



Hewlett Packard
Enterprise

SPP 2018.06.0 Release Notes

Published
June 2018

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Document History:

Released	Description
June 2018	Initial Version

Table of Contents

Overview	4
Summary of Changes	4
Important Notes	4
Enhancements.....	4
Added Firmware/Software.....	4
Driver Update Disks (DUD) for Linux	5
Supported Operating Systems	6
SPP Support for Client Operating System on HPE ProLiant WS460c Graphics Server and Synergy SY480 Compute Module.....	6
Prerequisites	7
Component Prerequisites.....	7
SUM Prerequisites.....	7
Known Limitations	7
Download & Deployment	9
Installation.....	10
Installation Instructions	11
Additional Information for using the SPP on Linux Operating Systems.....	12
Additional Information for using the SPP on VMware Operating Systems	12
Additional Resources	12
Hot Fixes.....	12
SPP Supplements	13
Using a PXE Server to Deploy Components from the full SPP ISO over a network.....	13
Setup	14
Configuring GRUB2.....	14
Configuring ELILO	14
Configuring PXELINUX	15
Supported network file system protocols	16
Common Abbreviations	17

Overview

The Service Pack for ProLiant (SPP) is a comprehensive systems software and firmware update solution, which is delivered as a single ISO image. This solution uses Smart Update Manager (SUM) as the deployment tool and is tested on all HPE ProLiant Gen9 and Gen10 servers as defined in the Service Pack for ProLiant Server Support Guide found at www.hpe.com/servers/spp/documentation.

Summary of Changes

Important Notes

HPE Synergy Customers - Before installing this SPP on Synergy, please review the information at www.hpe.com/downloads/synergy.

HPE StoreOnce Customers – Installation of the SPP can cause problems on StoreOnce systems. Please go to the HPE Support Center at <https://support.hpe.com/hpesc/public/home/result?qt=storeonce> to find the appropriate StoreOnce update.

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 two types of SPPs:

- Individual “**Production SPPs**” that contain the firmware and drivers for the all of the production server generations, and
- 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](#)”.

NOTE: Products sold prior to the November 1, 2015 separation of Hewlett-Packard Company into Hewlett Packard Enterprise Company and HP Inc. may have older product names and model numbers that differ from current models.

Enhancements

The 2018.06.0 SPP Production release contains components supporting the ProLiant, Synergy and Apollo Gen9 and Gen10 server platforms and options. SPP Release Notes, Server Support Guide, OS Support Guide, as well as other release documentation can be found [here](#).

Added support for Red Hat Enterprise Linux 7.5 and vSphere 6.5 U2.

This SPP 2018.06.0 release supersedes the SPP 2018.03.0.

Added Firmware

- Online ROM Flash Component - EG000600JWFUV and EG001200JWFVA Drives
- Online ROM Flash Component - EH0300JEDHC, EH0450JEDHD, and EH0600JEDHE Drives
- Online ROM Flash Component - MB6000JVYZD and MB4000JVYZC Drives
- Online ROM Flash Component - MB010000JWAYK and MB008000JWAYH Drives
- Online ROM Flash Component - EG001800JWJNR and EG002400JWJNT Drives
- Online ROM Flash Component - MB2000JFEML and MB4000JFEMN Drives
- Online ROM Flash Component - EG000600JWJNP and EG001200JWJNQ Drives
- Online ROM Flash Component - MB010000GWAYN and MB008000GWAYL Drives
- Online ROM Flash Component - VK000240GWEZB, VK000480GWEZC, VK000960GWEZD, VK001920GWEZE, MK000240GWEZF, MK000480GWEZH, MK000960GWEZK, and MK001920GWHRU Drives
- Online ROM Flash Component - MR000240GWFLU, MR000480GWFLV, VR000480GWFMD, MR000960GWFMA, VR000960GWFME, MR001920GWFMB, and VR001920GWFMC Drives
- Online ROM Flash Component - MB6000GEQUT and MB8000GEQUU Drives
- Online ROM Flash Component - MB002000GWFGH and MB001000GWFGF Drives
- Online ROM Flash Component - MO0400KEFHN, MO0800KEFHP, MO1600KEFHQ, MO2000KEFHR, MT0800KEXUU, and MT1600KEXUV Drives
- Online ROM Flash Component - VO0400KEFJB, VO1200KEFJC, and VO2000KEFJD Drives
- Online ROM Flash Component - LO0400KEFJQ, LO0800KEFJR, LO1600KEFJT, LO2000KEFJU, LT0800KEXVA, LT1600KEXVB, and LT2000KEXVC Drives
- Online ROM Flash Component - MK000400KWDUK, VK000480KWDUE, MK000800KWDUL, VK000960KWDUF, MK001600KWDUN, and VK001920KWDUH Drives
- Online ROM Flash Component – HPE Apollo 2000 Gen10 Backplane Expander Firmware
- Online ROM Flash Component – HPE SAS Expander Firmware for HPE D2500sb Storage Blade

