Abstract
This document describes new features, installation and update instructions, and known issues and workarounds for HPE OneView 5.0 for HPE Synergy. This release is intended for administrators who configure, manage, and troubleshoot compute modules, interconnects, and storage systems on HPE Synergy using HPE Synergy Composer powered by HPE OneView.
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HPE OneView Remote Technician

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Release information for HPE OneView 5.0

This document provides release information for HPE OneView 5.0 for HPE Synergy.

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For more information about HPE OneView, see Hewlett Packard Enterprise Information Library.

IMPORTANT: This product might contain references to unreleased products or features. Hewlett Packard Enterprise reserves the right to not release or support any such products or features commercially.

Key new features for HPE OneView 5.0

- **HPE Synergy Composer2**
  Includes more memory and a faster processor to deliver improved performance and management of Synergy systems. Synergy Composer2 with HPE OneView 5.0 delivers new management features including secure boot and remote access via iLO and IPv6.

- **Security - HPE Synergy Composer2**
  HPE Synergy Composer2 has an embedded silicon root of trust, which ensures the appliance system firmware has not been compromised. Specifically, the Composer2 automatically validates the integrity and authenticity of its system firmware.
  
  In addition, Secure Boot validates the integrity and authenticity of the boot path components (the boot loader, the OS kernel, and OS drivers).

- **iLO Remote Access - Synergy Composer2**
  Provides lights out access to the Composer2 with the ability to update, troubleshoot, and restore session from a remote client.

- **HPE Virtual Connect SE 100Gb F32 Module for HPE Synergy**
  Next generation Synergy Master/Satellite ICMs extending networking connectivity to 25/100Gb Ethernet and 32Gb FC. This new interconnect supports advanced Layer 2 features.
  
  Designed for data centers requiring high performance, scalability, and reliability, HPE VC SE 100Gb F32 Module for HPE Synergy supports new 25/50Gb adapters. Designed to deliver improved support for HPE Image Streamer, with dedicated bandwidth and better over subscription ratio on uplink and cluster ports. HPE VC SE 100Gb F32 Module for HPE Synergy extends cable transceiver options to support higher bandwidth using industry standard interconnect technology and form factor.

- **Advanced L2 Features with new VC SE 100Gb F32 Module for HPE Synergy**
- Private VLANs to isolate east-west traffic between compute modules
- Large network sets to eliminate VLAN limits and enable full interoperability with third party solutions, such as Cisco ACI
- sFlow to monitor flows and provide statistics in an industry standard way
- RoCE v1 and v2 to integrate with MS Azure and MS Storage Spaces Direct
- FlatSAN or FC Direct Attach with 3Par and Nimble storage systems for policy-driven storage resource provisioning
- Configurable LAG load-balancing based on L2 and L3 header parameters for better integrations with third party solutions
- Enhanced support and troubleshooting that have the following capabilities:
  - Remote SPAN (RSPAN) to extend port monitoring capability and route monitored traffic to an external switch.
  - Ping and traceroute to troubleshoot the device accessibility and reachability
  - SNTP client configuration to synchronize clock with the network devices, and provide means to measure packet delays

**HPE Synergy IPv6-only support**

Designed for companies that have exhausted available IPv4 address space. This feature delivers pure IPv6 support for the Synergy Composer, Synergy Composer2 appliances, and all the Synergy managed devices.

**Support for large network sets with HPE Virtual Connect SE 100Gb F32 Module for Synergy**

This feature is supported on the Virtual Connect SE 100GB F32 Module and provides the following benefits:
- Raises the VLAN limits imposed on the network sets and profile connections.
- Enables customers to define and utilize large numbers of discrete networks without having to use the tunnel mode.
- Allows customers to implement their networking settings without the max network limits constraint.
- Enables full interoperability with the third part solutions, such as CISCO ACI, and provides support for large number of end point groups on the same Bridge Domain.

**HPE Synergy automated vLAN provisioning**

This feature enables the network administrator to simplify the task of network creation and association of this network with the network set. When a network is created, you will have an option to associate this network directly with an already existing network set. This capability is useful when networks are created in bulk.

Also, this feature helps streamline network deployment. Adding a network to a network set deploys it across the LIG and LI automatically, thus making it accessible for server workloads. This feature reduces time, effort, and errors as compared to adding networks manually and individually to an uplink set. The feature is enabled by default on both the connections and on the uplink ports making it easy to add a new network to an existing network set.

**Arista Top of Rack (ToR) switch support**

HPE OneView monitors Arista Leaf ToR switches and models them as part of the logical switch resource. It displays the physical switch and port attributes including the switch model and health information, and LLDP neighbor data. It provides information about connector and per-port statistics. HPE OneView configures Synergy ICM and server profile connectivity and simultaneously provisions the corresponding VLANs to the Arista ToR ports connected to the Synergy ICMs. Arista switches enables Synergy administrator to discover and validate Synergy to Arista cabling and connectivity, receive alerts on connection errors with basic troubleshooting and remediation assistance. HPE OneView 5.0 release supports additional Arista switch families including 7070, 7260, 7160, and continues to support 7060 switches.

**Secure Boot support on Composer2**
Secure Boot prevents malicious software from hiding embedded code into the boot chain by ensuring that each component launched during the boot process is digitally signed, and that the signature is validated against a set of trusted certificates embedded in the UEFI BIOS.

- **Remote Access support on Composer2 through iLO**
  Remote Access to Composer2 through iLO provides an easy way to access Composer2 and helps address issues faster.

- **Improvements to Synergy Logical Interconnect (LI) Update from Group progress indicator**
  The progress indicator is enhanced to provide additional details about the time an Update from Group action will take. This capability prevents canceling or abandoning tasks that take longer than expected time to complete.

