



Hewlett Packard
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Overview

The Service Pack for ProLiant (SPP) is a systems software and firmware solution delivered as a bootable ISO. This solution uses Smart Update Manager (SUM) as the deployment tool and is tested on supported HPE servers and infrastructure, including ProLiant, BladeSystem, Synergy, and Apollo.

Download

There are several ways to download the SPP:

SPP Custom Download (<https://www.hpe.com/servers/spp/custom>)

HPE's recommended method for downloading a production or post-production SPP is through the SPP Custom Download web service.

In addition to providing an easy-to-use interface, SPP Custom Download facilitates reducing the size of the SPP before downloading, by filtering only the server models and OS/hypervisor versions needed, and by merging Hot Fixes and OS Supplements into one package (Full SPP ISO).

SPP Custom Download offers “Base” and “Full” SPP downloads:

- Base SPP ISO – always published and contains the drivers and firmware the day the SPP was released.
- Full SPP ISO – only published when one or more Hot Fixes or OS Supplements exist and contains the drivers and firmware plus updates. (Full SPP = Base SPP + Hot Fix + OS Supplements)

SPP Download Page (<https://www.hpe.com/servers/spp/download>)

An alternative method for downloading the SPP (Base SPP) is through the SPP Download page.

- The “Hot Fixes and Advisory” section of the SPP Download page provides a list of all the Hot Fixes and advisories for the selected SPP.
- The “Documentation” section of the SPP Download page contains the SPP documentation.

⚠ Access to the SPP requires validation via the HPE Support Center. An active warranty or HPE support agreement is required to download the SPP.

Summary of Changes

Important Notes

In order to reduce the frequency at which servers need to be updated, HPE has changed the packaging and delivery of the SPP. There are now two types of SPPs:

- A single “**Production SPP**” that contains the firmware and drivers for the all of the production server generations, and
- Multiple server generation specific “**Post-Production SPPs**” that contain the firmware and drivers for a specific post-production server generation (e.g. Gen8 only Post-Production SPP that contains the firmware and drivers for all of Gen8 server models).

The 2017.04.0 SPP was the last production SPP to contain components for the G6, G7 and Gen8 server platforms. For additional information on the changes, see “[Reducing Server Updates](#)”.

Release Summary

This Service Pack for ProLiant (SPP) 2017.10.1 release supersedes the SPP 2017.07.2.

Enhancements

The 2017.10.1 SPP release contains components supporting the ProLiant and Synergy Gen10 Server platforms. It also provides support for the following operating systems for Gen9 Server Platforms (only):

- vSphere 6.0 U3
- vSphere 6.5 U1, 6.5

Added support for the following operating systems:

- SUSE Linux Enterprise Server 12 SP3
- Red Hat Enterprise Linux 7.4

See the [Service Pack for ProLiant Server Support Guide](#) for information on supported HPE servers.

With the new enhanced security of the Gen10 server family, there are new features in Smart Update Manager (SUM). There are additional files for each new Gen10 component to facilitate this extra layer of security. These files are named with the component file name and a “.compsig” extension. Gen9 specific components may not have these additional files and will display a warning (“component signature file missing”) in the 8.0.0.0 version of SUM. These components are signed however they lack the Gen10 specific .compsig files. They are safe for installation. If the SPP is run in offline mode (server boots to SPP ISO) then SUM will prompt the user for iLO username/password, even if run in automatic mode. SUM run in interactive mode gives the user the option to enter iLO credentials to support high security mode.

Added Firmware/Software

- Windows:
 - Identifiers for Intel Xeon Processor Scalable Family for Windows
 - Identifiers for AMD Epyc Processors for Windows
 - AMD Secure Processor Driver for Windows Server 2012 R2
 - AMD Secure Processor Driver for Windows Server 2016
 - HPE Intel ixs Driver for Windows Server 2012 R2
 - HPE Intel ixs Driver for Windows Server 2016
 - HPE Intel ixt Driver for Windows Server 2012
 - HPE Intel ixt Driver for Windows Server 2012 R2
 - HPE Intel ixt Driver for Windows Server 2016
 - HPE Intel vxn Driver for Windows Server 2012
 - HPE Intel vxn Driver for Windows Server 2012 R2
 - HPE Intel vxn Driver for Windows Server 2016
 - HPE NVDIMM-N Drivers for Microsoft Windows Server 2012 and 2012 R2

