Hewlett Packard
Enterprise

# Smart Update Manager User Guide

## Version 8.0.0


**Abstract**

This document describes how to use SUM to apply firmware updates to HPE Synergy, Edgeline, ProLiant servers, and apply software updates to ProLiant servers. This document is intended for individuals who understand the configuration and operations of Microsoft Windows, Windows Server, Linux, smart components, VMware, and the risk of data loss from performing updates.



Part Number: 881504–001
Published: July 2017
Edition: 1

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# Introduction

## Smart Update Manager

SUM is a tool for firmware, driver, and software maintenance on ProLiant servers, BladeSystem enclosures, Moonshot systems, and other nodes. It provides a browser-based GUI or a command-line scripting interface for flexibility and adaptability.

SUM identifies associated nodes you can update at the same time to avoid interdependency issues.

Key features of SUM include:

- Discovery engine that finds installed versions of hardware, firmware, and software on nodes.
- SUM deploys updates in the correct order and ensures that all dependencies are met before deploying an update.
- Interdependency checking.
- Automatic and step-by-step localhost Guided Update process.
- Web browser-based mode.
- Ability to create custom baselines and ISOs.
- Support for iLO Repository (Gen10 iLO 5 nodes only).
- Simultaneous firmware and software deployment for multiple remote nodes.
- Local offline firmware deployments with SPP deliverables.
- Extensive logging in all modes.

**NOTE:**

SUM does not support third-party controllers, including flashing hard drives behind the controllers.

## Scaling SUM updates in your environment

SUM supports deploying up to 50 nodes at a time in all SUM modes. Deployment times depend on system and server environment variables.

**NOTE:**

Update a maximum of 10 VMware nodes at a time.

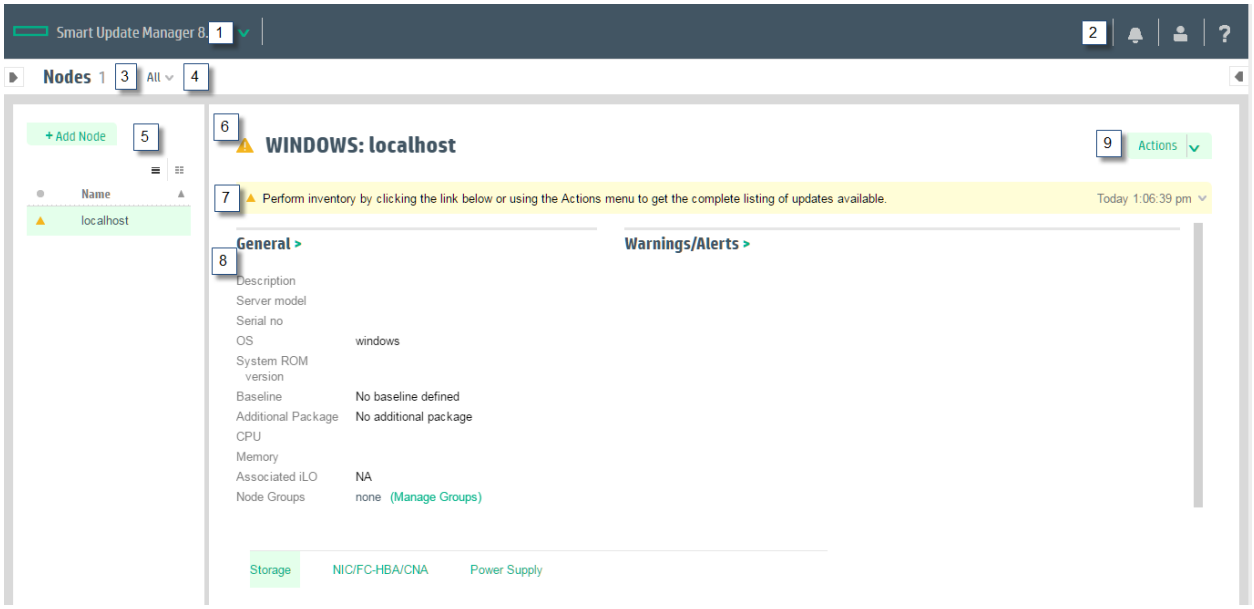
## About the GUI

SUM is a web browser-based application. When you launch the GUI, the system uses the default web browser.

**NOTE:**

Do not use the **Back** button in your browser window.

The following image explains the major areas of the GUI. Screens options vary based on the node type.




| Item | Description |
|---|---|
| 1 | Main menu - Provides links to all application screens. |
| 2 | • Activity list - Status updates appear briefly, and the activity icon displays the status of recent activities. To open the Activity panel, click the **Activities** icon.<br>• Login information - Displays the currently logged-in user and offers a logout function.<br>• Help - Opens the help panel. |
| 3 | Screen name - Displays the name of the screen. |
| 4 | Screen filters - Filters screen objects. |
| 5 | Screen list - Displays a list of items on the screen.<br>Add Node - Add button changes based on the screen. |
| 6 | Baseline or Node name - Lists the baseline or node that you selected in the screen list. This example shows the name of the selected baseline. |
| 7 | Informational highlight - Highlights information that you might need to perform or know about for the selected item. Click to expand this box for all information. |
| 8 | Item details - Provides full details about the selected item. |
| 9 | Actions - Lists the available actions.<br>**NOTE:**<br>Screen options vary based on the screen you are viewing. |

# Status icon descriptions

SUM uses icons to represent the status of resources and alerts and to control the display.

### Table 1: Status icons

| Large icon | Small icon | Description |
|---|---|---|
| | | Critical issue / Interrupted / Dependency issue |
| | | Warning |
| | | OK / Successful |
| | | Disabled |
| | | Unknown |
| | | A change is being applied or a task is running. |

# Downloading SUM

## Files included in the SUM download

Download SUM from the Hewlett Packard Enterprise website or from the Software Delivery Repository as a standalone application. The standalone application does not include updates for your environment. You can obtain update components from the SPP, SPP Custom Download, or from the SDR.

The SUM download includes the following:

**`smartupdate`**

SUM runs in either GUI, interactive CLI, CLI, or Linux RPM mode. By default, SUM opens in the GUI version. If you enter `smartupdate /s`, SUM runs in the CLI mode. If you enter `smartupdate` and one of the interactive CLI commands, SUM opens in interactive CLI mode.

**`clean-cache`**

Removes the files in the temp directory associated with SUM that contain cached information about nodes and baselines. Logs are still maintained.

**`gatherlogs`**

Collects all logs for SUM. The logs are useful when debugging or troubleshooting issues for SUM.

**`sum_migration`**

Migrates node data from earlier versions of SUM to the current version of SUM.

Prerequisites are available in the *Smart Update Manager Release Notes* available at **http://www.hpe.com/support/sum-rn-en**.

## Downloading SUM from the Hewlett Packard Enterprise website

**Procedure**

1. Launch a web browser.
2. Go to **http://www.hpe.com/servers/sum-download**.
3. Click the file that you want to download:
   a. **Smart Update Manager**

      – The ISO contains SUM and a bootable ISO environment. Firmware and Software components can be added to create a customized baseline.
   b. **Smart Update Manager RPM**

      – The RPM is a native package for Linux and is also available on the Software Delivery Repository at **http://www.hpe.com/support/SDR-SUM**.
   c. **Smart Update Manager zip**

      – The zip file contains the files for running SUM on supported Windows and Linux operating systems.

## Downloading an SPP Custom Download

You can:

- Create a custom SPP.
- Download any of the files available.
- Delete a custom SPP. You cannot delete a default SPP from the page.

For help with the SPP Custom Download page, see the **SPP Custom Download FAQ** page.

**Procedure**

1. Open a web browser and go to **https://www.hpe.com/servers/spp/custom**.
2. Access to the SPP requires validation through the HPE Support Center. An active warranty or HPE support agreement is required to download the SPP. For more information, please view the **SPP Warranty/Support Agreement Validation document**; an HPE Passport login is required.
3. If necessary, click **Sign in here**, and then provide your HPE Passport user credentials.
4. Select an SPP from the left side of the page.

# Downloading SUM from the SDR website

You can download SUM as an RPM from the Software Delivery Repository at **http://www.hpe.com/support/SDR-SUM**. The SDR contains a version of the SUM RPM for each supported operating system and architecture type. Instructions on how to set up your `yum` configuration are available on the SDR website.

You can use `yum` commands to search for and download SUM to your system. You can also use a web browser to navigate the SDR and download the rpm.

Use the following commands to search, download, or install SUM from the SDR:

**`yum search smartupdate`**

Search for SUM with yum.

**`yum install smartupdate`**

Install SUM with yum.

**`rpm -Uvh sum-<version>.<os>-<os_version>.x86_64.rpm`**

Download SUM from the SDR with a web browser, and then install the RPM.

For more information on using the SDR, see the Getting Started and FAQ sections on the Software Delivery Repository website at **http://www.hpe.com/support/SDR-SUM**.

For more information on using SUM with the SDR, see Linux best practices document at **http://www.hpe.com/info/sum-docs**.

# Migrating node information to the current SUM version

SUM stores node information in a database that is specific to each version of SUM. If you have used SUM to manage a node, migrate the node database information to the current version of SUM before launching SUM.

**Procedure**

1. From the SUM directory, launch `sum_migration.bat` (Windows) or `sum_migration.sh` (Linux).
2. Follow the on-screen instructions and then select the version you want to migrate to the version of SUM you are using.

# SUM and SPP boot environments

The USB Key Utility does not support multiboot setups on a single device. The SUM and SPP ISOs contain signed parts to work with the UEFI bootloader. The signed parts do not allow for multiboot setups

on a single device, such as a USB key. You can download the SPP at **http://www.hpe.com/servers/spp/download**.

The following sections discuss deployment from SUM. For more information on planning an update, see the SUM Best Practices Guides available on the Hewlett Packard Enterprise website.

# SUM modes

## SUM modes

SUM supports local and remote deployments. SUM runs in Windows and Linux in online and offline mode.

**GUI**

An easy-to-use browser-based GUI that enables deployment and maintenance of system software and firmware components to multiple systems in a single session.

**CLI**

The CLI enables you to script custom installations. This mode might not support all functions of the GUI and interactive CLI. For more information, see the **Smart Update Manager CLI Guide**.

**Inputfile CLI**

You can call a text file that contains all the SUM parameters you want to use. For more information, see the **Smart Update Manager CLI Guide**.

**Interactive CLI**

The interactive CLI allows you to script most of the commands that are available in the SUM GUI. Functionality available from the interactive CLI includes adding nodes and baselines, deploying nodes, collecting log files, and generating reports. For more information, see the **Smart Update Manager CLI Guide**.

**Linux firmware RPM**

The Linux firmware RPM mode offers a simplified command-line deployment mode for Linux nodes.

**Running from an ISO**

If your ISO contains updates, you can copy the ISO to a DVD or USB key. From the DVD or USB key, you can run SUM in an offline interactive or automatic mode.

- **Automatic mode** — Firmware components update without interaction. To launch automatic mode:
  1. Install the DVD or USB key into the server, boot the server to the DVD or USB key.
  2. SUM launches and deploys updates after a short period.
- **Interactive offline mode** — Allows you to use the GUI mode to deploy updates. To launch offline interactive mode:
  - Install the DVD or USB key into the server, boot the server to the DVD or USB key.

**NOTE:**

If you run SUM on a virtual machine running a supported operating system, do not deploy updates to the localhost system. Only deploy updates to remote nodes.

# Deployment modes

The following key terms apply when using SUM to deploy updates. You can combine the terms to reflect an environment, for example, local-online or remote-online.

**Local**

The installation runs on the physical hardware you are updating. For example, running on a server to update the system ROM of the server.

**Remote**

The installation runs on one system, but updates other physical nodes. For example, updating the OA or server firmware across a network.

**Online**

The installation occurs while the host processor is running in the normal server environment. For example, if the server runs Microsoft Windows Server 2012, the update occurs under this environment. The update does not require you to boot to a special environment to update the firmware. You might need to reboot the node to activate the firmware.

**Offline**

In offline mode, SUM boots a small SuSE Linux Enterprise Server 12 boot kernel and enables updates to occur on a single server.

- Only updates the local system.
- Only uses a single baseline.

In offline mode, SUM does not support some features that require the regular local host operating systems.

# Deployment scenarios

SUM deploys updates from the machine running SUM, the localhost, to one or more remote hosts. If the host running SUM uses Windows, you can update Windows, Linux, or VMware nodes. If the host running SUM uses Linux, you can update Linux or VMware nodes. You can also update remote ProLiant, Synergy, Edgeline, Moonshot systems, and Superdome X Onboard Administrators from Windows or Linux systems.

**SUM deployment scenarios**

**Graphical deployment on a local host**

- You are not familiar with command-line tools.
- You are deploying components on a local, single host.
- Updates do not require scripting.

**Scripted deployment on a local host**

- You are familiar with command-line tools.
- You are deploying components on a local, single host.
- Updates require a customized, scripted deployment.

**Graphical deployment to a remote host**

- You are not familiar with command-line tools.
- You are deploying components on one or more remote hosts.
- Updates do not require scripting.

**Scripted deployment to a remote host**

- You are familiar with command-line tools.
- You are deploying components on one or more hosts.
- Updates require a customized, scripted deployment to one, or more host systems.

# Deploying firmware for ProLiant servers using the SPP

The SPP includes components for HPE ProLiant server and enclosures systems, software, and firmware.

SUM deploys components to supported Windows, Linux, and VMware operating systems. The single SPP image contains a comprehensive collection of firmware and system software components including

drivers, agents, tools, utilities. These components are tested, managed, and deployed together as a single solution.

**NOTE:**

SUM supports deploying RPM components to Linux nodes.

Each SPP release includes a version of SUM you can use to deploy the SPP components. You can download the latest version of SUM from the SUM website at **http://www.hpe.com/servers/sum-download**.

For a complete list of systems and software supported by SPP, and updates available in an SPP release, see the release notes for that SPP at **http://www.hpe.com/info/spp/documentation**.

# Deploying HPE Synergy with SUM

The SPP and SUM can deploy updates to some HPE Synergy servers. SUM cannot deploy updates to the HPE Synergy Frame Link Module, use HPE OneView.

# Log files and changing directory locations

## Collecting log files in SUM online mode

SUM generates a set of debug log files that contain internal process and debug information which can be useful in determining issues with SUM. Log files are stored in the `/var/tmp/sum` (Linux) and `%LOCALAPPDATA%\sum` (Windows) directories. SUM creates log files for each function and node that SUM updates.

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

### Procedure

1. Open the directory that contains SUM and then launch `gatherlogs.bat` (Windows) or `gatherlogs.sh` (Linux).
2. Use the command `gatherlogs -s` to run the logs without a pause.

## Collecting log files in SUM offline mode

### Procedure

1. Boot an SPP or SUM in offline mode.
2. Launch the command prompt from the SUM GUI by pressing **CTRL+ALT+D+B+G**.
3. Select a directory where you want to save the logs. You can save the logs to a removable media to view them on another computer.

## SUM log file locations

SUM stores log files in the following locations:

**User logs**

**Windows directory:** `C:\cpqsystem\sum\log`

**Linux directory:** `/var/tmp/sum/sum_8.0.0/`

**Debug logs**

**Local Windows directory:** `%LOCALAPPDATA%\sum`.

**Remote Windows directory:** `Admin$\Temp\sum`.

**Linux directory:** `/var/tmp/sum`

**Local copy of SUM binaries when needed***

**Windows directory:** `%LOCALAPPDATA%\localsum`

**Linux directory:** `/var/tmp/localsum`

SUM makes a local copy of binaries and support files when SUM is launched from a network-mounted share or read-only location. This provides SUM uninterrupted access during updates.

**Remote node files**

**Windows directory:** `Admin$\temp\sum`

**Linux directory:** `/var/tmp/sum`

**NOTE:**

If you do not find logs in the locations listed on Linux systems, check the directory `/var/cpq/Component.log`.

# SUM log locations

- SUM log
  - Windows location: `C:\cpqsystem\sum\log\<ip>\sum_log.txt`
  - Linux location: `/var/log/sum/<ip>/sum_log.txt`
  - Top-level user log for the node at the given <ip> address.
  - Multiple sessions of SUM are included in the same log file.
  - Includes the summary of steps performed and components installed on the system.
  - Includes return codes for the node.
- SUM detail log
  - Windows location: `C:\cpqsystem\sum\log\<ip>\sum_detail_log.txt`
  - Linux location: `/var/log/sum/<ip>/sum_detail_log.txt`
  - Detailed level user log for node at the IP address.
  - Multiple sessions of SUM are included in the same log file.
  - Includes full output from each component run on the node.
  - Includes return codes for each component and that node.
- SUM install details log
  - Windows location: `C:\cpqsystem\sum\log\<ip>\SUM_InstallDetails.xml`
  - Linux location: `/var/log/sum/<ip>/SUM_InstallDetails.xml`
  - XML version of status for user of the last installation.
  - Includes overall status details.
  - Includes details for each component installed.
- `cpqsetup` log
  - Windows location: `C:\cpqsystem\log\cqpsetup.log`
  - Linux location: `/var/log/sum/Component.log`
  - Includes details of each component self-discovery and installation deployed.
- Other logs created by individual components
  - Windows location: `C:\cpqsystem\log\*.log`
  - Linux location: `/var/cpq/*.log`
  - `Flash.debug.log`
  - `Verbose.log`
  - `Cpxxxxxx.log`

# GatherLogs

SUM provides a tool that collects all log files in to one file. If you are troubleshooting an issue, run `gatherlogs`. The script is available in the same directory that holds SUM.

When using the `/debug_log_dir` parameter to launch SUM, also provide the parameter when you launch `gatherlogs`.

# Using the `sum.ini` file

When you launch SUM, it creates the `sum.ini` file in a temporary directory. The `sum.ini` file is a plain-text file that configures multiple settings for the SUM session. You can save or create an `sum.ini` file in the directory where SUM is and it will be used instead of the file in the temporary directory.

## Editing the default `sum.ini` file

### Procedure

1. Navigate to the temp directory for SUM. The default location for the temp directory is `/var/tmp/SUM` (Linux) or `%LOCALAPPDATA%\sum` (Windows).

   **NOTE:**

   If there is no directory or `sum.ini` file, launch SUM and then shut down the application to create the default `sum.ini` file.

2. Open the `sum.ini` file in a text editor.
3. Edit the parameters you want to change.
4. Save the file.
5. You can launch SUM and use these parameters.

**More Information**

**sum.ini file parameters** on page 19

## Creating a `sum.ini` file

You can create the `sum.ini` file before you launch SUM and assign the parameters you want to use. Use a text editor to create the file, and save it in your chosen directory.

### Procedure

1. Open a text editor and create a document.
2. Populate the document with the parameters you want SUM to use.
3. (Optional) Override the SUM RPM (Linux-only) default temp directory by creating `/opt/sum/bin/sum.ini`.

**More Information**

**sum.ini file parameters** on page 19

## Changing the temporary directory

Use the following command to launch SUM and change the temporary directory.