**Cluster profile rolling cluster update for VMware vSAN**

This feature enables you to manage the lifecycle of the VMware vSAN cluster using the hypervisor cluster profile. The VMware vSAN must be configured on the hypervisor cluster using tools external to HPE OneView. This helps you to non-disruptively configure hypervisor with the template configurations in hypervisor cluster profile, or update firmware on the servers running production vSAN workloads.

HPE OneView leverages the default VMware vSAN capabilities, while placing the hypervisor in the maintenance mode. The VMware vSAN sets the default data evacuation mode to Ensure Accessibility. This ensures that the virtual machines are migrated and the vSAN data is accessible in the cluster before placing the hypervisor host in maintenance.

With this ability, you can non-disruptively manage the lifecycle of a vSAN cluster, such as a firmware update, OS drivers on the servers in a cluster aware manner, and remediate hypervisor profile inconsistencies using the hypervisor cluster profile.

**Managed servers**

- **Firmware compliance dashboard for Gen10 based servers**
  HPE OneView 5.0 brings in an innovative new concept for managing firmware compliance for all Gen10 servers as well as for shared infrastructure that includes HPE BladeSystem and HPE Synergy. When a new firmware baseline (Service Pack for ProLiant or SPP) is loaded, HPE OneView generates a new Firmware Compliance view. HPE OneView compares the installed firmware versions of the managed hardware with the new component versions in the added SPP and generates a compliance report. Additionally, this feature allows the user to apply various filter views and export to Excel and csv formats.

- **Consistency reporting for firmware and BIOS settings in a server profile**
  HPE OneView 5.0 detects BIOS settings drift on Gen9 and later servers by comparing actual server BIOS settings with the values specified by the profile. Non-intrusive firmware and BIOS consistency indicators are displayed on the server profile UI, reducing reliance on alerts or visual inspection of details to determine inconsistencies.

- **HPE Nimble FC direct attach**
  This feature adds Fibre Channel volume attach support to the HPE Nimble storage system support. You can use server profiles to attach Nimble volumes via Fibre Channel. This leverages FC SAN auto-zoning capabilities, which is part of HPE OneView and supports HPE Virtual Connect SE 100Gb F32 Module for Synergy and HPE Virtual Connect SE 40Gb F8 Module for Synergy.

- **Brocade’s Fabric OS (FOS) REST API - replaces Brocade Network Advisor (BNA)**
  This feature provides a new SAN Manager type, utilizing the Brocade FOS switch REST API to manage Brocade SANs. HPE OneView is introducing Brocade switch FOS REST API as an alternative management path replacing BNA for HPE OneView to perform Brocade SAN zoning configuration. HPE OneView supports a migration process to transition a production environment from using one management path to another, causing no server disruption.
NOTE: HPE OneView support for BNA based zoning will continue to be supported for SANs, which does not upgrade to FOS versions supporting the Brocade REST API.

- **HPE Nimble Fibre Channel Support**
  This feature provides automated Fibre Channel (FC) SAN storage volume provisioning for HPE Nimble storage systems. Utilizing HPE OneView server profiles, you can automatically zone the FC fabric and provision Nimble storage volumes.

- **iLO configuration**
  The following items have been added to the list of iLO properties that can be configured from a server profile:
  - **Hostname**
    HPE OneView 5.0 provides the ability to configure the iLO hostname on a given server's iLO.
  - **Key Manager setup**
    HPE OneView 5.0 provides the ability to configure an iLO's key manager settings.

- **Single sign-on to iLO using FQDN from iLO host name hyperlink**
  In previous versions of HPE OneView, iLO web interface via SSO was launched using the iLO IP address. Starting with 5.0 release, you can also access iLO by using the fully qualified iLO hostname by clicking on the hostname link in the server hardware overview or hardware page.

**Firmware update enhancements**

- **Cancel a firmware task operation**
  HPE OneView 5.0 provides a method to cancel an ongoing server firmware update. The cancel option is enabled during the firmware staging and install operations.

- **Improved resilience for server firmware updates**
  HPE OneView 5.0 improves robustness of firmware updates via enhanced device error condition detection and automated remediation.

- **Improved progress indicators during firmware update process**
  HPE OneView 5.0 provides details about task updates during staging and installing operations of each individual components during a server firmware update. The system also displays the total count of installed components. In case a firmware update does not succeed for certain components, then these components get listed in the task.

**Remote Support - set Global Secondary Contact**

This feature allows a user to set a secondary remote support contact and have it inherited without having to explicitly configure a data center resource.

**Remote Support Status Report in Global Dashboard 1.8**

This allows a user to quickly check the devices across HPE OneView appliance that have remote support enabled.

**WCAG 2.0 - keyboard operations**

This feature improves keyboard navigation and visualization of the current field and easily identifies which user field has been selected. This feature complies with section 2.4.3 and section 2.4.7 of the Web Content Accessibility Guidelines (WCAG) 2.0.

