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Atrium

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HPE SYNERGY TECHNICAL WORKSHOP

intel

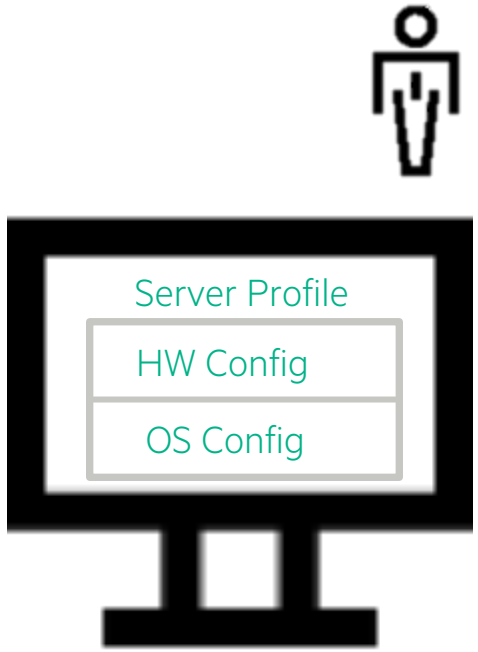
INTRODUCTION TO HPE SYNERGY

Software Defined Infrastructure

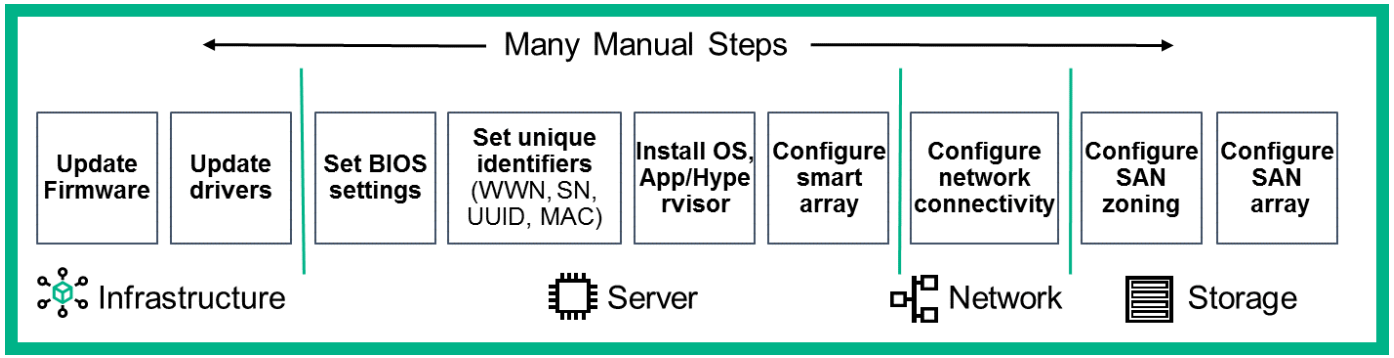
MANAGE PHYSICAL COMPUTE LIKE VIRTUAL MACHINES

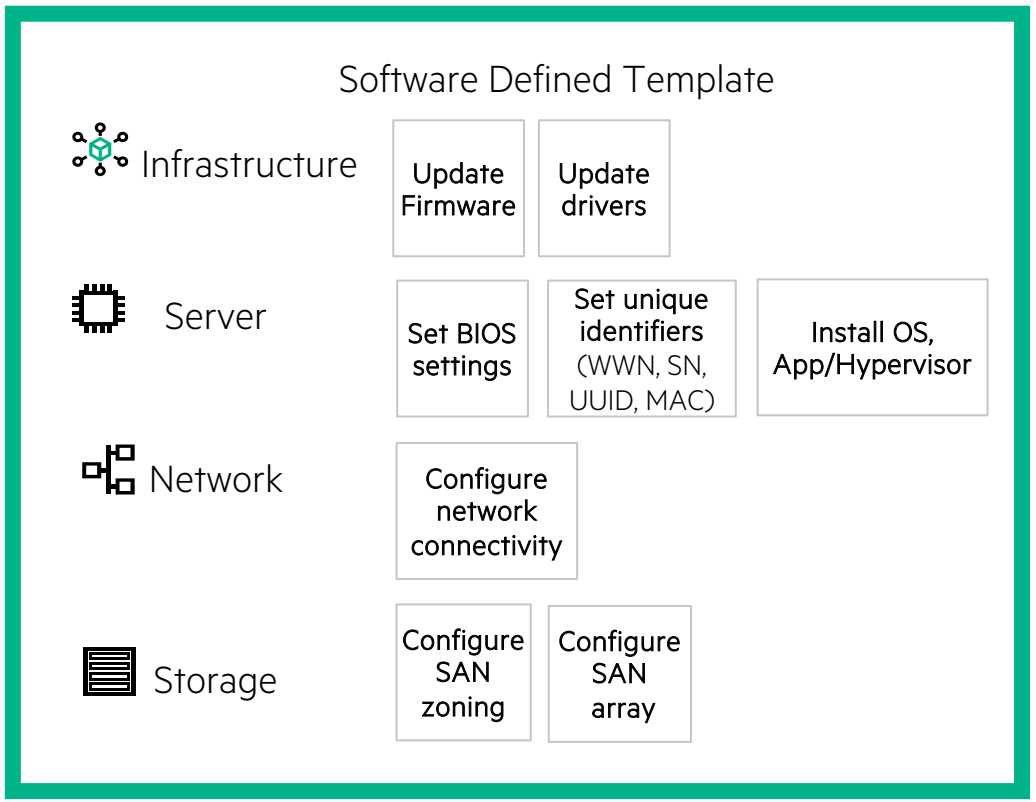
Enhanced server profiles manage stateless Compute Modules like VMs

Virtual Machine Operation	Physical Server Equivalent
– Create VM template with OS	– Create logical server profile with OS
– Deploy template to VM	– Activate server profile on compute module
– Update VM template	– Update server profile
– Hibernate VM template	– Deactivate server profile
– Move VM template	– Move server profile
– Delete VM template	– Delete server profile



DEPLOY INFRASTRUCTURE FASTER





- Repeatable, consistent deployment
- Totally automated
- From days to minutes
- No misconfiguration
- No manual intervention
- Totally programmable

TWO METHODS FOR AN ENHANCED USER EXPERIENCE

GUI

Is designed to enhance interaction among IT staff and match work practices in the data center

Is inspired by commonly used web technology

Builds functionality around an administrator's work practices

Works on desktops, tablets, and mobile devices

REST APIs

Involve the use of relatively basic C.R.U.D. operations applied to resources by using standardized HTTP POST, GET, PUT, PATCH, and DELETE commands

Enable you to manipulate resources consistently

Integrate with a broad ecosystem of management partners

BROAD ECOSYSTEM EASILY INTEGRATES YOUR PREFERRED TOOLSET

Through HPE OneView software-defined intelligence

Future proofing your datacenter

Reliable integration with the latest and most popular 3rd party and open source tools

TRANSFORM to software-defined

Improve productivity by simplifying IT Ops and Facilities

COMPOSE for any workload

Increase agility by automating infrastructure for DevOps

CONNECT from core to cloud

Gain intelligent insights by optimizing across clouds

HPE SYNERGY SOFTWARE RELEASES

Synergy Management Appliances

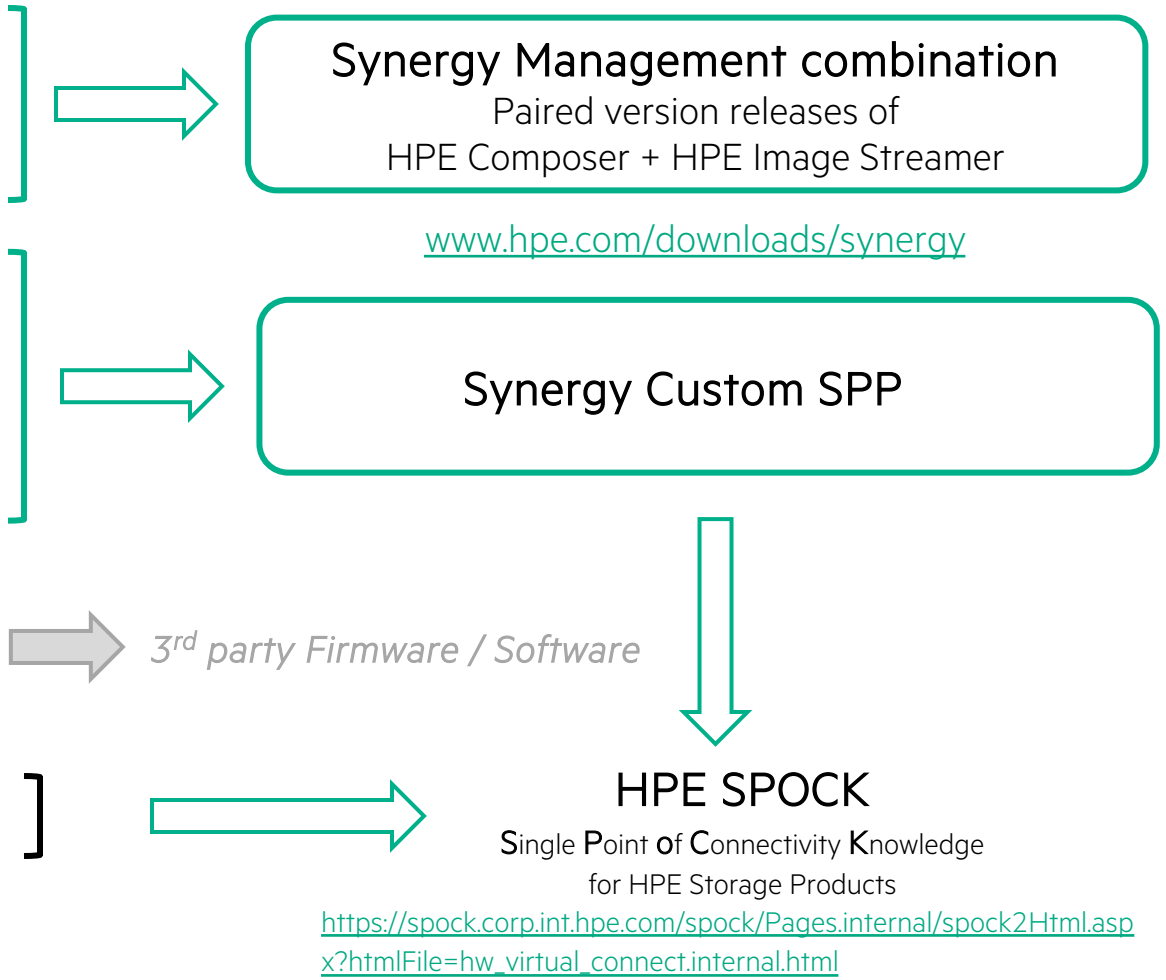
- HPE Synergy Composer (running HPE OneView)
- HPE Synergy Image Streamer

Synergy Frame Elements

- Synergy 12000 Frame
- Synergy Compute Modules (e.g. SY480, SY660)
- Interconnect Modules (e.g. Virtual Connect, adapters)
- Frame Link Modules

System elements that are *NOT INCLUDED:*

- 3rd party switches (e.g. Cisco)
- 3rd party storage (e.g. EMC, NetApp)
- Interconnects that are *NOT* managed by Synergy Composer (e.g. Brocade)



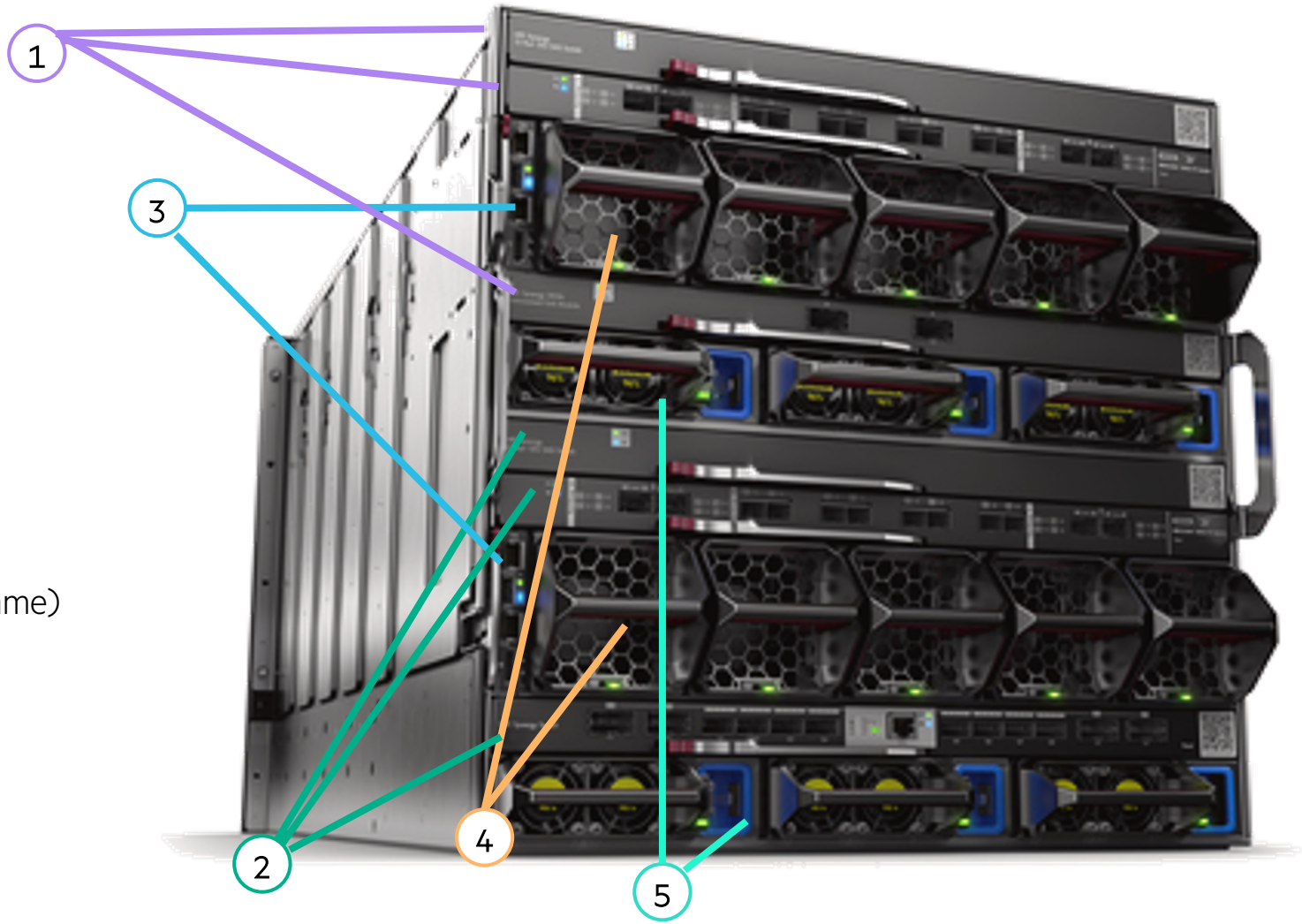
INTRODUCTION TO HPE SYNERGY

FLEXIBLE DESIGN FOR A SEAMLESS TRANSITION INTO THE DATACENTER

1. Sized to fit in existing infrastructure
2. Double Wide Storage module
3. Half Height Compute module
4. Full Height Compute module
5. Redundant Management Appliance Modules
6. Front Panel / HPE Synergy Console

FLEXIBLE DESIGN FOR A SEAMLESS TRANSITION INTO THE DATACENTER

1. Three primary Interconnect Modules (ICM)
2. Redundant Interconnect Modules
3. Redundant Frame Link Modules
4. Ten System Fan Modules included
5. Six Titanium 2650W Power Supplies (8.2kW Frame)



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SYNERGY MANAGEMENT APPLIANCES

Synergy Composer2

Enhanced Security
- Secure Boot

New Capability
- iLO Remote Access
- Synergy IPv6 support

Performance Improvements
- Faster CPU, More Memory, NVMe Storage
- Faster Operations
- More Responsive User Interface

the 'Brains' of Synergy

Synergy 4-port Frame Link Module

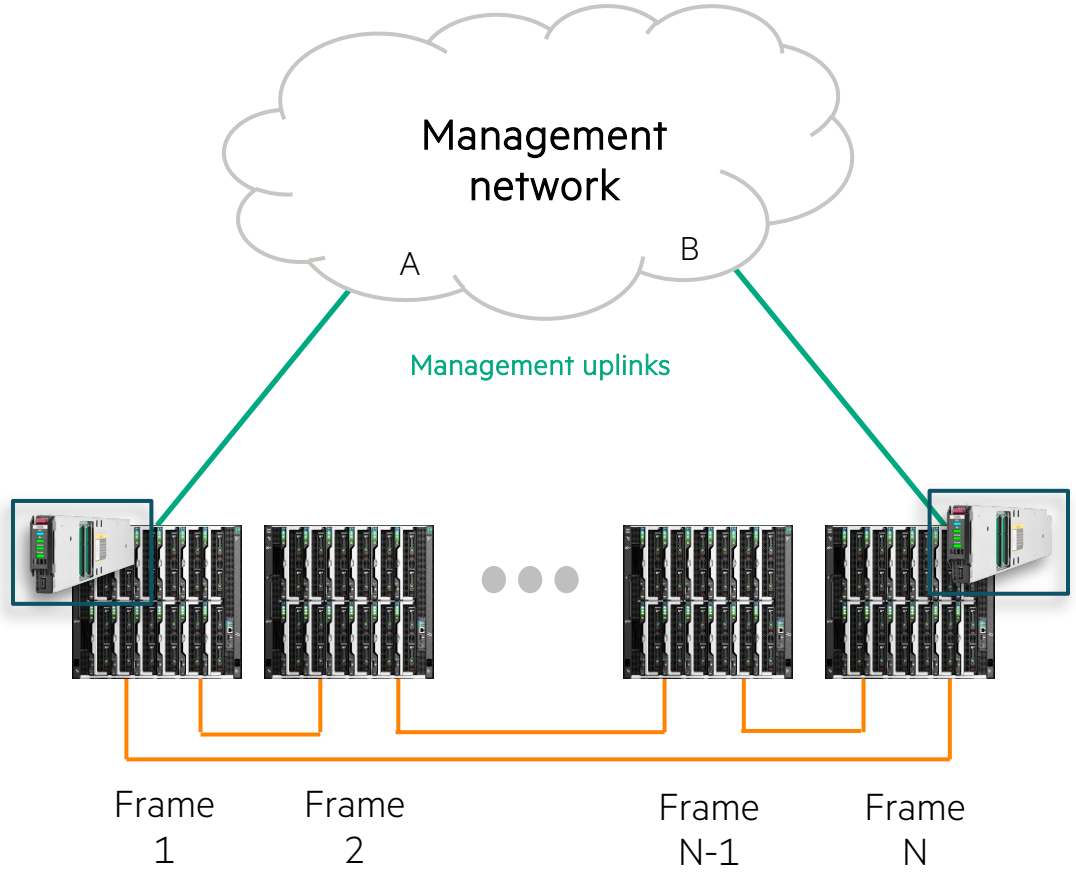
Enhanced Security
- Secure Start
- Hardware Root of Trust
- File Encryption (TPM)

Extending Synergy Connectivity
- SFP+ 10Gb ports for long distance connections
- New Appliance ports for future enhancements

the 'Gatekeeper' to Synergy

REDUCE DATA CENTER COMPLEXITY AND COST

- Simplifies cabling and reduces management deployment costs
- Increases management availability
- Reduces management bottlenecks and management configuration
- Automated discovery of all frames in the management ring
- Allows maximum flexibility for Image Streamer deployments



CONFIGURING HPE ONEVIEW FOR SYNERGY

The installation technician is responsible for simplifying deployment and scale with auto-assimilation of fluid resources.

