

HP Service Pack for ProLiant Quick Start Guide

Abstract

This guide describes the Service Pack for ProLiant (SPP) and how to use it to update system software including firmware, drivers, and utilities on ProLiant servers and Blade servers and enclosures. This guide is intended for individuals who are familiar with configuring Microsoft Windows, Linux, and VMware, and updating, maintaining, and deploying firmware and software to servers.

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1 Introduction to SPP

SPP is a comprehensive systems software and firmware solution delivered as a single download. This solution uses HP SUM as the deployment tool and is tested on all supported HP ProLiant servers including HP ProLiant Gen8 servers.

HP SPP along with HP SUM provides breakthrough Smart Update system maintenance tools that systematically update HP ProLiant servers and BladeSystem infrastructure with one-click simplicity at the scale of your data center.

SPP release versions

HP releases a new SPP version with most major server releases. For the current and earlier SPP versions, see the SPP download page at <http://www.hp.com/go/spp/download>.

For information about a specific SPP, SPP format or hot fix, see its release notes on the SPP Information Library at <http://www.hp.com/go/spp/documentation>.

SPP Supplements

An SPP Supplement is a bundle containing software and/or firmware components with HP SUM as the deployment tool. The bundle might 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 provides 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 for the next SPP. Support for SPP Supplements is included as part of the associated SPP's support period.

The version number for each SPP supplement matches the version of its corresponding SPP. Supplement release notes include information on the components in the bundle. If the Supplement includes Linux components, the components are also available on the SDR. Any operating system support added in a Supplement is included in the next SPP.

Download SPP Supplements from the SPP Information section on the SPP Download or Release Archive pages.

The release notes are on the SPP Information Library at <http://www.hp.com/go/spp/documentation>.

Deployment modes

For detailed information about deployment modes, see the *HP Smart Update Manager User Guide* at http://www.hp.com/support/HP_SUM_UG_en.

Operating system support

For system requirements, prerequisites, and supported operating systems, servers, and devices, see the *HP Service Pack for ProLiant Release Notes* or the server support guide in the SPP Information Library at <http://www.hp.com/go/spp/documentation>.

For more information on HP operating systems and virtualization software support for HP ProLiant servers, visit the OS support site at <http://www.hp.com/go/ossupport>.

For information on using the SPP to update systems running Windows Server 2008, see ["Downloading and installing an SPP" \(page 7\)](#). For systems running Windows Server 2012, see the *Implementing Microsoft Windows Server 2012* in the SPP Information Library.

For information on using the SPP to update Linux systems, see the *Linux best practices using HP Service Pack for ProLiant (SPP) and the Software Delivery Repository (SDR)* in the SPP Information Library.

For information on using the SPP to update VMware systems, see the *VMware: Best Practices for maintaining HP firmware, driver and system software using the HP Service Pack for ProLiant (SPP) and the Software Delivery Repository (SDR)* in the SPP Information Library.

2 Downloading and installing an SPP

Before updating business-critical servers or those in a complex or distributed environment, develop an update plan to minimize required downtime. For additional information, see the *HP Smart Update Best Practices Planning Guide*.

- ⓘ **IMPORTANT:** If you have not updated your server in over a year, HP recommends you follow the planning steps from the *HP ProLiant and Integrity Firmware Management Best Practices Planning Guide* to develop an update plan that addresses all compatibility and dependency issues.

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.

Using HP SUM to deploy an SPP

Determine whether you want to use online or offline mode to initiate deployment to your targets using the SPP:

- In online mode, HP SUM runs on a Windows or Linux hosted operating system.
- In offline mode, the server boots to the SPP ISO (Bootable ISO only).
 - In automatic mode, HP SUM updates firmware components for which updated versions are available without interaction.
 - In interactive mode, onscreen instructions guide you to update components.

Prerequisites for deploying SPP components on Windows

For detailed version information that addresses your environment see the *HP Service Pack for ProLiant Release Notes* in the SPP Information Library.

When running HP SUM or deploying components to systems running a Microsoft Windows operating system, the minimum requirements include:

- A local administrative system with 1 GB of memory.
- Sufficient hard-drive space of at least twice the file size of the components being deployed.
- A system enabled for WMI.
- Visibility to all remote targets 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.
- The network ports that HP SUM uses must be enabled. For more information on networking ports used by HP SUM, see the *HP Smart Update Manager User Guide*.

You must have the user name and password available for each remote server. Alternatively, you can use a domain account on the local administrative system that has administrator privileges on the target servers.

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 the File and Print Services exception is enabled in the Windows firewall. Failure to do so prevents HP SUM from deploying remote Windows targets.

Disabling BitLocker to permit firmware updates (Windows only)

The TPM, when used with BitLocker, measures a system state. Upon detection of a changed ROM image, it restricts access to the Windows file system if the user cannot provide the recovery key. HP SUM detects if a TPM is enabled in your system. For some newer models of HP ProLiant servers, if a TPM is detected in your system or with any remote server selected as a target, HP SUM utilities for HP iLO, Smart Array, NIC, and BIOS warn users prior to a flash. If the user does not temporarily disable BitLocker and does not cancel the flash, the BitLocker recovery key is needed to access the user data upon reboot.

A recovery event is triggered in the following situations:

- You do not temporarily disable BitLocker before flashing the system BIOS when using the Microsoft BitLocker Drive Encryption.
- You have optionally selected to measure HP iLO, Smart Array, and NIC firmware.

If HP SUM detects a TPM, a warning message appears:

CAUTION: A Trusted Platform Module (TPM) has been detected in this system. Failure to perform proper OS encryption procedures will result in loss of access to your data if recovery key is not available. Recommended procedure for Microsoft Windows (R) BitLocker (TM) is to \"suspend\" BitLocker prior to System ROM or Option ROM firmware flash. If you do not have your recovery key or have not suspended BitLocker, exit this flash. Failure to follow these instructions will result in loss of access to your data.