**Improvements to HPE OneView alert suppression**

HPE OneView 5.0 provides improvements in reducing the frequency and number of alerts during operations and monitoring of various components.
Changes delivered in HPE OneView 5.0 for HPE Synergy

The following issues from earlier HPE OneView releases are addressed in the 5.0 release:

- Resolve an issue where HPE OneView returns an incorrect error for an invalid Base DN input during the Add or Edit Directory action.
- Resolve an issue where Remote Support Active Health and Basic Data Collection directories inadvertently deleted during clean-up were recreated with incorrect permissions.
- Resolve an issue where edits to the Logical Interconnect Group resulted in an error when the user browser language switches from one locale to another.
- Resolve an issue where an upgrade from versions 4.1 to 5.0 removes the BIOS settings configured in the server profile and server profile template.
- Resolve an issue where the HPE OneView upgrade encountered unexpected issues due to the database containing thousands of events. HPE OneView appliance having these many events is not normal. The upgrade process is improved to handle the large number of events.
- Resolve an issue where HPE OneView is unable to reapply SAS configuration settings due to missing an Accessible Zone constraint.
- Resolve an issue where logging in using directory user accounts fail after upgrading to HPE OneView 5.0, if the directory groups are configured using a directory group's partially qualified distinguished (DN) name instead of a fully qualified group DN.
- Resolve an issue where HPE OneView remote support continues to monitor devices that have been forcefully removed from HPE OneView.
- Resolve an issue where removing an enclosure from HPE OneView does not remove the associated interconnects due to a constraint violation.
- Resolve an issue where the removing the interconnect task stalls, and HPE OneView does not reflect the correct interconnect module status.
- Resolve an issue where vROPS reports incorrect utilization information from HPE OneView about VC downlink performance.
- Resolve an issue where a refresh action automatically enables remote support on managed servers, which were previously disabled.
- Resolve an issue where removing and reinserting the standby HPE Image Streamer appliance too quickly fails because the active appliance did not have enough time to finish reducing to a single node cluster.
- Resolve an issue where enclosures are not discovered in HPE OneView after a factory reset due to certification issue in HPE Synergy Frame Link Module.
- Resolve an issue where HPE OneView stops sending email notifications when HPE OneView is configured to point to a different SMTP server than was originally specified.
- Resolves an issue where HPE OneView Version 4.00.11 is unable to import a certificate authority-signed appliance certificate due to cp command failure.
- Resolves an issue where HPE OneView Version 4.00.11 is unable to import a certificate authority-signed appliance certificate due to improper file permission on RabbitMQ server key.
- Resolve an issue where OneView Version 4.20 is unable to import a certificate authority-signed appliance certificate without a complete certificate chain.
- Resolve an issue where the initial configuration of an sFlow agent IP address is in the same subnet as that of the ICM management network and caused the Virtual Connect modules to enter an error state.
• Resolve an issue where after an HPE OneView upgrade, the interconnect module reports a configuration error and prevents editing the logical interconnect configuration settings.

• Resolve an issue where an enclosure refresh fails with a GEC_182 error on one of the appliance bays.

• Resolve an issue where the factory reset URL provided to establish and trust HPE Image Streamer returns an error when HPE OneView is unable to claim the Image Streamer appliance.

• Resolve an issue where a repaired Composer could not join a cluster post reimage.

• Improved a confusing label in the enclosure group GUI.

• Resolve an issue where there is a mismatch between consistency checking values in the server profile template and the validation error message in the HPE OneView GUI.

• Resolves an incorrect error for an invalid Base DN input during Add or Edit Directory action in HPE OneView.

Intermediate upgrade to HPE OneView version 4.20.02 and 5.00.00.01

Hewlett Packard Enterprise has identified a problem that may hinder a successful HPE OneView upgrade. The PreUpgrade.bin file is being provided to prepare the HPE OneView system for an immediate upgrade to 4.20.02 or 5.00. While HPE OneView will be available during the upgrade process, it is advisable to refrain from performing actions on the HPE OneView system, until the PreUpgrade.bin file is applied and the subsequent upgrade is performed.

Extract and apply PreUpgrade.bin file

Procedure

1. From the main menu, click Settings and select Update appliance.
2. Choose Select an update image from the Update Appliance pop-up dialog box.
3. Click Browse to locate the previously downloaded PreUpgrade.bin file on your local system.
4. Click Upload, and install to proceed with the upgrade process.
5. Review and accept the end user agreement, and select Update to start the update process.
6. View the status and progress of the update with the progress bar.

After a successful upgrade, the appliance returns to the Settings Appliance to proceed to the subsequent upgrade to HPE OneView version 5.0.

Appliance installation and update time

The update image file is available in the HPE Synergy Software Release at www.hpe.com/downloads/synergy.

Updating HPE Synergy Composer requires several reboots. The update is performed on both the primary and secondary Composers in a highly available configuration. The primary Composer completes the update first and is available for use after approximately 3 hours. The total time to complete the update on both Composers, including reboots, is approximately 5 hours.

During the update, the browser displays a progress bar indicating the percent complete for the process on the primary Composer. At the 14% or 15% mark, it can take approximately 20 minutes before the next progress bar update. A major part of the update process occurs when the progress bar displays 30%. Expect the progress bar to remain at this percentage for approximately 35 minutes for a smaller configuration (such as a three enclosure configuration) and up to 2 hours for the largest, fully populated, 21 enclosure configuration. From the 55% mark to the 100% mark, it can take approximately 1 hour in a larger configuration. After the update completes, the HPE OneView resource managers will
refresh their view of the managed environment. That takes a variable amount of time that is proportional to the size of the managed environment. That overall refresh time has not changed for version 5.0.

**NOTE:** During these progress phases do not reboot or reset any Composer or components. Any interruption may require restoration from a backup.

For update instructions, see the [HPE OneView for HPE Synergy Firmware and Driver Update Guide](Hewlett Packard Enterprise Information Library).

**Important upgrade notes**

- Before upgrading to 5.00.00.01, change the virtual CPU to 8 2-GHz, and memory to 24 GB.
- If the appliance starts from 1.10.xx, it is mandatory to change the default hard disk space from 160 GB to 275 GB.