### Procedure

1. Type `smartupdate /debuglogdir <log_path> /s`.

## `sum.ini` file parameters

Define the following SUM parameters based on your environment.

```
[FTP]
  port=disabled
```

**[HTTP]**

`port=63001`: SUM uses this port for nodes that require an HTTP connection. You can also use the parameter `/port` when you launch SUM.

`ssl_port=63002`: used for internal SUM HTTPS server. You can also use the parameter `/ssl_port` when you launch SUM.

`num_threads=200`: Number of concurrently running HTTP/HTTPS threads SUM allows. The suggested minimum is four threads per remote node.

**[Engine]**

`temp_dir=<path>`

> **NOTE:**
>
> This parameter is one method for changing the temp directory where SUM stores the log files and the nodes and the baseline database.

`mode=<release/debug>`: The debug parameters adds more details to the log files.

**[rpm]**

`nodeps=false/true>`: Determines if SUM automatically installs iLO dependencies. If `true`, SUM disables automatic installation.

# Launching SUM

## About web browser security certificate

When you launch SUM in GUI mode, you might see a statement that the URL `localhost:63002` is a potential security risk. The error statement differs based on the browser.

You can do the following to continue:

- Select the option to continue despite the risk.
- Import the Hewlett Packard Enterprise security certificate to the web browser.

## Importing the security certificate to Firefox

**Procedure**

1. Open **Settings**, select **Advanced** > **Certificates** > **View Certificates**.
2. Click **Import**, and then navigate to the SUM directory **assets\certificates**. Select the **CA.crt** file.
3. Select **Trust CA to identify websites**.
4. Clear the browser cache, and then close the browser.
5. Launch the browser.

## Importing the security certificate to Google Chrome

**Procedure**

1. Open Chrome settings, and then click **Show advanced settings**.
2. Click **Manage certificates** in the **HTTPS/SSL** section.
3. Click **Import**, and then navigate to the SUM directory **assets\certificates**. Select the **CA.crt** file. Place the certificate in the **Trusted Root Certification Authorities** store.
4. Clear the browser cache, and then close the browser.
5. Launch the browser.

## Importing the security certificate to Internet Explorer

**Procedure**

1. Click **Internet options**, select **Content**, and then select **Certificates** or **View Certificates**, based on the version of Internet Explorer.
2. Click **Import**, and then navigate to the SUM directory **assets\certificates**. Select the **CA.crt** file. Place the certificate in the **Trusted Root Certification Authorities** store.
3. Clear the browser cache, and then close the browser.
4. Launch the browser.

## Launching SUM

If you downloaded SUM as a standalone application, the ISO, zip, or RPM does not include software, driver, or firmware components. You can download components from **http://www.hpe.com**. If you downloaded SUM as part of an SPP bundle release, the download includes component updates.

When you launch SUM from a mounted ISO, such as iLO Virtual Media, SUM creates a local copy of the SUM binaries.`%LOCALAPPDATA%\localsum` (Windows) or `/var/tmp/localsum` (Linux) directory. Delete the temporary `localsum` files manually because the `clean-cache` command does not clean

these files. SUM displays messages about copying files to the drive specified. If you run SUM on a fileshare directory, SUM does not need to copy the files if you run.

**NOTE:**

When you launch SUM on a Windows node, the CHIF driver is installed automatically. To skip installing the CHIF driver, use the `/skip_prereqs` parameter. SUM cannot connect to an iLO 5 node without the CHIF driver.

Gen10 servers require the CHIF driver. Gen9 and older servers do not require the CHIF driver to communicate with SUM, but the CHIF driver allows SUM to determine all component versions.

Windows 2012 and later: Add the system to the domain and use the Domain Admin group user.

**IMPORTANT:**

SUM does not support multiple users logging in to SUM at the same time. All users must have administrator privileges, or the equivalent, for all nodes you are updating.

Each time you launch SUM it determines the state of each node that it manages. SUM determines changes that might have happened between sessions.

**Procedure**

1. Navigate to the directory where you saved SUM.
2. Do one of the following:

   **GUI mode**

   Navigate to the directory where you saved SUMSUM. To launch SUM on a fileshare directory, enter the command `smartupdate.bat` (Windows) or `smartupdate.sh` (Linux).

   To launch with a specific debug directory, use `smartupdate /debuglogdir <debug_directory_path>`

   **Text-based console mode (interactive CLI)**

   Navigate to the directory where you saved SUM. From the command line, type `smartupdate` and a console parameter. For a full list of parameters, type `smartupdate -h` (Linux) or `smartupdate /h` (Windows).

   **CLI mode and Input file mode**

   Navigate to the directory where you saved SUM. Type `smartupdate /s /h` Windows and `smartupdate -s -h` (Linux) for a full list of parameters. If you are using an input file, include the directory path to the input file. For full details on using SUM in CLI mode, see the *Smart Update Manager CLI Guide*.

## Launching SUM in GUI mode from an ISO

Run SUM on a Windows or Linux operating system.

**NOTE:**

When you launch SUM on a Windows node, the CHIF driver is installed automatically. To skip installing the CHIF driver, use the parameter `/skip_prereqs`.

**Procedure**

1. Copy the files from the ISO to your local host.
2. Run `launch_sum.bat` (Windows) or `launch_sum.sh` (Linux) from the directory that contains the ISO.

**NOTE:**

If you are using Gnome Virtual file system, manually extract the ISO and save them in a directory. Then launch SUM.

**SUM and SPP Boot environment change**

The USB Key Utility does not support multi-boot setups on a single device, for example a USB key. SUM and SPP ISOs contain signed parts to work with the UEFI bootloader.

## Launching SUM from the RPM

### Procedure

1. From any directory, type `smartupdate`.

## Using a PXE server to deploy updates

Use these steps to set up a PXE server on a Linux system.

### Procedure

1. Install the following packages:
   a. `tftp-server`
   b. `dhcp`
   c. `httpd`
   d. `syslinux`
2. Set up a DNS server on your network. Although not required, Hewlett Packard Enterprise recommends setting up a DNS server.
3. Activate `TFTP` within `XINETD`.
   a. Change
      `disable=yes`
      to
      `disable=no`
      in
      `/etc/xinet.d/tftp`
   b. Restart
      `XINETD`
4. Set up the PXE server to use a static IP:
   a. Create the file `/etc/sysconfig/network-scripts/ifcfg-eth0.static`
   b. Set the contents to the file as:

```
DEVICE=eth0
BOOTPROTO=STATIC
ONBOOT=no
TYPE=Ethernet
IPADDR=<IP>
NETMASK=<IPMASK>
GATEWAY=<GATEWAYIP>
```

5. Set up the PXE boot environment:
   a. Copy `initrd.img` and `vmlinuz` from the `/system` directory of the SPP ISO to `/tftpboot` directory of the PXE system.
   b. Copy `pxelinux.0` (PXE boot Linux kernel) to the `/tftpboot` directory.
   c. Ensure the files copied to `/tftpboot` are world readable.
6. Configure `PXELINUX`
   a. Create directory `/tftpboot/pxelinux.cfg`.
   b. Create files representing the hex value of the static IP address in the `/tftpboot/pxelinux.cfg` directory. For example, if the static IP address used is 192.168.0.254, the hex value is C0A800FE and the files to be created would be:
      - `C`
      - `C0`
      - `C0A`
      - `C0A8`
      - `C0A80`
      - `C0A800`
      - `C0A800F`
      - `C0A800FE`
   c. Create a zero-sized file (using touch) representing the MAC address of the NIC of the boot PXE boot client (pre-pended with 01 and replacing ':' with '-') in the `/tftpboot/pxelinux.cfg` directory. For example, if the NIC MAC address were 00:01:02:03:04:05, a file name would be 01-00-01-02-03-04-05.
7. Create a default `pxelinux` configuration.
   a. Create a file name default in the `/tftpboot/pxelinux.cfg` directory.
   b. Set the contents of the default file to:

```
prompt 1
default Linux
timeout 100
label Linux
kernel vmlinux
append initrd=initrd.img ramdisk_size=9216 noapic acpi=off
```

8. Copy the entire contents of the SPP ISO to a directory named `/tftpboot/SPP*`, where * represents the version of the SPP.
9. Add the following to `/ect/httpd/conf/httpd/conf` where "*" represents the version of the SPP.
10. `<Directory /tftpboot/SPP*>.`
11. `Options Indexes`
12. `AllowOverride None`
13. `</Directory>`
14. `Alias /linux /tftpboot/SPP*`
15. Start the `dhcpd` and apache services and activate `tftp`.
16. `service dhcpd start`
17. `service xinetd restart`
18. `service httpd start`
19. PXE boot the servers to begin the update process.

## HPE Firmware Pack for ProLiant

Updating with the Python script requires access to the Firmware Pack for ProLiant repository. Before using the commands listed below, install the SUM RPM. For more information on setting up a repository, see **http://www.hpe.com/support/SDR-FWPP**.

**`smartupdate requires`**

Lists PCI devices currently installed on components.

**`smartupdate list`**

Shows firmware currently installed on the system.

**`smartupdate upgrade`**

Initiates flash engine for firmware packages.

**`smartupdate info`**

Provides detailed description of installed firmware.

After establishing a Firmware Pack for ProLiant repository, use the following instructions to download and install the firmware RPMs:

- `Yum install $(smartupdate requires)`
- Press **Y** when prompted to install applicable RPMs.
- After the RPMs are installed, type:
- `smartupdate upgrade`
- Press **Y** when prompted to begin flashing the firmware update to the system.

**More Information**

**About the SUM RPM tool** on page 113

# Using a different version of SUM with an SPP ISO

To use a different version of SUM than the version that was packaged in an SPP, use the Custom Baseline function in SUM. Replacing the SUM files in an SPP ISO manually might create issues with deployments.

**NOTE:**

SUM can create a custom baseline or ISO with components from SPP 2016.10.0 and older, but it cannot include SUM versions earlier than SUM 8.0.0.

**Procedure**

1. Download a copy of the SUM ISO you want to use and save it in an empty directory, and then mount the ISO.
2. Download a copy of the SPP ISO and save it in an empty directory, and then mount the ISO.
3. Open the version of SUM you want to use with the SPP components.
4. Add the mounted SPP (`..\spp\packages`) to the SUM session.
5. Create a custom baseline using the SPP components, and then select the version of SUM you want to use as the version to include in the custom ISO.

**More Information**

**Adding a baseline** on page 34
**Creating a custom baseline and ISO** on page 35

# Disabling BitLocker to permit firmware updates (Windows only)

To allow firmware updates, temporarily disable BitLocker support.

**Procedure**

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:

- Enter `cscript manage-bde.wsf -protectors -disable c:`
- 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.
- Enter `cscript manage-bde.wsf -protectors -enable c:`

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

| Scenario | Result |
|---|---|
| TPM is detected and enabled, using GUI mode, and a system ROM must be updated. | SUM displays a warning message indicating that it detected TPM. SUM offers an option to **Ignore Warnings**. You can only deploy the updates if you select **Ignore Warnings**. |
| TPM is detected and enabled, using CLI or Input file mode, the `/tpmbypass` switch is not given, and firmware must be applied to the server. GUI mode does not support `/tpmbypass`. | No warning appears. A new log file is generated (`%systemdrive%\cpqsystem\log \cpqstub.log`). Because the installation is silent, the installation is terminated and cannot continue. |
| TPM is detected and enabled with Option ROM Measuring, using GUI mode, and a system ROM must be updated. | A warning message appears. After selecting **OK**, you can continue. The installation is not canceled. |
| TPM is detected and enabled with Option ROM Measuring, using CLI or Input file mode, the `/tpmbypass` switch is not given, and any firmware updated must be applied to the server. | No warning appears. A new log file is generated (`%systemdrive%\cpqsystem\log \cpqstub.log`). Because the installation is silent, the installation is terminated and cannot continue. |
| TPM is detected and enabled, using CLI or Input file mode, the installation occurs, and the `/tpmbypass` switch is supplied. | The installation occurs. |

In the SUM GUI, you can disable TPM on the Deploy screen. You can also disable TPM in CLI or interactive CLI mode.

## About using SUM with BitLocker

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. SUM detects if a TPM is enabled on a node. For some newer models of ProLiant servers, if a TPM is detected in your system or with any remote server selected as a target, SUM utilities for iLO, HDD, NIC, PowerPIC, 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 iLO, Smart Array, and NIC firmware.

If SUM detects a TPM, it displays a message.

To enable firmware updates without the need to enter in the TPM password on each server, temporarily disable BitLocker Drive Encryption. 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, re-enable BitLocker Drive Encryption. Re-enabling BitLocker Drive Encryption removes the plain text key and BitLocker secures the drive.

**CAUTION:**

Temporarily disabling BitLocker Drive Encryption can compromise drive security and only attempt to disable it in a secure environment. If you are unable to provide a secure environment, Hewlett Packard Enterprise recommends providing the boot password and leaving BitLocker Drive Encryption enabled throughout the firmware update process. This requires setting the `/tpmbypass` parameter for SUM or the firmware update is blocked.

# Linux root credentials for remote nodes

You can provide root credentials, a user with sudo permissions, or provide non-root and root credentials for remote nodes.

## Prerequisites for using Linux sudo credentials

- Provide one of the following:
  - Username and password
  - Username and SSH key file path (in PEM format)
- Give the sudo users write access to the `/var/tmp` directory.
- For sudo users, add the user to the */etc/sudoers* file. The following shows the privileges and specifications for users.
  - User: `Root`

    Privilege: `ALL=ALL`

    Specification: `ALL`
  - User: `Sudo_user`

    Privilege: `ALL`

    Specification: `ALL`
- Edit the entry in the `/etc/sudoers` file so the system asks for the sudo user password instead of root user password when you run the sudo command.

- The following shows the privileges to comment or remove from `/etc/sudoers`.
  - User: `ALL`

    Privilege: `ALL`

    Specification: `ALL`

    **NOTE:**

    Only use this option with `Defaults targetpw` on all systems.
- To use super user functionality, configure the user as a super user with all root privileges. You can also use non-root user with a root user to update components.
- When using SSH keys for login credentials combined with sudo, edit the entry in the `/etc/sudoers` file so that the system does not ask for the user password as follows:
  - User: `sudo_user`

    Privilege: `ALL`

    Specification: `NOPASSWD:ALL`

## Using an SSH keyfile with root credentials

SUM allows you to log in with a password or by providing an SSH key.

**Procedure**

1. On the node that is running SUM, type `ssh-keygen -t rsa`. SUM also supports DSA encryption key format. To create a DSA encryption key, type `ssh-keygen -t dsa`. A passphrase is optional.
2. Save the key in the directory `.ssh/id_rsa.pub`. Root users, use the directory `/root/.ssh`.
3. Verify that the private key is in PEM format by opening the key and viewing the top of the key for the following text:

   `---- BEGIN RSA PRIVATE KEY ----`
4. If necessary, on the node you want to update, create an `.ssh` directory at the root level. Set the permissions level on the directory to 700.
5. Determine if the node you want to update has the filename `.ssh/authorized_keys`. If this file is not present, create or append this file. Set the permissions on the `authorized_keys` file to 640.

   **NOTE:**

   If you append the file, more users are authorized to use the private key.
6. Copy the contents of `.ssh/id_rsa.pub` on the host node, and then paste them into the filename `.ssh/authorized_keys` on the remote node.
7. Open an SSH path between the host node and the node you want to update.
   a. Type `ssh root@10.0.0.1`. This parameter opens a shell path.
   b. Type `ssh root@10.0.0.1 uname`. This parameter executes the command and returns.
8. SUM requires access to `id_rsa` (private key file), and the optional passphrase.

   **NOTE:**

   If other applications require the public key in PEM format, you can convert it by typing `ssh-keygen -e -f id_rsa.pub > id_rsa_pub.pem`. Open the key, and look at the PEM format for `---- BEGIN SSH2 PUBLIC KEY ----`.

To create a private key on a Windows system, you can use an application like PuTTY or PuTTY Key Generator (PuTTYGen). For more information, see **https://www.digitalocean.com/community/tutorials/how-to-create-ssh-keys-with-putty-to-connect-to-a-vps**.

To export the file to PEM format, select, **Conversion** > **Export OpenSSH key**.

# Logging into SUM

### Procedure

1. If SUM is already running, use the current user credentials.

# Closing SUM

## Logging out of the SUM GUI

**Procedure**

1. Click the user icon, and then click **Logout**.
2. Select one of the following:
   - **Log Off - Current user.**
   - **Shutdown - This option will shut down SUM engine.**
3. Click **OK**.

If you close the browser window without shutting down SUM, the SUM engine continues to run in the background. Issue an interactive CLI command that shuts down the engine.

- Navigate to the directory that holds the SUM application.
- From a command line, type `smartupdate shutdownengine`.

## Clearing the SUM cache

SUM stores node information between sessions, including user credentials for nodes, in a database file. The `clean-cache` removes the database information. The command does not delete the log directories or files.

**Procedure**

1. Shut down the SUM engine.
2. From a command-line window, navigate to the directory that contains SUM.
3. Type `clean-cache.bat` (Windows) or `clean-cache.sh` (Linux).

**NOTE:**

If you are using a GUI, you can navigate to the directory that holds SUM and run `clean-cache` to clear the cache. Running the clean-cache command erases all nodes, baselines, and other information entered in SUM.

# Using the SUM GUI

## SUM Home screen

When you launch SUM, the GUI displays the Home screen. From this screen, you can click **Localhost Guided Update**, **Baseline Library**, or **Nodes**. To navigate to other screens, use the navigation menu in the upper-left corner.

## SUM Activity screen

The Activity screen provides a list of the activities that SUM is performing or has recently performed. The table displays the source and message related to activities SUM performs. SUM does not refresh this screen when you are viewing the screen. If you want to view the latest activity status, click **Refresh**.

## SUM Localhost Guided Update

Use the Localhost Guided Update function to update the localhost that is running SUM. You can use a baseline you have added to the Baseline Library. If you do not specify a baseline, SUM uses the updates in the directory from which SUM is run. If you want to configure components before deploying updates, make the configuration changes from the Baseline Library before running Localhost Guided Update.

**Localhost Guided Update modes**

- **Interactive**: SUM uses the default baseline or other baseline to update the localhost. You can choose the updates that SUM applies to the localhost.
- **Automatic**: SUM automatically updates the localhost and using the default baseline or other baseline that you select. After you click **OK**, SUM begins updating the node.

### Using Localhost Guided Update in Interactive mode

**Procedure**

1. In the navigation menu, click **Localhost Guided Update**.
2. Select **Interactive**.
3. SUM displays the current baseline selected for the Localhost.
   a. To use the currently selected baseline, continue to the next step.
   b. To use a different baseline, click the **X** next to the baseline. Select **Assign different baseline** to select another **Baseline** or **Additional package**.
4. Click **OK**. SUM begins inventory on the baseline and Localhost.
5. Click **Next** after SUM finishes the inventory.
6. Recommended updates that are ready to deploy are highlighted in blue and SUM displays a green icon in the **Ready to proceed** column. If a component has a red button in the **Ready to proceed** column, it means that there is a dependency to resolve before SUM can deploy that component. Deselect the item if you want to deploy the other updates and come back later to perform this update.
7. If you selected **Deploy all updates**, select a duration of time before SUM reboots.
8. Click **Deploy**.

