message and instances where the IML contains no log entry when this issue occurs. This issue does not occur if the Minimum Processor Idle State is configured for No C-states or C1E-state. The system is susceptible to this issue in the default Minimum Processor Idle State configuration.

Resolved an issue where PCI-Express Gen 3 option cards would run at PCI-Express Gen 1 speeds rather than the appropriate behavior of running at PCI-Express Gen 2 speeds. This server supports a maximum PCI-Express speed of Gen 2.

Resolved an issue in which uncorrectable memory errors (or other fatal system errors) will not be logged to the HP Integrated Management Log (IML) when using some revisions of VMware ESX Server. These errors will result in a fatal error (Purple Screen of Death - PSoD) under VMware ESX, but there will not be any indication of the error type (including no indication of an uncorrectable memory error or what DIMM has failed). A VMware ESX Server issue which can result in uncorrectable memory errors this is addressed in VMware ESX 4.1 U1 and VMware ESX 4.0 U3. This System ROM revision addresses the logging of errors.
Resolved an issue where the system did not properly modify the processor’s power state (P-state) based on workload when the system is configured with Intel Xeon 5687 processors and the HP Power Regulator Mode is configured to OS Control Mode in the ROM-Based Setup Utility (RBSU). The processor would always run in its maximum power/performance state rather than modifying the power state based on the workload.

Resolved an issue where the MAC address reported in the ROM Based Setup Utility (RBSU) for embedded NIC Port 4 would be reported as Unknown.

**Known Issues:**

None

**Enhancements**

Enhanced HP's Memory Pre-failure Alert support with HP Advanced Memory Error Detection Technology. This innovation analyzes multiple parameters of correctable memory error events and intelligently detects when the system is at an increased probability of non-recoverable memory conditions that would result in unplanned downtime or when correctable memory errors may degrade system performance. HP Advanced Memory Error Detection Technology will increase server uptime by accurately determining when a server administrator should schedule planned maintenance to replace DIMMs preventing unnecessary planned downtime and reducing the probability of unplanned downtime.

Enhanced DIMM initialization such that the system will continue to boot with failed DIMM(s) installed (with those DIMM(s) not available to the operating system) in some instances that would have previously resulted in a hang early in the system boot process without any information displayed on the screen.

Added latest product names of optional expansion cards for display in the ROM-Based Setup Utility (RBSU).

Improved the logging of Smart Array Accelerator Battery and Smart Array Accelerator Super-Cap information in the Integrated Management Log (IML) to clearly indicate what actions a customer should take when the battery or super-cap is not installed, requires replacement, or is charging.

Added support for Nvidia M2090 GPUs. This ROM update is required to provide adequate cooling for customers running a M2090 in a 2U SL390 G7 or running more than 4 M2090 GPUs in a 4U SL390 G7.

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**Online ROM Flash Component for Windows - HP ProLiant SL4540 Gen8 (P74) Servers**

Version: 2012.08.20 (Optional)

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**
Release Date:
08/20/2012

Last Recommended or Critical Revision:
05/30/2012

Previous Revision:
05/30/2012

Firmware Dependencies:
None

Enhancements/New Features:

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel’s DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for
Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMU on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None

Fixes

Important Notes:

None

Firmware Dependencies:

None

Problems Fixed:

Addressed an issue where the Integrated Management Log (IML) may contain erroneous log entries for Uncorrectable Machine Check Errors after a normal platform power cycle. Users who are experiencing these erroneous messages should update to this version of the system ROM before replacing any hardware components.

Addressed an issue where the ROM Based Setup Utility Command Line Interface (CLI) Mode may not function properly. Previous versions of the system ROM may have experienced an issue where certain commands in CLI mode would not function properly.

Addressed a rare issue where USB Support in a pre-boot environment, such as in DOS or the ROM Based Setup Utility (RBSU), may not function properly. This issue could have resulted in the system not booting
properly from USB media or the USB Keyboard may becoming unresponsive.

Addressed an issue where the platform may experience a virtualization fault (which may result in an NMI or Machine Check Exception) when IOMMU is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

Addressed an issue where the platform may experience decreased I/O performance when any Minimum Processor Idle Power Core States (C-states) are enabled. Reduced I/O performance has been seen in dual-processor configurations where I/O devices that are attached to the PCI-express lanes from one processor are accessing resources on the other processor when the other processor is in a low power state.

Known Issues:

None

Enhancements

Added support for Single Root I/O Virtualization (SR-IOV). SR-IOV can provide performance benefits in virtualized environments if the Operating System/hypervisor and installed I/O card support SR-IOV. This functionality is enabled via a ROM-Based Setup Utility (RBSU) Advanced System ROM Option. It is disabled by default. When enabled, the System ROM will configure devices that support SR-IOV for use under a supported Operating System. Please consult the proper Operating System and Network Adapter documentation for a list of supported configurations.

Added a new ROM Based Setup Utility (RBSU) Advanced Performance Option menu that allows the user to enable Intel NIC DMA Channels (IOAT). This option is disabled by default. When enabled, certain networking devices may see an improvement in performance by utilizing Intel's DMA engine to offload network activity. Please consult documentation from the network adapter to determine if this feature is supported.

Added a new ROM Based Setup Utility (RBSU) Advanced Power Savings Option menu that allows the user to disable Memory Power Management functionality. This option is enabled by default. When disabled, certain memory power savings modes are disabled which can result in lower latency responses from memory transactions at the cost of memory power savings.

Added a new ROM Based Setup Utility (RBSU) Advanced System ROM Option menu that allows the user to disable the default System ROM functionality that continually searches for bootable devices when a boot device cannot be found (non-system disk condition). By default, the System ROM will indefinitely keep searching for bootable devices from all available media types until a bootable device is detected.

Increased memory speeds for certain DIMM configurations using HP SmartMemory.

Updated the HP ProLiant Dynamic SmartArray Firmware to Version 2.50.0.

Online ROM Flash Component for Windows - HP ProLiant SL4545 G7 (A31) Servers
Version: 2012.08.15 (Recommended)
Important Note!

Important Notes:

None

Deliverable Name:

HP ProLiant SL4545 G7 System ROM - A31

Release Date:

08/15/2012

Last Recommended or Critical Revision:

08/15/2012

Previous Revision:

06/15/2012

Firmware Dependencies:

None

Enhancements/New Features:

Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

Problems Fixed:

Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where the platform may experience a virtualization fault (which may result in a NMI or Machine Check Exception) when Input/Output Memory Management Unit (IOMMU) is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMU on the platform.

Known Issues:
None

**Fixes**

**Important Notes:**
None

**Firmware Dependencies:**
None

**Problems Fixed:**
Resolved an issue where systems could reset unexpectedly. The unexpected reset would be reported in the Integrated Management Log (IML) as "The system experienced an unexpected reboot. The Integrated Management Log (IML) may contain an entry indicating additional information about this reboot".

Resolved an issue where the platform may experience a virtualization fault (which may result in a NMI or Machine Check Exception) when Input/Output Memory Management Unit (IOMMU) is enabled under a Hypervisor based Operating System. In some instances, Linux kernel messaging (DMESG) would reflect an inability to enable IOMMO on the platform.

**Known Issues:**
None

**Enhancements**
Enhanced logging of system errors to the Integrated Management Log (IML). Certain errors that may have resulted in a non-maskable interrupt (NMI) (Windows Blue Screen, Linux kernel panic, or VMware Purple Screen of Death) or system reset without an IML entry will now have an IML entry indicating the error type.

Added latest product names of optional expansion cards and updated language translations (for non-English modes) in the ROM-Based Setup Utility (RBSU).

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**Driver - Chipset**

**HP ProLiant PCI-express Power Management Update for Windows**
Version: 1.3.0.0 (D) (Optional)

**Enhancements**
Enhanced component-level logging has been implemented in the Smart Component installer. The generated log file will be located on the target system in the %SystemRoot%\cpqsystem\log directory under the name CPQSETUP.LOG.
**Driver - Lights-Out Management**

*HP iLO High-Performance Mouse for Linux*
Version: 1.2.1-* (Optional)

**Prerequisites**

In order for the HP iLO High-Performance Mouse to install and work properly, your server must have the following:

- embedded iLO2 or later
- Xfree86 or xorg-x11 install
- 2.6 Kernel or later

**Fixes**

Fixed issue where the remote console mouse does not function properly on RedHat Enterprise Linux 4 Update 8 with iLO3 based servers. Previously released version (1.2.0) that claimed iLO3 support did not function as expected under RHEL4 update 8 on iLO3 based servers.

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*HP ProLiant Channel Interface Device Driver for iLO for Red Hat Enterprise Linux 5 (AMD64/EM64T)*
Version: 8.5.0-1.rhel5 (Optional)

**Important Note!**
The hp-ilo features are now included in the Red Hat Enterprise Linux 5 Update 3 and later. Therefore you don't need to install hp-ilo if you are running Red Hat Enterprise Linux 5 Update 3 and later.

**Enhancements**

Added support for newer distribution kernels.

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*HP ProLiant Channel Interface Device Driver for iLO for Red Hat Enterprise Linux 5 (x86)*
Version: 8.5.0-1.rhel5 (Optional)

**Important Note!**
The hp-ilo features are now included in the Red Hat Enterprise Linux 5 Update 3 and later. Therefore you don't need to install hp-ilo if you are running Red Hat Enterprise Linux 5 Update 3 and later.

**Enhancements**

Added support for newer distribution kernels.
**HP ProLiant Channel Interface Device Driver for iLO for SUSE LINUX Enterprise Server 10 (AMD64/EM64T)**
Version: 9.0.0.sles10 (Optional)

**Enhancements**
Added poll() system call support to the HP Integrated Lights-out (iLO) module.

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**HP ProLiant Channel Interface Device Driver for iLO for SUSE LINUX Enterprise Server 10 (x86)**
Version: 9.0.0.sles10 (Optional)

**Enhancements**
Added poll() system call support to the HP Integrated Lights-out (iLO) module.

---

Version: 1.16.0.0 (Optional)

**Fixes**
Fixed a problem related to the Insight Management Agents and WBEM Providers re-establishing communications with iLO after iLO is rebooted.

---

Version: 1.16.0.0 (Optional)

**Fixes**
Fixed a problem related to the Insight Management Agents and WBEM Providers re-establishing communications with iLO after iLO is rebooted.
## Network Component Drivers

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**HP NC-Series Mellanox**

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**HP Network Configuration Utility**

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**HP Broadcom 1/10 GbE iSCSI Offload Driver for Linux**

Version: 7.2.55-2 *(Optional)*

**Prerequisites**

This rpm package requires that the *HP Broadcom 1/10 GbE Multifunction Driver for Linux* rpm, version 7.2.54-2, be installed in order to run correctly.

This rpm package requires that the *kernel-syms* package be installed in order to build correctly.

**Enhancements**

This driver now supports Red Hat Enterprise Linux 6 Update 3.

**Supported Devices and Features**

This driver supports the following network adapters:

- HP NC382i Integrated Dual Port Multifunction Gigabit Server Adapter
- HP NC382m Dual Port 1GbE Multifunction BL-c Adapter
HP Broadcom 1/10 GbE Multifunction Drivers for Linux
Version: 7.2.55-2 (Optional)

Prerequisites
This rpm package requires that the kernel-syms package be installed in order to build correctly.

Enhancements
This driver now supports Red Hat Enterprise Linux 6 Update 3.

Supported Devices and Features
This driver supports the following network adapters:
  - HP NC370T Multifunction Gigabit Server Adapter
  - HP BladeSystem Dual NC370i Multifunction Gigabit Server Adapter
  - HP NC371i Integrated PCI-X Multifunction Gigabit Server Adapter
  - HP NC373F PCI Express Multifunction Gigabit Server Adapter
  - HP NC373T PCI Express Multifunction Gigabit Server Adapter
  - HP NC373i Integrated Multifunction Gigabit Server Adapter
  - HP NC373m PCI Express Dual Port Multifunction Gigabit Server Adapter
  - HP NC374m PCIe Multifunction Gigabit Server Adapter
  - HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter
  - HP NC382i Integrated Dual Port Multifunction Gigabit Server Adapter
  - HP NC382m Dual Port 1GbE Multifunction BL-c Adapter
  - HP NC382T PCI Express Dual Port Gigabit Server Adapter
  - HP NC532i Dual Port 10GbE Multifunction BL-c Adapter
  - HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
  - HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter
  - HP Ethernet 10Gb 2-port 530FLB Adapter
  - HP Ethernet 10Gb 2-port 530M Adapter
  - HP Ethernet 10Gb 2-port 530SFP+ Adapter

---

HP Broadcom 10GbE Multifunction Driver for Windows Server 2008
Version: 7.2.53.0 (Optional)

Enhancements
This driver now provides support for separate TX/RX interrupt affinity.

Supported Devices and Features
This driver supports the following HP Broadcom 10GbE Multifunction network adapters:

- HP NC532i Dual Port 10GbE Multifunction BL-c Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- 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 Broadcom 10GbE Multifunction Driver for Windows Server 2008 x64 Editions**
Version: 7.4.29.0 *(Optional)*

**Enhancements**
This product now supports Windows Server 2012.

**Supported Devices and Features**
This driver supports the following HP Broadcom 10GbE Multifunction network adapters:

- HP NC532i Dual Port 10GbE Multifunction BL-c Adapter
- HP NC532m Dual Port 10GbE Multifunction BL-c Adapter
- 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 Broadcom 1Gb Driver for Windows Server 2008**
Version: 15.2.0.8 *(Optional)*

**Enhancements**
This software now supports the HP Ethernet 1Gb 4-port 331i-SPI Adapter.

**Supported Devices and Features**
This driver supports the following HP Broadcom network adapters:

- HP NC105i Integrated PCI Express Gigabit Server Adapter
- HP NC107i Integrated PCI Express Gigabit Server Adapter
- HP NC150T PCI 4-port Gigabit Combo Switch Adapter
- HP NC320i Integrated Gigabit Server Adapter
- HP NC320m PCI Express Dual Port Adapter for HP Bladesystem
- HP NC320T PCI Express Gigabit Server Adapter
- HP NC324i Integrated Dual Port PCI Express Gigabit Server Adapter
- HP NC325i Integrated Dual Port PCI Express Gigabit Server Adapter
- HP NC325m PCIe Quad Port Adapter
**HP Service Pack for ProLiant 2012.10.0 Release Notes**

- HP NC326i Integrated Dual Port PCI Express Gigabit Server Adapter
- HP NC326m PCIe Dual Port Adapter
- HP NC1020 Gigabit Server Adapter
- HP Embedded NC7761 Gigabit Server Adapter
- HP NC7771 Gigabit Server Adapter
- HP NC7781 Gigabit Server Adapter
- HP NC7782 Gigabit Server Adapter
- 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 332T Adapter

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**HP Broadcom 1Gb Driver for Windows Server 2008 x64 Editions**

Version: 15.4.0.17 *(Optional)*

**Enhancements**

This component now supports Windows Server 2012.

**Supported Devices and Features**

This driver supports the following HP Broadcom network adapters:

- HP NC105i Integrated PCI Express Gigabit Server Adapter
- HP NC107i Integrated PCI Express Gigabit Server Adapter
- HP NC150T PCI 4-port Gigabit Combo Switch Adapter
- HP NC320i Integrated Gigabit Server Adapter
- HP NC320m PCI Express Dual Port Adapter for HP Bladesystem
- HP NC324i Integrated Dual Port PCI Express Gigabit Server Adapter
- HP NC325i Integrated Dual Port PCI Express Gigabit Server Adapter
- HP NC325m PCIe Quad Port Adapter
- HP NC326i Integrated Dual Port PCI Express Gigabit Server Adapter
- HP NC326m PCIe Dual Port Adapter
- 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 332T Adapter

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**HP Broadcom 1Gb Multifunction Driver for Windows Server 2008**

Version: 7.2.1.0 *(Optional)*

**Enhancements**

This driver now provides support for separate TX/RX interrupt affinity.
**Supported Devices and Features**

This driver supports the following network adapters:

- HP NC370T Multifunction Gigabit Server Adapter
- HP BladeSystem Dual NC370i Multifunction Gigabit Server Adapter
- HP NC371i Integrated PCI-X Multifunction Gigabit Server Adapter
- HP NC373F PCI Express Multifunction Gigabit Server Adapter
- HP NC373T PCI Express Multifunction Gigabit Server Adapter
- HP NC373i Integrated Multifunction Gigabit Server Adapter
- HP NC373m PCI Express Dual Port Multifunction Gigabit Server Adapter
- HP NC374m PCIe Multifunction Gigabit Server Adapter
- HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter
- HP NC382i Integrated Dual Port Multifunction Gigabit Server Adapter
- HP NC382m Dual Port 1GbE Multifunction BL-c Adapter
- HP NC382T PCI Express Dual Port Gigabit Server Adapter

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**HP Broadcom 1Gb Multifunction Driver for Windows Server 2008 x64 Editions**

Version: 7.4.14.0 (Optional)

**Enhancements**

This component now supports Windows Server 2012.

**Supported Devices and Features**

This driver supports the following network adapters:

- HP BladeSystem Dual NC370i Multifunction Gigabit Server Adapter
- HP NC371i Integrated PCI-X Multifunction Gigabit Server Adapter
- HP NC373F PCI Express Multifunction Gigabit Server Adapter
- HP NC373T PCI Express Multifunction Gigabit Server Adapter
- HP NC373i Integrated Multifunction Gigabit Server Adapter
- HP NC373m PCI Express Dual Port Multifunction Gigabit Server Adapter
- HP NC380T PCI Express Dual Port Multifunction Gigabit Server Adapter
- HP NC382i Integrated Dual Port Multifunction Gigabit Server Adapter
- HP NC382m Dual Port 1GbE Multifunction BL-c Adapter
- HP NC382T PCI Express Dual Port Gigabit Server Adapter

---

**HP Broadcom TG3 Driver for Linux**

Version: 3.122q-2 (Optional)

**Prerequisites**

This rpm package requires that the `kernel-syms` package be installed in order to build correctly.

**Enhancements**
This software now supports the HP Ethernet 1Gb 4-port 331i-SPI Adapter.

**Supported Devices and Features**

This driver supports the following network adapters:

- HP NC105i PCIe Gigabit Server Adapter
- HP NC107i PCIe Quad Port Gigabit Server Adapter
- HP NC150T PCI 4-Port Gigabit Combo Switch Adapter
- HP NC320x PCI Express Gigabit Server Adapter
- HP NC324i PCIe Dual Port Gigabit Server Adapter
- HP NC325i PCIe Dual Port Gigabit Server Adapter
- HP NC325m Quad Port PCIe Gigabit Server Adapter
- HP NC326i PCIe Dual Port Gigabit Server Adapter
- HP NC326m Dual Port PCIe Gigabit Server Adapter
- HP NC1020 Gigabit Server Adapter
- HP NC77xx Gigabit Server Adapter
- 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 2-port 332T Adapter

---

**HP Emulex 10GbE Driver for Linux**

Version: 4.1.450.7-2 (Optional)

**Fixes**

This driver corrects corrupt checksums in the IP headers of 64-bit SCTP packets when using HP Emulex NC55x devices.

**Enhancements**

This driver now supports Red Hat Enterprise Linux 6 Update 3.

**Supported Devices and Features**

This driver supports the following HP network adapters:

- HP NC550SFP Dual Port 10GbE Server Adapter
- HP NC550m Dual Port Flex-10 10GbE BL-c Adapter
- HP NC551m Dual Port FlexFabric 10Gb Converged Network Adapter
- HP NC551i Dual Port FlexFabric 10Gb Network Adapter
- HP NC552m 10Gb 2-port Flex-10 Server Adapter
- HP NC552SFP 10Gb 2-port Ethernet Server Adapter
- HP NC553i 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC553m 10Gb 2-port FlexFabric Converged Network Adapter
- HP Flex-10 10Gb 2-port 552M Adapter
- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
HP Emulex 10GbE Driver for Windows Server 2008
Version: 4.1.450.5 (Optional)

Fixes
In conjunction with firmware version 4.1.436.0 or later, this driver corrects an issue which could prevent the OS from shutting down gracefully.

Supported Devices and Features
This driver supports the following HP network adapters:

- HP NC550SFP Dual Port 10GbE Server Adapter
- HP NC550m Dual Port Flex-10 10GbE BL-c Adapter
- HP NC551m Dual Port FlexFabric 10Gb Converged Network Adapter
- HP NC551i Dual Port FlexFabric 10Gb Network Adapter
- HP NC552m 10Gb 2-port Flex-10 Server Adapter
- HP NC5525FP 10Gb 2-port Ethernet Server Adapter
- HP NC553i 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC553m 10Gb 2-port FlexFabric Converged Network Adapter
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- HP Flex-10 10Gb 2-port 552M Adapter
- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 554M Adapter

HP Emulex 10GbE Driver for Windows Server 2008 R2
Version: 4.1.450.5 (Optional)

Fixes
In conjunction with firmware version 4.1.436.0 or later, this driver corrects an issue which could prevent the OS from shutting down gracefully.

Supported Devices and Features
This driver supports the following HP network adapters:

- HP NC550SFP Dual Port 10GbE Server Adapter
- HP NC550m Dual Port Flex-10 10GbE BL-c Adapter
- HP NC551m Dual Port FlexFabric 10Gb Converged Network Adapter
- HP NC551i Dual Port FlexFabric 10Gb Network Adapter
- HP NC552m 10Gb 2-port Flex-10 Server Adapter
- HP NC5525FP 10Gb 2-port Ethernet Server Adapter
HP Service Pack for ProLiant 2012.10.0 Release Notes

- HP NC553i 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC553m 10Gb 2-port FlexFabric Converged Network Adapter
- HP CN1000E Dual Port Converged Network Adapter
- HP CN1100E Converged Network Adapter
- HP Flex-10 10Gb 2-port 552M Adapter
- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 554M Adapter

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**HP Emulex 10GbE Driver for Windows Server 2008 x64 Editions**

Version: 4.1.450.5 *(Optional)*

**Fixes**

In conjunction with firmware version 4.1.436.0 or later, this driver corrects an issue which could prevent the OS from shutting down gracefully.

**Supported Devices and Features**

This driver supports the following HP network adapters:

- HP NC550SFP Dual Port 10GbE Server Adapter
- HP NC550m Dual Port Flex-10 10GbE BL-c Adapter
- HP NC551m Dual Port FlexFabric 10Gb Converged Network Adapter
- HP NC551i Dual Port FlexFabric 10Gb Network Adapter
- HP NC552m 10Gb 2-port Flex-10 Server Adapter
- HP NC552SFP 10Gb 2-port Ethernet Server Adapter
- HP NC553i 10Gb 2-port FlexFabric Converged Network Adapter
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- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 554M Adapter

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**HP Emulex 10GbE Driver for Windows Server 2012**

Version: 4.2.313.0 *(Optional)*

**Enhancements**

Initial release.

**Supported Devices and Features**

This driver supports the following HP network adapters:

- HP NC550SFP Dual Port 10GbE Server Adapter
- HP NC550m Dual Port Flex-10 10GbE BL-c Adapter
HP Emulex 10GbE iSCSI Driver for Linux
Version: 4.2.263.0-2 (Optional)

Enhancements
This package now supports Red Hat Enterprise Linux 6 Update 3.

Supported Devices and Features
This driver supports the following HP iSCSI adapters:

- HP NC551m Dual Port FlexFabric 10Gb Converged Network Adapter
- HP NC551i Dual Port FlexFabric 10Gb Network Adapter
- HP NC552m 10Gb 2-port Flex-10 Server Adapter
- HP NC552SFP 10Gb 2-port Ethernet Server Adapter
- HP NC553i 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC553m 10Gb 2-port FlexFabric Converged Network Adapter
- HP CN1000E Dual Port Converged Network Adapter
- HP CN1100E Converged Network Adapter
- HP Flex-10 10Gb 2-port 552M Adapter
- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 554M Adapter
- HP CN1000E Converged Network Adapter
- HP CN1100E Dual Port Converged Network Adapter

HP Emulex 10GbE iSCSI Driver for Windows Server 2008
Version: 4.1.424.0 (Optional)

Fixes
In conjunction with firmware version 4.1.436.0 or later, this driver corrects an issue which could prevent the OS from shutting down gracefully.

Supported Devices and Features
This driver supports the following HP Emulex iSCSI adapters:

- HP NC551m Dual Port FlexFabric 10Gb Converged Network Adapter
- HP NC551i Dual Port FlexFabric 10Gb Network Adapter
- HP NC553i 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC553m 10Gb 2-port FlexFabric Converged Network Adapter
- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 554M Adapter
- HP CN1000E Converged Network Adapter
- HP CN1100E Dual Port Converged Network Adapter
**HP Emulex 10GbE iSCSI Driver for Windows Server 2008 R2**

Version: 4.1.424.0 *(Optional)*

**Fixes**

In conjunction with firmware version 4.1.436.0 or later, this driver corrects an issue which could prevent the OS from shutting down gracefully.

**Supported Devices and Features**

This driver supports the following HP iSCSI adapters:

- HP NC551m Dual Port FlexFabric 10Gb Converged Network Adapter
- HP NC551i Dual Port FlexFabric 10Gb Network Adapter
- HP NC553i 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC553m 10Gb 2-port FlexFabric Converged Network Adapter
- HP CN1000E Converged Network Adapter
- HP CN1100E Dual Port Converged Network Adapter
- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 554M Adapter

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**HP Emulex 10GbE iSCSI Driver for Windows Server 2008 x64 Editions**

Version: 4.1.424.0 *(Optional)*

**Fixes**

In conjunction with firmware version 4.1.436.0 or later, this driver corrects an issue which could prevent the OS from shutting down gracefully.

**Supported Devices and Features**

This driver supports the following HP iSCSI adapters:

- HP NC551m Dual Port FlexFabric 10Gb Converged Network Adapter
- HP NC551i Dual Port FlexFabric 10Gb Network Adapter
- HP NC553i 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC553m 10Gb 2-port FlexFabric Converged Network Adapter
- HP CN1000E Converged Network Adapter
- HP CN1100E Dual Port Converged Network Adapter
- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 554M Adapter
HP Emulex 10GbE iSCSI Driver for Windows Server 2012
Version: 4.2.281.0 (Optional)

Enhancements
Initial release.

Supported Devices and Features
This driver supports the following HP iSCSI adapters:

- HP NC551m Dual Port FlexFabric 10Gb Converged Network Adapter
- HP NC551i Dual Port FlexFabric 10Gb Network Adapter
- HP NC553i 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC553m 10Gb 2-port FlexFabric Converged Network Adapter
- HP CN1000E Converged Network Adapter
- HP CN1100E Dual Port Converged Network Adapter
- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 554M Adapter

HP Intel e1000e Driver for Linux
Version: 1.9.5-2 (Optional)

Prerequisites
This rpm package requires that the kernel-syms package be installed in order to build correctly.

Enhancements
This driver now supports Red Hat Enterprise Linux 6 Update 3.

Supported Devices and Features
This driver supports the following network adapters:

- HP NC112i 1-port Ethernet Server Adapter
- HP NC112T PCI Express Gigabit Server Adapter
- HP NC110T PCI Express Single Port Gigabit Server Adapter
- HP NC360m Dual Port Gigabit Ethernet BL-c Adapter
- HP NC360T PCI Express Dual Port Gigabit Server Adapter
- HP NC364m Quad Port Gigabit Ethernet BL-c Adapter
- HP NC364T PCI Express Quad Port Gigabit Server Adapter

HP Intel E1R Driver for Windows Server 2008
Version: 11.14.48.0 (B) (Optional)
Fixes
This driver version corrects an issue which could result in the Intel Ethernet Thermal Sensor Monitor Service incorrectly posting an error to the system event log stating that the service hung during startup.

Supported Devices and Features
This driver supports the following HP Intel E1R network adapters:

- HP NC365T PCI Express Quad Port Gigabit Server Adapter
- HP Ethernet 1Gb 2-port 361i Adapter
- HP Ethernet 1Gb 2-port 361FLB Adapter
- HP Ethernet 1Gb 2-port 361T Adapter
- HP Ethernet 1Gb 4-port 366i Adapter
- HP Ethernet 1Gb 4-port 366M Adapter

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**HP Intel E1R Driver for Windows Server 2008 R2**
Version: 11.14.48.0 (B) (Optional)

Fixes
This driver version corrects an issue which could result in the Intel Ethernet Thermal Sensor Monitor Service incorrectly posting an error to the system event log stating that the service hung during startup.

Supported Devices and Features
This driver supports the following HP Intel E1R network adapters:

- HP NC365T PCI Express Quad Port Gigabit Server Adapter
- HP Ethernet 1Gb 2-port 361i Adapter
- HP Ethernet 1Gb 2-port 361FLB Adapter
- HP Ethernet 1Gb 2-port 361T Adapter
- HP Ethernet 1Gb 4-port 366i Adapter
- HP Ethernet 1Gb 4-port 366M Adapter

---

**HP Intel E1R Driver for Windows Server 2008 x64 Editions**
Version: 11.14.48.0 (B) (Optional)

Fixes
This driver version corrects an issue which could result in the Intel Ethernet Thermal Sensor Monitor Service incorrectly posting an error to the system event log stating that the service hung during startup.

Supported Devices and Features
This driver supports the following HP Intel E1R network adapters:

- HP NC365T PCI Express Quad Port Gigabit Server Adapter
- HP Ethernet 1Gb 2-port 361i Adapter
- HP Ethernet 1Gb 2-port 361FLB Adapter
- HP Ethernet 1Gb 2-port 361T Adapter
- HP Ethernet 1Gb 4-port 366i Adapter
- HP Ethernet 1Gb 4-port 366M Adapter
HP Ethernet 1Gb 4-port 366M Adapter

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**HP Intel E1R Driver for Windows Server 2012**
Version: 12.1.76.0 *(Optional)*

**Enhancements**
Initial release.

**Supported Devices and Features**
This driver supports the following HP Intel E1R network adapters:

- HP NC365T PCI Express Quad Port Gigabit Server Adapter
- HP Ethernet 1Gb 2-port 361i Adapter
- HP Ethernet 1Gb 2-port 361FLB Adapter
- HP Ethernet 1Gb 2-port 361T Adapter
- HP Ethernet 1Gb 4-port 366i Adapter
- HP Ethernet 1Gb 4-port 366M Adapter

---

**HP Intel igb Driver for Linux**
Version: 3.4.7.1-1 *(Optional)*

**Prerequisites**
This rpm package requires that the kernel-syms package be installed in order to build correctly.

**Enhancements**
This driver now supports Red Hat Enterprise Linux 6 Update 3.

This package now creates Option Card Sensor Data (OCSD) agents that are required for temperature monitoring.

**Supported Devices and Features**
This driver supports the following HP Intel network adapters:

- HP Ethernet 1Gb 2-port 361i Adapter
- HP Ethernet 1Gb 2-port 361FLB Adapter
- HP Ethernet 1Gb 2-port 361T Adapter
- HP NC362i Integrated Dual Port Gigabit Server Adapter
- HP NC362i Integrated Dual Port BL-c Gigabit Server Adapter
- HP NC365T 4-port Ethernet Server Adapter
- HP Ethernet 1Gb 4-port 366i Adapter
- HP Ethernet 1Gb 4-port 366M Adapter

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**HP Intel ixgbe Driver for Linux**
Version: 3.9.17-1 *(Optional)*
Prerequisites
This rpm package requires that the kernel-syms package be installed in order to build correctly.

Enhancements
This driver now supports the HP Ethernet 10Gb 2-port 560SFP+ Adapter.
This driver now supports Red Hat Enterprise Linux 6 Update 3.
This package now creates Option Card Sensor Data (OCSD) agents that are required for temperature monitoring.

Supported Devices and Features
This driver supports the following network adapters:

- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter

---

**HP Intel ixn Driver for Windows Server 2008**
Version: 2.11.114.0 (Optional)

Enhancements
This driver now supports the HP Ethernet 10Gb 2-port 560SFP+ Adapter.

Supported Devices and Features
This driver supports the following HP Intel ixn network adapters:

- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter

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**HP Intel ixn Driver for Windows Server 2008 R2**
Version: 2.11.114.0 (Optional)

Enhancements
This driver now supports the HP Ethernet 10Gb 2-port 560SFP+ Adapter.

Supported Devices and Features
This driver supports the following HP Intel ixn network adapters:

- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter
**HP Intel ixn Driver for Windows Server 2008 x64 Editions**
Version: 2.11.114.0 (Optional)

**Enhancements**
This driver now supports the HP Ethernet 10Gb 2-port 560SFP+ Adapter.

**Supported Devices and Features**
This driver supports the following HP Intel ixn network adapters:

- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter

---

**HP Intel ixn Driver for Windows Server 2012**
Version: 3.1.65.0 (Optional)

**Enhancements**
Initial release.

**Supported Devices and Features**
This driver supports the following HP Intel ixn network adapters:

- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter

---

**HP Mellanox EN Driver for InfiniBand adapters (Red Hat Enterprise Linux 5 Update 6 x86)**
Version: 1.5.7.2 (Recommended)

**Enhancements**
This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
Supported Devices and Features
SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 5 Update 6 (x86) supported by this binary rpm are:
2.6.18-238.el5 - (x86) and future update kernels.
2.6.18-238.el5xen - (x86) and future update kernels.
2.6.18-238.el5PAE - (x86) and future update kernels.

HP Mellanox EN Driver for InfiniBand adapters (Red Hat Enterprise Linux 5 Update 6 x86_64)
Version: 1.5.7.2 (Recommended)
Enhancements
Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

Supported Devices and Features
SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 5 U6 (x86_64) supported by this binary rpm are:
2.6.18-238.el5 - (x86_64) and future update kernels.
2.6.18-238.el5xen - (x86_64) and future update kernels.

HP Mellanox EN Driver for InfiniBand adapters (Red Hat Enterprise Linux 5 Update 7 x86)
Version: 1.5.7.2 (Recommended)
Enhancements
Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
Supported Devices and Features

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 5U7 (x86) supported by this binary rpm are:
- 2.6.18-274.el5 - (x86) and future update kernels.
- 2.6.18-274.el5xen - (x86) and future update kernels.
- 2.6.18-274.el5PAE - (x86) and future update kernels.

HP Mellanox EN Driver for InfiniBand adapters (Red Hat Enterprise Linux 5 Update 7 x86_64)
Version: 1.5.7.2 (Recommended)

Enhancements
Initial Release. This mlx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

Supported Devices and Features
SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 5U7 (x86_64) supported by this binary rpm are:
- 2.6.18-274.el5 - (x86_64) and future update kernels.
- 2.6.18-274.el5xen - (x86_64) and future update kernels.
**HP Mellanox EN Driver for InfiniBand adapters (Red Hat Enterprise Linux 5 Update 8 x86)**

Version: 1.5.7.2 *(Recommended)*

**Enhancements**

Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

**Supported Devices and Features**

**SUPPORTED KERNELS:**

The kernels of Red Hat Enterprise Linux 5U8 (i686) supported by this binary rpm are:

- 2.6.18-308.el5 - (i686) and future update kernels.
- 2.6.18-308.el5xen - (i686) and future update kernels.
- 2.6.18-308.el5PAE - (i686) and future update kernels.

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**HP Mellanox EN Driver for InfiniBand adapters (Red Hat Enterprise Linux 5 Update 8 x86_64)**

Version: 1.5.7.2 *(Recommended)*

**Enhancements**

Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of Red Hat Enterprise Linux 5U8 (AMD64/EM64T) supported by this binary rpm are:
2.6.18-308.el5 - (AMD64/EM64T) and future update kernels.
2.6.18-308.el5xen - (AMD64/EM64T) and future update kernels.

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**HP Mellanox EN Driver for InfiniBand adapters (Red Hat Enterprise Linux 6 Update 1 x86)**
Version: 1.5.7.2 *(Recommended)*

**Enhancements**
Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of Red Hat Enterprise Linux 6U1 (x86) supported by this binary rpm are:
2.6.32-131.0.15.el6 - (x86) and future update kernels.

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**HP Mellanox EN Driver for InfiniBand adapters (Red Hat Enterprise Linux 6 Update 1 x86_64)**
Version: 1.5.7.2 *(Recommended)*

**Enhancements**
Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
HP Service Pack for ProLiant 2012.10.0 Release Notes

- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

Supported Devices and Features

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 6U1 (x86_64) supported by this binary rpm are:
2.6.32-131.0.15.el6 - (x86_64) and future update kernels.

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**HP Mellanox EN Driver for InfiniBand adapters (Red Hat Enterprise Linux 6 Update 2 x86)**

Version: 1.5.7.2 (Recommended)

**Enhancements**

Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

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**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 6U2 (x86) supported by this binary rpm are:
2.6.32-220.el6 - (x86) and future update kernels.
HP Mellanox EN Driver for InfiniBand adapters (Red Hat Enterprise Linux 6 Update 2 x86_64)
Version: 1.5.7.2 (Recommended)

Enhancements
Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

Supported Devices and Features
SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 6U2 (x86_64) supported by this binary rpm are:
2.6.32-220.el6 - (x86_64) and future update kernels.

HP Mellanox EN Driver for InfiniBand adapters (Red Hat Enterprise Linux 6 Update 3 x86)
Version: 1.5.8.3 (Recommended)

Enhancements
This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
HP Service Pack for ProLiant 2012.10.0 Release Notes

- Ethtool support
- Net device statistics

Supported Devices and Features
SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 6U3 (x86) supported by this binary rpm are:
2.6.32-279.el6 - (x86) and future update kernels.

HP Mellanox EN Driver for InfiniBand adapters (Red Hat Enterprise Linux 6 Update 3 x86_64)
Version: 1.5.8.3 (Recommended)

Enhancements
This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

Supported Devices and Features
SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 6U3 (x86_64) supported by this binary rpm are:
2.6.32-279.el6 - (x86_64) and future update kernels.

HP Mellanox EN Driver for InfiniBand adapters (Red Hat Enterprise Linux 6 x86)
Version: 1.5.7.2 (Recommended)

Enhancements
Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

Supported Devices and Features
SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 6 (x86) supported by this binary rpm are:
2.6.32-71.el6 - (x86) and future update kernels.

HP Mellanox EN Driver for InfiniBand adapters (Red Hat Enterprise Linux 6 x86_64)
Version: 1.5.7.2 (Recommended)

Enhancements
Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

Supported Devices and Features
SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 6U1 (x86_64) supported by this binary rpm are:
2.6.32-71.el6 - (x86_64) and future update kernels.
**HP Mellanox EN Driver for InfiniBand adapters (SUSE LINUX Enterprise Server 10 SP 4 - AMD64/EM64T)**

Version: 1.5.7.2 (Recommended)

**Enhancements**

Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

**Supported Devices and Features**

SUPPORTED KERNELS:

The kernels of SUSE LINUX Enterprise Server 10 SP4 (AMD64/EM64T) supported by this binary rpm are:

- 2.6.16.60-0.85.1-default - (AMD64/EM64T) and future update kernels.
- 2.6.16.60-0.85.1-xen - (AMD64/EM64T) and future update kernels.
- 2.6.16.60-0.85.1-smp - (AMD64/EM64T) and future update kernels.
- 2.6.16.60-0.85.1-kdump - (AMD64/EM64T) and future update kernels.

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**HP Mellanox EN Driver for InfiniBand adapters (SUSE LINUX Enterprise Server 10 SP 4 - x86)**

Version: 1.5.7.2 (Recommended)

**Enhancements**

Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of SUSE LINUX Enterprise Server 10 SP4 (x86) supported by this binary rpm are:

- 2.6.16.60-0.85.1-default - (x86) and future update kernels.
- 2.6.16.60-0.85.1-xen - (x86) and future update kernels.
- 2.6.16.60-0.85.1-smp - (x86) and future update kernels.
- 2.6.16.60-0.85.1-kdump - (x86) and future update kernels.
- 2.6.16.60-0.85.1-kdumppae - (x86) and future update kernels.
- 2.6.16.60-0.85.1-bigsmp - (x86) and future update kernels.
- 2.6.16.60-0.85.1-xenpae - (x86) and future update kernels.

**HP Mellanox EN Driver for InfiniBand adapters (SUSE LINUX Enterprise Server 10 SP3 - AMD64/EM64T)**

Version: 1.5.7.2 (Recommended)

**Enhancements**

Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of SUSE LINUX Enterprise Server 10 SP3 (AMD64/EM64T) supported by this binary rpm are:

- 2.6.16.60-0.60.1-default - (AMD64/EM64T) and future update kernels.
- 2.6.16.60-0.60.1-xen - (AMD64/EM64T) and future update kernels.
- 2.6.16.60-0.60.1-smp - (AMD64/EM64T) and future update kernels.

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HP Mellanox EN Driver for InfiniBand adapters (SUSE LINUX Enterprise Server 10 SP3 - x86)
Version: 1.5.7.2 (Recommended)

Enhancements
Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

Supported Devices and Features
SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 10 SP3 (x86) supported by this binary rpm are:
- 2.6.16.60-0.60.1-default - (x86) and future update kernels.
- 2.6.16.60-0.60.1-xen - (x86) and future update kernels.
- 2.6.16.60-0.60.1-smp - (x86) and future update kernels.
- 2.6.16.60-0.60.1-kdump - (x86) and future update kernels.
- 2.6.16.60-0.60.1-kdump-pae - (x86) and future update kernels.
- 2.6.16.60-0.60.1-big-smp - (x86) and future update kernels.
- 2.6.16.60-0.60.1-xen-pae - (x86) and future update kernels.

HP Mellanox EN Driver for InfiniBand adapters (SUSE LINUX Enterprise Server 11 SP1 AMD64/EM64T)
Version: 1.5.7.2 (Recommended)

Enhancements
Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
Supported Devices and Features

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 11 SP1 (AMD64/EM64T) supported by this binary rpm are:
- 2.6.32.12-0.7-default - (AMD64/EM64T) and future update kernels.
- 2.6.32.12-0.7-xen - (AMD64/EM64T) and future update kernels.
- 2.6.32.36-0.5-default - (AMD64/EM64T) and future update kernels.
- 2.6.32.36-0.5-xen - (AMD64/EM64T) and future update kernels.

HP Mellanox EN Driver for InfiniBand adapters (SUSE LINUX Enterprise Server 11 SP1 x86)
Version: 1.5.7.2 (Recommended)

Enhancements

Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

Supported Devices and Features

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 11 SP1 (x86) supported by this binary rpm are:
- 2.6.32.12-0.7-default - (x86) and future update kernels.
- 2.6.32.12-0.7-xen - (x86) and future update kernels.
2.6.32.12-0.7-pae - (x86) and future update kernels.
2.6.32.36-0.5-default - (x86) and future update kernels.
2.6.32.36-0.5-xen - (x86) and future update kernels.
2.6.32.36-0.5-pae - (x86) and future update kernels.

**HP Mellanox EN Driver for InfiniBand adapters (SUSE LINUX Enterprise Server 11 SP2 AMD64/EM64T)**
Version: 1.5.7.2 (**Recommended**)

**Enhancements**
Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of SUSE LINUX Enterprise Server SP2 (AMD64/EM64T) supported by this binary rpm are:
3.0.13-0.27-default - (AMD64/EM64T) and future update kernels.
3.0.13-0.27-xen - (AMD64/EM64T) and future update kernels.

---

**HP Mellanox EN Driver for InfiniBand adapters (SUSE LINUX Enterprise Server 11 SP2 x86)**
Version: 1.5.7.2 (**Recommended**)

**Enhancements**
Initial Release. This mlnx_en driver release exposes the following capabilities:

- Single/Dual port
- Up to 16 Rx queues per port
- 16 Tx queues per port
- Rx steering mode: Receive Core Affinity (RCA)
- MSI-X or INTx
- Adaptive interrupt moderation
- HW Tx/Rx checksum calculation
- Large Send Offload (i.e., TCP Segmentation Offload)
- Large Receive Offload
- IP Reassembly Offload
- Multi-core NAPI support
- VLAN Tx/Rx acceleration (HW VLAN stripping/insertion)
- HW VLAN filtering
- HW multicast filtering
- Ethtool support
- Net device statistics

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of SUSE LINUX Enterprise Server SP2 (x86) supported by this binary rpm are:
- 3.0.13-0.27-default - (x86) and future update kernels.
- 3.0.13-0.27-xen - (x86) and future update kernels.
- 3.0.13-0.27-pae - (x86) and future update kernels.

---

**HP NC-Series Intel Driver for Windows Server 2008**
Version: 8.3.9.0 (E) *(Optional)*

**Enhancements**
Enhanced component-level logging has been implemented in the smart component installer. The generated log file will be located on the target system in %SYSTEMROOT%\cpqsystem\log directory under the name CPQSETUP.LOG.

**Supported Devices and Features**

This driver supports the following HP- NC-Series Intel network adapters:

- HP NC6132 Gigabit Module
- HP NC6136 Gigabit Server Adapter
- HP NC6170 Gigabit Server Adapter
- HP NC7131 Gigabit Server Adapter
- HP NC7132 Gigabit Module
- HP NC7170 Gigabit Server Adapter
- HP NC310F PCI-X Gigabit Server Adapter
- HP NC340T PCI-X Quad-port Gigabit Server Adapter

---

**HP NC-Series Intel Driver for Windows Server 2008 x64 Editions**
Version: 8.3.9.0 (E) *(Optional)*

**Enhancements**
Enhanced component-level logging has been implemented in the smart component installer. The generated log file will be located on the target system in %SYSTEMROOT%\cpqsystem\log directory under the name CPQSETUP.LOG.
Supported Devices and Features

This driver supports the following HP- NC-Series Intel network adapters:

- HP NC6132 Gigabit Module
- HP NC6136 Gigabit Server Adapter
- HP NC6170 Gigabit Server Adapter
- HP NC7131 Gigabit Server Adapter
- HP NC7132 Gigabit Module
- HP NC7170 Gigabit Server Adapter
- HP NC310F PCI-X Gigabit Server Adapter
- HP NC340T PCI-X Quad-port Gigabit Server Adapter

---

**HP NC-Series Intel e1000 Driver for Linux**

Version: 8.0.35-2 *(Optional)*

Prerequisites

This rpm package requires that the *kernel-syms* package be installed in order to build correctly.

Enhancements

This driver now supports Red Hat Enterprise Linux 6 Update 3.

Supported Devices and Features

This driver supports the following network adapters:

- HP NC310F PCI-X Gigabit Server Adapter
- HP NC340T PCI-X Quad-port Gigabit Server Adapter

---

**HP NC-Series Intel E1E Driver for Windows Server 2008**

Version: 9.15.17.0 *(Optional)*

Fixes

This driver addresses an issue where checksum offload computations were performed even when checksum offload was disabled.

Supported Devices and Features

This driver supports the following HP NC-Series Intel network adapters:

- HP NC110T PCI Express Single Port Gigabit Server Adapter
- HP NC360m Dual Port Gigabit Ethernet BL-c Adapter
- HP NC360T PCI Express Dual Port Gigabit Server Adapter
- HP NC364m Quad Port Gigabit Ethernet BL-c Adapter
---

**HP NC-Series Intel E1E Driver for Windows Server 2008 R2**  
Version: 9.15.17.0 (Optional)

**Enhancements**  
This driver now supports Windows Server 2012.

**Supported Devices and Features**  
This driver supports the following HP NC-Series Intel network adapters:

- HP NC110T PCI Express Single Port Gigabit Server Adapter
- HP NC360m Dual Port Gigabit Ethernet BL-c Adapter
- HP NC360T PCI Express Dual Port Gigabit Server Adapter
- HP NC364m Quad Port Gigabit Ethernet BL-c Adapter
- HP NC364T PCI Express Quad Port Gigabit Server Adapter

---

**HP NC-Series Intel E1E Driver for Windows Server 2008 x64 Editions**  
Version: 9.15.17.0 (Optional)

**Fixes**  
This driver addresses an issue where checksum offload computations were performed even when checksum offload was disabled.

