Abstract
This guide provides information on recommended best practices to update HPE Synergy firmware and drivers through HPE OneView.
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Overview of HPE Synergy firmware and driver updates

HPE Synergy Composer is powered by HPE OneView. HPE Synergy Composer provides fast, reliable, and simplified firmware and driver management for HPE Synergy hardware. HPE OneView manages firmware to minimize downtime, and reduce manual interactions and errors. Firmware updates of management appliances and shared infrastructure can be done in a nondisruptive manner to production workloads.

An HPE Synergy Custom SPP (Support Pack for ProLiant) is a comprehensive collection of firmware and system software components. Using the firmware management features built into the appliance, you can define firmware baselines and perform firmware updates across managed resources. HPE Synergy Custom SPPs enable you to update firmware on HPE Synergy compute modules, controllers, SAS storage, JBODs, and enclosures.

HPE Synergy simplified firmware and driver distribution

HPE Synergy releases firmware and driver updates through HPE Synergy Software Releases. The Software Releases define the versions of HPE Synergy Composer, HPE Synergy Image Streamer, and the HPE Synergy Custom SPP (Service Pack for ProLiant) that must be used together, eliminating the need to track and update individual firmware and drivers for your HPE Synergy.

⚠️ CAUTION: As HPE Composer 3.0 does not support Synergy Gen10 compute modules, to ensure proper functionality and support for the HPE Synergy Gen10 compute modules, it is necessary that before installing HPE Synergy Gen10 compute modules in an HPE Synergy 12000 Frame managed by HPE Composer 3.0, you must update your system to HPE Synergy Software Release with minimum Composer version 3.10.07 and the latest Synergy Custom SPP 2017.10.20180323.

To access Software Releases, go to [www.hpe.com/downloads/synergy](http://www.hpe.com/downloads/synergy). Each Software Release is identified with the date the Software Release was posted to this website.

Each Software Release contains HPE Synergy firmware and drivers qualified and released as HPE Synergy Software Releases. These Software Releases contain the following:

- HPE Synergy Composer firmware file, including HPE OneView
  - Includes either an update file or a reimage file, or both.
- HPE Synergy Image Streamer firmware file
  - Includes either an update file or reimage file, or both.
- HPE Synergy Custom SPP file
  - A subset of the full SPP that is contoured for HPE Synergy.
  - Includes all hotfixes that apply to the HPE Synergy solution.
- Links to firmware for non-HPE OneView managed switches.

**NOTE:** There are additional webpages that you have to either enter your credentials on or select additional links. Browse through these pages until you get to the applicable feature set page.
Each Software Release is tested to verify the versions of all the components work together. Hewlett Packard Enterprise recommends that HPE Synergy systems you update with the most current Software Releases every 12 months, at a minimum.

**Nondisruptive firmware update**

Nondisruptive updates may take more time to complete but do not affect operations of the user application.

**Nondisruptive updates of management appliances**

Updating a management appliance may require it to be restarted, but this update does not affect the operations of the systems under management. On a clustered appliance, the updates occur in sequence. First to the active appliance and then to the standby appliance, minimizing disruption of management activities.

**Nondisruptive and Orchestrated update of interconnects**

Nondisruptive updates of interconnects occur when interconnects, compute modules, and operating systems are properly configured, connections are redundant, and the Orchestrated activation method is chosen. When choosing the Orchestrated update method, one virtual connect module is always forwarding network traffic, with no impact to application network connection. When the Parallel activation method is chosen, all interconnect modules are activated at the same time, resulting in disruption of the network and storage connectivity.

To learn more about Parallel and Orchestrated activation methods, see the HPE OneView Help for HPE Synergy at [http://www.hpe.com/info/synergy-docs](http://www.hpe.com/info/synergy-docs).

**Simplified maintenance approach of compute modules**

Through HPE OneView, you can set a firmware baseline and a state that you want for firmware versions, on compute modules. Firmware and drivers updates are staged and then activated during an application maintenance window. This ability to perform firmware staging and development tasks outside of the actual maintenance window reduces service interruption, operational costs, and planned downtime.

**Nondisruptive rolling updates of hypervisor clusters**

Hypervisor clusters are updated nondisruptively when the Orchestrated activation option is chosen. If the logical enclosure contains one or more hypervisor profiles, each hypervisor is serially placed into a maintenance mode before updating. It can take up to 90 minutes to place a hypervisor into the maintenance mode, perform the firmware update, and take it back out of the maintenance mode.

**NOTE:** HPE OneView supports rolling updates of hypervisor clusters for VMware ESXi systems.

**Firmware support frequency**

Hewlett Packard Enterprise supports each firmware update version for 12 months from the release date. A common misconception about newly released firmware updates is that it is either mandatory to upgrade or install immediately. It is not necessary to update to a newer version before the support period expires. Update before the 12-month support window expires if you experience any of the following:
• **Hewlett Packard Enterprise releases a critical data corruption fix:** In rare instances, firmware and driver updates are released to eliminate data corruption issues. Hewlett Packard Enterprise recommends that you apply these updates immediately.

• **Hewlett Packard Enterprise releases a security patch:** Firmware and driver updates are released to fix security vulnerabilities. Hewlett Packard Enterprise recommends that you apply these updates immediately.

• **A specific Issue for which an update is available:** Apply new updates when you are facing a specific issue and an update is released to fix that issue.

• **Update firmware for new equipment or functionality:** When you add equipment or Hewlett Packard Enterprise releases software or firmware with new capabilities applicable to your environment, you can choose to update firmware and drivers on certain components to take advantage of them.

To acquire the latest version of the firmware, see [Acquiring firmware and drivers](#).

**NOTE:** To determine if the release is applicable to the environment, read the release notes. Hewlett Packard Enterprise recommends validating the firmware and driver updates in a nonproduction environment before rolling out to production.
Introduction to firmware updates of HPE Synergy components

NOTE: Hewlett Packard Enterprise recommends a regular backup schedule for all components. HPE also recommends backing up all HPE Synergy components before performing a firmware update.

HPE Synergy Composer

The HPE Synergy Composer is a management appliance that hosts HPE OneView and provides the ability to setup, manage, and monitor single or multiple linked frames.

Firmware updates of HPE Synergy Composer are nondisruptive to the production workloads and the update process does not affect the operations of system under management.

For more information on HPE Synergy Composer, see the topics "Settings: Appliance" and "Managing the appliance" in the HPE OneView Help for HPE Synergy, at http://www.hpe.com/info/synergy-docs.

HPE Synergy Image Streamer

HPE Image Streamer is a management appliance that hosts remote boot or remote run volumes for compute modules. It integrates with server profiles which are managed by HPE OneView and hosted on the HPE Synergy Composer. It deploys, configures, updates, and manages the images deployed to these boot or run volumes.

Firmware updates of highly available pairs of HPE Synergy Image Streamer appliances are used to maintain continuous connectivity between the boot or run volumes hosted by HPE Synergy Image Streamer and compute modules.

NOTE: Updating an Image Streamer appliance in a single frame configuration is not supported. In this case, the Image Streamer appliance can be reimaged to the required release.

