Oracle® Communications
HP Solutions Firmware Upgrade Pack

Software Centric Release Notes

Release 2.2.12

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Oracle Communications, HP Solutions Firmware Upgrade Pack, Release 2.2.12

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1 Introduction

1.1 Purpose and Scope

When a customer buys their HP ProLiant hardware through Oracle we act as the OEM provider of firmware updates through the HP Solutions Firmware Upgrade Pack releases. For Software Centric Customers this is not legally possible.

This document lists the firmware versions approved for this HP Solutions Firmware Upgrade Pack release to assist customers with upgrading their HP hardware. Also, additional instructions and guidance on the firmware upgrades has been provided where possible.

1.2 Acronyms

Table 1. Acronyms

BIOS	Basic Input Output System
FC	Fiber Channel
GPS	Global Product Solutions
HP	Hewlett-Packard Development Company, L.P.
iLO	Integrated Lights-Out
IOS	Internetwork Operating System
IP	Internet Protocol
IPM	Initial Product Manufacture
ISO	ISO 9660 file system (when used in the context of this document)
MOP	Method of Procedure
MSA	Modular Smart Array
OA	Onboard Administrator
POST	Power On Self-Test
PR	Problem Report
RMS	Rack Mount Server
ROM	Read Only Memory
SAN	Storage Area Network
SAS	Serial attached SCSI
SPP	Service Pack for ProLiant
TPD	Tekelec Platform Distribution
UI	User Interface

1.3 Terminology

Table 2. Terminology

Firmware	Coded instructions and data programmed directly into the circuitry of read-only memory for controlling the operation of the server or one of its devices.
BladeSystem	The HP c-Class BladeSystem which refers to the c7000 enclosure and all of its contained server and storage blades, including its management software and firmware.
Upgrade	The process of converting an HP hardware component from its current firmware release to a newer release.

Software Centric	Refers to customers who do not buy their HP hardware through Oracle (Software Only Customers).

2 Content

2.1 Firmware Baselines and Exceptions

Firmware packages in this document have a specified "Minimum Supported Version", "Current Supported Version", and "Maximum Supported Version". The Current Supported Version is the version currently provided by this HP FUP Release. Systems should be upgraded to at least the Minimum Supported Version where the presently-installed firmware is of an earlier version. In some cases versions newer than the Current Supported Version may be available. **Installing these newer versions is typically acceptable. However, check the "Maximum Supported Version" column for restrictions on newer firmware versions.**

2.2 HP Solutions Firmware Components Upgraded

IMPORTANT: For the versions indicated below here are guidelines for reading the table:

- **Minimum Supported FW Version** - If a component has a firmware version older than this it needs to be upgraded.
- **Current Supported FW Version** - This is the version of firmware used this HP FUP release.
- **Maximum Supported FW Version** - If a component has a firmware version newer than this it needs to be downgraded.

2.2.1 HP ProLiant Server Firmware Components

The table below lists the main firmware components relating to Oracle supported HP ProLiant Rack Mount and Blade servers.

Warning: Creating/using bootable USB SPP media to upgrade HP RMS firmware is currently unsupported with SPP version 2016.10.0.

Note: System ROM Versions are often interchangeably written with either a "yyyy.mm.dd" format or a "mm/dd/yyyy" format. For example, "05/02/2011" is equivalent to "2011.05.02".

Note: Gen9v1 servers use the Intel E5-XXXX v3 processors. Gen9v2 servers use the Intel E5-XXXX v4 processors.

Note: The minimum version of iLO4 firmware has been changed to specify the latest version available at HPE.com in revision 06 of this document. This is in response to the critical bug 25305878 and the related HPE Advisory. HPE continues to put out versions of firmware that provide more fixes for this issue after stating the last version was fixed necessitating always using the latest iLO4 firmware version.

