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Introduction

Welcome to the Quick Start, Deployment and Management Guide for the HPE OneView 2.00 release. HPE OneView provides a simple, consumer-inspired user experience that dramatically accelerates the everyday tasks of a Composable Infrastructure. By changing the focus from ‘how devices are managed’ to ‘how people work,’ HPE OneView delivers a software-defined management platform that is extensible and easy to use.

This document will guide administrators through the setup process, and how to manage the next generation of Composable Infrastructure with HPE OneView. The flow chart below outlines these steps.

HPE OneView 2.00 Features
The following list outlines what is introduced in the release:

Table 1. HPE OneView 2.00 Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server Profile Templates</td>
<td>Create templates that can be used with multiple profiles</td>
</tr>
<tr>
<td></td>
<td>Apply updates from templates to profiles creates from that template</td>
</tr>
<tr>
<td></td>
<td>Compliance checking between the server profile template and assigned server profiles</td>
</tr>
<tr>
<td>Driver and Firmware Updates through OneView</td>
<td>Online driver and firmware update using HPE Smart Update Tool (HPE SUT)</td>
</tr>
<tr>
<td></td>
<td>Supports Windows and Linux</td>
</tr>
<tr>
<td>Profile Mobility</td>
<td>Server profiles can now be migrated across platform generation, platform models and HPE OneView Enclosure Groups</td>
</tr>
<tr>
<td>Dual and Multi-Hop FCoE</td>
<td>Support for both Fiber Channel over Ethernet architectures as well as multi-hop mixed FC and FCoE architectures</td>
</tr>
<tr>
<td>Network Convergence beyond the Chassis</td>
<td>Extended the list of external switches supported by zoning automation of Fibre Channel or Fibre Channel over Ethernet</td>
</tr>
<tr>
<td>Storage Snapshots and Cloning</td>
<td>3PAR snapshots and clones</td>
</tr>
<tr>
<td></td>
<td>3PAR port pair persistence and failover</td>
</tr>
</tbody>
</table>
SAN Health and Diagnostics

- Data path monitoring
  - Alerts for expected array target port SAN logins, StoreServ persistent port failover, expected StoreServ vLUN configuration and expected SAN zoning configuration
  - SAN configuration reports to find extraneous SAN zoning, find and remove extraneous volume access granted and find and remove extraneous server access granted.

Active Directory Integration

- User interface improvements

SPP baseline with hotfix support

- Added user ability to add, delete or replace single components to the firmware baseline via the REST API

Customized Dashboard

- Settings are persistent and tied to the user

Cisco Nexus 5500 / 6000 support

- SAN Manager and automated SAN Zoning support for FC and FCoE SANs

HPE 5900cp/af and 5930 support

- SAN Manager and automated SAN Zoning support for FC and FCoE SANs

Automated SAN Zoning

- Added “Single-Initiator-Single-Target” automated zoning policy

Features from Previous HPE OneView releases

The following list outlines features introduced in previous releases:

<table>
<thead>
<tr>
<th>New Hardware Support</th>
<th>ProLiant Gen9 Servers</th>
</tr>
</thead>
<tbody>
<tr>
<td>OneView Standard Licensing</td>
<td>No Cost Software License – included with G6, G7, Gen8 &amp; Gen9 purchase</td>
</tr>
<tr>
<td></td>
<td>Hardware Fault Monitoring - Server disk, memory, processor, adapters, power and temperature</td>
</tr>
<tr>
<td></td>
<td>Hardware Inventory – search, report and export</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OneView Advanced Licensing</th>
<th>Partner integrations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full Composable Infrastructure Profiles</td>
</tr>
<tr>
<td></td>
<td>Right to Use License for Insight Control Server Provisioning for OS provisioning</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Automated Virtual Connect Migration</th>
<th>Automated migration from a Virtual Connect Manager configuration to a HPE OneView managed configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Automated Validation and incompatibilities report of configuration</td>
</tr>
<tr>
<td></td>
<td>Simple “Push button” import</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>System Health Monitoring</th>
<th>Agentless, touch free monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Auto SNMP Trap configuration and registration</td>
</tr>
<tr>
<td></td>
<td>Alert filtering and email notification</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reporting</th>
<th>Predefined list of reports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reports are exportable to CSV or MS Excel</td>
</tr>
<tr>
<td></td>
<td>Reports are printable as a PDF file</td>
</tr>
</tbody>
</table>

| Customizable Dashboard | Users can create, delete or customize searches and queries to the HPE OneView Dashboard |

<table>
<thead>
<tr>
<th>Extended Control and Automation of 3PAR StoreServ</th>
<th>Ephemeral Volumes for a hypervisor like experience with hardware</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Import attached volumes without downtime</td>
</tr>
<tr>
<td></td>
<td>Flexible Zone Aliases automatically created based on server, array port and port groups</td>
</tr>
<tr>
<td>Feature</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>HPE 5900CP Support</td>
<td>Automated FC SAN zoning</td>
</tr>
<tr>
<td>HPE Operations Analytics for HPE OneView</td>
<td>Recreates history with beautiful visualizations</td>
</tr>
<tr>
<td></td>
<td>Self-calibrates via machine learning</td>
</tr>
<tr>
<td></td>
<td>Stores, indexes and understands operations data</td>
</tr>
<tr>
<td>Automated Storage Provisioning</td>
<td>Add/remove 3PAR storage systems and storage pools</td>
</tr>
<tr>
<td></td>
<td>Create/Delete 3PAR volumes on demand</td>
</tr>
<tr>
<td></td>
<td>Attach/export 3PAR volumes to Server Profiles</td>
</tr>
<tr>
<td>Automated SAN Zoning</td>
<td>Add/remove Brocade fabrics for automated zoning</td>
</tr>
<tr>
<td></td>
<td>Zoning is fully automated via Server Profile volume attachment</td>
</tr>
<tr>
<td></td>
<td>Quickly and easily establish connectivity from Virtual Connect to 3PAR via Direct Attach</td>
</tr>
<tr>
<td>SAN Storage in Server Profiles</td>
<td>Automatically attach private/shared standalone volumes to server profiles and zone the SAN fabric or Direct Attach</td>
</tr>
<tr>
<td>DL Server Profile Support</td>
<td>For supported rack mount servers, enable the user to apply a profile that specifies an SPP firmware bundle and configure BIOS policies.</td>
</tr>
<tr>
<td>Native FC module support</td>
<td>Manage Native FC connections in the server profile</td>
</tr>
<tr>
<td>New Virtual Connect Module Support</td>
<td>Support for the HPE FlexFabric 20Gb/40Gb F8 module</td>
</tr>
<tr>
<td>New appliance Hypervisor support</td>
<td>Provide more hypervisor choices by supporting the deployment of the HPE OneView Management Appliance on Microsoft Server 2008 and Server 2012 Hyper-V</td>
</tr>
<tr>
<td>Localization</td>
<td>Japanese and Chinese localizations</td>
</tr>
<tr>
<td>Enclosure Visualization</td>
<td>Fan and Power Supply visualization and support for c7000 enclosures</td>
</tr>
<tr>
<td>Virtual Connect Networking</td>
<td>Support for VLAN tunnelling and untagged traffic</td>
</tr>
<tr>
<td></td>
<td>Easily create networks in bulk</td>
</tr>
<tr>
<td>Partner Integrations</td>
<td>HPE OneView for VMware vCenter with vCops and Log Insight</td>
</tr>
<tr>
<td></td>
<td>HPE OneView for Microsoft System Center with Hyper-V cluster provisioning</td>
</tr>
<tr>
<td></td>
<td>HPE OneView for RHEV</td>
</tr>
<tr>
<td>VC-Style Active/Active Networking</td>
<td>Configure Active/Active Uplink Sets for increased bandwidth utilization.</td>
</tr>
<tr>
<td>Server Profile Connection Online Updates</td>
<td>Update existing Network Connections within the Server Profile while the server is still powered on, both Network/Network Set assignment and bandwidth allocation.</td>
</tr>
<tr>
<td>Local SmartArray Configuration</td>
<td>Define the embedded SmartArray logical disk configuration as part of your Server Profile.</td>
</tr>
<tr>
<td>Virtual Appliance</td>
<td>Rapidly deploy appliance OVF with single setup screen</td>
</tr>
<tr>
<td>Firmware Updates</td>
<td>On appliance repository, search, and management network only. No need to inventory host OS.</td>
</tr>
<tr>
<td>Enclosure Groups</td>
<td>Configure a new enclosure just like the last one in seconds</td>
</tr>
<tr>
<td>Logical Interconnect Groups</td>
<td>VC module configuration with uplinks</td>
</tr>
<tr>
<td>Server Hardware Types</td>
<td>Inventory of your standardized hardware configurations</td>
</tr>
<tr>
<td>Enhanced Server Profiles</td>
<td>VC classic connectivity plus FW, BIOS, and boot configuration</td>
</tr>
</tbody>
</table>
Network Sets
Centralized VLAN configuration for Server Profile Network Connections

Enabling 3PAR Flat SAN
Dramatically reduce traditional FC SAN infrastructure with VC FlexFabric modules

Onboard Administrator and iLO Single Sign-On and Alert Management
Reduce the number of steps to manage the Management Processors.

Manage DL Servers
Add DL ProLiant rack mount servers for inventory and health

Alert and Monitor Systems in the Datacenter
iLO 4 traps automatically configured on import, no OS agents required

Environmental Management
Model and analyze power, cooling and location of your HPE IT equipment

Secure Appliance
Integrate the appliance into your Active Directory or OpenLDAP infrastructure

Visualizing the Datacenter
Visualize your data center’s layout and rack power consumption

Map View
Understand how things are connected from the data center down to the device

Smart Search
Quickly find the information you are looking for. Need to locate an HPE OneView Managed Address? Type it in the Search Field to find the Server Profile it’s assigned to.

### Browser Requirements

Please note that the following web browsers are a minimum requirement:

Table 4. Supported Browsers

<table>
<thead>
<tr>
<th>Browser</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Explorer</td>
<td>9, 10, and 11</td>
</tr>
<tr>
<td>Mozilla Firefox</td>
<td>33 or newer (ESR 31.x)</td>
</tr>
<tr>
<td>Google Chrome</td>
<td>38 or newer</td>
</tr>
<tr>
<td>Safari</td>
<td>Unsupported</td>
</tr>
<tr>
<td>Opera</td>
<td>Unsupported</td>
</tr>
</tbody>
</table>

### Supported Hardware

Supported Enclosures
- All c7000 BladeSystem Enclosures

Supported Servers
- All HPE ProLiant Gen9 BL-family of servers
- All HPE ProLiant Gen8 BL-family of servers
- All HPE ProLiant Gen9 DL-family of servers
- All HPE ProLiant Gen8 DL-family of servers
  - DL360 Gen8 and DL380 Gen8 servers support limited Server Profile configuration (BIOS Settings only)
- Limited server profile configuration for HPE ProLiant G7 servers
- Monitoring only for HPE ProLiant G6 servers

Supported IO Adapters
- All HPE Flex-10, FlexFabric 10Gb and FlexFabric 20Gb adapters
- 8Gb Fibre Channel HBAs: HPE QMH2562 8Gb FC HBA, HPE LPe1205 8Gb HBA

Please review the HPE OneView Support Matrix on http://www.HPE.com/go/oneview/docs
• 16Gb Fibre Channel HBAs: HPE QMH2672 16Gb HBA, HPE LPe1605 16Gb HBA
• Passive support for 1Gb, non-Flex10, and InfiniBand adapters.

**Supported Interconnects**

• HPE Virtual Connect FlexFabric 10Gb/24-Port Module
• HPE Virtual Connect FlexFabric 20Gb/40Gb F8 Module
• HPE Virtual Connect Flex-10 10Gb Ethernet Module
• HPE Virtual Connect Flex-10/10D Ethernet Module
• HPE Virtual Connect 20-port 8Gb Fibre Channel Module
• HPE Virtual Connect 24-port 8Gb Fibre Channel Module

**Supported HPE 3PAR StoreServ Storage**

• HPE 3PAR StoreServ 7000/8000
• HPE 3PAR StoreServ 10000/20000

**Support Fibre Channel Fabric Managers**

• Brocade SAN Network Advisor (FC only)
• HPE 5900CP/AF, 5930 (FC & FCoE)
• Cisco Nexus 5500/6000 (FC & FCoE)
• Cisco MDS (FC & FCoE)

**Hardware Firmware and Fibre Channel Fabric Manager Minimum Requirements**

Table 5 shows the minimum firmware requirements needed to successfully import an enclosure. Firmware will be updated via the appliance to the required versions later in this document.

<table>
<thead>
<tr>
<th><strong>Table 5. Minimum Firmware/Software Requirements</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Onboard Administrator: 3.00 or newer</td>
</tr>
<tr>
<td>iLO4: 1.01 or newer</td>
</tr>
<tr>
<td>iLO3: 1.20 or newer</td>
</tr>
<tr>
<td>iLO2: 2.12 or newer</td>
</tr>
<tr>
<td>Virtual Connect: 3.15 or newer</td>
</tr>
<tr>
<td>HPE 3PAR OS: 3.1.3 or newer</td>
</tr>
<tr>
<td>Brocade SAN Network Advisor: 12.1.4 or newer</td>
</tr>
</tbody>
</table>

**Table 6. Post Import Firmware Minimum Version**

<table>
<thead>
<tr>
<th><strong>Table 6. Post Import Firmware Minimum Version</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Onboard Administrator: 4.01</td>
</tr>
<tr>
<td>iLO4 for Gen8 servers: 1.40</td>
</tr>
<tr>
<td>iLO4 for Gen9 servers: 2.03</td>
</tr>
<tr>
<td>iLO3: 1.70</td>
</tr>
<tr>
<td>Virtual Connect: 4.20</td>
</tr>
</tbody>
</table>

**Note**

2 Device is allowed, but will not be managed by HPE OneView, nor the corresponding interconnect module via the Server Profile or Logical interconnect Group.
The Appliance Virtual Machine should not be deployed on a hypervisor within the same enclosure it will manage. Please use an externally available hypervisor host.

Table 7 shows the HPE OneView 2.0 Configuration Maximums.

<table>
<thead>
<tr>
<th>Table 7. Supported Maximums</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Servers</td>
</tr>
<tr>
<td>Servers per Enclosure</td>
</tr>
<tr>
<td>Total Enclosures</td>
</tr>
<tr>
<td>Total Interconnects</td>
</tr>
<tr>
<td>Total Enclosure Groups</td>
</tr>
<tr>
<td>Total Server Profiles</td>
</tr>
<tr>
<td>Assigned Server Profiles</td>
</tr>
<tr>
<td>Total Unassigned Server Profiles</td>
</tr>
</tbody>
</table>

HPE OneView User Interface Overview

The entirely new HPE OneView user experience is significantly improved from previous generations of HPE Management software (e.g. HPE System Insight Control.) The HPE OneView user interface is built using modern web programming languages, HTML5 and CSS3. Below is an example of what the User Interface (UI) looks like.

- The Top Level Menu is used for navigating the different sections of the UI. Each section is then categorized based on function and/or role (Servers, Networking, Storage, Facilities).
- The Universal Search bar defaults to local context searching, but can also search the global index for resources the administrator is looking for.

3 HPE OneView 1.10 and newer releases.
• The Sub-Menu is where the current context view, or the Details Pane, can be changed for the select Resource.

• The Activity Details section within the Details Pane will display the most recent activity, whether it was an Administrator performing actions or an automated alert is generated. It can be expanded to view further details, and the administrator can then navigate to the activity item to clear, assign or provide notes regarding the event.

• The Actions menu is also context and resource specific, and provide the administrator with specific actions to perform for a selected resource.

• The Activity Pane displays the current activity of the administrator performing various actions within their session, which can be pinned out or collapsed to increase the viewing dimensions of the Details Pane. Individual activity items can be selected, and then directly navigated to in the case of Create and Update actions.

HPE OneView Virtual Connect Management Architecture Overview

HPE OneView’s Virtual Connect management architecture is different from that of Virtual Connect Manager (VCM) or even Virtual Connect Enterprise Manager (VCEM). While VCM provided a consolidated management view, it is limited to a maximum of 4 Enclosures within a Multi-Stack Enclosure (MES) Domain configuration. This limits management scalability. VCEM represents a Manager-of-Managers architecture, where VCM is put into a locked state, and VCEM controls the configuration. When an enclosure containing Virtual Connect modules is claimed and managed by OneView, Virtual Connect Manager is no longer in use. It cannot be used for any level of management, as HPE OneView is the manager.

Deploying Your Appliance

This segment will guide you through deploying your HPE OneView appliance. It will cover the various steps within the First Time Setup experience.

Note

It is not supported to deploy the HPE OneView Management appliance on a Virtual Machine host that is inside a blade enclosure managed by this HPE OneView instance.

Microsoft Windows Server 2008/2012 Hyper-V

HPE OneView supports Microsoft Windows Server Hyper-V as a hosting platform. The following steps outline the process to import the template.

1. Within the Hyper-V Management Console, select Import Virtual Machine.
2. **Specify the directory where the extracted appliance contents are located.**

![Import Virtual Machine - Locate Folder](image1.png)

3. **Click Next**

![Import Virtual Machine - Select Virtual Machine](image2.png)
4. **Select the appropriate option for your environment**

![Image of the Choose Import Type window]

5. **Click Finish at the Summary screen.**

![Image of the Completing Import Wizard window]

6. **Once the VM has been deployed, edit the Settings.**

![Image of the Settings folder in the file system]

---

12
7. **Under the VM settings, update the Network Adapter with the appropriate virtual switch.**

8. **Click OK to save the settings, and then start the virtual machine.**

**VMware vSphere 5.x**

1. **Select File > Deploy OVF Template within vSphere**

2. **Select Browse then select the OVA file from the location where the file is stored**
3. **Verify the options selected and click Next.**

4. **Name the appliance and click Next**
5. Select the host or cluster that will run the HPE OneView appliance and click Next

6. Select the resource pool that will host the HPE OneView appliance and click Next
7. Select the storage location for the HPE OneView appliance and click Next.
8. Select the disk format that will be used for HPE OneView appliance and click Next. HPE recommends that Thick Provision Lazy Zeroed be used for the HPE OneView appliance.