**Supported Devices and Features**  
This driver supports the following HP NC-Series Intel network adapters:

- HP NC110T PCI Express Single Port Gigabit Server Adapter
- HP NC360m Dual Port Gigabit Ethernet BL-c Adapter
- HP NC360T PCI Express Dual Port Gigabit Server Adapter
- HP NC364m Quad Port Gigabit Ethernet BL-c Adapter
- HP NC364T PCI Express Quad Port Gigabit Server Adapter

---

**HP NC-Series Intel E1Q Driver for Windows Server 2008**  
Version: 11.17.27.0 (Optional)

**Fixes**  
This driver addresses an issue where checksum offload computations were performed even when checksum offload was disabled.

This driver corrects an issue where invalid speed/duplex options were available in a blade environment.
Supported Devices and Features

This driver supports the following HP NC-Series Intel E1Q network adapters:

- HP NC112T PCI Express Gigabit Server Adapter
- HP NC112i 1-port Ethernet Server Adapter
- HP NC362i Integrated Dual Port Gigabit Server Adapter
- HP NC362i Integrated Dual Port BL-c Gigabit Server Adapter

---

HP NC-Series Intel E1Q Driver for Windows Server 2008 R2
Version: 11.17.27.0 (Optional)

Fixes

This driver addresses an issue where checksum offload computations were performed even when checksum offload was disabled.

This driver corrects an issue where invalid speed/duplex options were available in a blade environment.

Supported Devices and Features

This driver supports the following HP NC-Series Intel E1Q network adapters:

- HP NC112T PCI Express Gigabit Server Adapter
- HP NC112i 1-port Ethernet Server Adapter
- HP NC362i Integrated Dual Port Gigabit Server Adapter
- HP NC362i Integrated Dual Port BL-c Gigabit Server Adapter

---

HP NC-Series Intel E1Q Driver for Windows Server 2008 x64 Editions
Version: 11.17.27.0 (Optional)

Fixes

This driver addresses an issue where checksum offload computations were performed even when checksum offload was disabled.

This driver corrects an issue where invalid speed/duplex options were available in a blade environment.

Supported Devices and Features

This driver supports the following HP NC-Series Intel E1Q network adapters:

- HP NC112T PCI Express Gigabit Server Adapter
- HP NC112i 1-port Ethernet Server Adapter
- HP NC362i Integrated Dual Port Gigabit Server Adapter
- HP NC362i Integrated Dual Port BL-c Gigabit Server Adapter

---

HP NC-Series Intel E1Q Driver for Windows Server 2012
Version: 12.1.77.0 (Optional)
**Enhancements**
Initial release.

**Supported Devices and Features**
This driver supports the following HP NC-Series Intel E1G network adapters:

- HP NC112T PCI Express Gigabit Server Adapter
- HP NC112i 1-port Ethernet Server Adapter
- HP NC362i Integrated Dual Port Gigabit Server Adapter
- HP NC362i Integrated Dual Port BL-c Gigabit Server Adapter

---

**HP NC-Series Mellanox 10GbE Driver for Windows Server 2008**
Version: 2.2.2.6704 (B) *(Optional)*

**Fixes**
This component addresses an issue where driver installation fails during an upgrade.

**Supported Devices and Features**
This driver supports the following HP NC-Series Mellanox 10GbE network adapters:

- HP 10GbE Dual Port Mezzanine Network Interface Card
- HP NC542m Dual Port Flex-10 10GbE BL-c Adapter
- HP NC543i 1-port 4x QDR IB/Flex-10 10Gb Adapter
- HP NC543i 2-port 4x QDR IB/10Gb Adapter

---

**HP NC-Series Mellanox 10GbE Driver for Windows Server 2008 R2.**
Version: 2.2.2.6704 (B) *(Optional)*

**Fixes**
This component addresses an issue where driver installation fails during an upgrade.

**Supported Devices and Features**
This driver supports the following HP NC-Series Mellanox 10GbE network adapters:

- HP 10GbE Dual Port Mezzanine Network Interface Card
- HP NC542m Dual Port Flex-10 10GbE BL-c Adapter
- HP NC543i 1-port 4x QDR IB/Flex-10 10Gb Adapter
- HP NC543i 2-port 4x QDR IB/10Gb Adapter

---

**HP NC-Series Mellanox 10GbE Driver for Windows Server 2008 x64 Editions**
Version: 2.2.2.6704 (B) *(Optional)*
Fixes
This component addresses an issue where driver installation fails during an upgrade.

Supported Devices and Features
This driver supports the following HP NC-Series Mellanox 10GbE network adapters:

- HP 10GbE Dual Port Mezzanine Network Interface Card
- HP NC542m Dual Port Flex-10 10GbE BL-c Adapter
- HP NC543i 1-port 4x QDR IB/Flex-10 10Gb Adapter
- HP NC543i 2-port 4x QDR IB/10Gb Adapter

**HP Network Configuration Utility for Windows Server 2008**
Version: 10.65.0.0 (Optional)

Fixes
This software addresses an issue where the HP NIC teaming driver may not initiate a failover when the primary NIC miniport driver of the team indicates that the NIC has been reset.

Enhancements
This software now supports the following network adapters:

- HP Ethernet 1Gb 4-port 331i-SPI Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter

**HP Network Configuration Utility for Windows Server 2008 R2**
Version: 10.65.0.0 (Optional)

Fixes
This software addresses an issue where the HP NIC teaming driver may not initiate a failover when the primary NIC miniport driver of the team indicates that the NIC has been reset.

Enhancements
This software now supports the following network adapters:

- HP Ethernet 1Gb 4-port 331i-SPI Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter

**HP Network Configuration Utility for Windows Server 2008 x64 Editions**
Version: 10.65.0.0 (Optional)

Fixes
This software addresses an issue where the HP NIC teaming driver may not initiate a failover when the
primary NIC miniport driver of the team indicates that the NIC has been reset.

**Enhancements**
This software now supports the following network adapters:

- HP Ethernet 1Gb 4-port 331i-SPI Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter

---

**HP QLogic iSCSI Driver for Linux**
Version: 5.02.15.06-4 *(Optional)*

**Enhancements**
This driver now supports Red Hat Enterprise Linux 6 Update 3.

**Supported Devices and Features**
This software supports the following network adapters:

HP CN1000Q Dual Port Converged Network Adapter

---

**HP QLogic nx_nic Driver for Linux**
Version: 4.0.588-2 *(Optional)*

**Prerequisites**
This rpm package requires that the `kernel-syms` package be installed in order to build correctly.

This driver must be installed only after upgrading to firmware version 4.0.555 or later.

**Enhancements**
This driver now supports Red Hat Enterprise Linux 6 Update 3.

**Supported Devices and Features**
This software supports the following HP P2 network adapters:

- HP NC512m Dual Port 10GbE Multifunction BL-c Adapter
- HP NC510C PCIe 10 Gigabit Server Adapter
- HP NC510F PCIe 10 Gigabit Server Adapter

This software supports the following HP P3 network adapters:

- HP NC522SFP Dual Port 10GbE Server Adapter
- HP NC522m Dual Port 10GbE Multifunction BL-c Adapter
- HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
- HP NC375i 1G w/NC524SFP 10G Module
HP Service Pack for ProLiant 2012.10.0 Release Notes

- HP NC375T PCI Express Quad Port Gigabit Server Adapter

---

**HP QLogic P3P iSCSI Driver for Windows Server 2008**
Version: 2.1.5.29 *(Optional)*

**Enhancements**
This driver will now enable additional error logging if a NIC device is not present.

**Supported Devices and Features**
This driver supports the following HP P3P network adapters:
- HP CN1000Q Dual Port Converged Network Adapter

---

**HP QLogic P3P iSCSI Driver for Windows Server 2008 x64 Editions**
Version: 2.1.5.29 *(Optional)*

**Enhancements**
This driver will now enable additional error logging if a NIC device is not present.

**Supported Devices and Features**
This driver supports the following HP P3P network adapters:
- HP CN1000Q Dual Port Converged Network Adapter

---

**HP QLogic P3P iSCSI Driver for Windows Server 2012**
Version: 2.1.5.35 *(Optional)*

**Enhancements**
Initial release.

**Supported Devices and Features**
This driver supports the following network adapters:
- HP CN1000Q Dual Port Converged Network Adapter

---

**HP QLogic P3P Multifunction Driver for Windows Server 2008**
Version: 4.6.17.502 *(Optional)*

**Fixes**
This package provides improved stability for the HP NC523SFP 10Gb 2-port Server Adapter.
Enhancements
The firmware bundled with this driver has been updated to version 4.0.588.

Minidumps are now disabled by default for P3 adapters.

Supported Devices and Features
This driver supports the following network adapters:

- HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
- HP NC375i 1G w/NC524SFP 10G Module
- HP NC375T PCI Express Quad Port Gigabit Server Adapter
- HP NC522m Dual Port 10GbE Multifunction BL-c Adapter
- HP NC522SFP Dual Port 10GbE Server Adapter
- HP NC523SFP 10Gb 2-port Flex-10 Server Adapter
- HP NC525m 10Gb 2-port FlexFabric Server Adapter
- HP CN1000Q Dual Port Converged Network Adapter

HP QLogic P3P Multifunction Driver for Windows Server 2008 R2
Version: 4.6.17.502 (Optional)

Fixes
This package provides improved stability for the HP NC523SFP 10Gb 2-port Server Adapter.

Enhancements
The firmware bundled with this driver has been updated to version 4.0.588.

Minidumps are now disabled by default for P3 adapters.

Supported Devices and Features
This driver supports the following network adapters:

- HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
- HP NC375i 1G w/NC524SFP 10G Module
- HP NC375T PCI Express Quad Port Gigabit Server Adapter
- HP NC522m Dual Port 10GbE Multifunction BL-c Adapter
- HP NC522SFP Dual Port 10GbE Server Adapter
- HP NC523SFP 10Gb 2-port Flex-10 Server Adapter
- HP NC525m 10Gb 2-port FlexFabric Server Adapter
- HP CN1000Q Dual Port Converged Network Adapter

HP QLogic P3P Multifunction Driver for Windows Server 2008 x64 Editions
Version: 4.6.17.502 (Optional)

Fixes
This package provides improved stability for the HP NC523SFP 10Gb 2-port Server Adapter.
Enhancements

The firmware bundled with this driver has been updated to version 4.0.588.

Minidumps are now disabled by default for P3 adapters.

Supported Devices and Features

This driver supports the following network adapters:

- HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
- HP NC375i 1G w/NC524SFP 10G Module
- HP NC375T PCI Express Quad Port Gigabit Server Adapter
- HP NC522m Dual Port 10GbE Multifunction BL-c Adapter
- HP NC522SFP Dual Port 10GbE Server Adapter
- HP NC523SFP 10Gb 2-port Flex-10 Server Adapter
- HP NC525m 10Gb 2-port FlexFabric Server Adapter
- HP CN1000Q Dual Port Converged Network Adapter

HP QLogic q lcnic Driver for Linux

Version: 5.0.28.1-2 (Optional)

Prerequisites

This rpm package requires that the kernel-syms package be installed in order to build correctly.

Enhancements

This driver now supports Red Hat Enterprise Linux 6 Update 3.

Supported Devices and Features

This software supports the following HP P3P network adapters:

- HP NC523SFP 10Gb 2-port Flex-10 Ethernet Server Adapter
- HP CN1000Q Dual Port Converged Network Adapter

Driver - Storage

HP ProLiant Dynamic Smart Array RAID Controller Driver for Windows 2008 x64 Editions

Version: 6.4.0.64 (Critical)

Fixes

- For the HP Dynamic Smart Array B320i, corrected hibernation issue on mixed drive type (SAS & SATA) configuration.
- For the HP Dynamic Smart Array B320i and B120i with optional write cache enabled, corrected
potential blue screen with STOP code 0xDEAD00BC. For more information on this issue, review the Customer Advisory #C03395860, which is available at the following url: http://h20566.www2.hp.com/portal/site/hpsc/public/kb/docDisplay/?docId=emr_na-c03395860
  
  o For the HP Dynamic Smart Array B320i, corrected issue where the server may stop responding or blue screen with STOP code 0xDEAD00AB would occur during install. For more information on this issue, review the Customer Advisory #C03395862, which is available at the following url: http://h20566.www2.hp.com/portal/site/hpsc/public/kb/docDisplay/?docId=emr_na-c03395862

Enhancements
  Reduced the driver shutdown time.

---

**HP ProLiant Dynamic Smart Array RAID Controller Driver for Windows 2012 x64 Editions**

Version: 62.4.0.64 (A) (Optional)

Enhancements
  Support for Microsoft Windows Server 2012

---

**HP ProLiant Dynamic Smart Array RAID Controller Driver for Windows Server 2008**

Version: 6.4.0.32 (Critical)

Fixes

  o For the HP Dynamic Smart Array B320i, corrected hibernation issue on mixed drive type (SAS & SATA) configuration.
  
  o For the HP Dynamic Smart Array B320i and B120i with optional write cache enabled, corrected potential blue screen with STOP code 0xDEAD00BC. For more information on this issue, review the Customer Advisory #C03395860, which is available at the following url: http://h20566.www2.hp.com/portal/site/hpsc/public/kb/docDisplay/?docId=emr_na-c03395860
  
  o For the HP Dynamic Smart Array B320i, corrected issue where the server may stop responding or blue screen with STOP code 0xDEAD00AB would occur during install. For more information on this issue, review the Customer Advisory #C03395862, which is available at the following url: http://h20566.www2.hp.com/portal/site/hpsc/public/kb/docDisplay/?docId=emr_na-c03395862

Enhancements
  Reduced the driver shutdown time.

---

**HP ProLiant Smart Array Embedded SATA RAID Controller Driver for Windows 2008 x64 Editions**

Version: 6.18.0.64 (Critical)
HP Service Pack for ProLiant 2012.10.0 Release Notes

**Fixes**

- Corrects an issue where HP B110i would try to resume the rebuild progress if the drive was replaced while the server was offline.
- To improve rebuild time, ensure that drive write cache is enabled during rebuild and disabled when rebuild completes.

---

**HP ProLiant Smart Array Embedded SATA RAID Controller Driver for Windows 2012**

Version: 6.18.2.64 (A) *(Optional)*

**Enhancements**

Support for Microsoft Windows Server 2012

---

**HP ProLiant Smart Array Embedded SATA RAID Controller Driver for Windows Server 2008**

Version: 6.18.0.32 *(Critical)*

**Fixes**

- Corrects an issue where HP B110i would try to resume the rebuild progress if the drive was replaced while the server was offline.
- To improve rebuild time, ensure that drive write cache is enabled during rebuild and disabled when rebuild completes.
## Storage Controller Drivers

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### HP Smart Array B110i SATA RAID Controller

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### HP 4/8 Internal Port SAS HBA with RAID and SCxxGe series HBA Driver for Windows Server 2008

**Version:** 1.28.2.1 (B) *(Optional)*

**Enhancements**

Added support for the HP SC08Ge SAS Host Bus Adapter

Enhanced component-level logging has been implemented in the smart component installer. The generated log file will be located on the target system in `%SYSTEMROOT%\cpqsystem\log` directory under the name CPQSETUP.LOG.

### HP 4/8 Internal Port SAS HBA with RAID and SCxxGe series HBA Driver for Windows Server 2008 x64 Editions

**Version:** 1.28.2.1 (C) *(Optional)*
Enhancements

Added support for the HP SC08Ge SAS Host Bus Adapter

Enhanced component-level logging has been implemented in the Smart Component installer. The generated log file will be located on the target system in the %SystemRoot%\cpqsystem\log directory under the name CPQSETUP.LOG.

---

**HP Dynamic Smart Array SATA RAID Controller Driver for Red Hat Enterprise Linux 5 (AMD64/EM64T)**

Version: **1.2.4-4** *(Recommended)*

**Enhancements**

- Added support to take advantage of NUMA for increased performance.
- Included sysfs attributes, to aid in the collection of data.

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of Red Hat Enterprise Linux 5 (AMD64/EM64T) supported by this binary rpm are:
- 2.6.18-274.el5 - Red Hat Enterprise Linux 5 Update 7 (AMD64/EM64T) and future errata kernels for update 7.
- 2.6.18-308.el5 - Red Hat Enterprise Linux 5 Update 8 (AMD64/EM64T) and future errata kernels for update 8.

---

**HP Dynamic Smart Array SATA RAID Controller Driver for Red Hat Enterprise Linux 5 (x86)**

Version: **1.2.4-4** *(Recommended)*

**Enhancements**

- Added support to take advantage of NUMA for increased performance.
- Included sysfs attributes, to aid in the collection of data.

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of Red Hat Enterprise Linux 5 (x86) supported by this binary rpm are:
- 2.6.18-274.el5 - Red Hat Enterprise Linux 5 Update 7 (x86) and future errata kernels for update 7.
- 2.6.18-308.el5 - Red Hat Enterprise Linux 5 Update 8 (x86) and future errata kernels for update 8.

---

**HP Dynamic Smart Array SATA RAID Controller Driver for Red Hat Enterprise Linux 6 (AMD64/EM64T)**

Version: **1.2.4-4** *(Recommended)*
Enhancements

- Added support to take advantage of NUMA for increased performance.
- Included sysfs attributes, to aid in the collection of data.

Supported Devices and Features

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 6 (AMD64/EM64T) supported by this binary rpm are:
2.6.32-131.el6 - Red Hat Enterprise Linux 6 Update 1(AMD64/EM64T) and future errata kernels for update 1.
2.6.32-220.el6 - Red Hat Enterprise Linux 6 Update 2(AMD64/EM64T) and future errata kernels for update 2.
2.6.32-279.el6 - Red Hat Enterprise Linux 6 Update 3(AMD64/EM64T) and future errata kernels for update 3.

HP Dynamic Smart Array SATA RAID Controller Driver for Red Hat Enterprise Linux 6 (x86)
Version: 1.2.4-4 (Recommended)

Enhancements

- Added support to take advantage of NUMA for increased performance.
- Included sysfs attributes, to aid in the collection of data.

Supported Devices and Features

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 6 (x86) supported by this binary rpm are:
2.6.32-131.el6 - Red Hat Enterprise Linux 6 Update 1(x86) and future errata kernels for update 1.
2.6.32-220.el6 - Red Hat Enterprise Linux 6 Update 2(x86) and future errata kernels for update 2.
2.6.32-279.el6 - Red Hat Enterprise Linux 6 Update 3(x86) and future errata kernels for update 3.

HP Dynamic Smart Array SATA RAID Controller Driver for SUSE LINUX Enterprise Server 10 (AMD64/EM64T)
Version: 1.2.4-4 (Recommended)

Enhancements

- Added support to take advantage of NUMA for increased performance.
- Included sysfs attributes, to aid in the collection of data.

Supported Devices and Features

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 10 (AMD64/EM64T) supported by this binary rpm are:
2.6.16.60-0.85.1 - SUSE LINUX Enterprise Server 10 SP 4 (AMD64/EM64T) and future errata kernels for SP 4.
**Enhancements**

- Added support to take advantage of NUMA for increased performance.
- Included sysfs attributes, to aid in the collection of data.

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of SUSE LINUX Enterprise Server 10 (x86) supported by this binary rpm are:
- 2.6.16.60-0.85.1 - SUSE LINUX Enterprise Server 10 SP 4 and future errata kernels for SP 4.

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**Enhancements**

- Added support to take advantage of NUMA for increased performance.
- Included sysfs attributes, to aid in the collection of data.

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of SUSE LINUX Enterprise Server 11 (AMD64/EM64T) supported by this binary rpm are:
- 2.6.32.12-0.7 - SUSE LINUX Enterprise Server 11 SP 1 (AMD64/EM64T) and future errata kernels for SP 1.
- 3.0.13-0.27.1 - SUSE LINUX Enterprise Server 11 SP 2 (AMD64/EM64T) and future errata kernels for SP 2.

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**Enhancements**

- Added support to take advantage of NUMA for increased performance.
- Included sysfs attributes, to aid in the collection of data.

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of SUSE LINUX Enterprise Server 11 (x86) supported by this binary rpm are:
2.6.32.12-0.7 - SUSE LINUX Enterprise Server 11 SP 1 (x86) and future errata kernels for SP 1.
3.0.13-0.27.1 - SUSE LINUX Enterprise Server 11 SP 2 (x86) and future errata kernels for SP 2.

**HP H2xx SAS/SATA Host Bus Adapter Driver for Windows Server 2008 x86 Editions**
Version: 2.68.58.0 *(Recommended)*

**Fixes**

- Resolved the memory alignment issue that caused F/W diag buffer to fail posting.
- Resolved the TM reset processing to force processing of all other reply queues before checking for outstanding I/Os that should have been terminated.
- Resolved the typo for Windows 8 x86 driver OS name in Internal Name field.

**Enhancements**

- Added 1 new Intel-branded HBA, change one Intel HBA branding string, and change PnP ID in NoDrv INF file for Intel enclosure.
- Removed setting of non-existent field within Windows 8 specific code inside function HandleFwDiagReply when reserving a diag buffer, which was causing BSOD.
- Added EnableQueryAccessAlignment registry entry in LSI_SAS2.INF file.
- Qualify copying of LogInfo into Srb->TimeOutValue with PSuite=1; registry entry (possible very long timeouts on retried I/O's).

**HP H2xx SAS/SATA Host Bus Adapter Driver for Red Hat Enterprise Linux 5 (AMD64/EM64T)**
Version: 13.10.02.00-2 *(Recommended)*

**Enhancements**

Alpha Release Version 13.10.02.00-2

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 5 (x86_64) supported by this binary rpm are:
2.6.18-274.el5 - Red Hat Enterprise Linux 5 Update 7 (x86_64)
2.6.18-308.el5 - Red Hat Enterprise Linux 5 Update 8 (x86_64)
**Support Devices and Features**

**SUPPORTED KERNELS:**
The kernels of Red Hat Enterprise Linux 5 (x86) supported by this binary rpm are:
- 2.6.18-274.el5 - Red Hat Enterprise Linux 5 Update 7 (x86)
- 2.6.18-308.el5 - Red Hat Enterprise Linux 5 Update 8 (x86)

**Enhancements**
Alpha Release Version 13.10.02.00-2

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of Red Hat Enterprise Linux 6 (x86_64) supported by this driver diskette are:
- 2.6.32-131.el6 - Red Hat Enterprise Linux 6 Update 1(AMD64/EM64T).
- 2.6.32-131.0.15.el6
- 2.6.32-220.el6 - Red Hat Enterprise Linux 6 Update 2(AMD64/EM64T).
- 2.6.32-279.el6 - Red Hat Enterprise Linux 6 Update 3(AMD64/EM64T).

**Enhancements**
Added support for RHEL 6.3

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of Red Hat Enterprise Linux 6 (x86) supported by this driver diskette are:
- 2.6.32-131.el6 - Red Hat Enterprise Linux 6 Update 1(x86).
- 2.6.32-131.0.15.el6
- 2.6.32-220.el6 - Red Hat Enterprise Linux 6 Update 2(x86).
- 2.6.32-279.el6 - Red Hat Enterprise Linux 6 Update 3(x86).
HP Service Pack for ProLiant 2012.10.0 Release Notes

**HP H2xx SAS/SATA Host Bus Adapter Driver for SUSE LINUX Enterprise Server 10 (AMD64/EM64T)**
Version: 13.10.02.00-2 (Recommended)

**Enhancements**
Alpha Release Version 13.10.02.00-2

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 10 (x86_64) supported by this driver diskette are:
2.6.16.60-0.85.1 - SUSE LINUX Enterprise Server 10 SP 4 (x86_64) plus future errata.

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**HP H2xx SAS/SATA Host Bus Adapter Driver for SUSE LINUX Enterprise Server 10 (x86)**
Version: 13.10.02.00-2 (Recommended)

**Enhancements**
Alpha Release Version 13.10.02.00-2

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 10 (x86) supported by this driver diskette are:
2.6.16.60-0.85.1 - SUSE LINUX Enterprise Server 10 SP 4 (x86) plus future errata.

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**HP H2xx SAS/SATA Host Bus Adapter Driver for SUSE LINUX Enterprise Server 11 (AMD64/EM64T)**
Version: 13.10.02.00-2 (Recommended)

**Enhancements**
Alpha Release Version 13.10.02.00-2

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 11 (x86_64) supported by this driver diskette are:
2.6.32.12-0.7 - SUSE LINUX Enterprise Server 11 SP 1 (x86_64) plus future errata.
3.0.13-0.27.1- SUSE LINUX Enterprise Server 11 SP 2 (x86_64) plus future errata.

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**HP H2xx SAS/SATA Host Bus Adapter Driver for SUSE LINUX Enterprise Server 11 (x86)**
Version: 13.10.02.00-1 (Recommended)

**Fixes**

An issue that caused a kernel panic when a HDD returned a SMART Error was resolved.
When the mpt2sas driver was updated to version 13.10.01.00 and the system was rebooted, the system stopped responding when trying to start the HP health monitor & SNMP agents.

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 11 (x86) supported by this driver diskette are:
- 2.6.32.12-0.7 - SUSE LINUX Enterprise Server 11 SP 1 (x86) plus future errata.
- 3.0.13-0.27.1 - SUSE LINUX Enterprise Server 11 SP 2 (x86) plus future errata.

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**HP H2xx SAS/SATA Host Bus Adapter Driver for SUSE LINUX Enterprise Server 11 (x86)**
Version: 13.10.02.00-2 *(Recommended)*

**Enhancements**
Alpha Release Version 13.10.02.00-2

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 11 (x86) supported by this driver diskette are:
- 2.6.32.12-0.7 - SUSE LINUX Enterprise Server 11 SP 1 (x86) plus future errata.
- 3.0.13-0.27.1 - SUSE LINUX Enterprise Server 11 SP 2 (x86) plus future errata.

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**HP H2xx SAS/SATA Host Bus Adapter Driver for Windows Server 2008 R2 Editions**
Version: 2.68.58.0 *(Recommended)*

**Fixes**
- Resolved the memory alignment issue that caused F/W diag buffer to fail posting.
- Resolved the TM reset processing to force processing of all other reply queues before checking for outstanding I/Os that should have been terminated.
- Resolved the typo for Windows 8 x86 driver OS name in Internal Name field.

**Enhancements**
- Added 1 new Intel-branded HBA, change one Intel HBA branding string, and change PnP ID in NoDrv INF file for Intel enclosure.
- Removed setting of non-existent field within Windows 8 specific code inside function HandleFwDiagReply when reserving a diag buffer, which was causing BSOD.
- Added EnableQueryAccessAlignment registry entry in LSI_SAS2.INF file.
- Qualify copying of LogInfo into Srb->TimeOutValue with PSuite=1; registry entry (possible very long timeouts on retried I/O's).
**HP H2xx SAS/SATA Host Bus Adapter Driver for Windows Server 2008 x64 Editions**
Version: 2.68.58.0 (Recommended)

**Fixes**
- Resolved the memory alignment issue that caused F/W diag buffer to fail posting.
- Resolved the TM reset processing to force processing of all other reply queues before checking for outstanding I/Os that should have been terminated.
- Resolved the typo for Windows 8 x86 driver OS name in Internal Name field.

**Enhancements**
- Added 1 new Intel-branded HBA, change one Intel HBA branding string, and change PnP ID in NoDrv INF file for Intel enclosure.
- Removed setting of non-existent field within Windows 8 specific code inside function HandleFwDiagReply when reserving a diag buffer, which was causing BSOD.
- Added EnableQueryAccessAlignment registry entry in LSI_SAS2.INF file.
- Qualify copying of LogInfo into Srb->TimeOutValue with PSuite=1; registry entry (possible very long timeouts on retried I/O's).

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**Microsoft Windows Server 2012 drivers are now included in the package.**

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**HP ProLiant Integrated SATA Controller Driver for Microsoft Windows Server 2008 R2**
Version: 1.1.10273.1 (B) (Optional)

**Important Note!**
If target system has successfully upgraded to driver version 1.1.20743.1, then upgrading to version 1.1.20743.1(B) is not required.

**Fixes**
This driver release fixes a bugcheck 0xD1 that occurs when the Symantec Netbackup does a shadow copy of Microsoft Window 2008 R2.
**HP ProLiant Integrated SATA Controller Driver for Windows Server 2008 x64 Edition**  
Version: 1.1.10273.1 *(Recommended)*

**Fixes**  
This driver release fixes a bugcheck 0xD1 that occurs when the Symantec Netbackup does a shadow copy of Microsoft Window 2008.

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**HP ProLiant Integrated SATA Controller Driver for Windows Server 2008 x86 Edition**  
Version: 1.1.10273.1 *(Recommended)*

**Fixes**  
This driver release fixes a bugcheck 0xD1 that occurs when the Symantec Netbackup does a shadow copy of Microsoft Window 2008.

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**HP ProLiant Smart Array 5x and 6x Controller Driver for Windows Server 2003/2008 x64 Editions**  
Version: 6.8.0.64 (F) *(Optional)*

**Enhancements**

No functional changes have occurred for the driver, only enhanced component-level logging has been implemented in the smart component installer. The generated log file will be located on the target system in `%SYSTEMROOT%\cpqsystem\log` directory under the name CPQSETUP.LOG. If you have previously installed version 6.8.0.64(E) of this driver, then you do not need to upgrade to version 6.8.0.64(F).

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**HP ProLiant Smart Array 5x and 6x Controller Driver for Windows Server 2008**  
Version: 6.8.0.32 (C) *(Optional)*

**Enhancements**

No functional changes have occurred for the driver, only enhanced component-level logging has been implemented in the smart component installer. The generated log file will be located on the target system in `%SYSTEMROOT%\cpqsystem\log` directory under the name CPQSETUP.LOG. If you have previously installed version 6.8.0.32(B) of this driver, then you do not need to upgrade to version 6.8.0.32(C).

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**HP ProLiant Smart Array Controller (AMD64/EM64T) Driver for SUSE LINUX Enterprise Server 10 (AMD64/EM64T)**  
Version: 3.6.28-20 *(Recommended)*

**Enhancements**

Added support Smart Array P822 controller.  
Bump max sectors to 8192 for the scsi half of the cciss driver for increased tape block size.
Supported Devices and Features

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 10 (AMD64/EM64T) supported by this binary rpm are:
2.6.16.60-0.85.1 - SUSE LINUX Enterprise Server 10 SP4 (AMD64/EM64T) and future errata kernels for SP4.

**HP ProLiant Smart Array Controller (AMD64/EM64T) Driver for SUSE LINUX Enterprise Server 11 (AMD64/EM64T)**
Version: 4.6.28-20 (Recommended)

Enhancements
Added support for SUSE LINUX Enterprise Server 11 SP2
Bump max_sectors to 8192 for the scsi half of the cciss driver for increased tape block size.
Starting with the SUSE Enterprise Linux 11 SP1, the hpssa driver is required for the latest generation Smart Array controllers (Px2x).

Supported Devices and Features

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 11 (AMD64/EM64T) supported by this binary rpm are:
2.6.32.12-0.7 - SUSE LINUX Enterprise Server 11 SP 1 (AMD64/EM64T) and future errata kernels for SP 1.
3.0.13-0.27.1 - SUSE LINUX Enterprise Server 11 SP 2 (AMD64/EM64T) and future errata kernels for SP 2.

**HP ProLiant Smart Array Controller (AMD64/EM64T) Driver for Red Hat Enterprise Linux 5 (AMD64/EM64T)**
Version: 3.6.28-20 (Recommended)

Enhancements
Added support for Red Hat Enterprise Linux 5 Update 8.
Added support Smart Array P822 controller.
Bump max_sectors to 8192 for the scsi half of the cciss driver for increased tape block size.

Supported Devices and Features

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 5 (AMD64/EM64T) supported by this binary rpm are:
2.6.18-238.el5 - Red Hat Enterprise Linux 5 Update 6 (AMD64/EM64T) and future errata kernels for update 6.
2.6.18-274.el5 - Red Hat Enterprise Linux 5 Update 7 (AMD64/EM64T) and future errata kernels for update 7.
2.6.18-308.el5 - Red Hat Enterprise Linux 5 Update 8 (AMD64/EM64T) and future errata kernels for update 8.

**HP ProLiant Smart Array Controller (AMD64/EM64T) Driver for Red Hat Enterprise Linux 6 (AMD64/EM64T)**
Version: 4.6.28-21 (Recommended)
**Enhancements**

Added support for Red Hat Enterprise Linux 6 Update 3.

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 6 (AMD64/EM64T) supported by this binary rpm are:
- 2.6.32-131.el6 - Red Hat Enterprise Linux 6 Update 1(AMD64/EM64T) and future errata kernels for update 1.
- 2.6.32-220.el6 - Red Hat Enterprise Linux 6 Update 2(AMD64/EM64T) and future errata kernels for update 2.
- 2.6.32-279.el6 - Red Hat Enterprise Linux 6 Update 3(AMD64/EM64T) and future errata kernels for update 3.

---

**HP ProLiant Smart Array Controller (AMD64/EM64T) Driver for Red Hat Enterprise Linux 6 (AMD64/EM64T)**

Version: 3.1.0-7 (Critical)

**Fixes**

Fixed command status return necessary to avoid data integrity issues. This can happen in multipath environments when a path goes down.

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 6 (AMD64/EM64T) supported by this binary rpms are:
- 2.6.32-131.el6 - Red Hat Enterprise Linux 6 Update 1 (AMD64/EM64T) and future errata kernels for update 1.
- 2.6.32-220.el6 - Red Hat Enterprise Linux 6 Update 2 (AMD64/EM64T) and future errata kernels for update 2.
- 2.6.32-279.el6 - Red Hat Enterprise Linux 6 Update 3 (AMD64/EM64T) and future errata kernels for update 3.

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**HP ProLiant Smart Array Controller (AMD64/EM64T) Driver for SUSE LINUX Enterprise Server 11 (AMD64/EM64T)**

Version: 3.1.0-7 (Critical)

**Fixes**

Fixed command status return necessary to avoid data integrity issues. This can happen in multipath environments when a path goes down.

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 11 (AMD64/EM64T) supported by this binary rpm are:
- 2.6.32.12-0.7 - SUSE LINUX Enterprise Server 11 SP 1 (AMD64/EM64T) and future errata kernels for SP 1.
- 3.0.13-0.27.1 - SUSE LINUX Enterprise Server 11 SP 2 (AMD64/EM64T) and future errata kernels for SP 2.
**HP ProLiant Smart Array Controller (x86/AMD32) Driver for Red Hat Enterprise Linux 5 (x86)**

**Version:** 3.6.28-20 *(Recommended)*

**Enhancements**
- Added support for Red Hat Enterprise Linux 5 Update 8.
- Added support Smart Array P822 controller.
- Bump max_sectors to 8192 for the scsi half of the cciss driver for increased tape block size.

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of Red Hat Enterprise Linux 5 (x86) supported by this binary rpm are:
- 2.6.18-238.el5 - Red Hat Enterprise Linux 5 Update 6 (x86) and future errata kernels for update 6.
- 2.6.18-274.el5 - Red Hat Enterprise Linux 5 Update 7 (x86) and future errata kernels for update 7.
- 2.6.18-308.el5 - Red Hat Enterprise Linux 5 Update 8 (x86) and future errata kernels for update 8.

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**HP ProLiant Smart Array Controller (x86/AMD32) Driver for Red Hat Enterprise Linux 6 (x86)**

**Version:** 4.6.28-21 *(Recommended)*

**Enhancements**
- Added support for Red Hat Enterprise Linux 6 Update 3.

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of Red Hat Enterprise Linux 6 (x86) supported by this binary rpm are:
- 2.6.32-131.el6 - Red Hat Enterprise Linux 6 Update 1(x86) and future errata kernels for update 1.
- 2.6.32-220.el6 - Red Hat Enterprise Linux 6 Update 2(x86) and future errata kernels for update 2.
- 2.6.32-279.el6 - Red Hat Enterprise Linux 6 Update 3(x86) and future errata kernels for update 3.

---

**HP ProLiant Smart Array Controller (x86/AMD32) Driver for Red Hat Enterprise Linux 6 (x86)**

**Version:** 3.1.0-7 *(Critical)*

**Fixes**
- Fixed command status return necessary to avoid data integrity issues. This can happen in multipath environments when a path goes down.

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of Red Hat Enterprise Linux 6 (x86) supported by this binary rpm are:
- 2.6.32-131.el6 - Red Hat Enterprise Linux 6 Update 1(x86) and future errata kernels for update 1.
- 2.6.32-220.el6 - Red Hat Enterprise Linux 6 Update 2(x86) and future errata kernels for update 2.
- 2.6.32-279.el6 - Red Hat Enterprise Linux 6 Update 3(x86) and future errata kernels for update 3.
**HP ProLiant Smart Array Controller (x86/AMD32) Driver for SUSE LINUX Enterprise Server 10 (x86)**
Version: 3.6.28-20 (Recommended)

**Enhancements**
Added support Smart Array P822 controller.
Bump max_sectors to 8192 for the scsi half of the cciss driver for increased tape block size.

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of SUSE LINUX Enterprise Server 10 (x86) supported by this binary rpm are:
2.6.16.60-0.85.1 - SUSE LINUX Enterprise Server 10 SP 4 (x86) and future errata kernels for SP4.

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**HP ProLiant Smart Array Controller (x86/AMD32) Driver for SUSE LINUX Enterprise Server 11 (x86)**
Version: 3.1.0-4 (Recommended)

**Enhancements**
Enabled Multiple Reply Queues for improved performance.

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of SUSE LINUX Enterprise Server 11 (x86) supported by this binary rpm are:
2.6.32.12-0.7 - SUSE LINUX Enterprise Server 11 SP 1 (x86) and future errata kernels for SP 1.
3.0.13-0.27.1 - SUSE LINUX Enterprise Server 11 SP 2 (x86) and future errata kernels for SP 2.

---

**HP ProLiant Smart Array Controller (x86/AMD32) Driver for SUSE LINUX Enterprise Server 11 (x86)**
Version: 4.6.28-20 (Recommended)

**Enhancements**
Added support for SUSE LINUX Enterprise Server 11 SP2
Bump max_sectors to 8192 for the scsi half of the cciss driver for increased tape block size.
Starting with the SUSE Enterprise Linux 11 SP1, the hpsa driver is required for the latest generation Smart Array controllers (Px2x).

**Supported Devices and Features**

**SUPPORTED KERNELS:**
The kernels of SUSE LINUX Enterprise Server 11 (x86) supported by this binary rpm are:
2.6.32.12-0.7 - SUSE LINUX Enterprise Server 11 SP 1 (x86) and future errata kernels for SP 1.
3.0.13-0.27.1 - SUSE LINUX Enterprise Server 11 SP 2 (x86) and future errata kernels for SP 2.
**HP ProLiant Smart Array Controller (x86/AMD32) Driver for SUSE LINUX Enterprise Server 11 (x86)**

Version: 3.1.0-7 (Critical)

**Fixes**
Fixed command status return necessary to avoid data integrity issues. This can happen in multipath environments when a path goes down.

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 11 (x86) supported by this binary rpm are:
- 2.6.32.12-0.7 - SUSE LINUX Enterprise Server 11 SP 1 (x86) and future errata kernels for SP 1.
- 3.0.13-0.27.1 - SUSE LINUX Enterprise Server 11 SP 2 (x86) and future errata kernels for SP 2.

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**HP ProLiant Smart Array Device Manager Extension for Windows Server 2003/2008**

Version: 6.6.0.32 (C) (Optional)

**Enhancements**
No functional changes have occurred for the Device Manager Extension, only enhanced component-level logging has been implemented in the smart component installer. The generated log file will be located on the target system in %SYSTEMROOT%\cpqsystem\log directory under the name CPQSETUP.LOG. If you have previously installed version 6.6.0.32(B) of this Device Manager Extension, then you do not need to upgrade to version 6.6.0.32(C).

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**HP ProLiant Smart Array Device Manager Extension for Windows Server 2003/2008 x64 Editions**

Version: 6.6.0.64 (D) (Optional)

**Enhancements**
No functional changes have occurred for the Device Manager Extension, only enhanced component-level logging has been implemented in the smart component installer. The generated log file will be located on the target system in %SYSTEMROOT%\cpqsystem\log directory under the name CPQSETUP.LOG. If you have previously installed version 6.6.0.64(C) of this Device Manager Extension, then you do not need to upgrade to version 6.6.0.64(D).

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**HP ProLiant Smart Array SAS/SATA Controller Driver for Windows Server 2008**

Version: 6.24.0.32 (B) (Optional)

**Important Note!**
If the target controller was successfully updated to version 6.24.0.32 of this driver, then it is not necessary to update to version 6.24.0.32(b)

**Fixes**
Fixed HPSUM installation issue with the SB40c hardware connected

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**HP ProLiant Smart Array SAS/SATA Controller Driver for Windows Server 2008 x64 Edition**

Version: 6.24.0.64 (C) *(Optional)*

**Important Note!**

If the target controller was successfully updated to version 6.24.0.64 or 6.24.0.64(B), then it is not necessary to update to version 6.24.0.64(C).

**Fixes**

Revised Smart Component package internal file. Driver functionality has not changed.

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**HP ProLiant Smart Array SAS/SATA Controller Driver for Windows Server 2012 x64 Edition**

Version: 62.24.2.64 *(Optional)*

**Fixes**

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**Enhancements**

Support for Microsoft Windows Server 2012

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**HP Smart Array B110i SATA RAID Controller Driver for Red Hat Enterprise Linux 5 (EM64T)**

Version: 1.2.6-13 *(Critical)*

**Fixes**

- Corrects an issue where HP B110i would try to resume the rebuild progress if the drive was replaced while the server was offline.
- To improve rebuild time, ensure that drive write cache is enabled during rebuild and disabled when rebuild completes.

**Enhancements**

Added support for Red Hat Enterprise 5 Update 8

**Supported Devices and Features**

**SUPPORTED KERNELS:**

The kernels of Red Hat Enterprise Linux 5 (AMD64/EM64T) supported by this binary rpm are:
- 2.6.18-274.el5 - Red Hat Enterprise Linux 5 Update 7 (AMD64/EM64T) and future errata kernels for update 7.
- 2.6.18-308.el5 - Red Hat Enterprise Linux 5 Update 8 (AMD64/EM64T) and future errata kernels for update 8.
**HP Smart Array B110i SATA RAID Controller Driver for Red Hat Enterprise Linux 5 (x86)**
Version: 1.2.6-13 **(Critical)**

**Fixes**
- Corrects an issue where HP B110i would try to resume the rebuild progress if the drive was replaced while the server was offline.
- To improve rebuild time, ensure that drive write cache is enabled during rebuild and disabled when rebuild completes.

**Enhancements**
- Added support for Red Hat Enterprise 5 Update 8

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 5 (x86) supported by this binary rpm are:
- 2.6.18-274.el5 - Red Hat Enterprise Linux 5 Update 7 (x86) and future errata kernels for update 7.
- 2.6.18-308.el5 - Red Hat Enterprise Linux 5 Update 8 (x86) and future errata kernels for update 8.

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**HP Smart Array B110i SATA RAID Controller Driver for Red Hat Enterprise Linux 6 (AMD64/EM64T)**
Version: 1.2.6-14 **(Recommended)**

**Enhancements**
- Added support for Red Hat Enterprise Linux 6 Update 3.

**Supported Devices and Features**

SUPPORTED KERNELS:
The kernels of Red Hat Enterprise Linux 6 (AMD64/EM64T) supported by this binary rpm are:
- 2.6.32-131.el6 - Red Hat Enterprise Linux 6 Update 1(AMD64/EM64T) and future errata kernels for update 1.
- 2.6.32-220.el6 - Red Hat Enterprise Linux 6 Update 2(AMD64/EM64T) and future errata kernels for update 2.
- 2.6.32-279.el6 - Red Hat Enterprise Linux 6 Update 3(AMD64/EM64T) and future errata kernels for update 3.

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**HP Smart Array B110i SATA RAID Controller Driver for Red Hat Enterprise Linux 6 (x86)**
Version: 1.2.6-14 **(Recommended)**

**Enhancements**
- Added support for Red Hat Enterprise Linux 6 Update 3.

**Supported Devices and Features**
HP Smart Array B110i SATA RAID Controller Driver for SUSE LINUX Enterprise Server 10 (AMD64/EM64T)
Version: 1.2.6-13 (Critical)

Fixes

- Corrects an issue where HP B110i would try to resume the rebuild progress if the drive was replaced while the server was offline.
- To improve rebuild time, ensure that drive write cache is enabled during rebuild and disabled when rebuild completes.

Supported Devices and Features

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 10 (AMD64/EM64T) supported by this binary rpm are:
2.6.16.60-0.85.1 - SUSE LINUX Enterprise Server 10 SP 4 (AMD64/EM64T) and future errata kernels for SP 4.

HP Smart Array B110i SATA RAID Controller Driver for SUSE LINUX Enterprise Server 10 (x86)
Version: 1.2.6-13 (Critical)

Fixes

- Corrects an issue where HP B110i would try to resume the rebuild progress if the drive was replaced while the server was offline.
- To improve rebuild time, ensure that drive write cache is enabled during rebuild and disabled when rebuild completes.

Supported Devices and Features

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 10 (x86) supported by this binary rpm are:
2.6.16.60-0.85.1 - SUSE LINUX Enterprise Server 10 SP 4 (x86) and future errata kernels for SP 4.
Fixes

- Corrects an issue where HP B110i would try to resume the rebuild progress if the drive was replaced while the server was offline.
- To improve rebuild time, ensure that drive write cache is enabled during rebuild and disabled when rebuild completes.

Enhancements

Added support for SUSE LINUX Enterprise Server 11 SP2

Supported Devices and Features

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 11 (AMD64/EM64T) supported by this binary rpm are:
- 2.6.32.12-0.7 - SUSE LINUX Enterprise Server 11 SP 1 (AMD64/EM64T) and future errata kernels SP 1.
- 3.0.13-0.27.1 - SUSE LINUX Enterprise Server 11 SP 2 (AMD64/EM64T) and future errata kernels SP 2.

---

HP Smart Array B110i SATA RAID Controller Driver for SUSE LINUX Enterprise Server 11 (x86)
Version: 1.2.6-13 (Critical)

Fixes

- Corrects an issue where HP B110i would try to resume the rebuild progress if the drive was replaced while the server was offline.
- To improve rebuild time, ensure that drive write cache is enabled during rebuild and disabled when rebuild completes.

Enhancements

Added support for SUSE LINUX Enterprise Server 11 SP2

Supported Devices and Features

SUPPORTED KERNELS:
The kernels of SUSE LINUX Enterprise Server 11 (x86) supported by this binary rpm are:
- 2.6.32.12-0.7 - SUSE LINUX Enterprise Server 11 SP 1 (x86) and future errata kernels for SP 1.
- 3.0.13-0.27.1 - SUSE LINUX Enterprise Server 11 SP 2 (x86) and future errata kernels for SP 2.