Component	Minimum Supported FW Version	Current Supported FW Version	Maximum Supported FW Version
System ROM for DL360 G7	2015.08.16	2015.08.16	no maximum
System ROM for DL360p Gen8 **w/ TPD builds 82.29 and lower**	2013.09.08	2013.09.08[1]	2013.09.18
System ROM for DL360p Gen8 **w/ TPD builds 82.30 and above**	2013.09.08	2015.07.01	no maximum
System ROM for DL360 Gen9v1 and Gen9v2	2016.09.13	2016.09.13	no maximum
System ROM for DL380p Gen8 **w/ TPD builds 82.29 and lower**	2013.09.08	2013.09.08[1]	2013.09.18
System ROM for DL380p Gen8 **w/ TPD builds 82.30 and above**	2013.09.08	2015.07.01	no maximum
System ROM for DL380 Gen9v1 and Gen9v2	2016.09.13	2016.09.13	no maximum
System ROM for BL460c Gen8 **w/ TPD builds 82.29 and lower**	2013.09.08	2013.09.08[1]	2013.09.18
System ROM for BL460c Gen8 **w/ TPD builds 82.30 and above**	2013.09.08	2015.06.01	no maximum
System ROM for BL460c Gen9v1 and Gen9v2	2016.05.05	2016.09.12	no maximum
System ROM for BL620c G7	2015.08.16	2015.08.16	no maximum
Power Management Controller for DL360 G7 and BL460c G7 Servers	1.6	not included	no maximum

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[1] The 2013.09.08 System ROM for DL360p/DL380p/BL460c Gen8 servers for use "w/ TPD builds 82.29 and lower" is not included with the 2016.10.0 SPP which includes the current support System ROM indicated for use "w/ TPD builds 82.30 and above".

Component	Minimum Supported FW Version	Current Supported FW Version	Maximum Supported FW Version
Power Management Controller for BL620c G7 Servers	1.7	not included	no maximum
Power Management Controller for all Gen8 Servers	3.0	3.3	no maximum
Power Management Controller for all Gen9 Servers	1.0.7	1.0.9	no maximum
HP NC365T Intel Quad Port 1GbE	no minimum	not included[2]	no maximum
HP NC364T Intel Quad Port 1GbE	no minimum	not included[2]	no maximum
HP NC364m Intel Quad Port 1GbE	no minimum	not included[2]	no maximum
HP 366M Intel Quad Port 1GbE	1.349.0	1.1446.0	no maximum
HP 331i Broadcom 4-port 1Gb	1.37	1.46	no maximum
HP 331FLR Broadcom 4-port 1Gb	1.37	1.46	no maximum
HP 331T Broadcom 4-port 1Gb	1.37	1.46	no maximum
HP 530FLB Broadcom 2-port 10Gb	7.4.22	7.13.75	no maximum
HP 530M Broadcom 2-port 10Gb	7.4.22	7.13.75	no maximum
HP NC553i Emulex 2-port 10Gb	4.6.247.5	10.7.316.0	no maximum
HP 560FLB Intel 2-port 10Gb	0x8000080b	0x80000872	no maximum
HP 560M Intel 2-port 10Gb	0x8000080b	0x8000083D	no maximum
HP 560SFP+ Intel 2-port 10Gb	0x80000811	0x80000835	no maximum
HP 560FLR-SFP+ Intel 2-port 10Gb	0x80000838	0x80000838	no maximum
Smart Array P410i/P411 Controller for DL/BL G7 Servers	6.40	6.64	no maximum
Smart Array P220i/P420i/P420/P421	8.00	8.00	no maximum
Smart Array P244br/P246br/P440ar/P840	4.52	4.52	no maximum
HP 12Gb SAS Expander	2.09	2.10	no maximum
Direct Attached D2700	0070(B)	0150	no maximum
D2200sb Storage Blade (internal P410i)	6.40	6.64	no maximum
D2220sb Storage Blade (internal P420i)	8.00	8.00	no maximum
iLO3 for all G7 DL/ML/BL Servers	1.88	1.88	no maximum

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[2] The NC364m, NC364T, and NC365T NICs do not have firmware on the SPP. HP has never released updated firmware for these NICs. They do not need to be upgraded. The firmware they ship with is approved.

Component	Minimum Supported FW Version	Current Supported FW Version	Maximum Supported FW Version
iLO4 for all Gen8/Gen9 DL/BL Servers	Latest from HPE (See iLO4 NAND Issue in Section 7)	Latest from HPE (See iLO4 NAND Issue in Section 7)	no maximum
SAS Storage Disks (Multiple Part Numbers included)	Various	Various	no maximum

2.2.2 HP Misc Firmware Components

The table below lists various HP and non-HP firmware components.