**NOTE:**

Items that are up-to-date or optional are not highlighted. Click **Select** to deploy these updates. To globally select all components to rewrite or downgrade, select **Actions** > **Advanced Options** and select the **Rewrite** and **Downgrade** options, and the **Reboot** options. To view the component details, double-click an update. If you want to view the information in the new update, click the hyperlink.

9. SUM performs component analysis before deploying updates.
10. Review the installation log files.

**NOTE:**

In offline mode, if SUM failed to deploy updates, click the **Reboot** to exit SUM and reboot the node to the host operating system.

You can deploy updates in an iLO task queue, or save install sets on the iLO Repository. SUM does not support deleting any install sets on the iLO Repository from the LocalGuide Update function.

**More Information**

**Deploying a node** on page 49

## Using Localhost Guided Update in Automatic mode

**Procedure**

1. In the navigation menu, click **Localhost Guided Update**.
2. Click **Automatic**.
3. SUM displays the current baseline selected for the Localhost.
   a. To use the currently selected baseline, continue to the next step.
   b. Click the **X** next to the baseline to use a different baseline. Select **Assign different baseline** to select a different **Baseline** or **Additional package**.
4. Click **OK**.

**NOTE:**

SUM begins to deploy updates after you click **OK**. SUM cannot interrupt updates in the Localhost Guided Update Automatic mode. SUM cannot install SNMP and WBEM Providers components in Automatic mode. Use Interactive mode if you want to install these components.

# SUM Baseline Library screen

The Baseline Library screen displays the baselines and additional packages you will use to update your nodes. Baselines include an SPP, or custom baseline that includes updates that you select from other baselines or additional packages. Additional packages are directories that hold updates that are not included in a named update package, for example a Hot Fix. SUM saves baseline information between sessions.

SUM displays each added baseline in the left pane. Select a baseline, and SUM displays the following information for each baseline and additional package.

- Languages
- Operating systems
- Enhancements
- Components – SUM includes a search box for finding updates that meet the search parameters. You can search on file name, description, and update type. Double-click an update to view its details.
- Component errors - Components that do not include signature files.

- Component Warnings – Displays components that are listed in the baseline manifest, but the component is not present.
- Component configuration – Configure some components before you can deploy the update.

**NOTE:**

If you created a custom ISO, mount the ISO on the system so SUM can detect the files, and then add the directory as a baseline.

**More Information**

**Component configuration** on page 39

**Adding a baseline** on page 34

## About SUM baselines

Baselines are directories that contain update components SUM can apply to local and remote nodes. Some baselines include:

- SPP
- Custom SPP downloads
- Maintenance Supplement Bundle
- Custom baselines/ISOs created by SUM

When you add a baseline, SUM searches for the following files:

- `bpxxxx.xml` file: Lists the name, version, history, and components in the baseline. SUM treats any components in the directory that are not listed in the `bpxxxx.xml` file as an Additional Package, not as the main baseline. The SPP, Maintenance Supplement Bundle, and custom baselines include the `bpxxxx.xml` file.
- `..\..\manifest` directory: This directory contains details about some components contained in the baseline. SPPs and custom baselines include prepopulated databases. Included in the manifest directory are:
  - `meta.xml`: Contains most of the component xml file data.
  - `primary.xml`: Contains details about RPMs in the baseline.
  - `system.xml`: Contains mapping information between ROM family and system model.
  - `revision_history.xml`: Contains history information for the component.
- `\db\BaselineDB.pdb`: This is a prepopulated database that SUM uses if there is no other database from other baselines. This file contains all details for the components when the baseline was generated. SPPs and custom baselines include prepopulated databases.

When SUM reads data from the baseline, it uses the following priority:

- Prepopulated database: The prepopulated database is the fastest way for SUM to inventory a baseline.
- Manifest files: SUM inventories a baseline more quickly with manifest files than opening each component.
- Reading each component. Each component has an embedded xml file (cpxxxx.xml) which contains details about the component. To view the details about the component:
  - Windows: Launch the component and then select **Extract**.
  - Linux scexe: From a command line, type `./CPxxxxx.scexe --unpack=<dir>`.
  - Linux RPMs: From a command line, type `rpm -qp --scripts <rpm_name>`. The component xml is embedded in the output.
  - VMware zip: Unpack the zip file.

**More Information**

**Component configuration** on page 39

**Adding a baseline** on page 34

# Adding a baseline

### Procedure

1. On the Baseline Library screen, click **Add Baseline**.

   **NOTE:**

   If you want to clear the Add baselines screen, click **Start Over**.

   SUM opens the add baseline screen.
2. Select **Add Baseline** or **Create Custom**.
3. Select the type of baseline you want to add and include the required information:

   **Browse SUM Server Path**

   A directory or file share that the system running SUM can access.

   Enter the directory path to the baseline, or click **Browse** and use the menu to navigate to the directory.

   **NOTE:**

   If you are adding an SPP, navigate to the `/packages` directory.

   **UNC path (for example \\host\dir)**

   This location uses UNC paths that the system can access. In the **Enter URI for the baseline** field, enter the UNC address for the source baseline. Enter the username and password.

   **NOTE:**

   UNC path is only supported in Windows systems.

   SUM does not support mapped UNC drives.

   **Download from http share**

   **Enter directory path**: Enter, or browse to, the directory where you want to save the baseline. If required, create a directory.

   **Enter HTTP URL**: Enter an HTTP URL where a bundle file is saved. The server can be local or remote, and you can use an Apache, Tomcat, or IIS server. Provide the complete URL, including the bundle XML. The components must reside in the same directory as the bundle XML. Make sure that you have enough local free space for the baseline.

   If you want to download components only for specific operating systems, select the operating systems in the **OS Filter Options**.

   **NOTE:**

   SUM adds all baselines it finds in a directory.
4. Click **Add**.

   To see the status of the baseline, check the activity log. If the baseline does not appear in the baseline list, make sure that there are updates in the directory.

**NOTE:**

SUM begins to inventory a baseline as soon as you finish adding the baseline. Wait until the baseline inventory finishes before adding another baseline.

**More Information**

**Component configuration** on page 39
**Adding a baseline** on page 34

## Creating a custom baseline and ISO

Creating a custom baseline allows you to:

- Deploy specific updates from SPP releases.
- Minimize the size of baselines or ISOs.
- Standardize the updates that you deploy in your environment.

**NOTE:**

Before creating a custom bootable ISO, make sure that an unpacked ISO is available in a local directory. SUM uses the ISO as a source for the boot environment. For example, a recent SPP ISO. Do not unpack more than one ISO in a directory.

You can create and download a custom SPP from the SPP Custom Download website at: **https://www.hpe.com/servers/spp/custom/**.

### Prerequisites

- Add the directories that contain updates as baselines to the Baseline Library screen.
- Outside of SUM, create a directory where you want to save the custom baseline or ISO.
- Make sure that each baseline directory only contains one baseline. For example, do not put an SPP ISO and hot fixes in the same directory.

### Procedure

1. Click **+Add**, and then select **Create Custom**.
2. In the **Description** text box, enter a description for the baseline. The maximum length for the description is 50 characters.
3. Select a date for the **Version**, and enter a 1-character or 2-character identifier, for example, **`1`** or **`1a`**.

   The **Baseline Name** is automatically generated by combining the description and version.
4. In the **Output Location** field, click **Browse** to navigate to an empty directory where you want to save the baseline. SUM does not allow using a directory that is not empty.
5. Select **Make Bootable ISO file** to create a bootable ISO with your baseline.

   To create a custom bootable ISO, you must have a bootable SPP or SUM ISO extracted in a local directory.

   In the **Source ISO Location** field, click **Browse** and choose the root directory where SUM can find the extracted bootable ISO. For example:

   ```
   C:\SUM\Baselines\spp_july2017
   ```

   **NOTE:**

   Do not store more than one bootable ISO in a directory.
6. In the **Select SUM Source Location**, select one of the following:

**Current Working Directory**

Copies the version of SUM you are currently using.

**Custom Directory**

Copies a version of SUM from another directory.

**Do Not Include**

Does not include a copy of SUM in the baseline.

In **SUM path** field, enter the directory path, or click **Browse** and then choose a directory that contains the version of SUM you want to use.

**NOTE:**

If you select Bootable ISO, **Do Not Include** is replaced with **Extracted Source ISO location**, which displays the location of the ISO with SUM.

7. In the **Baseline Sources** section, select the baselines that contain the components you want to include in the custom baseline.

   **NOTE:**

   If the same component is included in more than one source baseline, SUM lists the component multiple times. If you select the component from multiple baselines, SUM displays the component multiple times, but the baseline only includes one copy of the component file.

8. In the Filters section:
   a. Select whether you want to create a baseline for Enclosure Firmware Management.
   b. Select whether you want the custom baseline to **Match CloudSystem Matrix Version**. Select this option to use a `MatrixConfig.xml` file saved on your local system. If you select this option, the **Advanced Filters** become inactive and other filters are disabled.

      If you select **Match CloudSystem Matrix Version**, do the following:

      I. Select whether you want to compare the custom baseline to a Matrix Definition XML file on the local system. You can download the latest Matrix Definition from **http://www.hpe.com/info/matrixcompatibility**.

         SUM no longer supports comparing a baseline to a Matrix Definition XML file on hpe.com.

      II. Enter a directory for the Matrix Definition file.

   c. Select the **Component Type** you want to choose, **Firmware**, **Software**, or **Firmware and Software**.

      **NOTE:**

      Select one of these options if you want to create a baseline with only firmware or software updates. Use the baseline with only firmware or software updates to update only firmware or software for a node automatically.

   d. Select each kind of update you want to include in the baseline:

      **Critical Updates**

      Updates that require immediate deployment.

      **Recommended Updates**

      Updates recommended that you deploy at your earliest convenience.

**Optional Updates**

Updates to this version if your system is affected by one of the documented fixes, or if you want to utilize any of the enhanced functionalities provided by this version.

**Advanced Filters**

Select this to apply to the baseline:

| Filter category | Options |
|---|---|
| Architecture | Select the system architecture to include in the baseline. |
| Operating System | Select the operating systems to include in the baseline.The list of options is provided by the source baseline. Custom baseline only supports creating baselines from SPP baseline sources. To create a bootable ISO, select all Linux operating systems to include all drivers that you can deploy. |
| Enclosures | Select enclosure options for your environment. |
| Component Category | The type update you can deploy. |
| Server Model | Select the server device components to include in the baseline. The list of options is provided by the source baseline. |

**NOTE:**

SUM supports creating a baseline for node types supported by the SPP source baselines.

9. Click **Apply Filters**. SUM displays a list of available updates.
10. Select the individual component updates you want to include in your baseline. Use the search function to find specific updates in the list.
11. Click **Create ISO and save Baseline** or **Save Baseline** to create the baseline. When you click **Create ISO and save Baseline** or **Save Baseline**, SUM does not close the Create Custom Baseline screen, in case you want to create another custom baseline.

**NOTE:**

Install the application `xorriso` (UEFI) on Linux hosts to create a custom ISO that is bootable.

12. Click **Close** to close the Create Custom Baseline screen.

SUM saves XML files with details of the custom baseline components. SUM reads this XML file and compares the list to the contents of the directory.

**More Information**

**Component configuration** on page 39
**Adding a baseline** on page 34

## Generating baseline reports

**Procedure**

1. You can generate an Inventory report from the Baseline Library screen. This is the same Inventory report that you can generate on the Nodes screen.

**More Information**

**Component configuration** on page 39
**Adding a baseline** on page 34
**Generating node reports** on page 53

## Validating a baseline

SUM can validate a baseline against the following sources:

- **Bundle file** – Allows you to validate against a bundle, for example an SPP. You can use this feature after you pull an SPP from the web or copy a bundle between systems.

  If a component has been unpublished after the SPP or MSB was published, SUM does not pull the component from the web. SUM displays a message that there is a missing component when it validates the bundle. You can look up the component on the Hewlett Packard Enterprise website to see if it is available for download.
- **CloudSystem Matrix file**– Allows you to verify that a custom baseline matches a downloaded version of CloudSystem Matrix. For more information, see **http://www.hpe.com/info/matrixcompatibility**.

  SUM no longer supports validating a baseline against a CloudSystem Matrix file on hpe.com.

  After SUM validates a baseline matches a CloudSystem Matrix configuration file, you can use the baseline to inventory nodes to confirm the nodes match the configuration. Node inventory reports whether the baseline is an exact match to the installed versions, or if the node needs updates to match the CloudSystem Matrix configuration. Inventory also reports if installed components are at a later version than the HPE Helion CloudSystem configuration file.

  **NOTE:**

  SUM no longer supports validating a baseline against a CloudSystem Matrix file on hpe.com.

**Procedure**

1. From the Baseline Library screen, select a baseline, and then select **Actions** > **Validate**.

   SUM displays the baseline and baseline bundle file location.
2. Select a validation type, **Validate against bundle file**, or **Validate against CloudSystem Matrix version** on your local system.
   a. In **Matrix Definition XML File**, select **Latest MatrixConfig.xml file from local**.
   b. Enter the path, or browse, to the Matrix XML file.

**More Information**

**Component configuration** on page 39
**Adding a baseline** on page 34

## Re-validating baseline components

If a baseline inventory displayed component errors and you corrected the error, you can validate the baseline again.

**Procedure**

1. Add the baseline to the Baseline Library.
2. Perform inventory on the baseline.
3. Click **Validate All**.

   SUM verifies whether the component is valid or not.

**More Information**

**Component configuration** on page 39
**Adding a baseline** on page 34
**SUM does not validate a component** on page 63

## Deleting a baseline

Before deleting a baseline, assign a different baseline to each node that uses the selected baseline. The Baseline screen lists how many nodes use each baseline. Click the hyperlink to display the nodes that use the baseline.

**Procedure**

1. On the Baseline Library screen, select a baseline.
2. Select **Actions** > **Delete**.

   **NOTE:**

   If the baseline is associated with one or more nodes, SUM displays a list of the nodes. Edit the nodes to change the associated baseline, or delete the node.

3. Confirm that you want to delete the baseline.

**More Information**

**Component configuration** on page 39
**Adding a baseline** on page 34
**Editing a node** on page 48
**Deleting a node** on page 54

## Baseline addition or inventory cancellation

SUM does not support canceling a baseline addition or inventory. Wait for the procedure to end and then delete the baseline.

**More Information**

**Component configuration** on page 39
**Adding a baseline** on page 34

## Component configuration

Some components might have required or optional configuration settings. Configuration parameters include information necessary to set up the component correctly or passwords required for software installed by the component. From the Baseline Library screen, change component options, import options, and export options.

You can also configure components if you use an input file. For more information about input files, see *Smart Update Manager CLI Guide*. If you copy the configuration directory into a baseline, when you add that baseline to an SUM session, SUM imports the configuration settings during the inventory process.

You will need to reconfigure component settings if you:

- Run the `clean-cache` utility.
- Copy the component files to a remote server after configuring components settings on a local host and not exporting the configuration to the baseline directory after configuring it in SUM.

**More Information**

**Component configuration** on page 39
**Adding a baseline** on page 34

## Configuring components

**Procedure**

1. On the Baseline Library screen, select the baseline you want to use, select **Fixes**, and then select **Configuration state** until the components that offer configuration settings are filtered to the top.
2. Select **Configurable** or **Configured** for each a component you want to configure.

   **NOTE:**

   Components that display **Configured** have had the default configuration settings changed.
3. Enter the configuration settings, and then click **Save in SUM** to store the component settings in the current SUM database.

   Repeat these steps for each component you want to configure.

   **NOTE:**

   Configuration options vary based on the component.

**More Information**

**Component configuration** on page 39
**Adding a baseline** on page 34

## Exporting configured components

Configure components and export the component configurations to a location of your choice. You can then import these configuration settings into another SUM session or use these exported configuration parameters to configure the components as you deploy them outside of SUM or with SUM on remote nodes. This allows you to configure components once and reuse the configurations.

The exported configuration file or script is stored in a directory name `<component filename>_conf`. The directory contains the configuration file or script and a `README` file with the instructions on how to deploy the component with the configuration outside of SUM. SUM stores the configuration file or script separately from the component to not break the component security signing.

**Procedure**

1. On the Baseline Library screen, select the baseline you want to use, click **Components**, and then click **Configuration** or **Configured** until the components that offer configuration settings are filtered to the top.
2. Select **Configurable** for each a component you want to configure and then enter the configuration settings.

   **NOTE:**

   Configuration options vary based on the component.
3. Click **Save and Export**, and then select a directory where you want to save the component configuration. Select whether you want to include user credentials in the configuration file. SUM creates a directory named after the component you exported. The name is

`<component_name>_conf`. The Activity screen displays the address where it saved the configuration file.

4. SUM includes a `README` file that provides instructions on how to deploy the component in standalone mode.

   **IMPORTANT:**

   SUM stores configuration settings, possibly including user credentials, in a plain-text file format that the component can use.

5. Click **Save**. The configuration data is saved in the SUM database and written to the appropriate file.
6. Repeat these steps for each component you want to configure.

**More Information**

**Component configuration** on page 39
**Adding a baseline** on page 34

## Importing component configuration settings

If you have configured components in another SUM session, or in a baseline copied from another server, you can import these settings into the GUI.

**NOTE:**

If you saved the baseline configuration directory in the same directory as the baseline, SUM automatically imports the configuration settings when you add the baseline to the baseline library.

**Procedure**

1. On the Baseline Library screen, select the baseline you want to use, select **Fixes**, and then click **Configuration** until the components that offer configuration settings are filtered to the top.
2. Scroll down the list of components, and then select **Configurable** for each component configuration file.
3. Click **Import**.
4. Select the directory where you saved the configuration file, and then click **Open**.

   **IMPORTANT:**

   SUM overwrites any existing component configuration as it automatically saves the imported configuration data.

5. Repeat these steps for each component you want to configure.

**More Information**

**Component configuration** on page 39
**Adding a baseline** on page 34

# SUM Nodes screen

Nodes are hardware environment components. The Nodes screen displays the nodes and associated nodes that you have added to SUM and SUM can manage. The node details that SUM displays varies based on the node type.

The yellow status bar under the node name gives a brief description of the status or action you can perform next on the node. For full details, click the arrow. For example, after you add a node, the status bar might give a link to Inventory the node. Or, after you inventory a node, the status bar will provide a link to review and deploy updates.

SUM cannot scout, inventory, or deploy updates to iLO nodes that are in high security mode. Put the node into production mode and then try to perform scouting the node again.

**NOTE:**

SUM cannot manage nodes running in FIPS mode or in high security.

## About node status

SUM assigns the following statuses to nodes after you add the node and deploy updates:

- **Scouting**: SUM verifies the node address and user credentials. If required, scouting also installs a CHIF driver. For Gen10 iLO 5 nodes, scouting retrieves the iLO repository details.
- **Preinventory** (remote Windows and Linux nodes only): SUM runs commands on the remote node to determine operating system details, installed hardware, and installed RPMs (Linux nodes).
- **Inventory**: SUM gathers information from the node and determines which updates apply, and if there are any dependency issues. For remote Windows and Linux nodes, SUM copies a version of itself along with required the baseline components required to determine applicability.
- **Deploy/install updates**: SUM deploys updates to the node. For remote Windows and Linux nodes, all components required for deployment are copied to the remote node and SUM runs on the remote node. For iLO 5 nodes, SUM uploads components to the iLO Repository, and saves components for install sets.
- **Complete installation**: SUM finishes updates and, if necessary, reboots the node.