9. Select the network that will support the HPE OneView appliance and click Next.
10. Verify that the settings are correct and click Finish

![Deploy OVF Template](image)

11. The progress window will show you the status of the deployment process.

![Deploying HP OneView](image)

12. Proceed to the First Time Setup to begin to use your HPE OneView appliance

**First Time Setup**

- Change Administrator password
- Accept EULA
- Remote Support Opt-in
- Configure Appliance IP Settings

Completing the HPE OneView appliance First Time Setup is designed to be simple and straightforward. By default, the management interface is configured for IPv4 DHCP. If DHCP is not available on the management network you can access the Kiosk Browser within the VM console from the vSphere Client to complete the initial setup. If DHCP is available, you can configure the appliance with a browser remotely to complete the First Time Setup. The First Time Setup consists of Accepting a License Agreement, HPE Remote Support Access for remote troubleshooting, changing the default Administrator account password and configuring IP information.
Prior to continuing with this document, please make sure you have completed the following:

Table 8. Installation Checklist

| Task                                                                 | Completed? (Y|N) |
|----------------------------------------------------------------------|----------------|
| Have a supported Microsoft Hyper-V or vSphere 5.x host for appliance |                |
| Have Static IP Address, or DHCP Static Reservation                    |                |
| Have DNS A and PTR Records created                                   |                |
| Have NTP Server FQDN or IP Address information                        |                |

1. **Obtain the Virtual Machine IP Address from the VMware VIClient**

2. **Open a supported Web Browser to the noted IP Address to complete the First Time Setup.** If DHCP is not available, then you can continue the following steps using the embedded Kiosk Browser, by launching the VMware VM Remote Console or the Microsoft Hyper-V Remote Console.

If the hypervisor host is Windows Server Hyper-V, then completing First Time Setup must be performed from the appliance console using the Hyper-V Remote Console.

3. **Appliance Startup and Initialization Screen using the vSphere Client**

---

4 Please review the HPE OneView Support Matrix on [http://www.HPE.com/go/oneview/docs](http://www.HPE.com/go/oneview/docs) for the officially supported hypervisors.
4. Read and accept the licence agreement.

5. The HPE Support Access Opt-In is used for HPE Support Services remote access when the appliance is in an unhealthy state, and core services cannot start. By opting out, this also disables the ability to reset the appliance Administrator account password if ever lost.
6. Login to the appliance using the default credentials

Table 9. Appliance Administrator Default Credentials

<table>
<thead>
<tr>
<th>Username</th>
<th>Password</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrator</td>
<td>admin</td>
</tr>
</tbody>
</table>

7. Change the default Administrator password.
8. In the General section of the Appliance Networking window, enter a hostname for the appliance (e.g. HPEoneview.example.com)
   a. If you specify an FQDN, verify valid A and PTR records exist. The appliance will perform an nslookup of the FQDN and IP address and report an appliance warning if neither are available.

9. In the IPv4 section of the Appliance Networking window, enter the IPv4 Address, Subnet Mask and Default Gateway for the appliance (DHCP or Static can be used).
   a. DHCP is only supported when Static Reservations are used.

10. (Optional) In the DNS section of the Appliance Networking window, enter the Preferred and Alternate DNS server addresses for the appliance

11. (Optional) In the IPv6 section of the Appliance Networking window, configure the IPv6 address for the appliance
12. (Optional) In the Time and Language section of the Appliance Networking window, configure the NTP, Date and Locale information for the appliance.

13. Click OK to apply the configuration. After clicking OK, the appliance will configure those parameters. If you selected Static for the IP Address Assignment, you should be redirected to the new IP address. Please accept the certificate security warnings during the redirection, as a new SSL certificate is generated from the FQDN.

Firmware Repository

The HPE OneView 2.0 appliance does not ship with a default SPP. It is necessary to upload an SPP into the appliance, unless a custom baseline (created by HPESUM6) is required.

1. Select the Top Level Menu, and navigate to Firmware Bundles in the console.
2. To upload an SPP Bundle, click the **Add Firmware Bundle** button.

3. On the Add Firmware Bundle window, click on the **Choose File** button, and select the SPP ISO to upload.

4. Once selected, click the **Start Upload** button. You can also drag-and-drop firmware bundles (SPPs) within Windows environments. You can navigate away from the Firmware Bundle screen to other areas within the UI, as the upload process is a background process within the browser.
5. The SPP upload will begin. You can click the blue Close button in the lower right, as that will only close the dialog box and not cancel the upload.

---

**Note**

Do not close the browser window until the Firmware Upload task has completed. You can click on the Close button in the Add Firmware Bundle dialog as the upload is a background thread within the web application.

---

**Adding HPE OneView Advanced Licenses to the HPE OneView Appliance**

HPE OneView licensing is designed to be simplified, with the Advanced license typically embedded within the iLO or Onboard Administrator when ordered with Factory Express, CTO or BTO. Please refer to the HPE OneView Quickspecs for all possible licensing options.

HPE OneView also has a built-in 60-day Advanced evaluation license. During this HPE OneView Advanced license evaluation period, HPE OneView will not enable iLO Advanced features or functionality. The ILO Advanced license (trial or retail) is also required for server and enclosure power and performance monitoring.

If you have received a license key, use the appliance Settings menu to add licenses to the internal pool. The following steps outline that process.

1. From the Top Level Menu, and navigate to **Settings** in the console
2. Open the Actions menu, and select Add License.

3. Paste in your license key in the dialog box and click Add to apply the license.

4. On the Licenses page, verify that your license count has increased.

Network Configuration

First Time Setup  Configure Networking  Discover Hardware  Upgrade Firmware  Server Profiles  Environment Management  Appliance Security

- Create Ethernet Networks
- Create Fibre Channel Networks
- (Optional) HPE 3PAR StorServ Direct Attach
- Create Fibre Channel over Ethernet Networks
- Network Sets
- Logical Interconnect Groups
- Enclosure Groups

In this section, you will create Networks, Network Sets, Logical Interconnect Groups and Enclosure Groups.

Networks are constructs within the appliance that define a particular L2 network or FCoE/FC Fabric. A Network will be an object you can assign to Server Profiles, Network Sets, and Logical Uplink Sets. HPE OneView supports Virtual Connect
Active/Active networking, so each Ethernet Network does not require unique VLAN IDs. Similar to Virtual Connect provisioning all Ethernet Networks to all Ethernet modules within a Virtual Connect Domain, HPE OneView provisions all defined Ethernet Networks to all managed Ethernet-capable modules.

Network Sets are aggregated networking objects that contain Networks. The Network Set will be an object you can assign to Network Connections within Server Profiles to greatly simplify multiple network management. For instance, if you have a number of standard Networks required for Virtual Machine connectivity, which is different for physical servers, you can create different Network Sets for each host connectivity model. Network Sets replace the Multiple Networks Virtual Connect concept, and becomes the only way to trunk multiple networks to a Network Connection.

Logical Interconnect Groups are similar to Virtual Connect Enterprise Manager Domain Groups, which define what modules are located within the enclosure and the module configurations like IGMP Snooping, Loop Protection, Multicast Filtering, etc. Uplink Sets define uplink connectivity for Ethernet, FCoE and FC Networks, and are members of a Logical Interconnect Groups. The Logical Interconnect Group is then assigned to an Enclosure Groups to complete the Enclosure configuration policy. A Logical Interconnect is patterned after the Logical Interconnect Groups and is defined automatically once an Enclosure is added to the HPE OneView console by associating it to an Enclosure Group.

Uplink Sets are synonymous with the Shared Uplink Set within Virtual Connect, in that it defines the uplink connectivity for selected networks. An Uplink Set can either be an Ethernet or Fibre Channel type, but not both. Any defined Networks not associated with an Uplink Set become Internal Ethernet Networks to the Logical Interconnect, and are reported within the Logical Interconnect.

An HPE OneView Domain is a new concept to the Composable Infrastructure management framework. While you cannot create additional HPE OneView Domains, the appliance itself is a single Domain construct. An HPE OneView Domain consists of one or more Logical Interconnect Groups, Uplink Sets, Networks and help to define how Server Profiles consume these resources. When defining a Network, it will be available within the HPE OneView Domain for consumption by either a Logical Interconnect Groups, Logical Uplink Set, Logical Interconnect (for one-off configuration requirements) or Server Profiles (for Internal Only networks.)

Prior to continuing with this document, please make sure you have completed the following:

Table 10. HPE OneView Network Configuration Checklist

<table>
<thead>
<tr>
<th>Task</th>
<th>Completed? (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collect the Virtual Connect Module Types</td>
<td></td>
</tr>
<tr>
<td>Note the uplink ports connected to the upstream switches</td>
<td></td>
</tr>
<tr>
<td>Document necessary VLAN IDs and names</td>
<td></td>
</tr>
<tr>
<td>Document necessary Fibre Channel Fabrics</td>
<td></td>
</tr>
</tbody>
</table>

Creating Ethernet Networks

1. Select the Top Level Menu, and select Networks.
2. Once on the Networks screen, click the `+Create Network` button on the far left.

3. In the new window, provide the Name, select Ethernet as the Type, provide the VLAN ID, and bandwidth settings. Smart Link will automatically be selected by default. The Name is not case-sensitive. The name can contain spaces and special characters. Selecting Private Network will mimic PVLAN behavior in that all assigned Network Connections will all be in an isolated network. The Purpose drop-down selection is used by the HPE Insight Control for vCenter Plugin. 

Note
The VLAN ID field can accept ranges of VLANs (i.e. 10,15,20-50) and will append “_VLANID” to the end of the network name.

5 http://h30507.www3.hp.com/t5/Converged-Infrastructure/Finally-an-integrated-tool-based-on-how-I-work/ba-p/154413#.Ux1MmyyUPX4
4. Click the Create button to create the new Ethernet Network and close the Create Network dialog box. You can also select the Create+ button to continue creating more Networks – e.g. Create the B-Side Ethernet Network.

Creating Fibre Channel Networks

HPE OneView supports single-hop FCoE Fabrics with either traditional Fibre Channel Fabric Attach, or Virtual Connect Flat SAN with HPE 3PAR StoreServ Direct Attach. Starting with the HPE OneView 1.10 release, the Virtual Connect Fibre Channel 8Gb modules are supported, which only support Fabric Attached FC Networks. Please choose the appropriate following scenario to create either a Fabric Attach or 3PAR Direct Attach Fabric.

Fabric Attached Network

1. From the Top Level Menu, select Networks, then select the +Create Networks button.
2. In the new window, provide the Name, select Fibre Channel as the Network Type, select Fabric Attach as the Fabric Type, and modify Bandwidth allocation, Uplink Speed, Login Redistribution as needed.

![Create Network dialog box](image)

**Note**
The Fabric Attach Fabric Type is used for traditional Fibre Channel Fabric connectivity, which requires NPIV-capable upstream FC switches.

**Note**
By selecting the Fabric Attach Fabric Type, you can assign any of the available X1-X4 ports on a Virtual Connect FlexFabric module to an FC switch, when creating the Uplink Set in the Logical Interconnect Group.

3. Click the Create button to create the new Ethernet Network and close the Create Network dialog box. You can also select the Create+ button to continue creating more Networks.

**HPE 3PAR StoreServ Direct Attach (Optional)**

- Create Ethernet Networks
- Create Fibre Channel Networks
- (Optional) HPE 3PAR StoreServ Direct Attach
- Create Fibre Channel over Ethernet Networks
- Network Sets
- Logical Interconnect Groups
- Enclosure Groups
The HPE 3PAR StoreServ Flat SAN feature extends Virtual Connects “Wire-Once” management to the FC fabric by reducing the complexity, and cost of expensive FC switches. This feature is only supported with HPE 3PAR StoreServ arrays, and not with other HPE or 3rd party storage arrays.

1. From the Top Level Menu, select Networks, then select the +Create Networks button.

2. In the new window, provide the Name, select Fibre Channel as the Network Type, select Direct Attach as the Fabric Type, and modify Bandwidth allocation.

Note
By selecting the Direct Attach Fabric Type, you can assign any of the available X1-X4 ports on a Virtual Connect FlexFabric module to an HPE 3PAR StoreServ array.

3. Click the Create button to create the new Direct Attach Network and close the Create Network dialog box. You can also select the Create+ button to continue creating more Networks.
Fibre Channel over Ethernet Network

1. From the Top Level Menu, select Networks, then select the +Create Networks button.

2. In the new window, provide the Name, select FCoE as the Network Type, enter the SAN that the FCoE network will be associated with, enter a VLAN ID and modify the Bandwidth allocation as needed.

3. Click the Create button to create the new Ethernet Network and close the Create Network dialog box. You can also select the Create+ button to continue creating more Networks.
Creating Network Sets

1. Select the Top Level Menu, and choose Network Sets.

2. Once on the Network Sets screen, click the +Create Network Set button on the far left.
3. On the Create Network Sets screen, provide a name, then click the Add Networks button to select the networks to add.

4. You can search for a Network or multiple Networks, or either click SHIFT/CTRL+Left Mouse Click to select which will either select all in section, or multi-select the networks to add. The following example shows how to find the “A-Side” Ethernet Networks, and create the “A-Side” Network Set. Click Add once the desired networks are selected.
5. After clicking \textit{Add}, you can select the specific network that will be the \textit{Native VLAN}, or the default untagged network for the Servers Network Connection. This is typically used for PXE traffic.

6. Click \textit{Create} to create the Network Set
7. If you are creating an Active/Active network design, repeat the prior steps to create the “B-Side” Network Set.

Create Logical Interconnect Group

1. Select the Top Level Menu, and choose Logical Interconnect Group (LIG).
2. Once on the LIG screen, select the +Create Logical Interconnect Group button.

3. Provide a name to best describe the template. Use terms like Production or Dev to help describe the Logical Interconnect Group.

4. Click the Add interconnect button to add modules to Bays 1 and 2. Select the correct Virtual Connect Modules, either VC Flex-10, VC Flex-10/10D or VC FlexFabric. When clicking the Add Module button next to the peer bay, the UI will automatically select the correct module.

Creating Uplink Sets
1. Click the Add uplink set button.
2. On this window, we will create an Ethernet Type Uplink set representing an Active/Active configuration. Provide a Name, select Ethernet as the Type from the drop-down box.
3. Select the **Connection Mode** and **LACP Timer** settings to be used by this uplink set. **Automatic** Enables the uplinks to form aggregation groups using the IEEE 802.3ad LACP, and to select the highest performing uplink as the active path to external networks. Select **Automatic** in an active/active configuration.

4. Click the **Add networks** button to select the networks to add. By not selecting a **Network** or multiple **Networks**, they will be **Internal Ethernet Networks** within the **Logical Interconnect** that is applied to each enclosure from the **Logical Interconnect Group**.

5. A search field is provided to quickly locate a specific **Network** or multiple **Networks**. After searching you can either **Left Click** to select a single network or **SHIFT/CTRL+Left Mouse Click** to multi-select networks. Once all of your networks are selected, click the **Add** button, or click the **Add+** button to continue to add more networks by searching.
6. Make sure to mark the appropriate network as Native if the VLAN on the upstream switch is also the Native or Default VLAN.

7. Click the Add ports button to add uplink ports.
8. Select at least one port from each Ethernet Module. To quickly add multiple Uplink Ports, first search for a common port (e.g., X5), select them, click the Add+ button, then change the search to another port (e.g., X6) and click the Add button.

9. After you have added the Uplink Ports to your Uplink Set, click the Create button. Select the Create+ button if you wish to define an additional Uplink Set – e.g. the B-Side Uplink Set. Otherwise, select the Create button.
10. Continue to the next section to create **Fibre Channel Uplink Sets**. Otherwise, click the General Drop-down list and select **Interconnect Settings**, or scroll the window to the bottom to modify Ethernet Module parameters like **IGMP Snooping**, **Loop Protection**, **Fast MAC Cache Failover**, **SNMP** settings, etc.
Creating Fibre Channel Uplink Sets (Optional)

1. Click the **Add uplink set** button to add SAN Fabrics.

2. Provide a Name and select **Fibre Channel** from the drop-down menu for the Type.

3. Under the Networks heading, select the SAN Fabric Name from the drop-down list.

4. Under the Networks heading, select the Interconnect from the drop-down list, and then select which ports are to be linked.
5. Click the Create+ button.
6. Repeat to create the redundant SAN Fabric. Notice that the other Fabric is filtered from view.
7. Click the Create button.
8. If you wish to create another Uplink set, repeat the above steps, or click the Create button.
Reviewing Logical Interconnect Group Configuration

1. After creating the Logical Interconnect Group, select the Sub-Menu and choose General
2. Scroll down to bring the Logical Interconnect Group section into view, and mouse over of the Uplink sets. Examine the relationship of the Uplink set to the physical modules and their uplink ports.

3. From the Sub-Menu, select Uplink Sets. Examine the Uplink Sets and their relationship to the assigned Networks.

Create Enclosure Group

An Enclosure Group is a centralized configuration policy, similar to that of the Logical Interconnect Group, in which all associated Enclosures retrieve their configuration from. With the HPE OneView 1.0/1.05 version, the Enclosure Group would only define the Logical Interconnect Group association, and contains embedded, un-configurable management settings.
These management settings are SNMP, NTP and the HPE SIM Single-Sign-On (SSO) Certificate for agentless and touchless management configuration.

In the HPE OneView 1.10 or newer releases, an Enclosure Configuration Script can be assigned that will allow the administrator to configure other allowed settings of the OA.