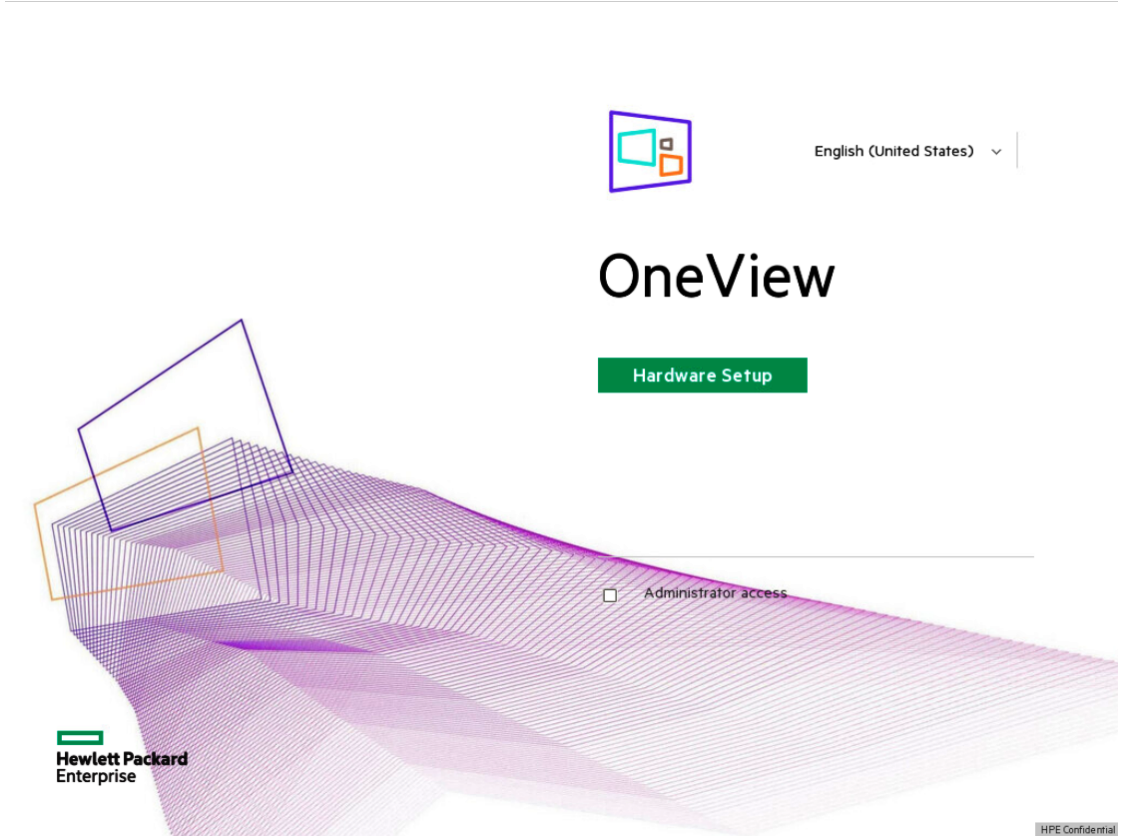
General steps involved with the installation technician's role:

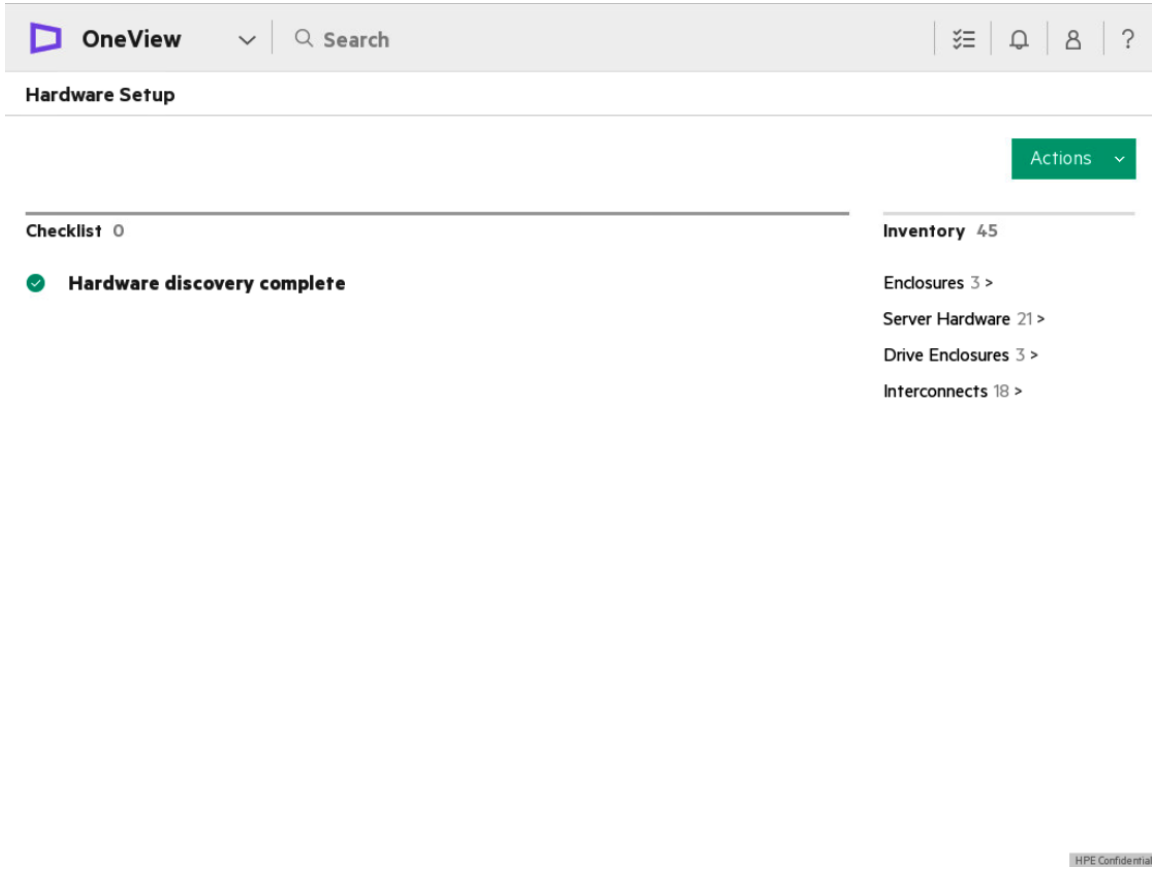
1. Build up the frame by inserting the compute, storage, fabric, and
   power options defined for the build.
2. Connect the fabric and management network cables.
3. Plug in the system.

Additional steps for the installation technician:

1. Access the Hardware Setup screen from the Synergy console.
2. Resolve any hardware setup errors.
3. Confirm the inventory.
4. Assign the Composer IP addresses.

INTEGRATED HARDWARE SETUP AND APPLIANCE CONFIGURATION



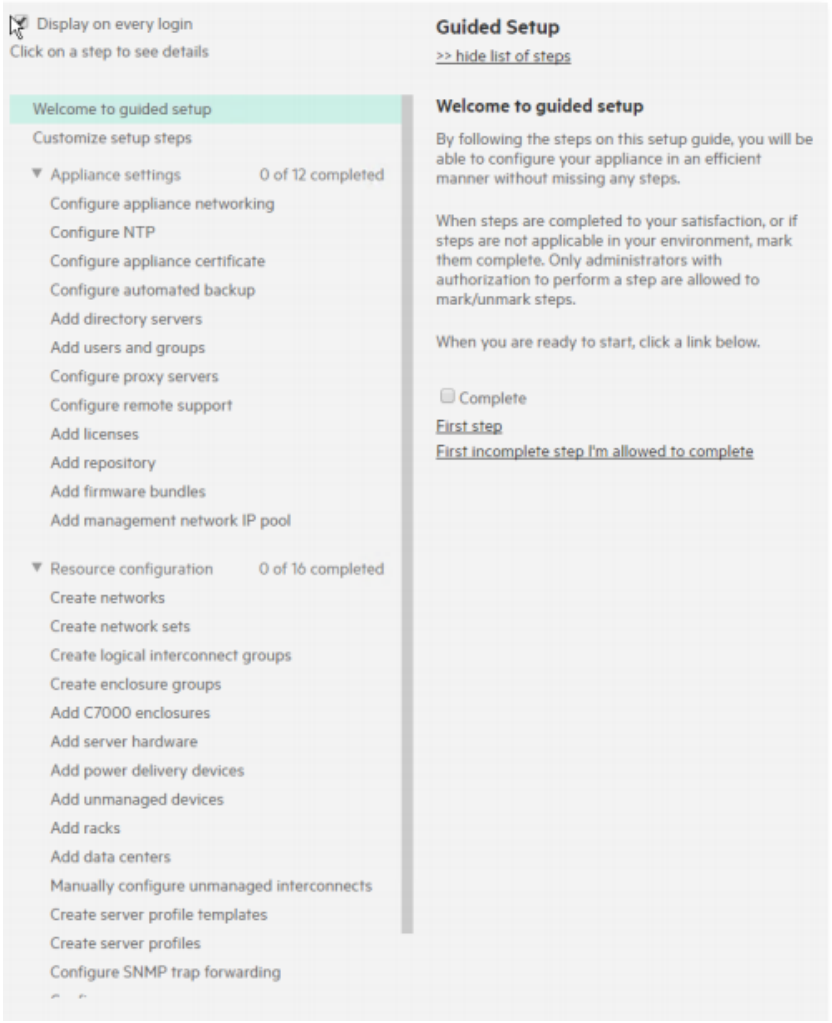


GUIDED SETUP

Provides step-by-step guidance for initial system setup along with a product tour of key concepts and features

Is accessed setup from the OneView dashboard

Enables you to configure the appliance efficiently without missing any steps



SOFTWARE-DEFINED ARCHITECTURE

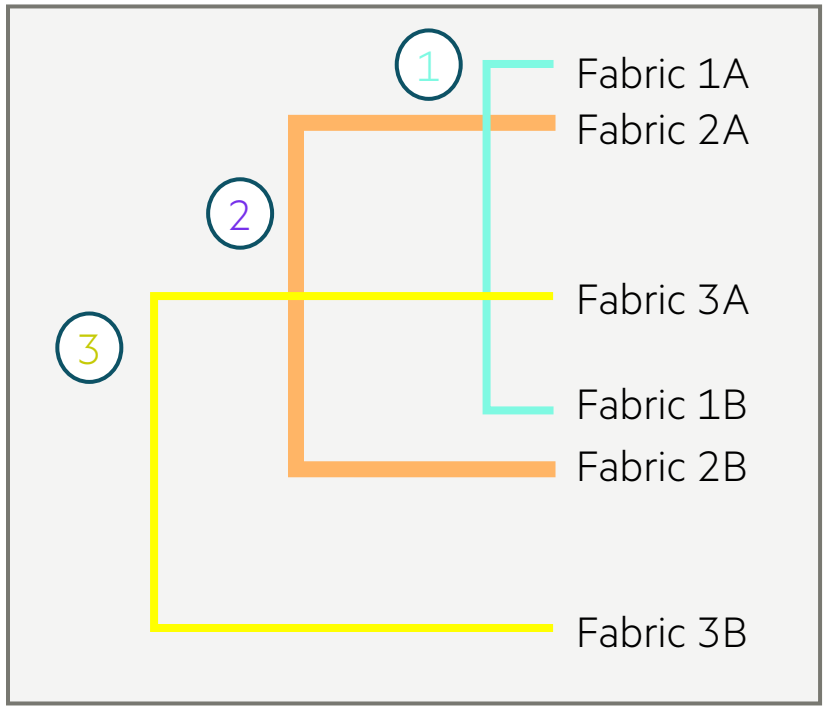
Abstraction of configuration from the hardware

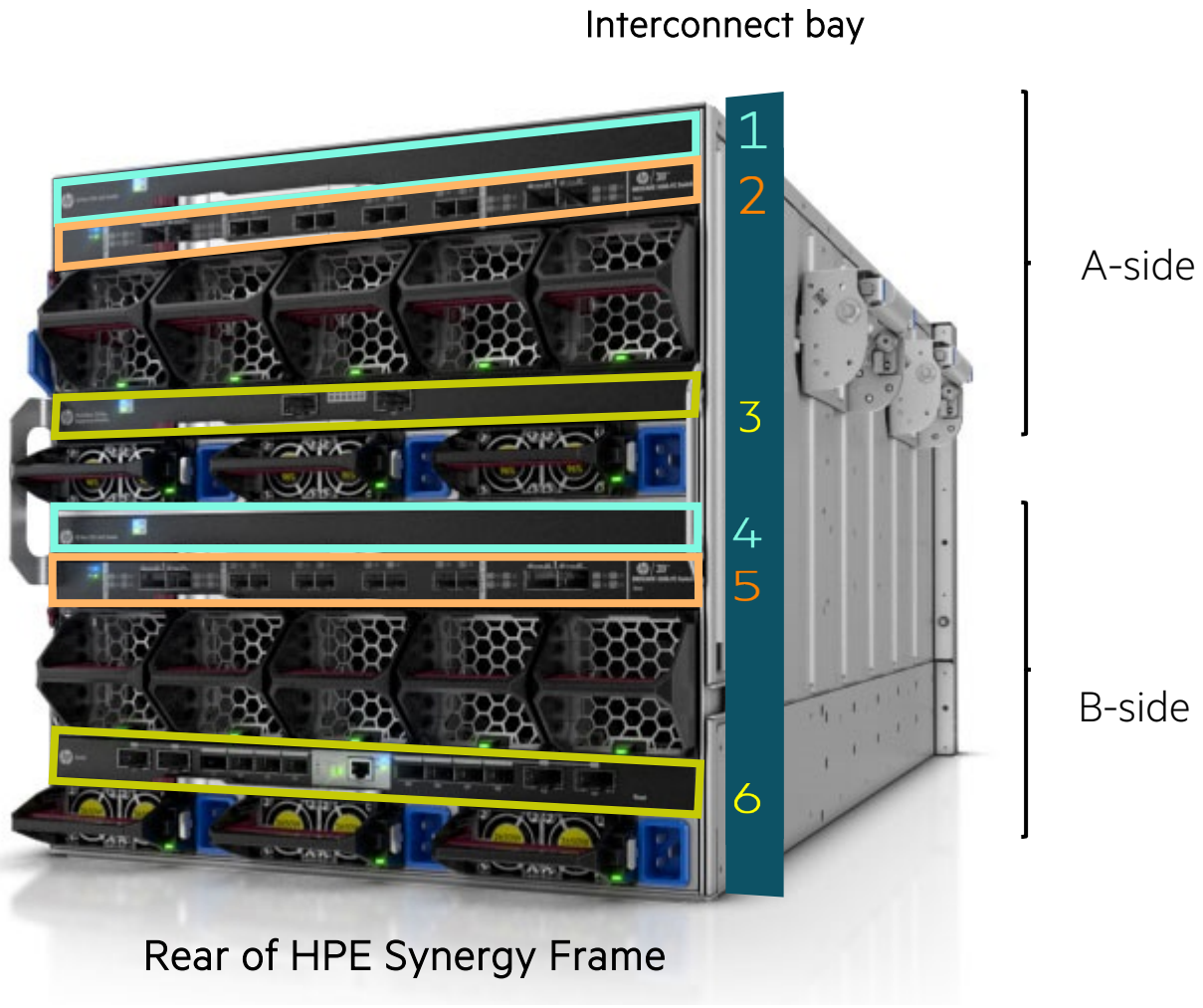
Server profile template	Volume template	Logical interconnect group	Template layer
Server profile	Volume	Logical interconnect	Configuration layer
Server, compute module	Array, JBODs	Switch, interconnect	Hardware layer

MANAGING HPE SYNERGY NETWORKING

Interconnect Modules

HPE SYNERGY FABRIC CONFIGURATION

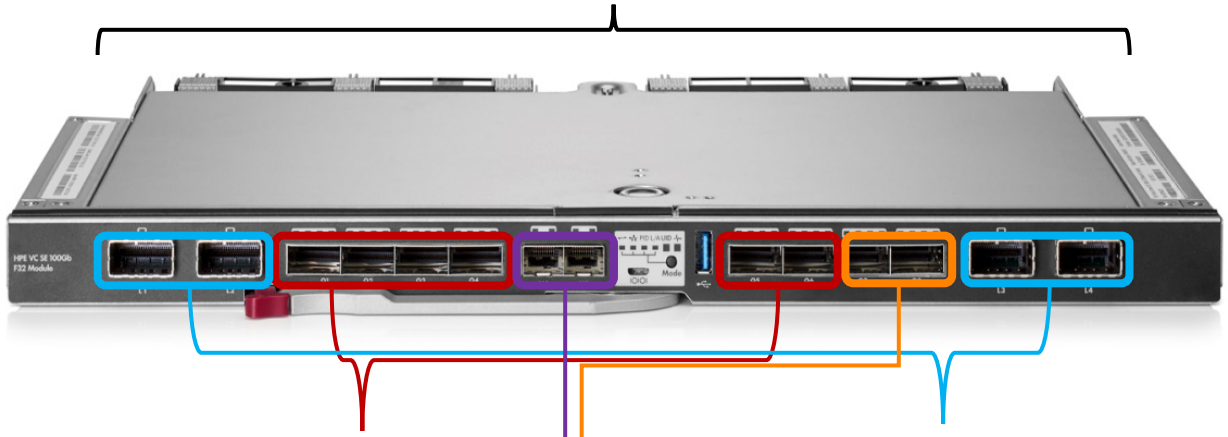




Rear of HPE Synergy Frame

HPE VIRTUAL CONNECT SE 100GB F32 MODULE

12x 25/50Gb (10Gb not supported)



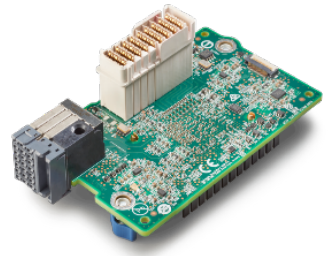
- 6x 100Gb uplink ports
  - Q1-Q6: 100/40Gb, 4x 10Gb or 4x25Gb Eth/FCoE
  - 4x 8/16/32Gb FC

- 2x 100Gb cluster ports
  - Q7-Q8: 100Gb ICM cluster ports

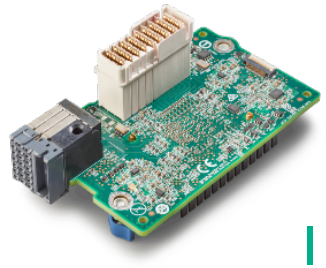
- 2x 10Gb SFP+ ports
  - X1-X2: 10Gb SFP+ Image Streamer ports

- 4x 300Gb Interconnect Link ports
  - AOC ICM cables (3m, 7m and 15m)
  - DAC cables (1.1m, 1.6m and 2.1m)

- High performance, low latency
  - 6.40 Tbps switching capacity
  - 300 ns sec for port to port latency
- Converged and resilient fabrics
  - Ethernet, FCoE, FC, RDMA and iSCSI
  - M-LAG for resilient fabric
- Multi-frame composable
- Upgrade to 32Gb FC via a license on demand
- Paired with full-featured currently shipping and new adapters



4820C @ 25 Gb/s



6820C @ 25/50 Gb/s

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HPE SYNERGY 20 GB INTERCONNECT LINK MODULE

Satellite module

12x20 Gb to compute modules

120 Gb interconnect link module CXP ports to master module

Zero-latency interconnect link AOCs

- High performance, low latency
  - 12 compute modules with 20 Gb connectivity
  - Two 120 Gb CXP ports to master module
  - Low latency (< 8 nano secs)
  - Ethernet, FCoE, Fibre Channel, and iSCSI
- Scalable up to 3 frames