---

Driver - Storage Fibre Channel

HP Storage Brocade Storport Fibre Channel Host Bus Adapter Driver for Microsoft Windows Server 2012
Version: 3.1.0.0 (Optional)

Important Note!
Release Notes:
HP StorageWorks Brocade Fibre Channel Host Bus Adapters Release Notes

To keep drivers and boot code synchronized, be sure to update your adapter with the latest boot image from [www.hp.com](http://www.hp.com) before you install or update adapter driver packages.

**Enhancements**
Contains driver version 3.1.0.0

**Supported Devices and Features**
This driver supports the following HP adapters:

- HP 41B PCIe 4Gb Fibre Channel Single Port Host Bus Adapter
- HP 42B PCIe 4Gb Fibre Channel Dual Port Host Bus Adapter
- HP 81B PCIe 8Gb Fibre Channel Single Port Host Bus Adapter
- HP 82B PCIe 8Gb Fibre Channel Dual Port Host Bus Adapter
- Brocade 804 8Gb Fibre Channel HBA for c-Class BladeSystem

---

**HP Storage Fibre Channel Adapter Kit for the Emulex Storport Driver for Windows Server 2012**
Version: 2.72.12.1 *(Recommended)*

**Important Note!**
Release Notes:
HP StorageWorks Emulex Adapters Release Notes

**Enhancements**
Initial driver with Windows Server 2012 support

---

**HP Storage Fibre Channel Adapter Kit for the QLogic Storport Driver for Windows Server 2012**
Version: 9.1.10.26 *(Optional)*

**Important Note!**
Release Notes:
HP StorageWorks QLogic Adapters Release Notes

**Enhancements**

- Build for Windows Server 2012
- Driver version 9.1.10.26

**Supported Devices and Features**
This driver supports the following HP adapters:

- HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA
- HP StorageWorks FC1243 4Gb PCI-X 2.0 Dual Channel HBA
- HP FC1142SR 4Gb PCIe Host Bus Adapter
HP Service Pack for ProLiant 2012.10.0 Release Notes

- HP FC1242SR 4Gb PCIe DC Host Bus Adapter
- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- Qlogic QMH2562 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- Qlogic QMH2462 4Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

HP Storage Fibre Channel Adapter Kit for the x64 Emulex Storport Driver
Version: 3.23.0.0 (Recommended)

Important Note!
Release Notes:
HP StorageWorks Emulex Adapters Release Notes

Prerequisites

This driver installation with HP Smart Component requires a minimum Windows Server 2003 SP2 with KB932755. Apply the Microsoft Storport update (KB932755) before installing or upgrading to this version of the miniport driver. For boot installations, Windows Server 2003 SP2 install image is required followed by the KB update.

W2K3 is not a supported operating system for the following options:

- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP Fibre Channel 8Gb LPe1205A Mezz card

Fixes

Added support for SLES 11 SP2, RHEL 6.3
Added support for Virtual Connect 3.70.

Enhancements

Updated driver to version 2.70.019.

Supported Devices and Features

- HP StorageWorks FC2243 4 Gb PCI-X 2.0 DC HBA
- HP FC2242SR 4Gb PCIe DC Host Bus Adapter
- HP StorageWorks FC2143 4 Gb PCI-X 2.0 HBA
- HP FC2142SR 4Gb PCIe Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
HP Storage Fibre Channel Adapter Kit for the x64 QLogic Storport Driver
Version: 9.1.10.26 (Optional)

Important Note!
Release Notes:
HP StorageWorks QLogic Adapters Release Notes

Enhancements

- Updated the Smart Component with driver version 9.1.10.26.
- This driver loads firmware version 5.06.05.

Supported Devices and Features

This driver supports the following HP adapters:

- HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA
- HP StorageWorks FC1243 4Gb PCI-X 2.0 Dual Channel HBA
- HP FC1142SR 4Gb PCIe Host Bus Adapter
- HP FC1242SR 4Gb PCIe DC Host Bus Adapter
- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- QLogic QMH2562 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- QLogic QMH2462 4Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

HP Storage Fibre Channel Adapter Kit for the x86 Emulex Storport Driver
Version: 1.23.0.0 (Recommended)

Important Note!
Release Notes:
HP StorageWorks Emulex Adapters Release Notes

Prerequisites

This driver installation with HP Smart Component requires a minimum Windows Server 2003 SP2 with KB932755. Apply the Microsoft Storport update (KB932755) before installing or upgrading to this version of the miniport driver. For boot installations, Windows Server 2003 SP2 install image is required followed by the KB update.

W2K3 is not a supported operating system for the following options:
HP Service Pack for ProLiant 2012.10.0 Release Notes

- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP Fibre Channel 8Gb LPe1205A Mezz card

**Fixes**
- Added support for SLES 11 SP2, RHEL 6.3
- Added support for Virtual Connect 3.70.

**Enhancements**
- Updated driver to version 2.70.019.

**Supported Devices and Features**

- HP StorageWorks FC2243 4 Gb PCI-X 2.0 DC HBA
- HP FC2242SR 4Gb PCIe DC Host Bus Adapter
- HP StorageWorks FC2143 4 Gb PCI-X 2.0 HBA
- HP FC2142SR 4Gb PCIe Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- Emulex LPe1205 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- Emulex LPe1105 4Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

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**HP Storage Fibre Channel Adapter Kit for the x86 QLogic Storport Driver**

Version: 9.1.10.26 *(Optional)*

**Important Note!**

Release Notes:
[HP StorageWorks QLogic Adapters Release Notes](#)

**Enhancements**

- Updated the Smart Component with driver version 9.1.10.26.
- This driver loads firmware version 5.06.05.

**Supported Devices and Features**

- This driver supports the following HP adapters:
  - HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA
  - HP StorageWorks FC1243 4Gb PCI-X 2.0 Dual Channel HBA
  - HP FC1142SR 4Gb PCIe Host Bus Adapter
  - HP FC1242SR 4Gb PCIe DC Host Bus Adapter
  - HP 81Q PCIe Fibre Channel Host Bus Adapter
  - HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
QLogic QMH2562 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
QLogic QMH2462 4Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

HP Storage Fibre Channel Over Ethernet Adapter Kit for the Emulex Storport Driver for Windows Server 2012
Version: 2.72.12.1 (Optional)

Important Note!
Release Notes:
HP StorageWorks Emulex Adapters Release Notes

Enhancements
Initial driver version with support for Windows Server 2012.

Supported Devices and Features
This driver supports the following HP adapters:
- HP NC551m Dual Port FlexFabric 10Gb Converged Network Adapter
- HP NC551i Dual Port FlexFabric 10Gb Network Adapter
- HP NC553i 10Gb 2-port FlexFabric 10Gb Converged Network Adapter
- HP NC553m 10Gb 2-port FlexFabric 10Gb Converged Network Adapter
- HP StorageWorks CN1000E Dual Port Converged Network Adapter
- HP StorageWorks CN1100E Dual Port Converged Network Adapter
- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 554M Adapter

HP Storage Fibre Channel Over Ethernet Adapter Kit for the QLogic Storport Driver for Windows Server 2012
Version: 9.1.10.16 (Optional)

Important Note!
Release Notes:
HP StorageWorks QLogic Adapters Release Notes

Enhancements
- Build for Windows Server 2012
- Driver version 9.1.10.16

Supported Devices and Features
This driver supports the following HP adapter:
HP CN1000Q Dual Port Converged Network Adapter
HP Storage Fibre Channel Over Ethernet Adapter Kit for the x64 Emulex Storport Driver
Version: 3.12.0.1 (Recommended)

**Important Note!**
Release Notes:
HP StorageWorks Emulex Adapters Release Notes

**Prerequisites**
This driver installation with HP Smart Component requires a minimum Windows Server 2003 SP2 with KB932755. Apply the Microsoft Storport update (KB932755) before installing or upgrading to this version of the miniport driver. For boot installations, Windows Server 2003 SP2 install image is required followed by the KB update.

W2K3 is not a supported operating system for the following options:

- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 554M Adapter

**Fixes**
Updated installer to correct issue where the elxplus driver was not being installed. No changes to driver binaries only the installer.

**Supported Devices and Features**
This driver supports the following HP adapters:

- HP NC551m Dual Port FlexFabric 10Gb Converged Network Adapter
- HP NC551i Dual Port FlexFabric 10Gb Network Adapter
- HP NC553i 10Gb 2-port FlexFabric 10Gb Converged Network Adapter
- HP NC553m 10Gb 2-port FlexFabric 10Gb Converged Network Adapter
- HP StorageWorks CN1000E Dual Port Converged Network Adapter
- HP StorageWorks CN1100E Dual Port Converged Network Adapter
- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 554M Adapter

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HP Storage Fibre Channel Over Ethernet Adapter Kit for the x64 QLogic Storport Driver
Version: 3.5.0.0 (Optional)

**Important Note!**
Release Notes:
HP StorageWorks QLogic Adapters Release Notes

**Enhancements**
Updated the Smart Component to contain driver version 9.1.9.55.

**HP Storage Fibre Channel Over Ethernet Adapter Kit for the x86 Emulex Storport Driver**

Version: 1.12.0.1 *(Recommended)*

**Important Note!**

Release Notes:

HP StorageWorks Emulex Adapters Release Notes

**Prerequisites**

This driver installation with HP Smart Component requires a minimum Windows Server 2003 SP2 with KB932755. Apply the Microsoft Storport update (KB932755) before installing or upgrading to this version of the miniport driver. For boot installations, Windows Server 2003 SP2 install image is required followed by the KB update.

W2K3 is not a supported operating system for the following options:

- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 554M Adapter

**Fixes**

Updated installer to correct issue where the elxplus driver was not being installed. No changes to driver binaries only the installer.

Corrected the raw driver files in the driver files folder to be the x86 versions.

**Supported Devices and Features**

This driver supports the following HP adapters:

- HP NC551m Dual Port FlexFabric 10Gb Converged Network Adapter
- HP NC551i Dual Port FlexFabric 10Gb Network Adapter
- HP NC553i 10Gb 2-port FlexFabric 10Gb Converged Network Adapter
- HP NC553m 10Gb 2-port FlexFabric 10Gb Converged Network Adapter
- HP StorageWorks CN1000E Dual Port Converged Network Adapter
- HP StorageWorks CN1100E Dual Port Converged Network Adapter
- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 554M Adapter

**HP Storage Fibre Channel Over Ethernet Adapter Kit for the x86 QLogic Storport Driver**

Version: 1.5.0.0 *(Optional)*

**Important Note!**

Release Notes:

HP StorageWorks QLogic Adapters Release Notes

HP | Service Pack for ProLiant 2012.10.0
Enhancements

Updated the Smart Component to contain driver version 9.1.9.55.

**HP Storage x64 Brocade Storport Fibre Channel Host Bus Adapter Driver for Microsoft Windows Server 2008**
Version: 3.1.0.0 (Optional)

**Important Note!**

Release Notes:
HP StorageWorks Brocade Fibre Channel Host Bus Adapters Release Notes

To keep drivers and boot code synchronized, be sure to update your adapter with the latest boot image from [www.hp.com](http://www.hp.com) before you install or update adapter driver packages.

**Prerequisites**

KB968675 (or higher) is recommended. This KB fixes a non paged memory leak in Windows 2008 storage stack.

**Enhancements**

Contains driver version 3.1.0.0

**Supported Devices and Features**

This driver supports the following HP adapters:

- HP 41B PCIe 4Gb Fibre Channel Single Port Host Bus Adapter
- HP 42B PCIe 4Gb Fibre Channel Dual Port Host Bus Adapter
- HP 81B PCIe 8Gb Fibre Channel Single Port Host Bus Adapter
- HP 82B PCIe 8Gb Fibre Channel Dual Port Host Bus Adapter
- Brocade 804 8Gb Fibre Channel HBA for c-Class BladeSystem

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**HP Storage x64 Brocade Storport Fibre Channel Host Bus Adapter Driver for Microsoft Windows Server 2008 R2**
Version: 3.1.0.0 (Optional)

**Important Note!**

Release Notes:
HP StorageWorks Brocade Fibre Channel Host Bus Adapters Release Notes

To keep drivers and boot code synchronized, be sure to update your adapter with the latest boot image from [www.hp.com](http://www.hp.com) before you install or update adapter driver packages.
**Enhancements**

Contains driver version 3.1.0.0

**Supported Devices and Features**

This driver supports the following HP adapters:

- HP 41B PCIe 4Gb Fibre Channel Single Port Host Bus Adapter
- HP 42B PCIe 4Gb Fibre Channel Dual Port Host Bus Adapter
- HP 81B PCIe 8Gb Fibre Channel Single Port Host Bus Adapter
- HP 82B PCIe 8Gb Fibre Channel Dual Port Host Bus Adapter
- Brocade 804 8Gb Fibre Channel HBA for c-Class BladeSystem

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**HP Storage x86 Brocade Storport Fibre Channel Host Bus Adapter Driver for Microsoft Windows Server 2008**

Version: 3.1.0.0 *(Optional)*

**Important Note!**

Release Notes:

[HP StorageWorks Brocade Fibre Channel Host Bus Adapters Release Notes](#)

To keep drivers and boot code synchronized, be sure to update your adapter with the latest boot image from [www.hp.com](http://www.hp.com) before you install or update adapter driver packages.

**Prerequisites**

KB968675 (or higher) is recommended. This KB fixes a nonpaged memory leak in Windows 2008 storage stack.

**Enhancements**

Contains driver version 3.1.0.0

**Supported Devices and Features**

This driver supports the following HP adapters:

- HP 41B PCIe 4Gb Fibre Channel Single Port Host Bus Adapter
- HP 42B PCIe 4Gb Fibre Channel Dual Port Host Bus Adapter
- HP 81B PCIe 8Gb Fibre Channel Single Port Host Bus Adapter
- HP 82B PCIe 8Gb Fibre Channel Dual Port Host Bus Adapter
- Brocade 804 8Gb Fibre Channel HBA for c-Class BladeSystem
Driver - Storage Tape

HP Storage Tape Drivers for Windows
Version: 3.6.0.0 (Recommended)

Enhancements

- Added support and drivers for Microsoft Windows 8 (x64), Microsoft Windows 8 (x86) and Microsoft Windows Server 2012 (64-bit)
- New driver versions added for older operating systems
- See table below for operating system support and driver versions
  - bold - new driver versions
  - * - not supported

<table>
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<tr>
<td>HP DAT Tape Autoloader</td>
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</tbody>
</table>

Driver - System Management

Combined Chipset Identifier for Windows Server 2003/2008
Version: 8.1.0.0 (Optional)

Important Note!
This is the final version of this component to support installation under Windows Server 2003.

Enhancements
Added support for new HP ProLiant server models. Refer to the contents of the Release Notes tab for the list of new server models.

Supported Devices and Features
This version adds support for HP ProLiant Gen8 servers.

Combined Chipset Identifier for Windows Server 2003/2008 x64 Editions
Version: 8.1.0.0 (Optional)
Important Note!
This is the final version of this component to support installation under Windows Server 2003 x64 Edition.

Enhancements
Added support for new HP ProLiant server models. Refer to the contents of the Release Notes tab for the list of new server models.

Supported Devices and Features
This version adds support for HP ProLiant Gen8 servers.

Combined Chipset Identifier for Windows Server 2008 R2
Version: 8.1.0.0 (Optional)

Enhancements
- Initial release for Windows Server 2008 R2 support.
- Added support for new HP ProLiant server models. Refer to the contents of the Release Notes tab for the list of new server models.

Supported Devices and Features
This version adds support for HP ProLiant Gen8 servers.

HP OpenIPMI Device Driver for SUSE LINUX Enterprise Server 10 (AMD64/EM64T)
Version: 8.5.2-*.*.sles10 (Optional)

Prerequisites
The Linux kernel "/.config" file must have IPMI support enabled for rebuilds. This is not the default on some older Linux distributions.

If a different Linux kernel (e.g. an errata kernel) is used in place of the supported version of Linux, the standard Linux Kernel build environment will need to be installed. Error messages will be displayed during the rebuild process indicating which Linux packages are missing.

Fixes
Suppressed logs where "channel_handler:Error Code: 0xc9" message was observed in /var/log/messages. This was expected messages as probe was done during the init.

HP OpenIPMI Device Driver for Red Hat Enterprise Linux 5 (AMD64/EM64T)
Version: 8.5.2-*.*.rhel5 (Optional)

Important Note!
The HP OpenIPMI device driver features are now available in the Red Hat Enterprise Linux 5 Update 5 (or Later) Kernel. Therefore, you don't need to install this package.
Prerequisites
The Linux kernel ".config" file must have IPMI support enabled for rebuilds. This is not the default on some older Linux distributions.

If a different Linux kernel (e.g. an errata kernel) is used in place of the supported version of Linux, the standard Linux Kernel build environment will need to be installed. Error messages will be displayed during the rebuild process indicating which Linux packages are missing.

Fixes
Suppressed logs where " channel_handler:Error Code: 0xc9" message was observed in /var/log/messages. This was expected messages as probe was done during the init.

HP OpenIPMI Device Driver for Red Hat Enterprise Linux 5 (x86)
Version: 8.5.2-*.rhel5 (Optional)

Important Note!
The HP OpenIPMI device driver features are now available in the Red Hat Enterprise Linux 5 Update 5 (or Later) Kernel. Therefore, you don’t need to install this package.

Prerequisites
The Linux kernel ".config" file must have IPMI support enabled for rebuilds. This is not the default on some older Linux distributions.

If a different Linux kernel (e.g. an errata kernel) is used in place of the supported version of Linux, the standard Linux Kernel build environment will need to be installed. Error messages will be displayed during the rebuild process indicating which Linux packages are missing.

Fixes
Suppressed logs where " channel_handler:Error Code: 0xc9" message was observed in /var/log/messages. This was expected messages as probe was done during the init.

HP OpenIPMI Device Driver for SUSE LINUX Enterprise Server 10 (x86)
Version: 8.5.2-*.sles10 (Optional)

Prerequisites
The Linux kernel ".config" file must have IPMI support enabled for rebuilds. This is not the default on some older Linux distributions.

If a different Linux kernel (e.g. an errata kernel) is used in place of the supported version of Linux, the standard Linux Kernel build environment will need to be installed. Error messages will be displayed during the rebuild process indicating which Linux packages are missing.

Fixes
Suppressed logs where " channel_handler:Error Code: 0xc9" message was observed in /var/log/messages. This was expected messages as probe was done during the init.
**HP ProLiant iLO 2 Management Controller Driver for Windows Server 2008**
Version: 1.14.0.0 *(Recommended)*

**Fixes**
Corrected command timeout failures reported by the driver when communicating with iLO 2.

**HP ProLiant iLO 2 Management Controller Driver for Windows Server 2008 x64 Editions**
Version: 1.14.0.0 *(Recommended)*

**Fixes**
Corrected command timeout failures reported by the driver when communicating with iLO 2.

**HP ProLiant iLO 3/4 Channel Interface Driver for Windows X64**
Version: 3.7.0.0 *(Optional)*

**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**
Add support for Windows Server 2012.

**HP ProLiant iLO 3/4 Channel Interface Driver for Windows X86**
Version: 3.5.0.0 *(Optional)*

**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**
Fixed a problem related to RIBCL "GET_AHS_STATUS" command.

**HP ProLiant iLO 3/4 Management Controller Driver Package for Windows Server 2008 X86**
Version: 3.6.0.0 *(Optional)*

**Prerequisites**
The *HP ProLiant iLO 3/4 Channel Interface Driver for Windows X86* (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.
**Fixes**
Fixed an intermittent loss of reporting of correctable memory errors on HP ProLiant Gen8 platforms with HP SmartMemory enabled. Requires HP iLO 4 firmware version 1.10 or later.

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**HP ProLiant iLO 3/4 Management Controller Driver Package for Windows Server 2008/2012 X64**
Version: 3.7.0.0 *(Optional)*

**Prerequisites**
The HP ProLiant iLO 3/4 Channel Interface Driver for Windows X64 (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**
Add support for Windows Server 2012.

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### Driver - Video

**ATI ES1000 Video Controller Driver for Windows Server 2008**

**Enhancements**
Enhanced component-level logging has been implemented in the Smart Component installer. The generated log file will be located on the target system in the %SystemRoot%\cpqsystem\log directory under the name CPQSETUP.LOG.

---

**ATI ES1000 Video Controller Driver for Windows Server 2008 x64 Editions**

**Enhancements**
- Added support for Microsoft Windows Server 2008 R2.
- Enhanced component-level logging has been implemented in the Smart Component installer. The generated log file will be located on the target system in the %SystemRoot%\cpqsystem\log directory under the name CPQSETUP.LOG.

---

**Matrox G200eH Video Controller Driver for Windows Server 2008 X64**
Version: 6.12.1.1030 *(Optional)*

**Fixes**
- Removed support for EDID 2.0.
- Removed 1024x768x43Hz from the supported resolution list.
- Hardened the detailed timings algorithm to prevent a possible division by zero.

**Matrox G200eH Video Controller Driver for Windows Server 2008 X86**
Version: 6.12.1.1030 (Optional)

**Fixes**
- Removed support for EDID 2.0.
- Removed 1024x768x43Hz from the supported resolution list.
- Hardened the detailed timings algorithm to prevent a possible division by zero.

**Matrox G200eH Video Controller Driver for Windows Server 2012 X64**
Version: 9.15.1.45 (Optional)

**Enhancements**
Initial release for Windows Server 2012.

**Firmware**

**Online ROM Flash for Linux - Power Management Controller (c-Class blades)**
Version: 3.4 (D) (Recommended)

**Important Note!**

For the HP ProLiant BL465c G1 and HP ProLiant BL685c G1, this Power Management Controller Firmware is not needed unless the currently installed revision is 0.7. If any revision of the firmware prior to or later than revision 0.7 is installed, it is not necessary to upgrade to revision 3.4 of the Power Management Controller Firmware. If the current revision is 0.7, upgrading to revision 3.4 is recommended. The Power Management Controller Firmware version 0.7 may exhibit the following issue:

Address an issue which can result in a failure to PXE boot and loss of all Power Meter Readings in the Integrated Lights Out Management Power Meter graph. This is an intermittent issue that was introduced with version .7 of this firmware. If this issue occurs, the problem can only be resolved by removing the power, which requires removing and reininserting the blade server. However, the issue may reappear. This firmware version 3.4 should be applied to the system to completely resolve the issue.

The following will occur if using Power Management Controller firmware .7 with Onboard Administrator Firmware 2.50 or later:
If using Power Management Controller firmware revision .7, the Onboard Administrator (OA) firmware version 2.50 or later will provide user status to indicate that the Power Management Controller firmware needs to be updated.

The status page on the GUI will show the affected blade(s) as “Major Degraded”. The Diagnostic Information will indicate “Wrong Power Management Controller Version,” and the text will be “The power management controller firmware on this blade must be upgraded. Please see customer advisory c01668472.”

The Command Line Interface (CLI) will have a Diagnostic Status entry that reads “Power Mgmt Cntlr Failed” when SHOW SERVER STATUS <BLADE> is issued.

The LCD will display a device error “Wrong Power Mgmt Cntlr Version in Bay (x) for affected blades and give a Fix message “The power management controller firmware on this blade must be upgraded ... Please see customer advisory c01668472”.

The OA system log will have an entry for each affected blade that reads “OA: The power management controller firmware on blade (x) must be upgraded. Please see customer advisory c01668472.”

The following needs to be considered when updating the Power Management Controller firmware:

This component requires iLO 2 firmware version 1.78 or later. Please update the iLO2 firmware to revision 1.78 or later before using this flash upgrade component. Do not flash the iLO 2 Firmware and Power Management Controller Firmware simultaneously. If the iLO 2 FW is not at version 1.78 or later before upgrading the Power Controller Firmware with this component, the following message will be displayed:

“The software is not supported for installation on this system. You must upgrade the iLO2 firmware to version 1.78 (or later) before flashing the Power Management Controller.”

Due to the issue with version .7 of the Power Management Controller Firmware, it is possible that an attempt to update the firmware may fail and the following error message will be displayed:

"The software is not supported for installation on this system."

"Unable to communicate with the Power Management Controller. You may be able to correct this problem by cycling power. You must physically disconnect all power, not just press the power button. If this is a blade server, you must remove and reinsert the blade."

If this condition occurs, completely remove power from the server. The blade server must be removed and reinserted into the enclosure. Pressing the power button will not resolve the issue. While unlikely, it may be necessary to repeat the steps to remove power to the server if the initial attempt to flash the server after removing power results in the same error message.

CP011627.scexe ver. 3.4(D) is a replacement for the previous CP011299.scexe ver. 3.4(C). Ver. 3.4(D) contains a minor update to enable support for the BL465c G1 and the BL685c G1 and address a flash issue with support for the xw460c G1. The Power Management Controller Firmware contained within ver. 3.4(D) is the same as the Firmware contained within ver. 3.4(C). Therefore, it is not necessary to upgrade with ver. 3.4(D), if ver. 3.4(C) was previously used to successfully upgrade the Power Management
Controller firmware to ver. 3.4.

This firmware update can only be applied if your Power Management Controller Firmware is version .6 or later. The current Power Management Controller firmware version will be identified and displayed when executing this upgrade on your system. If the current Power Management Controller Firmware version on your system is prior to .6 then you will receive a message indicating that this firmware update is not supported on your system. However, there is no need to update the Power Management Controller Firmware for such systems.

When performing this flash upgrade from a Linux OS environment the HP ProLiant Channel Interface Device Driver for iLO/iLO2 must be installed and running prior to executing the upgrade. If the HP ProLiant Channel Interface Device Driver is not installed and 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."

For the Windows OS flash upgrade there is no driver requirement.


**Prerequisites**

You must have iLO 2 version 1.78 (or later) in order to flash the Power Management Controller.

**Fixes**

CP011627.scexe ver. 3.4(D) is a replacement for the previous CP011299.scexe ver. 3.4(C). Ver. 3.4(D) contains a minor update to enable support for the BL465c G1 and the BL685c G1 and address a flash issue with support for the xw460c G1. The Power Management Controller Firmware contained within ver. 3.4(D) is the same as the Firmware contained within ver. 3.4(C). Therefore, it is not necessary to upgrade with ver. 3.4(D), if ver. 3.4(C) was previously used to successfully upgrade the Power Management Controller firmware to ver. 3.4.

Address an issue where when Dynamic Power Capping is enabled with a power cap level which is significantly above the server's idle power usage level, the server may experience dramatically decreased performance. The server will incorrectly limit power usage more than required to maintain the power cap level. This issue is usually seen when the power cap is set to a level near the power supply's maximum wattage or the maximum wattage reported by the blade server.

Address an issue where average and peak power usage graphs viewed from iLO 2 and Insight Power Manager may show power usage above the configured power cap value.

Address a very rare issue where the following message may be displayed from the Integrated Lights-Out Power Management Settings page. "The present power cap value is unreachable with the current server configuration." This message could be displayed even though the configured Power Cap value is achievable.

This firmware update can only be applied if your Power Management Controller Firmware is version .6 or
later. The current Power Management Controller firmware version will be identified and displayed when executing this upgrade on your system. If the current Power Management Controller Firmware version on your system is prior to .6 then you will receive a message indicating that this firmware update is not supported on your system.

When performing this flash upgrade from a Linux OS environment the HP Proliant Channel Interface Device Driver for iLO/iLO2 must be installed and running prior to executing the upgrade. If the HP Proliant Channel Interface Device Driver is not installed and 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."

For the Windows OS flash upgrade there is no driver requirement.

If updating the Power Management Controller Firmware from version .7, it is possible that an attempt to update the firmware may fail and the following error message will be displayed:

"The software is not supported for installation on this system."
"Unable to communicate with the Power Management Controller. You may be able to correct this problem by cycling power. You must physically disconnect all power, not just press the power button. If this is a blade server, you must remove and reinsert the blade."

If this condition occurs, completely remove power from the server. The blade server must be removed and reinserted into the enclosure. Pressing the power button will not resolve the issue. While unlikely, it may be necessary to repeat the steps to remove power to the server if the initial attempt to flash the server after removing power results in the same error message.

**Supported Devices and Features**

This component can be used on ProLiant G6 c-Class Blade servers and the following blades:

- HP ProLiant BL2x220c G5
- HP ProLiant BL260c G5
- HP ProLiant BL460c
- HP ProLiant BL460c G5
- HP ProLiant BL465c G1
- HP ProLiant BL465c G5
- HP ProLiant BL480c
- HP ProLiant BL495c G5
- HP ProLiant BL680c G5
- HP ProLiant BL685c G1
- HP ProLiant BL685c G5
- HP ProLiant xw460c Blade Workstation
- HP ProLiant xw2x220c Blade Workstation
Online ROM Flash for Linux - Power Management Controller (HP ProLiant DL360 G5 Server)
Version: 3.4 (C) (Recommended)

Important Note!

CP011302.scexe ver. 3.4(C) is a replacement for the previous CP011014.scexe ver. 3.4(B). Ver. 3.4(C) contains a minor update to provide support with HPSUM. The Power Management Controller Firmware contained within ver. 3.4(C) is the same as the Firmware contained within ver. 3.4(B). Therefore, it is not necessary to upgrade with ver. 3.4(C), if ver. 3.4(B) was previously used to successfully upgrade the Power Management Controller firmware to ver. 3.4.

This component requires iLO 2 version 1.78 or later. Do not flash the iLO 2 Firmware and Power Management Controller Firmware simultaneously.

If the iLO 2 FW is not at version 1.78 or later before upgrading the Power Controller Firmware with this component the following message will be displayed:

The software is not supported for installation on this system.
You must upgrade the iLO2 firmware to version 1.78 (or later) before flashing the Power Management Controller.

Prerequisites

You must have iLO 2 version 1.78 (or later) in order to flash the Power Management Controller.

Fixes

CP011302.scexe ver. 3.4(C) is a replacement for the previous CP011014.scexe ver. 3.4(B). Ver. 3.4(C) contains a minor update to provide support with HPSUM. The Power Management Controller Firmware contained within ver. 3.4(C) is the same as the Firmware contained within ver. 3.4(B). Therefore, it is not necessary to upgrade with ver. 3.4(C), if ver. 3.4(B) was previously used to successfully upgrade the Power Management Controller firmware to ver. 3.4.

Address an issue where when Dynamic Power Capping is enabled with a power cap level which is significantly above the server’s idle power usage level, the server may experience dramatically decreased performance. The server will incorrectly limit power usage more than required to maintain the power cap level. This issue is usually seen when the power cap is set to a level near the power supply’s maximum wattage or the maximum wattage reported by the blade server.

Address an issue where average and peak power usage graphs viewed from iLO 2 and Insight Power Manager may show power usage above the configured power cap value.

Address a very rare issue where the following message may be displayed from the Integrated Lights-Out Power Management Settings page. "The present power cap value is unreachable with the current server configuration." This message could be displayed even though the configured Power Cap value is achievable.

When performing this flash upgrade from a Linux OS environment the HP Proliant Channel Interface Device Driver for iLO/iLO2 must be installed and running prior to executing the upgrade. If the HP Proliant
Channel Interface Device Driver is not installed and 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."

For the Windows OS flash upgrade there is no driver requirement.

**Supported Devices and Features**

This component can be used on the following servers:

HP ProLiant DL360 G5

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**Online ROM Flash for Linux - Power Management Controller (HP ProLiant DL380 G5 Server)**

Version: 3.4 (C) *(Recommended)*

**Important Note!**

CP011305.scexe ver. 3.4(C) is a replacement for the previous CP011013.scexe ver. 3.4(B). Ver. 3.4(C) contains a minor update to provide support with HPSUM. The Power Management Controller Firmware contained within ver. 3.4(C) is the same as the Firmware contained within ver. 3.4(B). Therefore, it is not necessary to upgrade with ver. 3.4(C), if ver. 3.4(B) was previously used to successfully upgrade the Power Management Controller firmware to ver. 3.4.

This component requires iLO 2 version 1.78 or later. Do not flash the iLO 2 Firmware and Power Management Controller Firmware simultaneously.

If the iLO 2 FW is not at version 1.78 or later before upgrading the Power Controller Firmware with this component the following message will be displayed:

The software is not supported for installation on this system. You must upgrade the iLO2 firmware to version 1.78 (or later) before flashing the Power Management Controller.

**Prerequisites**

You must have iLO 2 version 1.78 (or later) in order to flash the Power Management Controller.

**Fixes**

CP011305.scexe ver. 3.4(C) is a replacement for the previous CP011013.scexe ver. 3.4(B). Ver. 3.4(C) contains a minor update to provide support with HPSUM. The Power Management Controller Firmware contained within ver. 3.4(C) is the same as the Firmware contained within ver. 3.4(B). Therefore, it is not necessary to upgrade with ver. 3.4(C), if ver. 3.4(B) was previously used to successfully upgrade the Power Management Controller firmware to ver. 3.4.

Address an issue where when Dynamic Power Capping is enabled with a power cap level which is significantly above the server's idle power usage level, the server may experience dramatically decreased performance. The server will incorrectly limit power usage more than required to maintain the power cap level. This issue is usually seen when the power cap is set to a level near the power supply's maximum...
wattage or the maximum wattage reported by the blade server.

Address an issue where average and peak power usage graphs viewed from iLO 2 and Insight Power Manager may show power usage above the configured power cap value.

Address a very rare issue where the following message may be displayed from the Integrated Lights-Out Power Management Settings page. "The present power cap value is unreachable with the current server configuration." This message could be displayed even though the configured Power Cap value is achievable.

When performing this flash upgrade from a Linux OS environment the HP ProLiant Channel Interface Device Driver for iLO/iLO2 must be installed and running prior to executing the upgrade. If the HP ProLiant Channel Interface Device Driver is not installed and 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."

For the Windows OS flash upgrade there is no driver requirement.

**Supported Devices and Features**

This component can be used on the following servers:

- HP ProLiant DL380 G5
- HP ProLiant DL380 G5 Data Protection Storage Server
- HP ProLiant DL380 G5 Storage Server

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**Online ROM Flash for Linux - Power Management Controller (ML/DL G6 Servers)**

Version: 2.9 (D) *(Optional)*

**Important Note!**

CP011308.scexe ver. 2.9(D) is a replacement for the previous CP011008.scexe ver. 2.9(C). Ver. 2.9(D) contains a minor update to provide support with HPSUM. The Power Management Controller Firmware contained within ver. 2.9(D) is the same as the Firmware contained within ver. 2.9(C). Therefore, it is not necessary to upgrade with ver. 2.9(D), if ver. 2.9(C) was previously used to successfully upgrade the Power Management Controller firmware to ver. 2.9.

This component requires iLO 2 version 1.78 or later. Do not flash the iLO 2 Firmware and Power Management Controller Firmware simultaneously.

If the iLO 2 FW is not at version 1.78 or later before upgrading the Power Controller Firmware with this component the following message will be displayed:

"The software is not supported for installation on this system. You must upgrade the iLO2 firmware to version 1.78 (or later) before flashing the Power Management Controller."
ML330 G6 models with Power Supply FIO kit 500447-B21 and DL320 G6 models with Power Supply FIO kit 515739-B21/537150-B21 do not support the Power Management Controller feature. Attempting to execute this component on these models will result in the following error message:

"The software is not supported for installation on this system.

Unable to communicate with the Power Management Controller. You may be able to correct this problem by cycling power. You must physically disconnect all power, not just press the power button. If this is a blade server, you must remove and reinsert the blade.

Press 'Close' to exit Setup."

**Prerequisites**
You must have iLO 2 version 1.78 (or later) in order to flash the Power Management Controller.

**Enhancements**
CP011308.scexe ver. 2.9(D) is a replacement for the previous CP011008.scexe ver. 2.9(C). Ver. 2.9(D) contains a minor update to provide support with HPSUM. The Power Management Controller Firmware contained within ver. 2.9(D) is the same as the Firmware contained within ver. 2.9(C). Therefore, it is not necessary to upgrade with ver. 2.9(D), if ver. 2.9(C) was previously used to successfully upgrade the Power Management Controller firmware to ver. 2.9.

Add support for Dynamic Power Capping. Dynamic Power Capping allows reclaiming power and cooling capacity by safely limiting server power consumption using a fast-acting, hardware-based capping algorithm. Dynamic Power Capping requires updating the System ROM and the iLO 2 Firmware in addition to the Power Management Controller Firmware. All required firmware must be updated to utilize Dynamic Power Capping.

**Supported Devices and Features**
This component can be used on ProLiant 300 Series ML/DL G6 servers with Advanced Power Capping support.

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**Firmware - Blade Infrastructure**

**HP 3Gb SAS BL Switch Firmware Smart Component for Linux**
Version: 2.2.17.0 (Optional)

**Enhancements**
The HP 3Gb SAS Switch will now publish external IP addresses to Onboard Administrator versions 3.20 or later instead of the internal IP address.
**HP BladeSystem c-Class Virtual Connect Firmware, Ethernet plus 4/8Gb 20-port and 8Gb 24-port FC Edition Component for Windows**

Version: 3.70 *(Recommended)*

**Prerequisites**

The latest version of HP Virtual Connect Release Notes contains the prerequisites and can also be found in the "User guide" section in the following URL:

http://h20000.www2.hp.com/bizsupport/TechSupport/DocumentIndex.jsp?contentType=SupportManual&lang=en&cc=us&docIndexId=64180&taskId=135&prodTypeId=3709945&prodSeriesId=4144084

**Fixes**

The latest list of issues resolved can be found in the HP Virtual Connect Release Notes that can be found in the "User guide" section of the following URL:

http://h20000.www2.hp.com/bizsupport/TechSupport/DocumentIndex.jsp?contentType=SupportManual&lang=en&cc=us&docIndexId=64180&taskId=135&prodTypeId=3709945&prodSeriesId=4144084

**Supported Devices and Features**

- HP 10/10Gb Virtual Connect Ethernet Module for c-Class BladeSystem
- HP Virtual Connect FlexFabric 10Gb/24-port Module for c-Class BladeSystem
- HP 4Gb Virtual Connect Fibre Channel Module for c-Class BladeSystem
- HP Virtual Connect 4Gb Fibre Channel Module for c-Class BladeSystem
- HP Virtual Connect 8Gb 24-port Fibre Channel Module for c-Class BladeSystem
- HP Virtual Connect 8Gb 20-port Fibre Channel Module for c-Class BladeSystem
- HP Virtual Connect Flex-10/10D Module for c-Class BladeSystem

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**HP BladeSystem c-Class Virtual Connect Firmware, Ethernet plus 4/8Gb 20-port and 8Gb 24-port FC Edition Component for Linux**

Version: 3.70 *(Recommended)*

**Prerequisites**

The latest version of HP Virtual Connect Release Notes contains the prerequisites and can also be found in the "User guide" section in the following URL:

http://h20000.www2.hp.com/bizsupport/TechSupport/DocumentIndex.jsp?contentType=SupportManual&lang=en&cc=us&docIndexId=64180&taskId=135&prodTypeId=3709945&prodSeriesId=4144084

**Fixes**
The latest list of issues resolved can be found in the HP Virtual Connect Release Notes that can be found in the "User guide" section of the following URL: http://h20000.www2.hp.com/bizsupport/TechSupport/DocumentIndex.jsp?contentType=SupportManual&lang=en&cc=us&docIndexId=64180&taskId=135&prodTypeId=3709945&prodSeriesId=4144084

Supported Devices and Features

HP 10/10Gb Virtual Connect Ethernet Module for c-Class BladeSystem
HP Virtual Connect FlexFabric 10Gb/24-port Module for c-Class BladeSystem
HP 4Gb Virtual Connect Fibre Channel Module for c-Class BladeSystem
HP Virtual Connect 4Gb Fibre Channel Module for c-Class BladeSystem
HP Virtual Connect 8Gb 24-port Fibre Channel Module for c-Class BladeSystem
HP Virtual Connect 8Gb 20-port Fibre Channel Module for c-Class BladeSystem
HP Virtual Connect Flex-10/10D Module for c-Class BladeSystem

Online HP 3Gb SAS BL Switch Firmware Smart Component for Windows
Version: 2.2.17.0 (Optional)

Enhancements

The HP 3Gb SAS Switch will now publish external IP addresses to Onboard Administrator versions 3.20 or later instead of the internal IP address.

Online HP 6Gb SAS BL Switch Firmware Smart Component for Linux
Version: 3.0.8.0 (Optional)

Important Note!
Customers who wish to support the HP Smart Array P721m or the HP D6000 Disk Enclosure with the HP 6Gb SAS BL Switch must ensure that the HP 6Gb SAS BL Switch Firmware is at 3.0.8.0 or greater.

Fixes

Firmware Dependency:
The devices listed below require minimum FW deliverables with HP Storage Manager version 3.0.8.0

Device Minimum Version

- HP D2600\D2700 Disk Enclosure 0134
- HP 600 Modular Disk System 3.44
- HP P2000 Modular Smart Array TS230P06
Problems Fixed:

Clock in SAS switch now reports local time, determined by Time Zone setting in Blade Enclosure.

Enhancements

Enhancements/New Features:

- Added context sensitive help in GUI to better describe High Performance Connection.
- Added support for:
  - HP Smart Array P721m.
  - HP D6000 Disk Enclosures.
- HP Serial Attached SCSI (SAS):
  - Added support to detect signal integrity issues between SAS switch and Disk Enclosures.

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**Online HP 6Gb SAS BL Switch Firmware Smart Component for Windows**
Version: 3.0.8.0 (Optional)

Important Note!

Customers who wish to support the HP Smart Array P721m or the HP D6000 Disk Enclosure with the HP 6Gb SAS BL Switch must ensure that the HP 6Gb SAS BL Switch Firmware is at 3.0.8.0 or greater.

Fixes

Firmware Dependency:
The devices listed below require minimum FW deliverables with HP Storage Manager version 3.0.8.0

Device Minimum Version

- HP D2600\D2700 Disk Enclosure 0134
- HP 600 Modular Disk System 3.44
- HP P2000 Modular Smart Array TS230P06
- HP Smart Array P711m\P712m 5.32

Problems Fixed:

Clock in SAS switch now reports local time, determined by Time Zone setting in Blade Enclosure.

Enhancements

Enhancements/New Features:

- Added context sensitive help in GUI to better describe High Performance Connection.
- Added support for:
  - HP Smart Array P721m.
  - HP D6000 Disk Enclosures.
HP Service Pack for ProLiant 2012.10.0 Release Notes

- HP Serial Attached SCSI (SAS):
  - Added support to detect signal integrity issues between SAS switch and Disk Enclosures.

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**Online HP BladeSystem c-Class Onboard Administrator Firmware Component for Linux**

Version: 3.70 *(Optional)*

**Important Note!**

**Important Notes**

- **EFM / iLO Update**
  - Ensure your iLO 3 firmware version is 1.20 or later before attempting to flash iLO 3 version 1.50
- **FIPS**
  - Enabling FIPS mode on an OA module or redundant pair of OA modules automatically forces the OA module(s) to be reset to factory defaults due to FIPS requirements. Please configure the OA module(s) for FIPS mode operation prior to performing any other enclosure or OA configuration including configuration of Virtual Connect.
  - OA 3.70 no longer supports HMAC-MDS and HMAC-SHA-96 for message authentication. Only FIPS 140-2 approved ciphers are supported.
- **GUI**
  - Onboard Administrator 3.70 changed the default certificate hash algorithm from SHA1 to SHA256. Browsers on operating systems released prior to 2004 that do not have the latest security related patches/updates applied may not be able to connect to the Onboard Administrator web interface. Ensure that the following minimum requirements for each operating system are met to support SHA256.
    - Windows XP requires SP3
    - Windows 2003 Server SP2 requires an update to support SHA256. For more information see, the Microsoft Support website: [http://support.microsoft.com/kb/968730](http://support.microsoft.com/kb/968730).
    - RedHat 4 was originally shipped with OpenSSL 0.9.7 which does not support SHA256. Update the operating system with the appropriate RPM to use openssl-0.9.8 or later.
    - Internet Explorer is not able to access the OA Web Interface if the OA certificate is generated using SHA-224 as SSL hash signature when running on Windows XP, Windows Vista and Windows 7. This is not the default hash function for Onboard Administrator self-signed certificates.
- **SHA1 Certificates**
  - OA 3.70 allows the hash signature algorithm to be changed. If a SHA1 certificate is needed in your network infrastructure, use the Onboard Administrator GENERATE KEY command to change the key size and hash algorithm. The default SSL key is RSA/2048/SHA-256.
- **Telnet**
  - OA v3.70 firmware changes the default state of the Telnet service to “disabled.” Note that the default “disabled” state will only take effect when there is no existing configuration on the OA or following an OA factory reset operation. In the case of firmware upgrade to an already configured OA/enclosure, the existing state of the Telnet service will not be changed.
Known Issues

- **General**
  - When the OA becomes unusually busy (can happen for a variety of reasons including spikes in management network traffic, or unresponsive blades in the enclosure) the enclosure status can change to degraded. If the situation clears itself normally, the status will revert back to normal. Both changes of status can trigger a health alert and/or an Alertmail notification. This scenario can recur repetitively under marginal conditions. OA 3.60 and later have been improved to filter out redundant alerts in some scenarios, and the conditions which trigger a degraded state have been modified to decrease the likelihood of false failure modes. You can safely ignore the degraded state alert once the status has returned to normal.
  - HP c-Class BladeSystem iLO 2 and iLO 3 virtual media performance will be limited based on the activity and number of simultaneous iLO virtual media sessions and the OA workload. The OA Enclosure DVD and Enclosure Firmware Management features also use the iLO virtual media feature and will have similar performance limitations. HP recommends that you limit the number of simultaneous sessions to prevent media timeout issues if timeout issues are experienced during OS install or firmware updates, reduce the number of virtual media sessions in progress, and restart the operation.
  - When performing a reset to factory defaults on redundant OA modules within an enclosure, a redundancy role change may occur during the subsequent reboot of the modules. This does not impact the reset to factory defaults operation and both modules will be successfully reset to factory default state.
  - The update of Onboard Administrator firmware may not work reliably when the OA NIC link speed is set to 10Mb and the link speed of switch port to which it is connected is not configured specifically for 10Mb. To work around this issue, configure both the OA NIC link speed and the links speed of the associated switch port to forced 10Mb (not auto negotiation).
  - OA Flashing status stops at 88% with C3000 enclosure although flashing actually completed successfully.
  - On a successful OA failover you may experience a SEGV error message in the OA Syslog similar to the following. This message can be safely ignored and will be addressed in a future OA release.
    - OA: SEGV /usr/sbin/hpoasi_eli (pid=1766) Address accessed 0x8.
      IP=0x12345678,Link=0x12345674

- **Enclosure Firmware Management (EFM)**
  - Enclosure Firmware Management (EFM) is not supported on the following OA Hardware Modules:
    - HP BladeSystem c3000 Onboard Administrator (PN# 448589-B21, 461514-B21)
    - HP BladeSystem c7000 Onboard Administrator (PN# 412142-B21)
  - EFM tracking and reporting will not reflect the changes made using other tools, such as HP SUM or HP SIM Version Control. If the firmware on a blade is updated using tools other than EFM, an EFM discovery or update must be performed before the correct versions of firmware will be reported by the OA.
  - EFM does not support mounting of remote SPP ISO connections using IPv6 network addresses.
  - EFM will not work reliably and should not be used on slow network links, i.e less than 100 Mbps.
While running EFM the OA response time may be slower than normal, and you may encounter spurious brief intervals of the enclosure status reported as degraded. Messages or alert notifications of this condition, as well as enclosure OK messages that appear subsequently can be safely ignored while running EFM.