To enable firmware updates without the need to type in the TPM password on each server, the BitLocker Drive Encryption must be temporarily disabled. Disabling the BitLocker Drive Encryption keeps the hard drive data encrypted. However, BitLocker uses a plain text decryption key that is stored on the hard drive to read the information. After the firmware updates have been completed, the BitLocker Drive Encryption can be re-enabled. Once the BitLocker Drive Encryption has been re-enabled, the plain text key is removed and BitLocker secures the drive again.

- △ **CAUTION:** Temporarily disabling BitLocker Drive Encryption can compromise drive security and should only be attempted in a secure environment. If you are unable to provide a secure environment, HP recommends providing the boot password and leaving BitLocker Drive Encryption enabled throughout the firmware update process. This requires setting the `/tpmbypass` parameter for HP SUM or the firmware update is blocked.

To temporarily disable BitLocker support to allow firmware updates:

1. Click **Start**, and then search for `gpedit.msc` in the Search Text box.
2. When the Local Group Policy Editor starts, click **Local Computer Policy**.
3. Click **Computer Configuration**→**Administrative Templates**→**Windows Components**→**BitLocker Drive Encryption**.
4. When the BitLocker settings are displayed, double-click **Control Panel Setup: Enable Advanced startup options**.
5. When the dialog box appears, click **Disable**.
6. Close all windows, and then start the firmware update.

To enable advanced startup options:

1. Enter `cscript manage-bde.wsf -protectors -disable c:`
2. When the firmware update process is completed, the BitLocker Drive Encryption support can be re-enabled by following steps 1 through 4 but clicking **Enabled** in step 5 instead. The following command can be used to re-enable BitLocker Drive Encryption after firmware deployment has completed.
3. Enter `cscript manage-bde.wsf -protectors -enable c:`

The following table describes TPM detection scenarios that you might encounter.

Scenario	Result
If TPM is detected and enabled, the installation is not silent, and a system ROM must be updated.	A warning message appears. Select OK to continue. The installation is not canceled.
If TPM is detected and enabled, the installation is silent, the <code>/tpmbypass</code> switch is not given, and any firmware updated must be applied to the server.	No warning appears. A new log file is generated (<code>%systemdrive%\cpqsystem\log\cpqstub.log</code>). Because the installation is silent, the installation is terminated and cannot continue.
If TPM is detected and enabled with Option ROM Measuring, the installation is not silent, and a system ROM must be updated.	A warning message appears. After selecting OK , you can continue. The installation is not canceled.
If TPM is detected and enabled with Option ROM Measuring, the installation is silent, the <code>/tpmbypass</code> switch is not given, and any firmware updated must be applied to the server.	No warning appears. A new log file is generated (<code>%systemdrive%\cpqsystem\log\cpqstub.log</code>). Because the installation is silent, the installation is terminated and cannot continue.
If TPM is detected and enabled, the installation is silent, the installation occurs, and the <code>/tpmbypass</code> switch is supplied.	The installation occurs.

Initiating deployment

Use the HP SUM GUI to deploy SPP components in online or offline interactive modes to local or remote hosts. For detailed instructions and prerequisites see the *HP Smart Update Manager User Guide* at <http://www.hp.com/go/hpsum/documentation> for the appropriate version of HP SUM.

Online mode

To initiate deployment in online mode:

1. Copy the SPP to a USB thumb drive, hard drive, or file system. For instructions, see “SPP staging procedures” (page 11).
2. Launch HP SUM from the root of the ISO:
 - Windows: `\hp\swpackages\hpsum.exe`
 - Linux: `/hp/swpackages/hpsum`



TIP: If you are updating only firmware or software, use a filter argument:

- `/romonly` — With this filter switch, HP SUM only displays firmware components needed for installation.
- `/softwareonly` — With this filter switch, HP SUM only displays software components needed for installation.

3. To review the EULA, locate `start.htm` in the root of the ISO and open it in one of the supported browsers.
4. Follow the instructions on the screen.

Offline mode

To initiate deployment in offline mode:

1. Copy the SPP to a USB thumb drive, hard drive, or file system. When using a USB thumb drive, the ISO must be bootable. For instructions, see “SPP staging procedures” (page 11).
2. Boot the server to the SPP.

3. Select either automatic mode or interactive mode:
 - If you select automatic mode, the firmware will be updated on the server automatically without further interaction.
 - If you select interactive mode, follow the instructions on the screen.
4. 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

Detailed information regarding deploying SPP versions over a PXE server is available in the *HP Service Pack for ProLiant Release Notes* at <http://www.hp.com/go/spp/documentation>.

Prerequisites

Before proceeding with the configuration, you must have the following:

- A good working knowledge of PXE and TFTP.
- A network with a DHCP server.
- 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.
- PXELINUX, available from the SYSLINUX website <http://syslinux.zytor.com/wiki/index.php/PXELINUX>

This procedure assumes you are using a Linux TFTP server, and the TFTP package available from the Linux Kernel Archives at <http://www.kernel.org/pub/software/network/tftp>.

Using HP SIM to deploy an SPP

1. Copy the SPP to a USB thumb drive, hard drive, or file system. See “SPP staging procedures” (page 11).
2. Launch HP SIM 7.0 or later. For more information on setting up and using other versions of HP SIM, see the HP Systems Insight Manager Information Library at <http://www.hp.com/go/hpsim/docs>.
3. Click **Tools**→**System Information**→**System Management Homepage**.
4. Enter the server's IP address, and then click **Run Now**.
5. Click **HP Version Control Repository Manager** on the System Management Homepage.

NOTE: SPP requires VCRM version 7.0 or later.