### Migrate an HPE Synergy Composer to an HPE Synergy Composer2

Transferring configuration settings and data from an active HPE Synergy Composer to a new HPE Synergy Composer2 is referred to as migration. The process uses the Backup and Restore facility of HPE OneView along with some additional steps.

For migration instructions, see [HPE Synergy Migration Guide](#).
Issues and suggested actions

The issues and known limitations in this release are described here.

Unable to successfully upgrade to HPE OneView version 5.0

Issue
HPE OneView is unable to successfully upgrade to version 5.0 when upgrading from version prior to v4.20.02.

Suggested action
First install the PreUpgrade.bin file to upgrade to version 4.20.02 before upgrading to HPE OneView version 5.0. For more information, see Extract and apply PreUpgrade.bin file.

Upgrade to HPE OneView 5.0 version may require HPE Synergy Composer to be reseated

Issue
HPE OneView upgrade from v4.x to v5.0 requires several appliance reboots. On rare circumstances, a Composer can require a full power cycle in order reboot successfully. If this happens during an upgrade, the upgrade process may time-out, while waiting for the reboot step to complete.

Suggested action
See the following advisory for the detailed procedure to detect the above issue and complete the upgrade successfully: https://support.hpe.com/hpsc/doc/public/display?docId=emr_na-a00082732en_us.

USB devices fails to mount intermittently during boot in HPE Synergy Composer appliance

Issue
After a reimage, or an upgrade to HPE OneView 5.0, the action to save the support dump to USB does not succeed and returns a message in the maintenance console.

Suggested action
Remove and reinsert the USB and retry the operation.

Unable to access devices in HPE OneView due to IP address changes

Issue
Changes to the IP address of HPE OneView appliance from one subnet to another causes the monitored or managed devices in the old subnet to become inaccessible.

Suggested action
Reboot the appliance.

Connection failed alert in server profiles due to changes in the speed of logical interconnects

Issue
When reducing the logical interconnect speed from 50G to 25G in order to grow a logical enclosure, connection failure messages may be seen on profiles after the CXP cables are removed.
Suggested action

- Verify the interconnect link topology in the enclosure view.
- After the topology returns to a healthy state, select reapply configuration on the logical interconnect, or reapply profile on the server profile.

This will apply the current configuration to the interconnects and clears the connection alerts.

**Browser displays error after HPE OneView appliance upgrades to version 5.0**

**Issue**

After HPE OneView successfully upgrades to version 5.0, the progress bar in the browser displays that HPE OneView is restarting. However, after the application restarts, the browser sometimes returns Temporarily unavailable page.

**NOTE:** The error occurs only once during an upgrade.

**Suggested action**

- Wait a few minutes and refresh the page.
- For larger configurations, it can take up to 30 minutes before the page is able to be refresh successfully.

**HPE OneView displays a warning during firmware updates to logical enclosure**

**Issue**

Firmware updates to logical enclosures in HPE OneView returns a file invalid warning due to network issues.

**Suggested action**

1. Check the progress of the Logical Enclosure firmware update.
2. Ignore the warnings, if the update completes successfully.

**Unable to successfully delete server profile in HPE OneView**

**Issue**

HPE OneView is unable to delete server profile when multiple profile deletes are simultaneously attempted, or when HPE OneView appliance is under a heavy load.

**Suggested action**

Retry the action to delete the server profile.

**NOTE:** It may take more than one retry to complete the delete action.

**Consistency check takes a long time after creating or importing multiple cluster profiles**

**Issue**
In a large scale environment, creating or importing multiple cluster profiles generate a large number of hypervisor manager events in HPE OneView. The consistency remediation takes a long time to complete the check and clear the alerts.

**Suggested action**
Wait for about 10 minutes in such situations before performing any operation on the cluster profile.

### Active Health system in HPE iLO unable to record changes in the server hardware managed by HPE OneView

**Issue**
When using remote support, the normally scheduled collection of the AHS logs may not complete displaying the following message:
The operation is taking longer than expected.

**Suggested action**
Manually rerun the iLO Active Health collection.

### Incorrect compliance checks for connections in HPE OneView

**Issue**
Compliance and remediation issues for server profiles where the profile becomes inconsistent with the template by changing the port on a connection in the profile.

**Suggested action**
Manually update the port settings in the profile to match the template.

### Inconsistencies between server profile settings and server hardware configuration reported post restore, backup, and reimage

**Issue**
Refreshing a server hardware after restoring, backing up, and reimaging occasionally returns the following inconsistency alert:
Server profile settings conflict with the server hardware configuration.

**Suggested action**
1. Power off the server.
2. Reapply the profile on the server.

### Incorrect average power value for server managed by HPE OneView

**Issue**
The REST API used to collect the server hardware utilization data incorrectly reports the maximum watts used by the server to date instead of the allocated power. HPE OneView reports the `metricCapacity` value for the `AveragePower` metric, causing the metric to exceed the `metricCapacity` value in some situations.

**Suggested action**
1. Refresh the server hardware.
A refresh speeds up the process of clearing any alerts caused by the power consumption exceeding the capacity. The power capacity changes to match the new maximum power used.

2. Login to the iLO web GUI and navigate to the **Power and Thermal > Power Meter** page to see the current maximum and average values.

**Multiple resource managers restart during HPE OneView restore and refresh**

**Issue**
Restoring a factory reset appliance triggers an automatic restart of multiple resource managers in HPE OneView.

**Suggested action**
Restart the appliance after a factory reset and before a restore operation.

**Configured local port monitoring stops working when downlink speed is modified**

**Issue**
Local port monitoring associated with a downlink port configured as an analyzer port stops working when the downlink speed is modified for logical interconnect with a Virtual Connect SE 100Gb F32 Module for Synergy.