- Blades with Trusted Platform Module (TPM) installed and enabled do not work with the EFM feature. It is necessary to disable TPM at the server blade for EFM to properly function. For more info on TPM please visit: [http://h20000.www2.hp.com/bc/docs/support/SupportManual/c01681891/c01681891.pdf](http://h20000.www2.hp.com/bc/docs/support/SupportManual/c01681891/c01681891.pdf)

- When used with SPP 2012.02.00, EFM will not properly report some NIC and HDD adapter’s firmware versions to the OA EFM feature. This issue is corrected with later versions of the SPP.

- EFM will fail on any blade if SSH is disabled in the blade’s iLO configuration settings. By default, SSH is enabled in iLO.

  - **FIPS**
    - When FIPS mode has been enabled for the OA module(s) within an enclosure and a redundant OA which does not have FIPS mode enabled is later introduced into the enclosure, the current FIPS mode configuration will not be successfully synchronized to this newly introduced OA module. To work around this issue, it is recommended that the OA module be reset to factory defaults prior to being introduced into a redundant OA configuration where FIPS mode has been enabled.
    - When FIPS mode is enabled for a redundant OA configuration, the automatic synchronization of FIPS mode configuration from the active to the standby OA module will trigger a reset of the standby OA module to factory defaults. This operation will be incorrectly recorded in the OA syslog as having been performed by the “Insight Display” user.
    - When running a previous version of the OA firmware with Strong Encryption mode enabled, an entry may be logged to the OA syslog indicating that the OA is operating in FIPS mode after updating the OA firmware to version 3.70. This OA syslog entry – “FIPS: Onboard Administrator is operating in FIPS Mode On” – inaccurately represents the current FIPS mode configuration and can safely be ignored. FIPS mode will not be enabled until configured by user action.

  - **GUI**
    - Script error displayed on flashing OA
      - Issue 1: An alert titled “Warning: Unresponsive script” may occur if connectivity to the OA is lost. This can be safely ignored, and the user can sign in after the connection is restored.
      - Issue 2: An alert titled “Internet Explorer Script Error” may occur on a remote GUI session when flashing the OA. This may be safely ignored.

  - **OA Upgrade**

    The OA flash process completes successfully although 88% is the highest percentage reported.

  - **Remote Support**

    Remote Support is not supported in FIPS mode ON/DEBUG

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**Fixes**

**Firmware Dependency**
Problems Fixed

General

- If using OA 3.6x, HP BladeSystem c3000 Enclosures containing both of the following power supply models show the power subsystem degraded, with one or more power supplies being marked as mismatched. See Customer Advisory c03509204 for more information: [http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03509204](http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03509204).
  - HP 1200W Common Slot Silver Hot Plug Power Supply Kit
    - Part number 437572-B21
    - Spare part number 441830-001
  - HP 1200W Common Slot Silver Hot Plug Power Supply Kit
    - Part number 500172-B21
    - Spare part number 498152-001

Enhancements

Enhancements/New Features:

- **Firmware Additions**
  - **FIPS**
    - FIPS, or *Federal Information Processing Standards*, is a set of publications that document standards for implementing security. More information can be found on the “National Institute of Standards and Technology” website [http://csrc.nist.gov/publications/PubsFIPS.html](http://csrc.nist.gov/publications/PubsFIPS.html). OA 3.70 provides a user selectable FIPS Mode of operation wherein:
      - only FIPS 140-2 approved algorithms such as AES, 3DES and SHA are permitted,
      - strong passwords are enforced,
      - integrity self-tests are performed whenever encryption services are used (Known Answer Tests - KATs),
      - and partition integrity checks on boot are performed.
    - Enabling FIPS mode on an OA module or redundant pair of OA modules automatically forces the OA module(s) to be reset to factory defaults due to FIPS requirements. Please configure the OA module(s) for FIPS mode operation prior to performing any other enclosure or OA configuration including configuration of Virtual Connect.
    - Some features are permanently disabled in FIPS mode for compliance reasons:
      - Telnet access
      - Enclosure IP mode
      - SNMP
      - OA Firmware downgrades
      - Set Factory Defaults
      - Upload support dumps
      - Disable strong passwords
      - Disable LCD PIN protection
    - The default security settings in OA 3.70 have been upgraded and are now
equivalent to prior version’s “Enforce Strong Encryption” setting. The “Enforce Strong Encryption” setting has been removed from OA 3.70.

- Upon changing FIPS modes, all security related data is cleared from the OA, including certificates, keys, and other critical security parameters. Please refer to the security section in the Onboard Administrator user guide for more information.

- FIPS is not supported on the following OA Hardware Modules:
  - HP BladeSystem c3000 Onboard Administrator (PN# 448589-B21, 461514-B21)
  - HP BladeSystem c7000 Onboard Administrator (PN# 412142-B21)

- **GUI**
  - Internet Explorer 10 (IE 10) is supported in compatibility mode only. The IE 10 “Windows 8 – Style UI Mode” is not supported.
  - OA GUI Management Console now allows login to 6Gb SAS Interconnect module Interfaces if VLANs are defined for the Interconnect modules.

- **IPv6**
  - OA 3.70 adds a group box in the Management Processor Information tab on the iLO - Device Bay page, where a radio button is displayed to allow selection of the current IPv4 address and all IPv6 addresses assigned to the iLO.

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**Online HP BladeSystem c-Class Onboard Administrator Firmware Component for Windows**

Version: 3.70 (Optional)

**Important Note!**

**Important Notes**

- **EFM / iLO Update**
  - Ensure your iLO 3 firmware version is 1.20 or later before attempting to flash iLO 3 version 1.50

- **FIPS**
  - Enabling FIPS mode on an OA module or redundant pair of OA modules automatically forces the OA module(s) to be reset to factory defaults due to FIPS requirements. Please configure the OA module(s) for FIPS mode operation prior to performing any other enclosure or OA configuration including configuration of Virtual Connect.
  - OA 3.70 no longer supports HMAC-MD5 and HMAC-SHA-96 for message authentication. Only FIPS 140-2 approved ciphers are supported.

- **GUI**
  - Onboard Administrator 3.70 changed the default certificate hash algorithm from SHA1 to SHA256. Browsers on operating systems released prior to 2004 that do not have the latest security related patches/updates applied may not be able to connect to the Onboard Administrator web interface. Ensure that the following minimum requirements for each operating system are met to support SHA256.
    - Windows XP requires SP3
    - Windows 2003 Server SP2 requires an update to support SHA256. For more information see, the Microsoft Support website: [http://support.microsoft.com/kb/968730](http://support.microsoft.com/kb/968730).
    - RedHat 4 was originally shipped with OpenSSL 0.9.7 which does not support SHA256. Update the operating system with the appropriate RPM to use openssl-0.9.8 or later.
Internet Explorer is not able to access the OA Web Interface if the OA certificate is generated using SHA-224 as SSL hash signature when running on Windows XP, Windows Vista and Windows 7. This is not the default hash function for Onboard Administrator self-signed certificates.

- **SHA1 Certificates**
  - OA 3.70 allows the hash signature algorithm to be changed. If a SHA1 certificate is needed in your network infrastructure, use the Onboard Administrator GENERATE KEY command to change the key size and hash algorithm. The default SSL key is RSA/2048/SHA-256.

- **Telnet**
  - OA v3.70 firmware changes the default state of the Telnet service to “disabled.” Note that the default “disabled” state will only take effect when there is no existing configuration on the OA or following an OA factory reset operation. In the case of firmware upgrade to an already configured OA/enclosure, the existing state of the Telnet service will not be changed.

### Known Issues

- **General**
  - When the OA becomes unusually busy (can happen for a variety of reasons including spikes in management network traffic, or unresponsive blades in the enclosure) the enclosure status can change to degraded. If the situation clears itself normally, the status will revert back to normal. Both changes of status can trigger a health alert and/or an Alertmail notification. This scenario can recur repetitively under marginal conditions. OA 3.60 and later have been improved to filter out redundant alerts in some scenarios, and the conditions which trigger a degraded state have been modified to decrease the likelihood of false failure modes. You can safely ignore the degraded state alert once the status has returned to normal.
  - HP c-Class BladeSystem iLO 2 and iLO 3 virtual media performance will be limited based on the activity and number of simultaneous iLO virtual media sessions and the OA workload. The OA Enclosure DVD and Enclosure Firmware Management features also use the iLO virtual media feature and will have similar performance limitations. HP recommends that you limit the number of simultaneous sessions to prevent media timeout issues. If timeout issues are experienced during OS install or firmware updates, reduce the number of virtual media sessions in progress, and restart the operation. When performing a reset to factory defaults on redundant OA modules within an enclosure, a redundancy role change may occur during the subsequent reboot of the modules. This does not impact the reset to factory defaults operation and both modules will be successfully reset to factory default state.
  - The update of Onboard Administrator firmware may not work reliably when the OA NIC link speed is set to 10Mb and the link speed of switch port to which it is connected is not configured specifically for 10Mb. To work around this issue, configure both the OA NIC link speed and the links speed of the associated switch port to forced 10Mb (not auto negotiation).
  - OA Flashing status stops at 88% with C3000 enclosure although flashing actually completed successfully.
  - On a successful OA failover you may experience a SEGV error message in the OA Syslog similar to the following. This message can be safely ignored and will be addressed in a
future OA release.

- OA: SEGV /usr/sbin/hpoasi_eli (pid=1766) Address accessed 0x8.
  IP=0x12345678,Link=0x12345674

### Enclosure Firmware Management (EFM)

- Enclosure Firmware Management (EFM) is not supported on the following OA Hardware Modules:
  - HP BladeSystem c3000 Onboard Administrator (PN# 448589-B21, 461514-B21)
  - HP BladeSystem c7000 Onboard Administrator (PN# 412142-B21)

- EFM tracking and reporting will not reflect the changes made using other tools, such as HP SUM or HP SIM Version Control. If the firmware on a blade is updated using tools other than EFM, an EFM discovery or update must be performed before the correct versions of firmware will be reported by the OA.

- EFM does not support mounting of remote SPP ISO connections using IPv6 network addresses.

- EFM will not work reliably and should not be used on slow network links, i.e. less than 100 Mbps.

- While running EFM the OA response time may be slower than normal, and you may encounter spurious brief intervals of the enclosure status reported as degraded. Messages or alert notifications of this condition, as well as enclosure OK messages that appear subsequently can be safely ignored while running EFM.

- Blades with Trusted Platform Module (TPM) installed and enabled do not work with the EFM feature. It is necessary to disable TPM at the server blade for EFM to properly function. For more info on TPM please visit: [http://h20000.www2.hp.com/bc/docs/support/SupportManual/c01681891/c01681891.pdf](http://h20000.www2.hp.com/bc/docs/support/SupportManual/c01681891/c01681891.pdf)

- When used with SPP 2012.02.00, EFM will not properly report some NIC and HDD adapter’s firmware versions to the OA EFM feature. This issue is corrected with later versions of the SPP.

- EFM will fail on any blade if SSH is disabled in the blade’s iLO configuration settings. By default, SSH is enabled in iLO.

### FIPS

- When FIPS mode has been enabled for the OA module(s) within an enclosure and a redundant OA which does not have FIPS mode enabled is later introduced into the enclosure, the current FIPS mode configuration will not be successfully synchronized to this newly introduced OA module. To work around this issue, it is recommended that the OA module be reset to factory defaults prior to being introduced into a redundant OA configuration where FIPS mode has been enabled.

- When FIPS mode is enabled for a redundant OA configuration, the automatic synchronization of FIPS mode configuration from the active to the standby OA module will trigger a reset of the standby OA module to factory defaults. This operation will be incorrectly recorded in the OA syslog as having been performed by the “Insight Display” user.

- When running a previous version of the OA firmware with Strong Encryption mode enabled, an entry may be logged to the OA syslog indicating that the OA is operating in FIPS mode after updating the OA firmware to version 3.70. This OA syslog entry – “FIPS: Onboard Administrator is operating in FIPS Mode On” – inaccurately represents the current FIPS mode configuration and can safely be ignored. FIPS mode will not be enabled until configured by user action.

### GUI

- Script error displayed on flashing OA
  - Issue 1: An alert titled "Warning: Unresponsive script" may occur if connectivity to the OA is lost. This can be safely ignored, and the user can sign in after the connection is restored.
- Issue 2: An alert titled "Internet Explorer Script Error" may occur on a remote GUI session when flashing the OA. This may be safely ignored.
  - **OA Upgrade**
    - The OA flash process completes successfully although 88% is the highest percentage reported.
  - **Remote Support**
    - Remote Support is not supported in FIPS mode ON/DEBUG

** Fixes **

** Firmware Dependency **


** Problems Fixed **

- **General**
  - If using OA 3.6x, HP BladeSystem c3000 Enclosures containing both of the following power supply models show the power subsystem degraded, with one or more power supplies being marked as mismatched. See Customer Advisory c03509204 for more information: [http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03509204](http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03509204).
    - HP 1200W Common Slot Silver Hot Plug Power Supply Kit
      - Part number 437572-B21
      - Spare part number 441830-001
    - HP 1200W Common Slot Silver Hot Plug Power Supply Kit
      - Part number 500172-B21
      - Spare part number 498152-001

** Enhancements **

** Enhancements/New Features:**

- **Firmware Additions**
  - **FIPS**
    - FIPS, or Federal Information Processing Standards, is a set of publications that document standards for implementing security. More information can be found on "National Institute of Standards and Technology" website [http://csrc.nist.gov/publications/PubsFIPS.html](http://csrc.nist.gov/publications/PubsFIPS.html). OA 3.70 provides a user selectable FIPS Mode of operation wherein:
      - only FIPS 140-2 approved algorithms such as AES, 3DES and SHA are permitted,
      - strong passwords are enforced,
      - integrity self-tests are performed whenever encryption services are used (Known Answer Tests - KATs),
      - and partition integrity checks on boot are performed.
    - Enabling FIPS mode on an OA module or redundant pair of OA modules automatically forces the OA module(s) to be reset to factory defaults due to
FIPS requirements. Please configure the OA module(s) for FIPS mode operation prior to performing any other enclosure or OA configuration including configuration of Virtual Connect.

- Some features are permanently disabled in FIPS mode for compliance reasons:
  - Telnet access
  - Enclosure IP mode
  - SNMP
  - OA Firmware downgrades
  - Set Factory Defaults
  - Upload support dumps
  - Disable strong passwords
  - Disable LCD PIN protection

- The default security settings in OA 3.70 have been upgraded and are now equivalent to prior version’s “Enforce Strong Encryption” setting. The “Enforce Strong Encryption” setting has been removed from OA 3.70.

- Upon changing FIPS modes, all security related data is cleared from the OA, including certificates, keys, and other critical security parameters. Please refer to the security section in the Onboard Administrator user guide for more information.

- FIPS is not supported on the following OA Hardware Modules:
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- **GUI**
  - Internet Explorer 10 (IE 10) is supported in compatibility mode only. The IE 10 “Windows 8 – Style UI Mode” is not supported.
  - OA GUI Management Console now allows login to 6Gb SAS Interconnect module Interfaces if VLANs are defined for the Interconnect modules.

- **IPv6**
  - OA 3.70 adds a group box in the Management Processor Information tab on the iLO - Device Bay page, where a radio button is displayed to allow selection of the current IPv4 address and all IPv6 addresses assigned to the iLO.

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**Firmware - Lights-Out Management**

**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - HP Integrated Lights-Out 2**

Version: 2.12 *(Recommended)*

**Fixes**

- Enabled SSL empty fragments by default to address the CBC-mode cipher IV weakness mentioned in CVE-2011-3389.
- Addressed vulnerabilities mentioned in CVE-2011-4576, CVE-2012-2110 and CVE-2012-2131.
- Added countermeasures for the ICMP blind connection-reset attack mentioned in CVE-2004-0790.
- CLI may show incorrect boot source list when there is a sixth bootable device in the system.
Increased the randomness of the initial seeding of the Pseudo-Random Number Generator to improve the security of the self-signed SSL certificates.

- iLO 2 may become inaccessible on Blade servers after a Virtual Connect failover.
- Added countermeasures for the ASF/RMCP ping pong attack. iLO 2 now remains responsive during ping pong attacks and iLO 2 no longer replies to malformed ASF ping requests.
- Improved the iLO 2 Browser Cookie behavior. Login and session cookies are cleaned up and are marked with the 'secure' attribute.
- Fixed a VSP Log lock up issue when a user presses and holds a key while browsing the log.
- Increased VSP buffer size to prevent iLO 2 from dropping characters during POST and GRUB.
- Fixed a segmentation fault seen in Solaris 10 when using ipmitool to read the FRU.

**Enhancements**

Added SHA1 Signing Algorithm as an option under Administrator -> Security -> SSL Certificate.

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**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - HP Integrated Lights-Out 3**

Version: 1.50 *(Recommended)*

** Fixes**

The following issues are resolved with iLO 3 firmware version 1.50:

- SSH key import problem in which SSH key blobs include extra space after the user name.
- Host Power Saver efficiency mode did not sync-up with the XML script.
- Percent symbol was missing in the DesiredSpeed field for fan speed in the CLI.
- iLO incorrectly displayed the DesiredSpeed for fan as 100 when one of the fans in a redundant configuration stopped working.
- The Network Time Protocol (NTP) Timezone dropbox was active when the DHCP was enabled.
- Error=400; Out of memory error in iLO' message displayed in the iLO GUI web interface while trying to add a new SSL certificate.
- iLO power meter might not return to normal even after deactivating the e-brake.
- DNS Domain name might accept some invalid characters in iLO CLI.
- The IPMI Serial Over LAN (SOL) session might stop responding at iLO RBSU during a server reboot.
- iLO did not decode special characters such as &, <, >, ', " in password through RIBCL.
- iLO might stop responding occasionally when a Web Server setting was changed.
- Adding/Removing SSH key for a user might generate an improper event log in iLO.
- iLO might not display Asset Tag information through the IPMIUTIL FRU command on Windows Client.
- Changing the boot order in the iLO web interface might not work properly with arrow keys in Microsoft Internet Explorer 7.0.
- XML entries with unsupported characters for Computer Lock configuration were accepted in iLO web interface and converted as valid key entries.
- DHCP supplied time zone was not applied to the time iLO obtained from an NTP server.
- Intermittent Unknown status for System Health, Server Power and UID was displayed in the iLO web interface Overview page.
- RIBCL failed with a login error when password contained a "%" character.
- The numeric keypad did not work correctly in some situations.
Get_All_Languages.xml file did not work with CPQLOCFG.
- iLO displayed an error message, "The Group SID is not valid", when SID was modified with a disabled directory.
- HP ProLiant BL460c G7 with Microsoft Windows Server 2008 R2, HP ProLiant Support Pack v8.60 and iLO 3 driver version 3.3.0.0 might randomly report hpilo3 driver errors in the system event log.
- iLO 3 Gateway IP address could be displayed as 0.0.0.0 in RBSU.
- iLO 3 could randomly fail to respond from the Channel Interface.
- iLO 3 could discard an imported SSL certificate that contains the SerialNumber field in the Subject.
- iLO 3 could attempt to shut down the server, if ambient temperature drops below zero Celsius.
- iLO 3 is marked with critical error in HPSIM and SMH when iLO 3 NIC is disabled.
- When trying to use IPMI tool via iLO 3 in Serial Over LAN (SOL) mode, the "Send break" command was not functional.

**Enhancements**

Added support for the following features in iLO 3 firmware version 1.50:

- IPv6 network communications - dedicated network connection only
  - Supported Networking Features
    - IPv6 Static Address Assignment
    - IPv6 SLAAC Address Assignment
    - IPv6 Static Route Assignment
    - Integrated Remote Console
    - OA Single Sign-On
    - Web Server
    - SSH Server
    - SNTP Client
    - DDNS Client
  - Networking Features not supported by IPv6 in this release
    - Shared Network Port Connections
    - DHCPv6 Address Assignment
    - DHCPv6 Domain, DNS, and NTP Configuration
    - Scriptable Virtual Media
    - CLI/RIBCL Key Import over IPv6
    - RIBCL over IPv6
    - CPQLOCFG/HPLOMIG over an IPv6 connection
    - Authentication using LDAP and Kerberos over IPv6
    - HP-SIM Single Sign-On
    - SNMP
    - IPMI
    - NETBIOS-WINS
    - WinDBG Support
- Customizable login security banner
- SSL custom certificate for RIBCL/CLI
- RIBCL command to remove SSH keys
- Special keys (function) for TextCons/Java IRC
- Hard drive temperature monitoring for HP Smart Array P222, P420 and P421 controllers
- Scripting command to read the asset tag
- IPMI-based hard drive health monitoring
Federal Information Processing Standard compliance

Implemented the following enhancements in iLO 3 firmware version 1.50:

- SSL certificates signed with SHA256, SHA384 and SHA512 can now be imported into iLO 3.
- iLO now displays the iLO DNS name or IP address in the browser title bar/tab for all supported browsers.
- The sort order in the iLO Event Log and Integrated Management Log now displays events by severity.
- Simple Network Time Protocol now support Fully Qualified Domain Name and IPv6.
- SET_HOST_APO.XML now uses iLO user permissions.
- A Boot order page added to the iLO 3 Web Interface.
- iLO 3 now support Hot Keys for Remote Console.
- Integrated Management Log (iLO web interface) now has the following capabilities:
  - The status of Critical or Caution events can be changed to Repaired
  - Maintenance Note can be added to the IML log

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**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - HP Integrated Lights-Out 4**

Version: 1.10 (Optional)

**Fixes**

- Fixed issue in which fan speed/airflow impedance occurs in certain situations.
- Updated the Factory_Defaults.xml script to include clearing the iLO and IML logs.
- Fixed an issue in which the server would auto power-on unexpectedly when iLO defaults were set using RIBCL.
- The iLO web interface and XML now show N/A for Total Memory Size, Operating Frequency, and Operating Voltage for empty processor sockets.
- Updated SET_HOST_APO.XML to use iLO user permissions.
- Changes to boot order in the iLO web interface and XML scripts now require the Virtual Power and Reset permission.
- Fixed Get_All_Languages.xml to work with CPQLOCFG.
- Fixed an issue where the iLO web interface displays the wrong message for an invalid SID.
- Fixed an issue where Clear_AHS_Data.xml will not execute successfully when AHS is disabled through the iLO web interface.
- The iLO Event Log now logs the name of the user that ran Clear_AHS_Data.XML.
- Fixed the Clear_AHS_Data.xml informational message.
HP Service Pack for ProLiant 2012.10.0 Release Notes

- Removed unrelated VSP messages when running Mod_VSP_Flow_Control.
- Fixed the Set_Server_Name.xml log entry in the iLO Event Log.
- Fixed synchronization issues with the Power Regulator Values in iLO web interface and XML scripts.
- Fixed Get_Network.XML to display correct network information when the iLO 4 configured link is set to Auto.
- Fixed invalid XML response for Get_All_Languages.xml and Get_Language.xml.
- Fixed the Get_EmHealth.xml Storage Controller label.
- Fixed the IRC playback video when the server is powered off.
- Fixed IRC intermittent hang when un-mounting virtual media during a server reboot.
- Fixed the issue that caused an SSH session to disconnect when the IRC Trust Setting is changed.
- Fixed an issue that caused the .NET IRC to prompt for user credentials when started from the iLO web interface.
- Fixed an issue that caused the numeric keypad to work incorrectly in some situations.
- Fixed intermittent Unknown status for System Health, Server Power and UID in the iLO web interface Overview page.
- Fixed an issue that caused a DHCP supplied time zone not to be applied to the time iLO obtained from an SNTP server.
- Fixed a temporary loss of communication with Smart Array firmware which could lead to iLO noting a critical storage condition. For more information, see the CA: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?locale=en_US&objectID=c03384383.
- Fixed an issue in which the server remains to be powered off when issuing a shutdown command (f12 > F2) using ESXi 5.0 U1.
- Fixed intermittent communication issues between iLO and a Smart Array Controller.
- Fixed the iLO web interface System Information page to display correct fan speed and temperatures.
- Various SNMP performance enhancements.
- Reworded the event log message to better identify when non-iLO firmware is flashed.
- Added controlled stepping of fan speed to avoid large fan speed changes that could cause fan failures.
**Enhancements**

- Support for HP Insight Remote Support 7.0 and later.
- Support for Location Discovery Services (ML and DL servers only).
- Support for configurable Remote Console hot keys.
- Integrated Management Log enhancements (iLO web interface):
  - Added the ability to change the status of Critical or Caution events to Repaired.
  - Added the ability to add a Maintenance Note to the IML log.
  - Added logging for some Smart Array storage events.
- Added a customizable login security banner.
- Added more defined SNMP traps related to the server power state.
- Changed the handling of cache modules in order to not report an error for normal conditions such as cache recharging or logical drive expansion.
- Improved iLO Event Log message when non-iLO firmware is flashed.
- Added CLI performance improvements.
- Added CLI support for adding and removing SSH keys.
- Added manual_iLO_reset to the CLI, which allows network changes without an immediate reset.

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**Online ROM Flash Component for Windows - HP Integrated Lights-Out 2**

Version: 2.12 (Recommended)

**Fixes**

- Enabled SSL empty fragments by default to address the CBC-mode cipher IV weakness mentioned in CVE-2011-3389.
- Addressed vulnerabilities mentioned in CVE-2011-4576, CVE-2012-2110 and CVE-2012-2131.
- Added countermeasures for the ICMP blind connection-reset attack mentioned in CVE-2004-0790.
- CLI may show incorrect boot source list when there is a sixth bootable device in the system.
- Increased the randomness of the initial seeding of the Pseudo-Random Number Generator to improve the security of the self-signed SSL certificates.
- iLO 2 may become inaccessible on Blade servers after a Virtual Connect failover.
- Added countermeasures for the ASF/RMCP ping pong attack. iLO 2 now remains responsive during ping pong attacks and iLO 2 no longer replies to malformed ASF ping requests.
- Improved the iLO 2 Browser Cookie behavior. Login and session cookies are cleaned up and are marked with the 'secure' attribute.
- Fixed a VSP Log lock up issue when a user presses and holds a key while browsing the log.
HP Service Pack for ProLiant 2012.10.0 Release Notes

- Increased VSP buffer size to prevent iLO 2 from dropping characters during POST and GRUB.
- Fixed a segmentation fault seen in Solaris 10 when using ipmitool to read the FRU.

Enhancements

Added SHA1 Signing Algorithm as an option under Administrator-&gt;Security-&gt;SSL Certificate.

Online ROM Flash Component for Windows - HP Integrated Lights-Out 3
Version: 1.50 (Recommended)

Fixes

The following issues are resolved with iLO 3 firmware version 1.50:

- SSH key import problem in which SSH key blobs include extra space after the user name.
- Host Power Saver efficiency mode did not sync-up with the XML script.
- Percent symbol was missing in the DesiredSpeed field for fan speed in the CLI.
- iLO incorrectly displayed the DesiredSpeed for fan as 100 when one of the fans in a redundant configuration stopped working.
- The Network Time Protocol (NTP) Timezone dropdown was active when the DHCP was enabled.
- Error=400; Out of memory error in iLO' message displayed in the iLO GUI web interface while trying to add a new SSL certificate.
- iLO power meter might not return to normal even after deactivating the e-brake.
- DNS Domain name might accept some invalid characters in iLO CLI.
- The IPMI Serial Over LAN (SOL) session might stop responding at iLO RBSU during a server reboot.
- iLO did not decode special characters such as &, <, >, ' in password through RIBCL.
- iLO might stop responding occasionally when a Web Server setting was changed.
- Adding/Removing SSH key for a user might generate an improper event log in iLO.
- iLO might not display Asset Tag information through the IPMIUTIL FRU command on Windows Client.
- Changing the boot order in the iLO web interface might not work properly with arrow keys in Microsoft Internet Explorer 7.0.
- XML entries with unsupported characters for Computer Lock configuration were accepted in iLO web interface and converted as valid key entries.
- DHCP supplied time zone was not applied to the time iLO obtained from an NTP server.
- Intermittent Unknown status for System Health, Server Power and UID was displayed in the iLO web interface Overview page.
- RIBCL failed with a login error when password contained a "%" character.
- The numeric keypad did not work correctly in some situations.
- Get_All_Languages.xml file did not work with CPQLOCFG.
- iLO displayed an error message, "The Group SID is not valid", when SID was modified with a disabled directory.
- HP ProLiant BL460c G7 with Microsoft Windows Server 2008 R2, HP ProLiant Support Pack v8.60 and iLO 3 driver version 3.3.0.0 might randomly report hpilo3 driver errors in the system event log.
- iLO 3 Gateway IP address could be displayed as 0.0.0.0 in RBSU.
- iLO 3 could randomly fail to respond from the Channel Interface.
- iLO 3 could discard an imported SSL certificate that contains the SerialNumber field in the
Subject.

- iLO 3 could attempt to shut down the server, if ambient temperature drops below zero Celsius.
- iLO 3 is marked with critical error in HPSIM and SMH when iLO 3 NIC is disabled.
- When trying to use IPMI tool via iLO 3 in Serial Over LAN (SOL) mode, the "Send break" command was not functional.

Enhancements

Added support for the following features in iLO 3 firmware version 1.50:

- IPv6 network communications - dedicated network connection only
  - Supported Networking Features
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    - Integrated Remote Console
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  - Networking Features not supported by IPv6 in this release
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    - Scriptable Virtual Media
    - CLI/RIBCL Key Import over IPv6
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    - NETBIOS-WINS
    - WinDBG Support
- Customizable login security banner
- SSL custom certificate for RIBCL/CLI
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- The sort order in the iLO Event Log and Integrated Management Log now displays events by severity.
HP Service Pack for ProLiant 2012.10.0 Release Notes

- Simple Network Time Protocol now support Fully Qualified Domain Name and IPv6.
- SET_HOST_APO.XML now uses iLO user permissions.
- A Boot order page added to the iLO 3 Web Interface.
- iLO 3 now support Hot Keys for Remote Console.
- Integrated Management Log (iLO web interface) now has the following capabilities:
  - The status of Critical or Caution events can be changed to Repaired
  - Maintenance Note can be added to the IML log

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**Online ROM Flash Component for Windows - HP Integrated Lights-Out 4**

Version: 1.10 *(Optional)*

**Fixes**

- Fixed issue in which fan speed/airflow impedance occurs in certain situations.
- Updated the Factory_Defaul.ts.xml script to include clearing the iLO and IML logs.
- Fixed an issue in which the server would auto power-on unexpectedly when iLO defaults were set using RIBCL.
- The iLO web interface and XML now show N/A for Total Memory Size, Operating Frequency, and Operating Voltage for empty processor sockets.
- Updated SET_HOST_APO.XML to use iLO user permissions.
- Changes to boot order in the iLO web interface and XML scripts now require the Virtual Power and Reset permission.
- Fixed Get_All_Languages.xml to work with CPQLOCFG.
- Fixed an issue where the iLO web interface displays the wrong message for an invalid SID.
- Fixed an issue where Clear_AHS_Data.xml will not execute successfully when AHS is disabled through the iLO web interface.
- The iLO Event Log now logs the name of the user that ran Clear_AHS_Data.XML.
- Fixed the Clear_AHS_Data.xml informational message.
- Removed unrelated VSP messages when running Mod_VSP_Flow_Control.
- Fixed the Set_Server_Name.xml log entry in the iLO Event Log.
- Fixed synchronization issues with the Power Regulator Values in iLO web interface and XML scripts.
- Fixed Get_Network.XML to display correct network information when the iLO 4 configured link is set to Auto.
- Fixed invalid XML response for Get_All_Languages.xml and Get_Language.xml.
Fixed the Get_EmHealth.xml Storage Controller label.

Fixed the IRC playback video when the server is powered off.

Fixed IRC intermittent hang when un-mounting virtual media during a server reboot.

Fixed the issue that caused an SSH session to disconnect when the IRC Trust Setting is changed.

Fixed an issue that caused the .NET IRC to prompt for user credentials when started from the iLO web interface.

Fixed an issue that caused the numeric keypad to work incorrectly in some situations.

Fixed intermittent Unknown status for System Health, Server Power and UID in the iLO web interface Overview page.

Fixed an issue that caused a DHCP supplied time zone not to be applied to the time iLO obtained from an SNTP server.


Fixed an issue in which the server remains to be powered off when issuing a shutdown command (f12 > F2) using ESXi 5.0 U1.

Fixed intermittent communication issues between iLO and a Smart Array Controller.

Fixed the iLO web interface System Information page to display correct fan speed and temperatures.

Various SNMP performance enhancements.

Reworded the event log message to better identify when non-iLO firmware is flashed.

Added controlled stepping of fan speed to avoid large fan speed changes that could cause fan failures.

**Enhancements**

- Support for HP Insight Remote Support 7.0 and later.
- Support for Location Discovery Services (ML and DL servers only).
- Support for configurable Remote Console hot keys.
- Integrated Management Log enhancements (iLO web interface):
  - Added the ability to change the status of Critical or Caution events to Repaired.
HP Service Pack for ProLiant 2012.10.0 Release Notes

- Added the ability to add a Maintenance Note to the IML log.
- Added logging for some Smart Array storage events.
  - Added a customizable login security banner.
  - Added more defined SNMP traps related to the server power state.
  - Changed the handling of cache modules in order to not report an error for normal conditions such as cache recharging or logical drive expansion.
  - Improved iLO Event Log message when non-iLO firmware is flashed.
  - Added CLI performance improvements.
  - Added CLI support for adding and removing SSH keys.
  - Added manual_ilo_reset to the CLI, which allows network changes without an immediate reset.

---

Firmware - Network

**HP QLogic P3 Online Firmware Upgrade Utility for Windows Server 2003/2008 x64 Editions**

Version: 1.3.9.7 *(Optional)*

**Enhancements**

This software now supports Windows Server 2012.

**Supported Devices and Features**

This software supports the following HP QLogic P3 network adapters:

- HP NC522m Dual Port 10GbE Multifunction BL-c Adapter
- HP NC522SFP Dual Port 10GbE Server Adapter
- HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
- HP NC375i 1G w/NC524SFP 10G Module
- HP NC375T PCI Express Quad Port Gigabit Server Adapter

---

**HP QLogic P3P Online Firmware Upgrade Utility for Windows Server 2008 x64 Editions**

Version: 1.0.1.1 (B) *(Optional)*

**Prerequisites**

This package requires one of the following drivers be installed before firmware can be updated:

- HP QLogic P3P Multifunction Driver for Windows Server 2008 x64 Editions
Enhancements
This component now supports Windows Server 2012.

Supported Devices and Features
This software package supports the following HP P3P network adapters:

- HP NC523SFP 10Gb 2-port Server Adapter
- HP CN1000Q Dual Port Converged Network Adapter

---

**HP Broadcom Online Firmware Upgrade Utility for Linux i386**
Version: 2.6.14 **(Optional)**

**Prerequisites**
This package requires the *HP Broadcom TG3 Driver for Linux* or the *HP Broadcom 1/10 GbE Multifunction Drivers for Linux* to be installed before firmware can be updated.

**Enhancements**
This software now supports the HP Ethernet 1Gb 4-port 331i-SPI Adapter.

This package now supports Red Hat Enterprise Linux 6 Update 3.

---

**HP Broadcom Online Firmware Upgrade Utility for Linux x86_64**
Version: 2.6.14 **(Optional)**

**Prerequisites**
This package requires the *HP Broadcom TG3 Driver for Linux* or the *HP Broadcom 1/10 GbE Multifunction Drivers for Linux* to be installed before firmware can be updated.

**Enhancements**
This software now supports the HP Ethernet 1Gb 4-port 331i-SPI Adapter.

This package now supports Red Hat Enterprise Linux 6 Update 3.

---

**HP Broadcom Online Firmware Upgrade Utility for Windows Server 2008**
Version: 3.1.0.10 **(Optional)**

**Prerequisites**
This package requires the appropriate driver for your NIC be installed before firmware can be updated. Available drivers are:

- HP Broadcom 1Gb Driver for Windows Server 2008
- HP Broadcom 1Gb Multifunction Driver for Windows Server 2008
HP Service Pack for ProLiant 2012.10.0 Release Notes

- HP Broadcom 10GbE Multifunction Driver for Windows Server 2008

Enhancements
This software now supports the HP Ethernet 1Gb 4-port 331i-SPI Adapter.

HP Broadcom Online Firmware Upgrade Utility for Windows Server 2008 x64 Editions
Version: 3.1.0.16 (Optional)

Prerequisites
This package requires the appropriate driver for your NIC be installed before firmware can be updated. Available drivers are:

- HP Broadcom 1Gb Driver for Windows Server 2008 x64 Editions
- HP Broadcom 1Gb Multifunction Driver for Windows Server 2008 x64 Editions
- HP Broadcom 10GbE Multifunction Driver for Windows Server 2008 x64 Editions

Enhancements
This component now supports Windows Server 2012.

HP Intel Online Firmware Upgrade Utility for Linux x86
Version: 1.2.6 (Optional)

Enhancements
This package now supports the HP Ethernet 10Gb 2-port 560SFP+ Adapter.

This package now supports Red Hat Enterprise Linux 6 Update 3.

The firmware utility in this package now supports command line options: ‘-e’ (rewrite) and ‘-g’ (downgrade).

Supported Devices and Features
This software supports the following 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 4-port 366i Adapter
- HP Ethernet 1Gb 4-port 366M Adapter
- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter

HP Intel Online Firmware Upgrade Utility for Linux x86_64
Version: 1.2.6 (Optional)
**Enhancements**

This package now supports the HP Ethernet 10Gb 2-port 560SFP+ Adapter.

This package now supports Red Hat Enterprise Linux 6, Update 3.

The firmware utility in this package now supports command line options: ‘-e’ (rewrite) and ‘-g’ (downgrade).

**Supported Devices and Features**

This software supports the following 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 4-port 366i Adapter
- HP Ethernet 1Gb 4-port 366M Adapter
- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter

---

**HP Intel Online Firmware Upgrade Utility for Windows Server 2008**
Version: 1.0.1.1 (Optional)

**Prerequisites**

This package requires the HP Intel E1R Driver for Windows Server 2008 or the HP Intel ixn Driver for Windows Server 2008 be installed before firmware can be updated.

**Enhancements**

This package now supports the HP Ethernet 10Gb 2-port 560SFP+ Adapter.

**Supported Devices and Features**

This package supports the following 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 4-port 366i Adapter
- HP Ethernet 1Gb 4-port 366M Adapter
- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter

---

**HP Intel Online Firmware Upgrade Utility for Windows Server 2008 x64 Editions**
Version: 1.0.1.1 (B) (Optional)

**Prerequisites**

This package requires the appropriate driver for your NIC be installed before firmware can be updated.
Available drivers are:

- HP Intel E1R Driver for Windows Server 2008 x64 Editions
- HP Intel E1R Driver for Windows Server 2008 R2
- HP Intel E1R Driver for Windows Server 2012
- HP Intel ixn Driver for Windows Server 2008 x64 Editions
- HP Intel ixn Driver for Windows Server 2008 R2
- HP Intel ixn Driver for Windows Server 2012

**Enhancements**
This component now supports Windows Server 2012.

**Supported Devices and Features**
This package supports the following 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 4-port 366i Adapter
- HP Ethernet 1Gb 4-port 366M Adapter
- HP Ethernet 10Gb 2-port 560FLB Adapter
- HP Ethernet 10Gb 2-port 560SFP+ Adapter

---

**HP Mellanox Online Firmware Upgrade Utility for Linux i386**
Version: 1.1.1 (Optional)

**Enhancements**
This component now contains firmware version 2.8.0240 for the HP NC543i 1-port 4x QDR IB/Flex-10 10Gb Adapter for the HP SE4235E Server and HP SE2235E Server.

**Supported Devices and Features**
This package supports the following network adapters:

- HP NC542m Dual Port Flex-10 10GbE BL-c Adapter
- HP NC543i 1-port 4x QDR IB/Flex-10 10Gb Adapter
- HP NC543i 2-port 4x QDR IB/10Gb Adapter

---

**HP Mellanox Online Firmware Upgrade Utility for Linux x86_64**
Version: 1.1.1 (Optional)

**Enhancements**
This component now contains firmware version 2.8.0240 for the HP NC543i 1-port 4x QDR IB/Flex-10 10Gb Adapter for the HP SE4235E Server and HP SE2235E Server.

---

HP Service Pack for ProLiant 2012.10.0 Release Notes
**Supported Devices and Features**

This package supports the following network adapters:

- HP NC542m Dual Port Flex-10 10GbE BL-c Adapter
- HP NC543i 1-port 4x QDR IB/Flex-10 10Gb Adapter
- HP NC543i 2-port 4x QDR IB/10Gb Adapter

---

**HP QLogic Online Firmware Upgrade Utility for Linux i386**

Version: 5.1.2 *(Recommended)*

**Prerequisites**

When updating firmware on P3 devices, this package requires *HP NC-Series QLogic Driver for Linux* version >= 4.0.540 and < 4.0.555 for installation. Driver version 4.0.555 must be installed after installing the firmware in this package. Using the P3 firmware in this package without driver version 4.0.555 or later is not a supported configuration.

This package version can be used to upgrade firmware versioned:

- 3.4.336 and later for the NC510C and NC510F network adapters
- 4.0.230 and later for all other supported network adapters

**Enhancements**

This package now supports Red Hat Enterprise Linux 6 Update 3.

This package now provides firmware version 4.0.588.

**Supported Devices and Features**

This software supports the following HP QLogic P2 network adapters:

- HP NC510F PCIe 10 Gigabit Serve Adapter
- HP NC510C PCIe 10 Gigabit Serve Adapter

This software supports the following HP QLogic P3 network adapters:

- HP NC522m Dual Port 10GbE Multifunction BL-c Adapter
- HP NC522SFP Dual Port 10GbE Server Adapter
- HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
- HP NC375i 1G w/NC524SFP 10G Module
- HP NC375T PCI Express Quad Port Gigabit Server Adapter
HP QLogic Online Firmware Upgrade Utility for Linux x86_64
Version: 5.1.2 (Optional)

Prerequisites
When updating firmware on P3 devices, this package requires HP NC-Series QLogic Driver for Linux version >= 4.0.540 and < 4.0.555 for installation. Driver version 4.0.555 must be installed after installing the firmware in this package. Using the P3 firmware in this package without driver version 4.0.555 or later is not a supported configuration.

This package version can be used to upgrade firmware versioned:

- 3.4.336 and later for the NC510C and NC510F network adapters
- 4.0.230 and later for all other supported network adapters

Enhancements
This package now supports Red Hat Enterprise Linux 6 Update 3.

This package now provides firmware version 4.0.588.

Supported Devices and Features
This software supports the following HP QLogic P2 network adapters:

- HP NC510F PCIe 10 Gigabit Serve Adapter
- HP NC510C PCIe 10 Gigabit Serve Adapter

This software supports the following HP QLogic P3 network adapters:

- HP NC522m Dual Port 10GbE Multifunction BL-c Adapter
- HP NC522SFP Dual Port 10GbE Server Adapter
- HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
- HP NC375i 1G w/NC524SFP 10G Module
- HP NC375T PCI Express Quad Port Gigabit Server Adapter

HP QLogic P3 Online Firmware Upgrade Utility for Windows Server 2003/2008
Version: 1.3.9.6 (Optional)

Fixes
This firmware now provides additional stability in certain error cases.

Supported Devices and Features
This software supports the following HP QLogic P3 network adapters:

- HP NC522m Dual Port 10GbE Multifunction BL-c Adapter
- HP NC522SFP Dual Port 10GbE Server Adapter
- HP NC375i Integrated Quad Port Multifunction Gigabit Server Adapter
- HP NC375i 1G w/NC524SFP 10G Module
- HP NC375T PCI Express Quad Port Gigabit Server Adapter

**HP QLogic P3P Online Firmware Upgrade Utility for Linux i386**

Version: 1.2.2 (Optional)

**Prerequisites**
This package requires the *HP QLogic qlcnic Driver for Linux* to be installed before firmware can be updated.

**Enhancements**
This package now supports Red Hat Enterprise Linux 6 Update 3.

This package now provides firmware version 4.9.96.

**Supported Devices and Features**
This package supports the following network adapters:

- HP CN1000Q Dual Port Converged Network Adapter
- HP NC523SFP 10Gb 2-port Ethernet Server Adapter

---

**HP QLogic P3P Online Firmware Upgrade Utility for Linux x86_64**

Version: 1.2.2 (Optional)

**Prerequisites**
This package requires the *HP QLogic qlcnic Driver for Linux* to be installed before firmware can be updated.

**Enhancements**
This package now supports Red Hat Enterprise Linux 6 Update 3.

This package now provides firmware version 4.9.96.

**Supported Devices and Features**
This package supports the following network adapters:

- HP CN1000Q Dual Port Converged Network Adapter
HP QLogic P3P Online Firmware Upgrade Utility for Windows Server 2008
Version: 1.0.1.1 (Optional)

Prerequisites
This package requires the HP QLogic P3P Multifunction Driver for Windows Server 2008 to be installed before firmware can be updated.

Fixes
This firmware corrects an issue that could lead to a loss of network connectivity.

Enhancements
This firmware now provides additional stability in certain error cases for the HP NC523SFP 10Gb 2-port Server Adapter.

This package now provides firmware version 4.9.96.

Supported Devices and Features
This software package supports the following HP P3P network adapters:

- HP NC523SFP 10Gb 2-port Server Adapter
- HP CN1000Q Dual Port Converged Network Adapter

Online Firmware Upgrade Utility (Linux x86_64) for HP InfiniBand FDR/EN 10/40Gb Dual Port 544FLR-QSFP Adapter: HP Part # 649282-B21 and HP InfiniBand QDR/EN 10Gb Dual Port 544FLR-QSFP Adapter: HP Part # 649283-B21
Version: 1.1.1 (Recommended)

Enhancements
Includes firmware version 2.10.2350 for the below cards:

- Rev B2 FDR (PSID: HP_0230220019)
- Rev Cx FDR (PSID: HP_0230240019)
- Rev B2 QDR (PSID: HP_0230220009)
- Rev Cx QDR (PSID: HP_0230240009)

Online Firmware Upgrade Utility (Linux x86_64) for HP InfiniBand FDR/EN 10/40Gb Dual Port 544QSFP Adapter: HP Part # 649281-B21
Version: 1.0.8 (Recommended)

Enhancements
Includes firmware version 2.10.2280 for the below card:
Online Firmware Upgrade Utility (Linux x86_64) for HP InfiniBand QDR/EN 10Gb Dual Port 544M Adapter: HP Part # 644160-B21 and HP InfiniBand FDR/EN 10/40Gb Dual Port 544M Adapter: HP Part # 644161-B21
Version: 1.0.6 (Recommended)

**Enhancements**
Includes firmware version 2.10.2280

Online Firmware Upgrade Utility (Linux x86_64) for HP Infiniband QDR/Ethernet 10Gb 2P 544i Adapter (SL4540 and SL4545 only)
Version: 1.0.7 (Recommended)

**Enhancements**
Includes firmware version 2.10.2610

**Supported Devices and Features**

This package supports the following InfiniBand adapters:

- HP Infiniband QDR/Ethernet 10Gb 2P 544i Adapter (SL4540 and SL4545 only)

Online Firmware Upgrade Utility (Windows x64) for HP InfiniBand FDR/EN 10/40Gb Dual Port 544FLR-QSFP Adapter: HP Part # 649282-B21 and HP InfiniBand QDR/EN 10Gb Dual Port 544FLR-QSFP Adapter: HP Part # 649283-B21
Version: 1.0.0.5 (Recommended)

**Enhancements**
This firmware upgrade utility has added support for Microsoft Windows Server 2012.

**Features Enabled in firmware version 2.10.2350:**

- Infiniband or Ethernet (10GbE & 1GbE) auto-sensing
- InfiniBand - FDR (Fourteen Data Rate), QDR (Quad Data Rate), SDR (Single Data Rate)
- Ethernet – 10GbE and 1GbE
- PCIe 3.0 and PCIe 2.0
- HP thermal sensors reporting
- NCSI SNP (Shared-Network-port) through Port2 in Ethernet mode
- WoL (Wake-on-Lan) through Port2 in Ethernet mode
- Preboot eXecution Environment (PXE)
Online Firmware Upgrade Utility (Windows x64) for HP InfiniBand FDR/EN 10/40Gb Dual Port 544QSFP Adapter: HP Part # 649281-B21
Version: 1.0.0.4 (Recommended)

Enhancements
This firmware upgrade utility has added support for Microsoft Windows Server 2012.