6. Click **Upload a support pack**. Browse to the `hp/swpackages` folder in the update directory.
7. Click **Upload**.
8. After the upload finishes, go to the HP SIM home page. Choose a system to update.
9. Click the IP address of the server you want to update.
10. On the server details page, click **Tools & Links**.
11. Click **System Credentials**.
12. Enter the user credentials for the update target.
13. Go to the HP SIM home page.
14. Select the check box for the server you want to update.
15. Click **Deploy**→**Deploy Drivers, Firmware and Agents**→**Install Software and Firmware**.

3 SPP staging procedures

After downloading the SPP, stage it for update and deployment. Select the staging method most adapted to your deployment processes.

NOTE: ProLiant configurable software components must be copied onto writable media for configuration.

- **Creating a bootable USB key** — Extracting the ISO to a bootable USB key is the easiest way to make the SPP available when you have physical access to a single or small number of servers. The USB key is writable, so it is suitable for all SPP components.
 - Windows — For instructions on using the USB Key Utility included in the SPP, see [“Using the HP USB Key Utility” \(page 12\)](#).
 - Linux — For instructions on using SYSLINUX, see [“Creating a bootable USB key with SYSLINUX” \(page 27\)](#).

❗ **IMPORTANT:** When using OA, copy the SPP to the USB key directly, leaving it in its ISO package.

- **Mounting the ISO** — Mounting the ISO from the local file system is the easiest way to deploy components from the SPP if you have network access to a target server with a running operating system. For instructions, see [“Mounting an ISO” \(page 14\)](#).
- **Copying the SPP to a hard drive** — Copying the ISO to a hard drive is useful when preparing the SPP to update remote servers. The hard drive is writable, so it is suitable for all SPP components. For instructions on copying the SPP to a hard drive, see [“Copying the SPP to a hard drive” \(page 14\)](#).

Adding or removing components from an SPP

You can add or remove components from an SPP and optionally create a custom ISO. You might want to add or remove a component from the SPP to:

- Incorporate a Hot Fix or newly released component that is not part of the SPP into your SPP baseline.
- Ensure that only necessary files are loaded onto the system, which can make tracking changes easier if troubleshooting is required.
- Maintain compatibility with third-party products. For example, if HP releases an update to your FC HBA, but the vendor of your external switch does not support the HP version, you can remove this update to continue to receive support from the switch vendor.

NOTE: Modified SPPs cannot be deployed with HP Intelligent Provisioning.

The easiest way to create a custom SPP is with the HP SUM custom baseline feature. If you prefer not to use HP SUM, select the method that results in the format needed for your update process.

- **Directory with files** — This process leaves the modified SPP in a regular file system folder or directory. You can run HP SUM without creating and mounting an ISO. See [“Creating a directory with files” \(page 11\)](#).
- **ISO** — This process results in a modified ISO file. HP SIM requires an ISO file. See [“Creating a custom ISO” \(page 12\)](#).

Creating a directory with files

To add or remove components from the SPP:

1. Download the SPP ISO that best meets your needs and extract it onto writable media, such as a USB key or hard drive.
2. Download any Hot Fixes or other components that you want to add to your ISO. Place them in the `\hp\swpackages` directory of the SPP.

NOTE: If you want to keep Hot Fixes separate from SPP components, place them in a different directory, such as `\hp\hotfixes`.

3. Remove any unneeded components from the `\hp\swpackages` directory.
4. Validate your custom solution before applying it to the targets. Doing this in a lab environment will minimize downtime.

Creating a custom ISO

HP SUM 6.2.0 and later supports creating custom baseline and bootable ISOs when you have a source ISO, which HP SUM 6.2.0 and later includes. You can download the latest version of HP SUM at <http://www.hp.com/go/hpsum>.

Add the baselines that include the updates you want to apply to your nodes, and then use the Create Custom baseline function. For more information, see the *HP Smart Update Manager User Guide*, available at <http://www.hp.com/go/hpsum/documentation>.

To create a custom ISO:

1. Download an SPP ISO.
2. Use an ISO editor to add components to or remove components from the ISO.

NOTE: There are several ISO creation applications available. If you are creating a bootable ISO, verify that the application you are using can create a valid boot record for your operating system. You can use HP SUM 6.2 to create a bootable ISO that requires no third-party applications.

Using the HP USB Key Utility

The HP USB Key Utility is a Windows application that enables you to copy SPP and other CD or DVD images to a USB flash drive.

Prerequisites

Installing applications onto a USB flash drive requires a supported source CD, DVD, or ISO, and a USB flash drive with adequate storage space for storing the source contents. The USB Key Utility requires a USB 2.0 flash drive with a storage size larger than the media or ISO image (2 GB or greater).

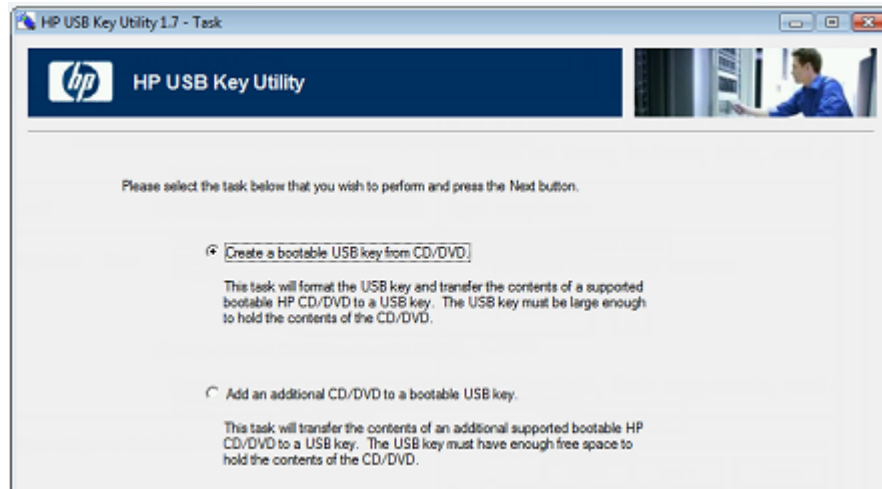
Creating a bootable USB key

After installation, the utility places a shortcut in HP System Tools in the Programs Start menu folder.