**Suggested action**
Reapply configuration to the affected logical interconnect.

**Limitations when iLO is in CNSA mode**

When the iLO of a managed server is in Commercial National Security Algorithm (CNSA) or Suite B mode, the iLO user interface or console is not accessible from the HPE OneView console.

**Non-English directory server group names not displayed in some browsers**

**Issue**
When a directory server is configured server with non-English group names, such as Chinese or Japanese, if Microsoft Internet Explorer 11, Firefox 57 or later, or Chrome 64 or later version of browser is used, the **Add** group operation does not list the configured groups after a Chinese or Japanese group name is selected. This applies to Active or Open LDAP Directory.

**Suggested action**
Use Microsoft Edge.

**Issue with HPE OneView SNMP configurations on iLO 5**

When the iLO 5 is reset on the managed server, if the HPE OneView managed server hardware is immediately refreshed, the SNMP configurations are inconsistent and the SNMP traps from the iLO 5 are not received in HPE OneView.

**Suggested action**
Wait about one minute after the iLO has started responding and refresh the server in HPE OneView again. This will restore the SNMP settings on the iLO and ensure that HPE OneView can continue monitoring and managing the server.
Unable to update the web server certificate for HPE OneView

**Issue**
An update to HPE OneView might not be successful in following cases:

- The appliance web server certificate is expired.
- The appliance web server certificate is about to expire within 24 hours.

The following error message is displayed:

[ERROR] The appliance web server certificate is either expired or has been reverted to an older certificate. Upgrade cannot proceed. Regenerate a new appliance self-signed certificate or re-import a new CA signed appliance certificate. Then retry upgrade.

**Suggested action**

1. Check if the appliance certificate is valid. The following items indicate an invalid certificate:
   - If the certificate is expired or about to expire in another 24 hours.
   - If the certificate is an SHA1 certificate.
   - If the certificate is missing any of the organizational information configured earlier for the certificate. Some information can be missing if the appliance certificate expires and the appliance is restarted before an updated certificate is installed.
   - If you had installed a CA signed certificate previously, but the current appliance certificate is not the one you had installed. The incorrect certificate might appear if the appliance certificate expires and the appliance is restarted before an updated certificate is installed.

   In all these cases, regenerate the self-signed appliance certificate or import a new CA signed certificate.

2. Retry the update.

Scanning tool reports a weak SSH cipher issue

**Issue**
Security vulnerability scanning tools, such as Nessus, report that the SSH server for HPE OneView supports Cipher Block Chaining (CBC) ciphers, which allow an attacker to recover plain text messages from ciphertext.

**Suggested action**
No action is required at this time.

This is a false positive from the scanning tool. This report is in reference to CVE-2008-5161, which describes an issue with the Secure Shell protocol discovered in 2008. However, this SSH protocol vulnerability was fixed in 2009, which predates HPE OneView. All HPE OneView versions have an SSH server that is not vulnerable to this issue.


Unable to move the Server Profile to another Logical Enclosure with a different deployment network

**Issue**
When migrating the server profile configured with the OS deployment settings to a different logical enclosure and deployment network, the deployment connections are not updated with the network configured in the newly selected enclosure group and display the following error on the profile update:

Unable to update profile: The IP address source can only be set to "SubnetPool" when the profile is configured with OS deployment settings.

**Suggested action**

During a server profile update operation after changing the Enclosure Group, perform the following steps:

1. Unassign the deployment plan.
2. Remove the deployment connection.
3. Reassign the deployment plan.

**ESXi FCoE boot from SAN**

**Issue**

When using an ESXi 6.0 legacy driver to boot from the SAN, if the VLAN over which the server being booted is removed, restored, or replaced, the ESXi server removes its access to the SAN.

**Suggested action**

Restore the VLAN to the uplink set while the ESXi server is powered on and booted to restore access to the SAN.

**Discrepancy in instructions for resolving an expired certificate**

**Issue**

When the appliance web server certificate expires, the following alert is displayed in the HPE OneView:

The appliance web server certificate has expired

**Suggested action**

Reimport or configure the appliance web server certificate. To configure the appliance web server certificate, perform the following steps:

1. Login to the HPE OneView appliance.
2. Click OS Deployment servers.
3. Click Image Streamer appliance IP address next to Image Streamer UI.

   The Image Streamer appliance UI opens in a new tab of the browser.

4. Click Deployment Appliances.
5. Click Actions.
6. Select an option to Create self-signed certificate or create Certificate appliance certificate signing request to configure a CA-signed certificate.

**The Fabric login request does not succeed on FCoE connections from HPE Synergy 4820C 10/20/25Gb Converged Network Adapter if the ToR switch is configured in transit mode**

**Issue**

Issues and suggested actions 17
When the top-of-rack (ToR) switch is configured in transit mode, the Fabric login (FLOGI) request does not succeed on Fibre Channel over Ethernet (FCoE) connections originating from HPE Synergy 4820C 10/20/25Gb Converged Network Adapter. As a result, the logical unit numbers (LUNs) provisioned on the targets do not appear on the host.

Suggested action
Change the configuration on the ToR switch to one of the modes supported by the interconnect module.

The HPE Synergy 40Gb F8 Switch Module supports both the modes, Fibre Channel Forwarder (FCF) and N-Port Virtualization (NPV). The module, however, does not support transit mode.

HPE OneView unable to support direct attach of 3PAR Persistent Ports pair to various interconnect modules

The appliance does not support the storage configuration where a pair of ports on a 3PAR StoreServ array are configured for Persistent Ports failover and are cabled for direct attach to two different interconnect modules on an enclosure.