For more information on the HPE Synergy Image Streamer, see the HPE Synergy Image Streamer User Guide at http://www.hpe.com/info/synergy-docs.

Shared Infrastructure

Shared infrastructure is that which is common to all compute modules in the frame. It includes HPE Frame Link Modules, interconnects, SAS Drive enclosures, and serial attached SCSI (SAS) connection modules.

Orchestrated firmware updates for interconnects are nondisruptive to the workloads in a properly configured, and redundant environment. Minimal downtime can occur during the firmware update when the orchestrated activation method is chosen. Orchestrated firmware updates do not affect the network traffic while the update process is in progress.

NOTE: Optionally, Parallel update and activation may be used, which will cause an downtime to the application networking.

For more information on managing interconnects, see the topic "Interconnects" in the HPE OneView Help for HPE Synergy at http://www.hpe.com/info/synergy-docs.
Compute Modules

Compute modules deliver high performance, efficiency, and scalability to power-demanding workloads. Compute modules increase virtual machine density by providing a full range of processor and storage options, and a simplified I/O architecture.

HPE OneView along with Smart Update Tools (SUT) provides a minimally disruptive method of updating firmware and operating system drivers on compute modules. This method includes the following options:

- For a fully nondisruptive update, use the hypervisor rolling cluster updates for ESXi.
- Alternatively, use the other option of AutoStage, the minimally disruptive option.

Firmware updates can be staged on compute modules anytime and activated by a reboot during a maintenance window.

Recommended firmware update order

Hewlett Packard Enterprise recommends that you update the components in the following order:

1. **Update the firmware for HPE Synergy Composer**.
2. **Update an Image Streamer appliance**.
3. **Update shared infrastructure and stage firmware on compute modules** using the Orchestrated update method initiated from a logical enclosure. The following types of components are included in the update:
   - Shared infrastructure
     - Frame link modules
     - Interconnect modules
     - SAS connection modules
     - SAS drive enclosures
   - Compute modules

   For a complete list of components, see the *HPE OneView Support Matrix for HPE Synergy*.

4. Reboot during a maintenance window to activate firmware on compute modules or use the Schedule function to schedule the activation for a specific date and time. For more information, see the Firmware section of the *HPE OneView Help for HPE Synergy*.
Requirements for high availability and redundancy

HPE Synergy Composer high availability configuration

Powered by HPE OneView, the HPE Synergy Composer enables you to set up, manage, and monitor single or multiple linked frames.

If redundancy is required, two HPE Synergy Composers must be installed within the same HPE Synergy management ring for high availability management.

- For each frame containing an HPE Synergy Composer, connect the MGMT port on the HPE Synergy Frame Link Module that is in the same frame and bay as the HPE Synergy Composer to the management LAN. Proper cabling ensures that the communication links between the HPE Synergy Composers are highly redundant.

- Install the HPE Synergy Composers in separate frames, so that if a frame experiences a failure, the HPE Synergy Management appliance in the other frame can function as the active appliance.

For more information, see HPE Synergy Frame Link Module ports in the HPE OneView Help for HPE Synergy at http://www.hpe.com/info/synergy-docs.

For more information on configurations in a multiframe environment, see the topics about HPE Synergy Composer and HPE Synergy Image Streamer configurations in the HPE Synergy Configuration and Compatibility Guide at http://www.hpe.com/info/synergy-docs.

Considerations for a clustered appliance

- If an appliance update fails, the appliance reverts to its initial software version.

- When a high availability cluster is updated, both appliances (first the active appliance and then the standby appliance) are updated to the new software version.

- If the active appliance cannot be updated, both the active and the standby appliance reverts to the software version before the update.

- If the update succeeds for the active appliance but not for the standby appliance, the high availability appliance cluster is lost. Reimage the standby appliance so that its version matches the active appliance. It can then join the active appliance and form the appliance cluster. For more information, see the topic—Reimage the appliance with the preloaded USB drive, in HPE OneView User Guide for HPE Synergy at http://www.hpe.com/info/synergy-docs.

Alternatively, you can rerun the upgrade on the standby appliance after setting the network settings. The network settings can be configured by the Maintenance Console. For more information, see the topic—Configure appliance networking from the appliance maintenance console, in HPE OneView User Guide for HPE Synergy at http://www.hpe.com/info/synergy-docs.

- Appliance services are available while the standby appliance is updated. However, the appliance cluster is not restored until the update of the standby appliance is complete.

Image Streamer high availability configuration

Each logical enclosure in a high availability (HA) configuration must have two interconnected Image Streamer appliances.

- From a storage perspective (storage for the active OS volumes and golden volumes): Each HPE Synergy Image Streamer appliance pair has an active-active configuration. That is, the components...
that support storage of OS volumes are always active in every HPE Synergy Image Streamer appliance pair, providing a continuous connection between compute modules and its boot/run OS volume.

- **From a management perspective:** One appliance in the pair is active and the other standby. During a failure in the active appliance, the standby appliance assumes control, protecting against data loss (management data and audit log).

In configurations where HPE Synergy Image Streamer appliances are used in multiple logical enclosures, many appliance pairs are formed. One appliance pair is designated as the primary appliance pair and the rest are designated as secondary appliance pairs.

If a failure occurs in the primary appliance pair, you can designate the secondary appliance pair as the new primary appliance pair. HPE OneView updates its information and provides a link to the Image Streamer user interface on the newly designated primary appliance pair.

For more information on designating a secondary appliance pair as a primary appliance pair, see the topic, "Change the deployment appliance for an Image Streamer OS deployment server" in the HPE OneView Help for HPE Synergy, at [http://www.hpe.com/info/synergy-docs](http://www.hpe.com/info/synergy-docs).

**Interconnect high availability configuration**

The interconnect modules connect components installed in the device bays to various data center fabrics, enabling the facility to receive, process, and forward data to destination components.

Redundancy is used to prevent loss of connectivity in the event of a failure. As a prerequisite for a high availability configuration, two separate paths need to be setup from the server to the ToR (top of the rack switch) through two interconnects that are stacked. The stacked interconnects can be in the same enclosure or separate enclosures. This configuration allows for the loss of any single interconnect or enclosure without affecting connectivity of the remaining enclosures.

For more information on redundancy modes and valid multiple enclosure configurations, see the topics, "About redundancy modes" and "Valid configurations for enclosure groups with multiple logical interconnect groups" in the HPE OneView Help for HPE Synergy, at [http://www.hpe.com/info/synergy-docs](http://www.hpe.com/info/synergy-docs).

**HPE Synergy Frame link modules redundancy configuration**

The HPE Synergy Frame Link Module is used by HPE OneView to discover and manage the HPE Synergy frame. A single HPE Synergy frame or enclosure has one or two frame link modules. For redundancy, or to link multiple HPE Synergy frames together, each frame must have two frame link modules. These link modules automatically negotiate so that one frame link module takes on an active state and the other takes on a standby state. Management of the HPE Synergy frame is automatically maintained during a failover.