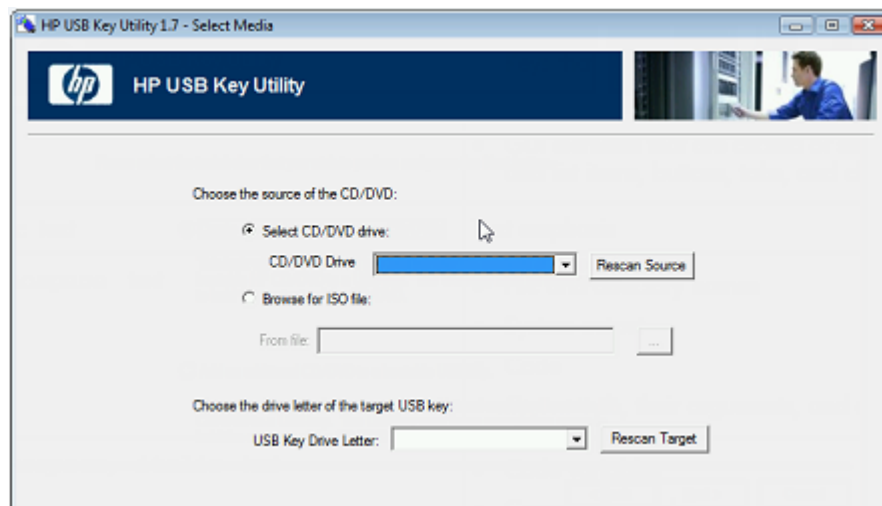
To create a bootable USB key:

1. Double-click the **HP USB Key Utility** shortcut in the HP System Tools folder.

2. Complete each step as presented by the application:
 - a. Click **Next** at the splash screen.
 - b. Read the End-User License Agreement, and then select **Agree** and click **Next**.
 - c. Select **Create a bootable USB key from CD/DVD**, and then click **Next**.



- d. Place the USB flash drive in an available USB port. Insert the media in the optical drive or mount the ISO image, and then click **Next**.
- e. Choose the drive letter of the source, choose the drive letter of the target USB flash drive, and click **Next**.



CAUTION: All data on the target USB key will be deleted.

- f. Click **Next** on the warning message screen. The USB flash drive is formatted, and the source contents are copied to the USB flash drive.
- g. Click **Finish** to display the README.TXT file.

Adding additional content to a bootable USB key

HP USB Key Utility supports multiple images on a single USB flash drive (provided there is adequate space available on the USB flash drive). To create a bootable USB key with multiple CD and DVD images, each image transferred to the USB key must support the multi-boot feature.

1. Follow the instructions for creating a bootable USB key.
2. Double-click the **HP USB Key Utility** shortcut in the HP System Tools folder.

3. Complete each step presented by the application:
 - a. Click **Next** at the splash screen.
 - b. Select **Agree**, and then click **Next** after reading the End-User License Agreement.
 - c. Select **Add an additional CD/DVD to a bootable USB key**, and then click **Next**.
 - d. Place the USB flash drive in an available USB port. Insert the media into the optical drive or mount the ISO image, and then click **Next**.
 - e. Choose the drive letter of the source, choose the drive letter of the target USB flash drive, and then click **Next**.
 - f. Click **Next** on the informational screen. The source contents are copied to the USB flash drive.
 - g. Click **Finish** to display the `README.TXT` file.
4. Repeat steps 2-3 for each source media or image to be transferred to the USB key.

Mounting an ISO

You can access the ISO contents directly by mounting the ISO file:

1. Use virtual CD/DVD image software available from various software suppliers to mount the SPP ISO.
2. Navigate to the `\hp\swpackages` folder on the mounted directory.
3. To run HP SUM, double-click `hpsum.exe` (Windows) or `hpsum` (Linux) and then follow the instructions on the screen.

Copying the SPP to a hard drive

To deploy SPP components with HP SUM using a hard drive:

1. Copy the contents of the `\hp\swpackages` directory from the SPP ISO image to a directory on the hard drive where HP SUM will be executed.
2. For Linux, ensure that execute privileges are available by using the `chmod -R 700*` command.
3. Copy any Hot Fixes into the directory where the files were copied in step 1. To keep the Hot Fix components separate, place them in a separate directory, such as `\hp\hotfixes`.
4. Run HP SUM.

4 SPP usage scenarios

This chapter contains high-level procedures that illustrate typical uses of the SPP. You can leverage these scenarios to learn about the SPP, adapt your custom installation and update procedures to use the SPP, or evaluate the SPP for use in your environment.

NOTE: It is important to note that features, functions and sometimes the interface will differ between versions of HP SUM included in the SPP release. Scenarios and screen excerpts may not match those in your environment. See detailed procedures for each HP SUM version at <http://www.hp.com/go/spp/documentation>.

Local bootable firmware update for a standalone server

This scenario updates the server firmware using the bootable method, which updates firmware identified by the HP SUM pre-installation environment. This is a good method for installing or updating a system without an operating system.

1. Download the bootable and complete SPP ISO.
2. Determine the target system and connect via iLO.
 - a. Connect to the target system's console.
 - b. Connect the bootable SPP ISO to the iLO virtual media.
3. Boot the server to the ISO.

When the server boots to the pre-installation environment, the HP SUM GUI launches.

4. Click **Localhost Guided Update** to begin an interactive or online update.
 - HP SUM scans the SPP repository.
 - HP SUM scans the local machine for outdated components.
 - HP SUM provides a report of available firmware components against the installed firmware components.
 - HP SUM identifies dependencies and updates the firmware.