- Firmware:
 - Online ROM Flash Component - VK000240GWEZB, VK000480GWEZC, VK000960GWEZD, VK001920GWEZE, MK000240GWEZF, MK000480GWEZH, MK000960GWEZK, and MK001920GWHRU Drives
 - Firmware - SATA Storage Disk Supplemental Update / Online ROM Flash Component - MR000240GWFLU, MR000480GWFLV, VR000480GWFMD, MR000960GWFMA, VR000960GWFME, MR001920GWFMB, and VR001920GWFMC Drives
 - Firmware - SATA Storage Disk Supplemental Update / Online ROM Flash Component - MB6000GEBTP Drives Supplemental Update / Online ROM Flash Component - MB6000GVYYU Drives Online Flash Component - 16GB NVDIMM-N DDR4-2666 Supplemental Update / Online ROM Flash Component) - HPE Apollo 45xx Gen10 Backplane Expander Firmware
 - Online ROM Flash Component - HPE Apollo 2000 Gen10/HPE ProLiant XL170r/XL190r Gen10 (U38) Servers
 - Online ROM Flash Component - HPE Apollo 4510 Gen10/HPE ProLiant XL450 Gen10 (U40) Servers
 - Online ROM Flash Component - HPE ProLiant ML350 Gen10 (U41) Servers
 - Online ROM Flash Component - HPE ProLiant DL160 Gen10/DL180 Gen10 (U31) Servers
 - Online ROM Flash Component - HPE ProLiant DL120 Gen10 (U36) Servers Online ROM Flash Component - HPE ProLiant ML110 Gen10 (U33) Servers

For a complete list of components on the ISO, see the SPP Contents Report on the ISO or the [SPP documentation page](#).

Driver Update Disks (DUD) for Linux

DUDs for the following controllers for all Red Hat and SUSE supported operating systems can be found in the 'DUD' directory at the root of the ISO.

- HPE ProLiant Smart Array Controller
- HPE Dynamic Smart Array B140i SATA RAID Controller Driver
- HPE ProLiant Gen10 Smart Array Controller (64-bit)

Known Limitations

The following is a select list of known issues and limitations relating to the smart components and SUM version delivered with this SPP. For a full list, please visit the [SPP Download page](#), select the "Hot Fixes & Advisories" tab, and the "Known Limitations" heading. This procedure can be followed for any currently listed SPP by selecting the preferred SPP version listed next to 'Currently Supported Versions' to open its version specific page.

Rewrite of FCoE/FC Driver Kit for HPE QLogic CNAs fails with "update returned an error" due to product name change.

Initial install will work successfully.

Offline update of HPE B140i in legacy BIOS mode is not supported.

Configure the Boot Mode to UEFI Mode if using HPE SW RAID.

HP H2xx SAS/SATA Host Bus Adapter Driver for SUSE LINUX Enterprise Server 12 SP2 & Red Hat Enterprise Linux 6.9 are not included in this SPP.

Due to a conflict with an in-distro driver and Smart Update Manager, the HP H2xx SAS/SATA Host Bus Adapter Driver for SUSE LINUX Enterprise Server 12 SP2 is not included in this SPP. It is available on HPE Support Center at <https://www.hpe.com/global/swpublishing/MTX-c502d2922c2c47f584880ba61e>. When using SUSE LINUX Enterprise Server 12 SP2, firmware must be flashed in offline mode.

The driver for Red Hat Enterprise Linux 6.9 will be included in the next SPP.