Features Enabled in firmware version 2.10.2280:

- Infiniband or Ethernet (10GbE & 1GbE) autosensing
- InfiniBand - FDR, QDR, SDR
- Ethernet – 10GbE and 1GbE
- PCIe 3.0 and PCIe 2.0
- HP OCSD thermal sensors reporting
- PXE

Online Firmware Upgrade Utility (Windows x64) for HP InfiniBand QDR/EN 10Gb Dual Port 544M Adapter: HP Part # 644160-B21 and HP InfiniBand FDR/EN 10/40Gb Dual Port 544M Adapter: HP Part # 644161-B21
Version: 1.0.0.4 (Recommended)

Enhancements
This firmware upgrade utility has added support for Microsoft Windows Server 2012.

Features Enabled in firmware version 2.10.2280:

- Infiniband or Ethernet (10GbE & 1GbE) autosensing
- InfiniBand - FDR (Fourteen Data Rate), QDR (Quad Data Rate), SDR (Single Data Rate)
- Ethernet – 10GbE and 1GbE
- PCIe 3.0 and PCIe 2.0
- HP thermal sensors reporting
- PXE (Pre eXecution Environment)

Online Firmware Upgrade Utility (Windows x64) for HP Infiniband QDR/Ethernet 10Gb 2P 544i Adapter (SL4540 and SL4545 only)
Version: 1.0.0.4 (Recommended)

Enhancements
This firmware upgrade utility has added support for Microsoft Windows Server 2012.
Firmware - Power Management

Version: 1.6 (B) (Recommended)

Important Note!

Important Notes:
None

Deliverable Name:

Release Version:
1.6(B)

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:
None

Enhancements
Important Notes:

None

Firmware Dependencies:

None

Enhancements/New Features:

This is the initial version of the firmware.

Known Issues:

None

Online ROM Flash for Linux - Power Management Controller (HP ProLiant DL980 G7/BL620c G7/BL680c G7 Servers)
Version: 1.7 (Recommended)

Important Note!

Important Notes:

None

Deliverable Name:

Power Management Controller (HP ProLiant DL980 G7/BL620c G7/BL680c G7 Servers)

Release Version:

1.7

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:

None

Enhancements

Important Notes:

None

Firmware Dependencies:

None

Enhancements/New Features:

This is the initial version of the firmware.

Known Issues:

None

Supported Devices and Features

This component can be used on the following servers:

- HP ProLiant BL620c G7
- HP ProLiant BL680c G7
- HP ProLiant DL980 G7

**Online ROM Flash for Linux - Power Management Controller (HP ProLiant Gen8 Servers)**

Version: 3.0 (B) (Optional)

**Important Note!**

Important Notes:

Ver. 3.0(B) contains support for new server products. The Power Management Controller Firmware contained within ver. 3.0(B) is equivalent to the Firmware contained within ver. 3.0. Therefore, it is not
necessary to upgrade with ver. 3.0(B), if the Power Management Controller firmware version is 3.0.

If a server has a Dynamic Power Cap enabled, the server’s performance may be significantly affected during the duration of the flash update of the Power Management Controller Firmware. To prevent the impact to performance, the Dynamic Power Cap can be disabled prior to the flash update process.

**Deliverable Name:**

Power Management Controller (HP ProLiant Gen8 servers)

**Release Version:**

3.0B

**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:**

None

**Enhancements**

**Important Notes:**

Ver. 3.0(B) contains support for new server products. The Power Management Controller Firmware contained within ver. 3.0(B) is equivalent to the Firmware contained within ver. 3.0. Therefore, it is not necessary to upgrade with ver. 3.0(B), if the Power Management Controller firmware version is 3.0.

If a server has a Dynamic Power Cap enabled, the server’s performance may be significantly affected during the duration of the flash update of the Power Management Controller Firmware. To prevent the
impact to performance, the Dynamic Power Cap can be disabled prior to the flash update process.

**Firmware Dependencies:**

None

**Enhancements/New Features:**

This is the initial version of the firmware.

**Known Issues:**

None

---


Version: 1.6 (B) *(Recommended)*

**Important Note!**

**Important Notes:**

None

**Deliverable Name:**


**Release Version:**

1.6(B)

**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:
None

Enhancements

Important Notes:
None

Firmware Dependencies:
None

Enhancements/New Features:
This is the initial version of the firmware.

Known Issues:
None

Online ROM Flash for Windows - Power Management Controller (HP ProLiant DL980 G7/BL620c G7/BL680c G7 Servers)
Version: 1.7 (Recommended)

Important Notes:
None

Deliverable Name:
Power Management Controller (HP ProLiant DL980 G7/BL620c G7/BL680c G7 Servers)

Release Version:
1.7

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:**

None

**Prerequisites**

The appropriate device driver must be installed and running before using this flash component. On Windows, install the HP ProLiant iLO 3 Management Controller Driver Package. On Linux, install the HP ProLiant Channel Interface Device Driver for iLO. 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:**

None

**Firmware Dependencies:**

None

**Enhancements/New Features:**

This is the initial version of the firmware.

**Known Issues:**

None
**Supported Devices and Features**

This component can be used on the following servers:

- HP ProLiant DL980 G7
- HP ProLiant BL620c G7
- HP ProLiant BL680c G7

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**Online ROM Flash for Windows - Power Management Controller (HP ProLiant Gen8 Servers)**

Version: 3.0 (B) **(Optional)**

**Important Notes:**

**Important Notes:**

Ver. 3.0(B) contains support for new server products. The Power Management Controller Firmware contained within ver. 3.0(B) is equivalent to the Firmware contained within ver. 3.0. Therefore, it is not necessary to upgrade with ver. 3.0(B), if the Power Management Controller firmware version is 3.0.

If a server has a Dynamic Power Cap enabled, the server’s performance may be significantly affected during the duration of the flash update of the Power Management Controller Firmware. To prevent the impact to performance, the Dynamic Power Cap can be disabled prior to the flash update process.

**Deliverable Name:**

Power Management Controller (HP ProLiant Gen8 servers)

**Release Version:**

3.0(B)

**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:**
Prerequisites

The "HP ProLiant iLO 3/4 Channel Interface Driver for Windows" must be installed and running before using this flash component. If the driver is not running you will receive the following error message: "The software is not supported for installation on this system. You must install the iLO Channel Interface driver to use this component."

Enhancements

Important Notes:

Ver. 3.0(B) contains support for new server products. The Power Management Controller Firmware contained within ver. 3.0(B) is equivalent to the Firmware contained within ver. 3.0. Therefore, it is not necessary to upgrade with ver. 3.0(B), if the Power Management Controller firmware version is 3.0.

If a server has a Dynamic Power Cap enabled, the server’s performance may be significantly affected during the duration of the flash update of the Power Management Controller Firmware. To prevent the impact to performance, the Dynamic Power Cap can be disabled prior to the flash update process.

Firmware Dependencies:

None

Enhancements/New Features:

This is the initial version of the firmware.

Known Issues:

None
## SAS Storage Disk Drivers

### Online ROM Flash Components - Linux

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<tr>
<td>Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DG0072BALVL, DG0146BALVN, DG0146BAHZP, DG0300BALVP, and DG0300BAHZQ drives</td>
<td>Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DG0146BAAB3, DG072BB975, DG146ABAB4, and DG146BB976 drives</td>
<td>Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DG072BABC, and DG146BACF drives</td>
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<td>Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DG072A4951, DG072BAAJA, DG146BAAJ8, and DG146A4960 drives</td>
<td>Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DH036ABAAS, DH036BB977, DH072BB978, and DH072BAAAS drives</td>
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<td>Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DH0146BALWN, DH0072BALW, and DH0036BALWK drives</td>
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<td>Online ROM Flash Component for Windows - DF036A8BB55, DF072A8B56, and DF146A8B57 drives</td>
<td>Online ROM Flash Component for Windows - DG036A8BB53 and DG072A8B54 drives</td>
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<td>Online ROM Flash Component for Windows - DF0146BB8052, DF300B8053, and DF0450B8054 drives</td>
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<td>Online ROM Flash Component for Windows - DF0450BAERF drive</td>
<td>Online ROM Flash Component for Windows - DF036A8BB55, DF072A8B56, and DF146A8B57 drives</td>
<td>Online ROM Flash Component for Windows - DF036A8BB53 and DG072A8B54 drives</td>
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<td>Online ROM Flash Component for Windows - DF036A8BB53 and DG072A8B54 drives</td>
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<td>Online ROM Flash Component for Windows - DG0146BAQPP and DG0300BAQPO drives</td>
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<td>Online ROM Flash Component for Windows - DG072BABCE, and DG146BABCf drives</td>
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<td>Online ROM Flash Component for Windows - DG072BABA3, DG072B975, DG146BABAB4, and DG146B976 drives</td>
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<td>Online ROM Flash Component for Windows - EF0300FARMU, EF0450FARMV, EF0600FARNA drives</td>
<td>Online ROM Flash Component for Windows - EG0300FARMU, EG0300FARMV, and EG0300FARMU drives</td>
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<td>Online ROM Flash Component for Windows - EG0146FASHU, EG0300FASHV, DG0146FAMWL and DG0300FAMWN drives</td>
<td>Online ROM Flash Component for Windows - EG0300FBDSP, EG0450FDBSM, and EG0600FDBSR drives</td>
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| Supplemental Update / Online ROM Flash Component for Linux - EG0300FBDSP, EG0450FDBSM, and EG0600FDBSR drives | Supplemental Update / Online ROM Flash Component for Linux - EG0300FBDSP, EG0450FDBSM, and EG0600FDBSR drives |
| Supplemental Update / Online ROM Flash Component for Linux - EG0300FBDSP, EG0450FDBSM, and EG0600FDBSR drives | Supplemental Update / Online ROM Flash Component for Linux - EG0300FBDSP, EG0450FDBSM, and EG0600FDBSR drives |
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Supplemental Update / Online ROM Flash Component for Linux - MB1000FAMYU and MB2000FAMYV drives
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<td>Supplemental Update / Online ROM Flash Component for Linux - EG0146FAWHU, EG0030FAWHV, DG0146FAMWL and DG0300FAMWN Drives</td>
<td>Supplemental Update / Online ROM Flash Component for Linux - EH0072FARWC and EH0146FARWD Drives</td>
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<td>Supplemental Update / Online ROM Flash Component for Linux - MB2000FBUCL and MB3000FBUCN drives</td>
<td>Supplemental Update / Online ROM Flash Component for Linux - MB3000FBNWV Drives</td>
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</table>

**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DF0300BAERF drive**

Version: HPD6 (B) (Optional)

**Important Note!**

Customers who already installed firmware version HPD6 do not need to update to HPD6(B).

**Prerequisites**

This disk drive component requires Smart Array P600 firmware version 1.50 or later available at [HP.com](http://www.hp.com).

**Fixes**

**Firmware Dependency:**

This disk drive component requires Smart Array P600 firmware version 1.50 or later available at [HP.com](http://www.hp.com).

**Problems Fixed:**

Resolves a potential disk "no show" issue at cold start.

**Enhancements**

Added support for Red Hat Enterprise Linux 6 Server.

---

**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DF036A8B55, DF072A8B56, and DF146A8B57 drives**

Version: HPD7 (E) (Optional)

**Important Note!**

Customers who already installed firmware version HPD7 do not need to update to HPD7(E).
Updated the component installer. If you have previously updated to version HPD7, another update is not needed.

**Prerequisites**
This disk drive component requires Smart Array P600 firmware version 1.50 or later available at [HP.com](http://www.hp.com).

**Enhancements**
Added support for Red Hat Enterprise Linux 6 Server

---

**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DF0450BAERH drive**
Version: HPD6 (B) *(Optional)*

**Important Note!**
Customers who already installed firmware version HPD6 do not need to update to HPD6(B).

**Prerequisites**
This disk drive component requires Smart Array P600 firmware version 1.50 or later available at [HP.com](http://www.hp.com).

**Fixes**

**Firmware Dependency:**
This disk drive component requires Smart Array P600 firmware version 1.50 or later available at [HP.com](http://www.hp.com).

**Problems Fixed:**
Resolves a potential disk "no show" issue at cold start.

**Enhancements**
- Hard drive firmware maintenance release
- Added support for Red Hat Enterprise Linux 6 Server.

---

**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DF072A4940, DF072BABUD, DF146A4941, DF146BABUE, DF300A4950, and DF300BABUF drives**
Version: HPD8 (B) *(Optional)*

**Important Note!**
Customers who already installed firmware version HPD8 do not need to update to HPD8(B).

**Prerequisites**
This disk drive component requires Smart Array P600 firmware version 1.50 or later available at [HP.com](http://www.hp.com).
Fixes

Firmware Dependency:
This disk drive component requires Smart Array P600 firmware version 1.50 or later available at HP.com.

Problems Fixed:
Resolves a potential disk "no show" issue at cold start.

Enhancements

Added support for Red Hat Enterprise Linux 6 Server.

Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DG0146BARTP and DG0300BARTQ drives
Version: HPD1 (B) (Optional)

Important Note!
Customers who already installed firmware version HPD1 do not need to update to HPD1(B).

Prerequisites

Firmware Dependency:

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires :

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires :

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
Enhancements
Firmware Dependency:

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- HP Smart Array P700m firmware version 4.86 or later
- HP Smart Array P712m firmware version 1.64 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at HP.com.

Enhancements/New Features:

- This firmware improves the hard drive servo control which reduces the number of positioning errors.
HP Service Pack for ProLiant 2012.10.0 Release Notes

- Added support for Red Hat Enterprise Linux 6 Server

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**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - EG0146FARTR and EG0300FARTT drives**

Version: HPDA *(Recommended)*

**Prerequisites**

This disk drive component requires Smart Array P600 firmware version 1.50 or later available at [HP.com](http://www.hp.com).

**Fixes**

**Problems Fixed:**

Firmware version HPDA now correctly reports the maximum drive recommended operating temperature. The incorrect values reported in previous versions of the FW caused ProLiant system fans to operate at improper speeds.

---

**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DB0750BABFE, MB1000BAWJP, and DB1000BABFF drives**

Version: HPD8 (B) *(Optional)*

**Important Note!**

Customers who already installed firmware version HPD8 do not need to update to HPD8(B).

**Prerequisites**

This disk drive component requires Smart Array P600 firmware version 1.50 or later available at [HP.com](http://www.hp.com).

**Fixes**

**Firmware Dependency:**

**For use with Online ROM Flash Update:**

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

**For use with Firmware CD Supplemental Update:**

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.
This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- HP Smart Array P700m firmware version 4.86 or later
- HP Smart Array P712m firmware version 1.64 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later
- HP Smart Array E500 firmware version 2.52 or later
- HP Smart Array P700m firmware version 4.86 or later
- HP Smart Array P712m firmware version 1.64 or later

Firmware for these controllers are available at [HP.com](http://www.hp.com).

**Problems Fixed:**

Addresses an issue that can result in premature failure due to the drive experiencing a ‘not ready’ condition.

**Enhancements**

Added support for Red Hat Enterprise Linux 6 Server.

---

**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DF0146B8052, DF0300B8053, and DF0450B8054 drives**

Version: HPD6 (B) *(Optional)*

**Important Note!**

Customers who already installed firmware version HPD6 do not need to update to HPD6(B).

**Prerequisites**

**Firmware Dependency:**

**For use with Online ROM Flash Update:**

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later
HP Service Pack for ProLiant 2012.10.0 Release Notes

For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- HP Smart Array P700m firmware version 4.86 or later
- HP Smart Array P712m firmware version 1.64 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at HP.com.

Fixes

Firmware Dependency:

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
HP Smart Array P700m firmware version 4.86 or later
- HP Smart Array P712m firmware version 1.64 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at [HP.com](http://www.hp.com).

**Problems Fixed:**

Addresses an issue that can result in premature failure due to the drive experiencing a ‘not ready’ condition.

**Enhancements**

Added support for Red Hat Enterprise Linux 6 Server

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**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DF036ABAA7, DF072ABAA8, DF072BB6BC, DF146BB6C2, DF146ABAA9, DF300BB6C3, and DF300ABAAA drives**

Version: HPDB (B) (Optional)

**Important Note!**

Customers who already installed firmware version HPDB do not need to update to HPDB(B).

**Prerequisites**

This disk drive component requires Smart Array P600 firmware version 1.50 or later available at [HP.com](http://www.hp.com).

**Fixes**

**Firmware Dependency:**

**For use with Online ROM Flash Update:**

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

**For use with Firmware CD Supplemental Update:**

Must be used in conjunction with the HP Smart Update Manager, available on the [Firmware Maintenance](http://www.hp.com).
This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- HP Smart Array P700m firmware version 4.86 or later
- HP Smart Array P712m firmware version 1.64 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at HP.com.

**Problems Fixed:**

Addresses an issue that can result in premature failure due to the drive experiencing a 'not ready' condition.

**Enhancements**

Added support for Red Hat Enterprise Linux 6 Server

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**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DG0072BALVL, DG0146BALVN, DG0146BAHZP, DG0300BALVP, and DG0300BAHZQ drives**

Version: HPD4 (C) *(Recommended)*

**Important Note!**

Customers who already installed firmware version HPD4 do not need to update to HPD4(C).

**Prerequisites**

**For use with Online ROM Flash Update:**

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later
For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- HP Smart Array P700m firmware version 4.86 or later
- HP Smart Array P712m firmware version 1.64 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at HP.com.

Fixes

Firmware Dependency:

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
HP Service Pack for ProLiant 2012.10.0 Release Notes

- HP Smart Array E500 firmware version 2.52 or later
- HP Smart Array P700m firmware version 4.86 or later
- HP Smart Array P712m firmware version 1.64 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at [HP.com](http://www.hp.com).

**Problems Fixed:**

- Addresses an issue that can result in premature failure due to the drive experiencing a ‘not ready’ condition
- The prior version of this firmware HPD4, released as CP014452.scexe could cause the drive to fail when rebooting after a drive firmware upgrade. This issue has been corrected in this updated release of CP015373.scexe, for drive firmware HPD4.

**Enhancements**

- Added support for Red Hat Enterprise Linux 6 Server.

---

**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DG0146BAQPP and DG0300BAQPQ drives**

Version: HPD3 (B) *(Optional)*

**Important Note!**

Customers who already installed firmware version HPD3 do not need to update to HPD3(B).

**Fixes**

**Firmware Dependency:**
For upgrade of drive firmware through a P600 Smart Array controller you must have controller firmware version 1.50 or later installed. (Available at HP.com.)

**Problems Fixed:**
Resolves potential issues encountered with drive discovery at power-up, and incorrect I/O failover behavior, both of which may be experienced if the drive firmware is not updated.

**Enhancements**

- Added support for Red Hat Enterprise Linux 6 Server.
**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DG036A8B53 and DG072A8B54 drives**

Version: HPD7 (H) (Optional)

**Important Note!**

Customers who already installed firmware version HPD7 do not need to update to HPD7(H).

**Enhancements**

**Firmware Dependency:**

**For use with Online ROM Flash Update:**

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

**For use with Firmware CD Supplemental Update:**

Must be used in conjunction with the HP Smart Update Manager, available on the [Firmware Maintenance CD](#).

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- HP Smart Array P700m firmware version 4.86 or later
- HP Smart Array P712m firmware version 1.64 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at [HP.com](http://www.hp.com).

**Enhancements:**

- Added component support for SUSE LINUX Enterprise Server 11
HP Service Pack for ProLiant 2012.10.0 Release Notes

- Added support for Red Hat Enterprise Linux 6 Server

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**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DG072A4951, DG072BAAJA, DG146BAAJB, and DG146A4960 drives**
Version: HPDB (B) (Optional)

**Important Note!**
Customers who already installed firmware version HPDB do not need to update to HPD(B).

**IMPORTANT:** For upgrade of drive firmware through a P600 Smart Array controller you must have controller firmware version 1.50 or later installed. (Available at HP.com.)

**Prerequisites**

**IMPORTANT:** For upgrade of drive firmware through a P600 Smart Array controller you must have controller firmware version 1.50 or later installed. (Available at HP.com.)

**Fixes**

**Firmware Dependency:**
This disk drive component requires Smart Array P600 firmware version 1.50 or later available at [HP.com](http://www.hp.com).

**Problems Fixed:**
Resolves a potential disk "no show" issue at cold start.

**Enhancements**
Added support for Red Hat Enterprise Linux 6 Server

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**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DG072ABAB3, DG072BB975, DG146ABAB4, and DG146BB976 drives**
Version: HPDF (Recommended)

**Fixes**

**Firmware Dependency:**
For use with Online ROM Flash Update:
Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
HP Smart Array P712m with firmware version 1.64 or later

For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- HP Smart Array P700m firmware version 4.86 or later
- HP Smart Array P712m firmware version 1.64 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at HP.com.

Problems Fixed:

- This firmware prevents the possibility that a HDD will cease to function when the drive is used in a Dual Domain or Dual Path Fail-over environment and communication to one path is suddenly lost. If this issue is encountered while running firmware version HPDE or earlier, upgrade to firmware version HPDF. Do not replace the drive.

Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DG072BABCE, and DG146BABCF drives
Version: HPD6 (B) [Optional]

Important Note!

Customers who already installed firmware version HPD6 do not need to update to HPD6(B).

IMPORTANT: For upgrade of drive firmware through a P600 Smart Array controller you must have controller firmware version 1.50 or later installed. (Available at HP.com.)

NOTE: Disk drive upgrades on the HP StorageWorks MSA2000 is an offline process. All host and array I/O must be stopped prior to the upgrade. For more information, see the HP StorageWorks 2000 Family Modular Storage Array reference guide.
IMPORTANT: Please refer to the release notes for special considerations regarding the pre-install conditions for flashing hard drives in MSA2000 configurations.

CAUTION: Updating the firmware of disk drives in a virtual disk risks the loss of data and causes the drives to be temporarily inaccessible.

IMPORTANT: Ensure that no other user is performing administrative functions on the MSA2000 storage system.

Prerequisites

IMPORTANT: For upgrade of drive firmware through a P600 Smart Array controller you must have controller firmware version 1.50 or later installed. (Available at HP.com.)

NOTE: Disk drive upgrades on the HP StorageWorks MSA2000 is an offline process. All host and array I/O must be stopped prior to the upgrade. For more information, see the HP StorageWorks 2000 Family Modular Storage Array reference guide.

IMPORTANT: Please refer to the release notes for special considerations regarding the pre-install conditions for flashing hard drives in MSA2000 configurations.

CAUTION: Updating the firmware of disk drives in a virtual disk risks the loss of data and causes the drives to be temporarily inaccessible.

IMPORTANT: Ensure that no other user is performing administrative functions on the MSA2000 storage system.

Enhancements

Added support for Red Hat Enterprise Linux 6 Server

Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DH0146BALWN, DH0072BALWL, and DH0036BALWK Drives
Version: HPD3 (C) (Recommended)

Important Note!
Customers who already installed firmware version HPD3 do not need to update to HPD3(C).

Prerequisites

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array P712m with firmware version 1.64 or later

Firmware for these controllers are available at HP.com.

Fixes

Firmware Dependency:

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- HP Smart Array P700m firmware version 4.86 or later
- HP Smart Array P712m firmware version 1.64 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later
HP Service Pack for ProLiant 2012.10.0 Release Notes

- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- HP Smart Array P700m firmware version 4.86 or later
- HP Smart Array P712m firmware version 1.64 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at [HP.com](http://www.hp.com).

**Problems Fixed:**

- Addresses an issue that can result in premature failure due to the drive experiencing a ‘not ready’ condition
- The prior version of this firmware HPD3, released as CP014489.scexe could cause the drive to fail when rebooting after a drive firmware upgrade. This issue has been corrected in this updated release of CP015265.scexe, for drive firmware HPD3.

**Enhancements**

- Added support for Red Hat Enterprise Linux 6 Server

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**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - DH036ABAA5, DH036BB977, DH072BB978, and DH072ABAA6 drives**

Version: HPDC (Recommended)

**Fixes**

**Firmware Dependency:**

**For use with Online ROM Flash Update:**

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

**For use with Firmware CD Supplemental Update:**

Must be used in conjunction with the HP Smart Update Manager, available on the [Firmware Maintenance CD](http://www.hp.com).
This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- HP Smart Array P7000m firmware version 4.86 or later
- HP Smart Array P712m firmware version 1.64 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at HP.com.

Problems Fixed:

This firmware prevents the possibility that a HDD will cease to function when the drive is used in a Dual Domain or Dual Path Fail-over environment and communication to one path is suddenly lost. If this issue is encountered while running firmware version HPDB or earlier, upgrade to firmware version HPDC. Do not replace the drive.

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**Online ROM Flash Component for Windows - DF036A8B55, DF072A8B56, and DF146A8B57 drives**

Version: HPD7 (B) *(Optional)*

**Prerequisites**

This disk drive component requires Smart Array P600 firmware version 1.50 or later available at HP.com.

**Enhancements**

Hard drive firmware maintenance release

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**Online ROM Flash Component for Windows - DG036A8B53 and DG072A8B54 drives**

Version: HPD7 (C) *(Optional)*

**Important Note!**

**IMPORTANT:** For upgrade of drive firmware through a P600 Smart Array controller you must have controller firmware version 1.50 or later installed. (Available at HP.com.)

**NOTE:** Disk drive upgrades on the HP StorageWorks MSA2000 is an offline process. All host and array I/O must be stopped prior to the upgrade. For more information, see the HP StorageWorks 2000 Family Modular Storage Array reference guide.
IMPORTANT: Please refer to the release notes for special considerations regarding the pre-install conditions for flashing hard drives in MSA2000 configurations.

CAUTION: Updating the firmware of disk drives in a virtual disk risks the loss of data and causes the drives to be temporarily inaccessible.

IMPORTANT: Ensure that no other user is performing administrative functions on the MSA2000 storage system

Prerequisites

IMPORTANT: For upgrade of drive firmware through a P600 Smart Array controller you must have controller firmware version 1.50 or later installed. (Available at HP.com.)

NOTE: Disk drive upgrades on the HP StorageWorks MSA2000 is an offline process. All host and array I/O must be stopped prior to the upgrade. For more information, see the HP StorageWorks 2000 Family Modular Storage Array reference guide.

IMPORTANT: Please refer to the release notes for special considerations regarding the pre-install conditions for flashing hard drives in MSA2000 configurations.

CAUTION: Updating the firmware of disk drives in a virtual disk risks the loss of data and causes the drives to be temporarily inaccessible.

IMPORTANT: Ensure that no other user is performing administrative functions on the MSA2000 storage system

Enhancements

Hard drive firmware maintenance release

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**Online ROM Flash Component for Windows - DB0750BABFE, MB1000BAWJP, and DB1000BABFF Drives**

Version: HPD8 (Recommended)

Prerequisites

This disk drive component requires Smart Array P600 firmware version 1.50 or later available at HP.com.

Fixes

Firmware Dependency:

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P4000/P400i with firmware version 5.20 or later
- HP Smart Array P8000 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
Online ROM Flash Component for Windows - DF0146B8052, DF0300B8053, and DF0450B8054 drives
Version: HPD6 (Recommended)

Prerequisites
Firmware Dependency:

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

Firmware for these controllers are available at HP.com.

Fixes
Firmware Dependency:

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

Firmware for these controllers are available at HP.com.

Problems Fixed:

- Addresses an issue that can result in premature failure due to the drive experiencing a ‘not ready’ condition.
Online ROM Flash Component for Windows - DF0300BAERF drive
Version: HPD6 (Critical)

**Important Note!**
Failure to upgrade this code could result in failure to recognize disk drives at cold start.

**Prerequisites**
This disk drive component requires Smart Array P600 firmware version 1.50 or later available at HP.com.

**Fixes**

**Firmware Dependency:**
This disk drive component requires Smart Array P600 firmware version 1.50 or later available at HP.com.

**Problems Fixed:**
Resolves a potential disk "no show" issue at cold start.

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Online ROM Flash Component for Windows - DF036ABAA7, DF072ABAA8, DF072BB6BC, DF146BB6C2, DF146ABAA9, DF300BB6C3, and DF300ABAAA drives
Version: HPDB (Recommended)

**Fixes**

**Firmware Dependency:**
For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

Firmware for these controllers are available at HP.com.

**Problems Fixed:**
Addresses an issue that can result in premature failure due to the drive experiencing a ‘not ready’ condition.

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Online ROM Flash Component for Windows - DF0450BAERH drive
Version: HPD6 (Critical)

**Important Note!**
Failure to upgrade this code could result in failure to recognize disk drives at cold start.

**Prerequisites**
This disk drive component requires Smart Array P600 firmware version 1.50 or later available at [HP.com](http://www.hp.com).

**Fixes**

**Firmware Dependency:**
This disk drive component requires Smart Array P600 firmware version 1.50 or later available at [HP.com](http://www.hp.com).

**Problems Fixed:**
Resolves a potential disk "no show" issue at cold start.

**Enhancements**
Hard drive firmware maintenance release

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**Online ROM Flash Component for Windows - DF072A4940, DF072BABUD, DF146A4941, DF146BABUE, DF300A4950, and DF300BABUF drives**
Version: HPD8 (Critical)

**Important Note!**
Failure to upgrade this code could result in failure to recognize disk drives at cold start.

**Prerequisites**
This disk drive component requires Smart Array P600 firmware version 1.50 or later available at [HP.com](http://www.hp.com).

**Fixes**

**Firmware Dependency:**
This disk drive component requires Smart Array P600 firmware version 1.50 or later available at [HP.com](http://www.hp.com).

**Problems Fixed:**
Resolves a potential disk "no show" issue at cold start.

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**Online ROM Flash Component for Windows - DG0072BALVL, DG0146BALVN, DG0146BAHZP, DG0300BALVP, and DG0300BAHZQ drives**
Version: HPD4 (Recommended)

**Prerequisites**
For use with Online ROM Flash Update:
Online flashing with this disk drive component requires:
HP Service Pack for ProLiant 2012.10.0 Release Notes

Fixes

Firmware Dependency:

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

Firmware for these controllers are available at HP.com.

Problems Fixed:

Addresses an issue that can result in premature failure due to the drive experiencing a 'not ready' condition.

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Online ROM Flash Component for Windows - DG0146BAQPP and DG0300BAQPQ drives
Version: HPD3 (Critical)

Important Note!

For important advisories concerning the PSP, please click here:

http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c02154316&lang=en&cc=us&taskId=101&prodSeriesId=3884082&prodTypeId=15351

Fixes

Firmware Dependency:

For upgrade of drive firmware through a P600 Smart Array controller you must have controller firmware version 1.50 or later installed. (Available at HP.com.)

Problems Fixed:

Resolves potential issues encountered with drive discovery at power-up, and incorrect I/O failover behavior, both of which may be experienced if the drive firmware is not updated.
Online ROM Flash Component for Windows - DG0146BARTP and DG0300BARTQ drives
Version: HPD1 (Recommended)

Prerequisites
Firmware Dependency:

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

Firmware for these controllers are available at HP.com.

Enhancements
Firmware Dependency:

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

Enhancements/New Features:

This firmware improves the hard drive servo control which reduces the number of positioning errors.

Online ROM Flash Component for Windows - DG0146FARVU, DG0300FARVV, DG0146BAMYQ, DG0300BAMYR, EG0146FAWJC, and EG0300FAWJD Drives
Version: HPDD (Critical)

Fixes

Problems Fixed:

Firmware version HPDD corrects a rare issue found in previous versions of the hard disk firmware. If the WRITE CACHE is Enabled on the hard drive, the drive WRITE CACHE can be partially over written with older data. This rare situation results in unexpected data being written to the drive and being returned on subsequent READs.
**Online ROM Flash Component for Windows - DG072A4951, DG072BAAJA, DG146BAAJB, and DG146A4960 drives**  
Version: HPDB (B) **(Critical)**

**Important Note!**  
If you have previously updated to version HPDB, another update is not needed. The changes for HPDB (B) did not affect FW functionality.

**Fixes**

**Problems Fixed:**

Resolves a potential disk "no show" issue at cold start.

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**Online ROM Flash Component for Windows - DG072ABAB3, DG072BB975, DG146ABAB4, and DG146BB976 drives**  
Version: HPDF **(Recommended)**

**Fixes**

**Firmware Dependency:**

**For use with Online ROM Flash Update:**

Online flashing with this disk drive component requires :

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

Firmware for these controllers are available at [HP.com](http://hp.com).

**Problems Fixed:**

This firmware prevents the possibility that a HDD will cease to function when the drive is used in a Dual Domain or Dual Path Fail-over environment and communication to one path is suddenly lost. If this issue is encountered while running firmware version HPDE or earlier, upgrade to firmware version HPDF. Do not replace the drive.

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**Online ROM Flash Component for Windows - DG072BABCE, and DG146BABCF drives**  
Version: HPD6 (A) **(Optional)**

**Important Note!**

**IMPORTANT:** For upgrade of drive firmware through a P600 Smart Array controller you must have
controller firmware version 1.50 or later installed. (Available at HP.com.)

**NOTE:** Disk drive upgrades on the HP StorageWorks MSA2000 is an offline process. All host and array I/O must be stopped prior to the upgrade. For more information, see the HP StorageWorks 2000 Family Modular Storage Array reference guide.

**IMPORTANT:** Please refer to the release notes for special considerations regarding the pre-install conditions for flashing hard drives in MSA2000 configurations.

**CAUTION:** Updating the firmware of disk drives in a virtual disk risks the loss of data and causes the drives to be temporarily inaccessible.

**IMPORTANT:** Ensure that no other user is performing administrative functions on the MSA2000 storage system.

**Prerequisites**

**IMPORTANT:** For upgrade of drive firmware through a P600 Smart Array controller you must have controller firmware version 1.50 or later installed. (Available at HP.com.)

**NOTE:** Disk drive upgrades on the HP StorageWorks MSA2000 is an offline process. All host and array I/O must be stopped prior to the upgrade. For more information, see the HP StorageWorks 2000 Family Modular Storage Array reference guide.

**IMPORTANT:** Please refer to the release notes for special considerations regarding the pre-install conditions for flashing hard drives in MSA2000 configurations.

**CAUTION:** Updating the firmware of disk drives in a virtual disk risks the loss of data and causes the drives to be temporarily inaccessible.

**IMPORTANT:** Ensure that no other user is performing administrative functions on the MSA2000 storage system.

**Enhancements**

Hard drive firmware maintenance release

**Online ROM Flash Component for Windows - DH0036BALWK, DH0072BALWL, and DH0146BALWN drives**

Version: HPD3 (C) *(Recommended)*

**Important Note!**

Customers who already installed firmware version HPD3 do not need to update to HPD3 (C).

**Prerequisites**

This disk drive component requires Smart Array P600 firmware version 1.50 or later available at [HP.com](http://hp.com).

**Fixes**
Problems Fixed:

- Addresses an issue that can result in premature failure due to the drive experiencing a 'not ready' condition
- The prior version of this firmware HPD3, released as cp013620.exe could cause the drive to fail when rebooting after a drive firmware upgrade. This issue has been corrected in this updated release of cp015365.exe, for drive firmware HPD3.
- HPD3 (C) fixes a component XML issue that would cause the component to be displayed incorrectly in HP Smart Update Manager (HPSUM) when flashing the drive firmware with an HP Smart Array P812 present.

**Online ROM Flash Component for Windows - DH0072FAQRD, DH0146FAQRE, EH0146FAWJB, and EH0072FAWJA Drives**

Version: HPDH (B) (Recommended)

**Important Note!**

- Customers who already installed firmware version HPD4 do not need to update to HPD4(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

**Fixes**

**Problems Fixed:**

This firmware corrects unsolicited drive resets that will cause the drive to abort any queued commands resulting in slower performance due to the host having to resubmit commands dropped and RESET events to be logged in the hardware error logs.

**Enhancements**

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller

**Online ROM Flash Component for Windows - DH036ABAA5, DH036BB977, DH072BB978, and DH072ABAA6 drives**

Version: HPDC (Recommended)

**Fixes**

**Firmware Dependency:**
For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

Firmware for these controllers are available at HP.com.

Problems Fixed:

This firmware prevents the possibility that a HDD will cease to function when the drive is used in a Dual Domain or Dual Path Fail-over environment and communication to one path is suddenly lost. If this issue is encountered while running firmware version HPDB or earlier, upgrade to firmware version HPDC. Do not replace the drive.

**Online ROM Flash Component for Windows - EF0300FARMU, EF0450FARMV, EF0600FARNA drives**

Version: HPD5 (B) (Recommended)

**Important Note!**

- Customers who already installed firmware version HPD5 do not need to update to HPD5(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

**Fixes**

Problems Fixed:

This firmware corrects unsolicited drive resets that will cause the drive to abort any queued commands resulting in slower performance due to the host having to resubmit commands dropped and RESET events to be logged in the hardware error logs.

**Enhancements**

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller
Important Note!

Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Fixes

Problems Fixed:

Resolved an issue where the controller did not recognize the drive which was caused by an unsolicited internal reset of the drive during initial spin up.

Enhancements

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller

Prerequisites

This disk drive component requires Smart Array P600 firmware version 1.50 or later available at HP.com.

Fixes

Problems Fixed:

Firmware version HPDA now correctly reports the maximum drive recommended operating temperature. The incorrect values reported in previous versions of the FW caused ProLiant system fans to operate at improper speeds.

Fixes

Problems Fixed:

- This firmware corrects unsolicited drive resets that will cause the drive to abort any queued
commands resulting in slower performance due to the host having to resubmit commands dropped and RESET events to be logged in the hardware error logs.

- In a fail over environment, this firmware corrects a possible drive hang if the connection on the active ports is lost.

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**Online ROM Flash Component for Windows - EG0300FBDBR, EG0450FBDBT and EG0600FBDBU drives**

Version: HPD7 (B) (Critical)

**Important Note!**

- Customers who already installed firmware version HPD7 do not need to update to HPD7(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

**Fixes**

**Problems Fixed:**

- Firmware version HPD7 prevents an initialization handshake issue that could result in the controller not recognizing that the drive is installed. This results in the drive being reported as bad or missing.
- Firmware version HPD7 corrects a rare issue found in previous versions of the hard disk firmware. If the WRITE CACHE is Enabled on the hard drive, the drive WRITE CACHE can be partially over written with older data. This rare situation results in unexpected data being written to the drive and being returned on subsequent READs.

**Enhancements**

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller

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**Online ROM Flash Component for Windows - EG0300FBDSP, EG0450FBDSQ, and EG0600FBDSR drives**

Version: HPD4 (B) (Recommended)

**Important Note!**

- Customers who already installed firmware version HPD4 do not need to update to HPD4(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline
firmware flashing of drives is supported for these configurations.

Fixes

Problems Fixed:

Firmware version HPD4 corrects the maximum temperature reported for the hard drives recommended operating temperatures. Improperly reported values might cause ProLiant system fans to operate at incorrect speeds.

Enhancements

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller

Online ROM Flash Component for Windows - EG0300FBLSE, EG0450FBLSF, EG0600FBLSH, and EG0900FBLSK drives
Version: HPD5 (Optional)

Important Note!

Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Fixes

Problems Fixed:

Added EVA support for EVA-enabled drives.

Enhancements

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller

Online ROM Flash Component for Windows - EH0072FARUA and EH0146FARUB drives
Version: HPD8 (B) (Recommended)

Important Note!

- Customers who already installed firmware version HPD8 do not need to update to HPD8(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline
firmware flashing of drives is supported for these configurations.

**Fixes**

**Problems Fixed:**

Firmware version HPD8 now correctly reports the maximum drive recommended operating temperature. The incorrect values reported in previous versions of the FW caused ProLiant system fans to operate at improper speeds.

**Enhancements**

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller

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**Online ROM Flash Component for Windows - EH0072FARWC and EH0146FARWD Drives**

Version: HPDB (Recommended)

**Important Note!**

Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

**Fixes**

**Problems Fixed:**

Resolved an issue where the controller did not recognize the drive which was caused by an unsolicited internal reset of the drive during initial spin up.

**Enhancements**

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller

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**Online ROM Flash Component for Windows - EO0200FBRVV, MO0200FBRWB, EO0400FBRWA, MO0400FBRWC, and MO0800FBRWD drives**

Version: HPD6 (Recommended)
Important Note!

Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Fixes

Problems Fixed:

Fixed an issue where the drive LED operation was not functioning properly when processing the following commands:

- Request Sense
- Inquiry
- Test Unit Ready
- Report LUNs

Enhancements

- Performance improvement when drives are configured in a raid 1 or a Raid 10 volume.
- Added support for the:
  - HP Smart Array B320i RAID controller
  - HP Smart Array B120i SATA RAID controller

Online ROM Flash Component for Windows - MB1000FAMYU and MB2000FAMYV Drives
Version: HPD5 (B) (Recommended)

Important Note!

- Customers who already installed firmware version HPD5 do not need to update to HPD5(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Fixes

Problems Fixed:

This firmware corrects unsolicited drive resets that will cause the drive to abort any queued commands resulting in slower performance due to the host having to resubmit commands dropped and RESET events to be logged in the hardware error logs.

Enhancements
Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller

Online ROM Flash Component for Windows - MB1000FBZPL and MB2000FB2PN drives
Version: HPD1 (B) (Critical)

**Important Note!**

- Customers who already installed firmware version HPD1 do not need to update to HPD1(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

**Fixes**

**Problems Fixed:**

- This firmware modifies the way the hard drive responds to delayed responses from the host. This modification allows the drive to recover from delayed host responses that would previously be misinterpreted as a 1716 POST Error (unrecoverable media error).
- This firmware fixes a rare condition where the drive inadvertently sends stale cache data and the user receives unexpected or invalid data.
- This firmware corrects an issue only observed in HP EVA systems. This firmware resolves a false drive failure seen within the EVA quorum drive backup target drive, when an EVA quorum drive is failed or removed.

**Enhancements**

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller

Online ROM Flash Component for Windows - MB2000FBUCL and MB3000FBUCN drives
Version: HPD3 (B) (Recommended)

**Important Note!**

- Customers who already installed firmware version HPD3 do not need to update to HPD3(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline
firmware flashing of drives is supported for these configurations.

Fixes

Problems Fixed:

This firmware corrects a potential issue where the hard drive is not seen when the server is powered on resulting in the system failing the drive and listing it as “Not Present”.

Enhancements

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller

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**Online ROM Flash Component for Windows - MB3000FBNWV Drives**

Version: HPD4 *(Recommended)*

Important Note!

Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Fixes

Problems Fixed:

Certain rare conditions could cause the drive to become unresponsive.

Enhancements

- This firmware allows large block WRITE commands to be handled more efficiently improving drive WRITE performance significantly.
- Added support for the:
  - HP Smart Array B320i RAID controller
  - HP Smart Array B120i SATA RAID controller

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**Online ROM Flash Component for Windows - MM0500FAMYT drive**

Version: HPD5 *(Recommended)*

Fixes
Problems Fixed:

This firmware corrects unsolicited drive resets that will cause the drive to abort any queued commands resulting in slower performance due to the host having to resubmit commands dropped and RESET events to be logged in the hardware error logs.

Online ROM Flash Component for Windows - MM0500FBFVQ and MM1000FBFVR drives
Version: HPD5 (B) (Optional)

Important Note!

- Customers who already installed firmware version HPD5 do not need to update to HPD5(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Enhancements

Enhancements/New Features:

- Firmware upgrade improves HDD manufacturing release process and has no direct field performance impact.
- Added support for the:
  - HP Smart Array B320i RAID controller
  - HP Smart Array B120i SATA RAID controller

Supplemental Update / Online ROM Flash Component for Linux - DG0146FARVU, DG0300FARVV, DG0146BAMYQ, DG0300BAMYR, EG0146FAWJC, and EG0300FAWJD Drives
Version: HPDD (Critical)

Fixes

Problems Fixed:

Firmware version HPDD corrects a rare issue found in previous versions of the hard disk firmware. If the WRITE CACHE is Enabled on the hard drive, the drive WRITE CACHE can be partially over written with older data. This rare situation results in unexpected data being written to the drive and being returned on subsequent READs.

Supplemental Update / Online ROM Flash Component for Linux - EG0300FBDBR, EG0450FBDBT and EG0600FBDBU drives
Version: HPD7 (B) (Critical)
Customers who already installed firmware version HPD7 do not need to update to HPD7(B).

Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

**Fixes**

Problems Fixed:

- Firmware version HPD7 prevents an initialization handshake issue that could result in the controller not recognizing that the drive is installed. This results in the drive being reported as bad or missing.
- Firmware version HPD7 corrects a rare issue found in previous versions of the hard disk firmware. If the WRITE CACHE is Enabled on the hard drive, the drive WRITE CACHE can be partially over written with older data. This rare situation results in unexpected data being written to the drive and being returned on subsequent READs.

**Enhancements**

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller
- HP HBA H221
- HP HBA H220
- HP HBA H222
- HP HBA H220i
- HP HBA H210i

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**Supplemental Update / Online ROM Flash Component for Linux - EG0300FBDSP, EG0450FBDSQ, and EG0600FBDSR drives**

Version: HPD4 (B) (Recommended)

**Important Note!**

- Customers who already installed firmware version HPD4 do not need to update to HPD4(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

**Fixes**

Problems Fixed:

Firmware version HPD4 corrects the maximum temperature reported for the hard drives recommended operating temperatures. Improperly reported values might cause ProLiant system fans
to operate at incorrect speeds.

**Enhancements**

**Enhancements/New Features:**

- Added support for the:
  - HP Smart Array B320i RAID controller
  - HP Smart Array B120i SATA RAID controller
  - HP HBA H221
  - HP HBA H220
  - HP HBA H222
  - HP HBA H220i
  - HP HBA H210i

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**Supplemental Update / Online ROM Flash Component for Linux - EG0300FBLSE, EG0450FBLSF, EG0600FBLSH, and EG0900FBLSK drives**

Version: HPD5 (Optional)

**Important Note!**

Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

**Fixes**

**Problems Fixed:**

Added EVA support for EVA-enabled drives.

**Enhancements**

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller
- HP HBA H221
- HP HBA H220
- HP HBA H222
- HP HBA H220i
- HP HBA H210i
Supplemental Update / Online ROM Flash Component for Linux - EH0072FARUA and EH0146FARUB drives
Version: HPD8 (B) (Recommended)

**Important Note!**

- Customers who already installed firmware version HPD8 do not need to update to HPD8(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

**Fixes**

**Problems Fixed:**

Firmware version HPD8 now correctly reports the maximum drive recommended operating temperature. The incorrect values reported in previous versions of the FW caused ProLiant system fans to operate at improper speeds.