For more information, see the *HP Smart Update Manager User Guide*.

Local and remote node firmware update

This is a method for updating the localhost node and remote nodes. Launch the SPP from a local system, use HP SUM to add baseline, nodes, inventory the nodes, and then deploy updates. This process should not require rebooting an online server. This type of update is typically used to update infrastructure firmware.

NOTE: Run HP SUM on the same operating system as the remote node you are updating. For example, to update a Linux node, run HP SUM on a Linux host.

1. Download the bootable and complete SPP ISO.
2. Unpack the ISO to a local directory or share, or mount the ISO to a local virtual drive.
3. In the root directory, double-click `start.htm`, and then follow the on-screen instructions.
4. Launch HP SUM, and then add the SPP ISO as a baseline. For more information, see the *HP Smart Update Manager User Guide*.
5. Obtain the OA IP address for the BladeSystem chassis you want to inventory and update.
6. In HP SUM, click **Add Node** on the Nodes screen, and then fill in the information for the node.
7. Click **Actions+Inventory**.
8. When HP SUM finishes the inventory process, if there are updates available for your node, click **Actions+Review/Deploy**.

9. HP SUM automatically selects updates. Select or deselect updates that you want to apply or not apply. If you make any changes, click **Analysis**.
10. Click **Deploy** to begin deployment.

Scripted online update for Linux server

This is a method that updates all of the software components for an online Linux server in a scripted method using an answer file. A similar process can be used for a Windows server, provided HP SUM is launched from a Windows server. The scripting answer files are similar for both the Windows and Linux environments.

Both SPP and HP ProLiant Support Pack (PSP) use HP SUM, so a scripted installation that worked for PSP 9.10 should work with SPP. Always check the *HP SUM Release Notes* for changes that may affect your scripts.

1. Download the bootable and complete SPP ISO.
2. Unpack or mount the SPP ISO to a local directory or share, or mount the ISO to a local virtual drive to gain access to HP SUM.
3. Prepare an answer file based on the command line options.

For HP SUM command line options, see the *HP Smart Update Manager User Guide*.

Example answer file

```
REBOOTALLOWED = YES
REBOOTREQUIRED = YES
REBOOTDELAY = 15
BUNDLESLIST = bp001190.xml
CMALOCALHOSTRWCOMMSTR = <string>
CMALOCALHOSTROCOMMSTR = <string>
CMAMGMTSTATIONRWIPORDNS = xxx.xxx.xxx.xxx
CMAMGMTSTATIONRWCOMMSTR = <string>
CMAMGMTSTATIONROIPORDNS = xxx.xxx.xxx.xxx
CMADEFTRAPCOMMSTR = <string>
CMAMGMTSTATIONROCOMMSTR = <string>
CMATRAPDESTINATIONCOMMSTR = <string>
CMATRAPDESTINATIONIPORDNS = xxx.xxx.xxx.xxx
CMASYSCONTACT = email@domain.com
CMASYSLOCATION = <string>
CMASTARTWEBAGENT = NO
CMASTARTSTORAGEAGENT = YES
CMANOTAINTEDKERNEL = YES|
```

4. Initiate HP SUM with the answer file:

```
./hpsum/s/softwareonly/answerfile
```

The `/softwareonly` switch tells HP SUM to update software components, such as drivers and agents.

The `/answerfile` location must be a valid path.

5 FAQs

This chapter provides typical questions and answers about using SPP.

How can I determine which SPP version I am using?

You can view the HP SPP version information in the `start.htm` file in a web browser. The file is in the root directory of the HP SPP.

Where can I find information for adding or removing components from an SPP?

Specific procedure information is available in the *HP ProLiant and Integrity Firmware Management Best Practices Implementer Guide* at <http://www.hp.com/go/spp/documentation>.

You can add or remove components from the SPP, to:

- Incorporate a Hot Fix or newly released component that is not part of the SPP into your SPP baseline.
- Ensure that only necessary files are loaded onto the system, which can make tracking changes easier if troubleshooting is required.
- Maintain compatibility with third-party products. For example, if HP releases an update to your FC HBA, but the vendor of your external switch does not support the HP version, you can remove this update to continue to receive support from the switch vendor.

NOTE: Modified SPPs cannot be deployed with HP Intelligent Provisioning. Use HP SUM to deploy a modified SPP. More information about HP Intelligent Provisioning is available at <http://www.hp.com/go/intelligentprovisioning/docs>.

For general instructions on adding or removing components from an SPP, see:

- To modify an SPP that has been extracted from its ISO, see “Creating a directory with files” (page 11).
- To modify an SPP within its ISO format, see “Creating a custom ISO” (page 12).

Does the SPP need to be in its ISO format or extracted?

Whether the SPP needs to be in its ISO format or extracted is determined by the tool used, for instance offline updates are booted from an ISO.

When should I use online versus offline mode?

In *online* mode, the installation occurs while the host processor is running in the normal server environment. For example, if the server runs Microsoft Windows Server 2008, the update occurs under this environment. The update does not require the server to be booted to a special environment to update the firmware. You might need to reboot the target to activate the firmware. HP recommends using online mode when possible.

Offline mode supports firmware updates only. HP SUM boots a small Linux kernel and enables updates to occur on a single server. In offline mode, you can only update the local system using a single repository, and some features of HP SUM that require the regular local host operating system are not supported. HP recommends using offline mode when necessary, and in the following situations:

- Installing or updating components that are only supported in offline mode.
- The target does not have a supported or functional operating system.

Where can I find information on planning updates for data centers and corporate environments?

The *HP ProLiant and Integrity Firmware Management Best Practices Planning and Implementer Guides* at <http://www.hp.com/go/spp/documentation> can help you create strategies for using the SPP in data centers and corporate environments.