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 Smart Array P824i-p MR Controller
- HPE Dynamic Smart Array B140i SATA RAID Controller
- HPE ProLiant Gen10 Smart Array Controller (64-bit)

Supported Operating Systems

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

- Microsoft Windows Sever 2016- All Editions
- Microsoft Windows Server 2012 R2 - All Editions
- Microsoft Windows Server 2012 - All Editions (not supported on Gen 10 platforms)
- Microsoft Windows Server 2012 Essentials (not supported on Gen 10 platforms)
- Red Hat Enterprise Linux 7.5, 7.4
- Red Hat Enterprise Linux 6.9, 6.8 (x86-64) (not supported on Gen 10 platforms)
- SUSE Linux Enterprise Server 12 SP3, 12 SP2
- SUSE Linux Enterprise Server 11 SP4, SP3 (AMD64/EM64T) (not supported on Gen 10 platforms)
- VMware vSphere 6.5 U2, 6.5 U1
- 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:

Microsoft Windows Client operating systems on Bare Metal Support Matrix for HPE ProLiant WS460c and Synergy 480 compute module. This table is a reference for Microsoft Windows client operating systems only (Microsoft Windows 7/8.1/10) and is not a reference for Microsoft Server, Hypervisors or other operating systems.

		NVIDIA Quadro K3100 MXM	NVIDIA Quadro K6000 K5000	NVIDIA Quadro M3000SE MXM	NVIDIA Quadro M6000 M5000	NVIDIA Tesla M6 MXM	NVIDIA Tesla P6 MXM	NVIDIA Quadro P6000	NVIDIA Tesla M10 M60	AMD FirePro S4000X MXM	AMD FirePro S7100X MXM
WS460c Gen9	NO	7, 8.1 ¹	7, 8.1	10 ¹	7, 10 ²	10 ¹	NO ⁴	7, 10 ²	NO ⁴	7 ¹	7, 10 ¹
Synergy 480 Gen10	NO	NO	NO	10 ¹	NO	10 ¹	NO ⁴	10 ^{1,2}	NO ⁴	NO	10 ¹
Synergy 480 Gen9	NO	NO	NO	10 ¹	10 ² (M5000 Only)	10 ¹	NO ⁴	10 ^{1,2}	NO ⁴	NO	10 ¹

WS460c Gen8	NO	7	7	NO	NO	NO	NO ⁴	NO	NO ⁴	7 ¹	NO
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- This is being provided as a customer convenience and can be found at support webpage for WS460c at following address.

HPE ProLiant WS460c Gen9 Post-Production Release Set for Microsoft Windows

Location - <https://www.hpe.com/global/swpublishing/MTX-1aa28fac5ef84d40afdfef1f49a>

- Future production SPP's will no longer have Windows 7 support.
- Windows 7 is the only operating systems impacted by this change, support for Windows 10 will continue on in future SPP releases.

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>.

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.

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 2017.10.0 to 2017.06.1 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, H240nr, H240, H241, H244br, P240nr, P244br, P246br, P440ar, P440, P441, P542D, P741m, P840, P840ar, 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

After installing Patched Kernels to Mitigate the Spectre and Meltdown Vulnerabilities, the following warning messages may be displayed: "System May be Vulnerable to Spectre v2" and/or "Loading Module not Compiled with Retpoline Compiler" Here is the [link](#) to the Customer Advisory.

HPE QLogic FastLinQ Online Firmware Upgrade Utility for Windows Server x64 Editions ([nicfwupg_qlflq.win64@5.1.3.0_sc-windows_en,ja](#)) component fails to install on first rewrite, but installs successfully on second rewrite attempt.

On Gen10 servers with S100i SW RAID enabled, while in offline interactive mode with SPP, SATA HDD firmware revisions will not be reviewable or upgradeable, unless logical drive was created with offline Smart Storage Administrator (SSA).

The following HPE Mellanox adapters support InfiniBand mode only:

- HP Infiniband FDR 2P 545QSFP Adapter (HPE Part Number: 702211-B21)
- HP Infiniband FDR 2P 545FLR-QSFP Adapter (HPE Part Number: 702212-B21)
- HP Infiniband FDR 2P 545M Adapter (HPE Part Number: 702213-B21)

Drivers supporting InfiniBand mode of operation are not distributed via the SPP. Mellanox drivers included in SPP support “Ethernet + RoCE” mode only and have to be used only with those adapters supporting Ethernet mode of operation. There is known issue currently where the Mellanox drivers included in the SPP are incorrectly listed in the install set for 545 series Mellanox adapters. For the adapters listed above, please do not use the Mellanox drivers included in the SPP and use MLNX-OFED drivers distributed via "Mellanox OFED VPI Drivers and Utilities" from the Linux Software Delivery Repository (https://downloads.linux.hpe.com/SDR/project/mlnx_ofed/) or HPE.com Support Center.