1. **Select the Top Level Menu, and select Enclosure Groups.**

```
<table>
<thead>
<tr>
<th>General</th>
<th>Servers</th>
<th>Networking</th>
<th>Storage</th>
<th>Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dashboard</td>
<td>Server Profiles</td>
<td>Networks</td>
<td>Volumes</td>
<td>Data Centers</td>
</tr>
<tr>
<td>Activity</td>
<td>Server Profile Templates</td>
<td>Network Sets</td>
<td>Volume Templates</td>
<td>Racks</td>
</tr>
<tr>
<td>Firmware Bundle</td>
<td>Logical Interconnect Groups</td>
<td>Logical Interconnect Groups</td>
<td>Storage Pools</td>
<td>Power Delivery Devices</td>
</tr>
<tr>
<td>Reports</td>
<td>Enclosures</td>
<td>Interconnects</td>
<td>Storage Systems</td>
<td>Unmanaged Devices</td>
</tr>
<tr>
<td>Enclosure Groups</td>
<td>Logical Enclosures</td>
<td>Logical Switch Groups</td>
<td>SANs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enclosures</td>
<td>Logical Switch Groups</td>
<td>SAN Managers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Server Hardware</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Server Hardware Types</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
```

2. **Click on the Create Enclosure Group button**

3. **In the Create Enclosure Group screen, provide a Name, and select the appropriate Logical Interconnect Group you created earlier.** Notice that if only a single Logical Interconnect Group exists, it will be selected by default.

```
Create Enclosure Group

General

Name: DCEA Prod Enclosure Grp 1

Logical interconnect group: VC FlexFabric Production

Note

Use configuration scripts to simplify new enclosure deployment and configuration, particularly when setting up multiple enclosures, eliminating the need to configure each enclosure manually. By entering a configuration script on the Enclosure Groups screen, a copy of the configuration script is stored with every enclosure you add that is associated with that enclosure group.
Note
The Enclosure Script will not allow all OA CLI commands to be used. The following table outlines the blacklisted commands:

Table 11. Enclosure Groups Configuration Script Blacklist

<table>
<thead>
<tr>
<th>Command</th>
<th>Command</th>
<th>Command</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADD EBIPA REMOVE CA CERTIFICATE SET ENCLOSURE NAME</td>
<td>ADD EBIPA REMOVE CA CERTIFICATE SET ENCLOSURE NAME</td>
<td>ADD EBIPA REMOVE CA CERTIFICATE SET ENCLOSURE NAME</td>
</tr>
<tr>
<td>ADD EBIPAV6 REMOVE EBIPA SET ENCLOSURE SERIAL_NUMBER</td>
<td>ADD EBIPAV6 REMOVE EBIPA SET ENCLOSURE SERIAL_NUMBER</td>
<td>ADD EBIPAV6 REMOVE EBIPA SET ENCLOSURE SERIAL_NUMBER</td>
</tr>
<tr>
<td>CLEAR NTP REMOVE EBIPAV6 SET ENCRYPTION</td>
<td>CLEAR NTP REMOVE EBIPAV6 SET ENCRYPTION</td>
<td>CLEAR NTP REMOVE EBIPAV6 SET ENCRYPTION</td>
</tr>
<tr>
<td>CLEAR VCMODE REMOVE HPESIM CERTIFICATE SET FACTORY</td>
<td>CLEAR VCMODE REMOVE HPESIM CERTIFICATE SET FACTORY</td>
<td>CLEAR VCMODE REMOVE HPESIM CERTIFICATE SET FACTORY</td>
</tr>
<tr>
<td>DISABLE DHCP_DOMAIN_NAME REMOVE OA ADDRESS IPV6 SET FIPS MODE</td>
<td>DISABLE DHCP_DOMAIN_NAME REMOVE OA ADDRESS IPV6 SET FIPS MODE</td>
<td>DISABLE DHCP_DOMAIN_NAME REMOVE OA ADDRESS IPV6 SET FIPS MODE</td>
</tr>
<tr>
<td>DISABLE EBIPA REMOVE SNMP TRAPRECEIVER SET HPESIM TRUST MODE</td>
<td>DISABLE EBIPA REMOVE SNMP TRAPRECEIVER SET HPESIM TRUST MODE</td>
<td>DISABLE EBIPA REMOVE SNMP TRAPRECEIVER SET HPESIM TRUST MODE</td>
</tr>
<tr>
<td>DISABLE EBIPAV6 REMOVE SNMP TRAPRECEIVER V3 SET IPCONFIG</td>
<td>DISABLE EBIPAV6 REMOVE SNMP TRAPRECEIVER V3 SET IPCONFIG</td>
<td>DISABLE EBIPAV6 REMOVE SNMP TRAPRECEIVER V3 SET IPCONFIG</td>
</tr>
<tr>
<td>DISABLE Firmware Management REMOVE SNMP USER SET NTP</td>
<td>DISABLE Firmware Management REMOVE SNMP USER SET NTP</td>
<td>DISABLE Firmware Management REMOVE SNMP USER SET NTP</td>
</tr>
<tr>
<td>DISABLE HTTPS REMOVE TRUSTED HOST SET NTP PRIMARY</td>
<td>DISABLE HTTPS REMOVE TRUSTED HOST SET NTP PRIMARY</td>
<td>DISABLE HTTPS REMOVE TRUSTED HOST SET NTP PRIMARY</td>
</tr>
<tr>
<td>DISABLE IPV6 REMOVE USER CERTIFICATE SET OA DOMAIN_NAME</td>
<td>DISABLE IPV6 REMOVE USER CERTIFICATE SET OA DOMAIN_NAME</td>
<td>DISABLE IPV6 REMOVE USER CERTIFICATE SET OA DOMAIN_NAME</td>
</tr>
</tbody>
</table>
Table 11. Enclosure Groups Configuration Script Blacklist

<table>
<thead>
<tr>
<th>DISABLE IPV6DYNDNS REMOVE USER</th>
<th>DISABLE IPV6DYNDNS REMOVE USER</th>
<th>DISABLE IPV6DYNDNS REMOVE USER</th>
</tr>
</thead>
<tbody>
<tr>
<td>SET OA NAME</td>
<td>SET OA NAME</td>
<td>SET OA NAME</td>
</tr>
</tbody>
</table>

| DISABLE NTP REMOVE USERS ALL | DISABLE NTP REMOVE USERS ALL | DISABLE NTP REMOVE USERS ALL |
| SET PASSWORD                 | SET PASSWORD                 | SET PASSWORD                 |

| DISABLE SLAAC SAVE EBIPA SET | DISABLE SLAAC SAVE EBIPA SET | DISABLE SLAAC SAVE EBIPA SET |
| SNMP COMMUNITY READ          | SNMP COMMUNITY READ          | SNMP COMMUNITY READ          |

| DISABLE SNMP SAVE EBIPAV6 SET| DISABLE SNMP SAVE EBIPAV6 SET| DISABLE SNMP SAVE EBIPAV6 SET|
| SSO TRUST MODE               | SSO TRUST MODE               | SSO TRUST MODE               |

| DISABLE TRUSTED HOST SET DATE| DISABLE TRUSTED HOST SET DATE| DISABLE TRUSTED HOST SET DATE|
| SET TIMEZONE                 | SET TIMEZONE                 | SET TIMEZONE                 |

| DISABLE USER vcmuser SET EBIPA| DISABLE USER vcmuser SET EBIPA| DISABLE USER vcmuser SET EBIPA|
| SET USER ACCESS vcmuser       | SET USER ACCESS vcmuser       | SET USER ACCESS vcmuser       |

| ENABLE DHCP_DOMAIN_NAME SET  | ENABLE DHCP_DOMAIN_NAME SET  | ENABLE DHCP_DOMAIN_NAME SET  |
| EBIPAV6 SHOW ALL             | EBIPAV6 SHOW ALL             | EBIPAV6 SHOW ALL             |

| ENABLE EBIPA SET EBIPA SHOW  | ENABLE EBIPA SET EBIPA SHOW  | ENABLE EBIPA SET EBIPA SHOW  |
| INTERCONNECT SHOW SYSLOG {   | INTERCONNECT SHOW SYSLOG {   | INTERCONNECT SHOW SYSLOG {   |
| OA | HISTORY }                   | OA | HISTORY }                   | OA | HISTORY }                   |

| ENABLE EBIPAV6 SET EBIPA SET | ENABLE EBIPAV6 SET EBIPA SET | ENABLE EBIPAV6 SET EBIPA SET |
| SERVER UNASSIGN { SERVER | INTERCONNECT | ( <bay number> | ALL | <bay number range> ) vcmuser | SERVER UNASSIGN { SERVER | INTERCONNECT | ( <bay number> | ALL | <bay number range> ) vcmuser | SERVER UNASSIGN { SERVER | INTERCONNECT | ( <bay number> | ALL | <bay number range> ) vcmuser |

| ENABLE FIRMWARE MANAGEMENT SET ENCLOSURE ASSET TAG UNASSIGN OA vcmuser | ENABLE FIRMWARE MANAGEMENT SET ENCLOSURE ASSET TAG UNASSIGN OA vcmuser | ENABLE FIRMWARE MANAGEMENT SET ENCLOSURE ASSET TAG UNASSIGN OA vcmuser |

Please refer to the Configure an enclosure with an OA configuration script section of the Online Help, or User Guide for an updated list.

4. Click the Create button to create the Enclosure Group, or Create+ to create the Enclosure Group and additional Enclosure Groups.

Import a Managed Enclosure

First Time Setup Configure Networking Discover Hardware Upgrade Firmware Server Profiles Environment Management Appliance Security

- Import C7000 Enclosure
- Import ProLiant DL Gen8
- Import 3PAR StoreServ array
- (Optional) Add Brocade SAN Network Advisor

In this section, you will go through the process on how to import an enclosure into the HPE OneView console. In order to successfully import an enclosure, the Onboard Administrator must be configured. At a minimum, both the Primary and Secondary OA must have a valid IP Address, Enclosure Bay IP Addressing or external DHCP Server supplying IP leases, and a valid Administrator-role account. During the Enclosure Import process, HPE OneView will automatically configure SNMP, NTP and the HPE SIM Single-Sign-On Certificate with the HPE OneView appliance IP Address and public SSL Certificate. The Enclosure Import process will also discover any device in the enclosure’s Device Bays, and attempt to configure the supported iLO’s for management (SNMP, NTP, HPE SIM SSO Certificate, create a special user account _HPEOneViewAdmin) and license the iLO’s and servers based on the License intent setting in the Add Enclosure screen.
Table 12. Enclosure Import Checklist

| Task                                                                 | Completed? (Y|N) |
|----------------------------------------------------------------------|-------------|
| Documented Onboard Administrator IP Address or FQDN                  |             |
| Documented Onboard Administrator administrator credentials           |             |
| Configured Onboard Administrator settings (EBIPA, Power Redundancy, etc.) |             |

Warning
If there is an existing Virtual Connect Domain on the enclosure that needs to be imported, please see the steps in the Maintenance section of the document – Importing an enclosure managed by Virtual Connect Manager

Note
If an enclosure is imported as a Managed enclosure then OneView Managed licenses will automatically be applied to the blades within the enclosure

1. **Navigate to Enclosures in the Top Level Menu.**

   ![Enclosures Menu](image)

2. **Click the Add Enclosure button.**

   ![Add Enclosure](image)

3. **Select the Managed option**
4. Select the Enclosure Group, define the desired license policy, and specify the Firmware Baseline from the drop-down list to apply to the enclosure.

5. Selecting the Add or Add+ button, the enclosure will be discovered, and the OA firmware will be updated to the version within the SPP.
6. HPE OneView provides audit tracking within the appliance. By clicking the gear in the lower left corner, HPE OneView shows you to what you have changed in the dialog screens.

7. Once the enclosure information has been verified, the appliance will begin its discovery process.
During this time, the appliance will validate if the OA firmware meets the minimum requirement.

Clicking on the Details link will take you to the Activity view of the enclosure, where you can examine the task and subtask details.

If the firmware is out of date, the Activity window will display the sub-tasks generated. Below is a sample screenshot.

8. After the Add Enclosure task has completed, the Enclosure State should read Configured.
Examine Imported Resources

After you have successfully imported the enclosure, you will want to verify all the resources in the enclosure have been imported.

Physical and Logical Interconnects

1. Select the Top Level Menu, and choose Interconnects

2. Interconnects are the physical Virtual Connect Modules. If the Virtual Connect modules meet the minimum required version, they should be in a Configured State. If the firmware version didn’t meet the minimum management requirements, the state of the module would be Unmanaged.
3. Select the Top Level Menu, and choose Logical Interconnects

4. The Logical Interconnect view shows the configuration of the VC Modules within the Enclosure. The configuration is based on the Logical Interconnect Group defined earlier in the installation process.
**Server Hardware**

1. Select Server Hardware from the top level menu.

![Server Hardware Menu](image1)

2. The Server Hardware section lists the discovered servers listed in the left panel. Selecting a specific server will open the detailed information about the selected server. Some examples of the information presented are installed options, serial numbers, and utilization information.

![Server Hardware Information](image2)

**Server Hardware Types**

Server Hardware Types are the unique server hardware platforms discovered during the addition of imported enclosures and devices. Their role within HPE OneView is to define the hardware configuration of each server type, which can include the adapter and its location, BIOS settings and even firmware bundles. Because HPE OneView knows the server hardware and its complete configuration, the administrator is able to do advanced configurations on components like network adapters. A network adapter can be configured for specific physical port to network connection mappings during the Server Profiles creation process. The Server Hardware Type is automatically created when an Enclosure or a Rack Mount server is added.

1. Select Server Hardware Types from the top level menu.

![Server Hardware Types Menu](image3)

2. Examine the different Hardware Types.
3. The Server Hardware Type allows editing but only to rename it or add a description.

4. Selecting a hardware type will allow you to see the number of servers that have this hardware type as well as the configuration of the network adapters.
Examine Relationships

HPE OneView has extensive mapping and relationship capabilities. These capabilities allow an administrator to select a component such as a server profile, logical interconnect, or physical server and see what other devices or profiles are linked to the component. This allows the administrator to easily see the impact of a change of other devices. In this example the relationship between the enclosure, physical blade and created networks will examined.

1. **Select Enclosures** from the top level menu.

2. **To access the Map View,** you can either click on the Map button, or select Map from the sub-menu.

3. **Within the Map view,** hover over objects to see how the relationships are built. In the following example, observe the relationships shown when the *Enc1* Enclosure is selected. Clicking on an object will navigate you to that objects Map.
4. Hover over one of the servers from the Server Hardware objects and observe the relationships between the Enclosure, Server Hardware Type, and Interconnect Bays.

5. Select on one of the server objects, and Left-Click. The Map View will change to display the Map View with the server being the center object. Hover over the Server Hardware and notice the relationship shown.
6. Lastly, examine the Network relationships. Because the Server Profile haven't been assigned yet, the Network relationship to the server is not yet available. From the top level menu, choose Networks.

7. Select an available Network, and click the Map View button. Mouse over the network, and examine the relationship tree that is built.

Using Labels

Labels provide a way to classify, or group common resources for filtering or locating. Any resource can be assigned to one or more labels.

1. From the Top Level Menu, select a resource, for our example we will use the Networks category.
2. Select an item from the left-hand menu, then select Labels from the view selector menu.

![Image showing the view selector menu with Labels highlighted](image1.png)

3. Select **Edit**

![Image showing the edit screen for VLAN 10-A](image2.png)

4. Specify the Label you wish to add. You can add one or more labels. Click the OK button to save your changes.

![Image showing the edit labels screen for VLAN 10-A](image3.png)
If you wish to delete a Label, click the X next to the label.

**Importing a ProLiant DL Managed Server**

1. Select **Server Hardware** from the top level menu.

2. In the Server Hardware screen, click the **+Add Server Hardware** button.

HPE OneView supports adding a ProLiant Gen8 or Gen9 DL servers for health, alert management and basic server profiles. In this section you will add a DL Gen9 server by adding the iLO IP Address or FQDN.

1. Select **Server Hardware** from the top level menu.

2. In the Server Hardware screen, click the **+Add Server Hardware** button.
3. In the Add Server Hardware screen, add the iLO FQDN or IP Address of the DL server to be added and select the radial button for a Managed server.

4. Enter the iLO Administrator credentials

5. Select the license type to be applied to the server – HPE OneView Advanced or HPE OneView Advanced w/o iLO.
6. Click the Add button to add the DL server, or select the Add+ button to add other DL Gen8 or Gen9 servers.

7. After clicking the Add button, HPE OneView will begin to discover the server, and configure the iLO for management.
8. Once the server is added, the administrator has the capability of powering the server on, applying a server profile, or launch the Remote Console from the Actions menu.

9. The server is now configured for element management by HPE OneView.

**Importing a ProLiant DL Monitored Server**

HPE OneView supports adding a ProLiant Generation 6 or newer DL servers for hardware monitoring. In this section you will add a DL server by adding the ILO IP Address or FQDN.

1. Select Server Hardware from the top level menu.
2. In the Server Hardware screen, click the +Add Server Hardware button.

3. In the Add Server Hardware screen, add the iLO FQDN or IP Address of the DL server to be added and select Monitored for the license model.

4. Enter the iLO Administrator credentials.

5. Click the Add button to add the DL server, or select the Add+ button to add other servers.
6. The server is now ready for hardware monitoring via HPE OneView
Adding HPE 3PAR StoreServ System

HPE OneView supports server profile driven volume provisioning and access configuration using 3PAR storage systems and direct attach or Brocade, HPE or Cisco fabric attach SANs. In this section you will import 1 or more 3PAR storage systems that are already initialized, have existing CPG’s, and any Virtual Domains\(^6\) configured. Additionally, 1 or more SAN Managers are required to discover, monitor, view and perform automated zoning of SANs. SAN Managers to Brocade, HPE or Cisco SAN fabrics must be created explicitly, while SAN Managers to direct attach SANs are created automatically when Logical Interconnects are configured containing direct attach networks. For Brocade SANs, Brocade SAN Network Advisor (BNA) must be installed and available to be configured as a SAN Manager. For HPE and Cisco SANs, the SAN Manager communicates directly with one of the physical switches in the SAN.

Prior to continuing with this document, please make sure you have completed the following:

**Table 13. HPE OneView Import HPE 3PAR StoreServ Checklist**

| Task                                                                 | Completed? (Y|N) |
|----------------------------------------------------------------------|----------------|
| Supported HPE3PAR StoreServ system with the minimum firmware requirements.\(^7\)                      |                 |
| HPE 3PAR StoreServ Management FQDN/IP Address and administrator account with at least Create role in root. |                 |
| (Optional) Brocade SAN Network Advisor FQDN/IP, HPE or Cisco switch Address and credentials.              |                 |

**Optional** Add SAN Manager

Utilizing managed SANs will help align the HPE OneView defined Fibre Channel Networks, SAN Fabrics, and HPE 3PAR StoreServ storage system ports together. This provides a simplified way to guarantee storage system ports are connected on the expected OneView managed FC Networks that will be assigned to Server Profiles.

When creating a SAN Manager to an HPEN 5900 family or Cisco switch, only switches configured in FCF mode should be added. Any switch in NPV mode can not be added as a SAN Manager. For more information regarding how to configure or setup an HPEN 5900CP for FCF, please either review the sample switch configuration in **Appendix A**, or review **Scenario 7** in the **FCoE Cookbook for HPE Virtual Connect whitepaper**\(^8\).

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\(^6\) HPE 3PAR Virtual Domains are a licensed feature.

\(^7\) Review **Supported Hardware** section for more details.

1. **Navigate to SAN Managers from the Top Level Menu.**

![SAN Managers Menu]

2. **Select Add SAN Manager button.**

![Add SAN Manager]

**Add Brocade SAN Network Advisor**

3. In the Add SAN Manager screen, select Brocade Network Advisor as the SAN Manager Type drop down list, provide the FQDN/IP Address, TCP Port (if different from the default SMI-S/WEBM over SSL 5989/TCP), and credentials to authenticate. Then click the Add button, or Add+ button to add another SAN Manager.

![Add SAN Manager Screen]

4. After adding the BNA SAN Manager, it will discover manageable SAN Fabrics. To view the discovered SANs, click on the SAN Manager's Used by hyperlink.
5. Automated Zoning is not enabled yet, as the discovered SAN Fabrics will need to be associated with an HPE OneView FC Network in order to become Managed. The following section will cover these steps in detail.

**Add HPEN 5900 family SAN Manager**

1. In the Add SAN Manager screen, select HPE as the SAN Manager Type drop down list, provide the FQDN/IP Address of a FCF mode switch in the SAN, TCP Port (SNMP Port), SSH credentials and SNMPv3 to authenticate. Then click the Add
button, or Add+ button to add another SAN Manager

**Add Cisco Nexus/MDS SAN Manager**

1. In the Add SAN Manager screen, select Cisco as the SAN Manager Type in the drop down list, provide the FQDN/IP Address of a FCF mode switch in the SAN, TCP Port (SNMP Port), SSH credentials and SNMPv3 to authenticate. Then click the Add button, or Add+ button to add another SAN Manager
Modify SAN Protocols and Zoning Policy

After SANs are discovered, the storage administrator can change the protocols being used on the SAN (that could not be detected) and how HPE OneView will configure and name zones and aliases on the SAN.

1. Edit the SAN

2. Modify the protocols in use on the SAN (that could not be detected at the switch the SAN Manager is communicating with). Modify the Zoning policy you wish to update. You can edit each field and replace tokens (ex. `{server_profile}`)
Update Fibre Channel Networks
After adding a supported SAN Manager, the Fibre Channel Networks will need to be updated, so they are associated with the correct discovered SAN Fabrics.

1. Navigate to Networks from the Top Level Menu.
2. Select the FC Network to be updated, then select Edit from the Actions Menu.

3. In the Associate with SAN drop down list, select the appropriate Fabric name, then select OK to save.
4. After updating the FC Network, examine the Associate with SAN and SAN Manager Properties in the General view.

5. Repeat the same steps to update any additional FC Networks.

6. Navigate back to SANs from the Top Level Menu.

7. The SAN will be Managed and will now reflect the associated FC Network, and Automate Zoning will be enabled.
8. Automate Zoning can be disabled on a per SAN basis. If automated Zoning is not desired, select and Edit the SAN.