## Viewing LiveLog information

The **LiveLog** allows you to view the status of an active deployment. If SUM is deploying multiple components, search the list to view the status of specific components. After SUM finishes the deployment, SUM displays a **View Log** button.

### Procedure

1. On the Nodes screen, select a node, and then click **LiveLog**.

## Adding a node or other deployment type

SUM uses the same function to add all node and deployment types.

You can add a node using a specific IP address or by searching an IP address range.

### Prerequisites

1. Know the IP address or DNS name of the node.
2. User login credentials for the node.
3. If you are planning to assign a baseline to a node, add the baseline first.

### Procedure

1. **Adding a single node by IP or DNS name**
2. **Adding a node by searching a range of addresses**
3. **Adding nodes by input file**

### Adding a single node by IP or DNS name

#### Procedure

1. From the Nodes screen, click **+Add Node**.
2. Select **Add a single node or known range of nodes**.

3. Enter the IP address, DNS name, range of IP addresses, or multiple addresses separated by comma. For example, entering 10.0.1.1–10.0.1.20 adds 20 nodes. 10.0.1.1, 10.0.1.2, 10.0.1.7 adds three nodes. If the nodes use the same credentials, SUM adds the nodes.

   **NOTE:**

   If you are adding a VC node, use the IP address of the primary Enet module. All VC modules installed, including FC modules, are updated through the primary Enet module.

4. Enter a description for the node.
5. In the **Type of node to add** field, select the node type. If you do not know the node type, select **Unknown** . During the inventory process, SUM determines the node type. If you are adding a node from a Deployment Type screen, SUM automatically selects the node type.

   Some nodes allow SUM to discover and add associated nodes automatically.

   **NOTE:**

   Selecting the correct node type might help SUM complete adding the node faster.

6. (Optional) Select the baseline, additional package, or both to apply to this node.
7. (Optional) Select a group from the list.
8. Select one of the following:
   - **Use current credentials (requires existing trust relationship with the node)** : This option is for Windows nodes only.
   - **Enter administrator credentials**: Enter the username and password for a user with administrator privileges on the node. Windows users can use `domain\username` if the user has administrator permission.
9. Linux nodes allow you to use sudo credentials to deploy updates without logging in to the node with root credentials. To use sudo commands, you have to install sudo capabilities on the node.

   **NOTE:**

   Super user and sudo are not available for all nodes.

   If you want to use sudo, in the **Access Level** field, select one of the following:
   - Click **Use sudo to update components** if you want to use sudo credentials.
   - Click **Enter super user credentials to update components** if you want to enter super user credentials.

   **NOTE:**

   If you are using super user credentials, enter normal user credentials in the **Credentials** field, and then add super user credentials in the **Access Level** field. SUM first logs in using the normal user credentials, and then uses the super user credentials to log in to the super user account.

10. Click **Add**.

    In the **Added Nodes** section, SUM displays the nodes you selected.

**More Information**

**Node-specific additional details** on page 46
**Moonshot node overview** on page 55

## Adding a node by searching a range of addresses

### Procedure

1. From the Nodes screen, click **+Add Node**. The name of this button changes if you are adding a different deployment type, for example, OA.
2. Select **Find nodes on network**.
3. Click **Find Nodes**.
4. Select **IP Address Range** or **Port Address**.

   **NOTE:**

   SUM can search a port in the range of 0–65535.

5. Enter a range of IP addresses for SUM to search, select one of the default ports or select **Other** and enter the port, and then click **Search**.

   **NOTE:**

   SUM only searches one subnet/octet, the final four digits of an IPv4 address.

   SUM displays the nodes it finds in the **Available Nodes** field.
6. Select the nodes you want to add from the **Available Nodes** section, and then click **Add Nodes**.
7. If you want to assign a baseline, select **Baseline**, **Additional Packages** in the **Baseline to Apply** field.
8. In the **Credentials** section, select whether to **Use current user credentials (requires existing trust relationship with the node)**, **Enter administrator credentials**, or **Enter SSH Key Credentials** (not available for all nodes).
9. If you choose to enter administrator credentials, enter the **Username** and **Password**.
10. Click **Add**.
11. In the **Added Nodes** section, SUM displays the nodes you selected.
12. Click **Cancel** to go back to the Nodes screen.

## Adding nodes with an input file

You can use a CLI with Input File script to add many nodes that you can deploy in the GUI.

### Procedure

1. Create an input file with the node details. For example:

```
#Input file sample
SILENT = YES
SOURCEPATH = C:\SPP
DRYRUN = TRUE

[TARGETS_USER_1]
HOST = 192.168.1.1
HOST = 192.168.1.3
HOST = 192.168.1.2
UID = user1
PWD = user_password1
[END]

[TARGETS_USER_2]
HOST = 192.168.1.4
HOST = 192.168.1.5
HOST = 192.168.1.6
```

```
UID = user2
PWD = user_password2
[END]
```

2. Open a terminal window, navigate to the directory where SUM is located, and then issue the command:

   `smartupdate /inputfile <path:\inputfile.txt>` (Windows)

   `./smartupdate --inputfile <path:/inputfile.txt>` (Linux)

3. Launch the GUI and manage the nodes. If the nodes were not added, verify that there are no issues with the Input File.

For more information, see **http://www.hpe.com/support/SUM-CLI-en**.

## Associated nodes deployment behavior

The following describes which nodes SUM can automatically add and the order in which SUM deploys the nodes:

**Onboard Administrator**

Types of associated nodes:

- iLO
- Virtual Connect
- SAS Switches

Deployment behavior:

- Deploys the OA first and then other nodes.

**Virtual Connect**

Types of associated nodes:

- Onboard Administrator

Deployment behavior:

- Deploys the VC first and then the OA.

**FC Switch**

Types of associated nodes:

- Partner FC Switches

Deployment behavior:

- Deploys to the selected switch first and then to associated switches.

**6 Gb SAS BL Switches**

Types of associated nodes:

- Onboard Administrator

Deployment behavior:

- Deploys to the selected switch first and then to the OA.

**iLO**

Types of associated nodes:

- Onboard Administrator
- Server

Deployment behavior:

- Deploys to the iLO first and then the OA and servers.

**Server**

Types of associated nodes:

- None

**Moonshot**

Types of associated nodes:

- None

**Superdome X**

Types of associated nodes:

- None

**NOTE:**

If you are running a mixed IPv4 and IPv6 environment, SUM might display the following issues:

- If you add an IPv6 iLO with associated nodes and the associated nodes are only configured with IPv4, SUM displays IPv6 nodes.
- SUM does not support IPv6 for SAS and FC switches.

## Node-specific additional details

Some nodes have node-specific information required when you add a node.

**Windows**

Additional details:

Enter what you want to do if SUM detects an update process on the node:

- **Leave the update running and bypass the node**
- **Stop any currently running update process on the node and replace it with updates from this session**

**Linux**

Additional details:

- You can use SSH key credentials for Linux nodes. Enter the **Username**, **Private Keyfile** location, and **Password** (if required). The private key file must use the PEM format.
- Enter what you want to do if SUM detects an update process on the node:
  - **Leave the update running and bypass the node**
  - **Stop any currently running update process on the node and replace it with updates from this session**
- Select the access level for this node:
  - None
  - Use sudo with credentials entered previously
  - Enter super user credentials

**VMware Host**

Additional details:

Select whether to use administrator credentials or open an authentication ticket with the VMware host of the vCenter. A ticket allows you to update the node regardless of the lockdown mode status.

If you select **Enter vCenter details to get ticket (for authentication to host)**, enter the **IP/DNS**, **Username**, and **Password** for the host.

**NOTE:**

SUM does not automatically migrate VMware nodes if DRS or HA is enabled. For more information on migrating VMware nodes, see the documentation for HPE OneView for VMware vCenter at **http://www.hpe.com/info/ovvcenter/docs**.

**Onboard Administrator**

Additional details:

- Select whether you want to automatically add associated nodes. This adds all nodes in the chassis.
  - If you are updating OAs and iLOs at the same time, select this for OA nodes so SUM detects associated iLO nodes. SUM can determine the proper deployment order when you deploy updates to the OA.
  - If you do not provide credentials, SUM uses the credentials you provide for the OA for associated VCs.

**NOTE:**

If the OA is in FIPS mode, SUM does not support downgrading or rewriting firmware. SUM displays a message and turns off the downgrade and rewrite options.

**Superdome X Onboard Administrator**

Additional details:

No node-specific settings.

**SAS B/L Interconnect Switch**

Additional details:

Select whether you want to automatically add associated nodes.

**Fibre Channel Switch**

Additional details:

Select whether you want to automatically add associated nodes.

**iLO**

Additional details:

Select whether you want to automatically add associated nodes.

**IMPORTANT:**

Do not add an iLO as a node if you are going to use it as part of an iLO Federation group.

**Moonshot**

Additional details:

- iLO Chassis Management Administrator Credentials: **Username** and **Password**.
- Switch Credentials: **Username**, **Password**, **Enable Password**. (Required only if you are updating the switch.)
- Select Credentials are the same on both switches if Switch B uses the same credentials. If not, clear this and enter the Switch B credentials.

**Virtual Connect**

Additional details:

Some VC options, such as VC Activation order, can be set from the Edit Node or Review/Deploy Node screen.

> **NOTE:**
>
> SUM cannot deploy updates to a Virtual Connect node managed by HPE OneView.

- Select whether you want to automatically add associated nodes.
- Add the Associated Onboard Administrator credentials
  - **Use credentials above**

    : Uses the same credentials you entered previously.
  - **Enter administrator credentials**

    : Enter the credentials if they differ from the credentials you entered earlier.

**More Information**

**Associated nodes deployment behavior** on page 45

## Editing a node

Nodes are changed using the Edit option on the Nodes screen. Make sure SUM has completed all functions, for example, node inventory or deployment, before you edit a node. Options you can edit vary based on the node. For information on specific node options, see **Node-specific additional details**.

> **NOTE:**
>
> SUM uses the same function to edit all node types.

**Procedure**

1. From the Nodes screen, highlight the node and then select **Actions** > **Edit**.
2. The following are some of the fields you can edit:
   a. **Description**
   b. **Type**
   c. Selected **Baseline** and **Additional Package**.

      > **NOTE:**
      >
      > If a node is part of a group, the group baseline and additional package settings override the node. Remove the node from the group to change the baseline or additional package.

   d. **Credentials**
3. Click **OK** to accept the changes and return to the Nodes screen.

## Aborting a node update

If SUM is deploying updates to a node and want to cancel the updates:

**Procedure**

1. From the Nodes screen, highlight the node, select **Actions** > **Abort**.

   **NOTE:**

   If SUM has started to perform updates, it completes the component update it is deploying, and then aborts the remaining component updates.

## Performing node inventory

The node inventory collects information about the node, and the firmware, software, and driver versions installed on the node. SUM detects when a self-discovery component has a missing dependency.

SUM must perform a node inventory during each new session to determine the firmware and software on a node.

SUM cannot inventory a node if the credentials are not valid. If the credentials are not valid for the node, edit the node credentials.

**NOTE:**

If you perform inventory on an OA node, SUM automatically adds and inventories the associated nodes if you select the check box on the Add Nodes screen. Add VC credentials separately. If you perform inventory on a blade iLO or VC, SUM does not find an associated OA until the end of the inventory process. Add credentials to the OA and then perform inventory on the OA node.

**Procedure**

1. From the Nodes screen, highlight the node and then select **Actions** > **Inventory**.
2. SUM displays the baseline associated with the node. If you want to reassign the baseline that SUM will use for inventory, select a baseline, additional package, or both.

   For Gen10 servers, you can select a saved install set as a baseline in the Inventory or Edit page.
3. Click **Inventory**. SUM displays errors to resolve before you can deploy updates.

**More Information**

**Associated nodes deployment behavior** on page 45

## Deploying a node

The deploy screen allows you to change the settings for the node you are deploying. You can change the:

- Installation options
- Scheduling options
- Reboot options
- iLO Repository options (Gen10 iLO 5 Windows and Linux nodes only)
- Components to deploy. Configure components from the Baseline Library screen.

**IMPORTANT:**

- Do not deploy updates to the localhost if you are running SUM on a virtual machine, only deploy updates to remote nodes.
- When SUM activates the Deploy button, do not manually update or downgrade a component that SUM manages. Updating the component manually will cause SUM to skip the component and report an error.

**Procedure**

1. From the Nodes screen, select a node to update, and then select **Actions** > **Review/Deploy**.
2. Select the **Installation Options** tab to change:
   - Downgrade and Re-write options

     **Upgrade Firmware and Software**

     Upgrades firmware and software components.

     **Upgrade Firmware**

     Upgrades only firmware components.

     **Upgrade Software**

     Upgrades only software components.

     **Downgrade and Rewrite both**

     Upgrades, downgrades, and rewrites firmware and software components.

     **Downgrade and Rewrite Firmware**

     Upgrades, downgrades, and rewrites only firmware components.

     **Downgrade and Rewrite Software**

     Upgrades, downgrades, and rewrites only software components.

     **Downgrade both**

     Upgrades and downgrades firmware and software components.

     **Downgrade Firmware**

     Upgrades and downgrades only firmware components.

     **Downgrade Software**

     Upgrades and downgrades only software components.

     **Rewrite both**

     Upgrades and rewrites firmware and software components.

     **Rewrite Firmware**

     Upgrades and rewrites only firmware components.

     **Rewrite Software**

     Upgrades and rewrites only software components.
   - Verbose logging or normal logging
   - **Skip Components with Dependency Failures**
   - Select whether to clean up temporary files after deployment.
   - Select whether to clean up debug logs and temporary files after deployment.

     **NOTE:**

     If an OA is in FIPS mode, SUM does not support downgrading or rewriting firmware. SUM displays a message and turns off the downgrade and rewrite options.
3. Select the **Reboot Options** tab to select the following:
   a. Select an option to reboot the system: `Never`, `If needed`, `Always`.
   b. Enter the number of minutes to delay rebooting the node. Select 1-60 minutes.
   c. Enter a reboot message, up to 255 characters, to display.

4. Gen10 iLO 5 Windows and Linux nodes only: Select the **iLO Repository Options** tab to manage the iLO Repository.
   a. Select **Save Components as an Install set on iLO Repository** to upload selected components to the iLO Repository and create an install set. SUM automatically creates a name and description, but you can enter a name and description for the install set. You can use this install set to rollback the server components. The name and description are limited to 63 characters, and the only special characters are - and _.
   b. Select one of the following:
      - **SUM manages iLO Repository space**: SUM automatically creates space on the iLO Repository if necessary. SUM deletes:
        - Un-referenced components first.
        - Deletes the oldest install set. iLO Repository can save a maximum 8 install sets.
      - **Manually manage iLO Repository space**: You select the install sets or un-referenced components to delete to free up iLO Repository space.
5. Select the components from the **Baseline** and **Associated Packages** tabs that you want to deploy.

   If you are deploying updates to an iLO5 node, SUM automatically selects components based on the operating system that is running SUM. If SUM cannot detect the operating system of the node, manually select components that apply.

   **NOTE:**

   Gen10 iLO 5 nodes require all components include a component signature file. If the signature file is missing, then SUM cancels the deployment. Deselect components without signature files to deploy other updates.

6. Click **Deploy**. SUM verifies any changes that you made are valid and then begins deploying components.

   **NOTE:**

   To begin the deployment, all dependency issues must be resolved, or clear the component so it does not install.

7. In the General section of the Node screen, click **View log** for the node, and then click **View log** for the component you installed to view the details of the installation.

   **NOTE:**

   On the node page, click the Live Log button to view the deployment status.

## iLO 5 update options

Gen10 servers with iLO 5 allow you to update the servers two ways:

- Deploy updates through the operating system with SUM.
- Deploy updates through the iLO 5. SUM loads the updates to the iLO 5. iSUT deploys the updates based on the iSUT mode. This requires:
  - Integrated Smart Update Tools 2.0.0.0 or later
  - AMS management tools

For more information about iSUT, see **http://www.hpe.com/info/sut-docs**.

## iLO Repository

The iLO Repository is a secure storage area in the nonvolatile flash memory embedded on the system board. This flash memory is called the iLO NAND. Use SUM or iLO to manage signed software and firmware components in the iLO Repository.

iLO, the UEFI BIOS, SUM, and other client software can retrieve these components and apply them to supported servers. Use SUM to organize the stored components into install sets and SUM or iLO to manage the installation queue.

## Install Sets

An install set is a group of components that can be applied to supported servers with a single command. Use SUM to create install sets. You can use iLO to view existing install sets in the iLO web interface.

## System recovery set

By default, a system recovery install set is included with every server. User accounts with the **Recovery Set** privilege can configure this install set.

The following firmware components are included in the default system recovery set:

- System ROM (BIOS)
- iLO firmware
- System Programmable Logic Device (CPLD)
- Innovation Engine
- Server Platform Services (SPS) Firmware

If the default system recovery set is deleted, a user with the **Recovery Set** privilege can use SUM to create an install set, and then designate it as the system recovery set by using the iLO RESTful API. Only one system recovery install set can exist at a time.

## Creating a system recovery set

Use update tools to save an install set to the iLO Repository, for example SUM.

### Prerequisites

- Recovery set permissions on the iLO.
- Install set saved in the iLO Repository.
- iLO RESTful API.

### Procedure

1. Open iLO RESTful API.
2. If there is an install set defined as a recovery set, use the `PATCH` command to define the `IsRecovery` parameter to `false`.

   ```
   PATCH /redfish/v1/UpdateService/InstallSets/[install_set_ID]/

   {
     "IsRecovery": false
   }
   ```
3. Use the `PROMOTE` command to change the `IsRecovery` parameter to `true` on a saved install set.

   ```
   PROMOTE /redfish/v1/UpdateService/InstallSets/[install_set_ID]/

   {
     "IsRecovery": true
   }
   ```

**More Information**

**Deploying a node** on page 49

### iLO 5 Gen10 security states

When you add a Gen10 node to SUM, communication between the iLO and host operating system occurs over the CHIF interface. Depending on the iLO security state, the communication operates in the following modes:

**Normal mode (Production mode)**

In normal mode, communication is not encrypted.

**Secure mode**

In secure mode, communication between the iLO and host operating system is encrypted, authorized, and authenticated.

If SUM finds that a node is using FIPS security mode, SUM does not update that node. Update the node before activating FIPS mode.

For more information about Gen10 server security modes, see *HPE Gen10 Security Reference Guide* at **https://www.hpe.com/info/sum-docs**.

## Deploying to and managing iLO Repository with SUM

On the Deploy screen, when you deploy updates to an iLO 5 node, SUM creates the installation queue for the iLO 5 to deploy. You can select whether you want to save the components in the iLO Repository.

- **Inventory** screen: Use this screen to inventory the baseline contents or a saved install set and additional baseline.
- **Review/Deploy** screen: Use this screen to deploy the selected baseline or install set. This screen performs like the Review/Deploy screen for other nodes.