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

Drivers and/or enablement kits must be installed prior to detecting and updating some hardware and firmware. There are several scenarios when 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 SUM to discover some hardware and thus the needed firmware. After the drivers are installed for the first time and the system rebooted, SUM needs to be run again for all of the firmware components to be presented for installation. The scenarios are:

- 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 SUM.
- When running SUM on Windows, if the iLO Channel Interface Driver is not installed, the iLO firmware 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 iLO4 and iLO5. When attempting to update the firmware, it may fail to update if it is already up to date. Downgrade of iLO from 2017.10.1 to 2017.07.2 is not supported and will fail to update. (ask about iLO4 or iLO5-which version)
- When using SUM on Linux, the iLO Channel Interface Driver needs to be loaded from the operating system for the iLO firmware to display for installation.
- The Power Management Controller, the Advanced Power Capping Microcontroller Firmware for HPE ProLiant BL/DL/MLGen9 Servers, and the Smart Array H240ar, H240, H241, H244br, P244br, P246br, P440ar, P440, P441, P741m, P840, and P841 firmware also require the iLO Channel Interface Driver for firmware installation.
- Broadcom NICs are not discovered by SUM unless the appropriate driver is installed and all Ethernet ports are up. The Ethernet port can be brought up by using the following command:

```
# 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.
- Enable all the Ethernet ports
- Run the Broadcom FW upgrade component

Tape components not listed on Gen10 server when installing from the iLO repository.

When running from this SPP on Gen10 servers, tape components will not show up when using the iLO. Components can be installed using SUM.

HPE Broadcom NetXtreme-E RoCE Kernel Driver (bnxt_re) Does Not Load on SUSE Linux Enterprise Server 11 SP4 and has been removed from this SPP. It is available on HPE Support Center for download. Any driver installed after HPE Broadcom NetXtreme-E RoCE Kernel Driver for SUSE Linux Enterprise Server 11 SP4 (bnxt_re) fails to load during OS boot.

On any HPE ProLiant Gen10 server or HPE Synergy Gen10 compute module with any network adapter listed in the Scope section below, configured for RoCE the HPEBroadcom NetXtreme-E RoCE Kernel Driver (bnxt_re) versions 20.6.1.6 and 20.6.3.1 does not load either manually or automatically by modprobe command on SUSE Linux Enterprise Server 11 SP4. This is targeted to be resolved in a future version of the bnxt_re driver.

As a workaround, perform either of the following:

To allow loading of the bnxt_re driver set 'allow_unsupported_modules 1' in /etc/modprobe.d/unsupported-modules.

OR

Load the driver using modprobe with option --allow-unsupported. Note: The OpenFabrics Enterprise Distribution, version 3.18-2, must be installed Otherwise the bnxt_re driver fails to load with error unknown symbols. The OFED package is available at following URL:
http://downloads.openfabrics.org/downloads/OFED/release_notes/OFED_3.18-2_release_notes
Note: The link above will take you outside the HPE website. HPE is not responsible for content outside of the HPE website.

Scope:

HPE Ethernet 10Gb 2-port 535FLR-T Adapter
HPE Ethernet 10Gb 2-port 535T Adapter
HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter
HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter

HPE Broadcom NetXtreme-E RoCE Kernel Driver for SUSE Linux Enterprise Server 11 SP4” support removed from SPP 2017.10.1.

“bnxt_re_roce.sles11sp4.x86_64@20.6.3.1-1 pubsw-linux_en: v20.6.3.1-1: HPE Broadcom NetXtreme-E RoCE Kernel Driver for SUSE Linux Enterprise Server 11 SP4: support removed from SPP 2017.10.1”, as on any Gen10 ProLiant Server with adapters(HPE Ethernet 10Gb 2-port 535FLR-T Adapter, HPE Ethernet 10Gb 2-port 535T Adapter, HPE Ethernet 10/25Gb 2-port 631FLR-SFP28 Adapter, HPE Ethernet 10/25Gb 2-port 631SFP28 Adapter) installed, SLES11SP4 OS with KiSO may fail to boot after installing the SPP 2017.10.1 using online method. The issue can even also happen if the HPE ProLiant Gen10 SmartArray Controller (64-bit) Driver for SUSE LINUX Enterprise Server 11 (smartpqi)driver is installed after installing HPE Broadcom NetXtreme-E RoCE Kernel Driver for SUSE Linux Enterprise Server 11 SP4 (bnxt_re) driver. Any driver installed after HPE Broadcom NetXtreme-E RoCE Kernel Driver for SUSE Linux Enterprise Server 11 SP4 (bnxt_re) fails to load during boot, fails to load with modprobe.