HPE Synergy frame link modules are located in the rear panel of the frame. For more information about the hardware, see also [www.hpe.com/info/synergy-docs](http://www.hpe.com/info/synergy-docs).
Acquiring firmware and drivers

Acquiring firmware for management appliances

HPE Synergy Composer and HPE Synergy Image Streamer appliances run a combination of software and firmware. Maintaining up-to-date appliance software and firmware fixes problems, improves performance, and adds new features to the appliance.

You can get the latest Software Releases for firmware file for all the HPE Synergy components from http://www.hpe.com/downloads/synergy.

NOTE: Hewlett Packard Enterprise recommends that you download the update file to your local computer before applying the update.

Acquiring firmware and drivers for shared infrastructure and compute modules

HPE Synergy Custom SPP (Service Pack for ProLiant)

An HPE Synergy Custom SPP is a comprehensive collection of firmware and system software components, all tested together as a single solution stack that includes drivers, agents, utilities, and firmware packages. Firmware files enable you to update firmware on your HPE Synergy.

You can apply HPE Synergy Custom SPPs as baselines to enclosures, interconnects, and server profiles, establishing a version that you want for firmware and drivers across devices. Each SPP deliverable contains the SUM (Smart Update Manager) and firmware smart components.

NOTE: Gen10 firmware hotfixes are released along with a signature file. To use the hotfixes for creating a custom SPP, upload the corresponding signature file to HPE OneView. An error message is displayed if you upload a Gen10 firmware hotfix without its signature file.


More Information

About firmware repositories

Hotfixes

Hotfixes are included in the HPE Synergy Custom SPP after they have been tested as part of a Software Release. The Software Releases are available at http://www.hpe.com/downloads/synergy.

NOTE: If the firmware update target system is Linux OS, the HPE ProLiant System ROM version listed is the ROM Linux hotfix component. If not, the latest ROM version updated in the SPP file is listed.
Firmware updates that require or result in resource downtime

Management appliance downtime
Firmware updates of management appliances are nondisruptive to the production workloads and the update process does not affect the operations of system under management. Taking an appliance offline does not affect the managed resources.

In an HPE Synergy Composer appliance cluster, HPE OneView is taken offline temporarily by an activate standby operation. HPE OneView resumes operation after the standby appliance becomes the active appliance.

In an HPE Synergy Image Streamer pair, the boot and run volume storage will maintain continuous connectivity to compute modules during appliance pair update. Boot and run volume deployment and other image management activities are taken offline temporarily. These activities resume operation once the appliance pair update is complete.

Shared infrastructure downtime

- HPE Synergy Frame Link Module: The HPE Synergy Frame Link Module is taken offline and brought back into management automatically during a logical enclosure firmware update. The update does not affect the operations of system under management.

- Interconnects and logical interconnects: The Orchestrated activation option allows nondisruptive updates of interconnects, if there are redundant paths from a server to the ToR switch. This activation method is not disruptive to workloads that work on top of reliable transport protocols. A validation occurs to determine if redundant paths from a server to the ToR are present. If the validation is successful, an Orchestrated update is performed. If not, a warning is displayed, explaining the cause and its resolution.

Compute module downtime
For a fully nondisruptive update, use the hypervisor rolling cluster updates for ESXi.

For a minimally disruptive firmware update, use SUT in the server profile and set SUT mode as mentioned in the following table:

**Table 1: SUT Usage**

<table>
<thead>
<tr>
<th>Server</th>
<th>Host (Hypervisor OS)</th>
<th>Recommended SUT mode</th>
<th>SUT type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gen8 and Gen9</td>
<td>Windows and Linux</td>
<td>AutoStage</td>
<td>iSUT for Windows and Linux</td>
</tr>
<tr>
<td>Gen8 and Gen9</td>
<td>ESXi</td>
<td>AutoDeploy</td>
<td>SUT for ESXi</td>
</tr>
<tr>
<td>Gen10 or later</td>
<td>Windows, Linux, and ESXi</td>
<td>AutoStage</td>
<td>iSUT for Windows, Linux, and ESXi</td>
</tr>
</tbody>
</table>

Reboot to activate the firmware during a maintenance window. Alternatively, you can perform cluster-based nondisruptive rolling updates for VMware ESXi clusters. For more information on rolling updates of hypervisor clusters, see HPE OneView Help for HPE Synergy at [http://www.hpe.com/info/synergy-docs](http://www.hpe.com/info/synergy-docs).
All configuration for SUT is done from the command line on the host server. For more information on using SUT, see the *Smart Update Tools User Guide* at [http://www.hpe.com/info/sut-docs](http://www.hpe.com/info/sut-docs).
Hewlett Packard Enterprise recommended firmware update procedure

Update the firmware

The following components require updates:

- HPE Synergy Composer
- HPE Synergy Image Streamer
- Shared infrastructure (Frame Link modules, interconnect modules, SAS connection modules, and SAS drive enclosures)
- Compute modules

**IMPORTANT:** Hewlett Packard Enterprise recommends that you update the components in the following order:

1. HPE Synergy Composer
2. HPE Synergy Image Streamer
3. Shared infrastructure and compute modules

**Best Practice:** Before loading a new custom SPP into HPE OneView, verify that adequate capacity is available on the HPE Synergy Composer.

**Procedure**

2. Ensure that you have fulfilled all critical prerequisites.
3. Perform a backup of your HPE Synergy components before updating your firmware.
4. **Update the firmware for HPE Synergy Composer.**
5. **Update an Image Streamer appliance.**
6. **Update shared infrastructure and stage firmware on compute modules** using the orchestrated update method initiated through a logical enclosure. For more information about logical enclosure components, see *HPE OneView Help for HPE Synergy*. Although you may already have components at the Software Release level, ensure the end result of your updates is a qualified Software Release. For information on updating firmware for individual components, see *Component-specific firmware and driver update methods*.
7. Reboot during a maintenance window to activate firmware on compute modules or use the **Schedule** function to schedule the activation for a specific date and time. For more information, see the Firmware section of the *HPE OneView Help for HPE Synergy*.

**Update the firmware for HPE Synergy Composer**

The appliance update file contains firmware and driver updates for both HPE Synergy Composer and HPE OneView. For more information on acquiring firmware updates for HPE Synergy Composer, see *Acquiring firmware for management appliances*. 
Important considerations for updating a high availability appliance cluster:

- This operation updates the software and firmware for both the active appliance and the standby appliance.
- The update operation is not allowed if the standby appliance is not accessible.
- Be mindful that while a clustered appliance is updating, it is not highly available and that it will not be highly available until both cluster members are updated and synchronized.
- The active appliance is updated first. If that update is successful, the standby appliance is then updated.
- The active appliance will be available after it has been updated and while the standby appliance is being updated as a background process. The status of the standby appliance update is shown in the Activity page as an Update appliance task.
- Changes to networking parameters are not allowed during the update operation.

**NOTE:** Browser considerations

- If you want to upload an image file larger than 4 GB through the UI, you must use a Firefox or Chrome browser. The file size limitations of Internet Explorer prevent large data transfers.
- If you do not have access to a Firefox or Chrome browser, or if you prefer to perform the file upload from a command line, you can use the documented REST calls to upload the file from a Windows or Linux command line. After uploading the image file using REST calls, you can then use any supported browser to install the update from the UI.