Suggested action
Either disable Persistent Port functionality on the 3PAR StoreServ array (for all ports on the array), or change the direct attach cabling to ensure partnered ports are connected to the same interconnect module.

Importing a hypervisor cluster profile (HCP) allows you to set an invalid OS deployment plan

Issue
Importing an HCP allows you to set an invalid OS deployment plan even when the OS deployment settings are not configured in the enclosure group associated with the appropriate server profile template. Once the import is complete, this results in inconsistencies reported on the HCP. Rectifying these inconsistencies in the HCP does not work.

Suggested action
When importing an HCP, specify a valid deployment plan or specify the deployment plan as “None” if the deployment plan is not applicable to the HCP.
Use of Google Analytics

HPE OneView 4.20 introduced integration with Google Analytics. Anonymous user interface usage data is transmitted from a user’s browser to Google Analytics which allows HPE to understand how the product is being used and how to improve it. No personally identifiable information is collected by Hewlett Packard Enterprise.

Users opt in to HPE OneView’s usage of Google Analytics, when accepting the HPE OneView End-User License Agreement (EULA).


HPE OneView administrators can also opt-out of Google Analytics tracking by using Settings > Security > Actions menu > Product Improvement menu.

Additional information:

- The information gathered is standard Google Analytics data with the only addition being the version of HPE OneView being used.
- HPE OneView Global Dashboard also integrates Google Analytics from release 1.5.

Supported iSCSI boot configurations

The following parameters are supported:

- IPv4
- Static IP address and DHCP allocated IP addresses
- SW-iSCSI (software initiator) and HW-iSCSI (iSCSI offload, hardware assisted initiator)

Managing iLO 4 devices

When managing devices using iLO 4, HPE OneView 4.0 or later works best with iLO 4 firmware version 2.55 or later. If you have iLO 4 firmware version 2.3x on your device, Hewlett Packard Enterprise recommends updating the iLO 4 firmware to version 2.55 or later before starting to manage the device using HPE OneView 3.0 or later.

Fibre Channel direct attach connections

HPE OneView 4.2 and later for HPE Synergy supports Fibre Channel fabric attach and Fibre Channel over Ethernet (FCoE) network connections. Direct Attach with 3PAR Storage (Flat SAN) is supported in HPE OneView 4.1 and later.

System board replacement

When a server is removed for maintenance reasons, HPE OneView for HPE Synergy does not power on if the validation for network security is not complete. When a new server is installed, HPE Synergy checks if the same server and configuration are used. If the UUID of the original server matches with that of the newly installed server, the server powers on automatically. However, if the UUID of the original server does not match with that of the newly installed server, the server profile displays an error indicating that the new server is not being recognized. If the same server with the same hardware type has been installed but is not recognized by HPE Synergy, it should be reapplied and reinstalled. Alternately, if the new server does not match the original server, the server profile should be removed and the correct, matching server should be installed.

When replacing a system board, the UUID needs to be manually reprogrammed via UEFI System Utilities to restart the server and unassign the server profile. This will power on the server and allow the UUID to be reprogrammed to accept the new server. After the new server completes the POST cycle, the server profile is reassigned to the newly installed server.

Reduce extraneous alerts
The default selection for alert criteria under Settings > Notifications > Add Alert Email Filter is changed from All alerts to All critical or warning alerts.

To receive notifications for all alerts, make sure that the alert criteria selected is All alerts.

Handling MD5 certificate alerts

Older devices, such as, servers with iLO 2 management processors can have Transport Layer Security (TLS) certificates with digital signatures based on the MD5 hashing algorithm. Such certificates are a serious security risk. The MD5 algorithm has been replaced by the Secure Hash Algorithm, such as SHA-256, for modern certificate digital signatures.

Use of certificates with MD5 digital signatures was deprecated starting with HPE OneView 4.1. In HPE OneView 4.2, warning alerts are sent on the MD5 certificates. In future HPE OneView releases, these MD5 certificates will be blocked and communication with managed devices using MD5 certificates will fail.

HPE OneView 4.2 performs periodic status checks on the certificates in the trust store. If a certificate using an MD5 hashing algorithm is found, the following alert is displayed:

- **Message:** Certificate with alias name `<alias name>` is using an insecure digital signature with MD5 hashing algorithm.
- **Resolution:** Certificates with MD5 digital signatures are insecure and deprecated. They will not be supported in future HPE OneView releases. If this is a device certificate, update the certificate with a strong digital signature. If this is a CA root or intermediate certificate, work with your public key infrastructure (PKI) administrator to update the certificate.

**NOTE:** Updating the certificate might need firmware update on the managed device.

These MD5 certificates are marked as Deprecated in HPE OneView on the Settings > Manage Certificates screen.

For iLO 2, all the HPE OneView iLO 2 firmware versions support SHA-based certificates. However, iLO firmware upgrades do not change an existing certificate of the device. Only iLO factory reset operations and change in the hostname of iLO regenerated the self-signed certificates of iLO. Similarly, certificate authority issued certificates might also contain MD5 digital signatures and a new iLO certificate signing request is required to obtain an updated certificate. See the iLO User Guide for more information.