**Enhancements**

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller
- HP HBA H221
- HP HBA H220
- HP HBA H222
- HP HBA H220i
- HP HBA H210i

Supplemental Update / Online ROM Flash Component for Linux - EO0200FBRVV, MO0200FBRWB, EO0400FBRWA, MO0400FBRWC, and MO0800FBRWD drives
Version: HPD6 (Recommended)

**Important Note!**

Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

**Fixes**

**Problems Fixed:**

Fixed an issue where the drive LED operation was not functioning properly when processing the
following commands:

- Request Sense
- Inquiry
- Test Unit Ready
- Report LUNs

Enhancements

Enhancements/New Features:

- Performance improvement when drives are configured in a raid 1 or a Raid 10 volume.
- Added support for the:
  - HP Smart Array B320i RAID controller
  - HP Smart Array B120i SATA RAID controller
  - HP HBA H221
  - HP HBA H220
  - HP HBA H222
  - HP HBA H220i
  - HP HBA H210i

Supplemental Update / Online ROM Flash Component for Linux - MB1000FAMYU and MB2000FAMYV drives

Version: HPD5 (B) (Recommended)

Important Note!

- Customers who already installed firmware version HPD5 do not need to update to HPD5(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Fixes

Problems Fixed:

This firmware corrects unsolicited drive resets that will cause the drive to abort any queued commands resulting in slower performance due to the host having to resubmit commands dropped and RESET events to be logged in the hardware error logs.

Enhancements

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller
Supplemental Update / Online ROM Flash Component for Linux - MB1000FBZPL and MB2000FBZPN drives
Version: HPD1 (B) (Critical)

Important Note!

- Customers who already installed firmware version HPD1 do not need to update to HPD1(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Fixes

Problems Fixed:

- This firmware modifies the way the hard drive responds to delayed responses from the host. This modification allows the drive to recover from delayed host responses that would previously be misinterpreted as a 1716 POST Error (unrecoverable media error).
- This firmware fixes a rare condition where the drive inadvertently sends stale cache data and the user receives unexpected or invalid data.
- This firmware corrects an issue only observed in HP EVA systems. This firmware resolves a false drive failure seen within the EVA quorum drive backup target drive, when an EVA quorum drive is failed or removed.

Enhancements

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller
- HP HBA H221
- HP HBA H220
- HP HBA H222
- HP HBA H220i
- HP HBA H210i
Supplemental Update / Online ROM Flash Component for Linux - MM0500FAMYT drive
Version: HPD5 (Recommended)

Fixes

Problems Fixed:

This firmware corrects unsolicited drive resets that will cause the drive to abort any queued commands resulting in slower performance due to the host having to resubmit commands dropped and RESET events to be logged in the hardware error logs.

Supplemental Update / Online ROM Flash Component for Linux - MM0500FBFVQ and MM1000FBFVR drives
Version: HPD5 (Optional)

Important Note!

Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Enhancements

- Firmware upgrade improves HDD manufacturing release process and has no direct field performance impact.
- Added support for the:
  - HP Smart Array B320i RAID controller
  - HP Smart Array B120i SATA RAID controller
  - HP HBA H221
  - HP HBA H220
  - HP HBA H222
  - HP HBA H220i
  - HP HBA H210i

Supplemental Update / Online ROM Flash Component for Linux - DH0072FAQRD, DH0146FAQRE, EH0146FAWJB, and EH0072FAWJA Drives
Version: HPDH (B) (Recommended)

Important Note!

- Customers who already installed firmware version HPDH do not need to update to HPDH(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.
HP Service Pack for ProLiant 2012.10.0 Release Notes

**Fixes**

**Problems Fixed:**

This firmware corrects unsolicited drive resets that will cause the drive to abort any queued commands resulting in slower performance due to the host having to resubmit commands dropped and RESET events to be logged in the hardware error logs.

**Enhancements**

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller
- HP HBA H221
- HP HBA H220
- HP HBA H222
- HP HBA H220i
- HP HBA H210i

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**Supplemental Update / Online ROM Flash Component for Linux - EF0300FARMU, EF0450FARMV, EF0600FARNA drive**

Version: HPD5 (B) *(Recommended)*

**Important Note!**

- Customers who already installed firmware version HPD5 do not need to update to HPD5(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

**Fixes**

**Problems Fixed:**

This firmware corrects unsolicited drive resets that will cause the drive to abort any queued commands resulting in slower performance due to the host having to resubmit commands dropped and RESET events to be logged in the hardware error logs.

**Enhancements**

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller
- HP HBA H221
- HP HBA H220
HP Service Pack for ProLiant 2012.10.0

Supplemental Update / Online ROM Flash Component for Linux - EF0300FATFD, EF0450FATFE, and EF0600FATFF drives
Version: HPD9 (Recommended)

Important Note!

Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Fixes

Problems Fixed:

Resolved an issue where the controller did not recognize the drive which was caused by an unsolicited internal reset of the drive during initial spin up.

Enhancements

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller
- HP HBA H221
- HP HBA H220
- HP HBA H222
- HP HBA H220i
- HP HBA H210i

Supplemental Update / Online ROM Flash Component for Linux - EG0146FAWHU, EG0300FAWHV, DG0146FAMWL and DG0300FAMWN Drives
Version: HPDF (Recommended)

Fixes

Problems Fixed:

- This firmware corrects unsolicited drive resets that will cause the drive to abort any queued commands resulting in slower performance due to the host having to resubmit commands dropped and RESET events to be logged in the hardware error logs.
- In a fail over environment, this firmware corrects a possible drive hang if the connection on the
active ports is lost.

Supplemental Update / Online ROM Flash Component for Linux - EH0072FARWC and EH0146FARWD Drives
Version: HPDB (Recommended)

Important Note!

Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Fixes

Problems Fixed:

Resolved an issue where the controller did not recognize the drive which was caused by an unsolicited internal reset of the drive during initial spin up.

Enhancements

Enhancements/New Features:

- Added support for the:
  - HP Smart Array B320i RAID controller
  - HP Smart Array B120i SATA RAID controller
  - HP HBA H221
  - HP HBA H220
  - HP HBA H222
  - HP HBA H220i
  - HP HBA H210i

Supplemental Update / Online ROM Flash Component for Linux - MB2000FBUCL and MB3000FBUCN drives
Version: HPD3 (B) (Recommended)

Important Note!

- Customers who already installed firmware version HPD3 do not need to update to HPD3(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.
**Fixes**

**Problems Fixed:**

This firmware corrects a potential issue where the hard drive is not seen when the server is powered on resulting in the system failing the drive and listing it as “Not Present”.

**Enhancements**

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller
- HP HBA H221
- HP HBA H220
- HP HBA H222
- HP HBA H220i
- HP HBA H210i

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**Supplemental Update / Online ROM Flash Component for Linux - MB3000FBNWV Drives**

Version: HPD4 *(Recommended)*

**Important Note!**

Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

**Fixes**

**Problems Fixed:**

Certain rare conditions could cause the drive to become unresponsive.

**Enhancements**

- This firmware allows large block WRITE commands to be handled more efficiently improving drive WRITE performance significantly.
- Added support for the:
  - HP Smart Array B320i RAID controller
  - HP Smart Array B120i SATA RAID controller
  - HP HBA H221
  - HP HBA H220
  - HP HBA H222
  - HP HBA H220i
  - HP HBA H210i
# Firmware - SATA Storage Disk

## SATA Storage Disk Drivers

### Online ROM Flash Components - Linux

| Firmware CD Supplemental Update / Online ROM Flash Component for Linux - MB2000EA2NL drives | Firmware CD Supplemental Update / Online ROM Flash Component for Linux - GB0160EAPRR drive | Firmware CD Supplemental Update / Online ROM Flash Component for Linux - GB0250C8045, GB0500C8046, and GB0750C8047 drives |
| Firmware CD Supplemental Update / Online ROM Flash Component for Linux - GB0250EAFJF, GB0500EAFJH, GB0750EAFJK, and GB1000EAFJL drives | Firmware CD Supplemental Update / Online ROM Flash Component for Linux - GB0500C4413 drive | Firmware CD Supplemental Update / Online ROM Flash Component for Linux - GB0500EAFYL drive |
| Firmware CD Supplemental Update / Online ROM Flash Component for Linux - GB0750C4414 drive | Firmware CD Supplemental Update / Online ROM Flash Component for Linux - M80500EBNCR drive | Firmware CD Supplemental Update / Online ROM Flash Component for Linux - MK0060EAVDR and MK0120EAVDT drives |
| Firmware CD Supplemental Update / Online ROM Flash Component for Linux - ST3160812AS drive | Firmware CD Supplemental Update / Online ROM Flash Component for Linux - ST3250620NS drive | Firmware CD Supplemental Update / Online ROM Flash Component for Linux - ST3250624AS drive |
| Firmware CD Supplemental Update / Online ROM Flash Component for Linux - ST3500630NS drive | Firmware CD Supplemental Update / Online ROM Flash Component for Linux - ST3500641AS drive | Firmware CD Supplemental Update / Online ROM Flash Component for Linux - ST3750640NS drive |
| Firmware DVD Supplemental Update / Online ROM Flash Component for Linux - VM0160EASRP and MM0500EANCR drives | HP Smart Update Firmware DVD Supplemental Update / Online ROM Flash Component for Linux - MB1000EBNCF drives |
| HP Smart Update Firmware DVD Supplemental Update / Online ROM Flash Component for Linux - GB0750EAMYB and GB1000EAMYC drives |

### Online ROM Flash Components - Windows

| Online ROM Flash Component for Windows - GB0160EAPRR drive | Online ROM Flash Component for Windows - GB0250C8045, GB0500C8046, and GB0750C8047 drives | Online ROM Flash Component for Windows - GB0250EAFJF, GB0500EAFJH, GB0750EAFJK, and GB1000EAFJL drives |
| Online ROM Flash Component for Windows - GB0250EAFYK drive | Online ROM Flash Component for Windows - GB0500C4413 drive | Online ROM Flash Component for Windows - GB0500EAFYL drive |
| Online ROM Flash Component for Windows - GB0750C4414 drive | Online ROM Flash Component for Windows - GB0750EAMYB and GB1000EAMYC drives | Online ROM Flash Component for Windows - MB0500CBEPQ and MB1000CBEP Drives |
| Online ROM Flash Component for Windows - MB0500CBQZQD and MB1000CBZQE Drives | Online ROM Flash Component for Windows - MB0500EAMZD, MB1000EAMZE and MB2000EAMZF Drives | Online ROM Flash Component for Windows - MB0500EBNCR drive |
| Online ROM Flash Component for Windows - MB0500EAMZD, MB1000EAMZE and MB2000EAMZF Drives | Online ROM Flash Component for Windows - MB0500CBEPQ and MB1000CBEP Drives |
| Online ROM Flash Component for | Online ROM Flash Component for | Online ROM Flash Component for |
### Windows - MB0500EBZQA, MB1000EBZQB, and MB2000EBZQC Drives

- Online ROM Flash Component for Windows - MB0500EBZQA, MB1000EBZQB, and MB2000EBZQC Drives
- Online ROM Flash Component for Windows - MB0500GCEHF, MB1000GCEHH, and MB2000GCEHK Drives
- Online ROM Flash Component for Windows - MB1000EBNCF Drives

### Online ROM Flash Component for Windows - MB0500GCEHF, MB1000GCEHH, and MB2000GCEHK Drives

- Online ROM Flash Component for Windows - MB0500GCEHF, MB1000GCEHH, and MB2000GCEHK Drives
- Online ROM Flash Component for Windows - MB3000EBKAB Drives
- Online ROM Flash Component for Windows - MB3000EBKAD Drives

### Online ROM Flash Component for Windows - MB1000EBZQB Drives

- Online ROM Flash Component for Windows - MB1000EBZQB Drives
- Online ROM Flash Component for Windows - MB1000EBZQE Drives
- Online ROM Flash Component for Windows - MB1000EBZQF Drives

### Online ROM Flash Component for Windows - MB2000EBZQC Drives

- Online ROM Flash Component for Windows - MB2000EBZQC Drives
- Online ROM Flash Component for Windows - MB2000EBZQF Drives
- Online ROM Flash Component for Windows - MB2000EBZQG Drives

### ROM Flash Components - Maxtor

- ROM Flash Component - Maxtor 6L250S0, Maxtor 6L160M0, and Maxtor 6L080M0 drives

### Supplemental Update / Online ROM Flash Components - Linux

- Supplemental Update / Online ROM Flash Component for Linux - GB0250EAFYK drive
- Supplemental Update / Online ROM Flash Component for Linux - MB0500CBZQD and MB1000CBZQF Drives
- Supplemental Update / Online ROM Flash Component for Linux - MB0500CBZQF and MB1000CBZPR Drives

- Supplemental Update / Online ROM Flash Component for Linux - MB0500EBZQA, MB1000EBZQB, and MB2000EBZQC Drives
- Supplemental Update / Online ROM Flash Component for Linux - MB0500GCEHF, MB1000GCEHH, and MB2000GCEHK Drives
- Supplemental Update / Online ROM Flash Component for Linux - MB0500GCEHF, MB1000GCEHH, and MB2000GCEHK Drives

- Supplemental Update / Online ROM Flash Component for Linux - MB3000EBKAB Drives
- Supplemental Update / Online ROM Flash Component for Linux - MB3000EBKAD and MB3000EBKAE Drives
- Supplemental Update / Online ROM Flash Component for Linux - MB1000EAMZE and MB2000EAMZD Drives

- Supplemental Update / Online ROM Flash Component for Linux - VB0160EAVEQ and VB0160CBCDE Drives
- Supplemental Update / Online ROM Flash Component for Linux - VB0160EAVEQ and VB0160CBCDE Drives
- Supplemental Update / Online ROM Flash Component for Linux - VB0160EAVDR and VB0160EAVDT Drives

### Firmware CD Supplemental Update / Online ROM Flash Component for Linux - MB2000EAZNL drives

Version: HPG3 (Critical)

### Fixes

**Problems Fixed:**

The drives’ media errors were not properly interpreted as invalid data which allows the invalid data to be used by applications. For additional information and a list of affected SATA hard drive models,
**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - GB0160EAPRR drive**

Version: HPG4 (Critical)

**Fixes**

**Problems Fixed:**

The drives’ media errors were not properly interpreted as invalid data which allows the invalid data to be used by applications. For additional information and a list of affected SATA hard drive models, reference Customer Advisory c03011446 at the following URL: [http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03011446](http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03011446)

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**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - GB0250C8045, GB0500C8046, and GB0750C8047 drives**

Version: HPGC (B) (Optional)

**Important Note!**

Customers who already installed firmware version HPGC do not need to update to HPGC(B).

**Fixes**

**Firmware Dependency:**

**For use with Online ROM Flash Update:**

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

**For use with Firmware CD Supplemental Update:**

Must be used in conjunction with the HP Smart Update Manager, available on the [Firmware Maintenance CD](#).

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
HP Service Pack for ProLiant 2012.10.0 Release Notes

- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- HP Smart Array P700m firmware version 4.86 or later
- HP Smart Array P712m firmware version 1.64 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at HP.com.

**Problems Fixed:**

Corrects background task mishandling that can lead to drive resets and device fault condition.

**Enhancements**

Enhancements/New Features:

- Added support for Red Hat Enterprise Linux 6 Server.

**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - GB0250EAFJF, GB0500EAFJH, GB0750EAFJK, and GB1000EAFJL drives**

Version: HPGC (B) (Optional)

**Important Note!**

Customers who already installed firmware version HPGC do not need to update to HPGC(B).

**Firmware Dependency:**

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires :

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.
This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- HP Smart Array P700m firmware version 4.86 or later
- HP Smart Array P712m firmware version 1.64 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at HP.com.

**Problems Fixed:**

Corrects background task mishandling that can lead to drive resets and device fault condition.

**Enhancements**

Added support for Red Hat Enterprise Linux 6 Server.

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**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - GB0500C4413 drive**

Version: HPG4 (F) **(Optional)**

**Important Note!**

Customers who already installed firmware version HPG4 do not need to update to HPG4(F).

Updated the component installer. If you have previously updated to version HPG4, another update is not needed.

**Prerequisites**

**For use with Online ROM Flash Update:**

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
HP Smart Array P712m with firmware version 1.64 or later

**For use with Firmware CD Supplemental Update:**

Must be used in conjunction with the HP Smart Update Manager, available on the [Firmware Maintenance CD](#).

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at [HP.com](#).

**Enhancements**

Updated the component installer. If you have previously updated to version HPG4, another update is not needed.

**Firmware Dependency:**

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the [Firmware Maintenance CD](#).

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- HP Smart Array P700m firmware version 4.86 or later
- HP Smart Array P712m firmware version 1.64 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at HP.com.

Enhancements/New Features:
- Implemented change to have offline flash mode use SCSI Write Buffer
- Added support for Red Hat Enterprise Linux 6 Server

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**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - GB0500EAFYL drive**

Version: HPG4 (Critical)

**Fixes**

**Problems Fixed:**

The drives’ media errors were not properly interpreted as invalid data which allows the invalid data to be used by applications. For additional information and a list of affected SATA hard drive models, reference Customer Advisory c03011446 at the following URL: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03011446

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**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - GB0750C4414 drive**

Version: HPG4 (F) (Optional)

**Important Note!**

Customers who already installed firmware version HPG4 do not need to update to HPG4(F).

Updated the component installer. If you have previously updated to version HPG4, another update is not needed.

**Prerequisites**

For use with Online ROM Flash Update:
Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later available
- HP Smart Array P400/P400i with firmware version 5.20 or later available
- HP Smart Array P800 with firmware version 5.20 or later available

For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at HP.com.

Enhancements

Updated the component installer. If you have previously updated to version HPG4, another update is not needed.

Firmware Dependency:

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.
This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- HP Smart Array P700m firmware version 4.86 or later
- HP Smart Array P712m firmware version 1.64 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at HP.com.

Enhancements/New Features:

- Implemented change to have offline flash mode use SCSI Write Buffer
- Added support for Red Hat Enterprise Linux 6 Server

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Firmware CD Supplemental Update / Online ROM Flash Component for Linux - MB0500EBNCR drive
Version: HPG2 (Critical)

Fixes

Problems Fixed:

The drives' media errors were not properly interpreted as invalid data which allows the invalid data to be used by applications. For additional information and a list of affected SATA hard drive models, reference Customer Advisory c03011446 at the following URL: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03011446

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Firmware CD Supplemental Update / Online ROM Flash Component for Linux - MK0060EAVDR and MK0120EAVDT drives
Version: HPG7 (Recommended)

Prerequisites

For use with Online ROM Flash Update:
Online flashing with this disk drive component requires:

- HP Smart Array P212 with firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 with firmware version 1.06 or later
- HP Smart Array P712m with firmware version 1.64 or later

For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance DVD.

This disk drive component requires:

- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P712m with firmware version 1.64 or later

Firmware for these controllers are available at HP.com.

Fixes

Firmware Dependency:

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array P212 with firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 with firmware version 1.06 or later
- HP Smart Array P712m with firmware version 1.64 or later

For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P712m with firmware version 1.64 or later

Firmware for these controllers are available at HP.com.

Problems Fixed:

- Fixes a SMART attribute calculation error that may result in a false predictive threshold trigger.
- Fixes a rare occurrence in which data may be incorrectly mapped during a background task. For additional information, reference Customer Advisory c02726227, available at the following URL:
Firmware CD Supplemental Update / Online ROM Flash Component for Linux - ST3160812AS drive
Version: AJL (H) (Optional)

Important Note!

Customers who already installed firmware version AJL do not need to update to AJL(H).

Updated the component installer. If you have previously updated to version AJL, another update is not needed.

Prerequisites

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later available
- HP Smart Array P400/P400i with firmware version 5.20 or later available
- HP Smart Array P800 with firmware version 5.20 or later available

For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later

Firmware for these controllers are available at HP.com.

Enhancements

- Hard drive firmware maintenance release.
- Added support for Red Hat Enterprise Linux 6 Server.
**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - ST3250620NS drive**

Version: 3BJR (G) **(Optional)**

**Important Note!**

Customers who already installed firmware version 3BJR do not need to update to 3BJR(G).

**Updated the component installer. If you have previously updated to version 3BJR, another update is not needed.**

**Prerequisites**

**For use with Online ROM Flash Update:**

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later available
- HP Smart Array P400/P400i with firmware version 5.20 or later available
- HP Smart Array P800 with firmware version 5.20 or later available

**For use with Firmware CD Supplemental Update:**

Must be used in conjunction with the HP Smart Update Manager, available on the [Firmware Maintenance CD](https://h20565.www2.hp.com/wwpr/getdocument.jsp?docname=hc222521.pdf).

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later

Firmware for these controllers are available at [HP.com](https://www.hp.com).

**Enhancements**

**Important Notes:**

Updated the component installer. If you have previously updated to version 3BJR, another update is not needed.

**Firmware Dependency:**

**For use with Online ROM Flash Update:**
Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later available
- HP Smart Array P400/P400i with firmware version 5.20 or later available
- HP Smart Array P800 with firmware version 5.20 or later available

For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later

Firmware for these controllers are available at HP.com.

Enhancements/New Features:

- Added ProLiant 100-series server support.
- Implemented change to have offline flash mode use SCSI Write Buffer.
- Added support for Red Hat Enterprise Linux 6 Server

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**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - ST3250624AS drive**

Version: AJL (G) *(Optional)*

**Important Note!**

Customers who already installed firmware version AJL do not need to update to AJL(G).

Updated the component installer. If you have previously updated to version AJL, another update is not needed.

**Prerequisites**

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later available
- HP Smart Array P400/P400i with firmware version 5.20 or later available
HP Service Pack for ProLiant 2012.10.0 Release Notes

- HP Smart Array P800 with firmware version 5.20 or later available

**For use with Firmware CD Supplemental Update:**

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at HP.com.

**Enhancements**

- Hard drive firmware maintenance release.
- Added support for Red Hat Enterprise Linux 6 Server.

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**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - ST3500630NS drive**

Version: 3BJR (G) (Optional)

**Important Note!**

Customers who already installed firmware version 3BJR do not need to update to 3BJR(G).

**Updated the component installer. If you have previously updated to version 3BJR, another update is not needed.**

**Prerequisites**

**For use with Online ROM Flash Update:**

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later available
- HP Smart Array P400/P400i with firmware version 5.20 or later available
For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later available
- HP Smart Array P400/P400i with firmware version 5.20 or later available
- HP Smart Array P800 with firmware version 5.20 or later available

Firmware for these controllers are available at HP.com.

Enhancements

Important Notes:
Updated the component installer. If you have previously updated to version 3BJR, another update is not needed.

Firmware Dependency:

For use with Online ROM Flash Update:

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later available
- HP Smart Array P400/P400i with firmware version 5.20 or later available
- HP Smart Array P800 with firmware version 5.20 or later available

For use with Firmware CD Supplemental Update:

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at HP.com.
HP Service Pack for ProLiant 2012.10.0 Release Notes

- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later

Firmware for these controllers are available at HP.com.

Enhancements/New Features:

- Added ProLiant 100-series server support.
- Implemented change to have offline flash mode use SCSI Write Buffer.
- Added support for Red Hat Enterprise Linux 6 Server.

**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - ST3500641AS drive**

Version: AJL (H) *(Optional)*

**Important Note!**

Customers who already installed firmware version AJL do not need to update to AJL(H).

Updated the component installer. If you have previously updated to version AJL, another update is not needed.

**Prerequisites**

**For use with Online ROM Flash Update:**

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later available
- HP Smart Array P400/P400i with firmware version 5.20 or later available
- HP Smart Array P800 with firmware version 5.20 or later available

**For use with Firmware CD Supplemental Update:**

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at [HP.com](http://www.hp.com).

**Enhancements**

- Hard drive firmware maintenance release.
- Added support for Red Hat Enterprise Linux 6 Server.

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**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - ST3750640NS drive**

Version: 3BJR (G) *(Optional)*

**Important Note!**

Customers who already installed firmware version 3BJR do not need to update to 3BJR(G).

 Updated the component installer. If you have previously updated to version 3BJR, another update is not needed.

**Prerequisites**

**For use with Online ROM Flash Update:**

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later available
- HP Smart Array P400/P400i with firmware version 5.20 or later available
- HP Smart Array P800 with firmware version 5.20 or later available

**For use with Firmware CD Supplemental Update:**

Must be used in conjunction with the HP Smart Update Manager, available on the [Firmware Maintenance CD](http://www.hp.com). This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later
HP Service Pack for ProLiant 2012.10.0 Release Notes

- Modular Smart Array 20 firmware version 2.02 or later, and connected to a HP Smart Array 64xx
- Modular Smart Array 1000 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1000 Active/Active firmware version 7.00 or later
- Modular Smart Array 1500 Active/Passive firmware version 5.20 or later
- Modular Smart Array 1500 Active/Active firmware version 7.00 or later

Firmware for these controllers are available at HP.com.

**Enhancements**

**Important Notes:**

Updated the component installer. If you have previously updated to version 3BJR, another update is not needed.

**Firmware Dependency:**

**For use with Online ROM Flash Update:**

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later available
- HP Smart Array P400/P400i with firmware version 5.20 or later available
- HP Smart Array P800 with firmware version 5.20 or later available

**For use with Firmware CD Supplemental Update:**

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later

Firmware for these controllers are available at HP.com.

**Enhancements/New Features:**

- Added ProLiant 100-series server support.
- Implemented change to have offline flash mode use SCSI Write Buffer.
- Added support for Red Hat Enterprise Linux 6 Server.
Firmware CD Supplemental Update / Online ROM Flash Component for Linux - ST3808110AS drive
Version: AJL (G) (Optional)

**Important Note!**

Customers who already installed firmware version AJL do not need to update to AJL(G).

**Updated the component installer. If you have previously updated to version AJL, another update is not needed.**

**Prerequisites**

**For use with Online ROM Flash Update:**

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later available
- HP Smart Array P400/P400i with firmware version 5.20 or later available
- HP Smart Array P800 with firmware version 5.20 or later available

**For use with Firmware CD Supplemental Update:**

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array E200/E200i firmware version 1.50 or later
- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P400/P400i firmware version 1.80 or later
- HP Smart Array P600 firmware version 1.50 or later
- HP Smart Array P800 firmware version 1.80 or later
- HP Smart Array E500 firmware version 2.52 or later

Firmware for these controllers are available at [HP.com](http://www.hp.com).

**Enhancements**

- Hard drive firmware maintenance release.
- Added support for Red Hat Enterprise Linux 6 Server.

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Firmware DVD Supplemental Update / Online ROM Flash Component for Linux - VM0160EASRP and MM0500EANCR drives
Version: HPG4 (Recommended)
Fixes

Problems Fixed:

Firmware version HPG4 prevents a low likelihood condition where the drive will stop responding after a frame error and loss of sync. If this condition occurs, a drive power cycle is required to recover.

---

**HP Smart Update Firmware DVD Supplemental Update / Online ROM Flash Component for Linux - MB1000EBNCF drives**
Version: HPG2 (Critical)

Fixes

Problems Fixed:

The drives’ media errors were not properly interpreted as invalid data which allows the invalid data to be used by applications. For additional information and a list of affected SATA hard drive models, reference Customer Advisory c03011446 at the following URL: [http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03011446](http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03011446)

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**HP Smart Update Firmware DVD Supplemental Update / Online ROM Flash Component for Linux - GB0750EAMYB and GB1000EAMYC drives**
Version: HPG6 (Critical)

Fixes

Problems Fixed:

The drives’ media errors were not properly interpreted as invalid data which allows the invalid data to be used by applications. For additional information and a list of affected SATA hard drive models, reference Customer Advisory c03011446 at the following URL: [http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03011446](http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03011446)

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**Online ROM Flash Component for Windows - GB0160EAPRR drive**
Version: HPG4 (Critical)

Fixes

Problems Fixed:

The drives’ media errors were not properly interpreted as invalid data which allows the invalid data to be used by applications. For additional information and a list of affected SATA hard drive models, reference Customer Advisory c03011446 at the following URL: [http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03011446](http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03011446)
**Online ROM Flash Component for Windows - GB0250C8045, GB0500C8046, and GB0750C8047 drives**  
Version: HPGC (Recommended)

**Fixes**

**Firmware Dependency:**

**For use with Online ROM Flash Update:**

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

Firmware for these controllers are available at [HP.com](http://www.hp.com).

**Problems Fixed:**

Corrects background task mishandling that can lead to drive resets and device fault condition.

---

**Online ROM Flash Component for Windows - GB0250EAFJF, GB0500EAFJH, GB0750EAFJK, and GB1000EAFJL drives**  
Version: HPGC (Recommended)

**Fixes**

**Firmware Dependency:**

**For use with Online ROM Flash Update:**

Online flashing with this disk drive component requires:

- HP Smart Array E500 with firmware version 5.20 or later
- HP Smart Array P400/P400i with firmware version 5.20 or later
- HP Smart Array P800 with firmware version 5.20 or later
- HP Smart Array P700m with firmware version 4.86 or later
- HP Smart Array P712m with firmware version 1.64 or later

Firmware for these controllers are available at [HP.com](http://www.hp.com).

**Problems Fixed:**

Corrects background task mishandling that can lead to drive resets and device fault condition.
**Online ROM Flash Component for Windows - GB0250EAFYK drive**
Version: HPG4 (B) (Critical)

**Important Note!**
- Customers who already installed firmware version HPG4 do not need to update to HPG4(B).
- **Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.**

**Fixes**

**Problems Fixed:**

The drives’ media errors were not properly interpreted as invalid data which allows the invalid data to be used by applications. For additional information and a list of affected SATA hard drive models, reference Customer Advisory c03011446 at the following URL: [http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03011446](http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03011446)

**Enhancements**

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller

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**Online ROM Flash Component for Windows - GB0500C4413 drive**
Version: HPG4 (Optional)

**Prerequisites**

This disk drive component requires HP Smart Array E500, HP Smart Array P400, HP Smart Array P400i, or HP Smart Array P800 with firmware version 5.20 or later available at [HP.com](http://hp.com).

**Enhancements**

Hard drive firmware maintenance release

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**Online ROM Flash Component for Windows - GB0500EAFYL drive**
Version: HPG4 (Critical)

**Fixes**

**Problems Fixed:**

The drives’ media errors were not properly interpreted as invalid data which allows the invalid data to be used by applications. For additional information and a list of affected SATA hard drive models,
Online ROM Flash Component for Windows - GB0750C4414 drive
Version: HPG4 (Optional)

Prerequisites
This disk drive component requires HP Smart Array E500, HP Smart Array P400, HP Smart Array P400i, or HP Smart Array P800 with firmware version 5.20 or later available at HP.com.

Enhancements
Hard drive firmware maintenance release

Online ROM Flash Component for Windows - GB0750EAMYB and GB1000EAMYC drives
Version: HPG6 (Critical)

Fixes

Problems Fixed:

The drives’ media errors were not properly interpreted as invalid data which allows the invalid data to be used by applications. For additional information and a list of affected SATA hard drive models, reference Customer Advisory c03011446 at the following URL: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03011446

Online ROM Flash Component for Windows - MB0500CBEPQ and MB1000CBEPR Drives
Version: HPG5 (Critical)

Important Note!

- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP 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 and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.

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 HPG5 prevents this condition from occurring.
Online ROM Flash Component for Windows - MB0500CBZQD and MB1000CBZQE Drives
Version: HPG2 (Critical)

Important Note!

- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP 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 and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.

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 HPG2 prevents this condition from occurring.

Online ROM Flash Component for Windows - MB0500EAMZD, MB1000EAMZE and MB2000EAMZF Drives
Version: HPG5 (Critical)

Important Note!

- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP 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 and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.

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 HPG5 prevents this condition from occurring.

Online ROM Flash Component for Windows - MB0500EBNCR drive
Version: HPG2 (Critical)

Fixes
Problems Fixed:

- The drives’ media errors were not properly interpreted as invalid data which allows the invalid data to be used by applications. For additional information and a list of affected SATA hard drive models, reference Customer Advisory c03011446 at the following URL: http://h20000.www2.hp.com/bizsupport/TechSupport/Documents.jsp?objectID=c03011446

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**Online ROM Flash Component for Windows - MB0500EBZQA, MB1000EBZQB, and MB2000EBZQC Drives**

Version: HPG2 (Critical)

**Important Note!**

- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP 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 and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.

**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 HPG2 prevents this condition from occurring.

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**Online ROM Flash Component for Windows - MB0500GCEHF, MB1000GCEHH, and MB2000GCEHK Drives**

Version: HPGD (Critical)

**Important Note!**

- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP 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 and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.

**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.

Online ROM Flash Component for Windows - MB1000EBNCF Drives
Version: HPG2 (Critical)

Fixes

Problems Fixed:

The drives’ media errors were not properly interpreted as invalid data which allows the invalid data to be used by applications. For additional information and a list of affected SATA hard drive models, reference Customer Advisory c03011446 at the following URL:

Online ROM Flash Component for Windows - MB2000EAZNL Drives
Version: HPG3 (Critical)

Fixes

Problems Fixed:

The drives’ media errors were not properly interpreted as invalid data which allows the invalid data to be used by applications. For additional information and a list of affected SATA hard drive models, reference Customer Advisory c03011446 at the following URL:

Online ROM Flash Component for Windows - MB3000EBKAB Drives
Version: HPG3 (Critical)

Fixes

Problems Fixed:

- This firmware fixes a rare condition where the drive inadvertently sends stale cache data and the user receives unexpected or invalid data.
- This firmware prevents a false predictive drive failure due to miscalculation during spin up.

Online ROM Flash Component for Windows - MK0060EAVDR and MK0120EAVDT drives
Version: HPG7 (Recommended)
Fixes

**Firmware Dependency:**

**For use with Online ROM Flash Update:**

Online flashing with this disk drive component requires:

- HP Smart Array P212 with firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 with firmware version 1.06 or later
- HP Smart Array P712m with firmware version 1.64 or later

**For use with Firmware CD Supplemental Update:**

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- HP Smart Array P212 firmware version 1.06 or later
- HP Smart Array P410/P410i/P411 firmware version 1.06 or later
- HP Smart Array P712m with firmware version 1.64 or later

Firmware for these controllers are available at HP.com.

**Problems Fixed:**

- Fixes a SMART attribute calculation error that may result in a false predictive threshold trigger.
- Fixes a rare occurrence in which data may be incorrectly mapped during a background task. For additional information, reference Customer Advisory c02726227, available at the following URL:


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**Online ROM Flash Component for Windows - MM0500EBKA and MM1000EBKAF drives**

Version: HPG3 (Critical)

**Important Note!**

- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP 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 and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.

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 HPG3 prevents this condition from occurring.

Online ROM Flash Component for Windows - MM0500GBKAK and MM1000GBKAL Drives
Version: HPGC (Critical)

Important Note!

- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP 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 and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.

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 HPGC prevents this condition from occurring.

Online ROM Flash Component for Windows - ST3160812AS drive
Version: AJL (B) (Optional)

Important Note!

Updated the component installer. If you have previously updated to version AJL, another update is not needed.

Prerequisites
This disk drive component requires HP Smart Array E500, HP Smart Array P400, HP Smart Array P400i, or HP Smart Array P800 with firmware version 5.20 or later available at HP.com.

Enhancements
Hard drive maintenance release

Online ROM Flash Component for Windows - ST3250620NS drive
Version: 3BJR (B) (Optional)

Important Note!
Updated the component installer. If you have previously updated to version 3BJR, another update is not needed.

**Prerequisites**  
This disk drive component requires HP Smart Array E500, HP Smart Array P400, HP Smart Array P400i, or HP Smart Array P800 with firmware version 5.20 or later available at [HP.com](http://www.hp.com).

**Enhancements**  
Hard drive maintenance release

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**Online ROM Flash Component for Windows - ST3250624AS drive**  
Version: AJL (B) *(Optional)*

**Important Note!**  
Updated the component installer. If you have previously updated to version AJL, another update is not needed.

**Prerequisites**  
This disk drive component requires HP Smart Array E500, HP Smart Array P400, HP Smart Array P400i, or HP Smart Array P800 with firmware version 5.20 or later available at [HP.com](http://www.hp.com).

**Enhancements**  
Hard drive firmware maintenance release

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**Online ROM Flash Component for Windows - ST3500630NS drive**  
Version: 3BJR (B) *(Optional)*

**Important Note!**  
Updated the component installer. If you have previously updated to version 3BJR, another update is not needed.

**Prerequisites**  
This disk drive component requires HP Smart Array E500, HP Smart Array P400, HP Smart Array P400i, or HP Smart Array P800 with firmware version 5.20 or later available at [HP.com](http://www.hp.com).

**Enhancements**  
Hard drive firmware maintenance release

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**Online ROM Flash Component for Windows - ST3500641AS drive**  
Version: AJL (B) *(Optional)*

**Important Note!**  
Updated the component installer. If you have previously updated to version AJL, another update is not needed.

**Prerequisites**
HP Service Pack for ProLiant 2012.10.0 Release Notes

This disk drive component requires HP Smart Array E500, HP Smart Array P400, HP Smart Array P400i, or HP Smart Array P800 with firmware version 5.20 or later available at HP.com.

Enhancements
Hard drive maintenance release

Online ROM Flash Component for Windows - ST3750640NS drive
Version: 3BJR (B) (Optional)

Important Note!
Updated the component installer. If you have previously updated to version 3BJR, another update is not needed.

Prerequisites
This disk drive component requires HP Smart Array E500, HP Smart Array P400, HP Smart Array P400i, or HP Smart Array P800 with firmware version 5.20 or later available at HP.com.

Enhancements
Hard drive firmware maintenance release

Online ROM Flash Component for Windows - ST3808110AS drive
Version: AJL (B) (Optional)

Important Note!
Updated the component installer. If you have previously updated to version AJL, another update is not needed.

Prerequisites
This disk drive component requires HP Smart Array E500, HP Smart Array P400, HP Smart Array P400i, or HP Smart Array P800 with firmware version 5.20 or later available at HP.com.

Enhancements
Hard drive maintenance release

Online ROM Flash Component for Windows - VB0160EAVEQ and VB0160CBCDE Drives
Version: HPG8 (Recommended)

Fixes

Problems Fixed
- Resolved an issue where the drive was not recognized when the power was turned on.
- Improved drive performance when booting at cold temperatures.
- Properly set the drive write cache to off as the default power-up setting.
Online ROM Flash Component for Windows - VB0250EAVER Drives
Version: HPG7 (B) *(Recommended)*

**Important Note!**
- Customers who already installed firmware version HPG7 do not need to update to HPG7(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

**Fixes**

**Problems Fixed**
- Resolved an issue where the drive was not recognized when the power was turned on.
- Improved drive performance when booting at cold temperatures.
- Properly set the drive write cache to off as the default power-up setting.

**Enhancements**

Added support for the:
- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller

Online ROM Flash Component for Windows - VM0160EASRP and MM0500EANCR drives
Version: HPG4 (B) *(Recommended)*

**Important Note!**
Customers who already installed firmware version HPG4 do not need to update to HPG4(B).

**Fixes**

**Problems Fixed**:
- Firmware version HPG4 prevents a low likelihood condition where the drive will stop responding after a frame error and loss of sync. If this condition occurs, a drive power cycle is required to recover.
- HPG4 (B) fixes a component XML issue that would cause the component to be displayed incorrectly in HP Smart Update Manager (HPSUM) when flashing the drive firmware with an HP Smart Array P812 present.

ROM Flash Component - Maxtor 6L250S0, Maxtor 6L160M0, and Maxtor 6L080M0 drives
Version: 1G60 (E) *(Optional)*
Important Note!

Customers who already installed firmware version 1GG0 do not need to update to 1GG0(E).

Updated the component installer. If you have previously updated to version 1GG0, another update is not needed.

Prerequisites

Must be used in conjunction with the HP Smart Update Manager, available on the Firmware Maintenance CD.

This disk drive component requires:

- Smart Array E200/E200i firmware version 1.50 or later
- Smart Array P400/P400i firmware version 1.80 or later
- Smart Array E500 firmware version 2.52 or later
- Smart Array P600 firmware version 1.50 or later
- Smart Array P800 firmware version 1.80 or later

Firmware for these controllers are available at HP.com.

Enhancements

- Hard drive firmware maintenance release.
- Added support for Red Hat Enterprise Linux 6 Server

Supplemental Update / Online ROM Flash Component for Linux - GB0250EAFYK drive
Version: HPG4 (B) (Critical)

Important Note!

- Customers who already installed firmware version HPG4 do not need to update to HPG4(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Fixes

Problems Fixed:

The drives’ media errors were not properly interpreted as invalid data which allows the invalid data to be used by applications. For additional information and a list of affected SATA hard drive models, reference Customer Advisory c03011446 at the following URL: http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c03011446
Enhancements

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller
- HP HBA H221
- HP HBA H220
- HP HBA H222
- HP HBA H220i
- HP HBA H210i

Supplemental Update / Online ROM Flash Component for Linux - MB0500CBEPQ and MB1000CBEPR Drives
Version: HPG5 (Critical)

Important Note!

- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP 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 and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.

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 HPG5 prevents this condition from occurring.

Supplemental Update / Online ROM Flash Component for Linux - MB0500CBZQD and MB1000CBZQE Drives
Version: HPG2 (Critical)

Important Note!

- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP 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 and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.
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 HPG2 prevents this condition from occurring.

Supplemental Update / Online ROM Flash Component for Linux - MB0500EAMZD, MB1000EAMZE and MB2000EAMZF Drives
Version: HPG5 (Critical)

Important Note!

- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP 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 and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.

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 HPG5 prevents this condition from occurring.

Supplemental Update / Online ROM Flash Component for Linux - MB0500EBZQA, MB1000EBZQB, and MB2000EBZQC Drives
Version: HPG2 (Critical)

Important Note!

- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP 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 and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.
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 HPG2 prevents this condition from occurring.

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**Supplemental Update / Online ROM Flash Component for Linux - MB0500GCEHF, MB1000GCEHH, and MB2000GCEHK Drives**

Version: HPGD (Critical)

**Important Note!**

- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP 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 and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.

**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.

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**Supplemental Update / Online ROM Flash Component for Linux - MB3000EBKAB Drives**

Version: HPG3 (B) (Critical)

**Important Note!**

Customers who already installed firmware version HPG3 do not need to update to HPG3(B).

**Fixes**

**Problems Fixed:**

- This firmware fixes a rare condition where the drive inadvertently sends stale cache data and the user receives unexpected or invalid data.
- This firmware prevents a false predictive drive failure due to miscalculation during spin up.
- HPG3 (B) fixes a component XML issue that would cause the component to be displayed incorrectly in HP Smart Update Manager (HPSUM) when flashing the drive firmware with an HP Smart Array P812 present.
Supplemental Update / Online ROM Flash Component for Linux - MM0500EBKAEB and MM1000EBKAEB drives
Version: HPG3 (Critical)

Important Note!

- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP 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 and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.

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 HPG3 prevents this condition from occurring.

Supplemental Update / Online ROM Flash Component for Linux - MM0500GBKAK and MM1000GBKAL Drives
Version: HPGC (Critical)

Important Note!

- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP 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 and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.

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 HPGC prevents this condition from occurring.

Supplemental Update / Online ROM Flash Component for Linux - VB0160EAVEQ and VB0160CBCDE Drives
Version: HPG8 (Recommended)
Fixes

Problems Fixed

- Resolved an issue where the drive was not recognized when the power was turned on.
- Improved drive performance when booting at cold temperatures.
- Properly set the drive write cache to off as the default power-up setting.

Supplemental Update / Online ROM Flash Component for Linux - VB0250EAVER Drives
Version: HPG7 (B) (Recommended)

Important Note!

- Customers who already installed firmware version HPG7 do not need to update to HPG7(B).
- Online firmware flashing of drives attached to an HP Smart Array controller running in Zero Memory (ZM) mode or an HP ProLiant host bus adapter (HBA) is NOT supported. Only offline firmware flashing of drives is supported for these configurations.

Fixes

Problems Fixed

- Resolved an issue where the drive was not recognized when the power was turned on.
- Improved drive performance when booting at cold temperatures.
- Properly set the drive write cache to off as the default power-up setting.

Enhancements

Added support for the:

- HP Smart Array B320i RAID controller
- HP Smart Array B120i SATA RAID controller
- HP HBA H221
- HP HBA H220
- HP HBA H222
- HP HBA H220i
- HP HBA H210i
## Firmware - Storage Controller

### Storage Controller Drivers

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### Firmware CD Supplemental Update - Online ROM Flash Component for Smart Array - Linux

| **Firmware CD Supplemental Update** |
| / **Online ROM Flash Component for Linux - Smart Array E200 and E200i** |

### HP Disk Enclosures

| **HP D2600/D2700 6Gb SAS Disk Enclosure ROM Flash Component for Linux** |
| **HP D2600/D2700 6Gb SAS Disk Enclosure ROM Flash Component for Windows** |

### Flash Components for Linux – Modular Smart Array

| **Offline Maintenance CD ROM Flash Component for Linux - Modular Smart Array 60** |
| **Offline Maintenance CD ROM Flash Component for Linux - Modular Smart Array 70** |

### Online ROM Flash Component for Modular Smart Array - Linux

| **Online ROM Flash Component for Linux - HP HBA H220, H221, H222, H210i and H220i** |
| **Online ROM Flash Component for Linux - Smart Array P212, P410, P410i, P411, P711m, P712m, and P812** |

### Online ROM Flash Component for Windows – 512MB Flash Backed Write Cache

| **Online ROM Flash Component for Windows - HP 512MB Flash Backed Write Cache for B-Series Smart Array** |

### Online ROM Flash Component for Windows - HP Gen8 Server Backplane Expander Firmware

| **Online ROM Flash Component for Windows - HP Gen8 Server Backplane Expander Firmware for HP Smart Array Controllers** |

### Online ROM Flash Component for Windows - HBA

| **Online ROM Flash Component for Windows - HP HBA(Host Bus Adapters) H220, H221, H222, H210i and H220i** |

### Online ROM Flash Component for Windows – B320i

| **Online ROM Flash Component for Windows - HP Smart Array B320i RAID controller** |

### Online ROM Flash Component for Windows - Smart Array

| **Online ROM Flash Component for Windows - Smart Array E200 and E200i** |
| **Online ROM Flash Component for Windows - Smart Array E500** |

| **Online ROM Flash Component for Windows - Smart Array P212, P410, P410i, P411, P711m, P712m, and P812** |
| Online ROM Flash Component for Windows - Smart Array P220i, P222, P420i, P420, P421, and P822 | Online ROM Flash Component for Windows - Smart Array P400 and P400i | Online ROM Flash Component for Windows - Smart Array P600 |
| Online ROM Flash Component for Windows - Smart Array P700m | Online ROM Flash Component for Windows - Smart Array P800 |
| **Supplemental Update / Online ROM Flash Component for Linux - Smart Array** | **Supplemental Update / Online ROM Flash Component for Linux - HP Smart Array B320i RAID controller** | **Supplemental Update / Online ROM Flash Component for Linux - HP Smart Array E500** |
| **Supplemental Update / Online ROM Flash Component for Linux - HP 512MB Flash Backed Write Cache for B-Series Smart Array** | **Supplemental Update / Online ROM Flash Component for Linux - Smart Array P400 and P400i** | **Supplemental Update / Online ROM Flash Component for Linux - Smart Array P700m** |
| **Supplemental Update / Online ROM Flash Component for Linux - Smart Array P800** | **Supplemental Update / Online ROM Flash Component for Linux – HP Gen8 Server Backplane Expander Firmware for HP Smart Array Controllers and HP HBA Controllers** |  |

**Firmware CD Supplemental Update - HP SAS Expander Card**  
Version: 2.08 *(Recommended)*

**Prerequisites**

A minimum FW version 3.30 is required on your HP Smart Array controller when updating to 2.06 FW on your HP SAS Expander Card.