The restart does not disrupt the operation of the systems under management, but it does close the management console.

For more information, see the topics about appliance updates in the *HPE OneView Help for HPE Synergy* at [http://www.hpe.com/info/synergy-docs](http://www.hpe.com/info/synergy-docs).

**Prerequisites**

- Minimum required privileges: Infrastructure administrator, Software administrator.
- Before you start the appliance update, ensure that no other users are logged in to the appliance and that no one logs in during the update.
- Create and download a backup file before updating the appliance. For more information, see the topics about creating and backing up files in the *HPE OneView Help for HPE Synergy* at [http://www.hpe.com/info/synergy-docs](http://www.hpe.com/info/synergy-docs).
- Upgrade all iPDU power delivery devices managed by HPE OneView to a minimum firmware version of 2.0.22.12. Hewlett Packard Enterprise recommends upgrading to the latest available firmware version.

**Procedure**

   
   The amount of time required for the download depends on the content delivered in the image file and the speed of your network connection. Perform the update process during nonpeak hours.

2. To upload the image file from your local computer to the appliance, do one of the following:
a. Drag the image file from a folder on your local computer and drop it in the box on the Update Appliance screen.

**NOTE:** Some versions of Microsoft Internet Explorer do not support this method.

b. Click **Browse**, browse to the image file, and select it.

The appliance validates the image file after you upload it.

If the image file is invalid or if there is insufficient disk space, the appliance deletes the image file and displays the errors.

3. Upload the image file to the appliance. You can install it immediately or at a later time.

   - To upload the image file and install it immediately, choose **Select an update image** and click **Upload and install**.
   - To upload the image file now but install at a later time, choose **Select an update image** and click **Upload only**.
   - To install an uploaded image file:
     a. Choose **Update from uploaded image** and verify that it is the correct image file. Otherwise, browse to select it.
     b. Click **End User License Agreement** and **Written Offer**.
        Review the terms and accept them.
     c. Click **Update**.

4. View the status and progress of the update with the progress bar.

5. After the appliance resumes activity, view its associated messages by accessing the Activity screen, locating the **Update appliance** task, and clicking it.

   The appliance is restarted during the update. The services are brought up after the restart. For a high availability clustered appliance, the updates occur in sequence, first to the active appliance and then to the standby appliance.

6. Verify the operation by examining the Firmware version and date. For more information, see the topic about appliance panel screen details in the *HPE OneView Help for HPE Synergy* at [http://www.hpe.com/info/synergy-docs](http://www.hpe.com/info/synergy-docs).

   If the update is successful, the appliance restarts. After restarting, the appliance returns to the login screen. Log in to the appliance. The new appliance version is displayed in the **Settings** screen. If the installation fails, the appliance reverts back to its previous state, then restarts.

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**Update an Image Streamer appliance**

**Prerequisites**

- Privileges: Infrastructure administrator.
- Ensure that the post-upgrade Image Streamer appliance version is compatible with the HPE Synergy Composer version in use. For information about version compatibility between the Image Streamer appliance and HPE Synergy Composer, see *HPE Synergy Image Streamer Support Matrix* available at the [Hewlett Packard Enterprise Information Library](http://www.hpe.com/info/enterprise-litlibrary).

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• Ensure that you have a backup of the appliance that is undergoing an update.

• Ensure that the Management and Storage cluster status is OK. Navigate to the storage section on the Deployment Appliances screen and verify if all OS volumes are in the OK state. The OS volumes in the Synchronizing/Restriping state will become OK after few minutes.

Procedure

1. Select Deployment Appliances from the main menu.
2. Select Update appliance from the Actions menu.
3. To upload an update image, select Select an update image.
   a. Drag and drop the required .bin file or click Browse to select a file.
   b. To upload and install, click Upload and install. Once the upload is complete, a dialog appears. Click Update to update the appliance.
   c. To upload the image on to the appliance and not install immediately, click Upload only.
      - This operation does not initiate the update process.
4. To use a previously uploaded image for updating the appliance, click Update from uploaded image.
   a. Click Update to perform the appliance update.

For information about the various update scenarios and possible reasons for an update failure, see HPE Synergy Image Streamer User Guide available at the Hewlett Packard Enterprise Information Library.

Updating Image Streamer in a single frame configuration

Hewlett Packard Enterprise recommends a 3-frame configuration as a minimum requirement for production environment. A special single frame configuration with one Image Streamer appliance can be used for development or testing environments. However, updating an Image Streamer appliance in a single frame configuration is not supported.

**IMPORTANT:** This procedure causes a downtime of at least 6-7 hours and you will lose all existing configurations.

Prerequisites

• Image Streamer configured in a single frame setup for testing or artifact development purposes.
• A requirement to update this test or developmental setup to a later version.

Procedure

1. Create a backup bundle to backup all Image Streamer artifacts.
   - Image Streamer user interface action: Deployment Groups > Actions > Create backup bundle
2. Download the backup bundle that you created to the local machine so that you can use it to restore the artifacts later.
3. Edit all server profiles and server profile templates that use OS Deployment Plans:
   - HPE OneView user interface action: Server Profiles > Actions > Edit
   - HPE OneView user interface action: Server Profile Templates > Actions > Edit

   a. Choose none in the Deployment Plan section.
   b. Remove the associated Deployment Network iSCSI boot connections.
   c. Uncheck Manage boot order under Boot Settings and click OK.

   **NOTE:** A warning about the deletion of associated OS volume will appear. Click OK to proceed.

4. Remove the Image Streamer intent from the logical enclosure:

   a. Edit the enclosure group to set the Deployment network type to none and remove the logical interconnect group from the logical enclosure.
   - HPE OneView user interface action: Enclosure Groups > Actions > Edit
   b. Edit the logical interconnect group to remove the Image Streamer uplink set.
   - HPE OneView user interface action: Logical Interconnect Groups > Actions > Edit
   c. Edit the enclosure group to add the logical interconnect group that you removed earlier.
   - HPE OneView user interface action: Enclosure Groups > Actions > Edit
   d. Edit the logical enclosure to update from group.
   - HPE OneView user interface action: Logical Enclosures > Actions > Update from group

   **NOTE:** Wait for the Update from group operation to complete before proceeding to the next step.

5. Delete the OS deployment server.
   - HPE OneView user interface action: OS Deployment Servers > Actions > Remove

6. Update HPE OneView to a version that supports the Image Streamer version that you require.
   - For instructions on how to update HPE OneView to a later version, see HPE OneView Help.

7. Reimage Image Streamer with the required version.
   - For instructions on how to reimage Image Streamer, see HPE Synergy Image Streamer User Guide available at the Hewlett Packard Enterprise Information Library.

   **IMPORTANT:** The new Image Streamer version must be compatible with the updated HPE OneView version.

8. Remove and reinsert the Image Streamer appliance after reimaging. This action ensures that HPE OneView discovers and claims the Image Streamer appliance afresh.