Emulex and QLogic HBA Firmware is flashed in online mode Service Pack for using ProLiant using the following steps. This section includes optional installation of the Smart SAN Enablement Kit.

1) Prep the operating system:

- If flashing Emulex CNAs or Fibre Channel HBAs on Linux, install the following RPMs from the operating system installation media, if not present on the system:
 - libsysfs or sysfsutils (depending on Linux OS) if Emulex CNAs are flashed, see CA c04366000 for additional information
 - libhbaapi or libhbaapi2 (depending on Linux OS, required for the Emulex Enablement Kit)
- For VMware use the HP Custom Image released at or shortly after the release of the SPP. To obtain the VMware Custom Image from HPE, visit the HPE web site to download drivers and other software to enable features such as SPP discovery and HBA firmware flashing. [Custom HPE ESXi images](#).

2) Use the SPP to install necessary drivers for the HBAs, including any NIC drivers where applicable. At this time do not install the Enablement Kit or flash the HBA firmware, even if the selections are enabled by default in the SPP; deselect them. Until the system is rebooted with the drivers you have installed, do not attempt to enable Smart SAN, do not install the Fibre Channel Enablement Kit, and do not flash the HBA firmware. If on-site processes do not permit the installation of out of box drivers, review HPE SPOCK for inbox driver support information for the configuration.

3) If the drivers were updated, reboot the target system.

4) Use SPP to install the Fibre Channel Enablement Kits on Linux targets if using Fiber Channel (FC) cards (also recommended if using CNA cards in FCoE mode). No reboot is required after installing the Fibre Channel Enablement Kits.

5) If you have installed a Smart SAN enabled driver and wish to enable the Smart SAN feature, configure the Smart SAN Enablement Kit component in HPE SPP. See the SPP documentation regarding configurable components. In the configuration of the component choose to enable Smart SAN. For Linux systems also elect to rebuild the ramdisk (initrd).

- **Note:** HPE recommends that you back up your Linux system's ramdisk before rebuilding it for any purpose (driver installation, Smart SAN Enablement, and so forth). The QLogic Smart SAN Enablement Kit does not create a copy of the ramdisk for you, so HPE recommends making a backup copy manually. The Emulex Smart SAN Enablement Kit creates a copy, the name of which can be seen if you click "View Log" in the SPP after deployment.

6) Perform an SPP inventory of the target system and optionally deploy the configured Smart SAN Enablement Kit and the firmware flash components.

- **Note:** For legacy QLogic 8Gbps FC HBAs, see the release note "Legacy QLogic 8Gb Fibre Channel Adapters show an Active/Available Multi-boot Version of '00.00.00'".

7) After the flash operation and the optional Smart SAN update complete, click "View Log" in the SPP to review the results of the operations and check for errors. Reboot the target system to enable the new HBA Firmware and Smart SAN.

Required libraries for Linux Virtual Connect firmware:

The following libraries are required for HPE BladeSystem c-Class Virtual Connect Firmware, Ethernet plus FC Edition Component to install on Linux 64-bit systems:

/lib/tls/libpthread.so.0

/lib/libdl.so.2
/usr/lib/libstdc++.so.6
/lib/tls/libm.so.6
/lib/libgcc_s.so.1
/lib/tls/libc.so.6
/lib/ld-linux.so.2

Supported Operating Systems

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

- Microsoft Windows Server 2016- All Editions
- Microsoft Windows Server 2012 R2 - All Editions
- Microsoft Windows Server 2012 - All Editions
- Red Hat Enterprise Linux 7.4, 7.3
- Red Hat Enterprise Linux 6.9, 6.8 (x86-64)
- SUSE Linux Enterprise Server 12 SP3, 12 SP2
- VMware vSphere 6.5 U1, 6.5
- VMware vSphere 6.0 U3, U2

For more information on HPE Operating Systems and Virtualization Software Support for ProLiant Servers, please visit our OS Support Site at: <https://www.hpe.com/info/ossupport>

SPP Support for Client Operating System on HPE ProLiant WS460c Graphics Server and Synergy SY480 Compute Module