Then click the option to Disable Automated Zoning.
Importing HPE 3PAR StoreServ System

1. Select **Storage Systems** from the top level menu.
2. In the Storage Systems screen, click the **Add storage system** button.

3. In the **Add Storage System** screen, add the FQDN or IP Address of the 3PAR storage system to be added, along with Administrator credentials. Click the **Connect** button to connect to the 3PAR storage system.
4. Once connected to the storage system, select the storage Virtual Domain® from the drop-down box if needed.

5. Once the storage domain is selected the Add storage pools button will be available. Click Add storage pools.

° HPE 3PAR Virtual Domains is a licensed feature, and is not part of the HPE OneView license.
6. On the Add storage pool screen, select the storage pool(s) to be added (multi-select is available on this screen.) Click the Add button to add the storage pool, or select the Add+ button to add other storage pools.

Assigning FC SANs/Networks to 3PAR Storage System Host Ports
1. When attaching volumes in profiles, only storage system ports on networks to which the profile has connections will be available for configuration by OneView. The SAN/Network a storage system port is connected to is set by the Expected SAN/Network field.

On the Storage System Ports section of the Add storage system screen, ports which are automatically detected on a managed SAN will already have its Expected SAN/Network set. Others will have their expected SAN/Network set to Auto, which will set its value to the first managed SAN on which the port is detected. When a port is on an unmanaged SAN/Network, it will need its FC Network to be set explicitly. Unused ports can be set to None. Repeat the process for the various ports on the storage system.

Creating Storage System Port Groups
When OneView attaches a volume to a server, by default it configures all storage system ports connected to the SAN connecting the storage system to the server as storage targets. If the storage administrator wishes to partition the storage system ports into smaller groups to be configured to the server, then assign a group name to the ports to be configured together. When Port Groups are being used, OneView will choose the least configured group of ports to
attach volumes to a server, achieving a load balancing across the storage system's ports. Set the port Port Group names on this screen.
2. From the Add Storage System page, click the Add button to add the storage system, or select the Add+ button to add other storage systems.

Examine Imported HPE 3PAR StoreServ System

After adding an HPE 3PAR StoreServ system, you can examine the details about the new resource.
1. From the Storage Systems view, select the specific storage system in the resource list view.

2. Select Storage System Ports from the sub-menu.
3. Here, you can view the matched storage system host ports, and the associated FC Networks and/or SAN Manager Fabrics.

![Storage System Ports](image)

**Import Existing Volume(s)**

HPE OneView can import existing, unexported volumes for assignment to Server Profiles. The internal HPE 3PAR StoreServ Volume ID will be required. Adding existing volumes can either be performed in the Storage Systems or Volumes view.

**NOTE**

There is a design limitation in the UI that unless an existing Volume has been created, the Actions menu is not available after navigating to the Volumes section. The first imported volume needs to be performed from the Storage Systems view. Subsequent Volumes can be added in the Volumes section of the UI, or continued to be added from the Storage Systems view. This behavior will change in a future release.

1. **Navigate to Storage Systems from the Top Level Menu.**

![Storage Systems](image)
2. While viewing an imported HPE 3PAR Storage System, select Add volume from the Actions menu.

![Image of HPE OneView interface](image)

**NOTE**

Adding volumes can also be performed from the Volumes section of the UI. The Actions menu will only be available when a volume exists in HPE OneView, either by importing or creating it.

![Image of HPE OneView interface](image)

3. Select the Storage System form the drop-down list, then provide the details of the Virtual Volume to import. The Volume ID is the HPE 3PAR StoreServ Volume ID found in the 3PAR Management Console. Select the Add or Add+.
button to add the volume.

Create Storage Volume Templates

*Storage Volume Templates* allow the Storage Administrator to enforce certain volume parameters when being created. Storage Volume Templates are not required in order to provision Storage Volumes.

1. **Navigate to Volume Templates from the Top Level Menu.**

2. **Click Create volume template button**
3. In the Create Volume Template screen, provide the details specific to the template. Specify the Storage Pool (CPG), and volume parameters (size, provisioned type and sharing). Then click the Create or Create+ button.

4. (Optional) If the Storage administrator would like to enforce volumes to be created from Storage Volume Templates, the Require template for Volume Creation Global Policy needs to be set, which is in the Edit Settings option of the Actions menu.

5. Tick the option to configure the policy.

Creating Storage Volumes
Volume creation is performed in the Volumes section, under the Storage column of the Top Level Menu within the UI. Volumes can be pre-created, or created after a Server Profile has been assigned to a server. In this release, Ephemeral Volume creation is not supported, and must exist prior to requesting the Volume(s) in the Server Profile. Volumes can be created with either the Server or Storage role.
1. **Navigate to Volumes from the Top Level Menu.**

   ![](Image 147x597 to 560x728)

2. **Click the Create volume button.**

   ![](Image 147x433 to 394x581)

3. **In the Create Volume screen, the options can be restricted if the Storage Administrator has forced Volume Creation to be provisioned from a Storage Volume Template. The following screenshot shows this restricted behavior.**

   ![](Image 36x758)

   Otherwise, the administrator creating the Volume may choose whether it will be associated with an available Storage Volume Template.
Provide the volume details, Storage Volume Template, capacity, provisioning type (if available), and sharing method.

**Note**
OneView attempts to name volumes on the 3PAR storage system as close as possible to volume names in OneView. When the OneView volume name is not a valid volume name on the 3PAR storage system (unsupported characters, too long, already exists, etc.), OneView will remove illegal characters, shorten and uniquify the name to create a legal name on the 3PAR storage system. Any scripting communicating with both systems needs to be aware of this.

4. Click Create or Create+ button to create the volume.

(Optional) Growing Volume Capacity
Growing a Volume is performed editing the volume and increasing its capacity.
1. Select the volume and click on the Edit action

![Volume and Edit Action](image1.png)

2. Edit the volume capacity and click OK.

![Edit Volume Capacity](image2.png)

**Upgrade Infrastructure Firmware**

- First Time Setup
- Configure Networking
- Discover Hardware
- Upgrade Firmware
- Server Profiles
- Environment Management
- Appliance Security

• Examine installed firmware
• Manage Virtual Connect firmware

In this exercise, you will examine the firmware status of the imported enclosures and servers.

**Examine Infrastructure Firmware**

The first place to start is with the Enclosure. There is a Firmware sub-menu view that you can switch to, which will report the firmware installed. If a Firmware Baseline was attached during the Enclosure import process, it will also report the available version in the Firmware Baseline.
1. Navigate to Enclosures from the Top-level Menu. Select Firmware in the submenu.

![Firmware Submenu](image)

2. Examine what is installed versus what is available in the Firmware Baseline.

![Firmware Comparison](image)

Managing Virtual Connect Firmware

HPE OneView provides the ability to manage Virtual Connect firmware from multiple locations; at the Logical Interconnect or Enclosure level. Managing Virtual Connect firmware at the Logical Interconnect would be used for those times where only VC firmware requiring updating.

1. Select Logical Interconnects from the Top Level Menu.

![Logical Interconnects Menu](image)
2. In the Logical Interconnects view, validate the [ENC-Name]-LI Logical Interconnect is selected, then the Actions menu select Update Firmware.

3. On the Update Firmware on [ENC-NAME]-LI window, select the Firmware Baseline, and select Update Firmware (stage + activate) action. The other two options are for staging firmware to initiate a manual activation of the Virtual Connect firmware. The second option Stage firmware for later activation is used to deploy and stage the firmware for later manual activation by the admin. If firmware has been previously staged, the final option would become active.

Note
HPE OneView does not offer the ability to modify Activation order, and each module is activated independently and at the same time, which will cause a network outage. To control potential outages, consider staging and manual activation of Virtual Connect firmware.
4. Clicking OK will begin the firmware update process. However, if you want to examine the individual update process for each Virtual Connect module, click the Details link in the Activity bar.
5. Once the firmware update has completed, examine the Firmware section, and see that it should show the Firmware Baseline assigned, the Installed and Baseline versions.

Creating Server Profiles

Server Profiles are managed resources that specify supported settings for the selected Server Hardware Type (e.g. Hardware Platform, Adapter Layout/Network Connections, BIOS Settings) and Enclosure Group (e.g. Networks based on Logical Interconnect), and can be left Unassigned for use as a Template. A Firmware Baseline (Policy) can be set within the Server Profile (for supported platforms), which will automatically update the firmware prior to assigning and configuring the Server Profile to the Device Bay it’s assigned.

Server Profile Affinity is to provide and control if and when the Server Profile is reapplied to the server hardware during rip-and-replace procedures. When the Server Profile Affinity is set to Device Bay, the Server Profile will be reapplied (Connections, BIOS, Boot Order, Firmware, etc.) when any server blade is inserted into the device bay, as long as the Server Hardware Type (SHT) matches the original configured SHT. If the Server Profile Affinity is set to Device Bay + Server Hardware, then the Server Profile will not be applied in the event of the physical server being reinserted into the same Device Bay. If the Server Hardware and its physical Serial Number do not match, the Server Profile will be flagged as Incompatible.

HPE 3PAR StoreServ Volume Attach is an automated method to provisioning host access to Volumes on a storage system, and to automate Fibre Channel Zoning. The Server Administrator would be able to attach 1 or more Volumes to a Server Profile. Then when the Server Profile is assigned to a Server, HPE OneView will orchestrate the Host creation and Virtual Volume export on the HPE 3PAR StoreServ system, and configure any required FC Zones for Fabric Attach networks.

In this chapter, you will first create a Server Profile to be used as a Template that defines specific elements. The Server Profile Template will then be copied and assigned to a Server Hardware Device.

Create Server Profile for Template Use

OneView 2.0 introduces Server Profile templates. Server Profile Templates provide a new powerful way to update and maintain your existing infrastructure. HPE OneView simplifies the one to many style of update and management of server profiles using templates. This feature adds inheritance to OneView templates where BIOS settings, firmware & driver updates, as well as other functions can be made in the template and then propagated out to the profiles created from that template.

The Templates in OneView provide a monitor and flag model. Profiles created from the template are monitored for compliance with the desired configuration. When inconsistencies are detected the profile is flagged as no longer being
compliant with the template. So when a new update is made at the template level, all profiles parented to that template will be flagged as not being consistent. From there – the user has control to bring individual nodes into compliance with the template or multi-select systems for update to the template.

1. Select the main menu option in the upper left, and choose **Server Profile Template**.

   ![Menu Options](image)

   - **Dashboard**
   - **Activity**
   - **Firmware Bundles**
   - **Reports**
   - **Servers**
     - **Server Profiles**
     - **Firmware Templates**
     - **Enclosure Groups**
     - **Logical Enclosures**
     - **Enclosures**
     - **Server Hardware**
     - **Server Hardware Types**
     - **Logical Switch Groups**
     - **Logical Switches**
   - **Networking**
     - **Networks**
     - **Logical Interconnect Groups**
     - **Logical Interconnects**
   - **Facilities**
     - **DataCenters**
     - **Networks**
     - **Logical Interconnect Groups**
     - **Logical Interconnects**
   - **Storage**
     - **Volumes**
     - **Volume Templates**
   - **Settings**
     - **Racks**
     - **Storage Systems**
     - **SANs**
     - **SAN Managers**

2. Once on the Server Profile Template screen, select the **+Create Server Profile Template** button.

   ![Create Server Profile Template](image)

3. In the General section of the server profile template creation page, provide a **Name** and **Description** for the Server Profile Template.

   ![Create Server Profile Template General](image)

4. In the Server Profile section of the server profile template creation page, enter a description for the server profile, select the **Server Hardware Type** and **Enclosure Group** that the server profile template will be associated with. Specify the **Server Affinity** you’d like to configure.

   ![Server Profile](image)
5. In the firmware section of the server profile template creation page, select a **Firmware Baseline** for the **Server Profile Template**.

6. Once a baseline is selected, choose how the baseline will be applied to the servers used within this server profile template. If either of the options using the **HPE Smart Update Tools** is selected then the firmware or driver updates will be done while the systems are online. If the **firmware only** option is selected then the firmware will be updated offline using **Intelligent Provisioning**.

7. In the connections section of the server profile template creation page, Add the needed Network Connections by clicking the **Add Connection** button, specify an **Ethernet Device Type** and either assign an **Ethernet Network**, or **Ethernet Network Set** to the Connection. Click the **Add+** button to continue adding **Network Connections** to the **Server Profile**.

   ![Add Connection](image)

   **Note**
   The **Use user-specified IDs** is for those customers that wish to provide their own MAC or WWN address for that connection.

   ![Firmware Baseline](image)

   **Note**
   You can specify which FlexNIC to assign the Network Connection to, or leave it at the default of Auto. Auto will apply the same Network Connection to Adapter mapping Virtual Connect does today. Do know that you cannot create a FlexNIC B, C or D without first creating FlexNIC A.

8. (Optional) **Adding Fibre Channel Networks** is a similar operation as an **Ethernet Device Type**. FlexNIC B is reserved for FC Connections when FC Connection Types are added to the **Server Profile**. When choosing the FlexNIC, you can leave the default **Auto**. You can force the FlexNIC assignment, but the list will be filtered based on the connection location to
the Interconnect Bay the FC Network is assigned to.

A. (Optional) If you wish to configure FC Boot From SAN (BFS), change the Boot setting from Not Bootable to either Primary or Secondary. You will need to provide the Target WWN and Host LUN ID in the respective fields.

9. Enable local storage management by selecting it.

If you enable the Manage Local Storage feature, a warning dialog will be displayed mentioning what the Initialize local
10. In the Local Storage section of the server profile template page, select the Controller Mode for the integrated controller.

11. Click Create Logical Drive

12. In the Create Logical Drive dialog window, enter a Name for the logical drive, select the RAID Level, select the number of drives for that RAID set, and the drive technology of that RAID set. Then click Create to create the logical drive for the server profile template.

13. Once the logical drive is created, select the boot device for the local storage using the drop-down box in the Create Server Profile Template dialog page.
14. Enable SAN Storage if necessary.
   
   A. Specify the Host OS Type, which controls the Host created on the 3PAR storage system.

   B. Click the Add Volume button to display the list of volumes available for assignment. Select the source Volume to assign to the Server Profile.
C. Once the Volume has been selected, the available Storage Paths will be displayed. You can disable, remove or add Storage Paths. Click Add or Add+ to add the volume.

![Add Volume](image)

15. Modify the Boot Order if necessary.

**Warning**
Disabling Boot Order in the Server Profile will also disable PXE and FC BfS configuration options.

16. Modify the following, or customize your own BIOS Settings

A. Add a Custom Post Message under the Server Asset Text section. E.g. “HPE ONEVIEW ROCKS!”

![Edit BIOS Settings](image)

B. Change the HPE Power Regulator setting to HPE Static High Performance under the Power Management Options section.

![Edit BIOS Settings](image)

Notice when you change the HPE Power Regulator from the default to HPE Static High Performance, the HPE
Power Profile, Intel QPI Link Power Management, Minimum Processor Idle Power Core State, and other related BIOS settings change.

Note
If the server hardware only contains a single CPU, you will need to change the HPE Power Profile setting to Custom, and then change Intel QPI Link Power Management to its default value, otherwise the Server Profile will fail to apply. This BIOS setting is only available on systems that contain multiple CPUs.

17. Leave the Advanced section as default, which would be Virtual Managed Addresses.

18. Click Create.

Creating Server Profiles from a Server Profile Template

1. Select the main menu option in the upper left, and choose Server Profile Templates.

2. From the left hand menu, select the server profile template to be used.
3. From the actions menu on the right hand side, select **Create Server Profile**

4. In the Create Server Profile dialog window, enter a **Name** and **Description** for the server profile

5. Select the **Server Hardware** that the server profile will be assigned to using the drop-down menu. Optionally, you can select to **Override** the server profile
A. Optionally, you can select to box labeled *Override the server profile template*. This will allow you to change all of the options within the template for this server profile.

6. Click *Create* to create the server profile.

---

Create One-Off Server Profile

1. Select the main menu option in the upper left, and choose *Server Profiles*.
2. Once on the Server Profiles screen, select the +Create Profile button

3. Provide a Name and Description for the Server Profile. Select the specific server blade that you want this server profile assigned to for the Server Hardware, and the Server Hardware Type and Enclosure Group will be accessible. Specify the Server Affinity you’d like to configure. Attach a Firmware Baseline to the Server Profile. When selecting either the Server Hardware Type or Enclosure Group will filter the assignable Server Hardware section.

4. Add the needed Network Connections by clicking the Add Connection button, specify an Ethernet Device Type and either assign an Ethernet Network, or Ethernet Network Set to the Connection. Click the Add+ button to continue
adding **Network Connections** to the **Server Profile**.

![Add Connection](image)

**Note**
The *Use user-specified IDs* is for those customers that wish to provide their own MAC or WWN address for that connection.

**Note**
You can specify which FlexNIC to assign the Network Connection to, or leave it at the default of Auto. Auto will apply the same Network Connection to Adapter mapping Virtual Connect does today. Do know that you cannot create a FlexNIC B, C or D without first creating FlexNIC A.

5. **(Optional) Adding Fibre Channel Networks** is a similar operation as an **Ethernet Device Type**. FlexNIC B is reserved for FC Connections when FC Connection Types are added to the **Server Profile**. When choosing the FlexNIC, you can leave the default *Auto*. You can force the FlexNIC assignment, but the list will be filtered based on the connection location to the Interconnect Bay the FC Network is assigned to.

![Add Connection](image)
A. (Optional) If you wish to configure FC Boot From SAN (BFS), change the Boot setting from Not Bootable to either Primary or Secondary. You will need to provide the Target WWN and Host LUN ID in the respective fields.

6. Enable local storage management by selecting it.

If you enable the Manage Local Storage feature, a warning dialog will be displayed mentioning what the Initialize local storage option does.

7. Enable SAN Storage if necessary.
A. Specify the Host OS Type, which controls the Host created on the 3PAR Storage System.

B. Click the Add Volume button to display the list of volumes available for assignment. Select the source Volume to assign to the Server Profile.

C. Once the Volume has been selected, the available Storage Paths will be displayed. You can disable, remove or add Storage Paths. Click Add or Add+ to add the volume.

8. Modify the Boot Order if necessary.
Warning
Disabling Boot Order in the Server Profile will also disable PXE and FC BfS configuration options.