The iLO Repository allows you to deploy firmware with the following methods:

- iLO and SUM: SUM works with the iLO to deploy the updates to the targets, for example, the operating system and iLO node.
- iLO and iSUT: The iLO and iSUT work together to deploy updates to the target nodes, for example, the operating system and the iLO node.

## Generating node reports

You can generate reports with that detail information about your SUM session, including details on a node, components you can install, and failed dependencies.

The reports for a node enable you to generate HTML, XML, and CSV reports. On the Reports screen, SUM includes a **Reports Center** that displays previous reports you have generated.

**NOTE:**

SUM uses the same function to generate reports for all node types.

**Procedure**

1. From the Nodes screen, select a node, and then select **Actions** > **Report**.
2. Select the reports you want to generate:

   **Firmware details**

   Displays firmware versions that are currently installed on the node.

**Deploy preview**

Displays components that SUM can install on the node.

**Failed dependency details**

Displays any failed dependencies on the node.

**Deploy details**

Displays details about what SUM installed on a node.

**Inventory**

Displays details about what components are in the baselines.

**Combined report**

Generates one of each report type.

**NOTE:**

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

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

   **NOTE:**

   You can view HTML and XML reports in java-script enabled browsers.

4. In the **Advanced Report Options** you can:
   a. Select a directory to save the reports. SUM creates a directory if it does not exist.
   b. Select whether to run the report in the background.
5. Click **Generate**.

## Deleting a node

**Procedure**

1. From the Nodes screen, highlight the node, and then select **Actions** > **Delete**.
2. Click **Yes, Delete** to confirm that you want to delete the node.

## Server overview

When you select a node, the Overview screen displays a progress bar for inventory and deployment of the node, and information about the node. For example, SUM does not deploy updates to HPE Synergy Frame Link Modules.

The information SUM displays varies based on the node type. Some information includes:

- Node type
- Node address
- NIC information
- FC HBA information
- Baseline and Additional Package
- Warnings/alerts
- Install sets available on the iLO Repository (Gen10 iLO5 nodes only)
- iLO Repository details (Gen10 iLO5 nodes only)

During the inventory and deploy process, SUM displays a progress bar for current tasks.

## Moonshot node overview

SUM displays the following information for Moonshot nodes:

- Description
- Chassis Name
- Product Name
- Installed Version
- Baseline
- Serial Number
- Product ID
- UUID
- Switch information
- Cartridge information

**NOTE:**

The first time you deploy updates to a Moonshot node, SUM does not display the Installed Version or Active Version. After deploying updates, SUM displays the Installed Version and Active Version the second time you deploy updates using SUM.

Prerequisites

- Switches are not in stacked mode.
- Updating Comwolff switches requires iLO Chassis Management 1.5.0 or later.

The following actions are available from the Overview screen:

- **Add**: See **Adding a node or other deployment type** on page 42.
- **Edit**: See **Editing a node** on page 48.
- **Report**: See **Generating node reports** on page 53.
- **Deploy**: See **Deploying a node** on page 49.

**NOTE:**

SUM does not support reboot options for Moonshot nodes.

# Node Groups screen

Node groups allow you to combine nodes and perform tasks as a group instead of individually. You can assign baselines, perform inventory, and review and deploy updates to all nodes in the groups that share these settings. The settings you assign on a group screen, for example a baseline, overrides what you applied to the node when you added the node to SUM.

## Adding a node group

**Procedure**

1. On the `Groups` screen, click **+Create New Group**.
2. Enter a **Node Group Name**.
3. Enter a **Node Group Description**.
4. In the **Assign existing Node(s) to Node Group** section, select the nodes that you want to add to the group.
5. In the **Baseline** section, select a **Baseline** and **Additional Packages** (optional) for the group if you want all the nodes to use the same baseline.

**NOTE:**

The baseline or additional package you select overrides the baseline or additional package you selected on the Nodes screen.

6. Click **Add**.

**NOTE:**

To remove a node from a node group, click the **X** on the right side of the row for the node.

## Editing a node group

**Procedure**

1. Select a node group from the list.
2. Select **Actions** > **Edit**.
3. Enter a new **Node Group Name** if you want to change it.
4. Enter a new **Node Group Description** if you want to change it.
5. In the **Assign existing Node(s) to Node Group** section, select the nodes you want to add to the node group.
6. In the **Remove Node(s) from Node Group** section, select the nodes you want to remove from the node group.
7. Select the baseline and additional package if you want to change them for all the nodes in the node group.
8. Enter new user credentials if you want to change them. The credentials override the credentials on the nodes in the group.
9. Click **OK**.

## Performing node group inventory

**Procedure**

1. Select a node group from the list.
2. Select **Actions** > **Inventory**.
3. Assign a baseline and additional package, if required.
4. Click **Inventory**.

## Deploying a node group

**Procedure**

1. Select a node group from the list.
2. Select **Actions** > **Review/Deploy**.
3. Select the **Installation Options** you want to deploy.
4. Select **Component verbose log** if you want more detailed log files.
5. Select the **Reboot options**.
6. Review and correct if SUM displays any warnings or alerts. SUM does not deploy updates to the group unless you select **Ignore Warnings**.
7. Select whether to skip components that report dependency failures or missing component signatures.
8. In the **Baseline Library** section, select the components you want to deploy.

9. Click **Deploy**.
10. If you make changes, SUM verifies that there are no dependency errors, and then deploys the components. SUM does not begin deployment until failed dependencies are resolved. Either resolve the dependency, or clear the component.

## Generating node group reports

**Procedure**

1. Select a node group from the list.
2. Select **Actions** > **Reports**.
3. Select the reports you want to generate and where you want SUM to save reports.
4. SUM generates the same reports for node groups and for nodes.

**More Information**

**Generating node reports** on page 53

## Aborting a node group update

**Procedure**

1. Select a node group from the list.
2. Select **Actions** > **Abort**.

## Deleting a node group

**Procedure**

1. Select a node group from the list.
2. Select **Actions** > **Delete**.
3. Confirm that you want to delete the node group.

# Advanced topics


- **About using SUM with IPv6 networks**
- **SUM network ports used**


## Using SUM with IPv6 networks

You can deploy to remote nodes in IPv6-based networks for Windows and Linux node servers.

For Windows-based servers to communicate with remote node servers, SUM uses either existing credentials or the user-provided user name and password to connect to the admin$ share. This share is an automatic share provided by Windows Server. After SUM connects to the admin$ share, it copies a version of the engine to the node server for the duration of the installation. After this engine starts, SUM uses this engine to communicate between the local and remote node server.

Open the firewall ports SUM needs for communication. After the installation is completed or canceled, SUM stops the remote engine, removes it from the node, closes the port on the Windows firewall, and then releases the share between the node and the local system.

For Linux-based servers to communicate to remote node servers, SUM starts by using the user-provided user name and password to create an SSH connection to the node server. After it connects, SUM copies the engine to the node server for the duration of the installation. After this engine starts, SUM uses this engine to communicate between the local and remote node server.

During this process, SUM opens ports in the iptables firewall to enable SUM to communicate with the SUM engine over SSL to pass data between the local and remote systems. When the installation is completed or canceled, SUM stops the remote engine, removes it from the target server, closes the port in the iptables firewall, and then closes the SSH connection to the node server.

To set up IPv6 networking, refer the documentation for your operating system.

## SUM network ports used

SUM requires that certain network ports are available. If you lock down network ports, make sure that the ports listed in the network port tables are open so that SUM works correctly when connecting to remote node servers and hosts. If you are unable to unlock these network ports, you must run SUM locally and update network-based hosts through their web interfaces (for example, the OA, iLO, and VC modules).

**NOTE:**

Use the `open_firewall` parameter for SUM to automatically open the required firewall ports on the local host and any remote servers.

Updates for most node types require network traffic in both directions between the server running SUM and the node. The server running SUM creates a local HTTP server, which is used to serve firmware binaries to the node and to communicate node status. The remote node issues HTTP requests and posts status updates to the server running SUM during the update process. If there is a routing problem or firewall blocking traffic back from the remote node to the system running SUM, firmware updates might be blocked, status updates blocked or delayed, or both.

After creating the initial communication binds to one of the available ports, SUM traffic can move to a dedicated high-number port number (greater than 1024). This frees up the initial port for new requests.

| System running SUM | Target node type | Inventory phase | | Deployment phase | |
|---|---|---|---|---|---|
| | | To target | From target (SUM 7.3.0 and later) | To target | From target (SUM 7.3.0 and later) |
| Windows | Windows | 445, 135, 137, 138, 139 | None | 445, 135, 137, 138, 139 | None |
| Windows or Linux | Linux | 22 | None | 22 | None |
| Windows or Linux | VMware | 443, 5989 | 63001 | 443, 5989 | 63001 |
| Windows or Linux | OA | 22, (80), 443 | None | 22, (80), 443 | None |
| Windows or Linux | Moonshot, Superdome X | 22, (80), 443 | None | 22, (80), 443 | 63001, 63002 |
| Windows or Linux | iLO, VC, FC switch, SAS switch | 22, (80), 443 | None | 22, (80), 443 | 63001 |

SUM uses port 63002 to communicate between the `sum_binary` and `sum_service` applications on both Windows and Linux systems. If ports are listed in both columns, SUM communicates bidirectionally.

**NOTE:**

Windows to Windows traffic uses WMI, a standard DCOM-In port 135 and Async-in and WMI-in.

Issue the commands `/port` and `/ssl_port` to change from ports 63001 and 63002 if there are firewall conflicts. Use `--open_firewall` to open the HTTP and HTTPS ports used by SUM for external access. Open these ports for remote node functionality and for remote browser access. For example:

```
smartupdate /port 80 /ssl_port 443
```

You can issue the command `/ftp_port` to assign which port to use for FTP service. By default the FTP port is disabled. Use the command to enable the service.

# Changing the port address in the `.ini` file

You can change the network ports SUM uses by editing the `sum.ini` file or using the `/port` or `/ssl_port` CLI parameters. For more information on using SUM CLI mode, see *Smart Update Manager CLI Guide*.

The following commonly used alternate network ports are:

**Procedure**

1. `port=63001` edit to `port=80`.
2. `ssl_port=63002` edit to `ssl_port=443`.

# SUM engine troubleshooting

## SUM stops responding.

**Symptom**

- SUM takes more time to deploy updates than expected.
- SUM stops responding when performing inventory on a baseline.
- SUM shuts down unexpectedly.

**Solution 1**

**Action**

1. Try the following actions.
   - Launch SUM.
   - Run `clean-cache` and then launch SUM.
   - Shut down the SUM engine. Use the command `smartupdate shutdownengine` from the SUM directory.
   - Restart the computer and run SUM again.

**Solution 2**

**Cause**

SUM might not have system or network resources.

**Action**

1. Do not deploy more than the 50 nodes at a time, or 10 VMware nodes at a time.

**Solution 3**

**Cause**

Performing inventory on more than one baseline might use too many system resources.

**Action**

1. Perform inventory on one SPP baseline at a time.

## SUM unexpectedly logs off users

**Symptom**

SUM logs out a user after an extended inactive period.

**Cause**

This is intentional. After an extended period of no activity, SUM logs out users.

### Action

1. Log in to SUM with your user credentials.

# SUM displays zero free space on a drive

### Symptom

SUM displays a warning that there is no free disk space when an available disk has more than 4 TB available.

### Action

1. In GUI mode, select `Ignore Warnings` on the Deploy screen.
2. In CLI mode, include the `/ignore_warnings` parameter.
3. In Inputfile mode, include the parameter `IGNOREWARNINGS=YES`.

# Text is not translated

### Symptom

Some text on screens is not translated.

### Action

1. No action. This is a known issue that will be fixed in a future version.

# Error message “Multiple connections to a server or shared resource by the same user...”

### Symptom

SUM displays the error message “Multiple connections to a server or shared resource by the same user...”.

### Cause

SUM uses the admin$ share function on Windows-based servers to copy files and perform required operations on remote node servers. If SUM detects multiple connections to the remote Windows node, it might display “Multiple connections to a server or shared resource by the same user, using more than one user name, are not allowed. Disconnect all previous connections to the server or shared resource and try again.”

If SUM displays the error check for open <filepath>admin$</filepath> shares on the remote node you want to update, and remove the connections. Use the following commands to check for open shares and delete them:

### Action

1. Open a command prompt window.
2. Type **`net use`**.
3. If open connections on the remote node are found, type: **`net use <node_admin_share> /delete`**
4. Attempt the operation in SUM that caused SUM to display the error.

# SUM reports port errors

### Symptom

SUM reports errors with blocked ports or does not disconnect from ports.

### Action

1. Close SUM and then reboot the system.
2. Clear the ports used in `sum.ini`.
3. Launch SUM.

# Browser closes connection with SUM

### Symptom

The Chrome or Internet Explorer browser closes the connection with SUM, but leaves SUM running.

### Cause

The browsers Internet Explorer and Chrome might disconnect from a SUM connection session.

### Action

1. Open a terminal window and navigate to the directory where SUM was launched.
2. Type the command `smartupdate /shudownengine` (Windows).
3. Relaunch SUM.

# SUM does not allow user to log off as expected

### Symptom

While running a process, users cannot log off as expected.

### Action

1. Wait until SUM ends all inventory and deploy processes before attempting to log off.

# Baseline troubleshooting

## SUM dependency issues

### Symptom

1. SUM displays the component error, `Missing 32 lib depend`.
2. SUM lists SUSE Enterprise Linux dependencies for Red Hat Enterprise Linux systems

### Solution 1

### Cause

Your systems might not have all 32–bit dependencies installed.

### Action

1. Make sure that you have all the 32-bit libraries installed on your system. View the component release notes for details on required libraries.

### Solution 2

### Cause

SUM incorrectly lists the SUSE components instead of Red Hat components.

### Action

1. No action.

## SUM displays a dependency error for self-inventory components

### Symptom

On the Baseline Library screen, SUM displays a dependency error for components that perform a self-inventory.

### Cause

Users deployed a server while using a root user account and are using sudo permissions to run SUM.

### Action

1. Delete the following directory.

   `/var/tmp/sum`

## SUM does not validate a component

### Symptom

The Baseline Library screen displays a missing composig file.

### Action

1. Delete the component from the baseline directory.
2. Download a new copy of the component to the baseline directory/
3. Validate the baseline.

**More Information**

**Re-validating baseline components** on page 38

# SUM displays multiple versions of the same component

### Symptom

When you are creating a custom baseline, SUM displays multiple versions of a component.

### Cause

Multiple source baselines contain the same component.

### Action

1. Select one copy of the component.

# A component is listed as disabled

### Symptom

SUM lists component `cp027753.exe` as `Disabled`.

### Cause

The `masterdependency.xml` file has incorrect `allow_rewrite` and `allow_downgrade` parameter settings.

### Action

1. To work around this issue, remove or update the masterdependency.xml file.

   **CAUTION:**

   Removing or editing the `masterdependency.xml` file might lead to deployment failures. SUM relies on this file to resolve dependency issues between components.

2. Close SUM.
3. Open the `masterdependency.xml` file in a text editor.
4. Find the `allow_rewrite` and `allow_downgrade` parameters for `cp027753.exe` and change them to `yes`.
5. Run the `clean-cache` application to remove node and baseline information.

   **NOTE:** `clean-cache`

   deletes all node information from the SUM database.

6. Launch SUM, add the nodes, and then continue the node deployment.

# Custom baseline screen does not display node types

### Symptom

SUM does not display a node type when filtering source for a custom baseline.

### Solution 1

### Cause

The source baselines might not contain components for that node type.

### Action

1. Make sure that the baseline includes components for the node type.

### Solution 2

### Cause

A node type might be clear.

### Action

1. Deselect all node types in **Advanced filters** to see all components in baseline sources and then select the components you want to add to the baseline.

# SUM does not save baselines after a Remote Desktop session

### Symptom

SUM does not save baseline or node information between Remote Desktop sessions.

### Cause

Remote Desktop does not save the temporary folders between sessions.

### Action

1. For more information, see the article on the Microsoft website **http://technet.microsoft.com/en-us/library/cc755098.aspx**

# SUM does not validate HTTP baselines

### Symptom

SUM cannot validate a baseline downloaded from an HTTP repository.

### Cause

SUM does not validate a baseline it downloads through HTTP. The .exe files downloaded are not compared against a manifest file.

**Action**

1. This is the expected behavior of SUM.

# SUM screens display outdated information

**Symptom**

The information SUM displays on a screen is outdated and incorrect.

**Cause**

The web browser has saved a cached version of the SUM screen.

**Action**

1. Clear the web browser cache.

# SUM refreshes the browser when adding a baseline

**Symptom**

SUM refreshes the browser window when you click Retrieve List when adding a baseline pulled from the web.

**Cause**

This is an issue that happens with Internet Explorer 11.

**Action**

1. Use a different web browser.

# SUM cannot select a component for deployment

**Symptom**

A different version of a component is available, but SUM does not select it automatically.

**Cause**

SUM does not recognize the date format.

**Action**

1. Update the component using the smart installer

# Baseline inventory does not respond for SPP ISO

**Symptom**

Performing SUM inventory when an SPP ISO is mounted via Gnome Virtual file system does not respond.

**Cause**

Gnome Virtual file system does not apply the read and execute permissions for the files.

**Action**

1. Manually extract the SPP to a directory and then launch SUM.

# Node troubleshooting

## SUM offline deploy fails to start on all selected servers

### Symptom

An Offline Review/Deploy action on an iLO Federation group does not start on all of the selected servers.

### Cause

The management network cannot process the offline deploy request.

### Action

1. Try the offline deploy request with a smaller group of servers.

   When working with multiple servers in an enclosure, Hewlett Packard Enterprise recommends limiting the group of servers to a maximum of 8.
2. Try the offline deploy request with a custom ISO that includes only the updates that apply to your environment.

## SUM has an issue with sudo user

### Symptom

SUM does not respond when editing a node with sudo.

### Cause

The user credentials might not have administrator privileges on the remote node.

### Action

1. Make sure the user that is logged in to SUM is part of the administrator group for the system.

## The SUM Deploy button is not shown

### Symptom

SUM does not display the **Deploy** button on the Deploy Nodes screen.

### Cause

SUM discovered a failed dependency.

### Action

1. Make sure that SUM has resolved all dependencies before attempting to deploy updates.

# SUM node inventory fails

### Symptom

- Inventory fails on remote Windows nodes. The node logs display the error `RegOpenKeyEx failed with error RegOpenKeyEx completed with error 997: Overlapped I/O operation is in progress.`
- SUM displays an inventory error on a VMware node.

### Solution 1

### Cause

This might be an issue with other processes running on the remote Windows node, for example a backup or process that accesses the registry.

### Action

1. Shut down the remote process that is accessing the registry, or run SUM locally on the node to perform inventory and deploy updates.

### Solution 2

### Cause

The VMware service might not be running.