You can determine the devices that are using certificates with MD5 digital signatures by using HPE OneView / rest/certificates REST API. You can use the HPE OneView PowerShell interface, POSH-HPOneView, available at https://hewlettpackard.github.io/POSH-HPOneView

For example:

```powershell
• Connect-HPOVMgmt -Hostname <your appliance> -Username <OneView username> [-AuthLoginDomain <AD or LDAP domain>]
• $certs = Send-HPOVRequest "/rest/certificates"
• $md5certs = @()
• $certs.members | foreach-object {$md5certs += New-Object PSObject -property@{commonName=$_.certDetails.commonName; aliasName=$_.aliasName; signature=_.certDetails.signatureAlgorithm }}
• $md5certs | ? {$_._signature -match "MD5" } | format-table
```

**NOTE:** This technique only identifies certificates that are present in the HPE OneView trust store. The certificates include certificate authority root and intermediate certificates and any device self-signed certificates. For the case of CA roots and intermediates, the leaf certificate of the device is not present in the HPE OneView trust store.
The following information was made available after publication and does not appear in the HPE OneView 5.0 documentation.

The HPE OneView 5.0 API Reference does not indicate the versions that are deprecated with this release.

The following API versions are deprecated, and the support for these versions will be removed in the next release:

<table>
<thead>
<tr>
<th>HPE OneView release</th>
<th>REST API version</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.20</td>
<td>120</td>
</tr>
<tr>
<td>2.00</td>
<td>200</td>
</tr>
<tr>
<td>2.00.06</td>
<td>201</td>
</tr>
<tr>
<td>3.00</td>
<td>300</td>
</tr>
<tr>
<td>3.10</td>
<td>500</td>
</tr>
</tbody>
</table>
HPE Synergy documentation resources

The Hewlett Packard Enterprise Information Library (https://www.hpe.com/info/synergy-docs) provides a comprehensive, one stop location for all HPE Synergy documentation, including installation instructions, user guides, maintenance and service guides, best practices, and links to additional resources. The Library supports filtering to improve findability.

<table>
<thead>
<tr>
<th>Document:</th>
<th>Provides:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HPE Synergy Solution</strong></td>
<td></td>
</tr>
<tr>
<td>Start Here Poster</td>
<td>First-time setup procedure of an HPE Synergy solution, from hardware installation to HPE OneView configuration.</td>
</tr>
<tr>
<td>Release Notes</td>
<td>Release descriptions, new features, documentation updates, and issues and suggested actions for products like HPE Synergy, HPE Synergy Image Streamer, and HPE OneView.</td>
</tr>
<tr>
<td>Migration Guide</td>
<td>Information about migrating from HPE Synergy Composer to HPE Synergy Composer2 and from HPE Synergy Frame Link Module to HPE Synergy 4-port Frame Link Module.</td>
</tr>
<tr>
<td>Validating HPE Synergy appliance firmware: Preparing an HPE Synergy appliance for first-time setup</td>
<td>Procedures for preparing an HPE Synergy appliance for initial use in a system.</td>
</tr>
<tr>
<td>Appliance User Guide</td>
<td>Outlines appliance module management, configuration, and security.</td>
</tr>
<tr>
<td>Cabling Guide</td>
<td>Cabling examples for management network, HPE Synergy Image Streamer, interconnects, and power.</td>
</tr>
<tr>
<td>Configuration and Compatibility Guide</td>
<td>An overview of HPE Synergy management and fabric architecture, detailed hardware component identification, and configuration requirements for hardware components.</td>
</tr>
<tr>
<td>Frame Link Module User Guide</td>
<td>Management, configuration, and security information for the HPE Synergy 4-Port Frame Link Module, HPE Synergy Frame Link Module, and HPE Synergy Management Console.</td>
</tr>
<tr>
<td>Power Management Overview Guide</td>
<td>For individuals wanting to gain additional details on how HPE Synergy manages power usage in an HPE Synergy 12000 Frame.</td>
</tr>
<tr>
<td>Troubleshooting Guide</td>
<td>Information for resolving common problems and courses of action for fault isolation and identification, issue resolution, and maintenance.</td>
</tr>
<tr>
<td>Error Message Guide</td>
<td>Information for resolving issues associated with specific error messages.</td>
</tr>
<tr>
<td>Documentation Map</td>
<td>A descriptive map to filter and locate the HPE Synergy documentation you need.</td>
</tr>
<tr>
<td>Glossary</td>
<td>Terminology, descriptions, and drawings to provide an understanding of the product and to help familiarize with the HPE Synergy ecosystem.</td>
</tr>
<tr>
<td><strong>HPE Synergy Image Streamer</strong></td>
<td></td>
</tr>
<tr>
<td>Deployment workflow</td>
<td>Interactively describes the various steps involved in setting up HPE Synergy Image Streamer for OS deployment and has pointers to the different documents that contain detailed instructions on the steps.</td>
</tr>
<tr>
<td>Document:</td>
<td>Provides:</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>Support Matrix</td>
<td>The latest software and firmware requirements, supported hardware, and configuration maximums for HPE Synergy Image Streamer.</td>
</tr>
<tr>
<td>User Guide</td>
<td>The OS deployment process using HPE Synergy Image Streamer, features of HPE Synergy Image Streamer, and purpose and life cycle of HPE Synergy Image Streamer artifacts. Also includes authentication, authorization, and troubleshooting information for HPE Synergy Image Streamer.</td>
</tr>
<tr>
<td>GitHub</td>
<td>The repository (<a href="https://github.com/HewlettPackard">github.com/HewlettPackard</a>) contains sample artifacts and documentation on how to use the sample artifacts. Also contains technical white papers explaining deployment steps that can be performed using HPE Synergy Image Streamer.</td>
</tr>
<tr>
<td>Help</td>
<td>Information about basic HPE Synergy Image Streamer concepts and user interface based tasks.</td>
</tr>
</tbody>
</table>