SPP software is an HPE ProLiant technology designed for server OS platforms but also supports certain client operating systems on HPE WS460c Graphics Server Blade and HPE Synergy 480 Compute Modules. Support for the SPP when used with Windows 10/7/8.1 on HPE ProLiant WS460c Graphics Server Blade is listed below:

- HPE SPP Offline/Online Modes are fully supported on HPE ProLiant WS460c Graphics Server Blade Gen9, and Synergy SY480 compute blade Gen9/10 when used in supported configuration (See Matrix Below).
- Important note: Changes to HPE SPP as of Version 2017.07.2.
 - Support for HPE ProLiant WS460c Gen8 systems and older will no longer be included in HPE SPP
 - Support for Microsoft Windows 7 and older Microsoft client operating systems will no longer be included in SPP
 - To support older systems and Operating systems, use SPP version 2017.04.0 and update component individual as needed from there.

Windows Client OS Bare Metal Support Matrix for HPE ProLiant WS460c and Synergy 480 compute module

NVIDIA	NVIDIA	NVIDIA	NVIDIA	NVIDIA	NVIDIA	NVIDIA	NVIDIA	AMD	AMD
Quadro	Quadro	Tesla	Quadro	Quadro	Quadro	Quadro	Tesla	FirePro	FirePro
K3100	M3000SE	M6	P6000	M6000	M6000	K6000	M60	S4000X	S7100X
MXM	MXM	MXM		M5000		K5000	K1	MXM	MXM
						K4000	K2		

WS460c Gen9	7.8.1	7.10	7.10	NO	7.8.1.10	7.8.1	NO	7	7.10
Synergy 480 Gen9	NO	10	10	10	10 (M5000)	NO	NO	NO	10
Synergy 480 Gen10	NO	10	10	10	NO	NO	NO	NO	10

Note:

The following components will be detected for install/update by SPP online mode. These utilities are administration tools intended for server operating systems and may not be appropriate for client operating systems.

- o HPE ProLiant Integrated Management Log Viewer (Gen 9 only)
- o HPE Lights-Out Online Configuration Utility
- o HPE Smart Storage Administrator (HPE SSA) for Windows 64-bit
- o HPE ProLiant Smart Array SAS/SATA Event Notification Service (Gen 9 only)

The following components may be detected by SPP online mode for installation/update. These utilities have not been tested on HPE ProLiant WS460c Graphics Server Blade or Synergy 480 Compute Modules with Client and are not recommended. The stability of the system will not be affected if these utilities are inadvertently installed, however, de-selecting these components during the SPP component install process is recommended.

- o HPE Insight Diagnostics Online Edition for Windows
- o HPE Insight Management WBEM Providers

WS460c Gen9 Windows 7 installed on Bare Metal support. IMPORTANT- Following only applies to specific configuration of HPE ProLiant WS460c Gen9 with Windows 7 installed bare metal (Not Virtualized)

- WS460c Gen9 with Windows 7 installed on bare metal leverages its firmware/drivers from BL460 Gen9 Windows Server 2008 R2 components
- Although the Production SPP will support WS460c Gen9, it does not support Windows Server 2008r2 Drivers/Firmware needed for Windows 7
- Going forward WS460c Gen9 with Windows 7 bare metal will be supported by the Gen8 Post-Production SPP
- As with WS/BL460c Gen8, the firmware and drivers for this specific configuration of HPE ProLiant WS460c Gen9 with Windows 7 will be included in the Gen8 Post-Production SPP.

The “Post-Production SPP” is supported through the EOS (end of support) for that server generation and all future firmware and driver updates are released as Hot Fixes

- To find the future firmware and driver updates are released as Hot Fixes for WS460c Gen9 with Windows 7, as mention above you will looking for and downloading the Drivers for Windows Server 2008r2. A link will be provided for these components at the WS460c gen9 / Windows 7 support download site.

Prerequisites

Component Prerequisites

Some components have prerequisites. Check the individual components for their prerequisites.

SUM Prerequisites

The most current prerequisites for SUM can be found at the SUM documentation page

<https://www.hpe.com/servers/hpsum/documentation>.

Deployment Instructions

Installation

There are two methods for using the Service Pack for ProLiant to update your ProLiant servers:

- Online mode - Runs on a Windows or Linux hosted operating system
- Offline mode - Server is booted to the ISO
 - Automatic mode - Firmware components will be updated without interaction
 - Interactive mode - Follow the onscreen steps to update firmware components

To initiate deployment in Interactive mode:

Run the launch_sum.bat (windows) or launch_sum.sh (linux) script which is found in the root of the ISO