### Action

1. Make sure the VMware service is running. Log in to the VMware ESXi Shell.
2. Check the provider version, type **`esxcli software vib list | grep smx`**.
3. Verify that the provider service is running, type **`/etc/init.d/sfcbd-watchdog status`**.
4. Verify that the provider responds to queries, type **`enum_instances SMX_SCInstallationService root/hpq`**.
5. To restart the service, type **`/etc/init.d/sfcbd-watchdog restart; /etc/init.d/sfcbd-watchdog status;`**.

### Solution 3

### Cause

The `pciinfo.depot` file is in the wrong location.

### Action

1. Close all tasks and back up important data on the node server.
2. Log in to the node server with root privileges.
3. Transfer the file `pciinfo.depot`, located in the SUM directory `/ia64/` to the node server.
4. Run **`swinstall -x autoreboot=true -s 'pwd' ./pciinfo.depot PCCIINFO`**.
5. After the update finishes, you can rerun SUM on a remote host to continue with additional updates.

# SUM does not detect a node

### Symptom

SUM might not detect some nodes, for example, a solid-state hard drive.

### Cause

Information that SUM gathers from the component might not match information from the node.

### Action

1. If SUM does not detect a node, and the component is available in the baseline, run the component outside of SUM.

# Linux hosts do not add Windows nodes

### Symptom

SUM does not add a Windows node when running SUM on a Linux host.

### Cause

SUM does not support deploying updates from a Linux host to a remote Windows node.

### Action

1. Run SUM on a Windows host to add Windows nodes.

# SUM cannot connect to a node

### Symptom

SUM displays the message `Unable to login or identify node as a supported device`.

### Solution 1

### Cause

SUM has connection issues with the remote node.

### Action

1. Check the following:
   - The node is active on the network.
   - Network ports are open.
   - Make sure that Windows nodes have the $Admin share enabled.
   - Make sure that HTTP and SSH access are enabled for Linux nodes.

### Solution 2

### Cause

User credentials are incorrect.

### Action

1. Verify that valid user credentials are provided.

# NIC firmware does not activate

### Symptom

NIC firmware does not activate after SUM reboots the NIC.

### Cause

Confirm that all component prerequisites are met.

### Action

1. Manually reboot the NIC. Select the EFI shell during the boot sequence. The update continues and reboots to HP-UX after it completes.

# No component version information displayed

### Symptom

SUM does not display version information for a component.

### Cause

SUM does not read the component contents correctly.

### Action

1. If you know that the component is the version you want to use, run SUM in online mode and force the deployment of the component.

# Command `open_firewall` does not work

### Symptom

The CLI command `open_firewall` does not work on some nodes.

### Cause

SUM is unable to open the firewall in all instances. These include: third-party firewall applications, Linux iptables DROP entries, and firewalls with complex rules.

### Action

1. When the `open_firewall` command does not work, manually open the firewall and then SUM can manage the node.

# Firewall error on a remote node error

### Symptom

SUM reports a potential error with a firewall on a remote node.

### Action

1. Make sure that no firewall is running, network ports are open, review the `http_proxy` parameter, `https_proxy` parameter, and review the CURL proxy settings.

   You can find more information about CURL proxy settings at the website **http://curl.haxx.se/docs/manpage.html**.

   You can find SUSE Linux Enterprise Server node proxy configurations in the directory `etc/sysconfig/proxy`.

# Determining which HPCISSS2 and HPCISSS3 drivers to install

### Symptom

Unsure which HPCISSS2 and HPCISSS3 drivers SUM installs.

### Action

1. If you are updating the Smart Array SAS/SATA driver, use the following table to determine which driver SUM installs if you select both the HPCISSS2 and HPCISSS3 drivers on the Review/Deploy screen:

| Installed driver version | CISSS2 | CISSS3 |
|---|---|---|
| HPSAMD driver | Installs if only this driver is selected. | Installs CISSS3 if both drivers were selected. |
| HPCISSS2 driver | Installs and updates. | |
| HPCISSS3 driver | | Installs and updates. |

   SUM does not overwrite an HPCISSS3 driver with HPCISSS2, or HPCISSS2 with HPCISSS3. After an update, SUM displays that the HPCISSS3 driver overwrote the HPCISSS2 driver, or HPCISSS2 overwrote HPCISSS3. When you relaunch SUM, it displays that the driver did not install and is ready to install.

   If you want to install a specific driver and SUM installs the other driver, perform an update outside of SUM to install the selected driver.

# SUM skips Broadcom ports

### Symptom

SUM does not update a Broadcom node.

### Cause

Broadcom port is not up when SUM attempts to deploy updates.

### Action

1. View the prerequisites of the appropriate driver for your network adapter installation to view the required port state.

# SUM reports OA update incorrectly

### Symptom

Fully installed OA updates are reported in SUM as failed.

### Cause

There is a timing issue between SUM and the target node.

### Action

1. Close and restart SUM, and then run inventory on the node to detect the component version details.

# SUM does not deploy to Windows cluster nodes

### Symptom

Unexpected issues occur when deploying updates to nodes that are part of Windows clusters.

### Cause

SUM does not support Windows clustering environments.

### Action

1. Remove the node from a Windows cluster.
2. Attempt to action again.

# SUM does not process encryption keys included in node input file details

### Symptom

When added in an input file node details, an encryption key is not processed as expected.

### Action

1. SUM processes the `ENCRYPTION_KEY` parameter as a global parameter, not an individual parameter. If different keys are required, use multiple input files.

# VMware troubleshooting

## RPM updates do not deploy to VMware nodes

**Symptom**

SUM does not deploy RPM updates to VMware ESXi nodes.

**Cause**

RPM packages only support Linux nodes.

**Action**

1. No action.

## Custom baselines include RPM components for VMware nodes

**Symptom**

Custom baselines created for VMware nodes include RPM components.

**Cause**

Linux node type is selected.

**Action**

1. Create a custom baseline and make sure that no Linux operating systems are included in the filters.

# Reports troubleshooting

## SUM does not generate reports

**Symptom**

SUM cannot generate reports for a node.

**Cause**

The node is offline or SUM cannot access the node.

**Action**

1. Make sure the node if online, that the firewall is open, and SUM can ping the node.

# Running commands in interactive CLI mode

## Updating SUM from command lines

SUM provides methods to run system commands outside the GUI.

- CLI: Allows you to add all parameters in one command line, and then use the silent parameter to execute the entire sequence on multiple nodes without any user interaction. You can update one or more nodes using this method.
- CLI with Input Files: Allows you to add all parameters to a text file, and then call SUM using the inputfile command with the text filename as the parameter. Using the input file method allows you to provide a larger number of nodes to update. For more information about using CLI and CLI with Input Files, see the SUM CLI guide.
- Interactive CLI: Provides an interactive method for each step of a process. This method is similar to using the GUI but you provide individual commands instead. SUM interactive CLI runs a single command at a time. Using this method allows you to have nodes a different stage of update. For example, you can have one node in the inventory phase, one node in the deployment phase, and another node that you are adding.
- Firmware RPMs: The SUM RPM deployment is a method for deploying firmware RPMs.
- Integrated Smart Update Tools (iSUT): iSUT allows you to run scripts that can deploy updates to your nodes. Before running iSUT, configure the component. For more information on using iSUT, see the *Integrated Smart Update Tools User Guide*.

The SUM binary executable maintains state information as needed on a per-session basis. SUM saves this information in the `sum.ini` file. This file is in the `%localappdata%\sum\` location in Windows and `/var/tmp/sum/` in Linux. SUM stores the user, session ID, host, and port information. This information enables you to log in and run SUM using different credentials.

## Deploying nodes

The following steps link to the basic instructions to deploy a node.

**Procedure**

1. Add a node and a baseline.
2. Perform inventory.
3. Deploy the updates.
4. Generate reports.

**More Information**

**add** on page 78
**inventory** on page 101
**deploy** on page 87
**generatereports** on page 89

## abort

**Description**

Safely terminates any command.

**Syntax**

```
smartupdate abort [--nodes [nodelist]]
```

**Parameters**

**--nodes <nodelist>**

A list of the nodes (full hostname or IP address) on which to perform the abort operation. If you do not specify nodes, the command terminates all tasks for all nodes.

**Restrictions**

This parameter does not support:

- Adding a node.
- Performing inventory on a local baseline.
- Deploying updates on OA, VC, iLO, and switch nodes.

**Windows usage**

```
C:\>smartupdate abort /nodes 100.2.3.4 100.2.3.5
```

**Linux usage**

```
$ ./smartupdate abort --nodes 100.2.3.4 100.2.4.5
```

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# activate

### Description

Activates any updates previously staged or installed, for example, rebooting or other processes based on specific devices.

### Syntax

```
smartupdate activate --nodes <nodelist> --cancelpending
```

### Parameters

**--nodes <nodelist>**

A list of the nodes (full hostname or IP address) on which to perform the activate nodes operation. If you do not provide any, the command applies to all nodes in the session.

### Restrictions

The `activate` command only applies to server nodes.

### Windows usage

```
C:\> smartupdate activate /nodes 10.0.0.1 10.0.0.2
```

### Linux usage

```
$ ./smartupdate activate --nodes 10.0.0.1 10.0.0.2
```

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# add

### Description

Adds baselines or nodes to the current working set for the current session.

### Syntax

```
smartupdate add --nodes
```

```
smartupdate add --baselines
```

### Parameters

Parameters given immediately after the `/nodes` command, but used before a node, are considered global parameters. These parameters apply to all the nodes specified in the command. For example:

```
smartupdate add /nodes user=user1 password=password1 type=linux 192.168.1.2
192.168.1.10
```

The parameters user, password, and type apply to both nodes.

Parameters used after a specified node apply to that node only.

```
smartupdate add /nodes 192.168.1.15 user=user2 password=password2 type=linux
192.168.1.17 user=user3 password=password3 type=windows
```

The parameters `user2`, `password2`, and `linux` apply to node `192.168.1.15`. The parameters `user3`, `password3`, and `windows` apply to `192.168.1.17`.

**--nodes <nodeslist>**

Object to perform the add operation. The items in the list should be delimited by spaces. You can specify the user and password globally for all nodes.

```
domain_name: localhost
```

```
ip: 127.0.0.1
```

```
ipv6: ::1
```

Add either nodes or baselines. Do not add both in the same command.

If you are adding a VC node, use the IP address of the primary Enet module. All VC modules installed, including FC modules, are updated through the primary Enet module.

**type = <node type>**

This parameter defines the node type. Use this as both a local and global parameter. SUM supports node types:

- `windows`
- `linux`
- `ilo`
- `virtual_connect`

  Use the IP address of a primary Enet module. VC nodes require `oa_username` and `oa_password`.If you add a VC node, include the following attributes: `oa_username` and `oa_password`.
- `oa`
- `vmware`
- `sas_switch`
- `fc_switch`
- `sdx`
- `moonshot`
- `unknown`

**skip_prereqs = <true|false>**

By default SUM installs the CHIF driver on Windows nodes. Use the `true` option to skip installing the CHIF driver.

**user=<user_name>**

Example: `user=john_doe@example.com`

This provides the username credentials for the node. If you do not enter this on the command line, SUM prompts for the username.

Use this as both local and global parameters.

If the node is a Linux node and part of a Windows domain, use the following format for the username.

`<domain>\<username>`

**password=<password>**

Example: `password=userpassword`

The user password credentials for the node. If you do not enter this on the command line, SUM prompts for the password.

Use this as both local and global parameters.

SUM supports Windows domains accounts for user credentials.

**su_user=<super_userID>**

Example: `user=su_john_doe@example.com`

The username for the super user.

**su_password=<super_user_password>**

Example: `password=su_userpassword`

The password for the super user.

**use_sudo**

VAlid options: `TRUE`, `FALSE`

Use credentials as sudo credentials.

Potential options:

- `true`
- `false`

**`switch_username=<switch_a_username>`**

Username for a Moonshot switch A. If the username for switch B is the same as switch A, then this value applies to both switches.

> **NOTE:**
>
> You can assign switch B credentials using the `setattributes` command.

**`switch_password=<switch_a_password>`**

Password for a Moonshot switch A. If the password for switch B is the same as switch A, then this value applies to both switches.

> **NOTE:**
>
> You can assign switch B credentials using the `setattributes` command.

**`switch_enable=<enable_password>`**

Enables switch A for the Moonshot node. You can use this value for the A and B switches if the password is the same.

**`vcenter_host`**

This is the address of the VMware vCenter when VMware is in lock-down mode. Use these parameters along with `vcenter_username` and `vcenter_password` to establish a connection with a VMware host that is in lock-down mode.

**`vcenter_username`**

This is the user account to establish a connection with a VMware host.

**`vcenter_password`**

This is the account password to establish a connection with a VMware host.

**`use_sshkey`**

Potential options:

- `true`
- `false`

Linux nodes only. Use `privatekeyfile` and `passphrase` (optional) with this command.

**`privatekeyfile=<PEM_file_absolute_path>`**

Enter the absolute address for the private key. The private key must be in PEM format.

Use this as both local and global parameters.

**`passphrase=<passphrase>`**

(Optional) Enter the passphrase for the private key.

Use this as both local and global parameters.

**override_connection**

Potential options:

- `true`
- `false`

You can also provide this parameter as a global option by providing the parameter before providing node details.

**`--baselines <directory_path>`**

Use this parameter to add local baselines by specifying the directory. If you are adding an HTTP baseline, use the `save_location` parameter.

**`save_location=<working_location>`**

Directory where you want to save HTTP baselines you download.

**`type=<baseline_type>`**

This parameter defines the baseline type. SUM supports baseline types:

`http`

`unc` (Windows only)

> **NOTE:**
>
> Make sure that the UNC directory is not open in the localhost system.

**`unc_username=<unc_username>`**

Enter the username for the UNC directory path. Valid for (Windows only).

**`unc_password=<unc_password>`**

Enter the password for the UNC directory path. Valid for (Windows only).

**`bundle=<bundle_name>`**

Enter the bundle file name you want to add. Use the command `getbaselines /list` to display the list of bundle file names. For example, `bundle=spp.2014.02.0.B`.

**`filter_os=<os_filter>`**

(HTTP baselines only) This attribute allows you to filter the components SUM downloads based on operating system. The valid options are:

`windows`

`linux`

`vmware`

### Restrictions

- Do not add a baseline and node in the same command. Use two separate commands.
- SUM interactive CLI mode does not automatically add nodes or baselines. The interactive CLI mode does not automatically add associated nodes. Use GUI mode to add associated devices.

### Usage

```
smartupdate add [--nodes n1 [type=<node_type>] [user=<username>]
[password=<userpassword>] [su_user=<su_user>] [su_password=<suuser_password>]
[use_sudo=true/false] [switch_username=<Moonshot_switchA_username>]
[switch_password=<Moonshot_switchA_password>]
[switch_enable=<Moonshot_switchA_enable>]

--baselines b1 [save_location=<directory>] [type=<baseline_type]
```

### Windows usage

**Windows sample command line**

```
C:\>smartupdate add /nodes 10.0.1.15 type=windows

C:\>smartupdate add /baselines type=http save_location=c:\temp\spp
bundle=http://10.1.2.3/spp/hp/swpackages/bp002524.xml filter_os=linux

C:\>smartupdate add /nodes type=vc 10.0.1.16 user=Administrator
password=12iso*help oa_username=Administrator oa_password=12iso*help

C:\>smartupdate add /nodes 10.0.1.4 type=vmware vcenter_host=10.0.1.20
vcenter_username=Administrator vcenter_password=password

C:\>smartupdate add /nodes 10.1.2.3 type=virtual_connect
oa_username=Administrator oa_password=mypassword1
```

**Linux usage**

```
$ ./smartupdate add --nodes 10.0.1.16 type=linux

$ ./smartupdate add --baselines "/SPP/" "/tmp/myrepos/"

$ ./smartupdate add --baselines type=http save_location=c:\temp\spp
bundle=http://10.1.2.3/spp/hpe/swpackages/bp002524.xml filter_os=linux

$ ./smartupdate add --nodes type=vc 10.0.1.18 user=Administrator
password=12iso*help oa_username=Administrator oa_password=12iso*help

$ ./smartupdate add --nodes 10.0.1.4 type=vmware vcenter_host=10.0.1.20
vcenter_username=Administrator vcenter_password=password

$ ./smartupdate add --nodes 10.1.2.3 type=virtual_connect
oa_username=Administrator oa_password=mypassword1
```

**NOTE:**

If the node type is Linux, you can use `su_user` and `su_password`, or use `use_sudo`.

For example:

```
smartupdate add /nodes 192.168.1.1 type=Linux user=user password=password
su_user=user1 su_password=password1

smartupdate add /nodes 192.168.1.1 type=Linux user=user password=password
use_sudo=true
```

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# configure

### Description

Enables you to export, import, and display component configuration settings in a baseline.

### Syntax

```
smartupdate configure --export baseline=<baselinename> dir=<directoryname>
[component=<componentname> includeCredentials=true|false>]

smartupdate configure --import baseline=<baselinename> dir=<directoryname>
[component=<componentname>]

smartupdate configure --show baseline=<baselinename>
[component=<componentname>
```

### Parameters/Options/Flags/Strings/...

**/export**

This parameter exports component configuration to a specified directory.

**/import**

This parameter imports component configuration from a specified directory.

**/show**

This parameter displays the component configuration options for the components in a baseline.

**baseline=<baselinename>**

Use this parameter to specify the baseline that contains the component you want to import, export, or show.

**dir=<directoryname>**

Use this parameter to specify the directory where you want to export or from where you want to import component configuration settings.

**component=<componentname>**

This is an optional parameter. This specifies the name of the component that you want to import, export, or show. If you do not specify a component, SUM exports, imports, or shows all components in a baseline.

**includeCredentials=<true|false>**

This is an optional parameter. If you select `true`, SUM includes the user credentials when it exports configuration settings. The default for this parameter is `true`.

**Windows usage**

```
C:\>smartupdate configure /import baseline=C:\spp.2012.01 dir=C:\Components
```

In this example, all the component configurations present under `C:\Components` directory for `C:\spp.2012.01` baseline will be loaded into SUM.

```
C:\>smartupdate configure /import baseline=C:\spp.2012.01 dir=C:\Components
\cp022423_conf component=cp022423.exe
```

In this example, SUM only imports the configuration for the component `cp022423.exe` of the baseline `C:\spp.2012.01` in the directory `C:\Components`.

```
C:\>smartupdate configure /show baseline=C:\spp.2012.01
```

In this example, SUM displays all the component configurations from the baseline `C:\spp.2012.01`.

**Linux usage**

```
$ ./smartupdate configure --export baseline=/root/SPP.2012.01 dir=/root/
Components
```

In this example, SUM exports all the component configurations from the baseline `/root/SPP.2012.01` to the directory `/root/Components`.

```
$ ./smartupdate configure --export baseline=/root/SPP.2012.01 dir=/root/
Components component=hp-snmp-agents-10.10-2657.7.rhel6.i686.rpm
includeCredentials=false
```

In this example, SUM only exports the configuration for the component `hp-snmp-agents-10.10-2657.7.rhel6.i686.rpm` from the baseline `/root/SPP.2012.01` present in the directory `/root/Components`. SUM does not export credentials in this example.

```
$ ./smartupdate configure --show baseline=/root/SPP.2012.01 component=hp-
snmp-agents-10.10-2657.7.rhel6.i686.rpm
```

In this example, SUM displays only the configuration for the component `hp-snmp-agents-10.10-2657.7.rhel6.i686.rpm` from the baseline `/root/SPP.2012.01`.