Component	Minimum Supported FW Version	Current Approved FW Version	Maximum Supported FW Version
OA **(Use with PM&C version 5.7 or greater)**	4.60	4.60	4.60
OA **(Use with PM&C versions 4.x to 5.5)**	3.71	3.71	3.71
1Gb Ethernet Pass-Thru Module	3.0.3	3.0.3	no maximum
MSA2012fc Disk Controller	J200P50-02	J201R09	no maximum
P2000 G3 MSA Disk Controller	TS201P004	TS201P007	no maximum
P2000 MSA USB Driver (Windows 32bit)	1.0.0.5	1.0.2.8	no maximum
P2000 MSA USB Driver (Windows 64bit)	1.0.2.8	1.0.2.8	no maximum
Cascaded D2700	0070(B)	0147	no maximum
Brocade SAN Switch	6.2.2b	6.2.2b	no maximum
Cisco 9372TX-E Switch NXOS	7.0.3.I4.5	7.0.3.I4.5	7.0.3.I4.5
Cisco 4948E-F Switch IOS	12.2(54)WO	12.2(54)WO	12.2(54)WO
Cisco 4948E-F Switch PROM	12.2(44r)SG9	12.2(44r)SG9	no maximum
Cisco 4948E Switch IOS	12.2(54)XO	12.2(54)XO	12.2(54)XO
Cisco 4948E Switch PROM	12.2(44r)SG8	12.2(44r)SG8	no maximum
Cisco 4948 Switch IOS	12.2(53)SG2	12.2(53)SG2	12.2(53)SG2
Cisco 4948 Switch PROM	12.2(31r)SGA1	12.2(31r)SGA1	no maximum
Cisco 3020 Switch IOS (For SwitchConfig Systems Only)	12.2(50)SE3	12.2(50)SE3	12.2(50)SE3
Cisco 3020 Switch IOS (For NetConfig Systems Only)	12.2(58)SE1[3]	12.2(58)SE1[3]	12.2(58)SE1[3]
HP 6120XG Switch	Z.14.51	Z.14.51	Z.14.51

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[3] This firmware version requires that OA firmware version 3.70 or greater is already installed before a 3020 upgrade.

Component	Minimum Supported FW Version	Current Approved FW Version	Maximum Supported FW Version
HP 6125G Switch (with PM&C below 6.0.1.0.0_60.21.0)	5.20.99, Release 2105	5.20.99, Release 2105	5.20.99, Release 2105
HP 6125G Switch (with PM&C 6.0.1.0.0_60.21.0 and above)	5.20.99, Release 2112P07	5.20.99, Release 2112P07	5.20.99, Release 2112P07
HP 6125XLG Switch (with PM&C below 6.5.0.0.0_65.6.0)	7.1.045, Release 2403	7.1.045, Release 2403	7.1.045, Release 2403
HP 6125XLG Switch (with PM&C 6.5.0.0.0_65.6.0 and above)	7.1.045, Release 2432P01	7.1.045, Release 2432P01	7.1.045, Release 2432P01
HP 5900 Switch	5900_5920_CMW710_F2427.ipe[4]	5900_5920_CMW710_F2427.ipe[4]	5900_5920_CMW710_F2427.ipe[4]

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[4] This firmware file can only be obtained by opening a HP Support case and specifically requesting it.

3 Upgrade Order

3.1 Recommended Order of Firmware Upgrades - Platform 6.5 and Below

The following is the recommended order of firmware upgrades to reduce possible issues during the process of upgrading a system's firmware.

1. 4948, 4948E, and 4948E-F switches.

2. Onboard Administrator (OA).

3. 1Gb Ethernet Pass-Thru Modules.

4. Cisco 3020, HP 6125G, HP 6120XG, and Brocade SAN enclosure switches.

5. The iLO4 of all Gen8 and Gen9 servers. See iLO4 NAND Issue in Section 7.

6. BL460 and BL620 blade servers.

7. P2000 and MSA2012fc external storage controllers.

8. D2700 enclosure cascaded from a P2000.

9. DL380 and DL360 rack mount servers.

NOTE: It is recommended that rack mount servers be upgraded last. If you choose to upgrade them at any other time, please make sure to adhere to the rules in the *Important Rules on Simultaneous Firmware Upgrades* section.