**HPE OneView for HPE Synergy**

<table>
<thead>
<tr>
<th>Document:</th>
<th>Provides:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support Matrix for HPE Synergy</td>
<td>The latest software and firmware requirements, supported hardware, and configuration maximums for HPE OneView.</td>
</tr>
<tr>
<td>User Guide and Help for HPE Synergy</td>
<td>Resource features, planning tasks, configuration quick start tasks, navigational tools for the graphical user interface, and more support and reference information for HPE OneView.</td>
</tr>
<tr>
<td>Global Dashboard User Guide and Help</td>
<td>Instructions for installing, configuring, navigating, and troubleshooting the HPE OneView Global Dashboard.</td>
</tr>
<tr>
<td>Troubleshooting resources</td>
<td>Troubleshooting screens within the tool, online help, and a troubleshooting chapter in the user guide.</td>
</tr>
</tbody>
</table>

**HPE Synergy firmware update resources**

<table>
<thead>
<tr>
<th>Document:</th>
<th>Provides:</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPE OneView for HPE Synergy: Firmware and Driver Update Guide</td>
<td>Information on how to update the firmware and recommended best practices to update firmware and drivers through HPE OneView.</td>
</tr>
</tbody>
</table>

The HPE Synergy Software Release Information site ([http://www.hpe.com/info/synergy-sw-release-information](http://www.hpe.com/info/synergy-sw-release-information)) provides an interactive resource for firmware update information. HPE Synergy firmware update resources are also available within HPE OneView.
Figure 1: HPE Synergy Software Release Information

<table>
<thead>
<tr>
<th>HPE Synergy Software Release Information site</th>
<th>Provides</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firmware Comparison Tool</td>
<td>A list of HPE Synergy Management Combinations to use to compare HPE Synergy Custom SPPs supported by the selected HPE Synergy Management Combination.</td>
</tr>
<tr>
<td>Firmware Feature Table</td>
<td>A list of firmware features to use to compare HPE Synergy Custom SPPs supported by the selected HPE Synergy Management Combination.</td>
</tr>
<tr>
<td>Upgrade Paths Table</td>
<td>Information on HPE Synergy Composer and HPE Synergy Image Streamer upgrade paths and HPE Synergy Management Combinations.</td>
</tr>
<tr>
<td>VMware Support</td>
<td>Information and requirements for using the VMware vSphere OS with HPE Synergy Custom SPPs.</td>
</tr>
</tbody>
</table>
# HPE Synergy document overview (documentation map)

## www.hpe.com/info/synergy-docs

### Planning
- HPE Synergy Migration Guide
- 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 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 4-Port Frame Link Module User Guide
- 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
- HPE OneView for Synergy Firmware and Driver Update Guide
- HPE OneView Help for HPE Synergy
- HPE OneView User Guide for HPE Synergy
- HPE Synergy Appliances Maintenance and Service Guide

### 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
<table>
<thead>
<tr>
<th>Website</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hewlett Packard Enterprise Information Library</td>
<td><a href="http://www.hpe.com/info/enterprise/docs">http://www.hpe.com/info/enterprise/docs</a></td>
</tr>
<tr>
<td>Hewlett Packard Enterprise Support Center</td>
<td><a href="http://www.hpe.com/support/hpesc">http://www.hpe.com/support/hpesc</a></td>
</tr>
<tr>
<td>Contact Hewlett Packard Enterprise Worldwide</td>
<td><a href="http://www.hpe.com/assistance">http://www.hpe.com/assistance</a></td>
</tr>
<tr>
<td>HPE OneView Documentation</td>
<td><a href="http://www.hpe.com/info/oneview/docs">http://www.hpe.com/info/oneview/docs</a></td>
</tr>
<tr>
<td>Subscription Service/Support Alerts</td>
<td><a href="http://www.hpe.com/support/e-updates">http://www.hpe.com/support/e-updates</a></td>
</tr>
<tr>
<td>Customer Self Repair</td>
<td><a href="http://www.hpe.com/support/selfrepair">http://www.hpe.com/support/selfrepair</a></td>
</tr>
<tr>
<td></td>
<td>kb/docDisplay/?docId=c05245290</td>
</tr>
<tr>
<td>Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix</td>
<td><a href="http://www.hpe.com/storage/spock">http://www.hpe.com/storage/spock</a></td>
</tr>
<tr>
<td>HPE 3PAR StoreServ Storage</td>
<td><a href="http://www.hpe.com/info/storage">http://www.hpe.com/info/storage</a></td>
</tr>
<tr>
<td>HPE Integrated Lights-Out</td>
<td><a href="http://www.hpe.com/info/ilo">http://www.hpe.com/info/ilo</a></td>
</tr>
<tr>
<td>Storage white papers and analyst reports</td>
<td><a href="http://www.hpe.com/storage/whitepapers">http://www.hpe.com/storage/whitepapers</a></td>
</tr>
</tbody>
</table>
HPE OneView Remote Technician

Speed issue resolution with HPE OneView Remote Technician. With HPE OneView Remote Technician, troubleshooting and resolving support issues is faster and easier. At your invitation, authenticated HPE support technicians access your HPE OneView appliance through a secure TLS connection to troubleshoot and diagnose issues.

- You do not have to be present when a trusted HPE support technician diagnoses the issue, including downloading logs directly without the need for an FTP site.
- HPE OneView Remote Technician is built into HPE OneView 4.1 and later with no additional applications.
- To access HPE OneView Remote Technician, open the Diagnostics menu within the HPE OneView Settings page.
- Does not require HPE OneView Remote Support.
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/info/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 Datacenter Care services
www.hpe.com/services/datacentercare
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

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.