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# delete

### Description

Enables you to delete both selected and nonselected baselines, nodes, or both from the current session. You can delete an install set from an iLO Repository. You cannot delete a baseline or node performing a function on the node.

### Syntax

```
smartupdate delete --nodes [nodelist]
```

```
smartupdate delete --baselines [baselinelist]
```

### Parameters/Options/Flags/Strings/...

**--nodes [nodelist]**

Object to perform the delete operation. Delimit the list with a space. If you do not provide a nodelist, all nodes are deleted.

**--baselines [baselinelist]**

Object to perform the delete operation. Delimit the list with a space. If you do not provide a list of baselines, all baselines are deleted.

```
--baselines <install_set_name> node=<node IP>
```

Delete an install set saved on an iLO Repository. Provide the install set name and the iLO 5, or Gen10 server running Windows or Linux, IP address. SUM cannot delete a locked install set.

**Restrictions**

Do not delete a baseline and node in the same command.

**Windows usage**

```
C:\> smartupdate delete /baselines "spp.2012.01"
C:\> smartupdate delete /nodes 10.0.0.1
```

**Linux usage**

```
$ ./smartupdate delete --baselines "spp.2012.01"
$ ./smartupdate delete --nodes 10.0.0.1
```

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# deploy

Enables you to perform the deployment for nodes in the current working set for the current session. If you do not specify any nodes, the default is all in the currently selected list.

### Syntax

```
smartupdate deploy [--nodes [nodelist]]
```

### Parameters

**`--nodes [nodelist]`**

A list of the nodes to perform the deploy operation on. You can specify each node in three ways:

```
domain_name: localhost
```

```
ip: 127.0.0.1
```

```
ipv6: ::1
```

If you do not provide a nodelist, all nodes in the session are deployed.

**`--cleanup_onexit`**

Deletes the following files:

- Firmware RPMs copied to the Linux directory `/usr/lib/i386-linux-gnu` or `/usr/lib/x86_64-gnu`.
- Extracted firmware RPM directory and folder contents.
- Un-extracted components of a baseline.
- If SUM is launched from a read-only location, this parameter deletes the `localsum` directory.

**`--cleanupall_onexit`**

Deletes the following files:

- Firmware RPMs copied to the Linux directory `/usr/lib/i386-linux-gnu` or `/usr/lib/x86_64-gnu`.
- Extracted firmware RPM directory and folder contents.
- Un-extracted components of a baseline.
- If SUM is launched from a read-only location, this parameter deletes the `localsum` directory.
- Debug logs.

### Restrictions

If there are no updates for a node, SUM might indicate that it deployed updates to the node, but nothing was deployed.

### Windows usage

```
C:\> smartupdate deploy /nodes 10.7.0.0
```

### Linux usage

```
$ ./smartupdate deploy --nodes 10.7.0.0
```

**`SUCCESS_NO_REBOOT`**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# findavailablenodes

Enables you to search the network for available nodes. To be available, you must be able to reach nodes and another management system must not have exclusive control of the nodes. This parameter searches the range of IP addresses provided and accepts an optional port.

### Syntax

```
smartupdate findavailablenodes --type ip|port [ipAddrLow ipAddrHi] [port]
```

### Description

### Parameters/Options/Flags/Strings/...

**--type ip|port**

If you pass the `type` option, the value must match one of three types:

1. `ip`—Enter a range of IP addresses that SUM will search. Options: `ipAddrLow`; `ipAddrHi`
2. `port`—Enter a port number along with an IP address range that SUM can search.Options: `ipAddrLow`; `ipAddrHi`; `portNum`

**Windows usage**

```
C:\>smartupdate findavailablenodes /type ip 10.7.85.0 10.7.85.128
```

**Linux usage**

```
$ ./smartupdate findavailablenodes --type port 10.7.85.0 10.7.85.128 445
```

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# generatereports

Enables you to generate reports for the SUM session. These reports include Inventory, Firmware, Failed Dependency, Deploy preview, Installed components, and Combined reports. The output defaults to `attributes values` and the type of report to `all available`.

**Syntax**

```
smartupdate generatereports [--type inventory | firmware | installables |
faileddep | installed | combined] [--output html | xml | csv] [--nodes
[nodelist]] [--baselines [baselinelist]]
```

**Parameters/Options/Flags/Strings/...**

**`--type`**

If you specify the `type` parameter, it must be one of the following:

- Inventory
- Firmware
- Installables
- Faileddep
- Installed
- Combined

If you do not provide a type, all types possible are generated.

**`--output`**

- `xml`
- `csv`
- `html`

If you do not provide an output type, all formats are produced.

**`--nodes [nodelist]`**

SUM generates a single report with details for all the nodes in the list. If you do not specify a list of nodes, all nodes in the current session are selected.

**`--baselines [baselinelist]`**

List of baselines to include in the reports. If you do not specify a list of baselines, all baselines in the current session are selected.

**Windows usage**

```
C:\>smartupdate generatereports /type inventory /nodes localhost
```

**Linux usage**

```
$ ./smartupdate generatereports --type faileddep --nodes 10.7.85.0
10.7.85.128
```

**`SUCCESS_NO_REBOOT`**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**`SUCCESS_REBOOT`**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**`SUCCESS_NOT_REQUIRED`**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# getattributes

Enables you to view any of the attributes for the session or selected node. You can change attributes using the `SetAttributes` command.

### Syntax

```
smartupdate getattributes [--nodes [nodelist]] [--session]
```

### Parameters/Options/Flags/Strings/...

**--nodes [<nodelist>]**

A list of the nodes for which to get the attributes. If you do not specify a nodelist, all nodes in the session are shown.

**--session**

Lists the attributes available in the SUM session.

### Windows usage

```
C:\> smartupdate getattributes /nodes localhost
C:\> smartupdate getattributes /nodes 10.0.1.2
```

### Linux usage

```
$ ./smartupdate getattributes --nodes localhost
$ ./smartupdate getattributes --nodes 10.0.1.4
```

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# getbaselines

Enables you to show the list of the baselines in the current SUM session.

### Syntax

```
smartupdate getbaselines [<baselinelist --details>] [nodeip]
```

### Parameters

**baselinelist [--details]**

Baseline location to use for performing the operation. Specify `--details` to get detailed baseline information.

**nodeip <ipaddress>**

Lists the install sets on the node. (Gen10 iLO 5 nodes only)

**Windows usage**

```
C:\>smartupdate getbaselines c:\spp\baseline1 /details
```

**Linux usage**

```
$ ./smartupdate getbaselines
```

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** The command was successful.

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** The command was successful but a reboot is required.

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** The command completed successfully, but was not required or everything was already current.

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** A general failure occurred. For details, see the logs.

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** A bad input parameter was encountered. For details, see the logs.

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** The installation of the component failed.

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** The command failed. For details, see the logs.

# getcomponentlogs

Enables you to view the component logs for a node.

**Syntax**

```
smartupdate getcomponentlogs [--nodes [<nodelist>]] [--component
<componentname>]
```

**Parameters**

**--nodes [<nodelist>]**

Nodes for this request. If you do not provide a nodelist, all nodes in the session are used.

**--component <componentname>**

The name of the component that SUM will display the log. If you use this parameter, you must enter a component name. If you do not specify a component, SUM generates logs for all components.

**Windows usage**

```
C:\> smartupdate getcomponentlogs /nodes localhost
```

**Linux usage**

```
$ ./smartupdate getcomponentlogs --nodes 10.0.1.1 --component cp020024.exe
```

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# getcurrentlyinstalledversions

Enables you to get the currently installed versions of components on nodes in the current SUM session.

### Syntax

```
smartupdate getcurrentlyinstalledversions [--nodes [<nodelist>]]
```

### Parameters

**--nodes [<nodelist>]**

A list of the nodes to get the installed versions. If you do not provide a nodelist, all nodes in the session are used.

### Windows usage

```
C:\> smartupdate getcurrentlyinstalledversions /nodes localhost
```

### Linux usage

```
$ ./smartupdate getcurrentlyinstalledversions --nodes localhost
```

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# getenginestatus

Enables you to retrieve the status information of the SUM session.

**Syntax**

```
smartupdate getenginestatus
```

**Windows usage**

```
C:/>smartupdate getenginestatus
```

**Linux usage**

```
$ ./smartupdate getenginestatus
```

**Example output**

```
No SUM engine found running.
```

**Example output**

```
Process name:
Copyright:
Version:
Active Sessions:
Engine status:
Total number of sessions:
```

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# getlogs

Launches the `GatherLogs` function for SUM, which collects all logs in to a compressed file. By default, SUM saves the log files in one of the following locations:

- Windows
  - `C:\cpqsystem\log`
  - `C:\cpqsystem\sum\log`
  - `C:\Windows\Temp\SUM`
  - `%localappdata%\sum`
- Linux
  - `/var/log/sum`
  - `/var/cpq`
  - `/var/tmp/SUM`

### Options

**debuglogdir <directorypath>**

Tells SUM to find the log files in a directory other than the default directory.

**logdir <directorypath>**

Tells SUM to find the log files in a directory other than the default directory.

### Syntax

```
smartupdate getlogs
```

### Windows usage

```
C:\> smartupdate getlogs
```

**Linux usage**

```
$ ./smartupdate getlogs
```

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** The command was successful.

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** The command was successful but a reboot is required.

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** The command completed successfully, but was not required or everything was already current.

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** A general failure occurred. For details, see the logs.

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** A bad input parameter was encountered. For details, see the logs.

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** The installation of the component failed.

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** The command failed. For details, see the logs.

# getneededupdates

Enables you to see the details of needed updates based on either the state of the current selections or items passed in as part of the command. If you do not specify any nodes, the command uses those currently selected in the session.

**Syntax**

```
smartupdate getneededupdates [--nodes [<nodelist>]]
```

### Description

### Parameters

**--nodes [<nodelist>]**

A list of the nodes on which to perform the check for needed updates operation. If you do not specify a nodelist, all nodes in the session are used.

### Windows usage

```
C:\> smartupdate getneededupdates /nodes localhost
```

### Linux usage

```
$ ./smartupdate getneededupdates --nodes localhost
```

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# getnodes

Enables you to show the list of the nodes in the current SUM session. Gen10 and iLO 5 nodes also list install sets in the iLO repository, components in each install set, and pending iLO task queue items.

### Syntax

```
smartupdate getnodes [<nodelist> --details]
```

### Parameters

**--<nodeslist>**

The nodes on which to perform the operation.

**--details**

Specify `[--details]` to get detailed information.

### Restrictions

### Windows usage

```
C:\>smartupdate getnodes 10.0.1.1 /details
```

### Linux usage

```
$ ./smartupdate getnodes 10.0.1.1 --details
```

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**`FAILURE_COMMAND_FAILED`**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# inventory

Enables you to scan nodes for the currently installed version of firmware, drivers, and hardware components.

### Syntax

```
smartupdate inventory [--nodes <nodelist>] [--baselines <baselinelist>]
```

### Parameters

**`--nodes [<nodelist>]`**

A list of the nodes on which to perform the inventory command. You can specify each node in the following ways:

- `localhost`
- `127.0.0.1`
- `::1`

**`--baselines [<baselinelist or install_set_name>]`**

Specify the path of the SPP or components. If the baseline location includes spaces or special characters, use escape characters (Linux) or double-quotations (Windows).

To use a saved install set on the iLO Repository, include a node IP address or DNS name and the baseline install set name.

If you include a node list with the baseline, SUM performs inventory on the nodes with the baseline specified. If you do not include a node list, then SUM only performs inventory on the baseline.

### Restrictions

Set the management options with the `setattributes` parameter before performing inventory. For example, set the AMS, SNMP, or WMI agents.

After performing successful inventory on a VC node using an encryption key, use the `setattributes` command to assign the `encryption_key` parameter details.

### Windows usage

```
C:\>smartupdate inventory /nodes 10.0.1.1 /baselines C:\Users\Administrator
\Desktop\blds\ilo\26.33
```

```
C:\>smartupdate inventory /nodes 10.0.1.1 /baseline <install_set_name>
```

### Linux usage

```
$ ./smartupdate inventory --nodes 10.0.1.1 --baselines /root/Desktop/rono/
blds/ilo
```

**`SUCCESS_NO_REBOOT`**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# login

Enables you to set the credentials used for the current session.

**Syntax**

Authenticating with credentials for the first time:

```
smartupdate login [--username <username> --password <password>] [--port
<port>] [--ssl_port <sslport>] [--ftp_port <ftpport>] [--open_firewall]
```

Authenticating with current credentials:

```
smartupdate login
```

**Parameters**

**--username**

Optional parameter for adding username.

**--password**

Optional parameter for adding user password.

**--port**

Optional parameter to define a port that SUM uses.

The allowed values are:

`80, 1024-65535`

**--ssl_port**

Optional parameter to define an SSL port that SUM uses.

The allowed values are:

`443, 1024-65535`

**--ftp_port**

Optional parameter to define the FTP port that SUM uses. Include this parameter when updating FC switches.

The allowed values are:

`disabled, 21, 1024-65535`

**--debuglogdir <filepath>**

Tells SUM where to save log files. Enter a directory path.

**--open_firewall**

SUM cannot open all firewall instances. Manually open the firewall if SUM cannot open a firewall.

**Windows usage**

```
C:\> smartupdate login /username rono /password pwd123 /ssl_port 9091
```

**Linux usage**

```
$ ./smartupdate login --username rono --password pwd123 --ssl_port 9091
```

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# setattributes

Enables you to change the attributes of an SUM node or session. The `setattributes` command might return an invalid parameter notice if the permissions are not correct, or if either the parameter is not part of the requested set or if the value is not allowed.

To view a list of attributes you can change, use the command `getattributes`. The available attributes change based on the nodes and baselines added in each session. For example:

`smartupdate /getattributes /session` (Windows)

`smartupdate /getattributes /nodes` (Windows)

### Syntax

```
smartupdate setattributes --nodes [<nodelist>] attribute1=value1
attribute2=value2
```

```
smartupdate setattributes --session attribute1=value1
```

Assign session attributes in the interactive CLI:

`smartupdate setattributes --session <attribute>=<value>` (Linux)

`smartupdate setattributes /session <attribute>=<value>` (Windows)

### Parameters

**--nodes [<nodelist>] attribute=value**

Specify the nodes and attributes that you want to apply to nodes.

**--session attribute=value**

Specify the session attribute you want to apply. Session attributes are global.

### Session parameter options

**auto_save_session**

`[true|false]`

**auto_save_session_time**

<integer> — The time in minutes. The default is 15 minutes.

**engine_mode**

[debug|release]

**software**

[true|false] — This defines the option for all nodes added in this session.

**firmware**

[true|false] — This defines the option for all nodes added in this session.

**rewrite**

[true|false] — This defines the option for all nodes added in this session.

**downgrade**

[true|false] — This defines the option for all nodes added in this session.

**language**

[en|ja|cn]

**verbosity**

[normal|verbose|veryverbose]

- normal — The default amount of information provided by SUM about a deployment.
- verbose — Provides more details about a deployment, if information is available.
- veryverbose —Provides more details about a deployment, if information is available.

**verbose**

[true|false]

smartupdate setattributes /nodes verbose=true

Determines the amount of details SUM provides during deployment.

**report_dir**

[directory_path] - Directory path where you want SUM to save reports. For example: C:\SUM_reports\.

**open_firewall**

[true|false]

Optional parameter that allows SUM to open the HTTP and HTTPs ports SUM uses for external communication. Also used to open the ports for remote node functionality and for remote browser access.

**reboot**

Valid options:

ifneeded, always, never

Determines the reboot options for this session.

**Node parameter options**

**Use_vCenter**

Options for VMware nodes.

[true|false]

If you set this attribute as `true`, enter the following settings:

- `vcenter_host` — IP address for the VMware vCenter node.
- `vcenter_username` — Username for the VMware vCenter node.
- `vcenter_password` — Password for the user connecting to the VMware vCenter node.

These parameters can also be set as session attributes.

**`encryption_key`**

Option:

String of a minimum of eight characters.

Required parameter for VC nodes with FIPS mode enabled. SUM uses the encryption key to encrypt the configuration saved to disk during the update process. This value is independent and does not need to match the VC password.

Assign this parameter after successful completion of VC inventory.

**`ethactorder`**

Possible values:

`ODDEVEN/PARALLEL/SERIAL/MANUAL`, the default value is `ODDEVEN`.

Use this command to determine VC-Enet module activation order.

**`fcactorder`**

Possible values:

`ODDEVEN/PARALLEL/SERIAL/MANUAL`, the default value is `SERIAL`.

Use this command to determine VC–FC activation order.

**`ethactdelay`**

Valid entries:

0–60 minutes. The default is 0 minutes.

Use this command to determine the time, in minutes, between activating or rebooting VC-Enet modules.

**`fcactdelay`**

Valid entries:

0–60 minutes. The default is 0 minutes.

Use this command to determine the time, in minutes, between activating or rebooting VC-FC modules.

**`use_sshkey`**

Linux nodes only

Potential options:

- `true`
- `false`

Other attributes:

- `privatekeyfile`

  –Enter the address for the private key. The private key must be in PEM format.
- `passphrase`

– (Optional) Enter the passphrase for the private key.

These parameters can also be set as session attributes.

**no_mgmt**

Potential options:

- `true`
- `false`

No AMS, SNMP, or WBEM Providers are selected for deployment.

**use_snmp**

(Linux only)

Potential options:

- `true`
- `false`

SUM deploys SNMP components.

**use_wmi**

(Windows only)

Potential options:

- `true`
- `false`

SUM deploys WBEM Provider components.

**use_ams**

(Gen9 and later)

Potential options:

- `true`
- `false`

SUM deploys AMS components to both Windows and Linux systems.

**skip_prereqs = <true|false>**

By default SUM installs the CHIF driver on Windows nodes. Use the `true` option to skip installing the CHIF driver.

**ignore_tpm**

Potential options:

`[true|false]`

This parameter tells SUM to ignore the TPM warning message when a TPM or TM module is installed on a server.

This parameter is supported on server and iLO nodes.

**on_failed_dependency**

`[omithost|omitcomponent|force]`

- `omithost` — SUM skips the host if it discovers a dependency failure. (Default)
- `omitcomponent` — SUM skips components with failed dependencies. Other components on the node are deployed.
- `force` — SUM forces the components with a failed dependency to deploy.

**`ignore_warnings`**

Potential options:

`[true|false]`

This parameter tells SUM to ignore warnings if it encounters any. Some errors are:

- Pending iLO 5 task queue warning.
- Exception task queue warning.
- iLO 5 or iSUT warnings.
- TPM/TM warnings.
- Low disk space.

**iLO 5 parameters**

**`--save_install_set <true/false>`**

`True`: Saves the install set on the iLO Repository.

`False`: (Default) Does not save the install set on the iLO Repository.

**`--install_set_name <SPP_baseline>`**

Provide the install set's name to save on the iLO Repository. Valid only for SPP baselines.

**`--install_set_description <description>`**

Saves the description you assign the install set.