NOTE: Mated switches must run the same firmware version. Make sure both switches are running the same firmware version before proceeding with the recommended order of firmware upgrades.

3.2 Recommended Order of Firmware Upgrades - Platform 6.7 to 7.x

The following is the recommended order of firmware upgrades when on or upgrading to Platform 6.7 to 7.x It is meant to reduce possible issues during the process of upgrading a system's firmware.

1. PM&C host server and PM&C application. (**PM&C 5.7 or greater must be installed before upgrading OA firmware to version 4.60**)

2. HP 5900, Cisco 9372TX-E, Cisco 4948, Cisco 4948E, and Cisco 4948E-F switches.

3. Onboard Administrator (OA).

4. 1Gb Ethernet Pass-Thru Modules.

5. Cisco 3020, HP 6125G, HP 6120XG, 6125XLG and Brocade SAN enclosure switches.

6. The iLO4 of all Gen8 and Gen9 servers. See iLO4 NAND Issue in Section 7.

7. BL460 and BL620 blade servers.

8. P2000 and MSA2012fc external storage controllers.

9. D2700 enclosure cascaded from a P2000.

10. DL380 and DL360 rack mount servers.

NOTE: It is recommended that rack mount servers (other than the PM&C host) be upgraded last. If you choose to upgrade them at any other time, please make sure to adhere to the rules in the *Important Rules on Simultaneous Firmware Upgrades* section.

NOTE: Mated switches must run the same firmware version. Make sure both switches are running the same firmware version before proceeding with the recommended order of firmware upgrades.

3.3 Important Rules on Simultaneous Firmware Upgrades

Below are important rules to follow when attempting to upgrade more than one type of hardware at a time.

- Do not upgrade an Onboard Administrator to version 4.60 until the associated PM&C is at version 5.7 or greater.

- When upgrading any firmware component do not simultaneously upgrade any network hardware between you and the component being upgraded.

- Do not upgrade anything else when upgrading HP 5900, Cisco 9372TX-E, Cisco 4948, Cisco 4948E, and Cisco 4948E-F switches.

- Do not upgrade anything else within the c7000 enclosure when upgrading Cisco 3020, HP 6125G, HP 6120XG, HP 6125XLG, and Brocade SAN enclosure switches.

- When upgrading an Onboard Administrator (OA) do not upgrade anything else within the c7000 enclosure.

4 Compatibility

4.1 With Previous HP FUP Releases

HP FUP releases are generally compatible with previous HP FUP releases, but previous HP FUP releases may not be compatible with the TPD version being used.

4.2 With Oracle Application Software

PM&C version 6.4 or newer is needed for managing the Cisco 9372TX-E switch including upgrading its firmware.

Before upgrading the Onboard Administrator to firmware version 4.60, the PM&C must be at version 5.7 or greater.

If using PM&C 5.7 or greater use Onboard Administrator firmware version 4.60.

If using PM&C 4.x to 5.5 use Onboard Administrator firmware version 3.71.

If using PM&C 2.x to 3.x use Onboard Administrator firmware version 3.31.

All HP Gen8 servers require either TPD 5.1.0 or TPD 6.0.0 build 80.20 or higher (eg. TPD 6.0.0-80.20.0) when installing TPD and this firmware release.

Installing TPD and TVOE builds older than 82.30 fails on Gen8 servers when System ROMs newer than 2013.09.18 are used. This problem only occurs during install. After an older, affected version of TPD (build 82.29 and lower) has been installed System ROM versions newer than 2013.09.18 can be installed and run without issue. This problem would only occur if there were some reason to re-install that older version of TPD such as a disaster recovery scenario. This means that before you upgrade to TPD build 82.30 or newer you should upgrade the firmware on the server to the latest approved System ROM version.

4.3 Firmware Version Restrictions

This table includes all conditional restrictions on firmware versions. If a system meets the condition then the listed component must comply with the version restrictions.