9. Modify the following, or customize your own BIOS Settings
   A. Add a Custom Post Message under the Server Asset Text section. E.g. “HPE ONEVIEW ROCKS!”

   ![Edit BIOS Settings]

   B. Change the HPE Power Regulator setting to HPE Static High Performance under the Power Management Options section.

   ![Edit BIOS Settings]

   Notice when you change the HPE Power Regulator from the default to HPE Static High Performance, the HPE Power Profile, Intel QPI Link Power Management, Minimum Processor Idle Power Core State, and other related BIOS settings change.

Note
If the server hardware only contains a single CPU, you will need to change the HPE Power Profile setting to Custom, and then change Intel QPI Link Power Management to its default value, otherwise the Server Profile will fail to apply. This BIOS setting is only available on systems that contain multiple CPUs.

10. Leave the Advanced section as default, which would be Virtual Managed Addresses.

   ![Advanced]

11. Click Create.
Create a Server Profile for Gen9 DL Servers

Network configuration (Ethernet or Fibre Channel) is not supported with Gen9 servers.

1. **Select Server Profiles from the Top Level Menu.**

2. **Click the +Add Server Profile button.**

3. **Provide the Server Profile details, like the name, description and Server Hardware.** Notice **Enclosure Group and Affinity** are not available.

4. **Specify the Firmware Baseline if needed.**
5. **Select the firmware installation method**

   ![Firmware Selection]

   - **Firmware**
     - Firmware baseline
     - Installation Method
       - Firmware and OS Drivers using HP Smart Update Tools
       - Firmware only using HP Smart Update Tools
       - Firmware only
     - To limit disruption during future firmware updates, select a Smart Update option. Without Smart Update, the server firmware must be powered off. Learn more.
     - Force installation

6. **Select the Boot Mode.** The options are UEFI, UEFI optimized or Legacy BIOS

   ![Boot Mode Selection]

7. **Scroll down to BIOS or select BIOS from the View Selector Menu.** Edit the appropriate BIOS Settings you wish to apply.

   ![BIOS Settings]

8. **Click Create or the Create+ button.**

**Create a Server Profile for Gen8 Servers**

HPE OneView has basic Server Profile support for the DL360 and DL380 Gen8 platforms. Only BIOS and Firmware management are supported with these platforms.
1. **Select Server Profiles from the Top Level Menu.**

   ![Server Profiles Menu](image)

2. **Click the +Add Server Profile button.**

   ![Add Server Profile](image)

3. **Provide the Server Profile details, like the name, description and Server Hardware. Notice Enclosure Group and Affinity are not available.**

   ![Create Server Profile](image)

4. **Specify the Firmware Baseline from the drop-down menu.**

   ![Firmware Baseline](image)

5. **Select the firmware installation method**
6. **Adjust the boot order if desired**

   **Boot Settings**

   - Manage boot order
     - 1. CD
     - 2. Floppy
     - 3. USB
     - 4. Hard disk
     - 5. PCIe
   
   Drag and drop or edit rows to re-order

7. **Scroll down to BIOS or select BIOS from the View Selector Menu. Edit the appropriate BIOS Settings you wish to apply.**

   ![BIOS Settings](image)

8. **Click Create or the Create+ button.**

**Add New Blade to Enclosure (Optional)**

In this section, you will need to insert a new blade into the enclosure. This will help you verify that a new blade is automatically discovered in the enclosure by HPE OneView. When a new blade is inserted into the enclosure, the Onboard Administrator will register a Blade Insertion event, which will be forwarded to the HPE OneView console. A discovery task will be created, which HPE OneView will attempt to configure the iLO for management.

1. Insert new blade into enclosure.
2. Navigate to the Enclosures Top Level Menu.
3. Examine the Device Bays panel to validate the new blade appears in the appropriate bay.
4. Once the new blade has been discovered, assign it a Server Profile.
Environmental Management

With HPE OneView, you can optimize the power and cooling requirements of your data center efficiently. While each individual system, enclosure or PDUs in your data center can provide its power requirements and sometimes even a limited amount of power consumption history, it is still difficult to understand the power and cooling requirements for your data center in a holistic way.

In this section, you will go through how to configure your HPE OneView so you can start investigating more about the overall systems in your data center and their power & cooling capacities and consumption.

Physical data center configuration

In order to take advantage of analysis and management features for your environment, you first want your physical data center environment to be accurately represented. You have the ability to match the physical placement of systems, enclosures, racks and other unmanaged devices through HPE OneView.

Add racks based on Location Discovery Services (LDS)

Racks are automatically created based on LDS. HPE ProLiant Servers or HPE BladeSystem enclosures mounted in HPE Intelligent Series Racks are automatically grouped in racks in the proper positions. The initial rack names are provided by the Rack Serial Number. The height of a created rack is displayed as 42U unless the top-most device managed by HPE OneView is in a higher position. If a managed device is later added to a position about 42U, the rack height will be automatically adjusted.

Add enclosures to racks without LDS

If no LDS is present, HPE BladeSystem enclosures automatically create an enclosing rack in HPE OneView during the discovery process, based upon the name configured in the HPE BladeSystem Onboard Administrator.

• Use of BladeSystem management stacking link cables up/down for all enclosures in a rack is encouraged – it causes a single rack to be created per set of enclosures and the enclosures will be in the proper order in the rack. Specific slot positioning must be provided by adjusting the positioning in the UI or via REST
• If BladeSystem management stacking links are not used – one rack is created per enclosure. Manually change the HPE OneView configuration to put the enclosures into a single rack and delete any duplicated racks.

1. To view the rack an enclosure is located in, select the Enclosures from the main menu.

2. After selecting the correct enclosure from the main pane, the information in the Hardware section of the details pane allows you to see the rack automatically created to house the enclosure.
Adding DLs to rack without LDS

If LDS is not present, racks are not automatically created for DL servers. DL servers may be added to racks previously created via enclosure discovery or racks may be created manually and have servers added to them. For either option, begin by navigating to the Racks screen.

1. To go to the Racks screen, select Racks in the main menu.

2. On the Racks screen, to create a rack either select +Add Rack button in the left panel or Add from the Actions pull-down on the right of the screen.
3. Once on the Add Rack screen, the screen details is segmented into the General and Layout sections. On the General pane, enter the requested information for the rack hardware.

4. The Layout panel consists of a visual representation of the rack and its slots, a list of available devices and a search box to find the desired systems and enclosures. From this panel, you can add, remove, and rearrange devices within the rack and edit the device details. To place a device, drag and drop it in the desired location.

5. Once the rack has been configured, select Add to complete the setup or Add + if additional racks need to be created.

Creating a data center

HPE OneView allows you to describe the physical locations of your racks and systems within your data center. After placing systems in the racks, 3D data center maps can be created to accurately describe the racks location on the data center floor.

1. Using the Top Menu, select Data Centers under the Facilities section.
2. HPE OneView automatically creates a default data center (Datacenter 1) during setup which serves as a holding place for racks once created. All racks are listed under Datacenter 1 in the order they were created. A message is shown until the default data center indicating it has not been configured.

3. If you wish to use the default Datacenter 1 for your actual data center, resolve the warning message by editing Datacenter 1 and renaming/resizing it to match the data center floor (or portion thereof) you are going to be managing with HPE OneView. This process is described in subsequent steps. Alternately, you can remove Datacenter 1 and Add one or more data centers as described next.

4. To add new data centers, use the + Add Data Center link on the Data Centers screen. The resulting screen details allows you to input specific information regarding the data center and the racks it contains. Racks available for placement are
listed in the Unpositioned Racks field. This listing includes racks held in the unconfigured default Datacenter 1.

5. To edit an existing data center, select Edit in the Layout section of data center page.
6. The Layout panel of the Edit screen allows you to drag & drop racks on the grid from an overhead view.

7. For physically accurate positioning not aligned with the grid lines, enter the position and angle in the rack positioning popup.

8. To remove any racks that are not part of the data center, drag them back to the unpositioned list or select them and click the Remove link in the popup.
9. Once editing of the data center is complete, select the OK button to return to the data center screen to view the 3D model of the data center.

Configuring power delivery topology for the data center

Configuring the physical setup for your data center is only half the picture. To get a complete understanding of your environment, you can also configure its power delivery hierarchy. Building out your environment's power topology helps reduce downtime by eliminating wiring errors and identifying potential overloads. HPE OneView enables you to create power distribution device objects and describe the power source for one or more components in the rack. Below, configure the rack-level power distribution for each rack.

Adding HPE iPDU's

1. Navigate to the Power Delivery Devices section from the Top Level Menu

2. To add HPE iPDU's that power your previously discovered equipment, on the Power Deliver Device screen select + Add power delivery device.
3. Enter the FQDN or IP address along with the login credentials needed for discovery.

4. Once the iPDU's have been discovered, view the rack in which the iPDU's-powered equipment resides. The iPDU's will be automatically depicted in the rack layout.

5. Edit the rack associated with the iPDU to set the iPDU core position properly.

6. Drag the iPDU to the upper or lower 0U space drop zones on the A/B side of the rack as appropriate.

7. Or specify the position via the device configuration popup accessible via the gear icon on the device.
Adding 3rd Party PDU’s or non-HPE iPDU’s

1. If an iPDU is not being used, create one or more Rack PDUs to represent power capacity in the rack. On the Power Delivery Device screen, select + Add power delivery device.

![Image of Power Delivery Device screen]

2. On the Add Power Delivery Device screen, select Rack PDU and specify the properties that will represent your PDU and the power capacity it provides.

![Image of Add Power Delivery Device screen]

3. If you know the hardware the PDU will be providing power to, it can be added by selecting the Add Connections link on the Add Power Delivery Device screen above. Once there, available hardware can be selected.

![Image of Add Connections screen]

4. Next, navigate to Racks from the Top Level Menu.

5. Edit the rack layout associated with the newly created PDU to set its position properly by dragging components around within the rack or from the Device Selection list.

Adding Unmanaged Devices

Unmanaged devices can be created for any devices that cannot be discovered by HPE OneView but consume power or slots in the rack.

1. Select Unmanaged Device from the Top Level Menu.
2. Once on the Unmanaged Devices screen, select the **Add unmanaged device** button.

3. Enter the specified information to represent the unmanaged device. Specify the maximum power value for the device to enable capacity and consumption analysis of your power delivery system. Once all information is completed, click the **Add** or **Add+** button.

4. The device can then be added to any rack layout and associated with any power delivery device.
Securing the Appliance

HPE OneView supports Role-based Access to the appliance with either local User Accounts, or it can be integrated with Microsoft Active Directory or other LDAP directories, like OpenLDAP. This section will cover how to create local user accounts, and optionally configure Active Directory authentication within the appliance.

(Optional) Integrating Active Directory/LDAP Security
You will need the following prior to configuring Active Directory settings within the appliance:

Table 10. Active Directory or OpenLDAP Checklist

| Task | Completed? (Y|N) |
|------|----------------|
| SSL certificates installed on your Domain Controllers |                  |
| FQDN of available Domain Controllers or LDAP Servers |                  |
| Domain Security Groups for Server Admins (will map to Specialized Server Administrator role) |                  |
| Network Admins (map to Specialized Network Administrator role) |                  |
| Infrastructure Admins (map to Full Administrator role) |                  |
| Read-Only Users |                  |

1. Select the main menu option in the upper left, and choose Settings.
2. Within the Settings view, the Edit option for Security will be displayed when you mouse into that frame. Select the Edit link.

3. Within the Edit Security window, click the Add directory button.

4. In the Add Directory window, you will need to specify the following:
   - Directory Name
   - Directory Type
   - Search Context
     - Field 1: CN for Active Directory, UID for LDAP Directories
     - Field 2: Organizational Unit in Distinguished Name format (i.e. OU=Admins,OU=Contoso)
     - Field 3: Top Level Domain Name in Distinguished Name format (i.e. DC=contoso,DC=com)
   - Click the Add directory server button to add your Domain Controller FQDN and Base-64 Public Key Certificate used for Server Authentication.
   - The Username and Password fields are to validate the Directory configuration. A Valid user account must exist in the Search Context you configured. You must specify the Canonical Name value of the user account.

Note
Field 2 can contain up to 4 Search Contexts. Referred to as multiple Relative Distinguished Names (RDNs), a '+' symbol is used to provide different search contexts. For instance, the following OU's could contain different Administrator accounts and groups:

- OU=admins,OU=Finance,DC=Contoso,DC=com
- OU=admins,OU=Sales,DC=Contoso,DC=com
- OU=admins,OU=HR,DC=Contoso,DC=com
- OU=admins,OU=Corp,DC=Contoso,DC=com

You can combine the above Search Contexts into a single value:

- OU=admins,OU=Finance,DC=Contoso,DC=com+OU=admins,OU=Sales,DC=Contoso,DC=com+OU=admins,OU=HR,DC=Contoso,DC=com+OU=admins,OU=Corp,DC=Contoso,DC=com
5. After the Directory has been configured, go back and Edit Security to set the Default Directory, and click OK to save the settings.

6. Next, navigate to Users and Groups from the main menu.

7. In the Users and Groups view, select the Actions menu and choose Add Directory User or Group
8. In the Add Directory User or Group screen, provide the credentials to authenticate. Once authenticated, begin typing the directory group name in the Group Name field. Select the group, and specify its role.

![Add Directory User or Group screen](image)

9. Repeat the same steps to add the remaining Directory Groups.

10. After you have configured your Directory Groups, you should log out by clicking the User button in the upper right of the UI and select Logout.
11. On the logon page, you will notice a new field to choose. This is the Directory chooser. You can select from the configured Directories and Local (if Local was not disabled in your Directory configuration.)

12. Log into appliance with a Server Admin user account

13. Navigate to Networks from the Top Level Menu, and notice the +Create Network button and Actions menu Networks from the Top Level Menu, and notice the +Create Network button and Actions menu are unavailable.
14. Log into appliance with a Network Admin user account

15. Navigate to Server Profiles from the Top Level Menu, and notice the +Create Server Profile button and Actions menu is no longer available.

Maintaining Your Appliance

This segment will guide you through the maintenance tasks you may encounter when using the HPE OneView appliance. It will cover the maintaining user groups and accounts, alerts and monitoring as well as other tasks you may experience when using HPE OneView to manage your Composable Infrastructure.

Import/Migrate a Virtual Connect Managed Enclosure

A new feature in the HPE OneView 1.20 Release is the ability to migrate existing Virtual Connect Domains. Migration is an offline process, and not all features of Virtual Connect will or can be migrated. Please refer to the HPE OneView 1.20 User Guide11 Chapter 9 Planning for enclosure migration from VCM into HPE OneView on page 101 for more details.

Before proceeding with the following steps, please make sure you have completed the following:

Table 11. VCM Migration Checklist

<table>
<thead>
<tr>
<th>Task</th>
<th>Completed? (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Created Virtual Connect Domain Backup</td>
<td></td>
</tr>
</tbody>
</table>

11 http://HPE.com/go/oneview/docs
1. The Dashboard, which is the default view when

2. Provide the Onboard Administrator IP Address or FQDN, select Managed, and provide the OA credentials. LDAP/AD OA Credentials are not supported, so please provide an OA Administrator account. There is a new option in the Enclosure Group drop-down list, Migrate from Virtual Connect Domain. Select this option.
3. After selecting the Migrate option, click the Add button to begin the process.

4. After clicking Add, you will need to select either Create New Enclosure Group or an existing Enclosure Group, then provide the Virtual Connect Domain-level Account credentials. Choosing an existing Enclosure Group should only be selected if a matching Enclosure Group resource matches the source enclosure configuration and Logical Interconnect Group layout. Then click the Test Compatibility button.
5. **Testing compatibility can take about 5 minutes to complete.** Once completed, a report will be generated showing any issues, and should be reviewed prior to completing the migration.

6. **Resolve any critical issues reported in the Migration Report.** Once ready, click OK to begin the migration. The total process should take approximately 30 minutes.

7. **Once the enclosure has been migrated from Virtual Connect Manager to HPE OneView, you can examine the resources that were migrated.**
Technical white paper | HPE OneView Deployment and Management Guide

[Image of HPE OneView networks and enclosure groups]

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8. The Enclosure Group and Logical Interconnect Group resource names can be modified after the migration is complete. Which the Enclosure Group resource can be selected in Step 4 instead of creating a new Enclosure Group resource as long as the additional target enclosure Virtual Connect configuration match (Ethernet and FC Networks, and associated uplink ports.)

Import a Monitored Enclosure

In this section, you will go through the process on how to import an enclosure into the HPE OneView console. In order to successfully import an enclosure, the Onboard Administrator must be configured. At a minimum, both the Primary and Secondary OA must have a valid IP Address, Enclosure Bay IP Addressing or external DHCP Server supplying IP leases, and a valid Administrator-role account. During the Enclosure Import process, HPE OneView will automatically configure SNMP, NTP and the HPE SIM Single-Sign-On Certificate with the HPE OneView appliance IP Address and public SSL Certificate. The Enclosure Import process will also discover any device in the enclosure's Device Bays, and attempt to configure the supported iLO’s for management (SNMP, NTP, HPE SIM SSO Certificate, create a special user account _HPEOneViewAdmin) and license the iLO’s and servers based on the License Intent setting in the Add Enclosure screen.
Note
If an enclosure is imported as a monitored enclosure then Virtual Connect Manager will still maintain control and management of the connectivity options.

1. Navigate to Enclosures in the Top Level Menu.

2. Click the Add Enclosure button.

3. Select the Monitored option

4. Enter the Onboard Administrator credentials to the enclosure
5. Selecting the Add or Add+ button, the enclosure will be discovered, and the Onboard Administrator will be configured to be monitored by HPE OneView.

Once the enclosure information has been verified, the HPE OneView will begin the discovery process. During this time, the appliance will validate if the OA firmware meets the minimum requirement. Clicking on the Details link will take you to the Activity view of the enclosure, were you can examine the task and subtask details.
During the import, HPE OneView configures Single Sign On, Network Time Protocol, power state and SNMP settings, as well as discovering the hardware types and updating environmental configurations.

6. After the Add Enclosure task has completed, the Enclosure State should read Monitored.

Changing the IP address of the HPE OneView Appliance

There may come a time when the IP address of the HPE OneView Appliance needs to be changed. Please follow these steps to ensure a smooth and easy transition for your Composable Infrastructure.

1. Select the main menu option in the upper left, and choose Settings.

2. In the Appliance section, select Edit