9. Create the OS deployment server after HPE OneView discovers and claims the Image Streamer appliance.
   - HPE OneView user interface action: OS Deployment Servers > +Add OS deployment servers

10. Add the Image Streamer intent to the logical enclosure:
a. Edit the enclosure group to remove the logical interconnect group from the logical enclosure.

HPE OneView user interface action: Enclosure Groups > Actions > Edit

b. Edit the logical interconnect group to create the Image Streamer uplink set.

HPE OneView user interface action: Logical Interconnect Groups > Actions > Edit

c. Edit the enclosure group to set the Deployment network type to External, the Deployment network to the network you created for deployment and add the logical interconnect group that you removed earlier.

HPE OneView user interface action: Enclosure Groups > Actions > Edit

d. Edit the logical enclosure to update from group.

HPE OneView user interface action: Logical Enclosures > Actions > Update from group

11. Restore the backup bundle that you downloaded in Step 2 using the Image Streamer user interface.

Image Streamer user interface action: Deployment Groups > Actions > Restore from backup bundle

12. Edit the server profiles and server profile templates to use OS Deployment Plans:

HPE OneView user interface action: Server Profiles > Actions > Edit
HPE OneView user interface action: Server Profile Templates > Actions > Edit

a. Choose the OS Deployment Plan in OS Deployment section.

The iSCSI boot connection is created automatically.

b. Click OK.

Update the firmware for shared infrastructure and compute modules

Hewlett Packard Enterprise recommends that you update shared infrastructure and compute modules by initiating the update process through a logical enclosure. From the logical enclosure, you can update HPE Synergy Frame Link Modules, interconnect modules, SAS connection modules, SAS drive enclosures, and the compute modules and their associated server profiles to set the firmware to a specified baseline.

To update both shared infrastructure and compute modules, choose shared infrastructure and profiles as the firmware update option in the Update firmware page of a logical enclosure. For nondisruptive firmware update of interconnects, choose Orchestrated as the type of firmware activation for Logical interconnect activation.

Component types in a logical enclosure

Each logical enclosure can include the following component types:

- Shared infrastructure
  - Frame link modules
  - Interconnect modules
- SAS connection modules
- SAS drive enclosures

- Compute modules

For a current list of specific components, see the HPE OneView Support Matrix for HPE Synergy at www.hpe.com/info/synergy-docs.

Update firmware from a logical enclosure

**NOTE:** When a logical enclosure firmware update is in progress, do not initiate a firmware update from a logical interconnect that is part of that logical enclosure.

If the selected firmware bundle is in warning state, you cannot update firmware from logical enclosure. The warning state is due to the missing components which are required to complete the logical enclosure firmware update.

**Prerequisites**

- Privileges: Infrastructure administrator or Server administrator
- One or more SPPs are added to the appliance firmware repository. For more information about using firmware repositories, see About firmware repositories.
- Power off any servers that lack server profiles or that have been set to either offline mode or managed manually in the server profile.
- **Applicable only for a single frame setup with Image Streamer:** To update Frame Link Modules, power off the servers booting from Image Streamer and also the Image Streamer appliance. Single frame Image Streamer appliance is not set up for high availability of boot volumes.
- To update Frame Link Modules or interconnect modules, ensure that the Image Streamer appliance cluster health and OS volume status are **OK**. For more information, see the cluster configuration topic in the HPE Synergy Image Streamer Help at http://www.hpe.com/info/synergy-docs.
- Add or import ESXi clusters before performing a cluster aware firmware update.

**Procedure**

1. From the main menu, select **Logical Enclosures**.
2. In the master pane, select the enclosure on which you want to update a firmware file.
3. Select **Actions > Update firmware**.
4. Enter the data requested on the screen.

A warning message displays if the logical enclosure consists of one or more hypervisor profiles when the **Shared infrastructure and profiles** option is selected along with the **orchestrated activation** option.

**NOTE:** Create or import VMware ESXi clusters in HPE OneView to perform rolling updates of hypervisor clusters. For more information about orchestrated hypervisor cluster updates, see HPE OneView Help for HPE Synergy at http://www.hpe.com/info/synergy-docs.

5. Click **OK**.
As the update progresses, if any one component of the update fails, the logical enclosure update will fail. An alert is displayed. Follow the resolution instructions proposed in the alert to resolve the issue.

6. Verify that the new firmware baseline is listed in the details pane of the **Logical Enclosures** screen.

**About firmware repositories**

A firmware repository enables you to store firmware file and deploy them across your environment. Selecting a firmware file from the repository displays its release date, supported languages and operating systems, and the file components. The screen also displays the amount of storage space available for additional firmware file on the appliance. You cannot add a firmware file that is larger than the amount of space available in the repository.

Two types of repositories are supported:

- **Internal Repository**: An internal embedded firmware repository has a maximum size limit of 12 GB to store and upload firmware file for use by components managed by HPE OneView.

  **NOTE**: You cannot add, edit, or remove the internal repository.

- **External Repository**: An additional externally managed HTTP/HTTPS web server can be added to the appliance as a repository. It is a user-maintained HTTP/HTTPS web server. You can upload firmware file in a specific directory and then register the HTTP/HTTPS server with HPE OneView. This functionality is supported for Linux and Windows systems.

  The recommended types of external web servers to use with the repository follow:

  - Apache
  - Internet Information Services (IIS)

  You can add web servers configured with the IPv4 address to HPE OneView.

  **Example**:
  IPv4 address: 192.168.12.0

  **NOTE**:

  - Only one external repository can be added.
  - HPE OneView and the external repository must be part of the same subnet.
  - An alert displays on the repository screen if you exceed the maximum storage space configured when setting up the external repository.
  - Do not change the name of an SPP in the external repository during a firmware update; the SPP name change will cause the update to fail.
  - Add the signature files for the Gen10 hotfixes that are present in the external repository. If the signature files are not added, a warning message appears in the HPE OneView **firmware bundles** page.

  The best practice is to add both the hotfix and the signature file as a pair in the external repository web server.

**Upload of firmware bundles that do not contain the management firmware components**

If you attempt to add a firmware bundle that does not contain the required firmware version and components, the firmware bundle is uploaded with a warning message in the appliance firmware
repository. The warning message displays the missing components in the firmware bundle. All the components below the minimum required versions are considered as missing.

For more information, see the topic, "Install and configure a web-based external firmware repository on Microsoft Windows" and "Install and configure a web-based external firmware repository on Linux" in the HPE OneView User Guide for HPE Synergy, at http://www.hpe.com/info/synergy-docs.

Add an external repository

**Prerequisites**

- Privileges: Network administrator, Server administrator, or Infrastructure administrator.

**NOTE:** Network administrator or Server administrator can only add the external repositories with HTTP. To add the external repository with HTTPS, Infrastructure administrator has to import certificate to HPE OneView before adding the external repository.

- External server is set up and ready to receive firmware files.
- Qualified domain name or IP address to reach.

**Procedure**

1. From the main menu, select **Settings** and click **Repository**.
2. Click + **Add Repository** in the master pane of **Repository** or select **Actions** → **Add**.
3. Enter the data requested in the **Add or edit repository** screen.
4. Click **Ok**.
5. Verify that the repository has been added in the master pane.