LOGICAL ENCLOSURE

Reduce hardware complexity and cost

Consolidate interconnects and cables

Maximize data throughput and minimize latency

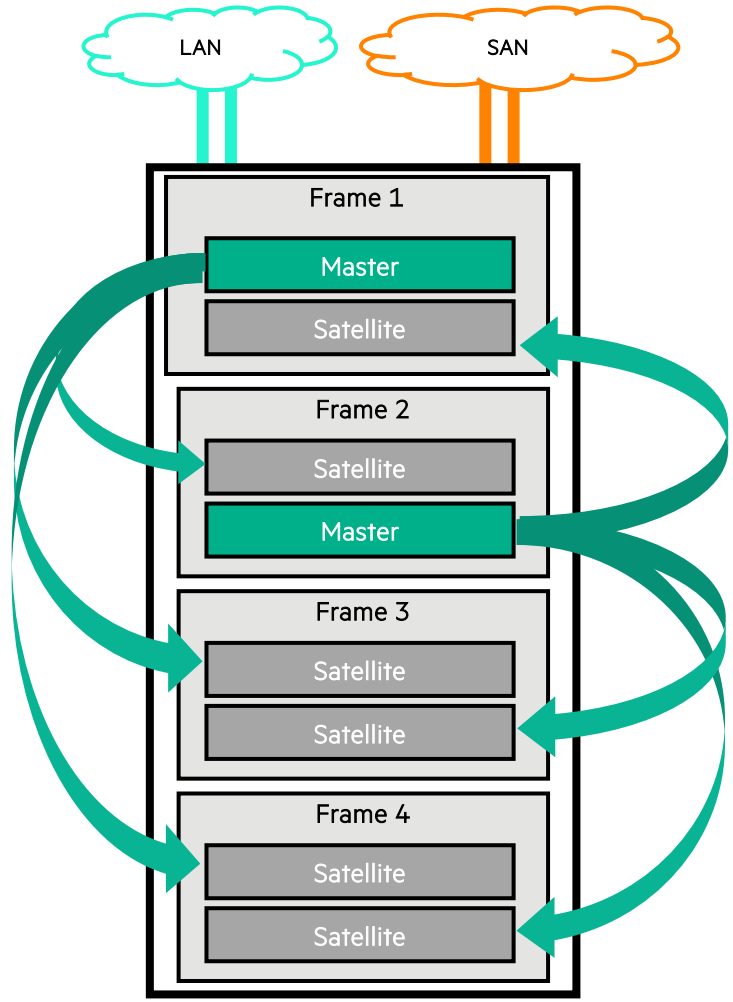
Only one hop and no oversubscription between VMs

Simplify management

Fewer devices to maintain

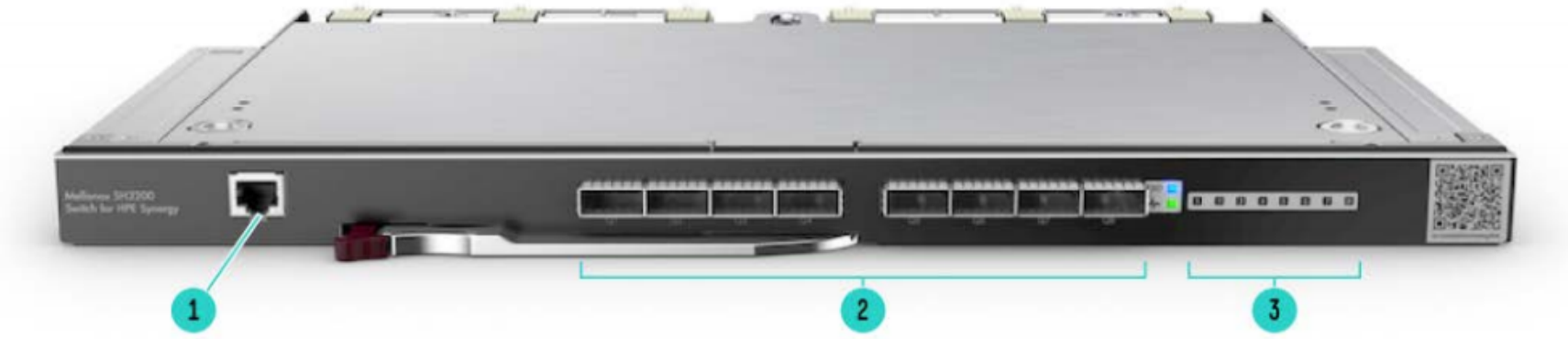
Efficiently scale fabrics across multiple frames

Up to 60 compute modules per fabric



MELLANOX SH2200 SWITCH MODULE FOR HPE SYNERGY

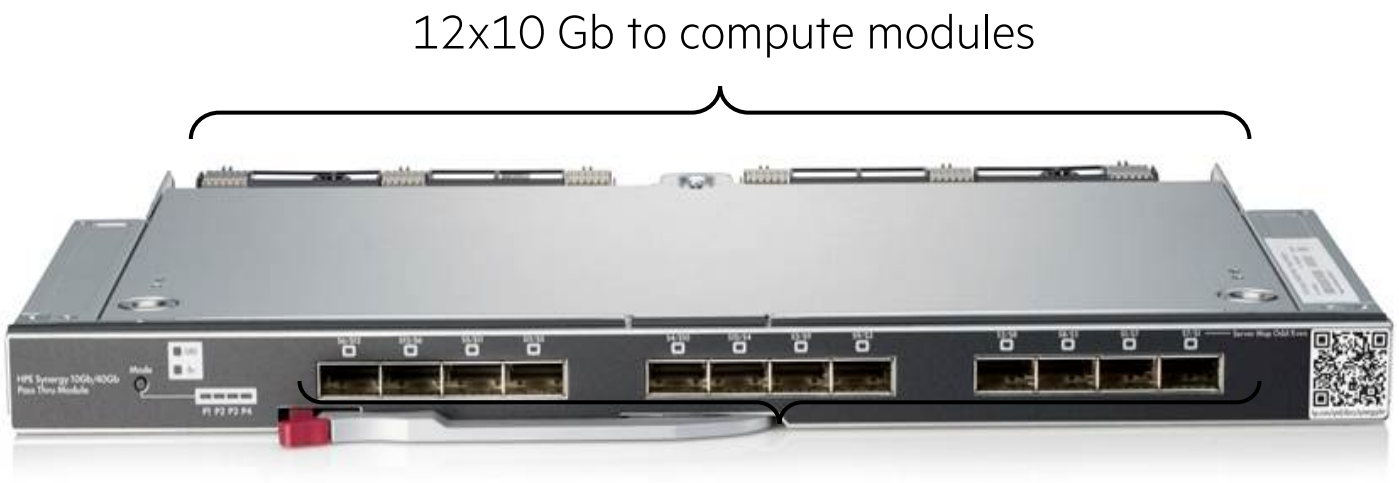
- Downlink ports to compute modules 25 GbE or 50 GbE
- Eight uplink ports 40/100 GbE
  - Each 100 GbE port can be split into four 25 GbE ports
  - QSFP28 ports
- Ultra-low latency <300 ns
- Managed by
  - Command line interface
  - Web GUI
  - Mellanox NEO software
- Monitored by HPE OneView



1. Console port
2. 40/100Gb QSFP28 Ethernet uplink ports
3. Status LEDs

Figure 1 Mellanox SH2200 Switch Module for HPE Synergy Bezel

HPE SYNERGY 10 GB PASS-THRU MODULE



12x 10 Gb uplink ports

- Q1 to Q12: 10 Gb, 10 Gb Ethernet/FCoE
- QSFP+/SFP+ adapter required for 10 Gb connections, one per QSFP+ port
- SFP+ transceivers
- SFP+ DAC cables
- SFP+ to 10 GbaseT RJ45 transceivers

- High performance, low latency
  - 12 direct network connections
  - Line rate performance
  - Standard Ethernet as well as FCoE
- No management required
- Synergy Composer provides:
  - Monitor performance
  - Hardware diagnostics
  - Error reporting
  - Firmware updates
- Unmanaged support by HPE OneView

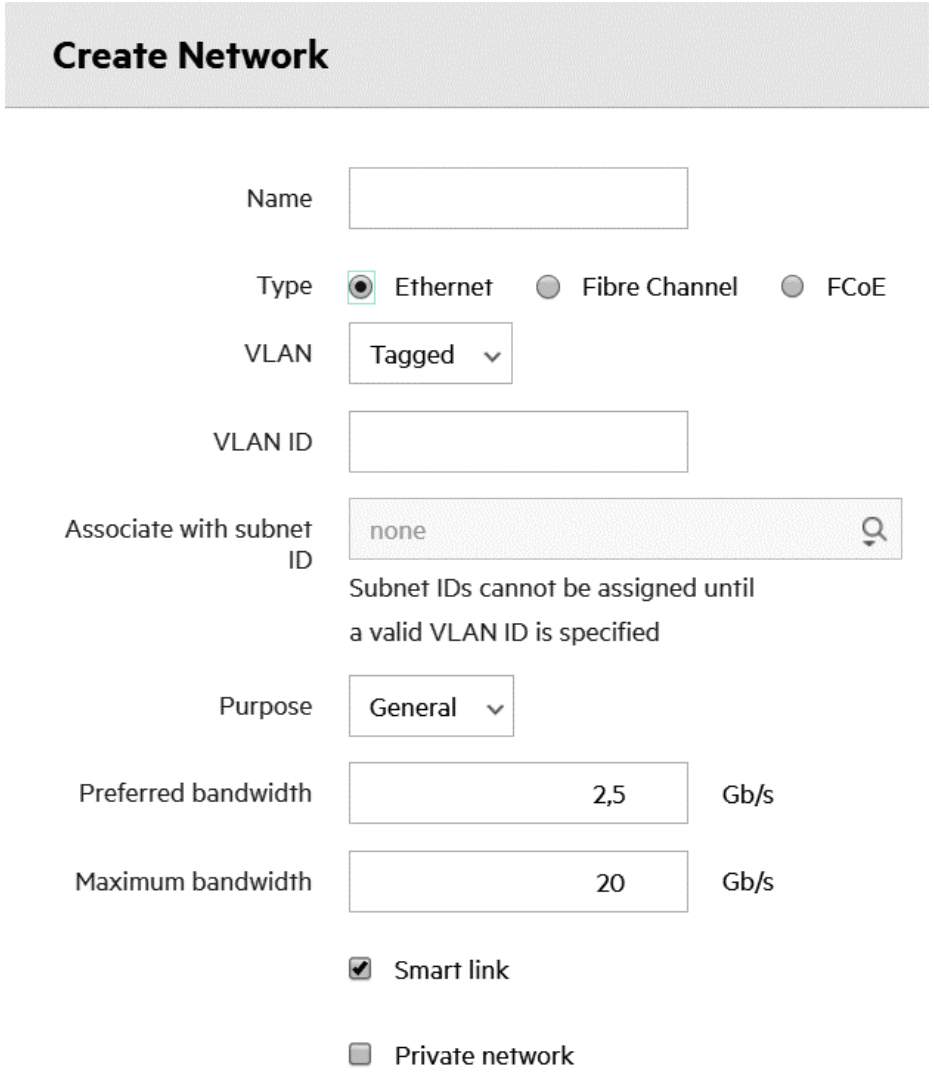
MANAGING HPE SYNERGY NETWORKING

Network Configuration

CREATING ETHERNET NETWORKS

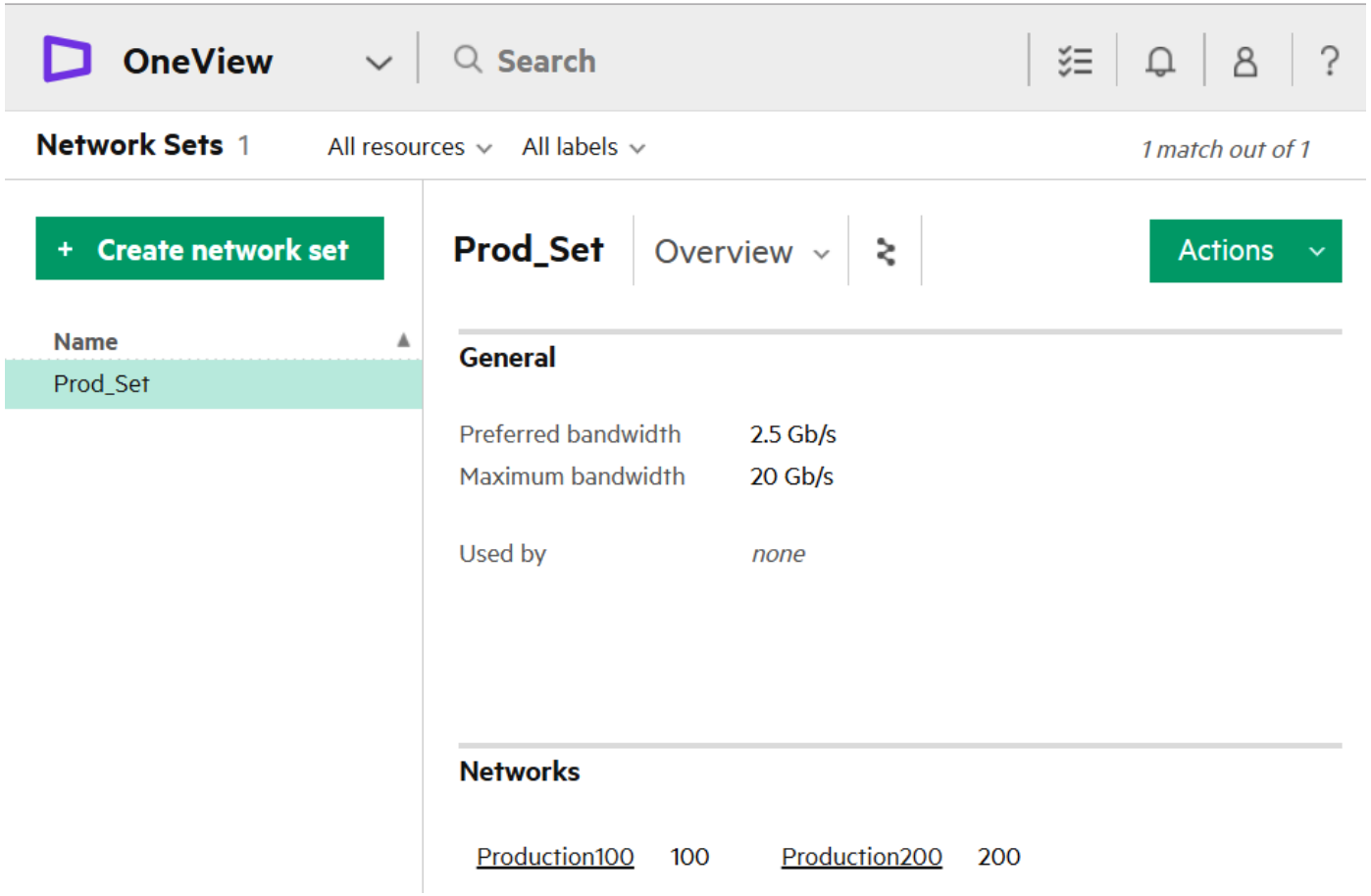
Network parameters include:

- VLAN
  - Tagged
  - Untagged
  - Tunnel
- VLAN ID
- Associate with subnet ID
- Purpose
- Preferred bandwidth
- Maximum bandwidth
- Smart link
- Private network



CREATING NETWORK SETS

Network Set represent a collection of networks and can be used for creating server connections (profiles).

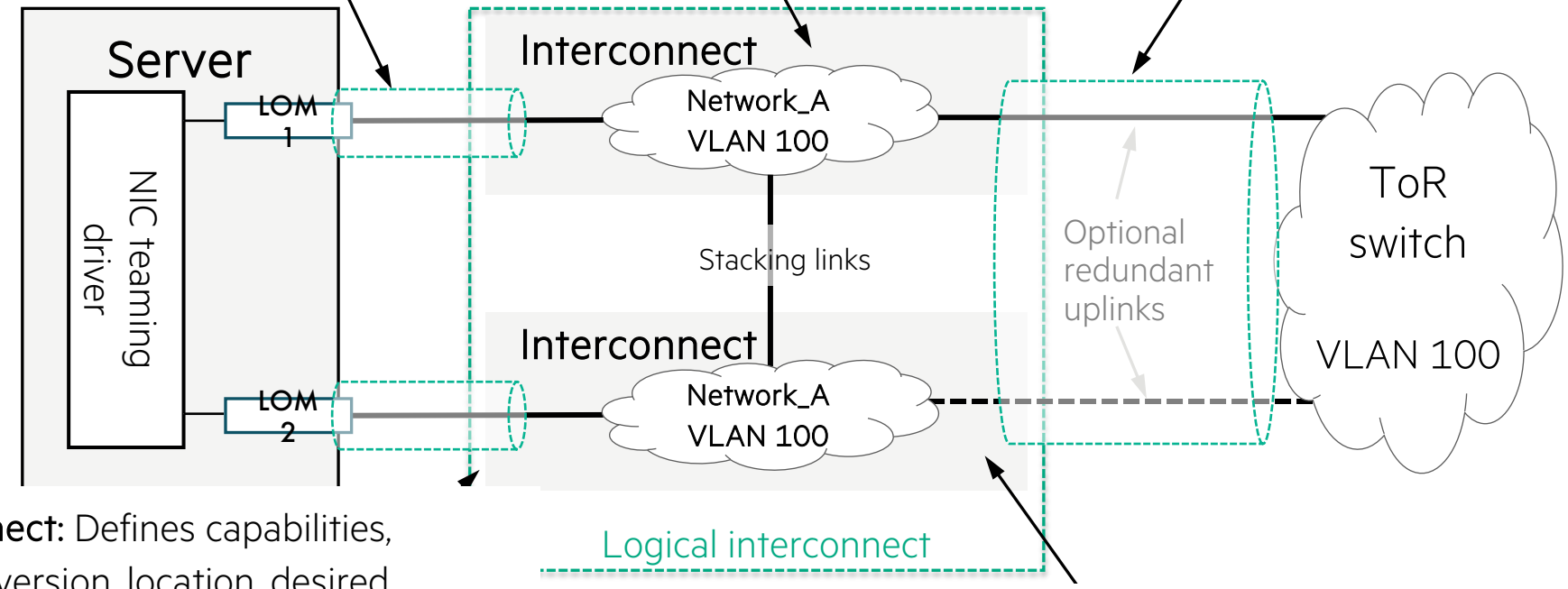


ONEVIEW AND VIRTUAL CONNECT INTERCONNECTS

Server profile LAN/SAN connectivity: **Connections**

Interconnects share a common management context: **Logical interconnect** and **networks**