3. Enter the new IP address or FQDN for the HPE OneView Appliance.
4. **Click OK.**

   **Note**
   After clicking OK, the appliance will configure those parameters. If you selected Static for the IP Address Assignment, you should be redirected to the new IP address. As this change is being applied the HPE OneView appliance will push the changes to the managed resources (storage devices, enclosures, etc.)

### Changing the SNMP Read String of the HPE OneView Appliance

There may come a time when the SNMP Read string of the HPE OneView Appliance needs to be changed. Please follow these steps to ensure a smooth and easy transition for your Composable Infrastructure.

1. **Select the main menu option in the upper left, and choose Settings.**

2. **In the SNMP section, select Edit.**

3. **In the Edit SNMP Settings window, enter the new SNMP Read String for the HPE OneView Appliance.**
4. Click OK.

Note
Changing the read string is recommended when running HPE System Insight Manager and HPE OneView in conjunction with each other. This is due to the fact that the OA only supports a single SNMP read string. When the enclosure is imported into HPE OneView, the read string on the OA will be overwritten if it doesn’t match that of the HPE OneView appliance.

Viewing Reports
HPE OneView provides a pre-defined list of reports giving the administrators and users information based on HPE OneView inventory, configuration, health status and more. Reports can also be pulled from the HPE OneView appliance via REST APIs.

1. From the Top Level Menu, and select Reports
2. From the left hand menu, select the desired report. For this example we will select the Server Firmware Inventory Report.

3. The selected report will be displayed

Exporting Reports

Reports within HPE OneView can be exported to XML or CSV files for use in other applications.

1. From the Top Level Menu, and select Reports

2. From the left hand menu, select the desired report. For this example we will select the Server Firmware Inventory Report.
3. The selected report will be displayed

4. From the Actions menu, select Save As.

5. Select the desired output format – Excel Workbook (*XLSX) or CSV MS-DOS (*.csv) and click OK
6. **The file will be saved in the Downloads folder of the local user**

   ![Downloads folder screenshot]

### Printing Reports

Reports within HPE OneView can be printed in PDF format.

1. **From the Top Level Menu, and select Reports**

   ![Top level menu screenshot]

2. **From the left hand menu, select the desired report. For this example we will select the Server Firmware Inventory Report.**

   ![Left hand menu screenshot]

3. **The selected report will be displayed**
4. From the browsers context menu select Print.

5. The file can now be printed or saved in PDF format.
Creating New Users

HPE OneView supports the methodology of differing roles within a Composable Infrastructure. In this section we will create a new user for the HPE OneView environment.

1. **Select the Top Level Menu, and navigate to Users and Groups in the console**

2. **From the left hand menu, select the +Add User button.**

3. **Provide a login name, Full name (optional), then enter and confirm the password that will be used for the account. Select the type of Role that this user will have. Specialized accounts can be limited to Backup functions, Network functions or Server functions. Full accounts are administrators for all segments. Read only accounts will be able to view**
information within HPE OneView but not change any information. Contact Email, Office and Mobile Phone numbers can be added if desired.

4. Select Add button to create the account.

Deleting Existing Users

HPE OneView supports the methodology of differing roles within a Composable Infrastructure. In this section we will delete an existing user in the HPE OneView environment.

1. Select the Top Level Menu, and navigate to Users and Groups in the console

2. Select the user that needs to be deleted from the left hand menu

3. Select Remove from the Actions menu
4. Confirm your selection by selecting the Yes, remove button to delete the account.

Changing User Permissions

HPE OneView supports the methodology of differing roles within a Composable Infrastructure. In this section we adjust the permissions for a user within the for the HPE OneView environment.

1. Select the Top Level Menu, and navigate to Users and Groups in the console

2. Select the user you want to edit from the left hand menu

3. Select Edit from the Actions menu.
4. Edit the information that needs to be changed.

![Dashboard interface with options]

5. Click the OK button to save the changes that have been made.

Adding a Dashboard Panel to the OneView Dashboard

HPE OneView 1.20 allows the user to customize the Dashboard interface. The customization allows each user to pick the categories that will be presented to the user when they log in. This customization is saved in the browser cache and not on the HPE OneView appliance so if the cache is cleared or the user logs in from another machine the changes will not follow the user.

1. From the Top Level Menu, select Dashboard

![Dashboard menu with options]

2. From the dashboard, select the Gear icon to open the Add Dashboard Panel menu
3. From the Add Dashboard Panel menu, select the information to be presented. In this example we will add a Dashboard Panel to show the reports available in HPE OneView. Click the down-arrow next to the resource drop-down list.

4. Scroll down the list and select Reports
5. **Click Add**

6. **The Reports Dashboard panel is now available.**
Removing a Dashboard Panel from the OneView Dashboard

HPE OneView 1.20 allows the user to customize the Dashboard interface. The customization allows each user to pick the categories that will be presented to the user when they log in. This customization is saved in the browser cache and not on the HPE OneView appliance so if the cache is cleared or the user logs in from another machine the changes will not follow the user.

1. **From the Top Level Menu, select Dashboard**

2. **From the dashboard, hover your mouse over the item to be removed**
3. To remove the item, select the X that appears

4. The item is removed from the dashboard

Alerts and Monitoring

Prior to physical and power delivery configuration, HPE OneView provides a Utilization panel where a summary of the current usage of each metric available for a resource can be monitored. Each type of resource provides specific metrics that
are collected from the management processor and displayed. The values depicted provide the value of the metric during the most recent five minute period.

Having configured the physical and power delivery topology of your environment, you can now begin to monitor and analyze its use of power and cooling resources. Power utilization monitoring allows you to identify and eliminate areas of waste while thermal monitoring helps reduce overcooling and fix hot spots.

1. The Dashboard, which is the default view when logging into the appliance, provides an overview of activity and alerts.

2. Select the desired hardware resource screen from the main menu.

3. The Utilization panel located within the details pane shows the metrics available for monitoring for the resource. The utilization metrics available to be monitored depends on the resource type:
   - Server hardware: CPU, power (including power cap) and temperature
   - Enclosures: power (including power cap settings) and temperature
   - Power Delivery Devices: power

Note
If you wish to change the temperature and size parameters to be displayed in a localized fashion, you must set the default Language in your browser for HPE OneView to display them correctly.
4. Flyovers showing the past 24 hours’ worth of CPU, Power or Temperature data are available by moving the pointer over the desired metric.

5. Selecting the Utilization panel heading or selecting Utilization from the view menu allows display and navigation of all available history of a specified metric.

6. Once selected, the details pane will show the first available metric for the device expanded. By default the last 24 hours of information is shown on the graph. However, the date bar below the graph allows selecting any available date range to be displayed.
7. Custom graphs can also be created. This custom graph allows two metrics to be plotted on the same graph allowing comparison between the metrics.

8. HPE OneView allows you to view areas in your data center that are insufficiently cooled due to various reasons such as poor airflow, concentration of excessive heat output, or wrap-around airflow at the ends of aisles. Likewise, it is possible to determine areas that are being overcooling and wasting cooling resources. HPE OneView's 3D visualization of the data center shows the peak observed temperature of each rack the last 24 hours.

Viewing Activity, Alerts and Tasks

Various health alerts are recorded regarding the lifecycle management of your data center and IT equipment. This capability enables you to be notified of events that may arise such as:

- New blade server inserted
- Create/Delete/Modify Networks
- Firmware Update
- Pre-Failure warnings
- Uplink Status of Logical Interconnects
- New potential overload conditions precipitated by addition of new hardware
- Thermal capacity of devices in rack exceed specified thermal limit
- Lack of power delivery redundancy to devices attached to power delivery devices
1. Select the main menu option in the upper left, and choose Activity.

2. This page is the master list of all activity within the appliance.

3. You can also expand the hardware resource (Server Hardware, Server Profile, Enclosure, Logical Interconnect, etc.) and look at the alert view to see the problem description. The details from the alert can most times be used to identify and help fix the problem.

Multi-use Commands

When making some changes or issuing some commands, it is possible to send those commands to multiple entities at one time. In this example we will power multiple servers on at once.
Issuing the Power On Command to Multiple Servers

1. Select the main menu option in the upper left, and choose Server Profiles.

2. If the left hand column, select the server profiles that you would like to manage. To select multiple items, hold down the control key while left clicking the desired server profiles.

3. From the Actions menu, select Power On

4. Looking in the activity page, you can see that servers have now been powered on.

Migrating a Server Profile

Migrating a Server Profile allows the software defined server to be moved to a different piece of physical hardware. HPE OneView provides profile mobility between different adapters, different hardware generations and different blade models. Server profiles can also be migrated across enclosure groups.
1. Select the server profile to be migrated

2. From the Actions menu, select Edit

3. The profile can be changed by editing either the specific Server Hardware bay assignment, by changing the Server Hardware Type and then selecting the Server Hardware Bay Assignment or by changing the Enclosure Group. Click Change next to either Server Hardware Type or Enclosure Group

4. From the Change Server Hardware Type and Enclosure Group dialog box, select the drop-down for the type of profile mobility needed. For example, select the drop-down box for Server Hardware Type.
5. **Select the desired Server Hardware Type**

6. **Click OK**
7. **Using the Server Hardware drop-down list, select the device bay that the server profile will be moved to**

8. **Click OK to begin the profile migration**
Add New Networks and Edit Server Profile

In this section you will add Networks to HPE OneView and modify an existing Logical Interconnect Group. You will then add the new Network or Networks to an existing Network Set or add a new Network Connection to an existing Server Profile.

Add Network(s)

1. Add a new Ethernet Network into the appliance. By adding a new Network, HPE OneView will configure all Logical Interconnects within the HPE OneView appliance, but not configure the Uplink Set(s) or Logical Interconnect Group(s).
By looking at the Logical Interconnect, you will notice the network(s) you added is a Local network.

2. Navigate to Logical Interconnect Groups, and add the new Network(s) to an existing Uplink Set.

3. Now that the Logical Interconnect Group has been updated, the Logical Interconnects that were created from importing the Enclosure will report they are no longer consistent with the group. Navigate to the Logical Interconnect that requires updating. Select the Actions menu, and then Update from group. Repeat for any other Logical Interconnects that require updating.
4. **Navigate to Network Sets and add the new Network to an existing Network Set.**

Information

Adding a Network to a Network Set does not require a Server to be powered off, and will deploy the updated Network Set configuration automatically.

5. **Examine a Server Profile that contains a Network Connection assigned to the Network Set.**

**Edit Server Profile**

Once a profile has been applied, you can edit the profile to make changes, and fix issues that may have been encountered. It is possible to edit the existing Network Connections by modifying existing assigned Network and/or Bandwidth without needing to first Power Off the server. Other Server Profile edits will require the Server Profile to be Powered Off.

1. Verify the Server is powered off.
2. Select the Actions menu, then select *Edit.*
3. Make the necessary changes to the server profile (i.e. Bandwidth adjustment, add a Network Connection, etc.)
4. Click the OK button to save the changes to the Server Profile.
5. Notice the server does not have its firmware reapplied, and only those changes are applied.
Changing the IP address of a managed resource (enclosure)

Occasionally situation arises where the IP address of a managed resource will need to be changed. In this example we will look at changing the IP address of an enclosure managed by HPE OneView.

1. Open the Onboard Administrator of the enclosure in question and change the IP address on the OA. Apply this change in the OA.

2. In the HPE OneView console, select the main menu option in the upper left, and choose Enclosures.

3. Once on the Enclosure screen, select the enclosure that has had the IP address changed. The status of the enclosure will be red.

4. From the Enclosure's action menu, select Refresh.

5. When the refresh process begins, it will detect that it can't communicate with the Onboard Administrator and will prompt the user for the new IP address.

6. After the refresh the enclosure should show a green status.

Adding a New Enclosure

1. Select the main menu option in the upper left, and choose Enclosures.
2. **Once on the Enclosure screen, select the +Add enclosure button.**

3. **Provide the IP address or FQDN of the Enclosure, with an Administrator account, select an Enclosure Group, and specify the Firmware Baseline to apply.** Selecting the Add or Add+ button, the enclosure will be discovered, and the OA firmware will be updated to the version within the SPP.

4. **During the Add Enclosure process, the Onboard Administrator firmware will be updated and the appliance will report the Onboard Administrator cannot be reached.** This is a normal message during the OA Firmware Update process. You can see this error condition by viewing the Alerts of the Enclosure. This alert will be automatically cleared after the Enclosure has been added.
5. After the Add Enclosure task has completed, the Enclosure State should read **Configured**.

Adding a Ethernet Network

1. Select the Top Level Menu, and select **Networks**.
2. Once on the Networks screen, click the +Create Network button on the far left.

3. In the new window, provide the Name, select Ethernet as the Type, provide the VLAN ID, and bandwidth settings. Smart Link will automatically be selected by default. Select Private Network if needed.

4. Click the Create button to create the new Ethernet Network and close the Create Network dialog box. You can also select the Create+ button to continue creating more Networks.

5. After the network has been created, it will be provisioned to all managed Virtual Connect Ethernet Interconnects. The new network(s) is an “Internal” network, until it is assigned to an Uplink Set either at the Logical Interconnect Group or
**Logical Interconnect.**

**Adding a Fibre Channel Network**

1. **Select the Top Level Menu, and select Networks.**

2. **Once on the Networks screen, click the +Create Network button on the far left.**

3. **In the new window, provide the Name, select Fibre Channel as the Network Type, select the correct Fabric Type, and modify Bandwidth allocation, Uplink Speed, Login Redistribution as needed.**
4. Click the Create button to create the new Fibre Channel Network and close the Create Network dialog box.

Adding an Ethernet Uplink to a Logical Interconnect

1. Select the Top Level Menu, and select Logical Interconnect.

2. Once on the Logical Interconnects screen, select the Edit option from the Actions menu.

3. In the new window, click the button Add Uplink Set.
4. **Enter a name for the Uplink Set, Select Ethernet as the Network Type.**

5. **Select the Add Networks button**

6. **Select the network that will added to the new Uplink Set, then click the Add button.**
7. **Select the Add uplink ports button.**

8. **Select the ports that will be used for the new uplink. Click the Add button.**

9. **Click the Create button to create the new Ethernet Uplink**
10. **Click the OK button to enable the new Ethernet Uplink**

   ![Diagram](image1.png)

   Adding a Fibre Channel Uplink
   
   1. **Select the Top Level Menu, and select Logical Interconnect Groups.**
      
      ![Menu screenshot](image2.png)

      2. **Once on the Logical Interconnects screen, select the Edit option from the Actions menu.**

      ![Logical Interconnects screen](image3.png)

      3. **In the new window, click the button Add Uplink Set.**

      ![Add Uplink Set button](image4.png)
4. Enter a name for the Uplink Set, Select *Fibre Channel* as the Network Type

5. Select the correct Fibre Channel network from the drop-down list Add Networks button
6. **Under the Uplink Ports section, select the interconnect module that will be used for the new network using the drop down menu.**

![Add Uplink Set](image)

6. **Using the checkboxes, select the ports that will be used**

![Add Uplink Set](image)
8. **Select the Create button.**

9. **Click the OK button to create the new Fibre Channel Uplink Set by saving the Logical Interconnect.**
Create Additional Storage Volume Templates

1. Navigate to Volume Templates from the Top Level Menu.

2. Click Create volume template button

3. In the Create Volume Template screen, provide the details specific to the template. Specify the Storage Pool (CPG), and volume parameters (size, provisioned type and sharing). Then click the Create or Create+ button.

4. (Optional) If the Storage administrator would like to enforce volumes to be created from Storage Volume Templates, the Require template for Volume Creation Global Policy needs to be set, which is in the Edit Settings option of the Actions menu.
5. Check the box to enable the option to configure the policy.

Create Additional Storage Volumes

1. Navigate to Volumes from the Top Level Menu.

2. Click the Create volume button.

3. In the Create Volume screen, the options can be restricted if the Storage Administrator has forced Volume Creation to be provisioned from a Storage Volume Template. The following screenshot shows this restricted behavior.
Otherwise, the administrator creating the Volume and choose whether it will be associated with an available Storage Volume Template.

Provide the volume details, Storage Volume Template, capacity, provisioning type (if available.), and sharing method.

4. Click Create or Create+ button to create the volume.
Create Storage Snapshots

1. **Navigate to Volumes from the Top Level Menu.**

2. **From the left hand menu, select the desired volume that will have the snapshot taken.**

3. **On the right hand side, select Create Snapshot.**
4. In the Create Snapshot window, enter a description for the snapshot

A. (Optional) You will notice that a Name is already created using the variables of [Volume Name]_[Timestamp]. This can be changed by selecting inside of the Name dialog box and editing the data within.

5. Click Create to crate the snapshot
Viewing Storage Snapshots

1. Navigate to **Volumes** from the Top Level Menu.

2. From the left hand menu, select a volume to view the snapshots associated with that volume.

3. Open the General menu for the volume.
4. Select Snapshots from the menu.

5. Examine the details of the snapshots available

Deleting Storage Snapshots
1. Navigate to Volumes from the Top Level Menu.

2. From the left hand menu, select a volume to view the snapshots associated with that volume.
3. **Open the General menu for the volume**

4. **Select Snapshots from the menu.**

5. **Click the X next to the snapshot information to delete the snapshot**
6. **Select Yes, delete on the delete snapshot confirmation dialog**

![Image of delete snapshot dialog]

Deleting this snapshot will result in loss of all data on the snapshot.

Delete Snapshot?

- Yes, delete
- Cancel

7. **Verify that the snapshot has been removed from the volume**

![Image of volume with no snapshots]

Reverting to previous Storage Snapshots

1. **Navigate to Volumes from the Top Level Menu.**

![Image of HP OneView interface]

2. **From the left hand menu, select a volume to view the snapshots associated with that volume.**
3. Open the General menu for the volume

4. Select Snapshots from the menu.

5. Select the Revert hyperlink
6. Select Yes, revert on the Revert Snapshot confirmation dialog

7. The revert process will begin

8. Verify that the revert process completed successfully

Removing Networks from a Server Profile

In this Use Case you will remove a network from the HPE OneView and modify an existing Logical Interconnect Group.

Removing Network(s)

1. Using the Top Menu, select Server Profiles
2. Select the server profile you want to edit from the menu on the left