For more information, see the topics on installing and configuring a web-based external firmware repository for Windows and Linux in the HPE OneView Help for HPE Synergy.

Edit an external repository

**Prerequisites**

Required privileges: Network administrator, Server administrator, or Infrastructure administrator.

**Procedure**

1. From the main menu, select **Settings** and click **Repository**.
2. In the master pane of **Repository**, select the repository to edit.
3. Either click the **Edit** icon in the **Repository** panel or select **Actions** → **Edit**.
4. Enter the data requested in the **Add or edit repository** screen.
5. Click **Ok**.
6. Verify that your changes have been made in the details pane.
Remove an external repository

Prerequisites

- Required privileges: Infrastructure administrator.
- Any server profile that is configured to use a firmware file residing in the external repository must not be in “staging” state.

Procedure

1. From the main menu, select Settings and click Repository.
2. In the master pane, select the repository to remove.
3. Select Actions→Remove.
   If the external repository has firmware file that are associated with different resources, a message is displayed with the information that removing a firmware file will disable firmware updates for the resources associated with it and also, displays the names of the resources. The list can be expanded to view the individual resources.
   a. Click Yes, remove to remove the external repository.
   b. Click Cancel to exit from the Remove screen without removing the external repository.
4. Verify that the external repository has been removed from the master pane.

Smart Update Tools (SUT)

SUT provides an online, minimally disruptive mechanism to update firmware and operating system drivers on server hardware.

An operating system (OS) utility, SUT enables you to perform both firmware and OS driver updates online without the need to have credentials in HPE OneView and without any degradation to production network speed. Combining firmware and driver updates allows changes that require a server reboot to be managed within a normal maintenance window, resulting in less downtime during a scheduled maintenance window. Update firmware and drivers using SUT when the server is powered on.

IMPORTANT: Set SUT mode as mentioned in the SUT usage table. Reboot to activate the firmware during a maintenance window.

The available SPP baseline can be selected when creating a logical enclosure, which sets all the compute modules to the available baseline during the maintenance window of logical enclosure creation. Hewlett Packard Enterprise recommends using the Firmware Only option during the bare metal deployment and subsequently a deployment using the AutoStage mode of SUT.

The modes in SUT are installation choices and cannot be configured from HPE OneView. All configuration for SUT is done from the command line on the host server. For Gen10 servers, HPE OneView automatically stages the firmware updates. You need not execute the SUT commands to stage the updates.

For more information, see the command-line help in SUT for a complete list of commands. For additional information on using Smart Update Tools, see Integrated Smart Update Tools for Windows and Linux User Guide and Smart Update Tools for VMware ESXi User Guide at http://www.hpe.com/info/sut-docs.
Supported Smart Update Tools (SUT)

Smart Update Tools (SUT) and Integrated Smart Update Tools (iSUT) are software utilities used with HPE OneView to stage, install, and activate firmware and driver updates.

<table>
<thead>
<tr>
<th>Server</th>
<th>Operating System</th>
<th>SUT type</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gen8, Gen9, and Gen10</td>
<td>Windows</td>
<td>iSUT for Windows</td>
<td>SUT 2.0.0 or later</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SUT 2.3.0 or later</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(recommended)</td>
</tr>
<tr>
<td>Gen8, Gen9, and Gen10</td>
<td>Linux</td>
<td>iSUT for Linux</td>
<td>SUT 2.0.0 or later</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SUT 2.3.0 or later</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(recommended)</td>
</tr>
<tr>
<td>Gen8 and Gen9</td>
<td>ESXi</td>
<td>SUT for ESXi</td>
<td>SUT 2.0.0 or later</td>
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<td></td>
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<tr>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(recommended)</td>
</tr>
<tr>
<td>Gen10</td>
<td>ESXi</td>
<td>iSUT for ESXi</td>
<td>SUT 2.3.6 or later</td>
</tr>
</tbody>
</table>
Component-specific firmware and driver update methods

**IMPORTANT:** Although you may already have components at the Software Release level, ensure the end result of your updates is a qualified Software Release.

For HPE Synergy Composer and HPE Synergy Image Streamer version pairs, go to the Software Release page, which will guide you to the HPE Support Center for further guidance on component firmware updates within Software Release.


The following sections describe the update process for individual components.

**Update HPE Synergy Composer only**

You can update directly to HPE OneView 4.2, provided the HPE Synergy Composer version is 4.00.05 or later. The update may involve multiple hops for some version combinations. Check the Synergy Software Release page for any update path restrictions at [http://www.hpe.com/downloads/synergy](http://www.hpe.com/downloads/synergy).

For more information about the update process, see the *HPE OneView User Guide for HPE Synergy* at [http://www.hpe.com/info/synergy-docs](http://www.hpe.com/info/synergy-docs).

**Update HPE Synergy Image Streamer only**

You can update from any HPE Synergy Image Streamer version to any other higher version of HPE Synergy Image Streamer. The update may involve multiple hops for some version combinations. To update the Image Streamer appliance, be sure that the appliance is running version 3.10.02 at a minimum before updating to any future version. All the HPE Synergy Image Streamer appliance pairs in an HPE Synergy Composer management domain must be updated at the same time. Check the Synergy Software Release page for any update path restrictions at [http://www.hpe.com/downloads/synergy](http://www.hpe.com/downloads/synergy).

For more information about the update process, see the *HPE OneView User Guide for HPE Synergy* at [http://www.hpe.com/info/synergy-docs](http://www.hpe.com/info/synergy-docs).

**Update shared infrastructure**

You can choose to update one or more components of the shared infrastructure, that is, frame link modules, interconnect modules, serial attached SCSI (SAS) connection modules, and SAS drive enclosures, which are common to all the compute modules in an enclosure.

- **Update only the shared infrastructure from a logical enclosure:** To update only the shared infrastructure components configured in the logical enclosure, select the option *Shared Infrastructure* when configuring the firmware update option for the logical enclosure.

- **Update only the HPE Synergy Frame Link Modules from a logical enclosure:** To update only the HPE Synergy Frame Link Modules from a logical enclosure, select *Frame link modules only* as the firmware update option for a logical enclosure.

- **Update only interconnects from a logical interconnect:** You can apply an HPE Synergy Custom SPP from a Software Release to a logical interconnect, which results in all associated interconnects having the same firmware baseline. This operation, by default, updates firmware only on those
member interconnects that are running a different version of firmware, and ignores the interconnects
that are running the same firmware version.

For more information and the complete procedures, see the topics about updating firmware for logical
interconnects within enclosures and updating firmware from logical enclosures in the HPE OneView Help

Update compute modules

Update firmware for compute modules

- **Through server profile or server profile template:**
  You can choose to update the firmware for a specific compute module using its server profile or server
  profile template.

  To update the firmware for a specific compute module, edit the existing server profile or server profile
  template. Alternatively, create a server profile or server profile template, and specify the version of the
  SPP. For a fully nondisruptive update, use the hypervisor cluster updates for ESXi.