Automatic mode will by default run firmware update without any user interaction after sitting 30 seconds at the menu screen when an SPP .iso image is used to boot the server.

Booting the SPP from iLO virtual media is only supported in Automatic Firmware Update mode. Users attempting this in any other mode may experience hangs from connection timeouts, difficulties updating iLO firmware, and mouse syncing issues.

Note: If you install a software from the SPP and then install a Microsoft Windows operating system Service Pack or other operating system updates, HPE recommends reinstalling the software from the SPP.

Installation Instructions

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

1. Download the SPP 2017.10.1.iso file from the SPP download page <https://www.hpe.com/servers/spp/download>
2. Determine how to access the data on the ISO – bootable USB key, mounted ISO, etc. Use the appropriate tool to obtain the ISO in the desired format.
3. Determine how to initiate deployment to the 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
4. Initiate deployment.

To initiate deployment in **online mode**:

- i From the SPP folder:
 - i Windows: launch_sum.bat
 - ii Linux: ./launch_sum
- ii For VMware hosts, select the host to update as a remote target. Online firmware update on a VMware host requires the HP Insight Management WBEM providers to be installed on the VMware host.
- iii To review the EULA, locate README.html which is found in the root of the ISO.

For more information, see the SUM User Guide and HPE ProLiant Best Practices Implementation Guide. <https://www.hpe.com/servers/spp/documentation>

To initiate deployment in **Offline mode**:

- iv Boot the server to the SPP using one of the supported methods including mounting the ISO or DVD or using a bootable USB key.
- v Select either Automatic mode or Interactive mode.
 - o If Automatic mode is selected, the firmware will be automatically updated on the server without any further interaction.
 - o If Interactive mode is selected, follow the instructions on the screen.
- vi Select the Firmware Update option on the screen to start SUM

Additional Information for using the SPP on Linux Operating Systems

Please refer to the following links for Technical Exception matrices for minimum OS support:

- vii Red Hat Enterprise Linux - [Red Hat Enterprise Linux](#)
- viii SUSE Linux Enterprise Server - [SUSE Linux Enterprise Server](#)

The SPP contains Linux drivers, agent software and firmware in a single ISO image. Alternatively, downloads.linux.hpe.com contains software repositories that may be used with software configuration managers (Yum, Zypper or Apt).

For drivers and agent software, subscribe your system to the "spp" repository:

<http://downloads.linux.hpe.com/SDR/project/spp/>

For firmware, subscribe your system to the "fwpp" repository:

<http://downloads.linux.hpe.com/SDR/project/fwpp/>

Gen10 Customers: The HPE Agentless Management Service (Daemon) (amsd) for Linux distributions replaces the hp-ams, hp-health, hp-snmp-agents and hp-smh-templates used on Gen9 platforms. Customers installing supported Linux distributions on Gen10 platforms should only install AMSD on the server for full management capabilities.

Additional Information for using the SPP on VMware Operating Systems

The SPP can deploy drivers and firmware to a system running a supported VMware operating system in an online mode. Drivers are also available at [Software Delivery Repository - vibsdepot](#). For a consolidated recipe of firmware and driver support, please review the [VMware FW and Software Recipe](#) document.

NOTE: The SPP does not support online VMware Gen10 firmware and drivers since they cannot be deployed from the SPP. The SPP will support VMware Gen10 platforms with offline firmware updates only.

The SPP will carry vSphere 6.5 and vSphere 6.0 U3 drivers and firmware smart components for Gen9 which can be deployed by SUM. The SPP will carry vSphere 6.5, vSphere 6.5 (U1) and vSphere 6.0 (U2/U3).

To determine support for these operating systems, see the HPE ProLiant Server VMware Support Matrix at: [HPE Servers Support and Certification Matrices](#)

Additional Resources

Hot Fixes

The Hot Fixes and the Customer Advisories for this SPP can be found by selecting the "Hot Fixes & Advisories" tab on the SPP Download page, <https://www.hpe.com/servers/spp/download>. The Customer Advisory can be reviewed to determine if the Hot Fix applies and determine which component(s) need to be downloaded. Individual Hot Fixes can be downloaded by selecting:

1. The grey + expander to the left of the Hot Fix Advisory to expand the list of associated downloadable component(s).
2. The title of the desired component to reveal its detail and download page.

All applicable Hot Fixes for this SPP are available for download on the [SPP Custom Download](#) page through the "Full SPP" tile. Either all Hot Fixes or a customized subset thereof can be downloaded by:

1. Hovering over the "Full SPP" tile and selecting "View Details":
2. For the "Full SPP", which consists of the Base SPP and all Hot Fixes, select "Download"
3. For a customized download, select "clone" to create the desired download
 - a. In "Step 1", ensure only the Hot Fix Supplement Bundle is selected
 - b. Fill in the requested information and select "Next: Select Filters"

- c. Further customize by selecting filters and/or select “Build”
- d. Follow the remaining prompts to create and download a customized set of Hot Fixes

SPP Supplements


A supplement is an add-on bundle that may contain firmware, drivers, and/or applications which is released between SPPs. If the Supplement’s contents include Linux components, the components will also be available on the [SDR](#). The components in the supplement are rolled into the next release of the SPP.

- ix SPP Supplements can be downloaded from the SPP Download page (<https://www.hpe.com/servers/spp/download>).
- x The Release Notes can be found on the [SPP Download page](#) Documentation Tab.

OS Supplements: An OS Supplement is a bundle containing software and/or firmware components. It includes support for a new operating system update, but works with the components in the SPP. Supplements allow HPE to deliver support when it is needed so customers do not have to wait on a full SPP’s availability. Support for OS Supplements are included as part of the associated SPP’s support period.

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.

 The files needed to configure the menu system for use with a PXE server can be found in the PXE directory on the full SPP ISO.

Prerequisites

The following is required before proceeding with the configuration:

- xi The user 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.
 - Either PXELINUX (<http://syslinux.zytor.com/wiki/index.php/PXELINUX>) [For legacy boot mode] or GRUB2 (<https://www.gnu.org/software/grub/>) [For UEFI and legacy boot mode]

The use of a Linux TFTP server and the TFTP package <http://www.kernel.org/pub/software/network/tftp/> is assumed. Other TFTP servers should work similarly.

Setup

Before proceeding with the configuration, ensure that the TFTP server as well as the PXELINUX or GRUB2 configuration are setup and configured properly. ELILO (<http://sourceforge.net/projects/elilo/files/>) may be used also. GRUB2 is recommended for UEFI boot mode, legacy boot mode, or mixed environments where both legacy and UEFI boot mode support are required.

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 as well as HTTP connections are supported.
2. For this example, the NFS and path to the ISO image used is 192.168.0.99/path/to/spp/image/(SPPfilename).iso. Test the network file system to ensure that it is accessible before proceeding.
3. The /pxe directory of the ISO image will need to be accessed, 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 /pxe directory of the ISO image to the TFTP server so that they are accessible by the TFTP software. See important instructions and information in the /pxe/README.txt file (for legacy boot mode PXELINUX configuration).

Configuring GRUB2

Follow these steps to configure GRUB2:

1. Run the command `grub2-mknetdir --net-directory=DIR` where DIR is the root of the TFTP server.
2. Configure DHCP using the helpful output of the `grub2-mknetdir` command above (`arch = 00:07` for UEFI boot mode and `arch = 00:00` for legacy boot mode).
5. Edit the `grub.cfg` files on the TFTP server to set the appropriate paths to the kernel `vmlinuz` image file and the initial ramdisk `initrd.img` image file which were copied to the TFTP server from the SPP ISO /pxe directory.

Configuring ELILO

Follow these steps to configure ELILO:

1. Add an EFI folder on the TFTP server which contains `bootx64.efi`, `elilomenu.msg`, and `elilo.conf`.
2. Add details in `elilo.conf` as it is given for configuring `pxelinux.cfg` (see below).
3. Change the DHCP configuration as given below:

```
if option arch = 00:07 {
    filename "pxelinux/bootx64.efi";
} else {
    filename "pxelinux.0";
}
```

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 the PXELINUX configuration file. The entire file does not need to be included:

label sos

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```
kernel vmlinuz
```

```
append initrd=initrd.img media=cdrom root=/dev/ram0 splash quiet hp_fibre cdcache  
showopts TYPE=AUTOMATIC AUTOPOWEROFFONSUCCESS=no  
AUTOREBOOTONSUCCESS=yes
```

label vsos

```
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```

```
kernel vmlinuz
```

```
append initrd=initrd.img media=cdrom root=/dev/ram0 splash quiet hp_fibre cdcache  
showopts TYPE=MANUAL AUTOPOWEROFFONSUCCESS=no
```

label sos_poweroff

```
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```

```
kernel vmlinuz
```

```
append initrd=initrd.img media=cdrom root=/dev/ram0 splash quiet hp_fibre cdcache  
showopts TYPE=AUTOMATIC hp_poweroff
```



The paths to files on the TFTP server are vmlinuz and initrd.img. They must be modified to include any directories or naming conventions that are on the TFTP server.

2. Replace “media=cdrom” with “media=net” on the append line
3. Specify the ISO image path. For the PXE booted server to find the ISO Image, 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/(SPPfilename).iso
```

```
iso1mnt=/mnt/bootdevice
```

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

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

label sos

```
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```

```
kernel vmlinuz
```

```
append initrd=initrd.img media=net root=/dev/ram0 splash quiet hp_fibre showopts  
TYPE=AUTOMATIC AUTOPOWEROFFONSUCCESS=no  
AUTOREBOOTONSUCCESS=yes
```

```
iso1=nfs://192.168.0.99:/path/to/spp/image/(SPPfilename).iso
```

```
iso1mnt=/mnt/bootdevice
```

label vsos

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kernel vmlinuz

append initrd=initrd.img media=net root=/dev/ram0 splash quiet hp_fibre showopts
TYPE=MANUAL AUTOPOWEROFFONSUCCESS=no iso1=nfs://
192.168.0.99:/path/to/spp/image/(SPPfilename).iso

iso1mnt=/mnt/bootdevice

label sos_poweroff

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kernel vmlinuz

append initrd=initrd.img media=net root=/dev/ram0 splash quiet hp_fibre showopts
TYPE=AUTOMATIC hp_poweroff
iso1=nfs://192.168.0.99:/path/to/spp/image/(SPPfilename).iso

iso1mnt=/mnt/bootdevice

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

Supported network file system protocols

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

NFS:

iso1=nfs://192.168.0.99/path/to/spp/image/(SPPfilename).iso

iso1mnt=/mnt/bootdevice

NFS volumes are mounted with the following options:

- *-o ro*
- *nolock*

The mount options can be explicitly set with the iso#opts parameter

iso1opts="rsize=32768,ro,nolock"

Windows® operating systems:

iso1=cifs://192.168.0.99/share/path/to/spp/image/ (SPPfilename).iso

iso1mnt=/mnt/bootdevice

Windows® operating systems with login credentials:

iso1=cifs://user:password@192.168.0.99/share/path/to/spp/image/(SPPfilename).iso

iso1mnt=/mnt/bootdevice

HTTP:

iso1=http://192.168.0.99/path/to/spp/image/(SPPfilename).iso

iso1mnt=/mnt/bootdevice

Once these steps have been completed, the SPP components are ready to be deployed using the PXE boot functionality.

Common Abbreviations

Abbreviations	Name
AMS	Agentless Management Service
CNU	Converged Network Utility
HBA	Host Bus Adapter
iLO	Integrated Lights-Out
MSB	Maintenance Supplement Bundle
OA	Onboard Administrator
RHEL	Red Hat Enterprise Linux
SIM	Systems Insight Manager
SLES	SUSE Linux Enterprise Server
SPP	Service Pack for ProLiant
SUM	Smart Update Manager