3. Select the Actions menu, then select Edit.

4. Remove the desired network from the server profile by selecting the X next to the network settings

5. Click the OK button to save the changes to the Server Profile.
Deleting a volume from HPE OneView

In this Use Case you will remove a volume from the HPE OneView.

1. Using the Top Menu, select Volumes

2. Select the volume to be deleted from the menu on the left

3. Select the Actions menu, then select Delete.

4. Select the desired type of volume deletion
Adding a New Blade to an Enclosure and Discovering New Server Hardware Types

As it was discussed in the first chapter, Deploying Your Appliance, Server Hardware Types are automatically discovered and defined by HPE OneView when a new server is added to the environment. This section outlines how to add a new server and the expected behavior. When a new blade is inserted into an HPE OneView managed enclosure, the OA will register a Blade Insertion SNMP event, which will be forward to HPE OneView. A discovery task will be created, which HPE OneView will attempt to configure the iLO for management.

1. Insert new blade into the enclosure
2. Select the Top Level Menu, and navigate to Enclosures in the console
3. On the left hand side select the desired enclosure

5. Click the Yes, Delete button remove the volume.
4. Using the drop-down menu, change to the Activity view of the enclosure to see the Blade Inserted event.

5. View the event
6. After the blade is inserted and discovered, from the Top Level menu select Server Hardware Types. If the new server is a new model, or has different connectivity layout (i.e. different FlexLOM or mezzanine options installed) than other managed servers, the new hardware type would now be listed.

Adding New Racks Based on Location Discovery Services

Racks are automatically created based on LDS. HPE ProLiant Servers or HPE BladeSystem enclosures mounted in HPE Intelligent Series Racks are automatically grouped in racks in the proper positions. The initial rack names are provided by the Rack Serial Number.

Adding Enclosures to Racks without Location Discovery Services

If no LDS is present, HPE BladeSystem enclosures automatically create an enclosing rack in HPE CI Mgmt. during the discovery process, based upon the name configured in the HPE BladeSystem Onboard Administrator.

- Use of BladeSystem management stacking link cables up/down for all enclosures in a rack is encouraged – it causes a single rack to be created per set of enclosures and the enclosures will be in the proper order in the rack. Specific slot positioning must be provided by adjusting the positioning in the UI or via REST
- If BladeSystem management stacking links are not used – one rack is created per enclosure. Manually change the HPE OneView configuration to put the enclosures into a single rack and delete any duplicated racks.

1. To view the rack an enclosure is located in, select the Enclosures from the main menu.
2. Select the correct enclosure from the navigation pane on the left

3. The information in the General section of the details pane allows you to see the rack automatically created to house the enclosure.

**Adding Rack Servers (DL's) to Racks without Location Discovery Services**

If LDS is not present, racks are not automatically created for DL servers. DL servers may be added to racks previously created via enclosure discovery or racks may be created manually and have servers added to them. For either option, begin by navigating to the Racks screen.

1. Using the Top Menu, select Racks.
2. On the Racks screen, to create a rack either select **Add Rack** button in the left panel or **Add** from the Actions pull-down on the right of the screen.

3. Once on the Add Rack screen, the screen details is segmented into the General and Layout sections. On the General pane, enter the requested information for the rack hardware.

4. The Layout panel consists of a visual representation of the rack and its slots, a list of available devices and a search box to find the desire systems and enclosures. From this panel, you can add, remove, and rearrange devices within the rack.
and edit the device details. To place a device, drag and drop it in the desired location.

5. Once the rack has been configured, select Add to complete the setup or Add + if additional racks need to be created.

Adding a Service Pack for ProLiant (SPP) Bundle

1. Select the Top Level Menu, and navigate to Firmware Bundles in the console

2. Select Add Firmware Bundle button.

3. In the Add Firmware Bundle screen, click on the Choose File button, and select the SPP ISO to upload.
4. Once selected, click the Start Upload button. Firmware bundles (SPPs) can also be drag-and dropped from Windows environments. You can navigate away from the Firmware Bundle screen to other areas within the UI, as the upload process is a background process within the browser.

**Note**
Do not close the browser window until the Firmware Upload task has completed. You can click on the Close button in the Add Firmware Bundle dialog as the upload is a background thread within the web application.

5. After the SPP has been uploaded, you can examine the contents
Create Custom SPP Firmware Baseline using HPESUM 7.X

Creating a custom baseline is important for situations where a supplement patch/update has been released, but not part of the mainstream SPP image release. The following steps outline the process of using HPESUM 7 to create a custom baseline to then upload to the appliance.

**Table 12. Custom SPP Checklist**

<table>
<thead>
<tr>
<th>Task</th>
<th>Completed? (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downloaded current Full ISO Image Service Pack for ProLiant</td>
<td></td>
</tr>
<tr>
<td>from <a href="http://HPE.com/go/spp/download">http://HPE.com/go/spp/download</a></td>
<td></td>
</tr>
<tr>
<td>Extracted ISO contents and launched <code>launch_HPEsum.cmd</code> or</td>
<td></td>
</tr>
<tr>
<td><code>launch_HPEsum.sh</code> from root directory</td>
<td></td>
</tr>
<tr>
<td>Download either Supplemental Update ISO or individual Smart</td>
<td></td>
</tr>
<tr>
<td>Component(^\text{12}) and extracted to directory</td>
<td></td>
</tr>
<tr>
<td>Added Supplemental Update or Smart Component directory to Baseline Library</td>
<td></td>
</tr>
</tbody>
</table>

1. Launch HPE SUM, and navigate to the Baseline Library from the top level menu.

\(^\text{12}\) Must be the Linux 64-bit SCEXE Smart Component
2. Select the appropriate Service Pack for ProLiant version (not a Maintenance Supplement Bundle), then select Create Custom from the Actions menu.

3. Provide a Description of the new baseline. The Version field will default to today’s date, which you can change to another date, and provide your own Version Identifier. The ISO must be bootable, as this is the only way HPESUM is embedded within the Baseline ISO, which is required by HPE OneView. Specify the Output Location, which must be an empty directory.
4. Next, in Step 1 of the Create Custom Baseline wizard, select the baselines that you will use to select the various components from.

5. In Step 2 of the Create Custom Baseline wizard, use the filters if you wish to reduce the size of the Custom Generated SPP to include only Firmware components and only those that are applicable to what you have in your inventory. For example, change the Component Type to only Firmware, and set the Operating System to RHEL 6.
6. Then select OA, VC, iLO, NIC, FC HBA/CNA, System ROM, Array Controller and Hard Drive in the Non server devices Advanced Filter and select only BL460 Gen8 platform under the Server Type filter.

**Note**

When creating a Custom SPP/Baseline for HPE OneView, you must include the OA, Virtual Connect, iLO3 and iLO4 firmware at a minimum, otherwise the HPE OneView appliance will reject the SPP ISO.
Note
The Advanced Filters view does not currently allow you to select individual components to directly add. For instance, the iLO3 firmware is required as part of any custom baseline for HPE OneView. As two potential workarounds, you can either:

- Directly add the iLO3 Smart Component (iLO3 version 1.80 Linux Smart Component filename is CP022551.scexe)
- Or, select any Generation 7 server platform when choosing the Server Type Advanced Filter.

7. In Step 3, click the Apply Filters button, and review the components that are displayed. Unselect those you do not want, or that are older versions, then click the Create ISO button.

8. Once the ISO has been created, close the dialog, and browse to the ISO file with your OS file explorer tool.
9. Navigate using a supported web browser to your HPE OneView appliance, and go to the Firmware Bundles section in the UI.

10. Next, click the Add Firmware Bundle button.

11. Either browse to the custom baseline ISO, or drag and drop the ISO into the browser window, then select Start Upload button. Once the upload begins, do not close your browser window to allow the upload to complete.

12. After the Baseline has been uploaded, you can inspect the contents.
13. The baseline is now available to be assigned to Enclosures, Server Profiles or Logical Interconnects.

Updating the Firmware Baseline for Servers deployed with Server Profile Templates

Server Profiles created from Templates in OneView are monitored for compliance with the desired Template. When inconsistencies are detected the profile is flagged as no longer being compliant with the template.

If a change, the firmware baseline for example, were made then the user can update a single profile or all via the server profile template. This will bring the selected templates back in compliance with the Server Profile Template.

1. Ensure that the firmware bundle is uploaded to the HPE OneView appliance
2. Select the main menu option in the upper left, and choose Server Profile Templates.
3. From the left hand menu, select the server profile to be updated.

4. From the actions menu, select the Edit.

5. In the Firmware section of the Edit Profile page, select the Firmware baseline to be used for the Server Profile Template.
6. Select the method to deploy the firmware baseline update. If either of the options using the HPE Smart Update Tools is selected then the firmware or driver updates will be done while the systems are online. If the firmware only option is selected then the firmware will be updated offline using Intelligent Provisioning.

7. Click OK to apply the changes.
7. The server profile template will be updated with the new firmware baseline

8. Click the Server Profiles doughnut to view the server profiles using this template.
9. The server profiles created this template will now be shown as being inconsistent with the server profile template.

10. Select the server profiles within the server profile template to be updated with the new firmware baseline.

11. From the actions menu, select Update from Template
12. Select, Yes, Update when the Update From Template Dialog box appears

13. The selected server profiles will now be updated with the changes to the server profile template.

Upgrading the Firmware Baseline for Single Servers with Profiles Assigned

1. Ensure that the firmware bundle is uploaded to the HPE OneView appliance
2. Select the main menu option in the upper left, and choose Server Profiles.
3. Once on the Server Profiles screen, select the Edit from the actions menu.
4. In the General section of the Edit Profile page, select the Firmware baseline to be used for the Server Profile.

5. Select the method to deploy the firmware baseline update. If either of the options using the HPE Smart Update Tools is selected then the firmware or driver updates will be done while the systems are online. If the firmware only option is selected then the firmware will be updated offline using Intelligent Provisioning.
6. **Click OK to apply the changes.**

14. **The firmware update will begin using the method selected**

---

**Managing Multiple Firmware Images in the Same Enclosure**

Because HPE supports its SPP bundles for 12 months, it may be necessary to have different servers within the same enclosure on different SPP bundles. This enables a customer to update the infrastructure ahead of time and update the servers during their normal maintenance window.

1. **Select the Top Level Menu, and navigate to Firmware Bundles in the console**
2. Select Add Firmware Bundle button.

3. In the Add Firmware Bundle screen, click on the Choose File button, and select the SPP ISO to upload.

4. Once selected, click the Start Upload button. Firmware bundles (SPPs) can also be drag-and dropped from Windows environments. You can navigate away from the Firmware Bundle screen to other areas within the UI, as the upload process is a background process within the browser.

5. Select the Top Level Menu, and navigate to Enclosures in the console.

6. Select the correct enclosure from the navigation pane, then select Update Firmware from the actions menu.
7. On the Update firmware screen select the correct Firmware Baseline and select Enclosure to update only the enclosure firmware.

8. Click OK to begin the firmware update.
9. **Verify that the enclosure firmware update is complete**

10. **Select the Top Level Menu, and navigate to Logical Interconnect in the console**

11. **Select the Logical Interconnects for the enclosure from the navigation pane**

12. **Select Update Firmware from the actions menu.**

13. **On the Logical Interconnect Update firmware screen select the option to Update Firmware option then select the correct Firmware Baseline. Click OK to apply the firmware.**
14. **Verify that the Logical interconnect firmware update is complete.**

15. **Next, navigate to Server Profiles from the top level menu. Select the correct Server Profile from the navigation pane.**

16. **Verify the Server Power is Off, and select Edit from the actions menu.**
17. On the Edit Server Profile screen select the correct firmware baseline from the Firmware Baseline drop-down box to be used for this Server Profile. Click OK to apply the firmware.

18. Verify that the firmware update on the Server Profile is complete

19. Verify firmware A is still on previous firmware

Deleting a Service Pack for ProLiant (SPP) Bundle

1. From the Top Level Menu, select Firmware Bundles
2. Select the firmware bundle to be removed.

3. From the actions menu select Remove.

4. From the Remove HPE Service Pack dialog box, select Remove Bundle.

5. Confirm that the firmware bundle was removed from the HPE OneView appliance.
Modifying Virtual ID Pools

HPE OneView has the ability to pool address ranges just like Virtual Connect Enterprise Manager does today. However, HPE OneView provides many more address ranges by using Locally Administered Addresses\(^\text{13}\), including Auto Generated pools that can greatly expand the pool capacity. By default, there are \(-1\) million ID's per MAC and WWN pools.

1. Select the main menu option in the upper left, and choose Settings.

\(^{13}\) [http://en.wikipedia.org/wiki/MAC_address](http://en.wikipedia.org/wiki/MAC_address), review Address Details section.
2. **On the Settings window, you will see a section called Addresses and Identifier.**

![Software Settings Window](image)

3. **When you click on the heading, you will see which pools have been automatically created, and the current allocation. You can select the Add auto-generate button to create a new range of addresses for the pool, or add a custom range.**

![MAC Address Settings](image)

---

**REST API**

REST (Representational State Transfer) is a web service format that uses basic Create, Read, Update and Delete (CRUD) operations that are performed on resources using HTTP POST, GET, PUT and DELETE. To learn more about general REST concepts, see:


HPE OneView has a resource-oriented architecture that provides a uniform REST interface. Every resource has one Uniform Resource Identifier (URI) and represents a physical device or logical construct, and may be manipulated using REST APIs. To view the list of resources, see [HPE Composable Infrastructure Controller REST API Reference](https://[ip]/help/cic/en/content/images/api/) located in the Online Help of the appliance.

**Resource operations**

Basic Create, Read, Update and Delete (CRUD) operations are performed on the appliance resources via the standard HTTP POST, GET, PUT and DELETE methods. RESTful interfaces are based on the World Wide Web standards, thus most modern web servers can support these operations without modification.
Restful APIs are stateless. The resource state is maintained by the resource manager and is reported as the resource representation. Any application state must be maintained by the client and it may manipulate the resource locally, but until a PUT or POST is made, the resource as known by the resource manager is not changed.

Table 13. REST HTTP Operations

<table>
<thead>
<tr>
<th>Operation</th>
<th>HTTP Verb</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create</td>
<td>POST URI &lt;Payload = Resource data&gt;</td>
<td>New resources are created using the POST operation and including relevant data in the payload. On Success the Resource URI is returned.</td>
</tr>
<tr>
<td>Read</td>
<td>GET URI</td>
<td>Returns the requested resource representation(s)</td>
</tr>
<tr>
<td>Update</td>
<td>PUT URI &lt;Payload = Update data&gt;</td>
<td>Update an existing resource using the update data.</td>
</tr>
<tr>
<td>Delete</td>
<td>DELETE URI</td>
<td>Delete the addressed resource</td>
</tr>
</tbody>
</table>

URI format
All the appliance URIs point to resources and the client does not need to modify or create URIs. The URI for specific resource is static and follows this format: https://{appl}/rest/{resource name}. The three parts are described below.

Table 14. URI Format

<table>
<thead>
<tr>
<th>URI Part</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>https://{appl}</td>
<td>The appliance address.</td>
</tr>
<tr>
<td>/rest</td>
<td>Type of URI.</td>
</tr>
<tr>
<td>/{resource name}</td>
<td>Name of the appliance resource such as server-profile.</td>
</tr>
</tbody>
</table>

Data transfer format
The appliance resources support JSON (JavaScript Object Notation) as the standard for exchanging data using a REST API. If JSON is not specified in the REST API call, then the default is JSON.
To learn more about JSON, go to www.json.org.

Accessing the ReST API with PowerShell
The HPE OneView PowerShell Library is available for download at http://hewlettpackard.github.io/POSH-HPEOneView/, both the source code and a pre-built installer. The library requires at least the Windows Management Framework 3.0 (aka PowerShell 3.0) to be installed, and the .Net 4.0 Client Framework. Windows Management Framework 4.0 (aka PowerShell 4.0) that ships with Windows 8.1/8.1 Update is supported. The HPE OneView POSH Library Installer will assist you with the installation of these two required components if not found on the system.

Please visit the HPE OneView Online Documentation page (https://github.com/HewlettPackard/POSH-HPEOneView/wiki), or use the get-help PowerShell cmdlet, for all available CMDLETS and the associated help.

Using PowerShell

Note
The following example assumes the HPE OneView POSH Library is installed with the available install package.

The HPE OneView PowerShell library is a self-contained module that you first need to import, or add to your PowerShell Session Profile. After the module has been successfully imported, you must first execute Connect-HPEOVmgmt in order to authenticate to the appliance. You can then execute other cmdlets to perform the desired action.

1. Execute Import-Module HPEOneView

   A. Example:

   ```powershell
   PS C:\Users\User> Import-Module HPEOneView.1.20
   Welcome to the HPE OneView POSH Library, v1.20.0.0009
   ```
To get a list of available CMDLETs in this library, type: `Get-Help HPEov`
To get help for a specific command, type: `get-help [verb]-HPEOV[noun]`
To get extended help for a specific command, type: `get-help [verb]-HPEOV[noun] -full`
To update the offline help for this module, type: `Update-Help -module HPEOneView.120`

Module sample scripts are located at: `C:\Users\User\WindowsPowerShell\Modules\HPEOneView.120\Samples`

If you need further help, please consult one of the following:
• Get-Help about_HPEOneView.120
• Online documentation at [https://github.com/HewlettPackard/POSH-HPEOneView/wiki](https://github.com/HewlettPackard/POSH-HPEOneView/wiki)
• Online Issues Tracker at [https://github.com/HewlettPackard/POSH-HPEOneView/issues](https://github.com/HewlettPackard/POSH-HPEOneView/issues)

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2. Execute the Connect-HPEOVmgmt CMDLET
   
   A. Example
   ```powershell
   [HPEONEVIEW]: [Not Connected] PS> Connect-HPEOVmgmt -appliance appliance.example.com –user Administrator –password password
   [HPEONEVIEW]: administrator@appliance.example.com PS>
   ```

3. Once you have authenticated to the appliance, you can execute different CMDLETs provided by the library
   
   A. Example
   ```powershell
   [HPEONEVIEW]: administrator@appliance.example.com PS> New-HPEOVNetwork –Type "Ethernet" –Name "Blue" –VLANID 100
   Creating Blue Ethernet Network
   ```

Accessing the ReST API with Python
Python comes with a few libraries that can complete REST requests like httplib2 and urllib2, these libraries are rather difficult to use and require a lengthy learning curve. Another python library called "Requests" has solved the learning curve, cleaned up REST requests and made them very easy to use. For a full comparison take a look at [http://isbullsh.it/2012/06/Rest-api-in-python/](http://isbullsh.it/2012/06/Rest-api-in-python/)

This overview of using Python to create REST requests will feature the Requests library.

The full HPE OneView Python Library can be found at [https://github.com/HewlettPackard/python-HPEOneView](https://github.com/HewlettPackard/python-HPEOneView).

Requests

_How to get Requests_
To get requests follow the steps on the Requests website here: [http://docs.python-requests.org/en/latest/user/install/#install](http://docs.python-requests.org/en/latest/user/install/#install)

The best method would be to use pip (the python package manager) to install requests:

```bash
> pip install requests
```

Creating and executing a request
To execute a request is very simple. First look at the following code:

```python
url = '/rest/login-sessions'
method = 'POST'
data = {
    'userName': username,
    'password': password,
}
headers = {
    'Accept': 'application/json',
    'Content-Type': 'application/json',
    'Accept-Language': 'en_US',
}
url = 'https://' + hostname + uri
response = requests.request(method, url, data=json.dumps(data), headers=headers, verify=False)
```
A request is made up for 4 items:

- **Method** - HTTP Method (e.g. POST, PUT, GET, etc.)
- **URL** - URL for the new Request object.
- **Body (or data)** - Any data we want to pass in
- **Headers** - HTTP headers, including request type and authentication key

**Example: Logging In**

Below is a fully working example of using Python + Requests to login to an appliance and collect the session ID:

```python
#!/usr/bin/env python
# © Copyright 2013 Hewlett-Packard Development Company, L.P.
import json
import requests

def main(hostname, username, password):
    uri = '/rest/login-sessions'
    method = 'POST'
    data = {
        'userName': username,
        'password': password,
    }
    headers = {
        'Accept': 'application/json',
        'Content-Type': 'application/json',
        'Accept-Language': 'en_US',
    }
    url = 'https://' + hostname + uri
    response = requests.request(method, url, data=json.dumps(data), headers=headers, verify=False)
    if response.status_code == 200:
        print(response.json()['sessionID'])
    else:
        print(response.json()['errorCode'] + ': ' + response.json()['message'])

if __name__ == '__main__':
    hostname = 'host.domain.com'
    username = 'administrator'
    password = 'password'
    main(hostname, username, password)
```

**Creating a Support Dump**

As with any product, occasionally there will be a situation that will require you to engage support. HPE OneView provides a Support Dump option to help with this process. There are two Support Dump options, and each contain different information: the Appliance and Logical Interconnects.
1. Select the main menu option in the upper left, and choose **Settings**.

2. Select the **Actions** menu option, and select **Create Support Dump**. It may take a minute or two to collect the Support Dump logs. The Support Dump may also be very large. This Support Dump collects information about the Appliance.

3. Save the .SDMP file.

4. Navigate to **Logical Interconnects** from the Top Level Menu.
5. Select *Create Support Dump* from the *Actions* menu. This will collect support log files from the Virtual Connect modules.

6. Save the .SDMP file.

7. Contact your HPE Support Representative and provide the information collected above.
Appendix A: Sample HPEN 5900CP FCF Switch Configuration

In this appendix, you will find a sample HP 5900CP switch configuration setup as an FCoE FCF.

# version 7.1.045, Release 2307
# sysname HPEN5900CP_FCF1
# irf mac-address persistent timer
# irf auto-update enable
undo irf link-delay
# irf member 1 priority 1
# lldp global enable
#
# system-working-mode advance
# password-recovery enable
#
fcoe-mode fcf
#
# vsan 1
#
# vsan 100
#
# vsan 200
#
# vsan 300
#
# vsan 400
#
# vsan 500
zone default-zone permit
#
# vsan 600
#
# vlan 1
#
# vlan 100
fcoe enable vsan 100
#
# vlan 200
fcoe enable vsan 200
#
# vlan 300
fcoe enable vsan 300
#
# vlan 400
fcoe enable vsan 400
#
# vlan 500
fcoe enable vsan 500
#
# vlan 600
fcoe enable vsan 600
#
# qos map-table dot1p-lp
import 0 export 0
import 2 export 0
import 3 export 1
import 4 export 0
import 5 export 0
import 6 export 0
import 7 export 0
#
traffic classifier DCBX operator or
if-match acl 4000
#
traffic behavior DCBX
remark dot1p 3
#
qos policy DCBX
classifier DCBX behavior DCBX mode dcbx
#
stp global enable
#
interface NULL0
#
interface FortyGigE1/0/49
port link-mode bridge
#
interface FortyGigE1/0/50
port link-mode bridge
#
interface FortyGigE1/0/51
port link-mode bridge
#
interface FortyGigE1/0/52
port link-mode bridge
#
interface M-GigabitEthernet0/0/0
ip address 16.71.148.39 255.255.252.0
#
interface Ten-GigabitEthernet1/0/9
port link-mode bridge
description To vSAN100 Avon FCoE
port link-type trunk
port trunk permit vlan 1 100
priority-flow-control auto
priority-flow-control no-drop dot1p 3
lldp tlv-enable dot1-tlv dcbx
qos trust dot1p
qos wrr be group 1 byte-count 15
qos wrr af1 group 1 byte-count 15
qos wrr af2 group sp
qos wrr af3 group sp
qos wrr af4 group sp
qos wrr cs6 group sp
qos wrr cs7 group sp
qos apply policy DCBX outbound
#
interface Ten-GigabitEthernet1/0/10
port link-mode bridge
description To vSAN100 Avon FCoE
port link-type trunk
port trunk permit vlan 1 100
priority-flow-control auto
priority-flow-control no-drop dot1p 3
lldp tlv-enable dot1-tlv dcbx
qos trust dot1p
qos wrr be group 1 byte-count 15
qos wrr af1 group 1 byte-count 15
qos wrr af2 group sp
qos wrr af3 group sp
qos wrr af4 group sp
qos wrr ef group sp
qos wrr cs6 group sp
qos wrr cs7 group sp
qos apply policy DCBX outbound
#
interface Ten-GigabitEthernet1/0/11
port link-mode bridge
description To vSAN300 Avon FCoE
port link-type trunk
port trunk permit vlan 1 300
priority-flow-control auto
priority-flow-control no-drop dot1p 3
lldp tlv-enable dot1-tlv dcbx
qos trust dot1p
qos wrr be group 1 byte-count 15
qos wrr af1 group 1 byte-count 15
qos wrr af2 group sp
qos wrr af3 group sp
qos wrr af4 group sp
qos wrr ef group sp
qos wrr cs6 group sp
qos wrr cs7 group sp
qos apply policy DCBX outbound
#
interface Ten-GigabitEthernet1/0/12
port link-mode bridge
description To vSAN300 Avon FCoE
port link-type trunk
port trunk permit vlan 1 300
priority-flow-control auto
priority-flow-control no-drop dot1p 3
lldp tlv-enable dot1-tlv dcbx
qos trust dot1p
qos wrr be group 1 byte-count 15
qos wrr af1 group 1 byte-count 15
qos wrr af2 group sp
qos wrr af3 group sp
qos wrr af4 group sp
qos wrr ef group sp
qos wrr cs6 group sp
qos wrr cs7 group sp
qos apply policy DCBX outbound
#
interface Ten-GigabitEthernet1/0/45
port link-mode bridge
#
interface Ten-GigabitEthernet1/0/46
port link-mode bridge
#
interface Ten-GigabitEthernet1/0/47
port link-mode bridge
#
interface Ten-GigabitEthernet1/0/48
port link-mode bridge
#
interface Fc1/0/1
#
interface Fc1/0/2
#
interface Fc1/0/3
#
interface Fc1/0/4
#
interface Fc1/0/5
#
interface Fc1/0/6
#
interface Fc1/0/7
#
interface Fc1/0/8
#
interface Fc1/0/13
#
interface Fc1/0/14
#
interface Fc1/0/15
  port access vsan 100
#
interface Fc1/0/16
  port access vsan 200
#
interface Fc1/0/17
#
interface Fc1/0/18
#
interface Fc1/0/19
#
interface Fc1/0/20
#
interface Fc1/0/21
#
interface Fc1/0/22
#
interface Fc1/0/23
#
interface Fc1/0/24
#
interface Fc1/0/25
#
interface Fc1/0/26
#
interface Fc1/0/27
#
interface Fc1/0/28
#
interface Fc1/0/29
  port access vsan 200
#
interface Fc1/0/30
  port access vsan 200
#
interface Fc1/0/31
  port access vsan 100
#
interface Fc1/0/32
  port access vsan 100
#
interface Fc1/0/33
#
interface Fc1/0/34
#
interface Fc1/0/35
#
interface Fc1/0/36
# interface Fc1/0/37
    port access vsan 300
# interface Fc1/0/38
# interface Fc1/0/39
    port access vsan 500
# interface Fc1/0/40
    port access vsan 600
# interface Fc1/0/41
# interface Fc1/0/42
# interface Fc1/0/43
# interface Fc1/0/44
# interface Vfc9
    port trunk vsan 100
    bind interface Ten-GigabitEthernet1/0/9
# interface Vfc10
    port trunk vsan 100
    bind interface Ten-GigabitEthernet1/0/10
# interface Vfc11
    port trunk vsan 300
    bind interface Ten-GigabitEthernet1/0/11
# interface Vfc12
    port trunk vsan 300
    bind interface Ten-GigabitEthernet1/0/12
#
    scheduler logfile size 16
#
    line class aux
    user-role network-admin
#
    line class vty
    user-role network-operator
#
    line aux 0
    user-role network-admin
#
    line vty 0 15
    authentication-mode scheme
    user-role network-admin
    user-role network-operator
    idle-timeout 0 0
#
    line vty 16 63
    user-role network-operator
#
    ip route-static 0.0.0.0 0 16.71.148.1
#
    snmp-agent
    snmp-agent local-engineid 800063A2807848593E27C600000001
    snmp-agent log all
snmp-agent sys-info contact Gary
snmp-agent sys-info location Gary's 5900 in Fort Collins
snmp-agent sys-info version v3
snmp-agent group v3 AutHPEnvr privacy write-view Viewdefault
snmp-agent group v3 admin write-view All2View
snmp-agent mib-view included All2View iso
snmp-agent mib-view included AllView snmp
snmp-agent usm-user v3 admin admin
snmp-agent usm-user v3 user2 AutHPEnvr cipher authentication-mode sha
$53$Ab$60$Vf$Qq$C$4$W$O$d$B$H$u$C$8$F$H$6$F$X$3$Y$M$= privacy-mode aes128
$53$Py$Z$H$a$O$3$T$b$x$G$y$P$8$Z$T$c$u$u$Q$6$V$R$y$m$T$x$m$d$B$Q$S$0$n$3$O$L$A$=

# ssh server enable
#
ntp-service source M-GigabitEthernet0/0/0
ntp-service unicast-server 16.110.135.123
#
# acl number 4000 name DCBX
rule 0 permit type 8906 ffff
rule 5 permit type 8914 ffff
#
# user-profile gary
#
# radius scheme system
user-name-format without-domain
#
# domain system
#
# domain default enable system
#
# role name level-0
description Predefined level-0 role
#
# role name level-1
description Predefined level-1 role
#
# role name level-2
description Predefined level-2 role
#
# role name level-3
description Predefined level-3 role
#
# role name level-4
description Predefined level-4 role
#
# role name level-5
description Predefined level-5 role
#
# role name level-6
description Predefined level-6 role
#
# role name level-7
description Predefined level-7 role
#
# role name level-8
description Predefined level-8 role
#
# role name level-9
description Predefined level-9 role
#
# role name level-10
description Predefined level-10 role
role name level-11
description Predefined level-11 role
#
role name level-12
description Predefined level-12 role
#
role name level-13
description Predefined level-13 role
#
role name level-14
description Predefined level-14 role
#
user-group system
#
local-user root class manage
password hash
$6$tax11rbZMQx6sAG8$3HM+5G1XjJp6GJvMk+3Hi83NFqDMSvCZSdulELTBe2C6QqoerEP4JoAYw9yqtC8o
yhUSDWXv+CQ==
service-type ftp
service-type ssh telnet http https
authorization-attribute user-role network-admin
authorization-attribute user-role network-operator
#
return
Additional Resources

HPE Enterprise Information Library - HPE OneView
- HPE OneView Online Help
- HPE OneView Release Notes
- HPE OneView Support Matrix
- HPE OneView Installation Guide
- HPE OneView User Guide
- HPE OneView REST API Reference
- HPE OneView Firmware Management White Paper
- Transitioning a Virtual Connect Configuration to HPE OneView

http://www.HPE.com/go/VirtualConnect
- Virtual Connect Command Line User Guide
- Virtual Connect Enterprise Manager User Guide
- Virtual Connect Enterprise Manager Command Line User Guide

http://www.HPE.com/go/oneviewcommunity
- HPE OneView Community Forums
- https://github.com/HewlettPackard/POSH-HPEOneView
- HPE OneView PowerShell Library
- https://github.com/HewlettPackard/python-HPEOneView
- HPE OneView Python Library

Learn more at
- HPE.com/info/HPEOneView