Uplinks sharing a common set of networks: **Uplink set**



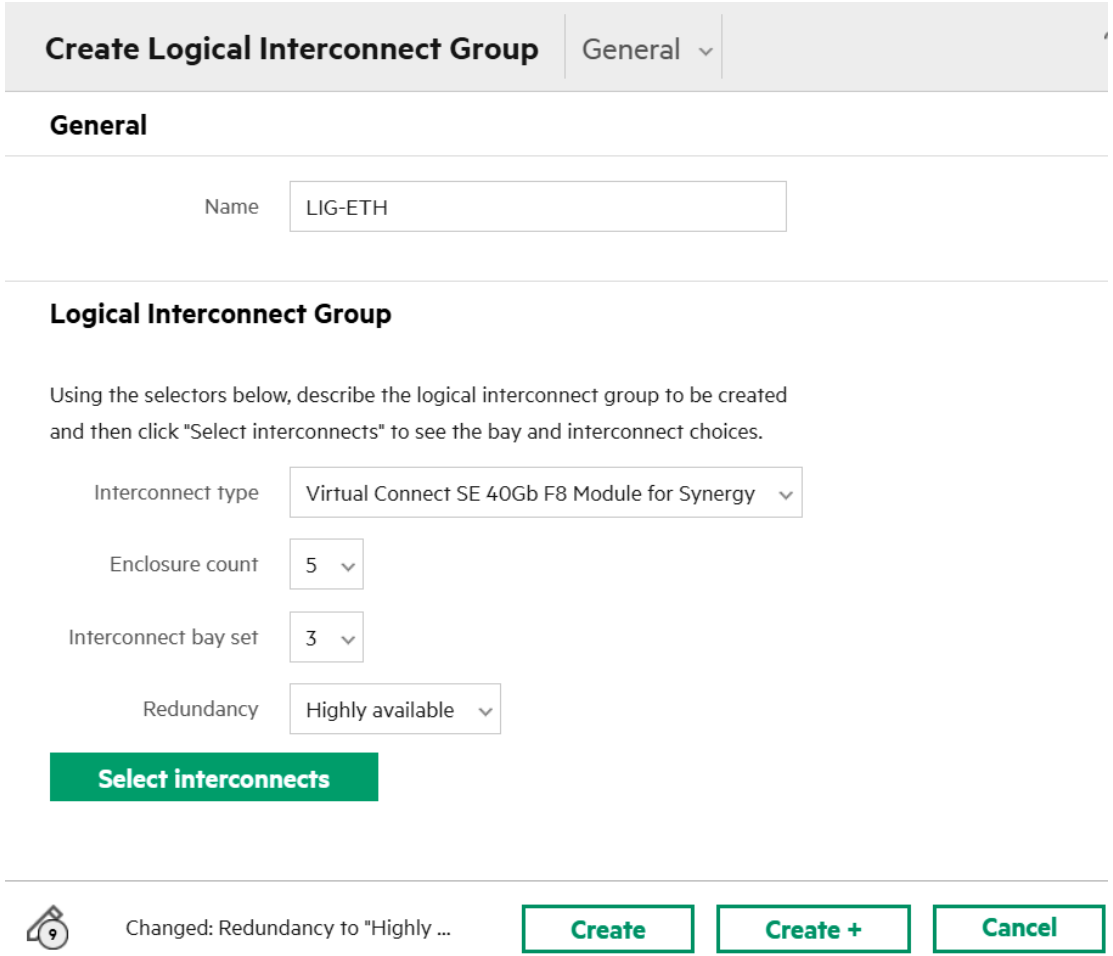
Interconnect: Defines capabilities, firmware version, location, desired configuration, and current status

Interconnect type: Represents basic interconnect capabilities

LIG FOR SYNERGY VIRTUAL CONNECT SE 40 GB F8/100 GB F32 MODULE

LIG for Synergy Virtual Connect SE 40 Gb F8/100 Gb F32 Modules defines:

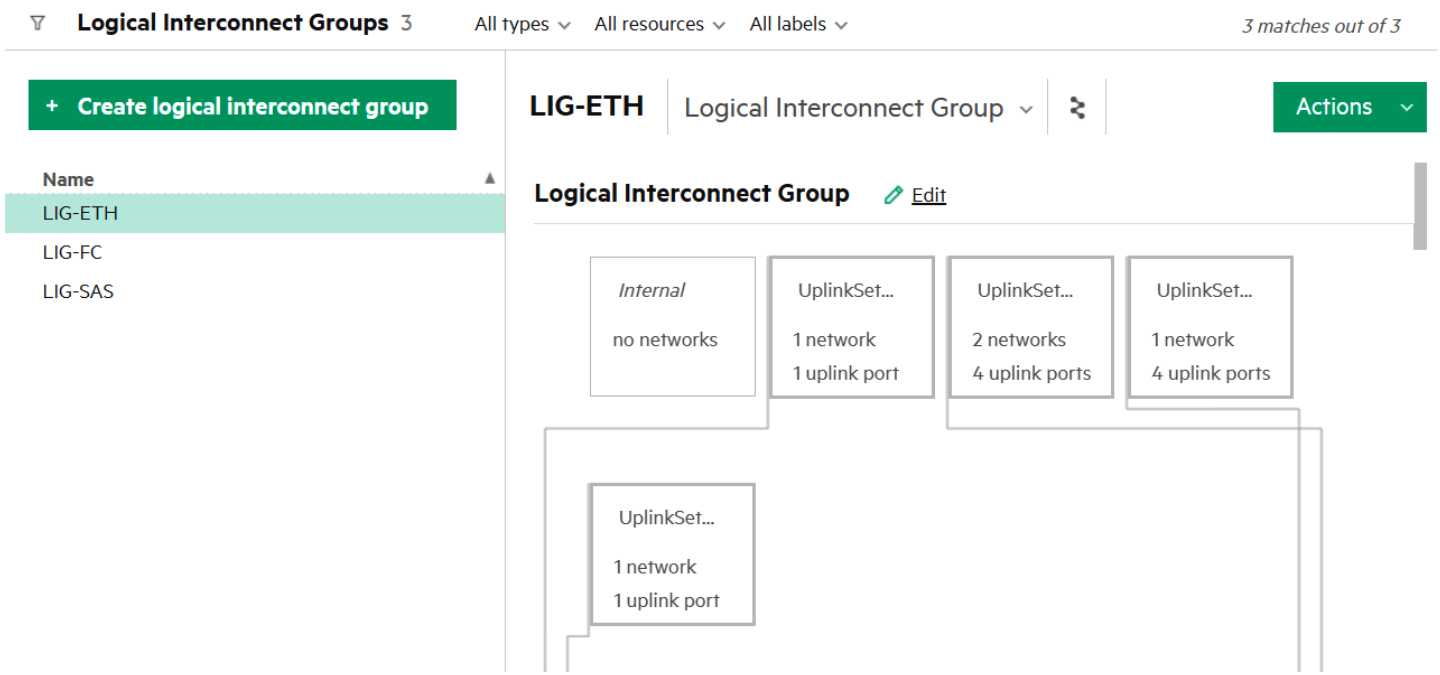
- Enclosure count (defines number of frames stacked in master/satellite configuration)
- Interconnect bay set used (according to the best practices modules are placed in third fabric—interconnects 3 and 6)
- Redundancy: Highly available, redundant, non-redundant
- Uplink set configuration (including FCoE uplink sets)
- Placement of master/satellite
- Advanced VC settings (QoS, IGMP, and so on)



LOGICAL INTERCONNECT GROUPS

- **LIG definition:** A template that specifies the interconnect technology and associates the necessary Ethernet, Fibre Channel, or FCoE networks

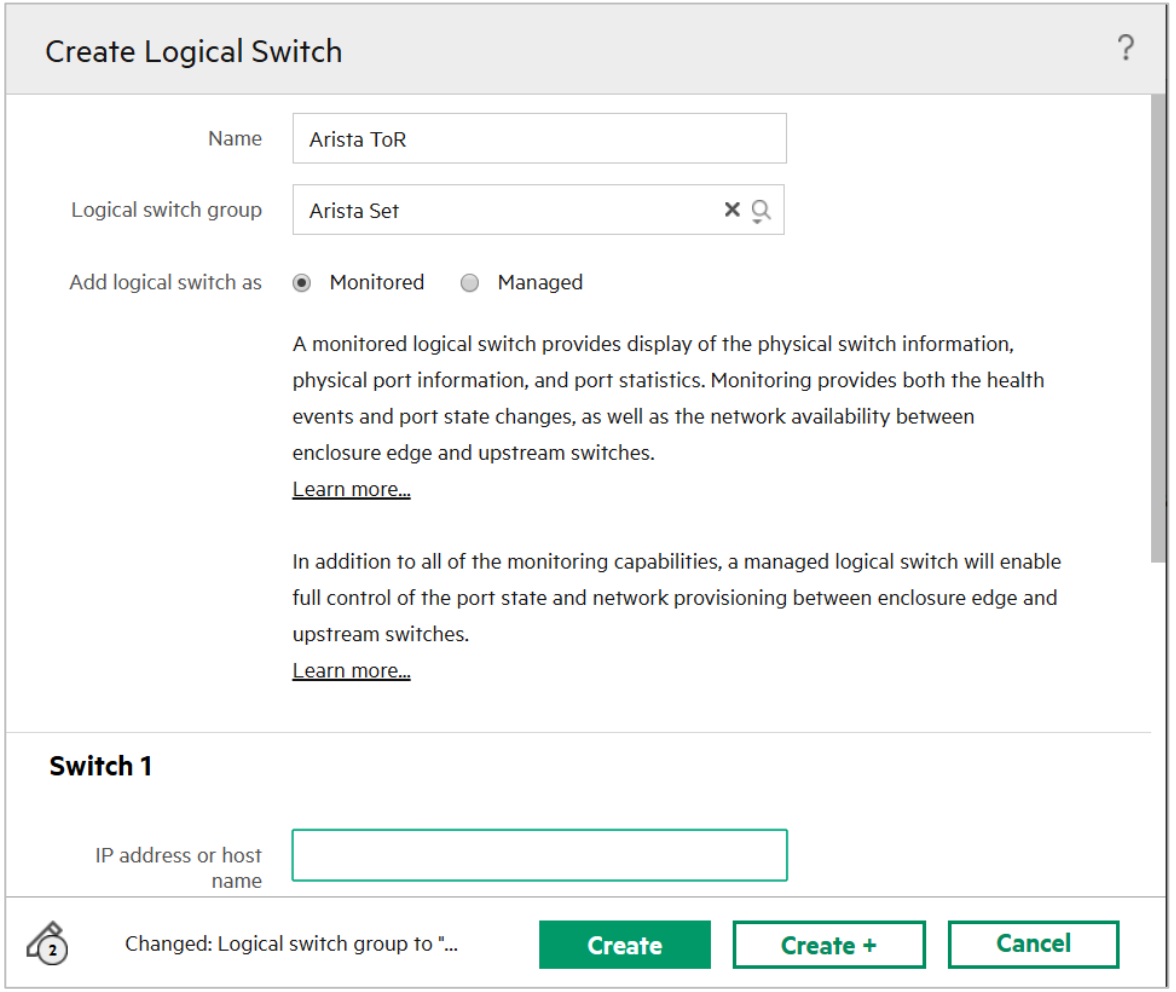
- LIGs can be one of the following types:
  - HPE Synergy 12 Gb SAS Connection Module
  - Virtual Connect SE 40 Gb F8/ 100 Gb F32 Module for Synergy
  - Virtual Connect SE 16 Gb/32 Gb FC Module for Synergy



MANAGING LOGICAL SWITCHES

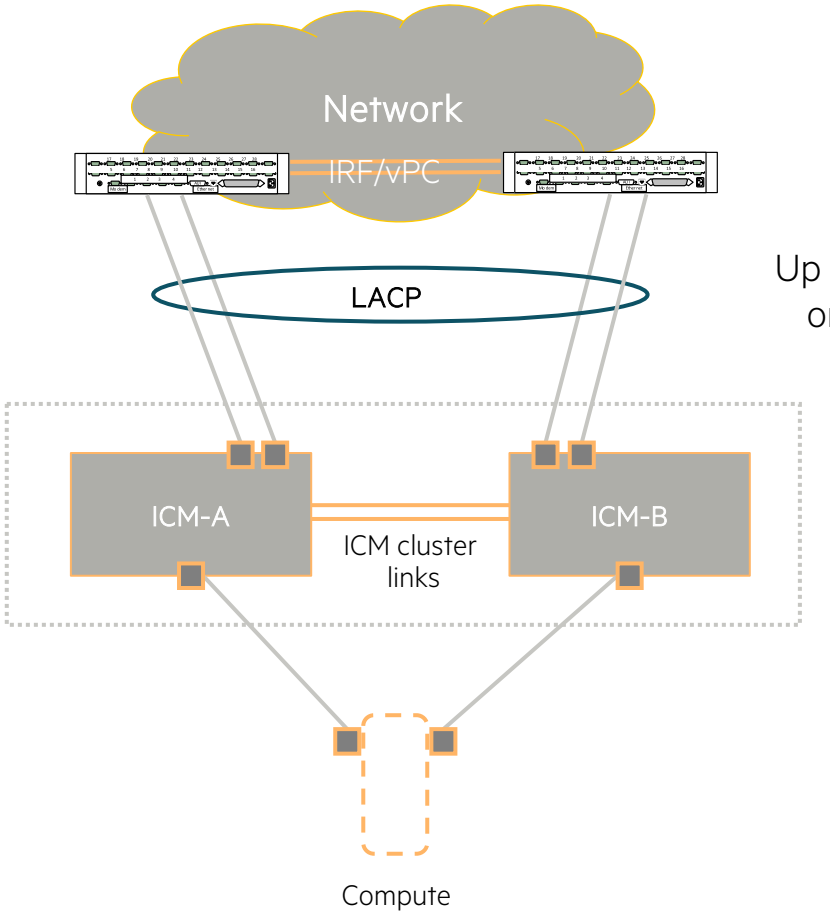
The logical switch can consist of a maximum of 2 physical ToR switches (external to the HPE Synergy frame) configured in a single stacking domain.

- The logical switch supports a maximum of 2 Arista switches.
- Both of them must be M-LAG setup.
- Both of them must belong to the same M-LAG domain.



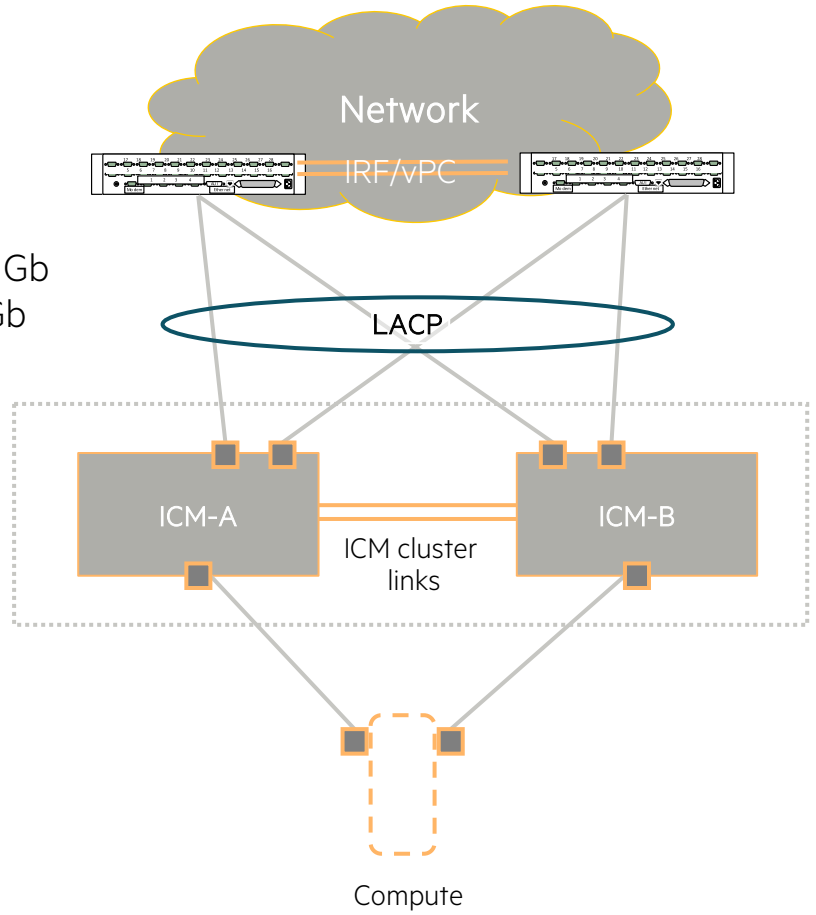
HIGH AVAILABILITY SCENARIO

Reduced availability EOR single homed



Up to all 16 x40 Gb
or all 48 x10 Gb

Highly available EOR multi homed



MANAGING HPE SYNERGY STORAGE

In-Frame Storage

HPE SYNERGY IN-FRAME STORAGE SOLUTION

D3940 Storage Module

Has slots for two IO adapters inside the drawer

- One IO adapter provided initially
- Acts as the interface to the disks
- Connects to the HPE Synergy 12 Gb SAS Connection Module

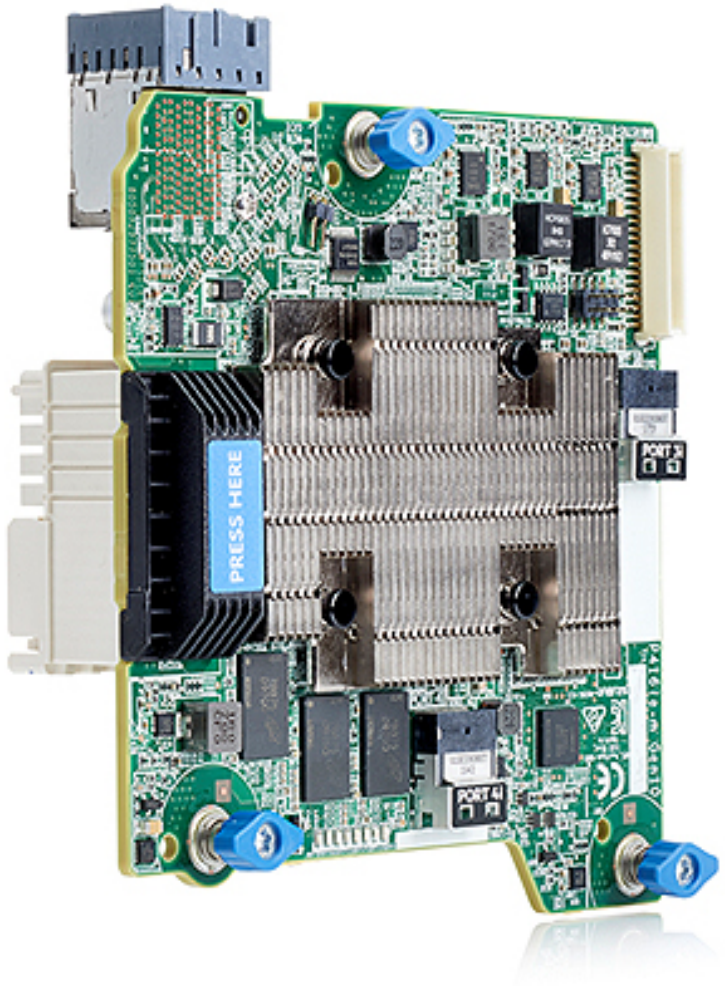
12 Gb SAS connection module

Connects to the RAID storage controllers in a compute module

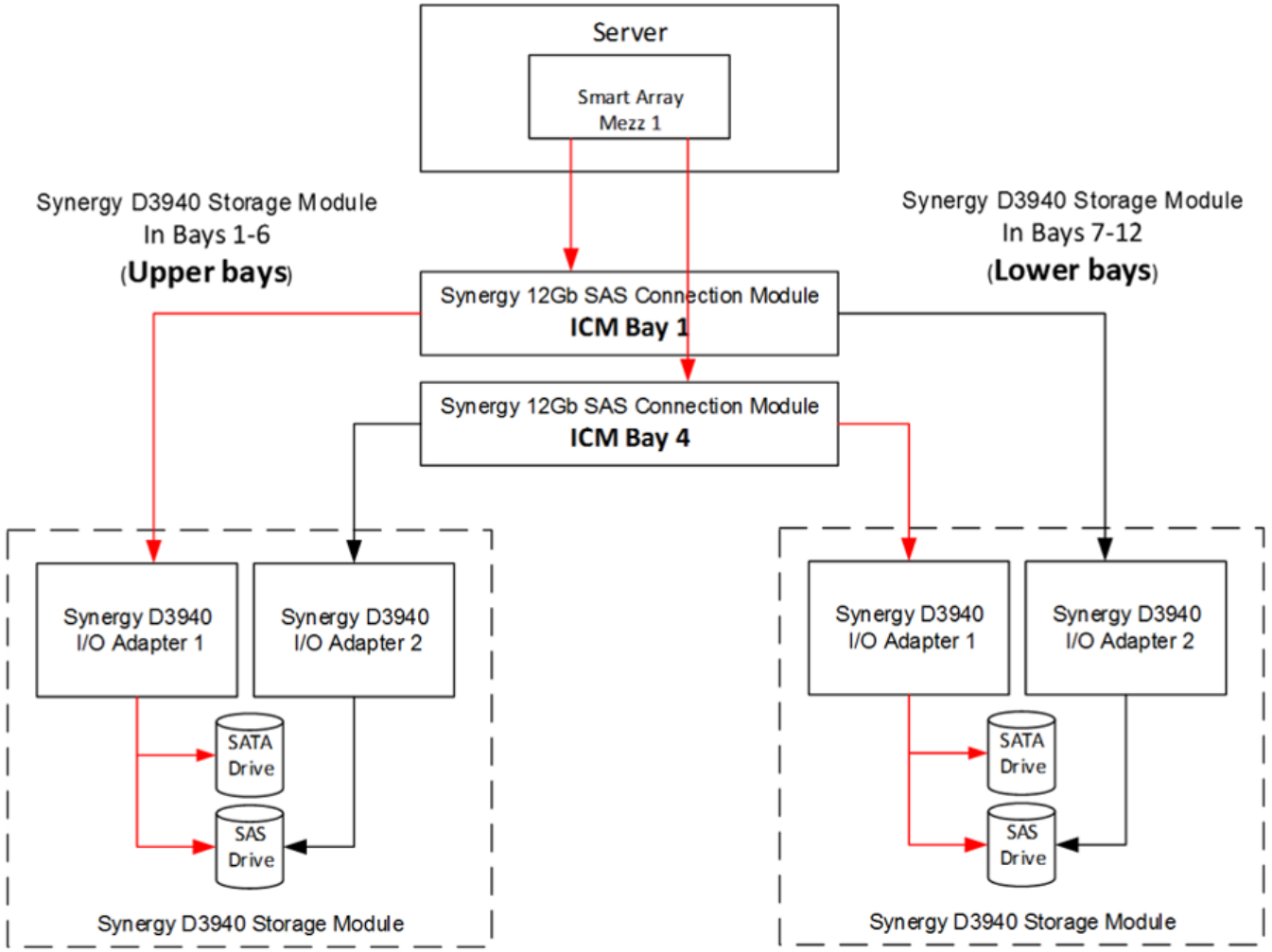
SMART ARRAY SAS CONTROLLERS

Smart Array P416ie-m Controller (for Gen10)