- *HP ProLiant and Integrity Firmware Management Best Practices Overview* – Provides information about keeping your system environment updated and running at its best.
- *HP ProLiant and Integrity Firmware Management Best Practices Planning Guide* – Provides an outline for creating a firmware update plan to follow before updating your server environment.
- *HP ProLiant and Integrity Firmware Management Best Practices Implementer Guide* – Provides examples for implementing updates.

You can download these documents from the SPP Information Library at <http://www.hp.com/go/spp/documentation>.

How can I install firmware or software components only?

You can use HP SUM to deploy firmware or software components separately.

In GUI mode create a custom baseline that includes only firmware or software components.

In CLI mode, use the following commands:

- `/romonly` — With this filter switch, HP SUM only displays firmware components needed for installation.
- `/softwareonly` — With this filter switch, HP SUM only displays software components needed for installation.

NOTE: For more information on using HP SUM, see the *HP Smart Update Manager User Guide*.

How does HP SUM work when applied to an entire chassis?

HP SUM performs dependency checking on targets, which ensures that all dependencies are met before an update begins. The HP SUM discovery process also detects the required updates for targets and allows HP SUM to perform updates in the correct order.

Is there a silent option to install an SPP?

The HP SUM CLI and input file modes each have a `/silent` parameter. In offline mode, you can use automatic mode to install firmware that needs to be updated. For more information on using these modes, see the *HP Smart Update Manager User Guide*.

When upgrading an entire c7000 Enclosure and all of its constituents, can I just give HP SUM the OA IP address?

- Can I simply give the HP SUM tool the OA IP address?
- Is the tool able to upgrade all of the components inside the chassis because the OA can automatically identify the addresses of the iLOs and modules?
- Do I have to manually add IP addresses of the blades, iLOs, modules, and so on, into the HP SUM GUI interface, thereby creating my own group, which is, in effect, the enclosure and all of its contents?
- Must I always manually add the host OS IP address that upgrades the blade server BIOS because the OA cannot identify what it is?

HP SUM updates all server firmware in online mode. HP SUM updates the OA through the OA interface, not through the NIC interface. The SPP provides the firmware versions used to update the server firmware.

Provide the IP address or DNS name for G7 and earlier targets that you want to update. HP SUM detects the OA host servers list on targets, and if you added servers to the OA host servers list, HP SUM will ask if you want to add the target.

If you are using a Gen8 server that is running AMS, you do not need to provide an IP address.

What is the order for updating an enclosure?

The update order depends on whether an operating system is already installed and the VC firmware version.

- With VC firmware earlier than 1.34, OA and the blades can be updated concurrently.
- With VC firmware 1.34 through 3.00:
 - Without an operating system, update the blade infrastructure firmware (OA or VC) first and then the blades (offline).
 - With an operating system, update the OA first, and then update the blades (online) and VC concurrently.
- With VC firmware greater than 3.00, you must install OA firmware 3.00 first.

SPP does not support Windows 2003. What should I do if I have a Windows 2003 server?

HP recommends that you continue to use PSP 8.70 and the Smart Update Firmware DVD 9.30 to update Windows 2003. You can also update firmware in offline mode with SPP 2011.09.0.

6 Troubleshooting

This chapter gives general information for generating reports and gathering logs to troubleshoot SPP issues.

For a listing of known limitations, see the *HP Service Pack for ProLiant Release Notes* for your environment on the SPP Information Library at <http://www.hp.com/go/spp/documentation>.

NOTE: Due to differences between versions for gathering logs and generating reports see the HP SUM product documentation for your particular environment on the SPP Information Library.

Generating and viewing reports

You can generate either an HTML or XML report file detailing the repository contents, target firmware, target install details, and failed dependencies. You can view both files in a web browser, such as Microsoft Internet Explorer. The reports support JavaScript-enabled web browsers Internet Explorer 6.0 or Mozilla Firefox 3.5 and later. The XML reports also allow you to write programs to extract report information and display it at other locations.

NOTE: Not all reports are available on all screens. If a report is not available, HP SUM colors it gray and it cannot be selected..

Generating a Report

HP SUM can generate reports from the Nodes screen after you have inventoried nodes.

To generate a report

1. From the Nodes screen, select a report or multiple reports, and then click **Actions**→**Report**.
2. Select the reports you want to generate:
 - **Firmware details:** This displays firmware versions that are currently installed on the node.
 - **Deploy preview:** This displays components that HP SUM can install on the node.
 - **Failed Dependency details:** This displays any failed dependencies on the node.
 - **Last deploy details:** This displays details about what HP SUM installed on a node.

NOTE: If you cannot select a report, HP SUM might not have enough information to generate the report.

3. Click the report format you want HP SUM to generate, **HTML**, **CSV**, or **XML**.

NOTE: HP SUM automatically opens the report after it finishes generating the report. If you do not have the format associated to an application, HP SUM prompts you to save the report.

4. Click **Generate**.

Collecting trace directories

In HP SUM 5.x, HP SUM generates a set of debug trace logs located in the %TEMP%\HPSUM directory on Windows systems. These files contain internal process and debug information which can be useful in determining HP SUM failures. In HP SUM 6.x, the files are stored in the %temp%\HP SUM for 6.x directory.

In HP SUM 5.x, the debug trace files are located under %temp%\hp_sum for Windows. The log files are located under C:\cpqsystem\hp\log. These files provide the following information and are appended in each HP SUM session.

HP SUM 5.0.0 and later includes a utility named `GatherLogs.bat` (Windows) or `Gatherlogs.sh` (Linux) to create a compressed `.zip` (Windows) or `tar.Z` (Linux) file with all the logs. If you need to review the log files, you can run this utility to gather all the logs in one file.

NOTE: Exit HP SUM before running the GatherLogs utility.