**Fixes**

**Firmware Dependency:**  
A minimum FW version 3.66 is required on your HP Smart Array controller when updating to 2.08 FW on your HP SAS Expander Card.

**Problems Fixed:**

Resolved intermittent condition in which the HP SAS Expander card may not locate logical drives after a power cycle and will report the following error at post.

- Slot 0 HP Smart Array P410i Controller (512MB, V3.66) 0 logical drives
- 1785- Slot 0 drive Array Not Configured
- No Drive Detected

**Firmware CD Supplemental Update / Online ROM Flash Component for Linux - Smart Array E200 and E200i**  
Version: 1.86 *(Critical)*

HP | Service Pack for ProLiant 2012.10.0
Prerequisites
For optimal performance, driver version 2.4.48-12 or higher is strongly recommended with this firmware release.

Fixes

Problems Fixed:

Fixed an issue where logical drives were not being detected during POST or reboot on the HP Smart Array E200i controller with firmware version 1.80, 1.82 or 1.84.

Firmware CD Supplemental Update / Online ROM Flash Component for Linux - Smart Array P600
Version: 2.04 (A) (Recommended)

Important Note!

Fixes

- Fixed an issue where incorrect data may be returned for a SCSI MODE SENSE command sent to a SATA drive.
- Fixed an issue where Sequential reads on SATA drives in an HP StorageWorks MSA60 may lead to drive failures.

HP D2600/D2700 6Gb SAS Disk Enclosure ROM Flash Component for Linux
Version: 0146 (Recommended)

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: 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.

NOTE: 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.

Prerequisites

IMPORTANT: Server-attach environments installing D2600/D2700 I/O module firmware 0070 or later must update Smart Array controller firmware to v3.50 or higher before installing new firmware on the
D2600/D2700 disk enclosure.

**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.

**NOTE:** 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.

**Fixes**

Fixed a reporting issue in which power supply was incorrectly reported as failed by some management utilities.

**Enhancements**

Added speed negotiation to allow 6 Gb/s SATA drives to function at 3 Gb/s.

**Supported Devices and Features**

The D2000 Enclosure can be attached to any of the following HP Smart Array storage controllers:

- HP Smart Array P212 Controller
- HP Smart Array P222 Controller
- HP Smart Array P411 Controller
- HP Smart Array P421 Controller
- HP Smart Array P812 Controller
- HP Smart Array P822 Controller

Alternatively, it can also be connected behind a HP Storageworks P2000 G3 array.

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**HP D2600/D2700 6Gb SAS Disk Enclosure ROM Flash Component for Windows**

Version: 0146 *(Recommended)*

**Important Note!**

**IMPORTANT:** Server-attach environments installing D2600/D2700 I/O module firmware 0070 or later must update Smart Array controller firmware to v3.50 or higher before installing new firmware on the D2600/D2700 disk enclosure.

**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.

**NOTE:** 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.

**Prerequisites**

**IMPORTANT:** Server-attach environments installing D2600/D2700 I/O module firmware 0070 or later must update Smart Array controller firmware to v3.50 or higher before installing new firmware on the D2600/D2700 disk enclosure.

**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.

**NOTE:** 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.

**Fixes**

Fixed a reporting issue in which a power supply was incorrectly reported as failed by some management utilities.

**Enhancements**

Added speed negotiation to allow 6 Gb/s SATA drives to function at 3 Gb/s.

**Supported Devices and Features**

The D2000 Enclosure can be attached to any of the following HP Smart Array storage controllers:

- HP Smart Array P212 Controller
- HP Smart Array P222 Controller
- HP Smart Array P411 Controller
- HP Smart Array P421 Controller
- HP Smart Array P812 Controller
- HP Smart Array P822 Controller

Alternatively, it can also be connected behind a HP P2000 G3 MSA array.
**Important Note!**

**CAUTION:** If the currently installed MSA60 firmware is less than 1.50 then you cannot update the MSA70 with this firmware. You must first obtain new MSA60 I/O module(s) (IOM) to complete this update. If the currently installed MSA60 firmware is less than 2.00, then you must perform this update with only one IOM inserted at a time.

**CAUTION:** Before upgrading controller firmware, ensure that the storage system configuration is stable and is not being reconfigured or changed in any way. If configurations changes are in progress, monitor them and wait until they are completed before proceeding with the upgrade.

**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.

**IMPORTANT:** After the completion message is displayed, one must power cycle each MSA60 enclosure to complete the update process.

**Fixes**

- Implemented a Single Cycle Hold Detection (SCHD) fix for SATA drives.
- Fixed an intermittent issue which resulted in MSA60/70 enclosures sending a BREAK primitive (sometimes referred to as a “SAS Link Broken” issue) to SmartArray and MSA array controllers.
- Fixed issues which resulted in a hung I/O module with blinking amber LEDs.
- Fixed an intermittent issue which resulted in MSA60/70 enclosures sending broadcast messages to the initiator, causing a temporary performance reduction.
- Fixed an intermittent issue where the enclosure returned incorrect Initiator Connection Tag (ICT) information to the initiator.
- Incorporated other minor miscellaneous firmware enhancements and fixes.

**Supported Devices and Features**

The MSA60 drive enclosure can be attached to any of the HP Smart Array storage controllers:

- Smart Array E500
- Smart Array P212
- Smart Array P410
- Smart Array P411
- Smart Array P600
- Smart Array P800
Important Note!

Server Connect Environments: Recommended

Controller Connect Environments: Recommended only for MSA2000 G2 arrays running M112 and later

CAUTION: If the currently installed MSA70 firmware is less than 1.50 then you cannot update the MSA70 with this firmware. You must first obtain new MSA70 I/O module(s) (IOM) to complete this update. If the currently installed MSA70 firmware is less than 2.00, then you must perform this update with only one IOM inserted at a time.

CAUTION: When the MSA70 is connected behind a MSA2000 G2 storage array, upgrading to this version of MSA70 firmware (2.28) requires that MSA2000 G2 array be running M112 or later version of firmware.

CAUTION: Before upgrading controller firmware, ensure that the storage system configuration is stable and is not being reconfigured or changed in any way. If configurations changes are in progress, monitor them and wait until they are completed before proceeding with the upgrade.

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.

IMPORTANT: After the completion message is displayed, one must power cycle each MSA70 enclosure to complete the update process.

NOTE: This Firmware Smart Component will not inter-operate with HP Smart Update Manager (HP SUM) or with the HP Smart Update Firmware DVD (formerly Firmware Maintenance CD) in P2000/MSA2000 configurations.

Prerequisites

CAUTION: If the MSA70 firmware is less then 1.50 then you cannot update the MSA70 with this firmware. You must first obtain new MSA60/70 I/O module(s) (IOM) to complete this update. If the MSA70 firmware is less then 2.00, then you must perform this update with only one IOM inserted at a time.

CAUTION: When the MSA70 is connected behind a MSA2000 G2 storage array, upgrading to this version of MSA70 firmware (2.28) requires that MSA2000 G2 array be running M112 or later version of firmware.

IMPORTANT: In a single-controller system, updating firmware causes all disks to be temporarily inaccessible. Stop I/O to vdisks before performing this operation.

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.

IMPORTANT: After the completion message is displayed, one must power cycle each MSA70 enclosure to complete the update process.

NOTE: This Firmware Smart Component will not inter-operate with HP Smart Update Manager (HP SUM) or with the HP Smart Update Firmware DVD (formerly Firmware Maintenance CD) in P2000/MSA2000 configurations.

Fixes
* Implemented a Single Cycle Hold Detection (SCHD) fix for SATA drives.
* Fixed an intermittent issue which resulted in MSA60/70 enclosures sending a BREAK primitive (sometimes referred to as a “SAS Link Broken” issue) to SmartArray and MSA array controllers.
* Fixed issues which resulted in a hung I/O module with blinking amber LEDs.
* Fixed an intermittent issue which resulted in MSA60/70 enclosures sending broadcast messages to the initiator, causing a temporary performance reduction.
* Fixed an intermittent issue where the enclosure returned incorrect Initiator Connection Tag (ICT) information to the initiator.
* Incorporated other minor miscellaneous firmware enhancements and fixes.

**Enhancements**

In MSA2000 G2 connection environments, Smart Component does not allow upgrading to 2.28 firmware if the MSA2000 G2 is not running M112 or later firmware.

**Supported Devices and Features**

The MSA70 2.5 inch drive enclosure can be attached to any of the HP Smart Array storage controllers:

- Smart Array E500
- Smart Array P212
- Smart Array P410
- Smart Array P411
- Smart Array P600
- Smart Array P800

The MSA70 2.5 inch drive enclosure can also be attached to any of the MSA2000 G2 or P2000 G3 storage products. However, this version of MSA70 firmware (2.28) is only supported behind a MSA2000 G2 storage array running M112 or later version of firmware.

**Online ROM Flash Component for Linux - HP HBA H220, H221, H222, H210i and H220i**

Version: 13.10.113.00 *(Recommended)*

**Fixes**

Resolved an issue to update thermal settings for OEM specific HBAs.

**Online ROM Flash Component for Linux - Smart Array P212, P410, P410i, P411, P711m, P712m, and P812**

Version: 5.70 (B) *(Recommended)*

**Important Note!**

Customers who already installed firmware version 5.70 do not need to update to 5.70(B).

**Fixes**
Problems Fixed:

- Fixed an issue with the HP P812 controller in which a rare lockup (code 0xD4) could occur upon reboot.
- Fixed an issue where disk location information was reported incorrectly in the HP DL580 G5 with the HP SAS Expander card.
- Fixed an issue where a RAID 6 volume could have inconsistent parity data in the last stripe in certain configurations after a volume transformation operation had occurred.
- Fixed an issue where removal of a HP P2000saG3 controller module could cause a controller lockup (code 0xAB).
- Fixed an issue where the hot-add of a 3TB drive to HP DL180G6 12 drive backplane could cause the controller to lock up (code 0x15).
- Fixed an issue where the controller would lock up (code 0xBC) due to incorrectly placing host data into a write-cache line that had a memory error.
- Fixed an issue where a controller configured for 100% read cache could cause a false "A cache error was detected. Run a diagnostic report for more information" error to be displayed in the 'Cache Status Details' column in ACU.
- Fixed an issue where after hot-adding a SATA disk to an MSA-60, MSA-70, or HP DL180-G6 12-drive backplane, the storage controller could become unresponsive. Reference Customer Advisory c03011608.
- Fixed an issue where the controller could become unresponsive while handling a hot-removal event when experiencing heavy I/O.
- Fixed an issue that could be experienced during a volume transformation operation. If a logical Unrecoverable Read Error occurred, it could cause the bad block(s) to be moved to the incorrect location in the transformed volume if the original volume was configured at an offset in the array.
- Fixed an issue where simultaneous handling of many Unrecoverable Read Errors on SATA disks supporting Native Command Queuing could result in a lockup (code 0x15).
- Fixed an issue where a disk of size >2TB could be incorrectly marked as failed.
- Fixed an issue that caused a lockup (code 0x13) with a SSD RAID 10 array under heavy I/O load.
- Fixed an issue where SATA disks could occasionally be marked as failed or missing during boot when no cache module is installed on the controller.
- Fixed an issue where a controller running with no cache module, attached to SATA disks, could encounter a lockup (code 0x15) when running HP Insight Diagnostics software or offline HDD firmware flash utility.
- Fixed an issue with cable pull between the controller and an enclosure IO module that would cause a lockup (code 0x13) in Open VMS / Solaris systems.
- Fixed several issues that caused the controller to become unresponsive at boot up time. Reference CA C03161926.
- Fixed the controller firmware to properly process F1 and F2 keys at startup. Reference CA c03127437.
- Fixed an issue in which 3TB drives were not managed as spares.
- Fixed an issue in which the Server Serial Number, Product ID, and Other Configurations were cleared or set to default. Reference Customer Advisory c03083515.

Online ROM Flash Component for Windows - HP 512MB Flash Backed Write Cache for B-Series Smart Array

Version: 0.38 (Recommended)
Important Note!

Online firmware update available for systems running supported Linux and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.

Fixes

Problems Fixed:

Resolved a temperature reporting issue that caused the fans in a Bladesystem c-Class enclosure to ramp up and down when the blade servers were powered on but idle (no I/O load).

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**Online ROM Flash Component for Windows - HP Gen8 Server Backplane Expander Firmware for HP Smart Array Controllers**

Version: 2.16 (Optional)

**Important Note!**

- Online Component updates are not supported with the HP H2xx Host Bus Adapters (HBA).
- Online backplane expander firmware update available for Smart Array Controllers configured in systems running supported Linux and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.

Enhancements

The following enhancements and features have been added to backplane expander firmware version 2.16:

- Online backplane expander firmware update available for Smart Array Controllers configured in systems running supported Linux and Microsoft Windows environments. Online Component update is not supported with the HP H2xx Host Bus Adapters (HBA).
- New expander backplane firmware activation with a warm server reboot following an online firmware update.
- Additional SATA drive log reporting.
- Detection and diagnostic reporting when damaged SAS connections are encountered.
- Support for the 500 GB SATA HDD MM0500GBKAK [PN 655708-B21 Option Kit, PN 655709-B21 ZMod]

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**Online ROM Flash Component for Windows - HP HBA(Host Bus Adapters) H220, H221, H222, H210i and H220i**

Version: 13.10.113.00 (Recommended)

**Fixes**

Resolved an issue to update thermal settings for OEM specific HBAs.
HP Service Pack for ProLiant 2012.10.0 Release Notes

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**Online ROM Flash Component for Windows - HP Smart Array B320i RAID controller**
Version: 13.10.113.00 *(Recommended)*

**Fixes**

**Problems Fixed:**

Corrected thermal values for improved temperature monitoring.

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**Online ROM Flash Component for Windows - Smart Array E200 and E200i**
Version: 1.86 (B) *(Critical)*

**Important Note!**

Customers who already installed firmware version 1.86 do not need to update to 1.86(B).

**To update firmware from Windows operating system on target server:**

- Place the Smart Component in a temporary directory.
- Double-click on the Smart Component.
- Follow the directions given by the Smart Component.
- Reboot your system if you would like the update to take effect immediately.

**HP recommends for remote deployment of this package that you obtain the most recent version of the Firmware Maintenance CD and follow these steps:**

- Place the Firmware Maintenance CD on a USB key using the USB Key Creator Utility.
- Place the firmware to be updated in the directory, `\HPFWUP900\hp\swpackages` on the USB key.
- Run Autorun from `\HPFWUP900\autorun.cmd` on the Firmware Maintenance CD from the USB key on a system.
- Select the Firmware Update tab.
- Click on the Install Firmware link to launch the HP Smart Update Manager.
- Follow the GUI to install the firmware on remote servers.

**Note:** The HP ProLiant 100-series servers are only supported on the Firmware Maintenance DVD 9.0 or greater.

**Fixes**

**Important Notes:**

**To update firmware from Windows operating system on target server:**

- Place the Smart Component in a temporary directory.
- Double-click on the Smart Component.
- Follow the directions given by the Smart Component.
- Reboot your system if you would like the update to take effect immediately.
HP recommends for remote deployment of this package that you obtain the most recent version of the Firmware Maintenance CD and follow these steps:

- Place the Firmware Maintenance CD on a USB key using the USB Key Creator Utility.
- Place the firmware to be updated in the directory, \HPFWUP900\hp\swpackages on the USB key.
- Run Autorun from \HPFWUP900\autorun.cmd on the Firmware Maintenance CD from the USB key on a system.
- Select the Firmware Update tab.
- Click on the Install Firmware link to launch the HP Smart Update Manager.
- Follow the GUI to install the firmware on remote servers.

Note: The HP ProLiant 100-series servers are only supported on the Firmware Maintenance DVD 9.0 or greater.

Problems Fixed:

- Fixed an issue where logical drives were not being detected during POST or reboot on the HP Smart Array E200i controller with firmware version 1.80, 1.82 or 1.84.
- Fixed an issue that caused the component to hang during installation under a Japanese Language version of the OS.

Online ROM Flash Component for Windows - Smart Array E500
Version: 7.24 (Recommended)

Important Note!

When running VMware ESX/ESXi, only offline updates are supported using the HP Smart Update Manager on the Firmware Maintenance CD.

Prerequisites

- Updating the HP DL360G5 System ROM to revision P58 3/9/08 or higher is required in addition to updating to this HP Smart Array firmware revision for the modified shutdown sequence to ensure sufficient time for HDD head parking of internal HDDs.
- Updating the HP MSA 60 and/or MSA 70 firmware version to 2.16 or higher is required to enable dual domain functionality.

Fixes

Firmware Dependency:

- Updating the HP DL360G5 System ROM to revision P58 3/9/08 or higher is required in addition to updating to this HP Smart Array firmware revision for the modified shutdown sequence to ensure sufficient time for HDD head parking of internal HDDs.
- Updating the HP MSA 60 and/or MSA 70 firmware version to 2.16 or higher is required to enable dual domain functionality.
HP Service Pack for ProLiant 2012.10.0 Release Notes

Problems Fixed:

- Resolved an issue where the server’s system event log would fill with Event ID 129 warnings and the Smart Array controller would become unresponsive.

Online ROM Flash Component for Windows - Smart Array P212, P410, P410i, P411, P711m, P712m, and P812
Version: 5.70 (C) (Recommended)

Important Note!
Customers who already installed firmware version 5.70 do not need to update to 5.70(C).

Fixes

Problems Fixed:

- Fixed an issue with the HP P812 controller in which a rare lockup (code 0xD4) could occur upon reboot.
- Fixed an issue where disk location information was reported incorrectly in the HP DL580 G5 with the HP SAS Expander card.
- Fixed an issue where a RAID 6 volume could have inconsistent parity data in the last stripe in certain configurations after a volume transformation operation had occurred.
- Fixed an issue where removal of a HP P2000saG3 controller module could cause a controller lockup (code 0xAB).
- Fixed an issue where the hot-add of a 3TB drive to HP DL180G6 12 drive backplane could cause the controller to lock up (code 0x15).
- Fixed an issue where the controller would lock up (code 0xBC) due to incorrectly placing host data into a write-cache line that had a memory error.
- Fixed an issue where a controller configured for 100% read cache could cause a false "A cache error was detected. Run a diagnostic report for more information" error to be displayed in the 'Cache Status Details' column in ACU.
- Fixed an issue where after hot-adding a SATA disk to an MSA-60, MSA-70, or HP DL180-G6 12-drive backplane, the storage controller could become unresponsive. Reference Customer Advisory c03011608.
- Fixed an issue where the controller could become unresponsive while handling a hot-removal event when experiencing heavy I/O.
- Fixed an issue that could be experienced during a volume transformation operation. If a logical Unrecovered Read Error occurred, it could cause the bad block(s) to be moved to the incorrect location in the transformed volume if the original volume was configured at an offset in the array.
- Fixed an issue where simultaneous handling of many Unrecoverable Read Errors on SATA disks supporting Native Command Queuing could result in a lockup (code 0x15).
- Fixed an issue where a disk of size >2TB could be incorrectly marked as failed.
- Fixed an issue that caused a lockup (code 0x13) with a SSD RAID 10 array under heavy I/O load.
- Fixed an issue where SATA disks could occasionally be marked as failed or missing during boot when no cache module is installed on the controller.
- Fixed an issue where a controller running with no cache module, attached to SATA disks, could encounter a lockup (code 0x15) when running HP Insight Diagnostics software or offline HDD firmware flash utility.
o Fixed an issue with cable pull between the controller and an enclosure IO module that would cause a lockup (code 0x13) in Open VMS / Solaris systems.
o Fixed several issues that caused the controller to become unresponsive at boot up time. Reference CA \texttt{C03161926}.
o Fixed the controller firmware to properly process F1 and F2 keys at startup. Reference CA \texttt{C03127437}.
o Fixed an issue in which 3TB drives were not managed as spares.
o Fixed an issue in which the Server Serial Number, Product ID, and Other Configurations were cleared or set to default. Reference Customer Advisory \texttt{C03083515}.
o Fixed an issue that caused the 5.70 component (cp017182.exe) to fail during installation under the German Language version of the OS. This issue is fixed in the \texttt{5.70(B)} component (cp017780.exe).

\textbf{Enhancements}

Added support for Microsoft Windows Server 2012. This enhancement was added in the \texttt{5.70(C)} component (cp018403.exe).

\textit{Online ROM Flash Component for Windows - Smart Array P220i, P222, P420i, P420, P421, P721m, and P822}

Version: 3.22 (Recommended)

\textbf{Fixes}

\textbf{Problems Fixed:}

Firmware version 3.22 has resolved the following problems:

- A temperature reporting issue caused the fans in a BladeSystem c-Class enclosure to ramp up and down when the blade servers were powered on but idle (no I/O load).
- The F5 and F8 keys could not be used from the serial console to start the ORCA or ORCA CLI utilities when the BIOS Serial Console Port was set to COM2 in RBSU.
- The Smart Array controller’s Option ROM could hang during controller initialization.
- A POST 1785 error could occur on systems that were rebooted while parity initialization was being performed on a non-boot LUN using the Rapid (Offline) parity initialization option.
- The Smart Array controller could hang on configurations with non-typical RAID 6 strip settings and a large number of physical drives.
- The Smart Array controller could hang during an unlikely drive media error handling condition while expanding a volume.

\textit{Online ROM Flash Component for Windows - Smart Array P400 and P400i}

Version: 7.24 (Recommended)

\textbf{Important Note!}

When running VMware ESX/ESXi, only offline updates are supported using the HP Smart Update.
Prerequisites

- Updating the HP DL360G5 System ROM to revision P58 3/9/08 or higher is required in addition to updating to this HP Smart Array firmware revision for the modified shutdown sequence to ensure sufficient time for HDD head parking of internal HDDs.
- Updating the HP MSA 60 and/or MSA 70 firmware version to 2.16 or higher is required to enable dual domain functionality.

Fixes

Firmware Dependency:

- Updating the HP DL360G5 System ROM to revision P58 3/9/08 or higher is required in addition to updating to this HP Smart Array firmware revision for the modified shutdown sequence to ensure sufficient time for HDD head parking of internal HDDs.
- Updating the HP MSA 60 and/or MSA 70 firmware version to 2.16 or higher is required to enable dual domain functionality.

Problems Fixed:

Resolved an issue where the server’s system event log would fill with Event ID 129 warnings and the Smart Array controller would become unresponsive.

Online ROM Flash Component for Windows - Smart Array P600

Version: 2.04 (B) (Recommended)

Important Note!

If you have previously updated to version 2.04, another update is not needed. The changes for 2.04(B) did not affect FW functionality.

HP recommends for remote deployment of this package that you obtain the most recent version of the Firmware Maintenance CD and follow these steps:

- Place the Firmware Maintenance CD on a USB key using the USB Key Creator Utility.
- Place the firmware to be updated in the directory, /compaq/swpackages on the USB key.
- Run Autorun from \autorun\autorun_win.exe on the Firmware Maintenance CD from the USB key on a system.
- Select the Firmware Update tab.
- Click on the Install Firmware link to launch the HP Smart Update Manager.
- Follow the GUI to install the firmware on remote servers.

Fixes

Important Notes:

HP recommends for remote deployment of this package that you obtain the most recent version of
the Firmware Maintenance CD and follow these steps:

- Place the Firmware Maintenance CD on a USB key using the USB Key Creator Utility.
- Place the firmware to be updated in the directory, /compaq/swpackages on the USB key.
- Run Autorun from \_autorun\autorun_win.exe on the Firmware Maintenance CD from the USB key on a system.
- Select the Firmware Update tab.
- Click on the Install Firmware link to launch the HP Smart Update Manager.
- Follow the GUI to install the firmware on remote servers.

Problems Fixed:

- Fixed an issue where incorrect data may be returned for a SCSI MODE SENSE command sent to a SATA drive.
- Fixed an issue where Sequential reads on SATA drives in an HP StorageWorks MSA60 may lead to drive failures.

Enhancements

Updated the component flashing engine.

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**Online ROM Flash Component for Windows - Smart Array P700m**

Version: 7.24 (Recommended)

**Important Note!**

When running VMware ESX/ESXi, only offline updates are supported using the HP Smart Update Manager on the Firmware Maintenance CD.

**Fixes**

**Firmware Dependency:**

- Updating the HP DL360G5 System ROM to revision P58 3/9/08 or higher is required in addition to updating to this HP Smart Array firmware revision for the modified shutdown sequence to ensure sufficient time for HDD head parking of internal HDDs.
- Updating the HP MSA 60 and/or MSA 70 firmware version to 2.16 or higher is required to enable dual domain functionality.

**Problems Fixed:**

Resolved an issue where the server’s system event log would fill with Event ID 129 warnings and the Smart Array controller would become unresponsive.

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**Online ROM Flash Component for Windows - Smart Array P800**

Version: 7.24 (Recommended)

**Important Note!**
When running VMware ESX/ESXi, only offline updates are supported using the HP Smart Update Manager on the Firmware Maintenance CD.

**Prerequisites**

- Updating the HP DL360G5 System ROM to revision P58 3/9/08 or higher is required in addition to updating to this HP Smart Array firmware revision for the modified shutdown sequence to ensure sufficient time for HDD head parking of internal HDDs.
- Updating the HP MSA 60 and/or MSA 70 firmware version to 2.16 or higher is required to enable dual domain functionality.

**Fixes**

**Firmware Dependency:**

- Updating the HP DL360G5 System ROM to revision P58 3/9/08 or higher is required in addition to updating to this HP Smart Array firmware revision for the modified shutdown sequence to ensure sufficient time for HDD head parking of internal HDDs.
- Updating the HP MSA 60 and/or MSA 70 firmware version to 2.16 or higher is required to enable dual domain functionality.

**Problems Fixed:**

Resolved an issue where the server’s system event log would fill with Event ID 129 warnings and the Smart Array controller would become unresponsive.

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**Supplemental Update / Online ROM Flash Component for Linux - HP 512MB Flash Backed Write Cache for B-Series Smart Array**

Version: 0.38 *(Recommended)*

**Important Note!**

Online firmware update available for systems running supported Linux and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.

**Fixes**

**Problems Fixed:**

Resolved a temperature reporting issue that caused the fans in a Bladesystem c-Class enclosure to ramp up and down when the blade servers were powered on but idle (no I/O load).

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**Supplemental Update / Online ROM Flash Component for Linux - HP Smart Array B320i RAID controller**

Version: 13.10.113.00 *(Recommended)*

**Fixes**

**Problems Fixed:**
Corrected thermal values for improved temperature monitoring.

**Supplemental Update / Online ROM Flash Component for Linux - Smart Array E500**
Version: 7.24 (Recommended)

**Important Note!**
When running VMware ESX/ESXi, only offline updates are supported using the HP Smart Update Manager on the Firmware Maintenance CD.

**Prerequisites**
- Updating the HP DL360G5 System ROM to revision P58 3/9/08 or higher is required in addition to updating to this HP Smart Array firmware revision for the modified shutdown sequence to ensure sufficient time for HDD head parking of internal HDDs.
- Updating the HP MSA 60 and/or MSA 70 firmware version to 2.16 or higher is required to enable dual domain functionality.

**Fixes**

**Firmware Dependency:**
- Updating the HP DL360G5 System ROM to revision P58 3/9/08 or higher is required in addition to updating to this HP Smart Array firmware revision for the modified shutdown sequence to ensure sufficient time for HDD head parking of internal HDDs.
- Updating the HP MSA 60 and/or MSA 70 firmware version to 2.16 or higher is required to enable dual domain functionality.

**Problems Fixed:**
Resolved an issue where the server’s system event log would fill with Event ID 129 warnings and the Smart Array controller would become unresponsive.

**Supplemental Update / Online ROM Flash Component for Linux - Smart Array P220i, P222, P420i, P420, P421, P721m, and P822**
Version: 3.22 (Recommended)

**Fixes**

**Problems Fixed:**
Firmware version 3.22 has resolved the following problems:

- A temperature reporting issue caused the fans in a BladeSystem c-Class enclosure to ramp up and down when the blade servers were powered on but idle (no I/O load).
- The F5 and F8 keys could not be used from the serial console to start the ORCA or ORCA CLI utilities when the BIOS Serial Console Port was set to COM2 in RBSU.
The Smart Array controller’s Option ROM could hang during controller initialization.

- A POST 1785 error could occur on systems that were rebooted while parity initialization was being performed on a non-boot LUN using the Rapid (Offline) parity initialization option.
- The Smart Array controller could hang on configurations with non-typical RAID 6 strip settings and a large number of physical drives.
- The Smart Array controller could hang during an unlikely drive media error handling condition while expanding a volume.

**Supplemental Update / Online ROM Flash Component for Linux - Smart Array P400 and P400i**

Version: 7.24 (Recommended)

**Important Note!**

When running VMware ESX/ESXi, only offline updates are supported using the HP Smart Update Manager on the Firmware Maintenance CD.

**Prerequisites**

- Updating the HP DL360G5 System ROM to revision P58 3/9/08 or higher is required in addition to updating to this HP Smart Array firmware revision for the modified shutdown sequence to ensure sufficient time for HDD head parking of internal HDDs.
- Updating the HP MSA 60 and/or MSA 70 firmware version to 2.16 or higher is required to enable dual domain functionality.

**Fixes**

**Firmware Dependency:**

- Updating the HP DL360G5 System ROM to revision P58 3/9/08 or higher is required in addition to updating to this HP Smart Array firmware revision for the modified shutdown sequence to ensure sufficient time for HDD head parking of internal HDDs.
- Updating the HP MSA 60 and/or MSA 70 firmware version to 2.16 or higher is required to enable dual domain functionality.

**Problems Fixed:**

Resolved an issue where the server’s system event log would fill with Event ID 129 warnings and the Smart Array controller would become unresponsive.

**Supplemental Update / Online ROM Flash Component for Linux - Smart Array P700m**

Version: 7.24 (Recommended)

**Important Note!**

When running VMware ESX/ESXi, only offline updates are supported using the HP Smart Update Manager on the Firmware Maintenance CD.
**Fixes**

**Firmware Dependency:**
- Updating the HP DL360G5 System ROM to revision P58 3/9/08 or higher is required in addition to updating to this HP Smart Array firmware revision for the modified shutdown sequence to ensure sufficient time for HDD head parking of internal HDDs.
- Updating the HP MSA 60 and/or MSA 70 firmware version to 2.16 or higher is required to enable dual domain functionality.

**Problems Fixed:**

Resolved an issue where the server’s system event log would fill with Event ID 129 warnings and the Smart Array controller would become unresponsive.

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**Supplemental Update / Online ROM Flash Component for Linux - Smart Array P800**

Version: 7.24 *(Recommended)*

**Important Note!**

When running VMware ESX/ESXi, only offline updates are supported using the HP Smart Update Manager on the Firmware Maintenance CD.

**Prerequisites**

- Updating the HP DL360G5 System ROM to revision P58 3/9/08 or higher is required in addition to updating to this HP Smart Array firmware revision for the modified shutdown sequence to ensure sufficient time for HDD head parking of internal HDDs.
- Updating the HP MSA 60 and/or MSA 70 firmware version to 2.16 or higher is required to enable dual domain functionality.

**Fixes**

**Firmware Dependency:**
- Updating the HP DL360G5 System ROM to revision P58 3/9/08 or higher is required in addition to updating to this HP Smart Array firmware revision for the modified shutdown sequence to ensure sufficient time for HDD head parking of internal HDDs.
- Updating the HP MSA 60 and/or MSA 70 firmware version to 2.16 or higher is required to enable dual domain functionality.

**Problems Fixed:**

Resolved an issue where the server’s system event log would fill with Event ID 129 warnings and the Smart Array controller would become unresponsive.

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**Supplemental Update / Online ROM Flash Component for Linux – HP Gen8 Server Backplane Expander Firmware for HP Smart Array Controllers and HP HBA Controllers**

Version: 2.16 *(Optional)*
Important Note!

- Online Component updates are not supported with the HP H2xx Host Bus Adapters (HBA).
- Online backplane expander firmware update available for Smart Array Controllers configured in systems running supported Linux and Microsoft Windows environments. All other OSes would require an offline update using the SPP and HP SUM.

Enhancements

Enhancements/New Features:

The following enhancements and features have been added to backplane expander firmware version 2.16:

- Online backplane expander firmware update available for Smart Array Controllers configured in systems running supported Linux and Microsoft Windows environments. Online Component update is not supported with the HP H2xx Host Bus Adapters (HBA).
- New expander backplane firmware activation with a warm server reboot following an online firmware update.
- Additional SATA drive log reporting.
- Detection and diagnostic reporting when damaged SAS connections are encountered.
- Support for the 500 GB SATA HDD MM0500GBKAK [PN 655708-B21 Option Kit, PN 655709-B21 ZMod]

Firmware - Storage Fibre Channel

HP Firmware Flash for Brocade Fibre Channel Host Bus Adapters - Linux (x86)

Version: 2012.10.01 (Optional)

Important Note!

Release Notes:
HP StorageWorks Brocade Fibre Channel Host Bus Adapters Release Notes

Prerequisites

The following software is required before installing this firmware. The software is available from the Support & Drivers web site at hp.com.

- Linux Driver and Host Connectivity Manager (HCM) Integrated Installation kit, version 3.1.0.0
- HP Fibre Channel Enablement Kit for Linux, version 1.2-14

Enhancements

Added BIOS version 3.1.0.0

Supported Devices and Features

This firmware supports the following HP adapters:
HP Firmware Flash for Brocade Fibre Channel Host Bus Adapters - Linux (x86_64)
Version: 2012.10.01 (Optional)

Important Note!
Release Notes:
HP StorageWorks Brocade Fibre Channel Host Bus Adapters Release Notes

Prerequisites
The following software is required before installing this firmware. The software is available from the Support & Drivers web site at hp.com.

- Linux Driver and Host Connectivity Manager (HCM) Integrated Installation kit, version 3.1.0.0
- HP Fibre Channel Enablement Kit for Linux, version 1.2-14

Enhancements
Added BIOS 3.1.0.0

Supported Devices and Features
This firmware supports the following HP adapters:

- HP 41B PCIe 4Gb Fibre Channel Single Port Host Bus Adapter
- HP 42B PCIe 4Gb Fibre Channel Dual Port Host Bus Adapter
- HP 81B PCIe 8Gb Fibre Channel Single Port Host Bus Adapter
- HP 82B PCIe 8Gb Fibre Channel Dual Port Host Bus Adapter
- Brocade 804 8Gb Fibre Channel HBA for c-Class BladeSystem

HP Firmware Flash for Emulex Fibre Channel Host Bus and Converged Network Adapters - Linux (x86)
Version: 2012.08.01 (Optional)

Prerequisites

- The hp-fc-enablement kit must be installed. It can be obtained from the SPP.
- Environment must be running an add-on lpfc driver for FC flash
- Environment must be running an add-on be2net driver for CNA flash
- Environment must be running an add-on be2iscsi driver
- 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**
Contains fix for FCoE multipath recovery failure.

**Enhancements**

Updated Emulex CNAs firmware to version 4.1.450.7

Firmware/bios for 4/8/16Gb FC options contained in this component:

- 4Gb - fw: 2.82x4; Universal Boot: version 5.03a13, 2.12a8 bios (standup HBA's)
- 4Gb - fw: 2.82x4; Universal Boot: version 6.03a11, 3.11a5 bios (mezzanine cards)
- 8Gb - fw: 2.00a4; Universal Boot: version 5.20a0, 2.12a9 bios (standup HBA's)
- 8Gb - fw: 2.00a4; Universal Boot: version 6.03a11, 3.11a5 bios (mezzanine cards)
- 8Gb - fw: 2.00a8; Universal Boot: version 6.10a4 3.12a3 bios (LPe1205A)
- 16Gb Universal Boot, version 1.0.11.110 (SN1000E)

Firmware for all CNA and NIC options contained in this component:

version 4.1.450.7

**Supported Devices and Features**

- HP StorageWorks FC2243 4 Gb PCI-X 2.0 DC HBA
- HP FC2242SR 4Gb PCIe DC Host Bus Adapter
- HP StorageWorks FC2143 4 Gb PCI-X 2.0 HBA
- HP FC2142SR 4Gb PCIe Host Bus Adapter
- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP CN1100E Dual Port Converged Network Adapter
- HP Flex-10 10Gb 2-port 552M Adapter
- HP NC553m 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC553i 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC552m 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC552SFP 10Gb 2-port Ethernet Server Adapter
- HP NC551m Dual Port FlexFabric 10Gb Converged Network Adapter
- HP NC551i Dual Port FlexFabric 10Gb Network Adapter
- HP NC550SFP Dual Port 10GbE Server Adapter
- HP FlexFabric 10Gb 2-port 554M Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP NC550m Dual Port Flex-10 10Gbe BL-c Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- Emulex LPe1205 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- Emulex LPe1105 4Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
HP Firmware Flash for Emulex Fibre Channel Host Bus and Converged Network Adapters - Linux (x86_64)
Version: 2012.08.01 (Optional)

Prerequisites

- The hp-fc-enablement kit must be installed. It can be obtained from the SPP.
- Environment must be running an add-on lpfc driver for FC flash
- Environment must be running an add-on be2net driver for CNA flash
- Environment must be running an add-on be2iscsi driver
- 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
Contains fix for FCoE multipath recovery failure.

Enhancements

Updated all CNA and NIC firmware to version 4.1.450.7

Firmware/bios for Fibre Channel options supported by this component:

- 4Gb - fw: 2.82x4; Universal Boot: version 5.03a13, 2.12a8 bios (standup HBA's)
- 4Gb - fw: 2.82x4; Universal Boot: version 6.03a11, 3.11a5 bios (mezzanine cards)
- 8Gb - fw: 2.00a4; Universal Boot: version 5.20a0, 2.12a9 bios (standup HBA's)
- 8Gb - fw: 2.00a4; Universal Boot: version 6.03a11, 3.11a5 bios (mezzanine cards)
- 8Gb - fw: 2.00a8; Universal Boot: version 6.10a4 3.12a3 bios (LPe1205A)
- 16Gb Universal Boot, version 1.0.11.110 (SN1000E)

Firmware for all CNA and NIC options supported by this component:

version 4.1.450.7

Supported Devices and Features

- HP StorageWorks FC2243 4 Gb PCI-X 2.0 DC HBA
- HP FC2242SR 4Gb PCIe DC Host Bus Adapter
- HP StorageWorks FC2143 4 Gb PCI-X 2.0 HBA
- HP FC2142SR 4Gb PCIe Host Bus Adapter
- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
HP Service Pack for ProLiant 2012.10.0 Release Notes

- HP CN1100E Dual Port Converged Network Adapter
- HP Flex-10 10Gb 2-port 552M Adapter
- HP NC553m 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC553i 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC552m 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC552SFP 10Gb 2-port Ethernet Server Adapter
- HP NC551m Dual Port FlexFabric 10Gb Converged Network Adapter
- HP NC551i Dual Port FlexFabric 10Gb Network Adapter
- HP NC5505FP Dual Port 10GbE Server Adapter
- HP FlexFabric 10Gb 2-port 554M Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP NC550m Dual Port Flex-10 10Gb eBL-c Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- Emulex LPe1205 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- Emulex LPe1105 4Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

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**HP Firmware Flash for QLogic Fibre Channel Host Bus Adapters - Linux (x86)**

Version: 2012.10.01 *(Optional)*

**Important Note!**

Release Notes: [HP StorageWorks QLogic Adapters Release Notes](#)

**Enhancements**

- Added new firmware/BIOS packages
- 4 Gb HBA/Mezz cards, 2.03AF
  - Firmware 5.03.15
  - BIOS 3.13
- 8 Gb HBA/Mezz cards, 2.58AF
  - Firmware 5.03.15
  - BIOS 3.13
- QMH2572 8 Gb FC Mezz, 2.59AF
  - Firmware 5.06.04
  - BIOS 3.13

**Supported Devices and Features**

This firmware supports the following HP adapters:

- HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA
- HP StorageWorks FC1243 4Gb PCI-X 2.0 Dual Channel HBA
- HP FC1142SR 4Gb PCIe Host Bus Adapter
- HP FC1242SR 4Gb PCIe DC Host Bus Adapter
- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- QLogic QMH2562 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
HP Firmware Flash for QLogic Fibre Channel Host Bus Adapters - Linux (x86_64)
Version: 2012.10.01 *(Optional)*

**Important Note!**
Release Notes:
[HP StorageWorks QLogic Adapters Release Notes](#)

**Enhancements**
- Added new firmware/BIOS packages

- 4 Gb HBA/Mezz cards, 2.03AF
  - Firmware 5.03.15
  - BIOS 3.13
- 8 Gb HBA/Mezz cards, 2.58AF
  - Firmware 5.03.15
  - BIOS 3.13
- QMH2572 8 Gb FC Mezz, 2.59AF
  - Firmware 5.06.04
  - BIOS 3.13

**Supported Devices and Features**
This firmware supports the following HP adapters:

- HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA
- HP StorageWorks FC1243 4Gb PCI-X 2.0 Dual Channel HBA
- HP FC1142SR 4Gb PCIe Host Bus Adapter
- HP FC1242SR 4Gb PCIe DC Host Bus Adapter
- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- QLogic QMH2562 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- QLogic QMH2462 4Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

**HP Firmware Online Flash for Brocade Fibre Channel Host Bus Adapters - Windows 2008 (x86)**
Version: 2012.10.01 *(Optional)*

**Important Note!**
Release Notes:
[HP StorageWorks Brocade Fibre Channel Host Bus Adapters Release Notes](#)
HP Service Pack for ProLiant 2012.10.0 Release Notes

Prerequisites

The following software is required before installing this firmware. The software is available from the Support & Drivers web site at hp.com.

HP Storage x86 Brocade Storport Fibre Channel Host Bus Adapter Driver for Microsoft Windows Server 2008

Enhancements

Added new BIOS version 3.1.0.0

Supported Devices and Features

This firmware supports the following HP adapters:

- HP 41B PCIe 4Gb Fibre Channel Single Port Host Bus Adapter
- HP 42B PCIe 4Gb Fibre Channel Dual Port Host Bus Adapter
- HP 81B PCIe 8Gb Fibre Channel Single Port Host Bus Adapter
- HP 82B PCIe 8Gb Fibre Channel Dual Port Host Bus Adapter
- Brocade 804 8Gb Fibre Channel HBA for c-Class BladeSystem

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**HP Firmware Online Flash for Brocade Fibre Channel Host Bus Adapters - Windows 2008/2012 (x64)**

Version: 2012.10.01 (Optional)

Important Note!

Release Notes:

HP StorageWorks Brocade Fibre Channel Host Bus Adapters Release Notes

Prerequisites

The following software is required before installing this firmware. The software is available from the Support & Drivers web site at hp.com.

- HP Storage x64 Brocade Storport Fibre Channel Host Bus Adapter Driver for Microsoft Windows Server 2008
- HP Storage x64 Brocade Storport Fibre Channel Host Bus Adapter Driver for Microsoft Windows Server 2012

Enhancements

- Added support for Windows Server 2012
- Contains boot bios version 3.1.0.0

Supported Devices and Features

This firmware supports the following HP adapters:
**Prerequisites**

The associated Windows drivers need to be installed. They can be obtained from the Service Pack for Proliants (SPP).

**Fixes**

Contains fix for FCoE multipath recovery failure.

**Enhancements**

Updated all CNA and NIC firmware to version 4.1.450.7

Firmware/bios for Fibre Channel options contained in this component:

- 4Gb - fw: 2.82x4; Universal Boot: version 5.03a13, 2.12a8 bios (standup HBA's)
- 4Gb - fw: 2.82x4; Universal Boot: version 6.03a11, 3.11a5 bios (mezzanine cards)
- 8Gb - fw: 2.00a4; Universal Boot: version 5.20a0, 2.12a9 bios (standup HBA's)
- 8Gb - fw: 2.00a4; Universal Boot: version 6.03a11, 3.11a5 bios (mezzanine cards)
- 8Gb - fw: 2.00a8; Universal Boot: version 6.10a4 3.12a3 bios (LPe1205A)
- 16Gb Universal Boot, version 1.0.11.110 (SN1000E)

Firmware for all CNA and NIC options contained in this component:

- version 4.1.450.7

**Supported Devices and Features**

- HP StorageWorks FC2243 4 Gb PCI-X 2.0 DC HBA
- HP FC2242SR 4Gb PCIe DC Host Bus Adapter
- HP StorageWorks FC2143 4 Gb PCI-X 2.0 HBA
- HP FC2142SR 4Gb PCIe Host Bus Adapter
- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
HP Service Pack for ProLiant 2012.10.0 Release Notes

- HP CN1100E Dual Port Converged Network Adapter
- HP Flex-10 10Gb 2-port 552M Adapter
- HP NC553m 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC553i 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC552m 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC552sFP 10Gb 2-port Ethernet Server Adapter
- HP NC551m Dual Port FlexFabric 10Gb Converged Network Adapter
- HP NC551sFP Dual Port 10GbE Server Adapter
- HP FlexFabric 10Gb 2-port 554M Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP NC550m Dual Port Flex-10 10GbE BL-c Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- Emulex LPe1205 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- Emulex LPe1105 4Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

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**HP Firmware Online Flash for Emulex Fibre Channel Host Bus and Converged Network Adapters - Windows 2008/2012 x64**

Version: 2012.08.01 (B) *(Optional)*

**Prerequisites**

The associated Windows drivers need to be installed. They can be obtained from the Service Pack for Proliants (SPP).

**Fixes**

CN1100E: iSCSI Data Corruption with CN1100E due to Residual Underflow

TigerShark10 HW: DCC Unavailable on Emulex 4.1.450.1 FW

**Enhancements**

Updated BE2/BE3 firmware to version 4.1.450.7.