- 12 Gb/s SAS or 6 Gb/s SATA
- PCI express 3.0 x 8 link width
- 2 GB 72-bit wide DDR4-2100 flash-backed write cache
- **Internal:** 8 SAS/SATA lanes across 2 x 4 slim SAS ports
- **External:** 8 SAS/SATA lanes across an external SAS port



SYNERGY D3940 SAS/SATA STORAGE CONNECTIVITY

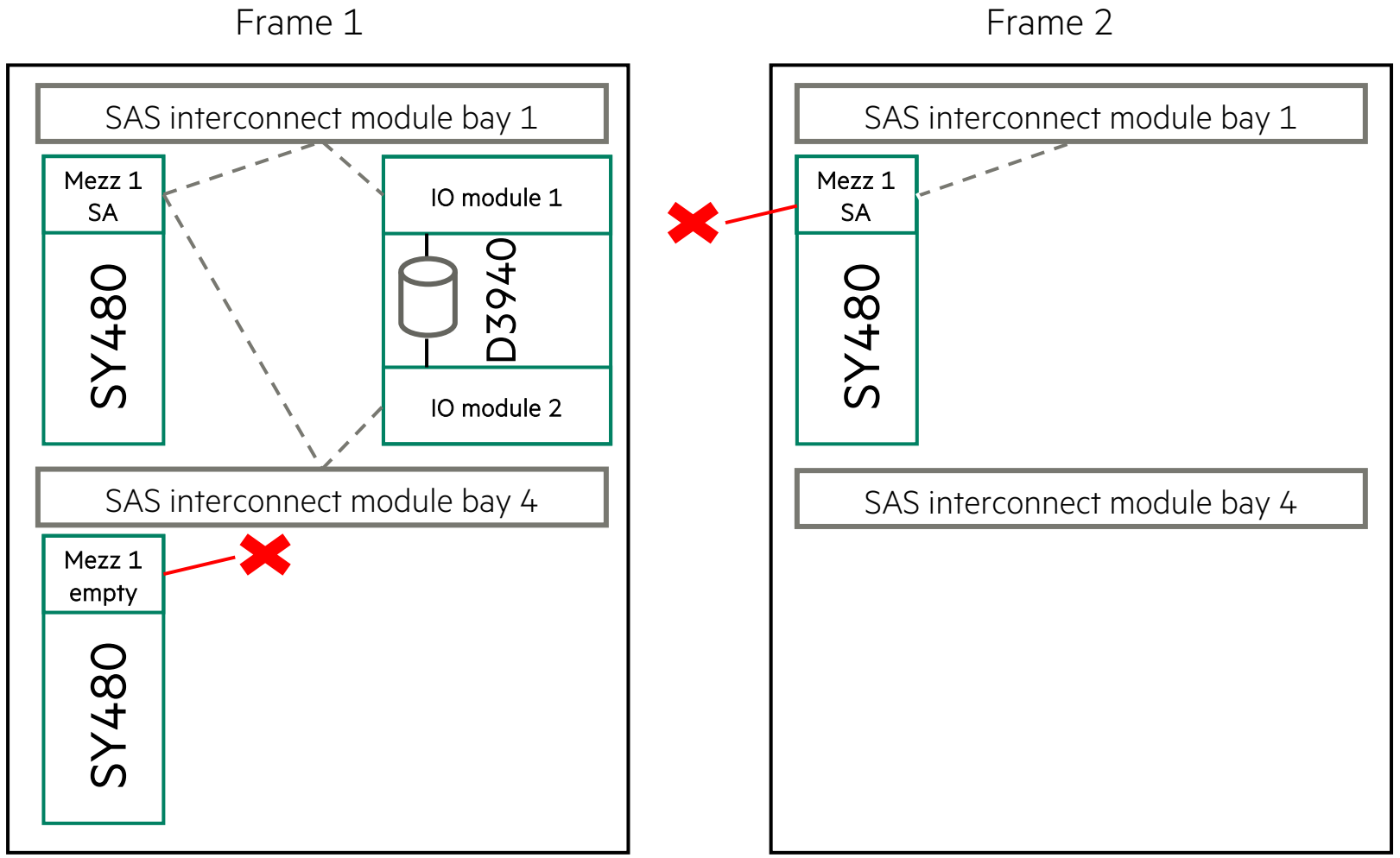


SYNERGY SAS STORAGE CONNECTIVITY

SAS interconnect module provides internal (within the frame) connections only

No Smart Array = No SAS connection to drive

Different frame = No SAS connection to drive



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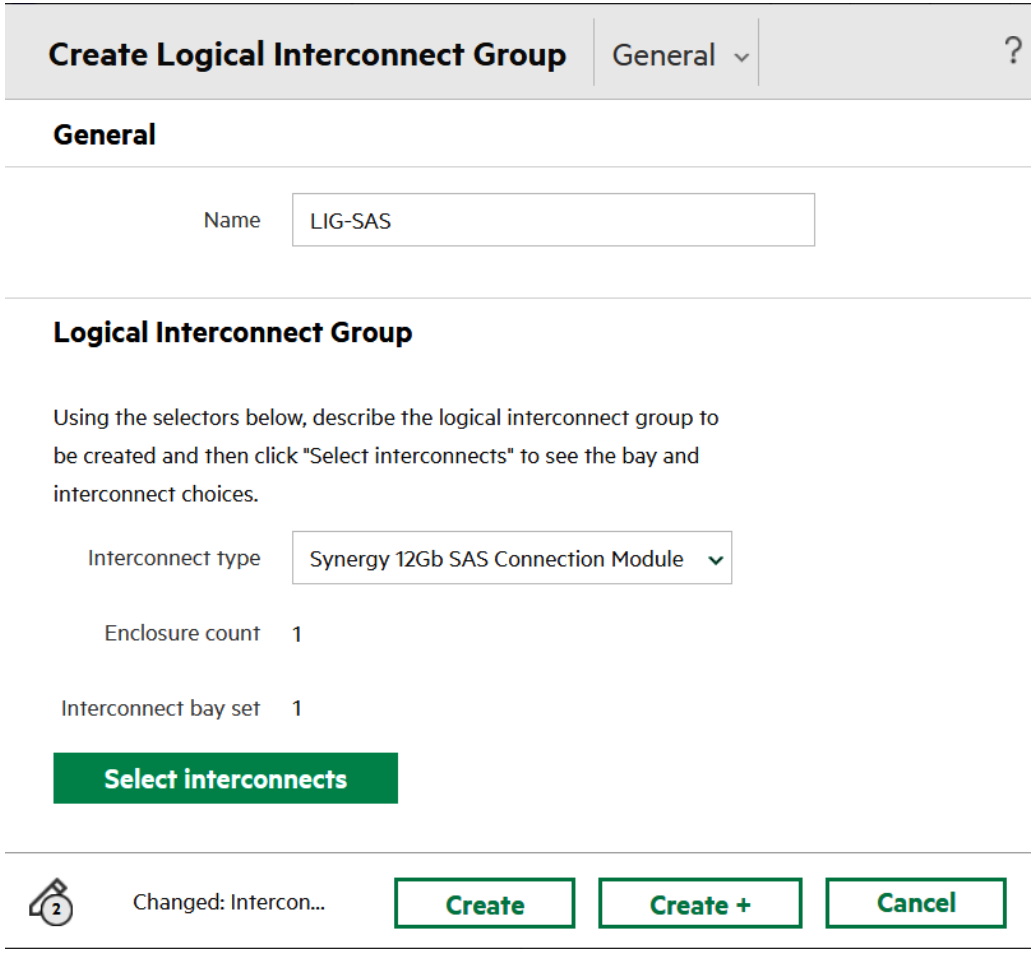
CREATING AN LIG FOR SYNERGY SAS MODULES

LIG for Synergy SAS modules defines:

- Enclosure count (always is 1, as FC modules do not support stacking like Ethernet module)
- Interconnect bay set used (only first fabric can be used—interconnects 1 and 4; single module is also supported)

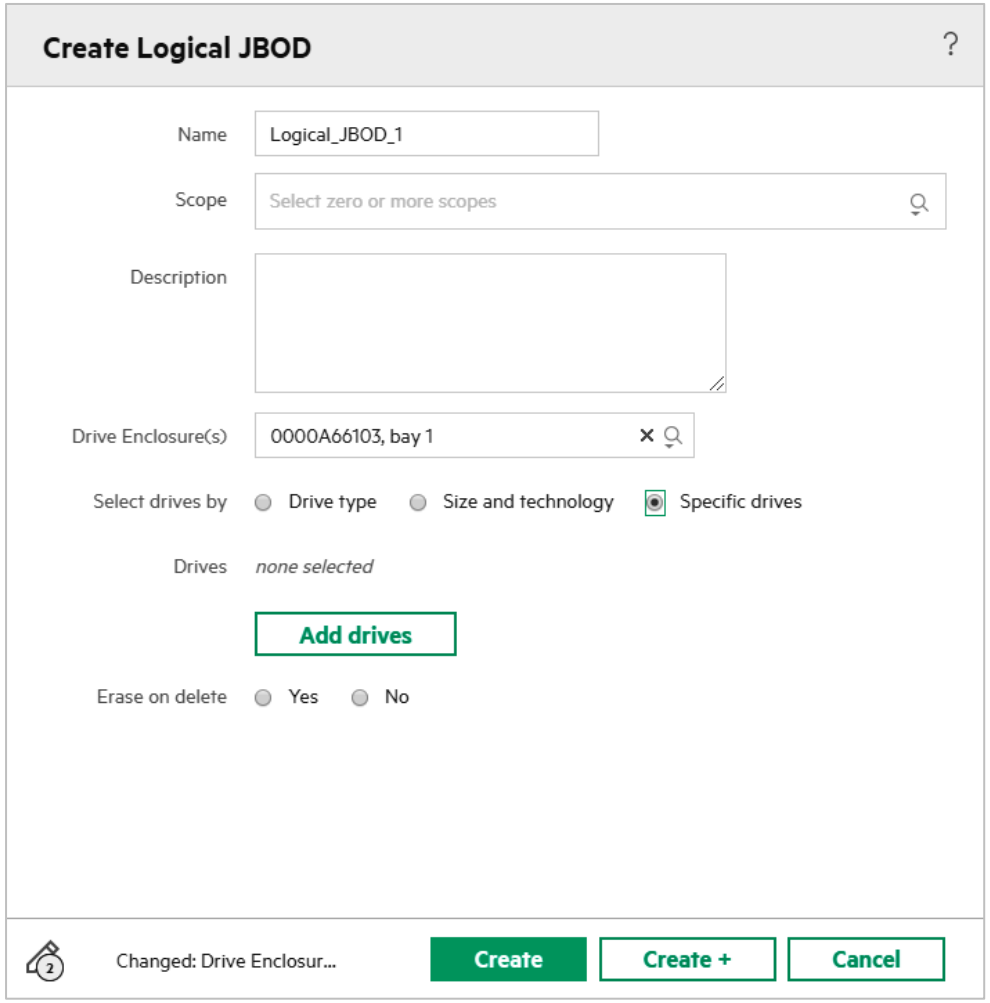
There are no uplinks to configure as the SAS modules present disks from the D3940 Storage Module to compute modules within the same frame



HPE ONEVIEW LJBOD—SYNERGY D3940

A logical JBOD supports the following features:

- Manual drive selection supported
- Ability to erase drive when LJBOD is deleted
- Permanent option



MANAGING HPE SYNERGY STORAGE

Storage Area Networks

COMPOSABLE AND FC SWITCHED FABRIC INNOVATIONS

32 Gbps (Gen6) FC Interconnect Modules and adapters for HPE Synergy

HPE VC SE 32 Gb FC Module

Brocade 32 Gb FC SAN Switch

32 Gb HBA
(Broadcom/Emulex)

Composable and time-tested Fibre Channel
ICMs with Gen 6 (32 G) technology

plus

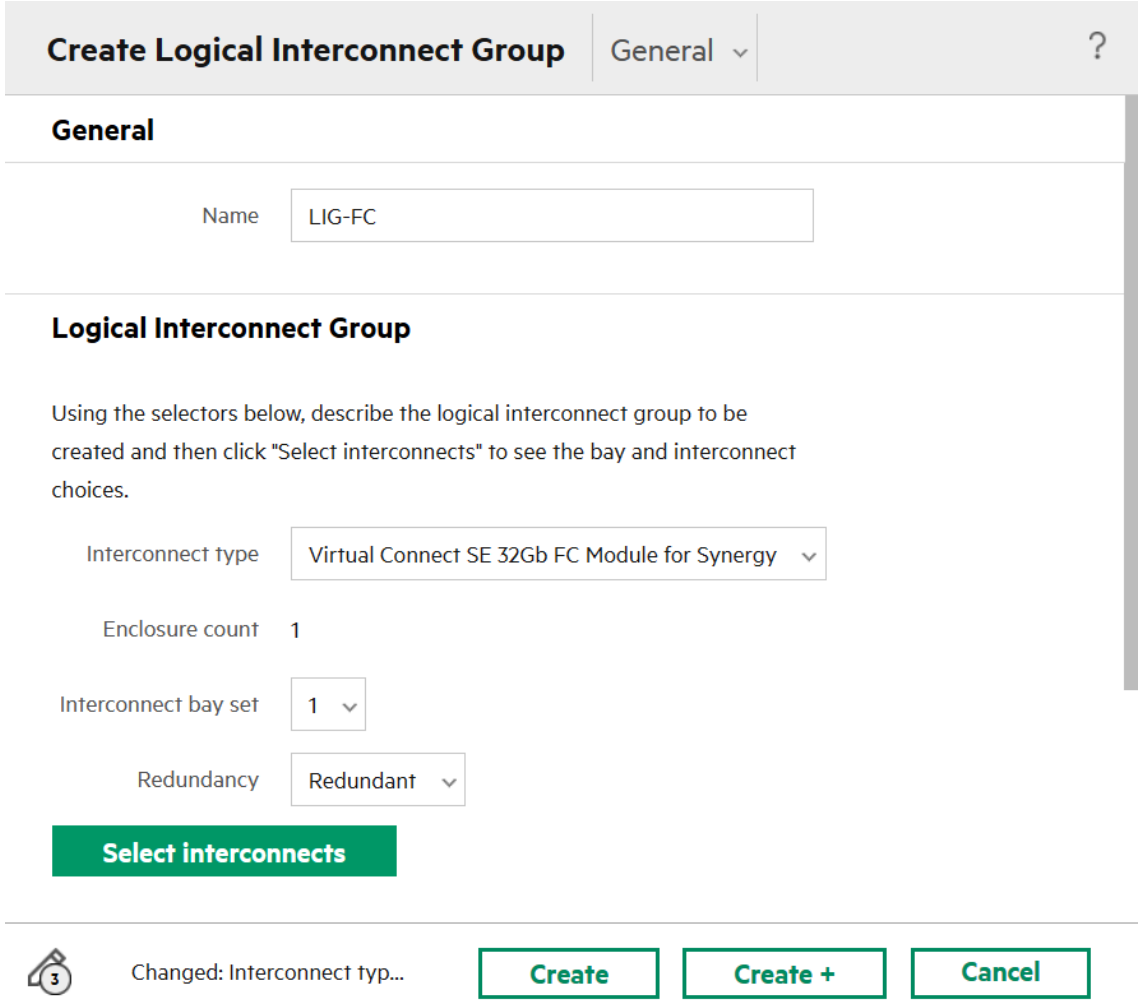
FC-NVMe over Fabric Gen 6 adapters
Fully compatible with HPE Gen 5 and Gen 4 FC SANs