The following are the debug files for HP SUM 5.x.

Debug Trace Files	Function
<code>InventoryResults.xml</code>	Contains details of the component inventory from the repositories.
<code>Settings.xml</code>	Includes general settings information of HP SUM such as Force downgrade or upgrade.
<code>SourceClient.trace</code>	Includes trace data of repository manager and general errors if any.
<code>Hpsumiserver\Hpsumiserver.log</code>	Contains trace data for HP SUM SOAP server sessions.
<code>Hpsumiserver\HpsumserverW32.log</code>	Contains remote trace data for HP SUM SOAP server sessions.
<code>Hpsumiserver\localhpsumsoapserver.log</code>	Contains information of the HP SUM SOAP server.
<code>Session.log</code>	Contains the data and time each session started. This file is saved in a separate directory named with the date.
<code>RepositoryManager</code>	Provides the repository and component information. This directory can be excluded in the trace data when collecting the trace files.
<code><target>\Discoverymanager.log</code>	Provides the details of interaction between the Operations Manager and the remote discovery client. If a discovery tool fails, it is reported to this trace file and surfaced as a <code>Discovery Failed</code> message. This log is target specific.
<code><target>\Installmanager.log</code>	Provides the interaction between the Operations Manager and the remote discovery client. If a discovery tool fails, it is reported to this trace file and surfaced as a <code>Discovery Failed</code> message. This log is target specific.
<code><target>\<target name>.log.txt</code>	Provides the trace data from operations manager for a specific target. <code><target></code> is the name of the target in the source selections screen.
<code><target>\Settings.xml</code>	Provides general settings information of HP SUM such as Force downgrade or upgrade for a specific target.

Log Files	Function
<code><target>\hpsum_log.txt</code>	Contains information of HP SUM discovery, installation status and errors if any. <code><target></code> is the name of the target in the source selections screen.
<code>Hpsum_detail_log.txt</code>	Contains the log data of the components.
<code>hpsum.ini</code>	Stores persistent data on the user's system.

HP SUM 6.0.0 trace directories

In HP SUM 6.x, trace directories are stored in the /tmp/HPSUM (Linux) and %temp%\HPSUM (Windows) directories. HP SUM creates trace directories for each function and node that HP SUM updates.

If you are running HP SUM in offline mode, use the following instructions to collect trace directories and logs.

1. Launch HP SUM in offline mode.
2. Launch the command prompt from the HP SUM GUI by pressing **CTRL-ALT-D-B-X**.

NOTE: After approximately 30 seconds, the command prompt appears over the HP SUM GUI window.

3. Change the directory to the one running HP SUM. For example, `cd /mnt/bootdevice/SPP2012060B/hp/swpackages`.
4. Type `./gatherlogs.sh` to collect the HP SUM logs. All logs are collected in a `.tar.gz` file in the directory where you placed HP SUM or in a temp directory if the HP SUM directory is read-only. The log file is named `HPSUM_Logs_$(datetime).tar`.
5. Place the logs on a removable media if you want to view them on another computer.

7 Support and other resources

SPP support policy

For the support period of each active SPP, see the *HP Service Pack for ProLiant Release Notes* on the SPP Information Library.

Information to collect before contacting HP

Be sure to have the following information available before you contact HP:

- Active Health System log (HP ProLiant Gen8 servers only).
Download and have available an Active Health System log for seven days before the failure was detected. For more information, see the *HP Intelligent Provisioning User Guide* at <http://www.hp.com/go/intelligentprovisioning/docs>.
- OA SHOW ALL report (for HP BladeSystem products only)
For information on obtaining the OA SHOW ALL report, see: <http://www.hp.com/go/OAlog>.
- Technical support registration number (if applicable)
- Product serial number
- Product model name and number
- Product identification number
- Applicable error messages
- Add-on boards or hardware
- Third-party hardware or software
- Operating system type and revision level

How to contact HP

Use the following methods to contact HP technical support:

- See the Contact HP worldwide website: <http://www.hp.com/go/assistance>
- Use the **Contact HP** link on the HP Support Center website: <http://www.hp.com/go/hpsc>
- In the United States, call +1 800 334 5144 to contact HP by telephone. This service is available 24 hours a day, 7 days a week. For continuous quality improvement, conversations might be recorded or monitored.

Subscription service

Receive, by email, support alerts announcing product support communications, driver updates, software releases, firmware updates, and customer-replaceable component information by signing up at <http://www.hp.com/go/myadvisory>.

To change options for support alerts you already receive, click the **Sign in** link on the right.

Related information

The SPP website contains documents, Customer Advisories, and a video library: <http://www.hp.com/go/spp>.

The SPP Information Library at <http://www.hp.com/go/spp/documentation> includes:

- *HP Service Pack for ProLiant Release Notes*
- *HP Service Pack for ProLiant Support Guide*

- HP ProLiant firmware management best practices guides
- Contents reports, listing the contents of each SPP

The SPP Download page includes current and archived SPP downloads, Hot Fixes, and advisories at <http://www.hp.com/go/spp/download>.

The HP Systems and Server Software Management page includes links to ProLiant server management utilities at <http://www.hp.com/go/smartupdate>.

For information about HP SUM, see the *HP Smart Update Manager User Guide*: http://www.hp.com/support/HP_SUM_UG_en.

For information on the HP Systems Insight Manager, see the following documents on the HP Systems Insight Manager website: <http://www.hp.com/go/hpsim/docs>.

- *HP Systems Insight Manager Installation and User Guide*
- *HP Systems Insight Manager Help Guide*

For more information about ProLiant Gen8 server and software see the HP website: <http://www.hp.com/go/proliantgen8/docs>.

For information about HP Insight Control Management Software, see the HP website: <http://www.hp.com/servers/rdp>.

For information about operating systems supported by ProLiant servers, see the operating system support matrices: <http://www.hp.com/go/supportos>.