  For more information on the complete procedure to update compute modules, see the topics about
  updating with a server profile or server profile template in the HPE OneView Help for HPE Synergy at

- **Through server profile using HPE Synergy Image Streamer:**
  1. Update firmware and drivers on one compute module using an existing golden image through
     server profile.
  2. Set SUT mode as mentioned in the SUT usage table.
  3. Capture the volume from the compute module which contains the new or updated golden image.
  4. Copy one or more deployment plans that use the original golden image, and then specify the new
     or updated golden image.
  5. To use the new or copied deployment plan, edit server profiles, and select the Firmware only
     option for the firmware update.

  For more information on creating golden images and deployment plans, see the HPE Synergy Image
  Streamer Help.

  All configuration for SUT is done from the command line on the host server. For more information on
Best practices for validating firmware updates

- Validate firmware and driver updates in a nonproduction environment before rolling out to production.
- In production, apply updates starting with low impact compute modules and slowly move to business compute modules.
- Check the firmware inventory after the update to make sure that the firmware version matches the version you prefer.
- To make sure that the applications perform in the preferred manner after the upgrade, perform application level tests with test workloads.
- Evaluate any critical alerts and warnings that might have been raised on the resources for any recommended actions.
## Best practices for managing firmware

<table>
<thead>
<tr>
<th>Best practice</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upload the latest HPE Synergy Custom SPP from the appropriate Software Release.</td>
<td><strong>Download</strong> the latest HPE Synergy Custom SPP and then upload the SPP to your appliance repository. Apply your favorite filter to download an environment-specific SPP.</td>
</tr>
<tr>
<td>Note: Each HPE Synergy Custom SPP deliverable contains the SUM and firmware smart components.</td>
<td></td>
</tr>
<tr>
<td>Set the same firmware baseline for all devices in a logical enclosure.</td>
<td>Hewlett Packard Enterprise recommends that you set the firmware baseline using the Update Firmware option on the Logical Enclosures screen. This option immediately updates all the devices in the enclosure to the specified SPP level.</td>
</tr>
<tr>
<td>Update firmware in the proper sequence.</td>
<td>Although Hewlett Packard Enterprise recommends that you set the firmware baseline for all devices in an enclosure, which installs all firmware in the proper order, you can update firmware on specific components. If you choose to update component firmware independently, upgrade the firmware in the following order: logical interconnect, and then the server profile. Hewlett Packard Enterprise recommends that you install the drivers from the same SPP that contains the firmware.</td>
</tr>
<tr>
<td>Update firmware and drivers using SUT when the compute module is powered on</td>
<td>Firmware and drivers can be updated through the server profile when using SUT. See Integrated Smart Update Tools for Windows and Linux User Guide and Smart Update Tools for VMware ESXi User Guide for installation instructions. Set SUT mode as mentioned in the SUT usage table. Reboot in the maintenance window.</td>
</tr>
<tr>
<td>running an OS.</td>
<td></td>
</tr>
<tr>
<td>Verify the managed device setting before updating the firmware.</td>
<td>Do not update the firmware using SUM or another external tool, on a managed device unless the firmware baseline is set to Manage manually.</td>
</tr>
<tr>
<td>Store SPPs in a separate location from the appliance.</td>
<td>As HPE OneView does not back up the firmware repository, store SPPs in a repository that is not on the appliance, such as in a backup SFTP or HTTPS server. After an HPE OneView restore is performed, retrieve the backed-up SPPs from the SFTP/HTTPS servers and then upload into HPE OneView.</td>
</tr>
</tbody>
</table>

*Table Continued*
<table>
<thead>
<tr>
<th>Best practice</th>
<th>Description</th>
</tr>
</thead>
</table>
| Remove SPPs from the firmware repository.         | SPPs that have been uploaded and discovered through an external repository are automatically restored by HPE OneView. Ensure that a backup is taken after adding the external repository.  
   As an SPP is required when adding resources to the appliance that have versions older than the minimum firmware versions for monitoring or managing, have at least one SPP available at all times. If you want to delete an SPP, reassign all resources to a different SPP before removing the SPP. |
| Validating firmware updates.                      | Validate firmware and driver updates in a nonproduction environment before rolling out to production.                                           |
Documentation and troubleshooting resources for HPE Synergy

HPE Synergy documentation

The Hewlett Packard Enterprise Information Library ([www.hpe.com/info/synergy-docs](http://www.hpe.com/info/synergy-docs)) is a task-based repository. It includes installation instructions, user guides, maintenance and service guides, best practices, and links to additional resources. Use this website to obtain the latest documentation, including:

- Learning about HPE Synergy technology
- Installing and cabling HPE Synergy
- Updating the HPE Synergy components
- Using and managing HPE Synergy
- Troubleshooting HPE Synergy

HPE Synergy Configuration and Compatibility Guide

The [HPE Synergy Configuration and Compatibility Guide](http://www.hpe.com/info/synergy-docs) is in the Hewlett Packard Enterprise Information Library ([www.hpe.com/info/synergy-docs](http://www.hpe.com/info/synergy-docs)). It provides an overview of HPE Synergy management and fabric architecture, detailed hardware component identification and configuration, and cabling examples.

HPE Synergy Frame Link Module User Guide

The [HPE Synergy Frame Link Module User Guide](http://www.hpe.com/info/synergy-docs) is in the Hewlett Packard Enterprise Information Library ([www.hpe.com/info/synergy-docs](http://www.hpe.com/info/synergy-docs)). It outlines frame link module management, configuration, and security.

HPE OneView User Guide for HPE Synergy

The [HPE OneView User Guide for HPE Synergy](http://www.hpe.com/info/synergy-docs) is in the Hewlett Packard Enterprise Information Library ([www.hpe.com/info/synergy-docs](http://www.hpe.com/info/synergy-docs)). It describes resource features, planning tasks, configuration quick start tasks, navigational tools for the graphical user interface, and more support and reference information for HPE OneView.

HPE OneView Global Dashboard

The HPE OneView Global Dashboard provides a unified view of health, alerting, and key resources managed by HPE OneView across multiple platforms and data center sites. The [HPE OneView Global Dashboard User Guide](http://www.hpe.com/info/synergy-docs) is in the Hewlett Packard Enterprise Information Library ([www.hpe.com/info/synergy-docs](http://www.hpe.com/info/synergy-docs)). It provides instructions for installing, configuring, navigating, and troubleshooting the HPE OneView Global Dashboard.

HPE Synergy Image Streamer User Guide

The [HPE Synergy Image Streamer User Guide](http://www.hpe.com/info/synergy-docs) is in the Hewlett Packard Enterprise Information Library ([www.hpe.com/info/synergy-docs](http://www.hpe.com/info/synergy-docs)). It describes the OS deployment process using Image Streamer, features of Image Streamer, and purpose and life cycle of Image Streamer artifacts. It also includes authentication, authorization, and troubleshooting information for Image Streamer.
HPE Synergy Image Streamer GitHub
The HPE Synergy Image Streamer GitHub repository (github.com/HewlettPackard) contains sample artifacts and documentation on how to use the sample artifacts. It also contains technical white papers explaining deployment steps that can be performed using Image Streamer.