Download & Deployment

The SPP can be downloaded from either the SPP Download page or the SPP Custom Download service. Both options require HPE Passport login and an active warranty or HPE support agreement.

To ensure the integrity of your download, HPE recommends verifying your results with the following SHA-256 Checksum values:

b075dca16836a1d949c6a6156c63486cac5f557e0f38caaad2fe67bae14066c1	SPP2018060.2018_0618.64.iso
2db5cdfc84541ce60eb539dff195ba1ab503ed06fa649f78d54c3515e9a94030	SPP2018060.2018_0618.64.iso.sha2sum

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

The SPP Download page enables downloading through the HPE Support Center and contains SPP specific information, including:

- A “Hot Fixes and Advisory” section listing Hot Fixes and Customer Advisories for the selected SPP.
- A “Documentation” section which contains a variety of SPP documentation, including Release Notes, Component Release Notes, Contents Report, Server Support Guide, and the [SPP OS Guide](#).
- Navigation to the SPP Custom Download service

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

SPP Custom Download provides an easy-to-use interface and facilitates reducing the size of the SPP by allowing filtering/customizing before downloading. Additionally, it offers convenient downloading of the SPP and the SPP plus related Supplements.

Customizing the SPP download, can be done by:

- selecting the tile containing only a “plus sign”
- making the desired selections (Please Note: Choosing item(s) to filter removes the unchosen items accordingly and therefore, reduces the number of files in the output) to create a customized output
- **Example:** to download only Supplements, select the “plus sign”. Deselect the SPP and ensure only the desired Supplement is selected. Provide name, version, description and format, and then proceed with customization as desired:

** Choosing item(s) to filter removes the unchosen items accordingly and therefore, reduces the number of files in the output

Installation

There are two methods for using the Service Pack for ProLiant to update your ProLiant servers: Online mode and Offline mode.

Online mode - Runs on a Windows or Linux hosted operating system

- 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 image

Offline mode - Server is booted to the .iso image

- Automatic mode - Firmware components will be updated without interaction
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.

- Interactive mode - Follow the onscreen steps to update firmware components



Note: 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.

Installation Instructions

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

1. Download the SPP 2018.06.0.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 from 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**:

- From the SPP folder:
 - Windows: launch_sum.bat
 - Linux: ./launch_sum

- For VMware hosts, select the host to update as a remote target. Online firmware update on a VMware host requires the HPE Insight Management WBEM providers to be installed on the VMware host.
- 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**:

- Boot the server to the SPP using one of the supported methods including mounting the ISO or using a bootable USB key.
- Select either Automatic mode or Interactive mode.
 - If Automatic mode is selected, the firmware will be automatically updated on the server without any further interaction.
 - If Interactive mode is selected, follow the instructions on the screen.
- 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:

- Red Hat Enterprise Linux - [Red Hat Enterprise Linux](#)
- 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/>

Additional Information for using the SPP on VMware Operating Systems

The SPP can deploy drivers and firmware to a Gen 9 system running a supported VMware operating system in an online mode. Drivers are also available at [Software Delivery Repository - vibsdepot](#).

NOTE: The SPP does not support VMware Gen10 updates in online mode; firmware updates are supported in offline mode. The SPP provides full VMware update support for Gen9 platforms.

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 “SPP + Supplements” selection. To download only Hot Fixes:

- select the “plus sign”
- Deselect the SPP and ensure only the Hot Fix Supplement Bundle is selected
- Provide name, version, description and format, and then proceed with customization as desired

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.

- SPP Supplements can be downloaded from the SPP Download page (<https://www.hpe.com/servers/spp/download>).
- 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 is 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:

- 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 that 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 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

```
MENU LABEL Automatic Firmware Update Version 2018.06.0  
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

```
MENU LABEL Interactive Firmware Update Version 2018.06.0  
kernel vmlinuz  
append initrd=initrd.img media=cdrom root=/dev/ram0 splash quiet hp_fibre cdcache  
showopts TYPE=MANUAL AUTOPOWEROFFONSUCCESS=no
```

label sos_poweroff

```
MENU HIDE Automatic & POWEROFF Firmware Update Version 2018.06.0  
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

```
MENU LABEL Automatic Firmware Update Version 2018.06.0
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

```
MENU LABEL Interactive Firmware Update Version 2018.06.0
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

```
MENU HIDE Automatic & POWEROFF Firmware Update Version 2018.06.0
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*
- *noexec*

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
CNA	Converged Network Adapter
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