**`--manually_manage_iLO_repository = <true>`**

`True`: (Default) Prevents SUM from automatically removing install sets to make room for new install sets.

**`--skip_missing_compsig`**

Possible values: [TRUE|FALSE]

Skips deploying components that do not have component signature files. The default value is false.

**Superdome X parameter options**

**`update_type`**

`[ALL/COMPLEX/PARTITIONS]` — This value tells SUM what to Superdome X nodes to update.

**`device_list`**

`[devicelist]` — This value tells SUM which Superdome X nodes you want to update.

**`reboot_list`**

`[rebootlist]` — This value tells SUM which Superdome X nodes to reboot after deployment.

**Moonshot parameter options**

You can set the following Moonshot-specific attributes for switch B, if those credentials differ from switch A. These parameters can also be set as session attributes.

**`switch_username`**

`[username]` — User name for the Moonshot A switch.

**switch_password**

[password] — Password for the Moonshot A switch.

**switch_enable**

[enable_password] — Enablement password for the Moonshot A switch.

**switchb_username**

[username] — User name for the Moonshot B switch.

**switchb_password**

[password] — Password for the Moonshot B switch.

**switchb_enable**

[enable_password] — Enablement password for the Moonshot B switch.

**Downgrade and rewrite parameter options**

The following describes GUI downgrade and rewrite combinations and the corresponding interactive CLI parameters:

**Software only**

```
smartupdate setattributes /nodes localhost rewrite=false downgrade=false
firmware=false software=true
```

**Firmware only**

```
smartupdate setattributes /nodes localhost rewrite=false downgrade=false
firmware=true software=false
```

**Firmware and software**

```
smartupdate setattributes /nodes localhost rewrite=false downgrade=false
firmware=true software=true
```

**Downgrade software**

```
smartupdate setattributes /nodes localhost rewrite=false downgrade=true
firmware=false software=true
```

**Downgrade firmware**

```
smartupdate setattributes /nodes localhost rewrite=false downgrade=true
firmware=true software=false
```

**Downgrade both**

```
smartupdate setattributes /nodes localhost rewrite=false downgrade=true
firmware=true software=true
```

**Rewrite software**

```
smartupdate setattributes /nodes localhost rewrite=true downgrade=false
firmware=false software=true
```

**Rewrite firmware**

```
smartupdate setattributes /nodes localhost rewrite=true downgrade=false
firmware=true software=false
```

**Rewrite both**

```
smartupdate setattributes /nodes localhost rewrite=true downgrade=false
firmware=true software=true
```

**Rewrite and downgrade software**

```
smartupdate setattributes /nodes localhost rewrite=true downgrade=true
firmware=false software=true
```

**Rewrite and downgrade firmware**

```
smartupdate setattributes /nodes localhost rewrite=true downgrade=true
firmware=true software=false
```

**Rewrite and downgrade both**

```
smartupdate setattributes /nodes localhost rewrite=true downgrade=true
firmware=true software=true
```

**Windows usage**

```
C:\> smartupdate setattributes /nodes 10.0.1.5 firmware=true software=true
rewrite=true downgrade=true

C:\> smartupdate setattributes /nodes 10.0.1.5 update_type=all

C:\> smartupdate setattributes /session open_firewall=yes

C:\> smartupdate setattributes /nodes 10.0.0.4 use_vcenter=true
vcenter_host=10.0.0.1 vcenter_username=test vcenter_password=password
```

**Linux usage**

```
$ ./smartupdate setattributes --nodes 10.0.1.5 firmware=true software=true
rewrite=true downgrade=true

$ ./smartupdate setattributes --nodes 10.0.1.5 update_type=all

$ ./smartupdate setattributes -session open_firewall=yes

$ ./smartupdate setattributes --nodes 10.0.0.5 use_vcenter=true
vcenter_host=10.0.0.1 vcenter_username=test vcenter_password=password
```

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# shutdownengine

Enables you to terminate the SUM engine. If other sessions are active, this fails unless you use the `--force` option.

**CAUTION:**

Using `--force` can cause loss of information.

### Syntax

```
smartupdate shutdownengine [--force]
```

### Parameters

**--force**

Force shutdown even if other sessions are still active.

**--cleanup_onexit**

Deletes SUM files from remote nodes, except user and debug log files.

**--cleanupall_onexit**

Deletes SUM files, including installed firmware RPMs. Does not delete user log files.

### Windows usage

```
C:/>smartupdate shutdownengine /force
```

### Linux usage

```
$ ./smartupdate shutdownengine --force
```

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** `The command was successful.`

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** `The command was successful but a reboot is required.`

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** `The command completed successfully, but was not required or everything was already current.`

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** `A general failure occurred. For details, see the logs.`

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** `A bad input parameter was encountered. For details, see the logs.`

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** `The installation of the component failed.`

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** `The command failed. For details, see the logs.`

# Deploying firmware RPMs

This section describes using SUM firmware commands to deploy ProLiant firmware in the RPM format to nodes running supported Linux operating systems.

## About the SUM RPM tool

SUM firmware commands tool is available at **http://www.hpe.com/support/SDR-SUM**. For information on the prerequisites for running SUM, see the SUM release notes. Versions are available for supported Red Hat Enterprise Linux and SuSE Linux Enterprise Server operating systems.

## About SPP ISO and RPMs

The SPP ISO contains password protected and nonpassword protected firmware in both RPM and SCEXE format. The SDR has two folders: an SPP folder that contains nonpassword protected firmware and an FWPP folder that contains password protected firmware. All firmware on the SDR is in RPM format.

## Accessing firmware RPMs

**Procedure**

1. Use normal Linux tools (for example, YUM), to pull a collection of system firmware from a centralized repository, for example the Software Delivery Repository at **http://downloads.linux.hpe.com/SDR**.

### Prerequisites

**Procedure**

1. Perform these tasks on the target system, and run them with

   `uid=0`

   (root) privileges.


- **Using YUM distributions (RedHat)** on page 113
- **Using Zypper distributions (SuSE)** on page 114


### Using YUM distributions (RedHat)

Install, deliver, and locally cache applicable firmware.

**Procedure**

1. Navigate to the repository location.
2. Add the repository to YUM.

```
# cd /etc/yum.repos.d/
# wget http://hpe:firmrpms@10.0.0.1/~username/firmware/firmware.repo
```

Automatically find required packages

- Install the SUM firmware commands utility.
- Use SUM to query the system and report which packages you need:

```
# yum install smartupdate
# yum install $(smartupdate requires) --skip-broken
```

## Using Zypper distributions (SuSE)

Install, deliver, and locally cache applicable firmware.

**Procedure**

1. Add the repository to Zypper:

   ```
   # zypper addrepo http://hpe:firmrpms@10.0.0.1/~user/firmware/firmware.repo
   ```

   For more information, see **https://downloads.linux.hpe.com/SDR/project/hpsum**

Automatically find required packages

- Install the SUM firmware commands utility.
- Use SUM to query the system and report which packages you need:

  ```
  # zypper install sum
  # zypper install $(smartupdate requires)
  ```

# Deploying firmware components

The primary function of SUM firmware commands is to flash or upgrade the firmware from the packaged contents to the device on the target host by using the command `smartupdate upgrade`.

**Procedure**

1. Launch the firmware flash engine using the command `smartupdate upgrade`.

   Global options:

   - `--y`, `--yes`: Assume yes to all options.
   - `--v`, `--verbose`: Display verbose information.

   Other upgrade options:

   - `--f`: Force upgrades
   - `--dry-run`: Test that upgrade runs without issues. Does not deploy upgrades.
   - `--d` or `--downgrade`: Downgrade components.
   - `--debuglogdir`: Defines the directory where SUM saves log files.
   - `--r` or `--rewrite`: Rewrite components.
   - `--ignore-warnings`: Ignores warnings SUM returns and proceeds with the installation.
   - `--cleanup_onexit`: Cleans up the following:
     - FWRPMS copied to the IP folder.
     - Unpacked components in the baseline.
     - All temporary directories the firmware wrapper generates.
   - `--cleanupall_onexit`: Cleans up everything, including the debug logs, generated by the firmware wrapper. This command does not delete the user logs.

# Other RPM commands

## info

Gather information about the firmware packages available on the target system.

**Syntax**

```
smartupdate info
```

# list

Gather information about the firmware packages available compared to what is installed on the target host.

### Syntax

```
smartupdate list
```

### Example output

```
smartupdate list

Searching for firmware.
Analyzing results.

Info | NAME                        | VERSION         | INSTALLED    | TYPE   |
-------------------------------------------------------------------------------
icRU | system-p70                  | 2015.07.01      | 2015.07.0    | system |
ifrU | ilo4                        | 2.5             | 2.4          | ilo    |
```

### Parameters

**`I` — Installable**

`1`: Yes, can be installed.

`—`: Cannot be installed.

**`c` — Criticality**

`c`: Addresses a critical issue.

`f`: Addresses an issue.

`e`: Enhanced functionality.

`-`: No information.

**`r` — Reboot**

`r`: The package requires a reboot to apply the update, but the firmware is up-to-date, no action required.

`R`: The next time the update command is run a reboot will be required.

`-`: No reboot required.

**`version cmp` — Different between applied version and version in the package.**

`-`: The versions are the same.

`d`: The version in the package is older than the currently applied version.

`U`: The version in the package is newer than the currently applied version.

### Options

Use a filter string for most commands to work with a specific firmware package or subset.

### Example filter output

```
smartupdate list '%{NAME} =~ /p70/'

Searching for firmware.
Analyzing results.

Info | NAME                | VERSION         | INSTALLED     | TYPE   |
```

```
-------------------------------------------------------------------------
icRU | system-p70          | 2015.07.01      | 2009.07.00    | system |
```

**SUCCESS_NO_REBOOT**

**Windows:** 0

**Linux:** 0

**Text:** The command was successful.

**SUCCESS_REBOOT**

**Windows:** 1

**Linux:** 1

**Text:** The command was successful but a reboot is required.

**SUCCESS_NOT_REQUIRED**

**Windows:** 3

**Linux:** 3

**Text:** The command completed successfully, but was not required or everything was already current.

**FAILURE_GENERAL**

**Windows:** -1

**Linux:** 255

**Text:** A general failure occurred. For details, see the logs.

**FAILURE_BAD_PARM**

**Windows:** -2

**Linux:** 254

**Text:** A bad input parameter was encountered. For details, see the logs.

**FAILURE_COMPONENT_FAILED**

**Windows:** -3

**Linux:** 253

**Text:** The installation of the component failed.

**FAILURE_COMMAND_FAILED**

**Windows:** -4

**Linux:** 252

**Text:** The command failed. For details, see the logs.

## query

Extract package information in a format that you define.

**Syntax**

```
smartupdate query

Searching for firmware.
Analyzing results.
```

```
system-p70
--------------------------------------------------------------------------------
----------------------
%{RELEASEDATE_SECOND} 57
%{RELEASEDATE_MONTH} 9
%{FIRMWARE_STRING} smartcomponent-linux-firmware-system
%{RPMNAME} hp-firmware-system-p70
%{REBOOT_REQUIRED} yes
%{VERSIONID} 4082a4f9023d47b082a48853ff659c08
%{RELEASENUM} 1.1
%{MODEL}
%{XSL}
%{LANGUAGE} English (US)
%{FILENAME} CP027723.scexe
%{PLATFORM} red_hat_enterprise_linux_x86
%{RELEASEDATE_DAY} 3
%{UNINSTALL_SILENT}
%{UNINSTALL_COMMAND}
%{PRODUCTID} 047d8b4df70c471db61bbfce96870076
%{UNINSTALL_COMMAND_PARAMS}
%{RELEASEDATE_HOUR} 13
%{INSTALL_NEEDUSERACCT} no
%{PLATFORM_MAJOR} 6
%{FIRMWARE_ID} system-p70
%{INSTALL_COMMAND_PARAMS}
%{VERSION} 2015.07.01
%{FIRMWARE_NAME} system-p70
%{ALTNAME} HP ProLiant DL380p Gen8 (P70) Servers
%{RELEASE} 1.1
%{NAME} Online ROM Flash Component for Linux - HP ProLiant DL380p Gen8 (P70)
Servers
%{TYPE_OF_CHANGE} 0
%{MANUFACTURER_NAME} Hewlett-Packard Development Company, L.P.
%{DESCRIPTION} This component provides updated system firmware that can be
installed directly
on supported Operating Systems. Additionally, when used in conjunction with
Smart Update
Manager (SUM), this Component allows the user to update firmware on remote
servers from a
central location. This remote deployment capability eliminates the need for
the user to be
physically present at the server in order to perform a firmware update.
%{INSTALL_COMMAND}
%{INSTALL_SILENT} yes
%{INSTALL_COMMAND_REBOOT_REQUIRED} yes
%{UNINSTALL_COMMAND_REBOOT_REQUIRED}
%{DEBNAME} hp-firmware-system-p70
%{RELEASEDATE_MINUTE} 49
%{TYPE_OF_CHANGE_TXT} enhancement
%{RELEASEDATE_YEAR} 2015
%{REVISION}
```

## erase

Erases the components that the command `smartupdate requires` installs.

**Syntax**

Use the command for your Linux operating system.

```
yum erase $(smartupdate requires)
```

```
zypper remove $(smartupdate requires)
```

# RPM downloads are blocked

### Symptom

RPM downloads are blocked.

### Cause

A dependency error prevents SUM from downloading RPMs.

### Action

1. Use the command to continue downloads when SUM encounters an error: `yum install $(smartupdate requires) --skip-broken`

# `smartupdate upgrade` returns an error

### Symptom

When running the command `smartupdate upgrade`, an error is shown instead of installing the update.

### Action

1. Run the command `smartupdate upgrade`a second time.

# RPM mode does not correctly handle Smart Array firmware

### Symptom

SUM commands `requires`, `upgrade`, and `list` do not accurately work with Smart Array firmware.

### Action

1. Deploy Smart Array firmware with GUI or CLI mode.

# Websites and support

## Websites

| | |
|---|---|
| Hewlett Packard Enterprise Information Library | **www.hpe.com/info/EIL** |
| Smart Update Manager | **www.hpe.com/servers/sum** |
| Smart Update Manager Downloads | **www.hpe.com/servers/sum-download** |
| Smart Update Manager Information Library | **www.hpe.com/info/sum-docs** |
| Smart Update Tools | **www.hpe.com/servers/sut** |
| Smart Update Tools Information Library | **www.hpe.com/info/sut-docs** |
| Service Pack for ProLiant | **www.hpe.com/servers/spp** |
| Service Pack for ProLiant documentation | **www.hpe.com/info/spp/documentation** |
| Service Pack for ProLiant downloads | **www.hpe.com/servers/spp/download** |
| *HPE Gen10 Security Reference Guide* | **http://www.hpe.com/support/gen10-security-ref-en** |
| Service Pack for ProLiant custom downloads | **www.hpe.com/servers/spp/custom** |
| HPE SDR site | **downloads.linux.hpe.com** |

For additional websites, see **Support and other resources**.

## Support and other resources

### Accessing Hewlett Packard Enterprise Support

- For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:

  **http://www.hpe.com/assistance**
- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:

  **http://www.hpe.com/support/hpesc**

#### Information to collect

- Technical support registration number (if applicable)
- Product name, model or version, and serial number
- Operating system name and version
- Firmware version
- Error messages
- Product-specific reports and logs

- Add-on products or components
- Third-party products or components

## Accessing updates

- Some software products provide a mechanism for accessing software updates through the product interface. Review your product documentation to identify the recommended software update method.
- To download product updates:

  **Hewlett Packard Enterprise Support Center**

  **www.hpe.com/support/hpesc**

  **Hewlett Packard Enterprise Support Center: Software downloads**

  **www.hpe.com/support/downloads**

  **Software Depot**

  **www.hpe.com/support/softwaredepot**
- To subscribe to eNewsletters and alerts:

  **www.hpe.com/support/e-updates**
- To view and update your entitlements, and to link your contracts and warranties with your profile, go to the Hewlett Packard Enterprise Support Center **More Information on Access to Support Materials** page:

  **www.hpe.com/support/AccessToSupportMaterials**

**IMPORTANT:**

Access to some updates might require product entitlement when accessed through the Hewlett Packard Enterprise Support Center. You must have an HPE Passport set up with relevant entitlements.

## Customer self repair

Hewlett Packard Enterprise customer self repair (CSR) programs allow you to repair your product. If a CSR part needs to be replaced, it will be shipped directly to you so that you can install it at your convenience. Some parts do not qualify for CSR. Your Hewlett Packard Enterprise authorized service provider will determine whether a repair can be accomplished by CSR.

For more information about CSR, contact your local service provider or go to the CSR website:

**http://www.hpe.com/support/selfrepair**

## Remote support

Remote support is available with supported devices as part of your warranty or contractual support agreement. It provides intelligent event diagnosis, and automatic, secure submission of hardware event notifications to Hewlett Packard Enterprise, which will initiate a fast and accurate resolution based on your product's service level. Hewlett Packard Enterprise strongly recommends that you register your device for remote support.

If your product includes additional remote support details, use search to locate that information.

**Remote support and Proactive Care information**

**HPE Get Connected**

**www.hpe.com/services/getconnected**

**HPE Proactive Care services**

**www.hpe.com/services/proactivecare**

**HPE Proactive Care service: Supported products list**

**www.hpe.com/services/proactivecaresupportedproducts**

**HPE Proactive Care advanced service: Supported products list**

**www.hpe.com/services/proactivecareadvancedsupportedproducts**

**Proactive Care customer information**

**Proactive Care central**

**www.hpe.com/services/proactivecarecentral**

**Proactive Care service activation**

**www.hpe.com/services/proactivecarecentralgetstarted**

## Warranty information

To view the warranty for your product or to view the *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products* reference document, go to the Enterprise Safety and Compliance website:

**www.hpe.com/support/Safety-Compliance-EnterpriseProducts**

**Additional warranty information**

**HPE ProLiant and x86 Servers and Options**

**www.hpe.com/support/ProLiantServers-Warranties**

**HPE Enterprise Servers**

**www.hpe.com/support/EnterpriseServers-Warranties**

**HPE Storage Products**

**www.hpe.com/support/Storage-Warranties**

**HPE Networking Products**

**www.hpe.com/support/Networking-Warranties**

## Regulatory information

To view the regulatory information for your product, view the *Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products*, available at the Hewlett Packard Enterprise Support Center:

**www.hpe.com/support/Safety-Compliance-EnterpriseProducts**

**Additional regulatory information**

Hewlett Packard Enterprise is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as REACH (Regulation EC No 1907/2006 of the European Parliament and the Council). A chemical information report for this product can be found at:

**www.hpe.com/info/reach**

For Hewlett Packard Enterprise product environmental and safety information and compliance data, including RoHS and REACH, see:

**www.hpe.com/info/ecodata**

For Hewlett Packard Enterprise environmental information, including company programs, product recycling, and energy efficiency, see:

**www.hpe.com/info/environment**

# Documentation feedback

Hewlett Packard Enterprise 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@hpe.com**). When submitting your feedback, include the document title, part number, edition, and publication date located on the front cover of the document. For online help content, include the product name, product version, help edition, and publication date located on the legal notices page.