- Firmware/bios for 4 & 8Gb FC options contained in this component:
  - 4Gb Universal Boot, version 5.03a13 - 2.82x4 fw, 2.12a8 bios (standup HBA's)
  - 4Gb Universal Boot, version 6.03a11 - 2.82x4 fw, 3.11a5 bios (mezzanine cards)
  - 8Gb Universal Boot, version 5.20a0 - 2.00a4 fw, 2.12a9 bios (standup HBA's)
  - 8Gb Universal Boot, version 6.03a11 - 2.00a4 fw, 3.11a5 bios (mezzanine cards)
  - 8Gb Universal Boot, version 6.10a4 - 2.00a8 fw, 3.12a3 bios (LPe1205A)
  - 16Gb Universal Boot, version 1.0.11.110 (LPe1600x)

- Firmware for CNA options contained in this component:
  - BE3 firmware version 4.1.450.7
  - BE2 firmware version 4.1.450.7
Supported Devices and Features

- HP StorageWorks FC2243 4 Gb PCI-X 2.0 DC HBA
- HP FC2242SR 4Gb PCIe DC Host Bus Adapter
- HP StorageWorks FC2143 4 Gb PCI-X 2.0 HBA
- HP FC2142SR 4Gb PCIe Host Bus Adapter
- HP SN1000E 16Gb Dual Port Fibre Channel Host Bus Adapter
- HP SN1000E 16Gb Single Port Fibre Channel Host Bus Adapter
- HP 82E 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- HP 81E 8Gb Single Port PCIe Fibre Channel Host Bus Adapter
- HP CN1100E Dual Port Converged Network Adapter
- HP Flex-10 10Gb 2-port 552M Adapter
- HP NC553m 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC553i 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC552m 10Gb 2-port FlexFabric Converged Network Adapter
- HP NC552SFP 10Gb 2-port Ethernet Server Adapter
- HP NC551m Dual Port FlexFabric 10Gb Converged Network Adapter
- HP NC551i Dual Port FlexFabric 10Gb Network Adapter
- HP NC550SFP Dual Port 10GbE Server Adapter
- HP FlexFabric 10Gb 2-port 554M Adapter
- HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter
- HP FlexFabric 10Gb 2-port 554FLB Adapter
- HP NC550m Dual Port Flex-10 10Gbe BL-c Adapter
- HP LPe1205A 8Gb Fibre Channel Host Bus Adapter for BladeSystem c-Class
- Emulex LPe1205 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- Emulex LPe1105 4Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

HP Firmware Online Flash for QLogic Fibre Channel Host Bus Adapters - Windows 2008 (x86)
Version: 2012.10.01 (Optional)

Important Note!
Release Notes:
HP StorageWorks QLogic Adapters Release Notes

Prerequisites
The HP supplied QLogic driver and enablement kit must be installed prior to this firmware component being identified by HP SUM for deployment. The software is available from www.hp.com/go/fchba and www.hp.com/go/cna. Select your product and then select the Software and Drivers page to find the required driver and enablement kit.

Supported Devices and Features
This firmware supports the following HP adapters:

- HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA
- HP StorageWorks FC1243 4Gb PCI-X 2.0 Dual Channel HBA
- HP FC1142SR 4Gb PCIe Host Bus Adapter
- HP FC1242SR 4Gb PCIe DC Host Bus Adapter
- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
HP Service Pack for ProLiant 2012.10.0 Release Notes

- QLogic QMH2562 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- QLogic QMH2462 4Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

**HP Firmware Online Flash for QLogic Fibre Channel Host Bus Adapters - Windows 2008/2012 (x64)**

Version: 2012.10.01 (Optional)

**Important Note!**
Release Notes: [HP StorageWorks QLogic Adapters Release Notes](#)

**Prerequisites**
The HP supplied QLogic driver and enablement kit must be installed prior to this firmware component being identified by HP SUM for deployment. The software is available from [www.hp.com/go/fchba](http://www.hp.com/go/fchba) and [www.hp.com/go/cna](http://www.hp.com/go/cna). Select your product and then select the Software and Drivers page to find the required driver and enablement kit.

**Supported Devices and Features**
This firmware supports the following HP adapters:

- HP StorageWorks FC1143 4Gb PCI-X 2.0 HBA
- HP StorageWorks FC1243 4Gb PCI-X 2.0 Dual Channel HBA
- HP FC1142SR 4Gb PCIe Host Bus Adapter
- HP FC1242SR 4Gb PCIe DC Host Bus Adapter
- HP 81Q PCIe Fibre Channel Host Bus Adapter
- HP 82Q 8Gb Dual Port PCIe Fibre Channel Host Bus Adapter
- QLogic QMH2562 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- QLogic QMH2462 4Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem
- HP QMH2572 8Gb Fibre Channel Host Bus Adapter for c-Class BladeSystem

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**Firmware - Storage Tape**

**HP Storage Tape Firmware for Linux**
Version: 3.7.0.0 (Recommended)

**Important Note!**
On HP ProLiant G6/7 servers with an HP Smart Array P212 Storage Controller card, an error can occur in the following configuration:
- HP SAS Tape drive
- HP Smart Array P212 Controller card
- SUSE LINUX Enterprise Server 11 (x86) or SUSE LINUX Enterprise Server 11 (AMD64/EM64T)
- Version 4.6.24-5 of HP ProLiant Smart Array Controller (x86/AMD32) Driver for SUSE LINUX Enterprise Server 11 (x86) or HP ProLiant Smart Array Controller (AMD64/EM64T) Driver for SUSE LINUX Enterprise Server 11 (x86)
Server 11 (AMD64/EM64T) - These drivers are available on HP.COM as an individual downloads and bundled in the HP ProLiant Support Pack 8.51 for SUSE LINUX Enterprise Server 11 (i686) or HP ProLiant Support Pack 8.51 for SUSE LINUX Enterprise Server 11 (x86_64), respectively.

Note: When these drivers are installed on the target system, the driver filename begins with ‘cciss’.

Upon installation of the above mentioned cciss driver, an HP initrd boot environment is created and made the default. In this environment, attempting to update a SAS tape drive firmware results in the drive going offline (without updating the drive firmware) and the system must be rebooted to restore the drive connection.

The following workaround exists to allow firmware updates and expected drive results.

1. Open a command line terminal
2. Enter the command: gedit/boot/grub/menu.lst
3. Once the file is open, change the line “setting default=x” where x = any number, to “setting default=0”
4. Save the file
5. Reboot the system

The system will now boot into the default SLES environment and allow expected functionality to occur.

Prerequisites

Make sure that the tape drive is available and not running any backup, restore, copy, or verify jobs before attempting to upgrade the tape drive firmware from a Linux system. When the tape drive is engaged in one of these jobs, the firmware upgrade process cannot begin until the tape drive has completed processing of any current jobs.

Fixes

The Fixes defined below are only applicable for the following firmware:

**HP DAT 160 SAS Tape Drive Firmware Revision WSB8**
Firmware includes fixes which address the following issues:

- Fixed an issue that could cause SAS link resets when connected to certain HBAs
- Fixed some settings to prevent SAS controller time-outs
- Fixed the potential for command time-outs by accommodating HBA long Open Rejects.

**HP DAT 72 SCSI Tape Drive Firmware Revision WPBC**
Firmware includes fixes which address the following issues:

- Fixed a firmware issue where the drive would experience a bus reset from certain bus configuration commands if the drive was busy.
**HP Storage Tape Firmware for Microsoft Windows**
Version: 3.7.0.0 (b) *(Recommended)*

**Fixes**

The Fixes defined below are only applicable for the following firmware:

**HP DAT 160 SAS Tape Drive Firmware Revision WSB8**
Firmware includes fixes which address the following issues:

- Fixed an issue that could cause SAS link resets when connected to certain HBAs
- Fixed some settings to prevent SAS controller time-outs
- Fixed the potential for command time-outs by accommodating HBA long Open Rejects.

**HP DAT 72 SCSI Tape Drive Firmware Revision WPBC**
Firmware includes fixes which address the following issues:

- Fixed a firmware issue where the drive would experience a bus reset from certain bus configuration commands if the drive was busy.

**Enhancements**

*Added support for new operating systems:*

- Microsoft Windows Server 2012
- Microsoft Windows 8 (32-bit)
- Microsoft Windows 8 (64-bit)

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**Software - Lights-Out Management**

**Headless Server Registry Update for Windows**
Version: 1.0.0.0 (F) *(Optional)*

**Enhancements**

*Allow installation on Windows Server 2012.*

**HP Lights-Out Online Configuration Utility for Linux**
Version: 4.0.0-0 *(Optional)*

**Prerequisites**

This utility requires the following minimum firmware revisions:

- Integrated Lights-Out 2 firmware v1.00 or later
- Integrated Lights-Out 3 firmware v1.00 or later
Integrated Lights-Out 4 firmware v1.00 or later

The management interface driver and management agents must be installed on the server.

 Fixes

Capture configuration using /a /w switches may have given a ‘Feature Not Supported’ error.

 Enhancements

Added support for iLO 4.

HP Lights-Out Online Configuration Utility for Linux
Version: 4.0.1-0 (Recommended)

Prerequisites

This utility requires the following minimum firmware revisions:

- Integrated Lights-Out 2 firmware v1.00 or later
- Integrated Lights-Out 3 firmware v1.00 or later
- Integrated Lights-Out 4 firmware v1.00 or later

The management interface driver and management agents must be installed on the server.

 Fixes

- HPONCFG for linux sometimes displayed the error message "Error opening libcpqci.so: libcpqci.so: cannot open shared object file: No such file or directory".
- An error message indicating 'Invalid Integer' with a status code 0x1 may appear while trying to restore iLO settings from a captured file through HPONCFG.

 Enhancements

None

HP Lights-Out Online Configuration Utility for Windows 2003/2008 x64 Editions
Version: 4.0.1.0 (Recommended)

Prerequisites

This utility requires the following minimum firmware revisions:

- Integrated Lights-Out 2 firmware v1.00 or later
- Integrated Lights-Out 3 firmware v1.00 or later
- Integrated Lights-Out 4 firmware v1.00 or later
HP Service Pack for ProLiant 2012.10.0 Release Notes

The management interface driver must be installed on the server.

.Net Framework 2.0 (full version) or later is required to launch HPONCFG GUI.

Fixes

- Configuring iLO on a Blade Server with the HPONCFG Graphical User Interface failed with a message indicating Lights-Out Functionality is disabled.
- An error message indicating 'Invalid Integer' with a status code 0x1 appeared while trying to restore iLO settings from a captured configuration file through HPONCFG.
- Server UUID, Model and System ROM details were not displayed on some servers.
- Resetting iLO 3 to Factory Default through HPONCFG Graphical User Interface did not clear the iLO event logs.
- 'Error encountered in execution of hponcfg' message displayed while trying to set iLO to Factory Defaults with the HPONCFG Graphical User Interface.
- The HPONCFG Graphical User Interface incorrectly displayed the Server UUID in a string format.
- The “OK” button was disabled when the password field was blank while restoring the captured configuration settings using the HPONCFG Graphical User Interface.
- XML Login event was not cleared from iLO Event Log after executing Clear Event Log command from HPONCFG Graphical User Interface.

Enhancements

None

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Version: 4.0.1.0 *(Recommended)*

**Prerequisites**

This utility requires the following minimum firmware revisions:

- Integrated Lights-Out 2 firmware v1.00 or later
- Integrated Lights-Out 3 firmware v1.00 or later
- Integrated Lights-Out 4 firmware v1.00 or later

The management interface driver must be installed on the server.

.Net Framework 2.0 (full version) or later is required to launch HPONCFG GUI.

**Fixes**

- Configuring iLO on a Blade Server with the HPONCFG Graphical User Interface failed with a message indicating Lights-Out Functionality is disabled.
- An error message indicating 'Invalid Integer' with a status code 0x1 appeared while trying to restore iLO settings from a captured configuration file through HPONCFG.
- Server UUID, Model and System ROM details were not displayed on some servers.
- Resetting iLO 3 to Factory Default through HPONCFG Graphical User Interface did not clear the
iLO event logs.
  
  - 'Error encountered in execution of hponcfg' message displayed while trying to set iLO to Factory Defaults with the HPONCFG Graphical User Interface.
  - The HPONCFG Graphical User Interface incorrectly displayed the Server UUID in a string format.
  - The “OK” button was disabled when the password field was blank while restoring the captured configuration settings using the HPONCFG Graphical User Interface.
  - XML Login event was not cleared from iLO Event Log after executing Clear Event Log command from HPONCFG Graphical User Interface.

**Enhancements**

None

---

**PFA Server Registry Update for Windows**

Version: 1.0.0.0 (C) *(Optional)*

**Enhancements**

Add support for Windows Server 2012.

---

**Software - Storage Controller**

**HP ProLiant Smart Array SAS/SATA Event Notification Service for Windows Server 2008 (x86) 32-bit**

Version: 6.30.0.32 *(Optional)*

**Enhancements**

Added logging of cache events to the Integrated Management Log.

---

**HP ProLiant Smart Array SAS/SATA Event Notification Service for Windows Server 2008 x64 Editions**

Version: 6.30.0.64 (A) *(Optional)*

**Important Note!**

If the target controller was successfully updated to version 6.30.0.64 of this service, then it is not necessary to update to version 6.30.0.64(A)

**Enhancements**

Added logging of cache events to the Integrated Management Log.
**Software - Storage Fibre Channel HBA**

**Fibreutils for HP Storage Fibre Channel Host Bus Adapters for Linux (x86)**
Version: 3.2-5 *(Optional)*

**Prerequisites**
Requires the following packages to be installed: glibc libgcc libstdc++ bash perl

**Enhancements**
Updated for SLES 11 SP2

**Fibreutils for HP Storage Fibre Channel Host Bus Adapters for Linux (x86_64)**
Version: 3.2-5 *(Optional)*

**Prerequisites**
Requires the following packages to be installed: glibc libgcc libstdc++ bash perl

**Enhancements**
Updated for SLES 11 SP2

**HP Fibre Channel Enablement Kit for Linux**
Version: 1.2-12 *(Optional)*

**Enhancements**
Added support for RHEL 6.3

**HP Fibre Channel Enablement Kit for Linux**
Version: 1.2-14 *(Optional)*

**Enhancements**
Added support for Brocade driver version 3.1.0.0
### System Management Software

#### HP Array Configuration Utility - Linux

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<thead>
<tr>
<th>Software</th>
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<tr>
<td>HP Array Configuration Utility CLI for Linux</td>
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#### HP Insight Diagnostics

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#### HP Insight Management Agents

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<tr>
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#### HP Insight Management WBEM

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#### HP ProLiant Agentless Management Service

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#### HP ProLiant Array Configuration Utility (CLI)

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<td>HP ProLiant Array Configuration Utility (CLI) for Windows 64-bit</td>
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#### HP SNMP Agents

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</tbody>
</table>
### HP Array Configuration Utility CLI for Linux

**Version:** 9.20.9.0 *(Optional)*

**Enhancements**
- Support for Smart Array P721m

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**Version:** 9.30.15.0 *(Optional)*

**Enhancements**
- Logical Drive Movement enhancements
**HP Array Configuration Utility CLI for Linux 64-bit**
Version: 9.30.15.0 (Optional)

**Enhancements**
Logical Drive Movement enhancements

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**HP Array Configuration Utility for Linux**
Version: 9.20.9.0 (Optional)

**Prerequisites**

The HP Array Configuration Utility for Linux requires the HP System Management Homepage software to be installed on the server. If the HP System Management Homepage software is not already installed on your server, please download it from HP.com and install it before installing the HP Array Configuration Utility for Linux.

**HP ProLiant 100-series customers:** Because the HP System Management Homepage software is not supported for use with HP ProLiant 100-series servers, the graphical (GUI) version of the Array Configuration Utility for Linux cannot be installed. HP ProLiant 100-series customers may instead use the "HP Array Configuration Utility CLI for Linux" which is command-line driven and does not require the System Management Homepage software to be loaded on the server.

**IMPORTANT UPDATE:** ACU (GUI) for Linux can now be run without requiring the HP System Management Homepage. ACU now supports a Local Application Mode for Linux. The HP System Management Homepage is still supported, but no longer required to run the ACU GUI.

To invoke, enter the following at the command prompt:

cpqacuxe -nosmh

The command will start ACU in a new Firefox browser window. When the browser window is closed, ACU will automatically stop. This is only valid for the loopback interface, and not visible to external network connections.

**Enhancements**
Support for Smart Array P721m

---

**HP Array Configuration Utility for Linux**
Version: 9.30.15.0 (Optional)

**Prerequisites**

The HP Array Configuration Utility for Linux requires the HP System Management Homepage software to be installed on the server. If the HP System Management Homepage software is not already installed on your server, please download it from HP.com and install it before installing the HP Array Configuration Utility for Linux.
**HP ProLiant 100-series customers:** Because the HP System Management Homepage software is not supported for use with HP ProLiant 100-series servers, the graphical (GUI) version of the Array Configuration Utility for Linux cannot be installed. HP ProLiant 100-series customers may instead use the "HP Array Configuration Utility CLI for Linux" which is command-line driven and does not require the System Management Homepage software to be loaded on the server.

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The command will start ACU in a new Firefox browser window. When the browser window is closed, ACU will automatically stop. This is only valid for the loopback interface, and not visible to external network connections.

**Enhancements**

Logical Drive Movement enhancements

---

**HP Array Configuration Utility for Linux 64-bit**

Version: 9.30.15.0 (Optional)

**Prerequisites**

The HP Array Configuration Utility for Linux requires the HP System Management Homepage software to be installed on the server. If the HP System Management Homepage software is not already installed on your server, please download it from HP.com and install it before installing the HP Array Configuration Utility for Linux.

**HP ProLiant 100-series customers:** Because the HP System Management Homepage software is not supported for use with HP ProLiant 100-series servers, the graphical (GUI) version of the Array Configuration Utility for Linux cannot be installed. HP ProLiant 100-series customers may instead use the "HP Array Configuration Utility CLI for Linux" which is command-line driven and does not require the System Management Homepage software to be loaded on the server.

**IMPORTANT UPDATE:** ACU (GUI) for Linux can now be run without requiring the HP System Management Homepage. ACU now supports a Local Application Mode for Linux. The HP System Management Homepage is still supported, but no longer required to run the ACU GUI.

To invoke, enter the following at the command prompt:

cpqacuxe -nosmh

The command will start ACU in a new Firefox browser window. When the browser window is closed, ACU will automatically stop. This is only valid for the loopback interface, and not visible to external network connections.

**Enhancements**
Logical Drive Movement enhancements

**HP Insight Diagnostics Online Edition for Linux (x86 32-bit)**
Version: 9.2.0-397 (Optional)

**Prerequisites**
The following component(s) are required for HP Insight Diagnostics Online Edition for Linux:

- HP System Management Homepage, version 7.0.0-12 or higher

The following component(s) are recommended for HP Insight Diagnostics Online Edition for Linux to make full use of its capabilities:

- HP System Health Application, version 9.0.0 or higher

**Enhancements**
Added support for the following new product(s):

- HP ProLiant WS460c Gen8 Workstation Blade

---

**HP Insight Diagnostics Online Edition for Linux (x86 32-bit)**
Version: 9.3.0-466 (Optional)

**Prerequisites**
The following component(s) are required for HP Insight Diagnostics Online Edition for Linux:

- HP System Management Homepage, version 7.0.0-12 or higher

The following component(s) are recommended for HP Insight Diagnostics Online Edition for Linux to make full use of its capabilities:

- HP System Health Application, version 9.0.0 or higher

**Fixes**
Contains fixes to support new servers.

**Enhancements**
Added support for new HP ProLiant Gen8 servers and options

- HP ProLiant SL4540 Gen8
- HP ProLiant SL4545 G7
- HP ProLiant SL270s Gen8 Server
HP Service Pack for ProLiant 2012.10.0 Release Notes

See the HP Service Pack for ProLiant Release Notes for more information.

See the HP Service Pack for ProLiant Server Support Guide for information on supported servers.

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**HP Insight Diagnostics Online Edition for Linux (x86-64)**
Version: 9.3.0-466 (Optional)

**Prerequisites**
The following component(s) are required for HP Insight Diagnostics Online Edition for Linux:

- HP System Management Homepage, version 7.0.0-12 or higher

The following component(s) are recommended for HP Insight Diagnostics Online Edition for Linux to make full use of its capabilities:

- HP System Health Application, version 9.0.0 or higher

**Enhancements**

Added support for new HP ProLiant Gen8 servers and options

- HP ProLiant SL4540 Gen8
- HP ProLiant SL4545 G7
- HP ProLiant SL270s Gen8 Server

See the HP Service Pack for ProLiant Release Notes for more information.

See the HP Service Pack for ProLiant Server Support Guide for information on supported servers.

---

**HP Insight Diagnostics Online Edition for Windows**
Version: 9.3.0.4614 (Optional)

**Important Note!**

**Known Limitations**

Under HP 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 HP Modular Smart Array). The controllers affected are:

- Smart Array 6i Controller
- Smart Array 641 Controller
- Smart Array 642 Controller
- Smart Array 6402 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 HP Insight Diagnostics.

As a work-around, HP Insight Diagnostics Online Edition for Windows, version 8.5 or earlier, may be used to display logical drive properties in Survey. The HP Array Configuration Utility, available from hp.com, can also display information about logical drives attached to these controllers.

Prerequisites

The following component(s) are required for HP Insight Diagnostics Online Edition for Linux:

- HP System Management Homepage, version 7.0.0-12 or higher

The following component(s) are recommended for HP Insight Diagnostics Online Edition for Linux to make full use of its capabilities:

- HP ProLiant Agentless Management Service, version 9.0.0.0 or higher
- HP ProLiant Integrated Lights-Out Management Interface Driver, version 1.15.0.0 or higher

Enhancements

Added support for new HP ProLiant Gen8 servers and options

- HP ProLiant SL4540 Gen8
- HP ProLiant SL4545 G7
- HP ProLiant SL270s Gen8 Server

See the HP Service Pack for ProLiant Release Notes for more information.

See the HP Service Pack for ProLiant Server Support Guide for information on supported servers.

---

**HP Insight Diagnostics Online Edition for Windows x64 Editions**

Version: 9.3.0.4614 (Optional)

**Important Note!**

**Known Limitations**

Under HP 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 HP Modular Smart Array). The controllers affected are:

- Smart Array 6i Controller
- Smart Array 641 Controller
- Smart Array 642 Controller
HP Service Pack for ProLiant 2012.10.0 Release Notes

- 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 HP Insight Diagnostics.

As a work-around, HP Insight Diagnostics Online Edition for Windows, version **8.5 or earlier**, may be used to display logical drive properties in Survey. The HP Array Configuration Utility, available from hp.com, can also display information about logical drives attached to these controllers.

**Prerequisites**

The following component(s) are required for HP Insight Diagnostics Online Edition for Linux:

HP System Management Homepage, version 7.0.0-12 or higher

The following component(s) are recommended for HP Insight Diagnostics Online Edition for Linux to make full use of its capabilities:

- HP ProLiant Agentless Management Service, version 9.0.0.0 or higher
- HP ProLiant Integrated Lights-Out Management Interface Driver, version 1.15.0.0 or higher

**Enhancements**

Added support for new HP ProLiant Gen8 servers and options

- HP ProLiant SL4540 Gen8
- HP ProLiant SL4545 G7
- HP ProLiant SL270s Gen8 Server

Added support for Microsoft Windows Server 2012

See the [HP Service Pack for ProLiant Release Notes](#) for more information.

See the [HP Service Pack for ProLiant Server Support Guide](#) for information on supported servers.

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**HP Insight Management Agents for Windows Server**

Version: 9.25.0.0 (**Optional**)

**Important Note!**

Support for ProLiant Gen 8 servers

Workaround for known issue

Problem: HP Foundation Agents not starting automatically after system restart has been observed on few systems intermittently. If this occurs selecting the 'SNMP' datasource from System Management Homepage will not be possible.
Workaround: From the Windows "Services" program right click on "HP Insight Foundation Agents" and select Start.

**Prerequisites**
SNMP Service.

**Fixes**
- Storage Agents - Fix in SAS sub agent. Storage box number was previously always reported as "1" when multiple boxes are attached to one port on H-series HBAs.
- Storage Agents - Fix in Smart Array sub agent. "Percent Rebuild Complete" value was previously incorrect when a 2TB (or larger) physical drive is used as part of a logical drive and rebuilding.

**Enhancements**
Storage agents: Support for SSD drives for caching

---

**HP Insight Management Agents for Windows Server x64 Editions**
Version: 9.25.0.0 *(Recommended)*

**Important Note!**
Support for ProLiant Gen 8 Servers

Important Note: Workaround for known issue

Problem: HP Foundation Agents not starting automatically after system restart has been observed on few systems intermittently. If this occurs selecting the 'SNMP'datasoue from System Management Homepage will not be possible.

Workaround: From the Windows "Services" program right click on "HP Insight Foundation Agents" and select Start.

**Prerequisites**
SNMP service.

**Fixes**
- Storage Agents - Fix in SAS sub agent. Storage box number was previously always reported as "1" when multiple boxes are attached to one port on H-series HBAs.
- Storage Agents - Fix in Smart Array sub agent. "Percent Rebuild Complete" value was previously incorrect when a 2TB (or larger) physical drive is used as part of a logical drive and rebuilding.

**Enhancements**
Storage agents: Support for SSD drives for caching

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HP Insight Management WBEM Providers for Windows Server
Version: 9.2.5.0 (Optional)

Prerequisites

The HP Insight Management WBEM Providers version 9.0.0.0 require storage, network, system management controller, and Lights-Out interface drivers from PSP 9.00.

In addition, the System Management Homepage (SMH) component is required for a single server web-based user interface.

Enhancements

Support for Windows 2012

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HP Insight Management WBEM Providers for Windows Server x64 Editions
Version: 9.2.5.0 (Optional)

Prerequisites

The HP Insight Management WBEM Providers version 9.0.0.0 require storage, network, system management controller, and Lights-Out interface drivers from PSP 9.00.

In addition, the System Management Homepage (SMH) component is required for a single server web-based user interface.

Enhancements

Support for Windows 2012

---

HP ProLiant Agentless Management Service for Red Hat Enterprise Linux 5 (AMD64/EM64T)
Version: 1.2.5 (Optional)

Important Note!

- hp-ams only supported on HP ProLiant Gen8 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
Prerequisites

There are no dependencies for hp-ams

Fixes

Fixed an issue where periodic CPU usage would cause either Segmentation Faults or Floating Point Exceptions when doing periodic Active Health Service (AHS) logging.

Enhancements

- Added support for New HP ProLiant Gen8 Servers.
- When CPU usage was being calculated the percentage of time being spent in either "User" or "kernel" mode it was based on the time spent in either state from when the system was started. This has been changed to reflect the amount of time spent in each state during the sample period.

HP ProLiant Agentless Management Service for Red Hat Enterprise Linux 5 (x86)
Version: 1.2.5 (Optional)

Important Note!

- hp-ams only supported on HP ProLiant Gen8 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

Prerequisites

There are no dependencies for hp-ams

Fixes

Fixed an issue where periodic CPU usage would cause either Segmentation Faults or Floating Point Exceptions when doing periodic Active Health Service (AHS) logging.

Enhancements

- Added support for New HP ProLiant Gen8 Servers.
- When CPU usage was being calculated the percentage of time being spent in either "User" or "kernel" mode it was based on the time spent in either state from when the system was started. This has been changed to reflect the amount of time spent in each state during the sample period.
**HP ProLiant Agentless Management Service for Red Hat Enterprise Linux 6 (AMD64/EM64T)**  
Version: 1.2.5 *(Optional)*

**Important Note!**

- hp-ams only supported on HP ProLiant Gen8 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

**Prerequisites**

There are no dependencies for hp-ams

**Fixes**

Fixed an issue where periodic CPU usage would cause either Segmentation Faults or Floating Point Exceptions when doing periodic Active Health Service (AHS) logging.

**Enhancements**

- Added support for New HP ProLiant Gen8 Servers.
- When CPU usage was being calculated the percentage of time being spent in either "User" or "kernel" mode it was based on the time spent in either state from when the system was started. This has been changed to reflect the amount of time spent in each state during the sample period.

---

**HP ProLiant Agentless Management Service for Red Hat Enterprise Linux 6 (x86)**  
Version: 1.2.5 *(Optional)*

**Important Note!**

- hp-ams only supported on HP ProLiant Gen8 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
Prerequisites

There are no dependencies for hp-ams

Fixes

Fixed an issue where periodic CPU usage would cause either Segmentation Faults or Floating Point Exceptions when doing periodic Active Health Service (AHS) logging.

Enhancements

- Added support for New HP ProLiant Gen8 Servers.
- When CPU usage was being calculated the percentage of time being spent in either "User" or "kernel" mode it was based on the time spent in either state from when the system was started. This has been changed to reflect the amount of time spent in each state during the sample period.

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**HP ProLiant Agentless Management Service for SUSE LINUX Enterprise Server 10 (AMD64/EM64T)**

Version: 1.2.5 (Optional)

**Important Note**

- hp-ams only supported on HP ProLiant Gen8 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

Prerequisites

There are no dependencies for hp-ams

Fixes

Fixed an issue where periodic CPU usage would cause either Segmentation Faults or Floating Point Exceptions when doing periodic Active Health Service (AHS) logging.

Enhancements

- Added support for New HP ProLiant Gen8 Servers.
- When CPU usage was being calculated the percentage of time being spent in either "User" or "kernel" mode it was based on the time spent in either state from when the system was started. This has
been changed to reflect the amount of time spent in each state during the sample period.

---

**HP ProLiant Agentless Management Service for SUSE LINUX Enterprise Server 10 (x86)**

Version: 1.2.5 (Optional)

**Important Note!**

- hp-ams only supported on HP ProLiant Gen8 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

**Prerequisites**

There are no dependencies for hp-ams

**Fixes**

Fixed an issue where periodic CPU usage would cause either Segmentation Faults or Floating Point Exceptions when doing periodic Active Health Service (AHS) logging.

**Enhancements**

- Added support for New HP ProLiant Gen8 Servers.
- When CPU usage was being calculated the percentage of time being spent in either "User" or "kernel" mode it was based on the time spent in either state from when the system was started. This has been changed to reflect the amount of time spent in each state during the sample period.

---

**HP ProLiant Agentless Management Service for SUSE LINUX Enterprise Server 11 (AMD64/EM64T)**

Version: 1.2.5 (Optional)

**Important Note!**

- hp-ams only supported on HP ProLiant Gen8 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
Prerequisites

There are no dependencies for hp-ams

Fixes

Fixed an issue where periodic CPU usage would cause either Segmentation Faults or Floating Point Exceptions when doing periodic Active Health Service (AHS) logging.

Enhancements

- Added support for New HP ProLiant Gen8 Servers.
- When CPU usage was being calculated the percentage of time being spent in either "User" or "kernel" mode it was based on the time spent in either state from when the system was started. This has been changed to reflect the amount of time spent in each state during the sample period.

**HP ProLiant Agentless Management Service for SUSE LINUX Enterprise Server 11 (x86)**

Version: 1.2.0 (Optional)

**Important Note!**

- hp-ams only supported on HP ProLiant Gen8 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

**Prerequisites**

None

**Enhancements**

- Added support for new HP ProLiant Gen8 Servers.
- The HP iLO 4 firmware v1.10 and later will send Integrated Management Log (IML) events to HP AMS, which then logs them with the OS's syslog() service.
- Installed HP packages are now logged to Active Health Service (AHS).
**HP ProLiant Agentless Management Service for SUSE LINUX Enterprise Server 11 (x86)**

Version: 1.2.5 (Optional)

**Important Note!**

- hp-ams only supported on HP ProLiant Gen8 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

**Prerequisites**

There are no dependencies for hp-ams

**Fixes**

Fixed an issue where periodic CPU usage would cause either Segmentation Faults or Floating Point Exceptions when doing periodic Active Health Service (AHS) logging.

**Enhancements**

- Added support for New HP ProLiant Gen8 Servers.
- When CPU usage was being calculated the percentage of time being spent in either "User" or "kernel" mode it was based on the time spent in either state from when the system was started. This has been changed to reflect the amount of time spent in each state during the sample period.

---

**HP ProLiant Agentless Management Service for Windows X64**

Version: 9.25.0.0 (Optional)

**Important Note!**

Only required for Windows Server 2012.

**Prerequisites**

The HP ProLiant iLO 3/4 Channel Interface Driver for Windows X64 (version 3.4.0.0 or later) must be installed prior to this component.

**Enhancements**

Add support for Windows Server 2012.

---

**HP ProLiant Agentless Management Service for Windows X86**

Version: 9.10.0.0 (Optional)
Prerequisites

The **HP ProLiant iLO 3/4 Channel Interface Driver for Windows X86** (version 3.4.0.0 or later) must be installed prior to this component.

Fixes

Faster update of NIC data after network cable is inserted or removed.

HP ProLiant Array Configuration Utility (CLI) for Windows

Version: 9.30.15.0 *(Optional)*

**Enhancements**

Logical Drive Movement enhancements

HP ProLiant Array Configuration Utility (CLI) for Windows 64-bit

Version: 9.30.15.0 *(Optional)*

**Enhancements**

Logical Drive Movement enhancements

HP ProLiant Array Configuration Utility for Windows

Version: 9.30.15.0 *(Optional)*

**Enhancements**

Logical Drive Movement enhancements

HP ProLiant Array Configuration Utility for Windows 64-bit

Version: 9.30.15.0 *(Optional)*

**Enhancements**

Logical Drive Movement enhancements

HP ProLiant Integrated Management Log Viewer for Windows Server x64 Editions

Version: 6.3.0.0 *(Optional)*

**Important Note!**

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.

**Fixes**
Corrected Japanese localization.

---

**HP ProLiant Integrated Management Log Viewer for Windows Server x86 Editions**

*Version: 6.3.0.0 (Optional)*

**Important Note!**

Version 6.2.0.0 of this application is the final version that will support installation under Windows Server 2003.

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, a 64-bit release of this application is available. Version 5.22.0.0 and later of the 32-bit release will not install under 64-bit Windows.

Starting with version 5.3.0.0, installation is based on the Microsoft Installer (MSI). If you wish to downgrade to version 5.2.0.0 or earlier, use Windows Add or Remove Programs to uninstall this application before installing the earlier version.

**Fixes**
Corrected Japanese localization.

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**HP SNMP Agents for Red Hat Enterprise Linux 5 (AMD64/EM64T)**

*Version: 9.2.5 (Optional)*

**Important Note!**

The HP System Health Application and Insight Management Agents (hpasm) 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 hpasm v8.0.0 and allow for a more modular installation choices.

**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 following issues:

- HP Insight Management Agents appears to cause snmpd daemon to segmentation fault (Segfault).
- HP Insight Management Agents information disappears in HP SMH (HP System Management Homepage) after 6 hours.

Enhancements
Added support for New HP ProLiant Gen8 Servers.

---

**HP SNMP Agents for Red Hat Enterprise Linux 5 (x86)**
Version: 9.2.5 (Optional)

**Important Note!**

The HP System Health Application and Insight Management Agents (hpasm) 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 hpasm v8.0.0 and allow for a more modular installation choices.

Prerequisites
To get the list of all dependency files for hp-snmp-agents type:

```
rpm --qp --requires hp-snmp-agents<version>.rpm
```

Fixes
Fixed following issues:

- HP Insight Management Agents appears to cause snmpd daemon to segmentation fault (Segfault).
- HP Insight Management Agents information disappears in HP SMH (HP System Management
Enhancements

- Added support for New HP ProLiant Gen8 Servers.

---

**HP SNMP Agents for Red Hat Enterprise Linux 6 (AMD64/EM64T)**

Version: 9.2.5 (Optional)

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 following issues:

- HP Insight Management Agents appears to cause `snmpd` daemon to segmentation fault (Segfault).
- HP Insight Management Agents information disappears in HP SMH (HP System Management Homepage) after 6 hours.

---

Enhancements

- Added support for New HP ProLiant Gen8 Servers.

---

**HP SNMP Agents for Red Hat Enterprise Linux 6 (x86)**

Version: 9.2.5 (Optional)

Prerequisites

To get the list of all dependency files for `hp-snmp-agents` type:

```
rpm -qp --requires hp-snmp-agents<version>.rpm
```

Fixes

Fixed following issues:

- HP Insight Management Agents appears to cause `snmpd` daemon to segmentation fault (Segfault).
- HP Insight Management Agents information disappears in HP SMH (HP System Management Homepage) after 6 hours.
Enhancements
Added support for New HP ProLiant Gen8 Servers.

HP SNMP Agents for SUSE LINUX Enterprise Server 10 (AMD64/EM64T)
Version: 9.2.5 (Optional)

Important Note!

The HP System Health Application and Insight Management Agents (hpasm) 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 hpasm v8.0.0 and allow for a more modular installation choices.

Prerequisites

The hp-health and hp-snmp-agents run as 32 bit applications in the x86_64 environment. The Linux kernel 32 bit compatibility must be enabled (usual default for Linux) and the 32 bit compatibility libraries must be present.

To get the list of all dependency files for hp-snmp-agents type:

```bash
rpm --qp --requires hp-snmp-agents<version>.rpm
```

Fixes

Fixed following issues:

- HP Insight Management Agents appears to cause snmpd daemon to segmentation fault (Segfault).
- HP Insight Management Agents information disappears in HP SMH (HP System Management Homepage) after 6 hours.

Enhancements
Added support for New HP ProLiant Gen8 Servers.

HP SNMP Agents for SUSE LINUX Enterprise Server 10 (x86)
Version: 9.2.5 (Optional)

Important Note!

The HP System Health Application and Insight Management Agents (hpasm) version 8.0.0 was split into
HP Service Pack for ProLiant 2012.10.0 Release Notes

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 hpasm v8.0.0 and allow for a more modular installation choices.

Prerequisites

To get the list of all dependency files for hp-snmp-agents type:

```
rpm -qp --requires hp-snmp-agents=<version>.rpm
```

Fixes

Fixed following issues:

- HP Insight Management Agents appears to cause snmpd daemon to segmentation fault (Segfault).
- HP Insight Management Agents information disappears in HP SMH (HP System Management Homepage) after 6 hours.

Enhancements

Added support for New HP ProLiant Gen8 Servers.

---

**HP SNMP Agents for SUSE LINUX Enterprise Server 11 (AMD64/EM64T)**

Version: 9.2.5 (Optional)

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 following issues:

- HP Insight Management Agents appears to cause snmpd daemon to segmentation fault (Segfault).
- HP Insight Management Agents information disappears in HP SMH (HP System Management Homepage) after 6 hours.
**Enhancements**

Added support for New HP ProLiant Gen8 Servers.

---

**HP SNMP Agents for SUSE LINUX Enterprise Server 11 (x86)**

Version: 9.2.0 *(Optional)*

**Prerequisites**

To get the list of all dependency files for hp-snmp-agents type:

```
rpm -qp --requires hp-snmp-agents<version>.rpm
```

---

**Enhancements**

Added support for New HP ProLiant Gen8 Servers.

---

**HP SNMP Agents for SUSE LINUX Enterprise Server 11 (x86)**

Version: 9.2.5 *(Optional)*

**Prerequisites**

To get the list of all dependency files for hp-snmp-agents type:

```
rpm -qp --requires hp-snmp-agents<version>.rpm
```

**Fixes**

Fixed following issues:

- HP Insight Management Agents appears to cause snmpd daemon to segmentation fault (Segfault).
- HP Insight Management Agents information disappears in HP SMH (HP System Management Homepage) after 6 hours.

---

**Enhancements**

Added support for New HP ProLiant Gen8 Servers.

---

**HP System Health Application and Command Line Utilities for Red Hat Enterprise Linux 5 (AMD64/EM64T)**

Version: 9.2.5 *(Optional)*

**Important Note!**

The HP System Health Application and Insight Management Agents (hpasm) 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 Service Pack for ProLiant 2012.10.0 Release Notes

- HP System Management Homepage Templates (hp-smh-templates) version 8.1.0

These three packages provide equivalent functionality as hpasm v8.0.0 and allow for a more modular installation choice.

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 truncating issue for CQSBTK EV when doing set serial and other commands.

Enhancements

Added support for New HP ProLiant Gen8 Servers.

---

**HP System Health Application and Command Line Utilities for Red Hat Enterprise Linux 5 (x86)**

Version: 9.2.5 (Optional)

Important Note!

The HP System Health Application and Insight Management Agents (hpasm) 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 hpasm v8.0.0 and allow for a more modular installation choice.

Prerequisites

To get the list of all dependency files for hp-health, type:

```
rpm --qp --requires hp-health-< version >.rpm
```

Fixes

Fixed truncating issue for CQSBTK EV when doing set serial and other commands.

Enhancements

Added support for New HP ProLiant Gen8 Servers.
**HP System Health Application and Command Line Utilities for Red Hat Enterprise Linux 6 (AMD64/EM64T)**
Version: 9.2.5 (Optional)

**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 truncating issue for CQSBTK EV when doing set serial and other commands.

**Enhancements**

Added support for New HP ProLiant Gen8 Servers.

---

**HP System Health Application and Command Line Utilities for Red Hat Enterprise Linux 6 (x86)**
Version: 9.2.5 (Optional)

**Prerequisites**

To get the list of all dependency files for hp-health, type:

```
rpm -qp --requires hp-health<version>.rpm
```

**Fixes**

Fixed truncating issue for CQSBTK EV when doing set serial and other commands.

**Enhancements**

Added support for New HP ProLiant Gen8 Servers.

---

**HP System Health Application and Command Line Utilities for SUSE LINUX Enterprise Server 10 (AMD64/EM64T)**
Version: 9.2.5 (Optional)

**Important Note!**

The HP System Health Application and Insight Management Agents (hpasm) 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 Service Pack for ProLiant 2012.10.0 Release Notes

- HP System Management Homepage Templates (hp-smh-templates) version 8.1.0

These three packages provide equivalent functionality as hpasm v8.0.0 and allow for a more modular installation choice.

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 truncating issue for CQSBTK EV when doing set serial and other commands.

Enhancements

Added support for New HP ProLiant Gen8 Servers.

---

HP System Health Application and Command Line Utilities for SUSE LINUX Enterprise Server 10 (x86)
Version: 9.2.5 (Optional)

Important Note!

The HP System Health Application and Insight Management Agents (hpasm) 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 hpasm v8.0.0 and allow for a more modular installation choice.

Prerequisites

To get the list of all dependency files for hp-health, type:

```
rpm --qp --requires hp-health-< version >.rpm
```

Fixes

Fixed truncating issue for CQSBTK EV when doing set serial and other commands.

Enhancements

Added support for New HP ProLiant Gen8 Servers.

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HP | Service Pack for ProLiant 2012.10.0
**HP System Health Application and Command Line Utilities for SUSE LINUX Enterprise Server 11 (AMD64/EM64T)**

Version: 9.2.5 *(Optional)*

**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 truncating issue for CQSBTK EV when doing set serial and other commands.

**Enhancements**

Added support for New HP ProLiant Gen8 Servers.

---

**HP System Health Application and Command Line Utilities for SUSE LINUX Enterprise Server 11 (x86)**

Version: 9.2.0 *(Optional)*

**Prerequisites**

To get the list of all dependency files for hp-health, type:

```
rpm --qp --requires hp-health-<version>.rpm
```  

**Enhancements**

Added support for New HP ProLiant Gen8 Servers.

---

**HP System Health Application and Command Line Utilities for SUSE LINUX Enterprise Server 11 (x86)**

Version: 9.2.5 *(Optional)*

**Prerequisites**

To get the list of all dependency files for hp-health, type:

```
rpm --qp --requires hp-health-<version>.rpm
```  

**Fixes**

Fixed truncating issue for CQSBTK EV when doing set serial and other commands.

**Enhancements**
Added support for New HP ProLiant Gen8 Servers.

**HP System Management Homepage for Linux (AMD64/EM64T)**

Version: 7.1.2-3 *(Recommended)*

**Prerequisites**

The rpm will check for prerequisites.

**Fixes**

- Improved security features.
- Improved logging on few Operating Systems

**Enhancements**

- Enable support of following OS:
  - Red Hat Client 5.8
- Updated the following components:
  - OpenSSL to version 1.0.1c
  - PHP to version 5.3.14
- Improvement in following components:
  - RPM packaging

---

**HP System Management Homepage for Linux (x86)**

Version: 7.1.2-3 *(Recommended)*

**Prerequisites**

The rpm will search for prerequisites and notify the user of any not present on the machine.

**Fixes**

- Improved security features
- Improved logging on few Operating Systems

**Enhancements**

- Enable support of following OS:
  - Red Hat Client 5.8
- Updated the following components:
  - OpenSSL to version 1.0.1c
  - PHP to version 5.3.14
- Improvement in following components:
  - RPM packaging
**HP System Management Homepage for Linux (x86)**
Version: 7.1.1-1 *(Critical)*

**Prerequisites**
The rpm will search for prerequisites and notify the user of any not present on the machine.

** Fixes**
Improved security features of PHP.

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**HP System Management Homepage for Windows x64**
Version: 7.1.2.3 (B) *(Recommended)*

** Fixes**
- Improved security features
- Improved logging on few Operating Systems

**Enhancements**
- Enable support of following OS:
  - Windows Server 2012
- Updated the following components:
  - OpenSSL to version 1.0.1c
  - PHP to version 5.3.14

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**HP System Management Homepage for Windows x86**
Version: 7.1.2.3 *(Recommended)*

** Fixes**
- Improved security features
- Improved logging on few Operating Systems

**Enhancements**
- Enable support of following OS:
  - Windows Server 2012
- Updated the following components:
  - OpenSSL to version 1.0.1c
  - PHP to version 5.3.14
**HP System Management Homepage Templates for Linux**

Version: 9.2.0 *(Optional)*

**Important Note!**

The HP System Health Application and Insight Management Agents (hpasm) 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 hpasm v8.0.0 and allow for a more modular installation choices.

**Prerequisites**

To get the list of all dependency files for hp-smh-templates type:

`rpm --qp --requires hp-smh-templates<version>.rpm`

**Enhancements**

Added support for New HP ProLiant Gen8 Servers.

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**HP System Management Homepage Templates for Linux**

Version: 9.2.5 *(Optional)*

**Important Note!**

The HP System Health Application and Insight Management Agents (hpasm) 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 hpasm v8.0.0 and allow for a more modular installation choices.

**Prerequisites**

To get the list of all dependency files for hp-smh-templates type:

`rpm --qp --requires hp-smh-templates<version>.rpm`

**Fixes**

Fixed following issues:
- HP Insight Management Agents appears to cause snmpd daemon to segmentation fault (Segfault).
- HP Insight Management Agents information disappears in HP SMH (HP System Management Homepage) after 6 hours.

**Enhancements**
- Added support for New HP ProLiant Gen8 Servers.

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**HP Version Control Agent for Linux**

**Version:** 7.1.0-6 *(Recommended)*

**Important Note!**

Enable automatic update or Perform "Update from hp.com now" in Version Control Repository Manager to obtain the latest HP Smart Update Manager (HPSUM) or manually download Linux HPSUM from ftp://ftp.hp.com/pub/softlib2/software1/sc-linux/p809864560/v71069/hpsum-5.0.0.scexe and place in repository folder of Version Control Repository Manager Version 6.1 and above.

HPSUM is recommended for the deployment of software and firmware that are stored in the repository.

**Prerequisites**

Install the latest HP System Management Homepage (hpsmh RPM) from the following link:


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**Enhancements**

Enhancement: support for model number based filtering in report page

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**HP Version Control Agent for Linux**

**Version:** 7.1.2-0 *(Recommended)*

**Important Note!**

Enable automatic update or Perform "Update from hp.com now" in Version Control Repository Manager to obtain the latest HP Smart Update Manager (HPSUM) or manually download Linux HPSUM from ftp://ftp.hp.com/pub/softlib2/software1/sc-linux/p809864560/v55460/hpsum-4.0.0.scexe and place in repository folder of Version Control Repository Manager Version 6.1 and above.

HPSUM is recommended for the deployment of software and firmware that are stored in the repository.

**Prerequisites**

Install the latest HP System Management Homepage (hpsmh RPM) from the following link:


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**Fixes**

- Updates for Smart Array firmware not displayed in VCA inventory
- Few Components displayed multiple times in VCA inventory
**HP Version Control Agent for Windows x64**
Version: 7.1.2.0 *(Optional)*

**Prerequisites**
HP System Management Home page need to be installed.

**Fixes**
Updated description for Smart Array Controllers

**Enhancements**
Support Added for Microsoft Windows Server 2012

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**HP Version Control Agent for Windows x86**
Version: 7.1.2.0 *(Optional)*

**Prerequisites**
HP System Management Home page need to be installed.

**Fixes**
Updated description for Smart Array Controllers