HPE Synergy Software Overview Guide
The HPE Synergy Software Overview Guide is in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs). It provides detailed references and overviews of the various software and configuration utilities to support HPE Synergy. The guide is task-based and covers the documentation and resources for all supported software and configuration utilities available for:

- HPE Synergy setup and configuration
- OS deployment
- Firmware updates
- Troubleshooting
- Remote support

Best Practices for HPE Synergy Firmware and Driver Updates
The Best Practices for HPE Synergy Firmware and Driver Updates is in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs). It provides information on how to update the firmware and recommended best practices to update firmware and drivers through HPE Synergy Composer, which is powered by HPE OneView.

HPE OneView Support Matrix for HPE Synergy
The HPE OneView Support Matrix for HPE Synergy is in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs). It maintains the latest software and firmware requirements, supported hardware, and configuration maximums for HPE OneView.

HPE Synergy Image Streamer Support Matrix
The HPE Synergy Image Streamer Support Matrix is in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs). It maintains the latest software and firmware requirements, supported hardware, and configuration maximums for HPE Synergy Image Streamer.

HPE Synergy Firmware Comparison Tool
The HPE Synergy Firmware Comparison Tool is on the Hewlett Packard Enterprise website (http://www.hpe.com/info/synergy-fw-comparison-tool). HPE Synergy Software Releases are made up of a management combination and an HPE Synergy Custom SPP. This tool provides a list of Management Combinations and lets you compare HPE Synergy SPPs supported by the selected management combination.

HPE Synergy Upgrade Paths
The HPE Synergy Upgrade Paths is a table on the Hewlett Packard Enterprise website (http://www.hpe.com/info/synergy-fw-upgrade-table). The table provides information on HPE Synergy Composer and HPE Synergy Image Streamer upgrade paths and management combinations.
HPE Synergy Glossary

The HPE Synergy Glossary, in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs), defines common terminology associated with HPE Synergy.

HPE Synergy troubleshooting resources

HPE Synergy troubleshooting resources are available within HPE OneView and in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs).

Troubleshooting within HPE OneView

HPE OneView graphical user interface includes alert notifications and options for troubleshooting within HPE OneView. The UI provides multiple views of HPE Synergy components, including colored icons to indicate resource status and potential problem resolution in messages.

You can also use the Enclosure view and Map view to quickly see the status of all discovered HPE Synergy hardware.

HPE Synergy Troubleshooting Guide

The HPE Synergy Troubleshooting Guide is in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs). It provides information for resolving common problems and courses of action for fault isolation and identification, issue resolution, and maintenance for both HPE Synergy hardware and software components.

Error Message Guide for HPE ProLiant Gen10 servers and HPE Synergy

The Error Message Guide for HPE ProLiant Gen10 servers and HPE Synergy is in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs). It provides information for resolving common problems associated with specific error messages received for both HPE Synergy hardware and software components.

HPE OneView Help and HPE OneView API Reference

The HPE OneView Help and the HPE OneView API Reference are readily accessible, embedded online help available within the HPE OneView user interface. These help files include “Learn more” links to common issues, as well as procedures and examples to troubleshoot issues within HPE Synergy.

The help files are also available in the Hewlett Packard Enterprise Information Library (www.hpe.com/info/synergy-docs).

HPE Synergy QuickSpecs

HPE Synergy has system specifications as well as individual product and component specifications. For complete specification information, see the HPE Synergy and individual HPE Synergy product QuickSpecs on the Hewlett Packard Enterprise website (www.hpe.com/info/qps).
HPE Synergy document overview (documentation map)

www.hpe.com/info/synergy-docs
## Planning
- HPE Synergy 12000 Frame Site Planning Guide
- HPE Synergy Configuration and Compatibility Guide
- HPE OneView Support Matrix for HPE Synergy
- HPE Synergy Image Streamer Support Matrix
- Setup Overview for HPE Synergy
- HPE Synergy Software Overview Guide

## Installing hardware
- HPE Synergy Start Here Poster (included with frame)
- HPE Synergy 12000 Frame Setup and Installation Guide
- Rack Rails Installation Instructions for the HPE Synergy 12000 Frame (included with frame)
- HPE Synergy 12000 Frame Rack Template (included with frame)
- Hood labels
- User guides
- HPE Synergy Cabling Interactive Guide
- HPE OneView Help for HPE Synergy — Hardware setup

## Configuring for managing and monitoring
- HPE OneView Help for HPE Synergy
- HPE OneView User Guide for HPE Synergy
- HPE OneView API Reference for HPE Synergy
- User Guides
- HPE Synergy Firmware Comparison Tool
- HPE Synergy Upgrade Paths (website)

## Managing
- HPE OneView User Guide for HPE Synergy
- HPE Synergy Image Streamer Help
- HPE Synergy Image Streamer User Guide
- HPE Synergy Image Streamer API Reference
- HPE Synergy Image Streamer deployment workflow
- HPE Synergy Frame Link Module User Guide

## Monitoring
- HPE OneView User Guide for HPE Synergy
- HPE OneView Global Dashboard User Guide

## Maintaining
- Product maintenance and service guides
- Best Practices for HPE Synergy Firmware and Driver Updates
- HPE OneView Help for HPE Synergy
- HPE OneView User Guide for HPE Synergy
- HPE Synergy Appliances Maintenance and Service Guide for HPE Synergy Composer and HPE Synergy Image Streamer

## Troubleshooting
- HPE OneView alert details
- HPE Synergy Troubleshooting Guide
- Error Message Guide for HPE ProLiant Gen10 servers and HPE Synergy
- Integrated Management Log Messages and Troubleshooting Guide for HPE ProLiant Gen10 and HPE Synergy
- HPE OneView API Reference for HPE Synergy
- HPE Synergy Image Streamer API Reference
### Websites

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<tr>
<td>Hewlett Packard Enterprise Information Library</td>
<td><a href="http://www.hpe.com/info/enterprise/docs">www.hpe.com/info/enterprise/docs</a></td>
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<td>Insight Remote Support</td>
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<tr>
<td>Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix</td>
<td><a href="http://www.hpe.com/storage/spock">www.hpe.com/storage/spock</a></td>
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<td>HPE 3PAR StoreServ Storage</td>
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<tr>
<td>HPE Integrated Lights-Out (iLO)</td>
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<td>Storage white papers and analyst reports</td>
<td><a href="http://www.hpe.com/storage/whitepapers">www.hpe.com/storage/whitepapers</a></td>
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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](http://www.hpe.com/assistance)
- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:

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](http://www.hpe.com/support/hpesc)
  Hewlett Packard Enterprise Support Center: Software downloads
  [www.hpe.com/support/downloads](http://www.hpe.com/support/downloads)
  Software Depot
  [www.hpe.com/support/softwaredepot](http://www.hpe.com/support/softwaredepot)
- To subscribe to eNewsletters and alerts:
  [www.hpe.com/support/e-updates](http://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:
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 information for your product, see the links provided below:

HPE ProLiant and IA-32 Servers and Options

www.hpe.com/support/ProLiantServers-Warranties

HPE Enterprise and Cloudline 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

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