32 Gb HBA
(Cavium/QLogic)

LIG FOR SYNERGY VIRTUAL CONNECT FIBRE CHANNEL MODULES

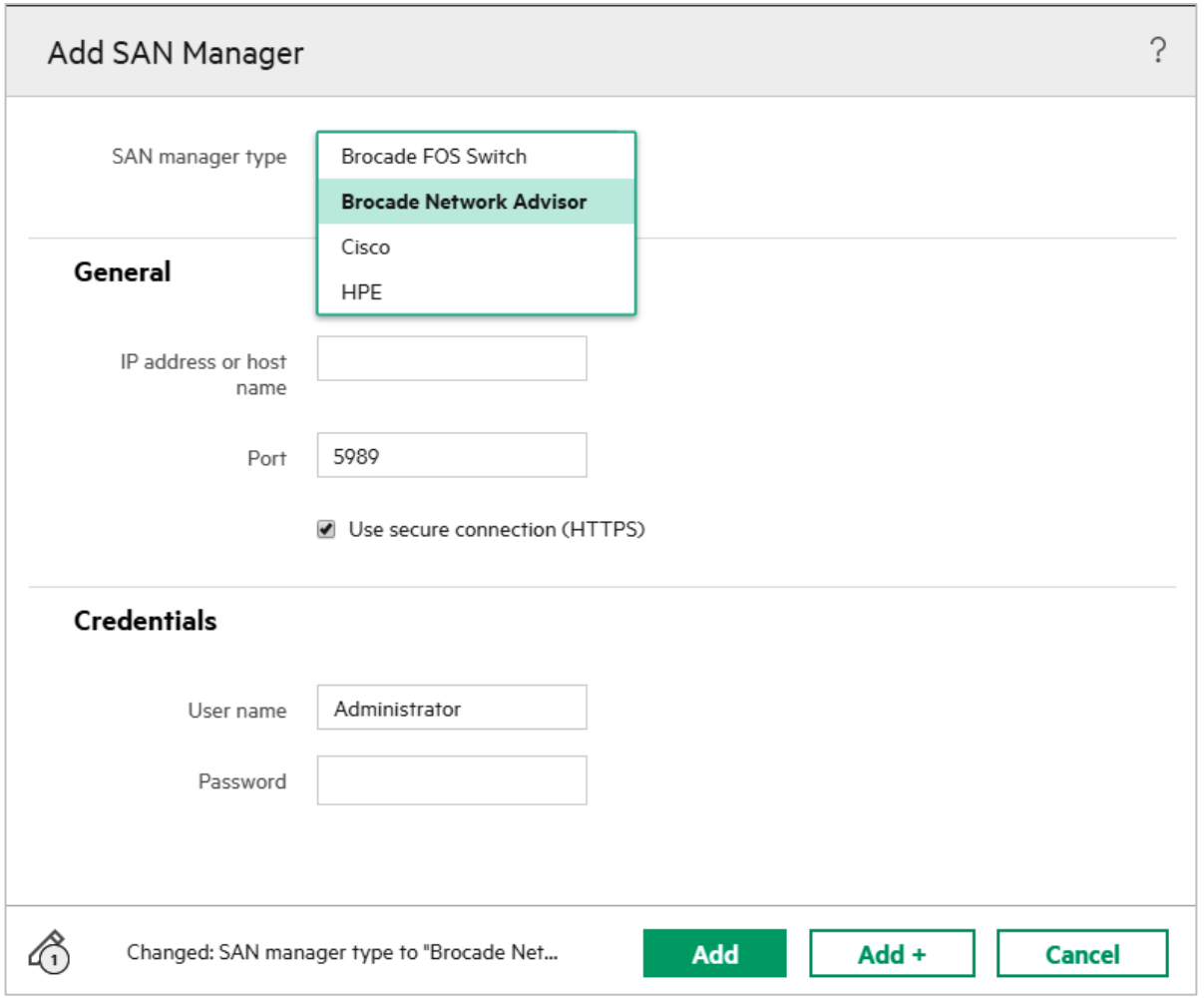
LIG for Synergy Virtual Fibre Channel modules defines:

- Enclosure count (always is 1, as FC modules do not support stacking like Ethernet modules)
- Interconnect bay set used (according to the best practices modules are placed in second fabric—interconnects 2 and 5)
- Redundancy
- Uplink set configuration for FC networks
- Uplinks on a single ICM may be added to an uplink set and trunked together at the SAN switch



ADDING SAN MANAGERS

1. From the HPE OneView Main menu, select **SAN Managers**.
2. Click **+ Add SAN Manager**.
3. Select the SAN manager type from the drop-down menu, and complete all of the required information.



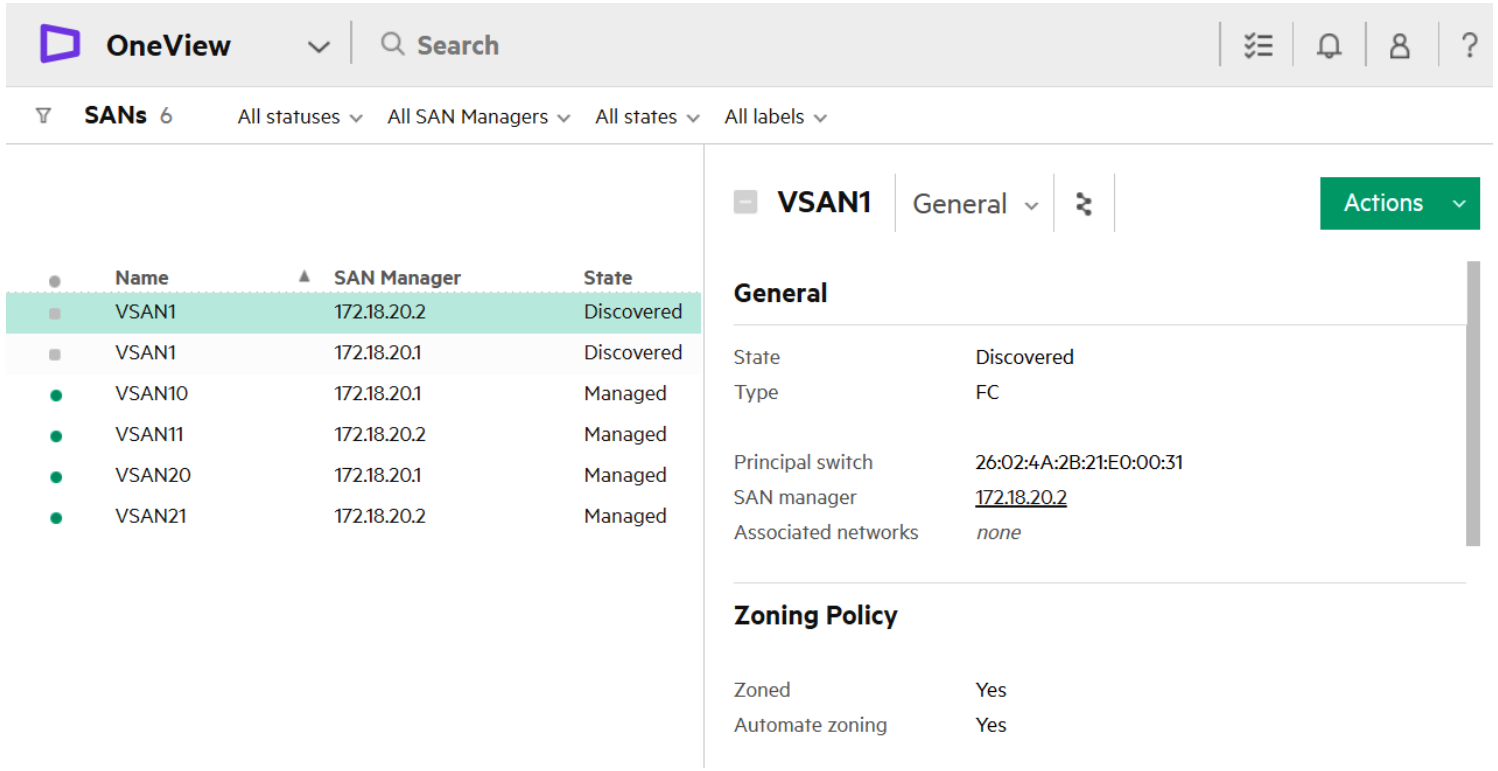
NOTE: Brocade Network Advisor software is going EOL, which means no enhancements beyond BNA version 14.4.

DISCOVERING SAN FABRICS

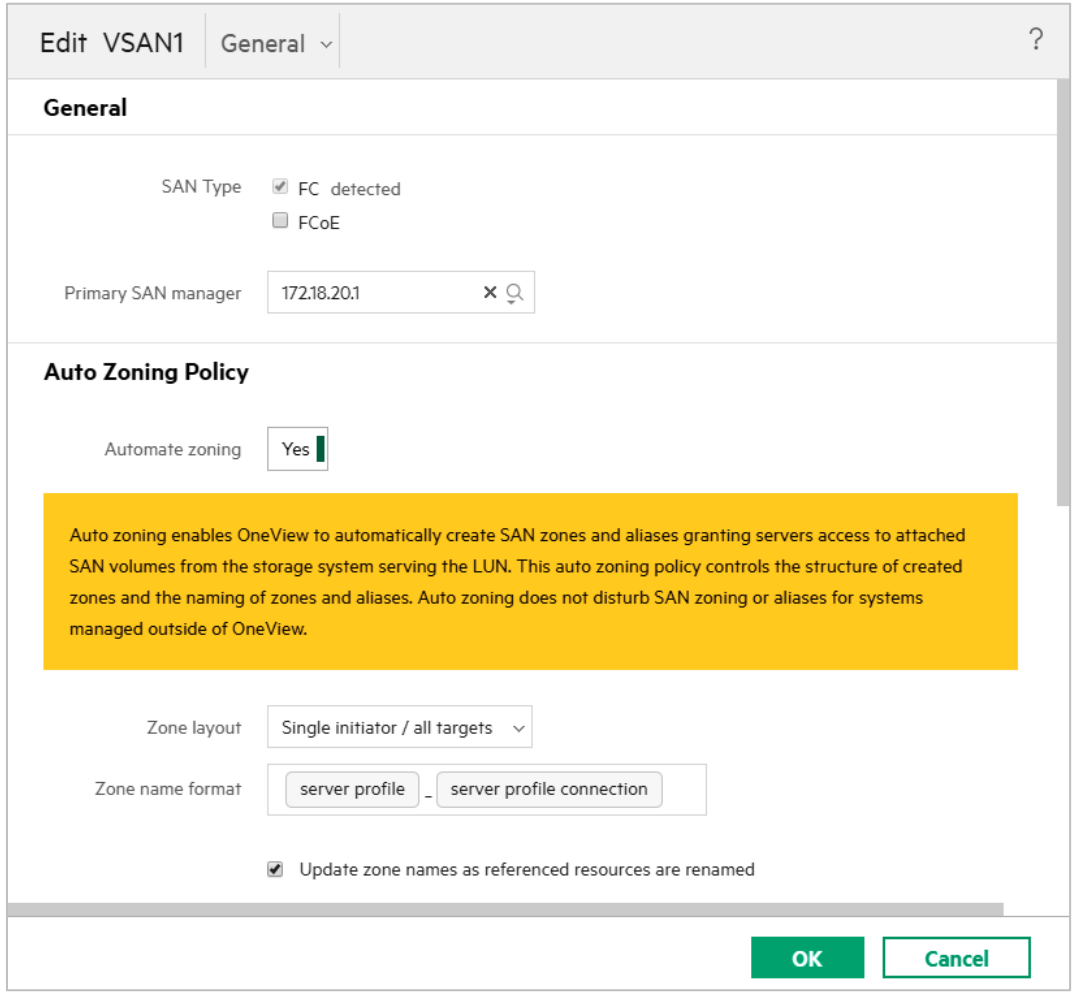
Discovered—A SAN that is not associated with a network.

Managed—A SAN that is associated with one or more networks in HPE OneView.

Only managed SANs can be configured to be automatically zoned by HPE OneView.



CHANGING SAN SETTINGS



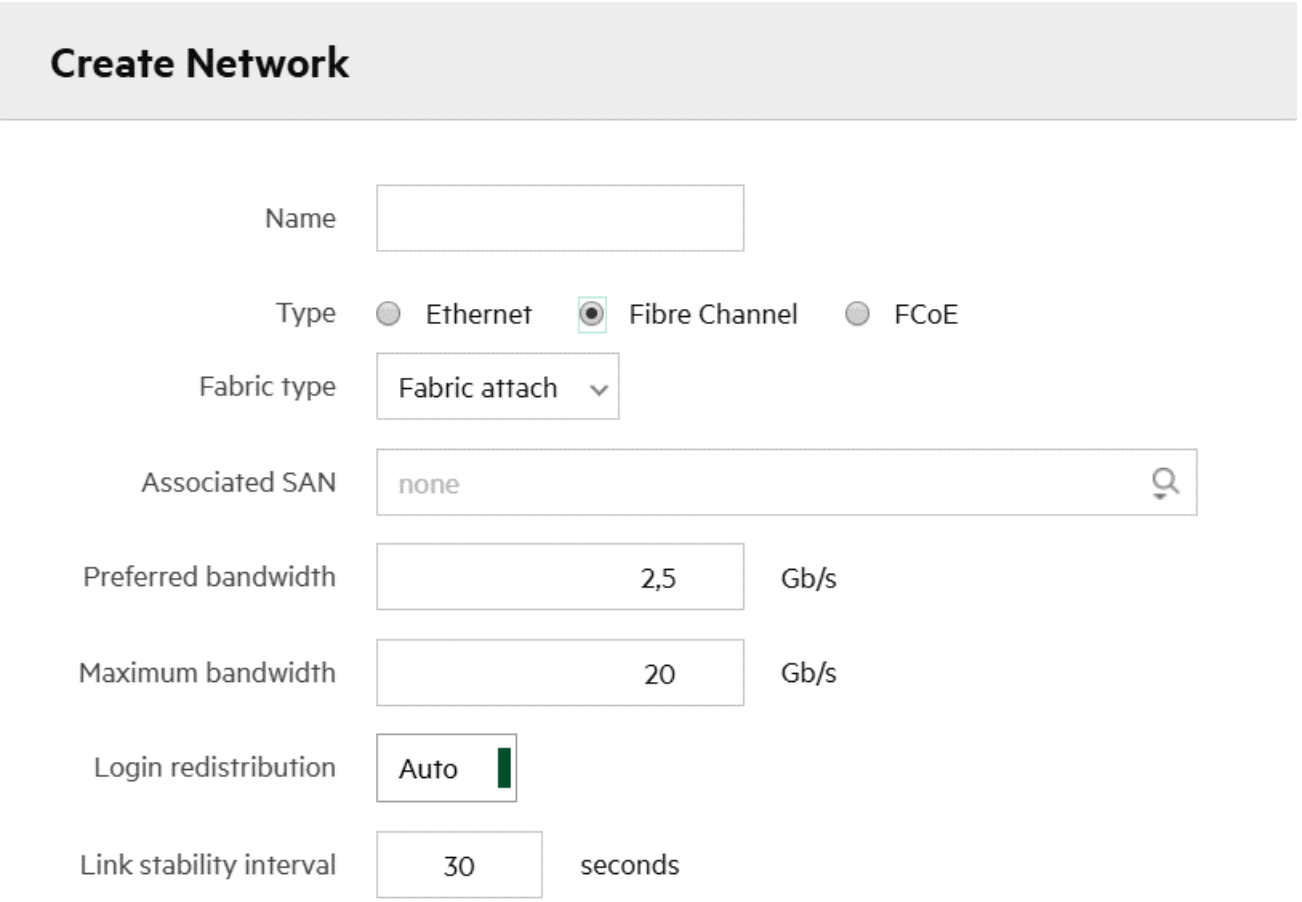
After SAN is imported, it can be edited to configure:

- General settings like SAN type and primary SAN manager
- Zone structure policy
- Alias generation

CREATING FIBRE CHANNEL NETWORKS

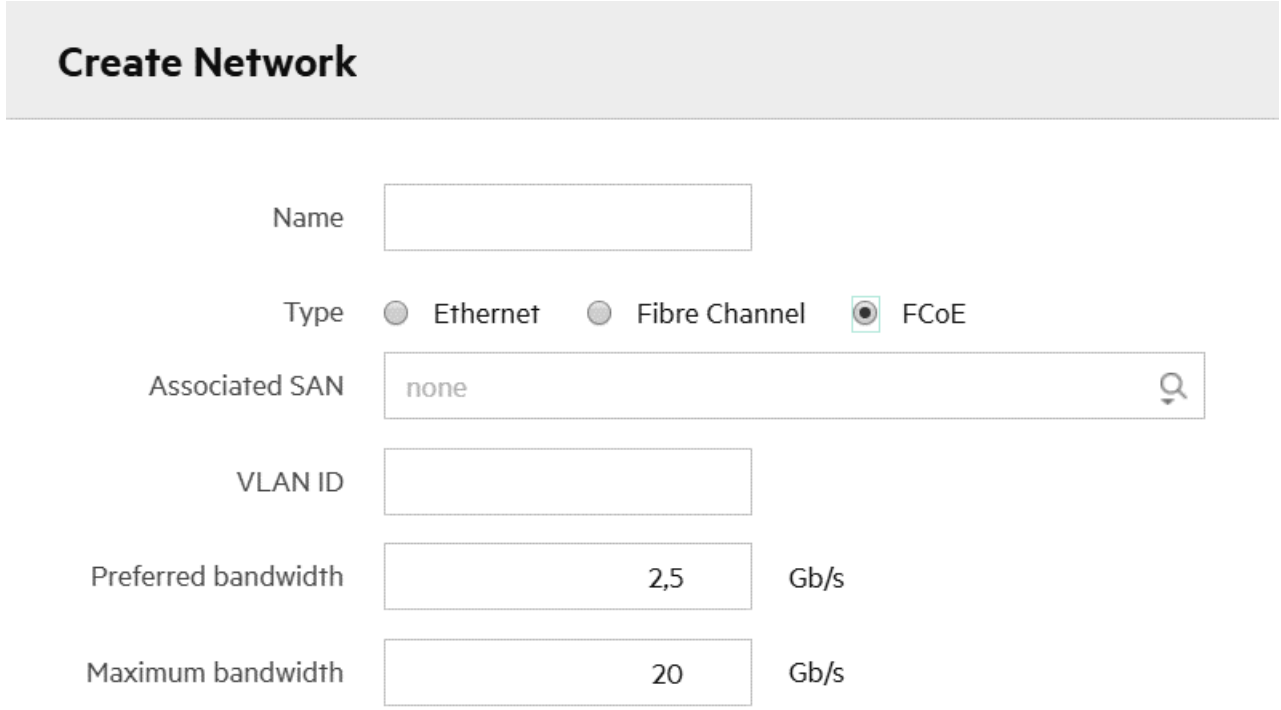
Network parameters:

- Fabric type
- Associated SAN
- Preferred and maximum bandwidths
- Login redistribution
- Link stability interval



CREATING FCOE NETWORKS

- Creating FCoE networks combines the Fibre Channel and Ethernet network creation processes.
- If SANs are discovered from SAN managers, the VLAN ID auto-populates when the Associated SAN is selected.

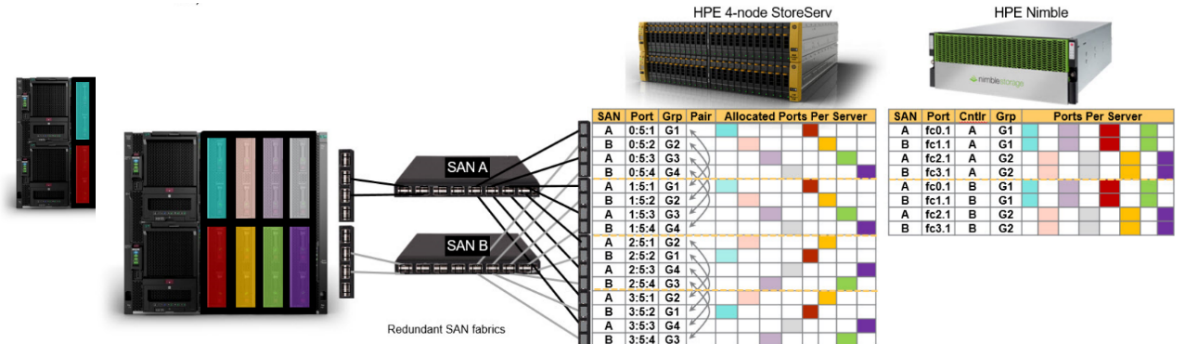


SAN STORAGE PATH LOAD BALANCING TO MULTI-NODE/COUPLET

"I want to perform SAN volume attachment configuration path load balancing across 3PAR/Primera nodes for best practice fault tolerance of paths."