For information about support for updating SATA hard drives in a Modular Smart Array 20/50/60/70 storage enclosure connected to a ProLiant server using a Smart Array controller, see the support matrix on the HP StorageWorks Modular Smart Arrays website: <http://www.hp.com/go/msa>.

Typographic conventions

Table 1 Document conventions

Convention	Element
Blue text: Table 1 (page 24)	Cross-reference links and e-mail addresses
Blue, underlined text: http://www.hp.com	Website addresses
Bold text	<ul style="list-style-type: none"> • Keys that are pressed • Text typed into a GUI element, such as a box • GUI elements that are clicked or selected, such as menu and list items, buttons, tabs, and check boxes
<i>Italic</i> text	Text emphasis
Monospace text	<ul style="list-style-type: none"> • File and directory names • System output • Code • Commands, their arguments, and argument values
<i>Monospace, italic</i> text	<ul style="list-style-type: none"> • Code variables • Command variables
Monospace, bold text	Emphasized monospace text

⚠ CAUTION: Indicates that failure to follow directions could result in damage to equipment or data.

❗ IMPORTANT: Provides clarifying information or specific instructions.

NOTE: Provides additional information.



TIP: Provides helpful hints and shortcuts.

HP Insight Remote Support software

HP strongly recommends that you register your device for remote support to enable enhanced delivery of your HP Warranty, HP Care Pack Service, or HP contractual support agreement. HP Insight Remote Support supplements your monitoring continuously to ensure maximum system availability by providing intelligent event diagnosis, and automatic, secure submission of hardware event notifications to HP, which will initiate a fast and accurate resolution, based on your product's service level. Notifications may be sent to your authorized HP Channel Partner for onsite service, if configured and available in your country.

For more information, see *HP Insight Remote Support and Insight Online Setup Guide for ProLiant Gen8 Servers and BladeSystem c-Class Enclosures* on the HP website (<http://www.hp.com/go/enterprise/docs>). HP Insight Remote Support is available as part of HP Warranty, HP Care Pack Service, or HP contractual support agreement.

HP Insight Online

HP Insight Online is a capability of the HP Support Center portal. Combined with HP Insight Remote Support 7.x, it automatically aggregates device health, asset, and support information from iLO Management Engine with contract and warranty information, and then secures it in a single, personalized dashboard that is viewable from anywhere at any time. The dashboard organizes your IT and service data to help you understand and respond to that information more quickly. With specific authorization from you, an authorized HP Channel Partner can also view your IT environment remotely at HP Insight Online.

For more information, see the following documents on the HP website (<http://www.hp.com/go/insightremotesupport/docs>):

- For more information about using HP Insight Online, see the *HP Insight Online User's Guide*.
- For more information about installing HP Insight Remote Support and enabling HP Insight Online, see the *HP Insight Remote Support and Insight Online Setup Guide for ProLiant Gen8 Servers and BladeSystem c-Class Enclosures*.

8 Documentation feedback

HP is committed to providing documentation that meets your needs. To help us improve the documentation, send any errors, suggestions, or comments to Documentation Feedback (docsfeedback@hp.com). Include the document title and part number, version number, or the URL when submitting your feedback.

A Creating a bootable USB key with SYSLINUX

To create a bootable USB key with Linux:

1. Obtain SYSLINUX 3.2 or higher from <http://syslinux.zytor.com> and download it to a Linux workstation.
2. Install the SYSLINUX RPM obtained in the previous step.
3. Create a directory for the USB key mount point if one does not already exist. For example,
`mkdir /usbkey`

NOTE: The device mount point can vary depending on whether other SCSI drives are also installed on the server. Thus, the device mount point might be `sdb1`, `sdcl`, etc.

4. Insert the USB key and mount it. For example,
`mount /dev/sda1 /usbkey`
5. To make the key bootable, write the boot partition to the USB key:
`./syslinux /usbkey`
6. Create a directory to mount the SPP. For example,
`mkdir /spp_mount_point`
7. Mount the SPP via a loopback. For example,
`mount -t iso9660 spp.<version>.iso /spp_mount_point -o loop`
8. Change to the directory on the mounted SPP ISO.
`cd /spp_mount_point/usb`
9. Run the `usbcreator.sh` script, passing in the SPP mount point and the USB mount point to move the SPP files to the USB key. For example,
`./usbcreator.sh /spp_mount_point /usbkey`
10. If you want to add Hot Fixes or other components, copy them to the `/hp/swpackages` directory on `/usbkey`.

NOTE: HP SUM will install additional components that it finds in the `/hp/swpackages` directory. Intelligent Provisioning will not update additional components.

11. Unmount the SPP ISO and USB key. For example,
`umount /dev/sda1`
`umount spp.<version>.iso`
12. Remove the USB key.

Glossary

DUD	Driver User Diskette
EFM	Enclosure Firmware Management – a feature of OA
HBA	host bus adapter
HP iLO	Integrated Lights-Out
HP SUM	HP Smart Update Manager
LDU	Linux Deployment Utility
LILO	Linux Loader
OA	Onboard Administrator
POST	Power-On Self-Test
PSP	HP ProLiant Support Pack
RBSU	HP ROM-Based Setup Utility
RIBCL	Remote Insight Board Command Language
RPM	Red Hat Package Manager
SAS	serial attached SCSI
SDR	Software Delivery Repository
SMHP	HP System Management Homepage
SOAP	Simple Object Access Protocol
SPP	HP Service Pack for ProLiant
SSH	Secure Shell
SSL	Secure Sockets Layer
SUV	serial, USB, video
TPM	Trusted Platform Module
UNC	Universal Naming Convention
VC	Virtual Connect
VCA	Version Control Agent
VCRM	Version Control Repository Manager
WMI	Windows Management Instrumentation
XML	extensible markup language

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