Condition	Component	Version	Description
PM&C version ≤ 3.2.x	OA	3.31 only	HP OA Firmware version 3.5 or higher is incompatible with older PM&C versions resulting in an inability to IPM enclosure blades.
TPD/TVOE build less than 82.30	Gen8 Blade and RMS System ROMs	2013.09.18 maximum	TPD/TVOE builds before 82.30 will not install with Gen8 System ROMs newer than version 2013.09.18
OA firmware version ≥ 4.01	PM&C	5.7 minimum	Before an OA can be upgraded to firmware version 4.01 or later the PM&C must be at version 5.7 or greater.
PM&C version 4.x to 5.4	OA	3.71 only	If a PM&C, version 4.x to 5.5, is being used the OA firmware must be version 3.71.
PM&C version 5.7 or greater	OA	4.60 only	If a PM&C, version 5.7 or greater is being used the OA firmware must be version 4.60.

5 HP SPP Baseline and Changes

Warning: Creating/using bootable USB SPP media to upgrade HP RMS firmware is currently unsupported with SPP version 2016.10.0.

This section details the version of the HP SPP ISO used as a baseline for this HP Firmware Upgrade Pack and any firmware versions that differ from it.

The baseline version of the HP SPP ISO used for HP FUP 2.2.11 is SPP 2016.10.0

- Only 64bit RHEL6/7 firmware components were included to allow the ISO file size to be below 4GB for compatibility with the OA Enclosure Firmware Management feature and to generally reduce the size of the ISO.

- Firmware for server models **not listed** in the *HP ProLiant Server Firmware Components* section was not included.

- HPE Intel Online Firmware Upgrade Utility for Linux version 1.10.8 was replaced with version 1.11.12.

The 2013.09.08 System ROM for DL360p/DL380p/BL460c Gen8 servers for use "w/ TPD builds 82.29 and lower" is not included with the 2016.10.0 SPP which includes the current support System ROM indicated for use "w/ TPD builds 82.30 and above" as mentioned in the *HP ProLiant Server Firmware Components* section.

6 Additional Instructions

For firmware issues and concerns please contact HP Support for assistance. If any firmware issue is found to impact Oracle software please contact Oracle Support to notify us of the problem. You can contact support via https://support.oracle.com or call the CAS main number at **1-800-223-1711** (toll-free in the US), or call the Oracle Support hotline for your local country from the list at https://www.oracle.com/support/contact.html.

6.1 Additional Firmware Installation and Configuration

The following are additional installation and configuration instructions for this release.

- Mated switches of the same model must have the same firmware version(s) as each other.
- When upgrading a Cisco 3020 switch, the OA must first be upgraded to firmware version 3.70 or newer.
- The PM&C must be at version 5.7 or greater before upgrading to OA firmware version 4.60.

7 iLO4 NAND Issue

NOTE: HPE continues to put out versions of iLO4 firmware that provide more fixes for this issue after stating the last version was fixed. Because of this we recommend always using the latest iLO4 firmware version.

All Gen8 and Gen9 servers (Blades and RMSs) have a critical iLO4 firmware issue that can result in the iLO4 becoming unusable and unrecoverable. The HPE advisory linked to below, at the time of this document's creation (11 October 2017) states versions below 2.54 are affected. However, we recommend using the latest available iLO4 firmware version in conjunction with the Advisory because HPE continues to put out versions of firmware that provide more fixes for this issue after stating the last version was fixed. This issue can cause other, less serious iLO4 issues too. See Bug 25305878.

Use the instructions in the latest version of the HPE Advisory linked to below to fix the issue.

http://h20564.www2.hpe.com/hpsc/doc/public/display?docId=emr_na-c04996097

Also, there is concern that the errors caused by the issue impact the life of the iLO4 NAND due to excessive logging. Optionally, too reduce the number of writes to the iLO4 NAND, you can turn off the AHS logging on the iLO4 which should allow the iLO4 NAND to last longer than if AHS logging is enabled. If you turn off AHS logging the end user loses nothing, but the AHS logs will be unavailable for HPE Support to analyze if the server has a HPE support case opened against it.

NOTE: This procedure is to be performed after the iLO4 upgrade and NAND reformat procedure.

1. Login to the iLO4 Web GUI.
2. Go to Information -> Active Health System Log
3. Click "**Show Advanced Settings**" at the bottom of the page
4. Uncheck the box next to "**Enable Active Health System Logging**".
5. Click the "**Apply**" button.