HPE OneView enhanced load balancing capabilities with HPE Primera storage systems:

- Follows best practice data path configuration will be auto configured when using 2-8 node storage systems.
- Profile volume attach paths will prefer boot targets on different storage system nodes when selecting boot targets for multiple paths to the boot volume
- Profile volume attach paths will spread boot & data path port group selection to maximize use of storage system fault domains (for > 2 node systems) Fibre Channel protocol only (no iSCSI support)
- Profiles with "FC load balanced" boot connections will enhance load balancing of primary/secondary assignment across network/sans to use a least configured network load balancing approach

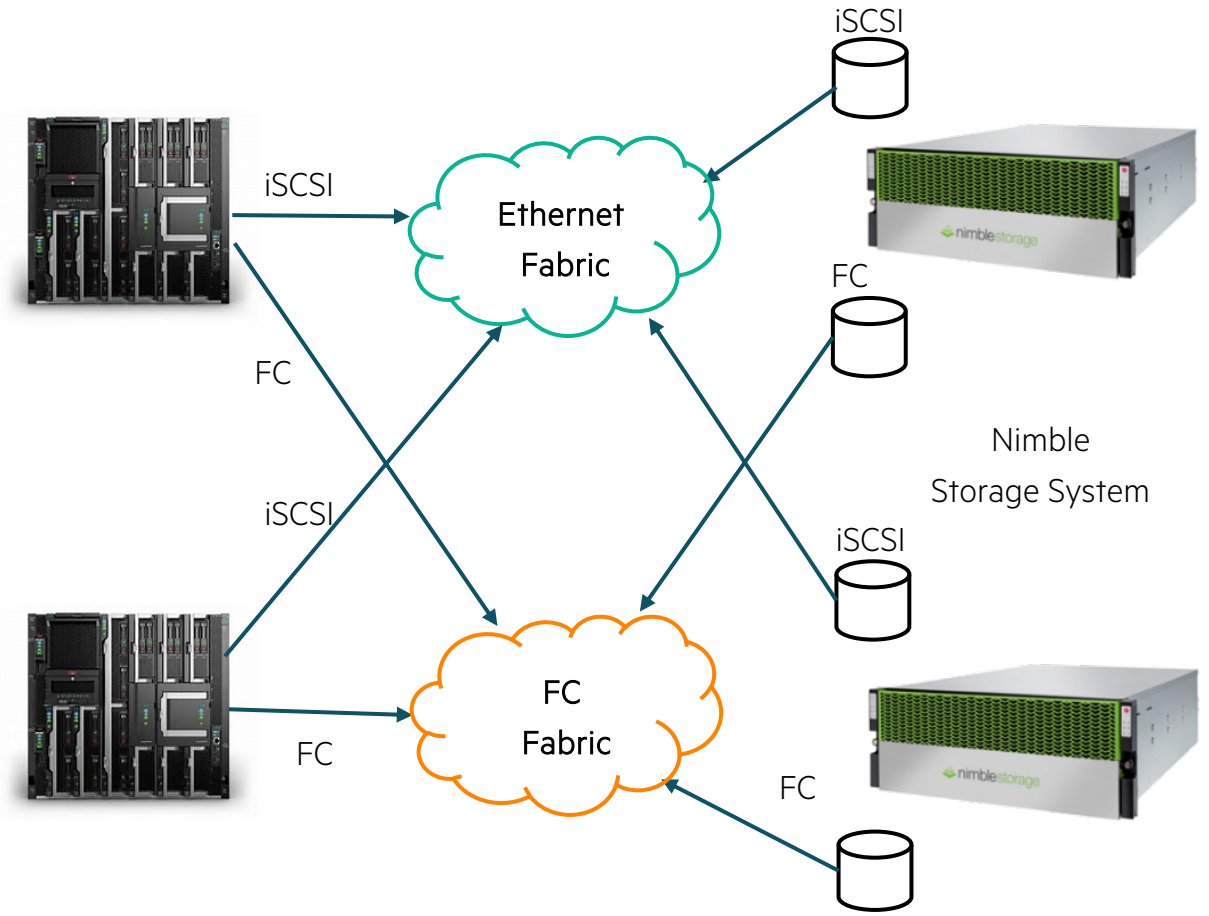


ONEVIEW – NIMBLE 5.1 - MIXED PROTOCOL STORAGE

"I want to configure Nimble storage to support both FC and iSCSI protocols using the same storage system."

HPE OneView will now support Nimble 5.1 multi-protocol arrays with both FC and iSCSI ports on a single array:

- Customers can use the protocol that is best for the use case of the volume's usage
- OneView manages both iSCSI and FC ports.
  - iSCSI port is VLAN assignment for discovery IP's and subnets
- Requires Nimble OS version 5.1 and above
  - Can be configure to support both FC and iSCSI protocols from the same storage system (group of arrays).
  - Servers can be configured to access storage using both protocols at same time
  - Storage systems can be configured to serve storage using both protocols at the same time



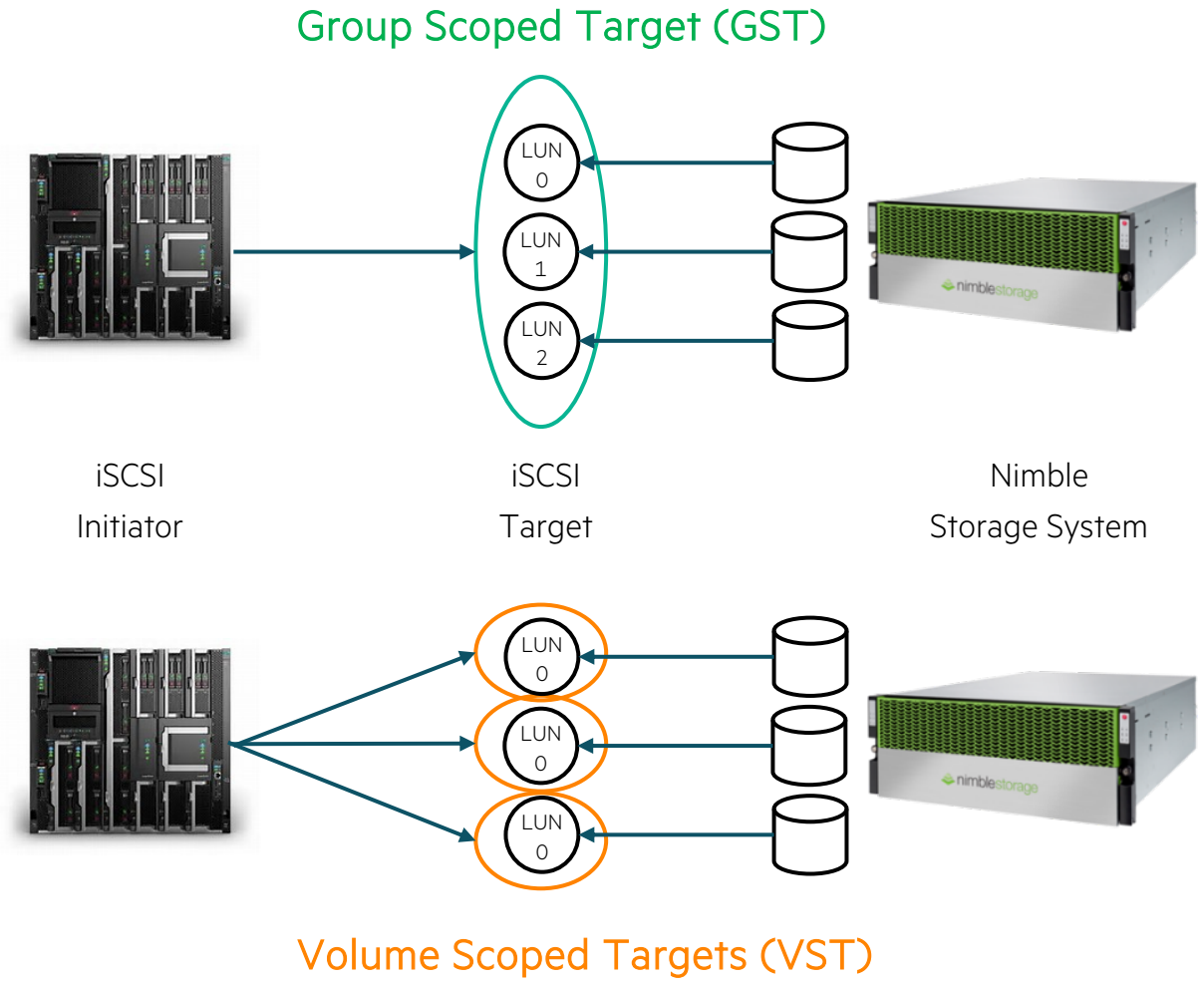
Mixed Protocol Storage Configuration

NIMBLE 5.1 - ISCSI GROUP SCOPED TARGET SUPPORT

"I want to configure iSCSI storage for my VMware cluster."

HPE OneView will now configure HPE Nimble 5.1 supported **Group Scoped Targets** when configuring iSCSI storage volume attachments for servers:

- Reduces the number of network connections between server and storage
  - One connection per group vs. one connection per volume
- Reduces the amount of server (iSCSI initiator) configuration required
- Allows adding iSCSI storage without reconfiguring the server
- Preferred for VMware cluster iSCSI storage use
- Required by Nimble synchronous replication use
- Supported with Synergy, C7000, DL/Apollo servers



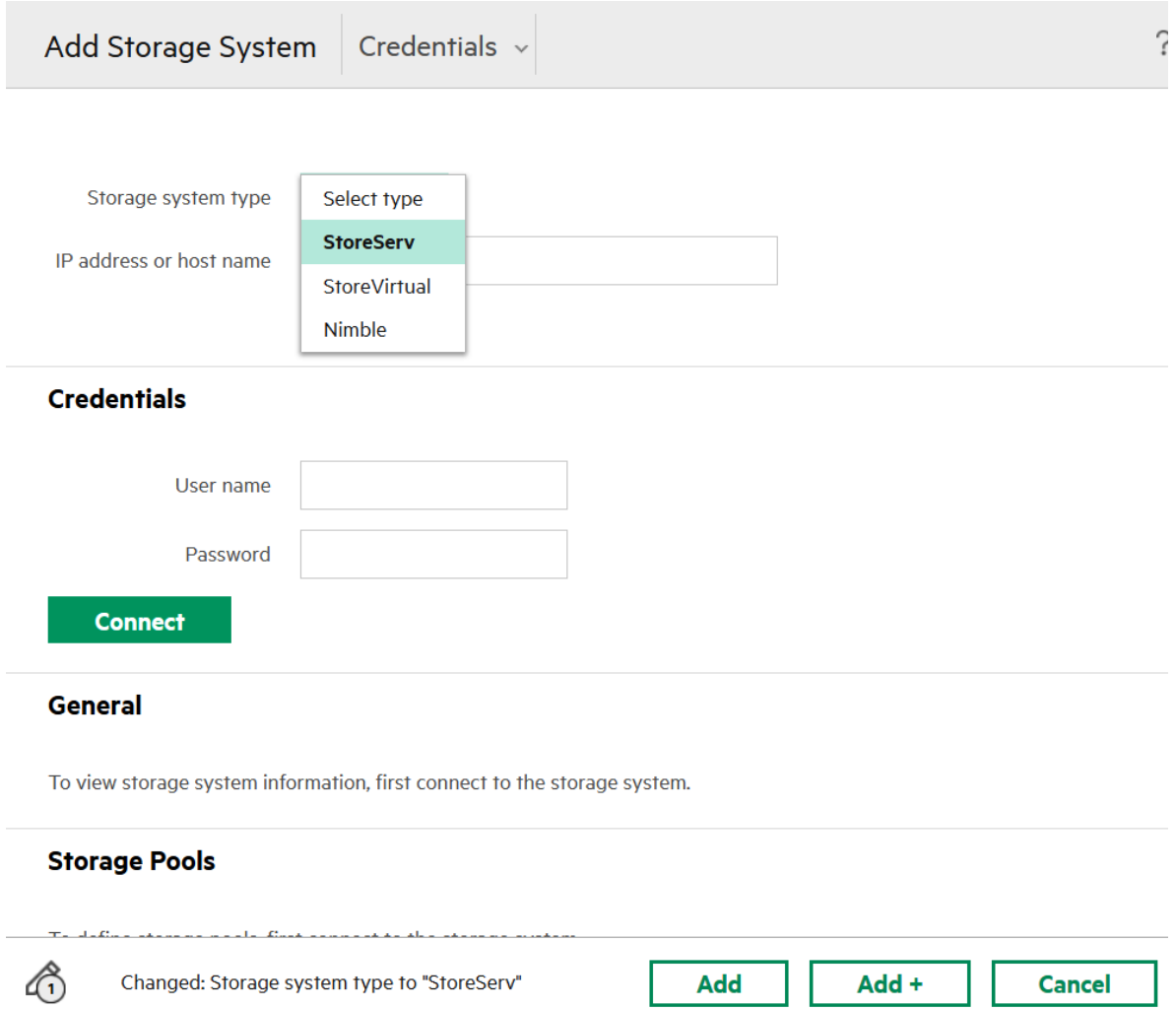
MANAGING HPE SYNERGY STORAGE

External Storage Arrays

ADDING MANAGED STORAGE SYSTEMS

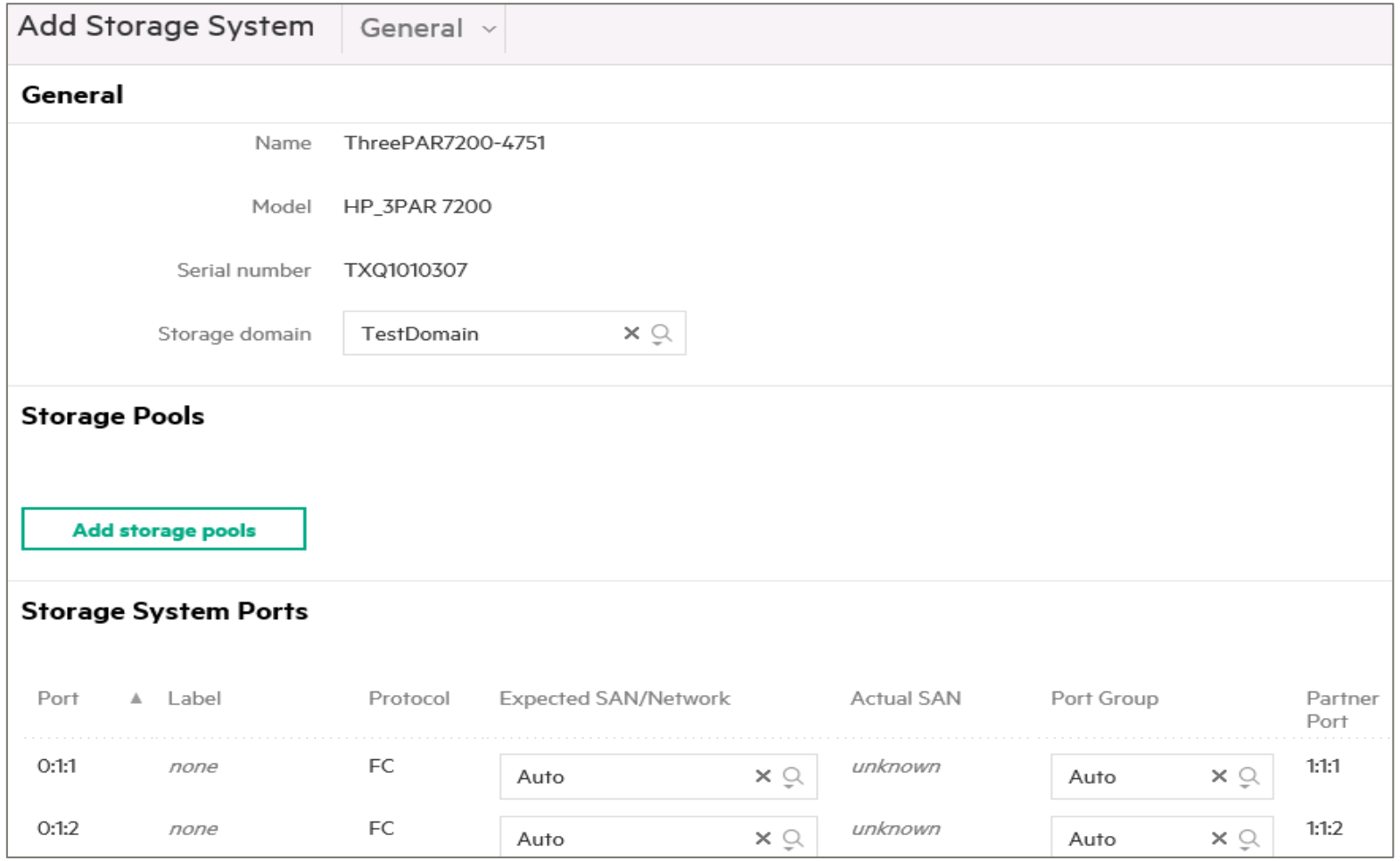
Supported storage:

- 3PAR StoreServ
- StoreVirtual
- Nimble
- Primera



ADDING A STORAGE SYSTEM

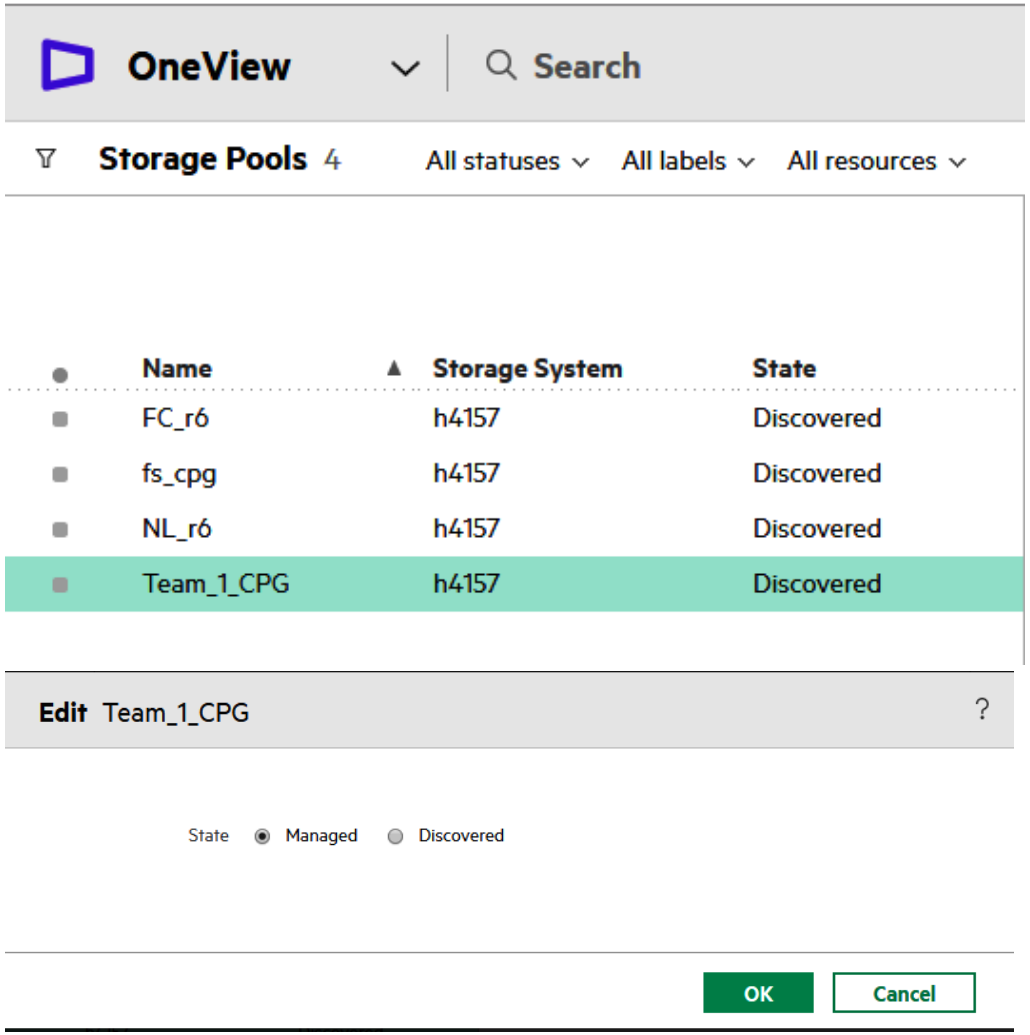
3PAR Storage domain and storage pools



Controller node ports
<*controller*: <*port-module*>:<*port*>

MANAGING STORAGE POOLS

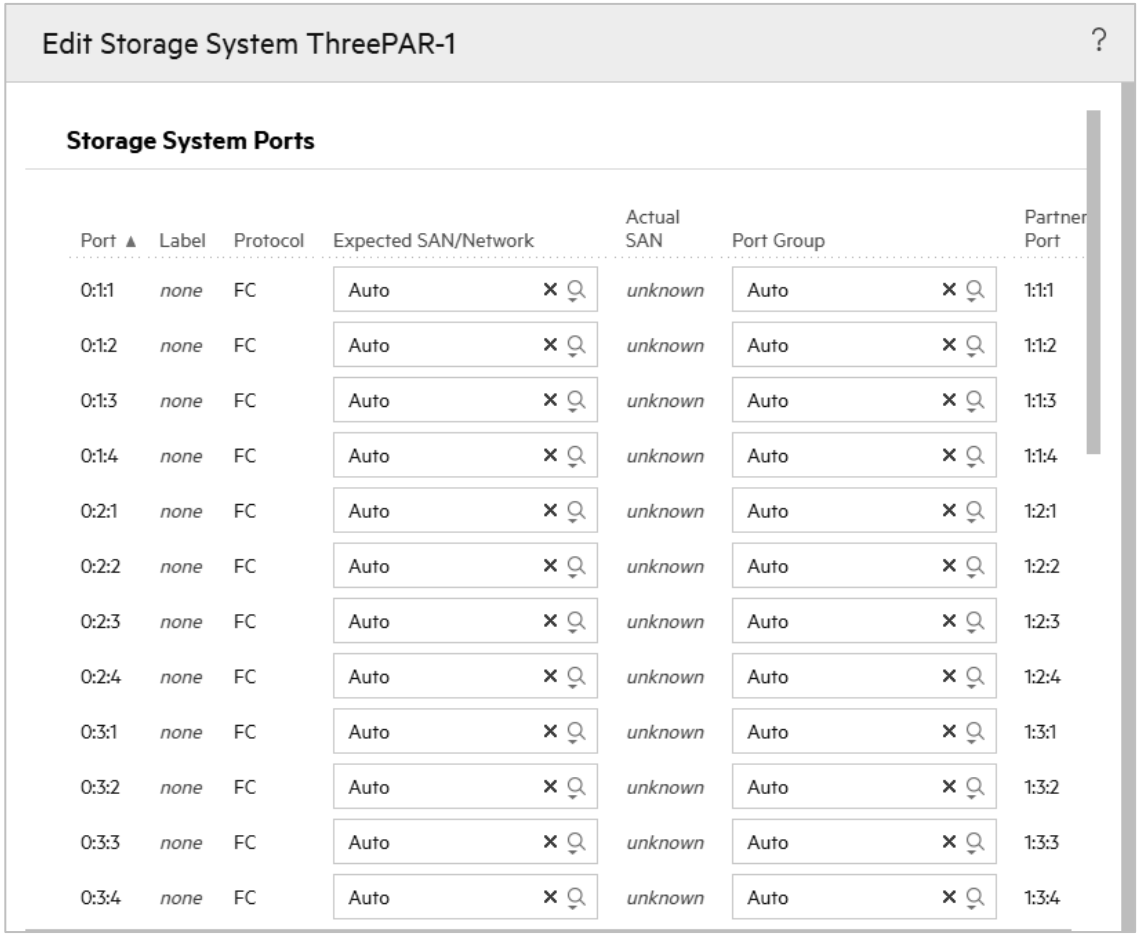
- All storage pools from 3PAR (if applicable) are added with the storage system in a discovered state.
- Volume provisioning is possible only for managed pools.
- To manage a pool, edit the pool, and change it to managed.
- Data protection volume collections from Nimble arrays are detected and imported into HPE OneView as volume sets.



CONFIGURING SYSTEM PORTS ON 3PAR

HPE OneView provides an ability to:

- Define port groups as part of the storage system configuration.
- Manage an expected SAN/network.



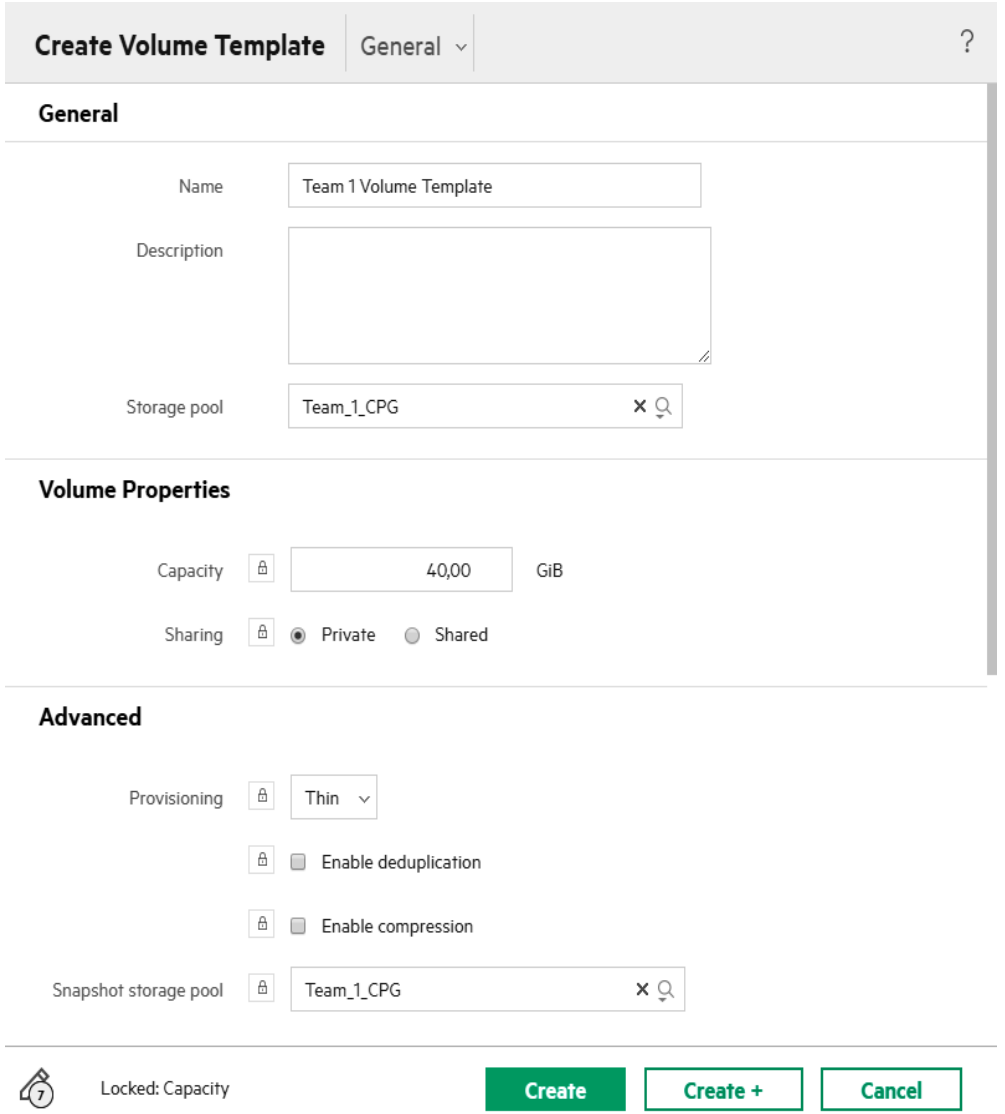
MANAGING HPE SYNERGY STORAGE

Storage Volumes

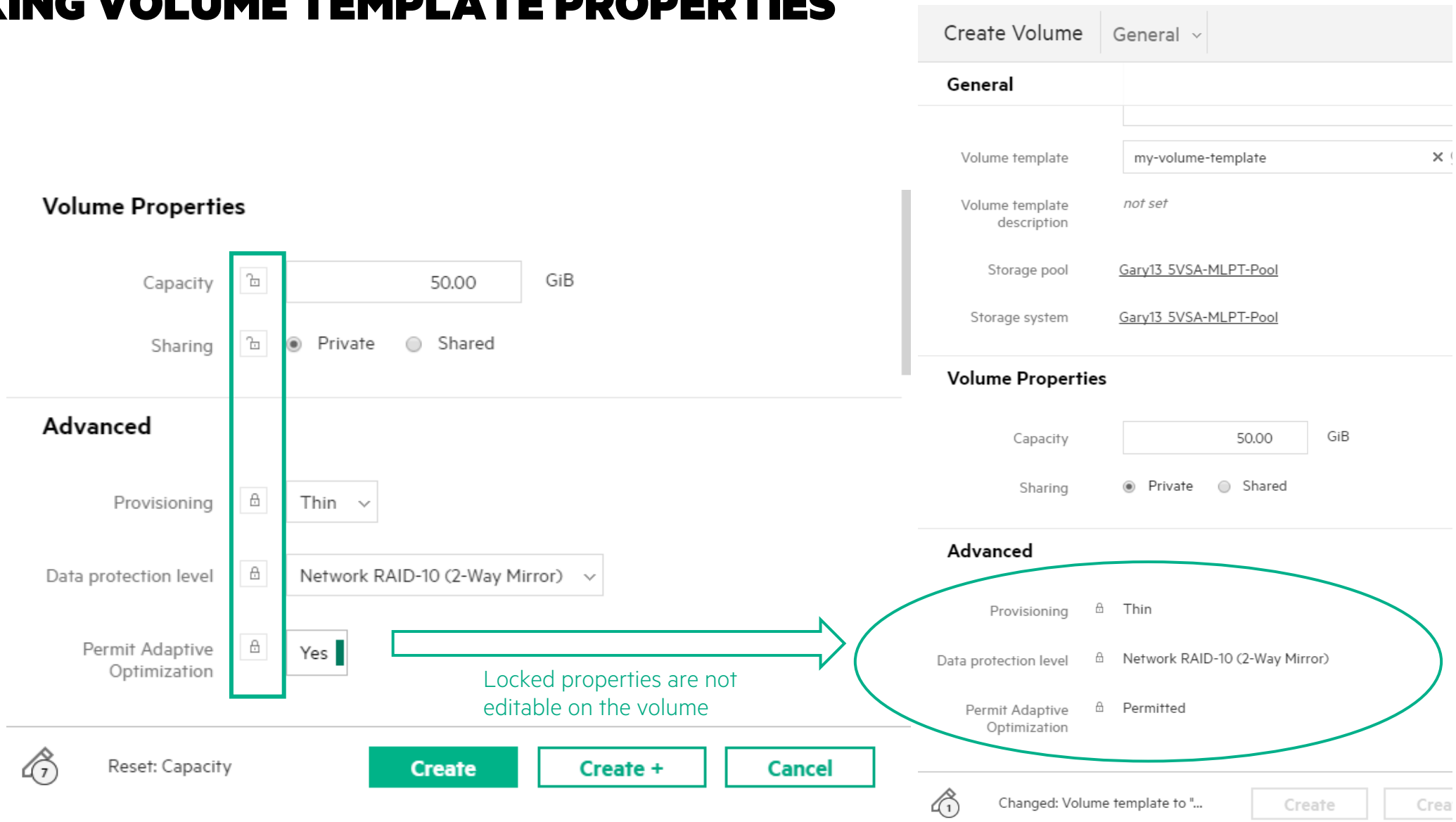
STORAGE VOLUME TEMPLATES

Storage administrators can create storage volume templates.

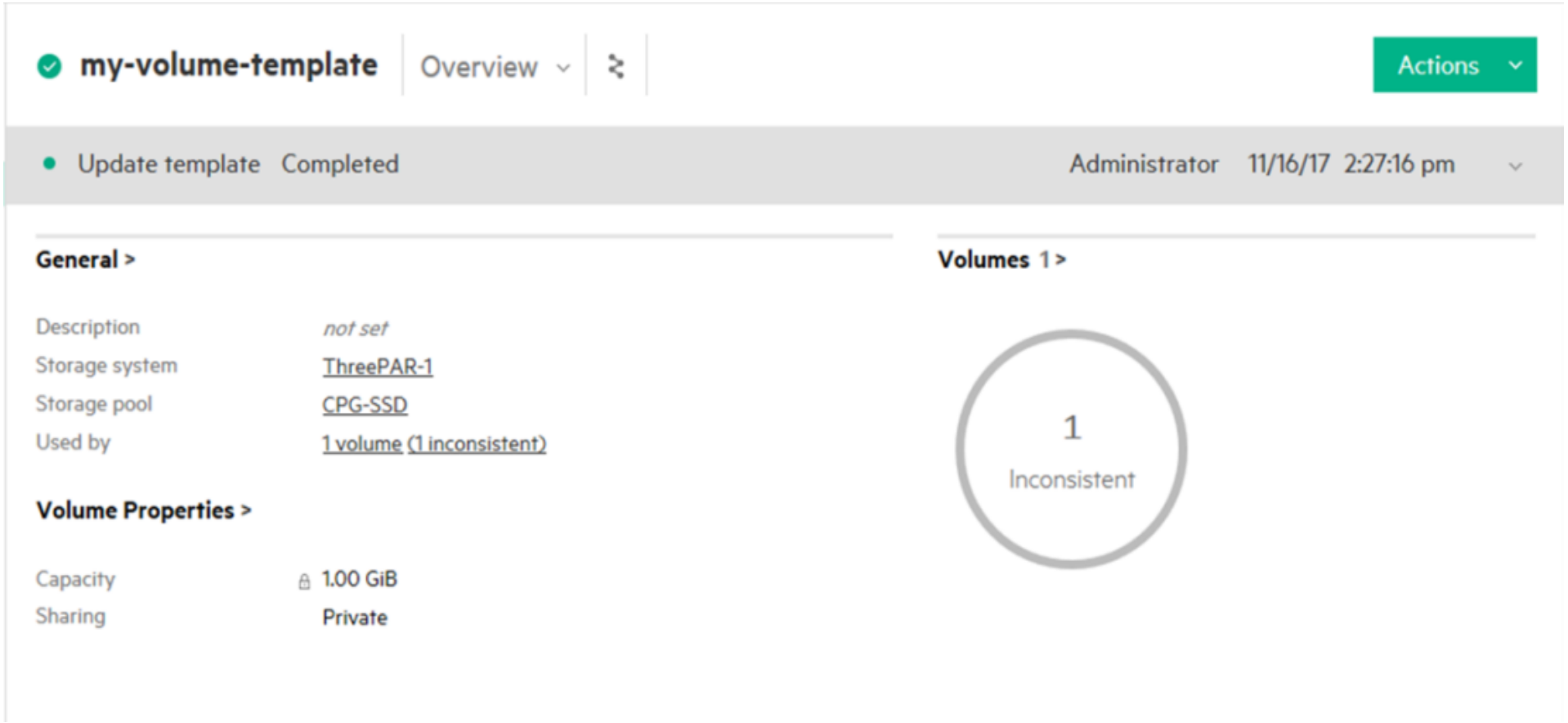
- The administrator can force users to create volumes using the available storage volume templates.
- 3PAR StoreServ pools support different volume properties than StoreVirtual or Nimble pools.



LOCKING VOLUME TEMPLATE PROPERTIES

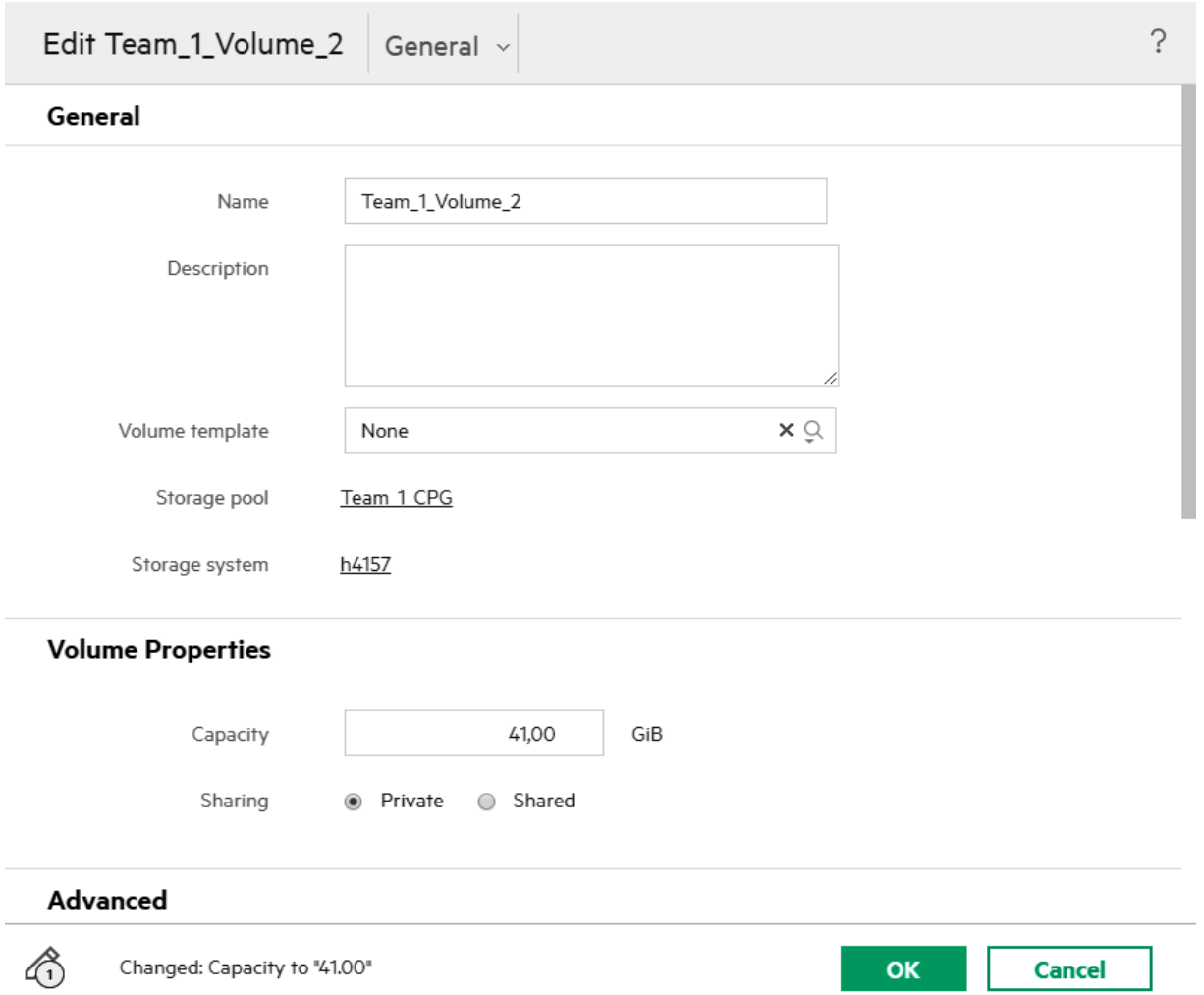


VOLUME CONSISTENCY VALIDATION

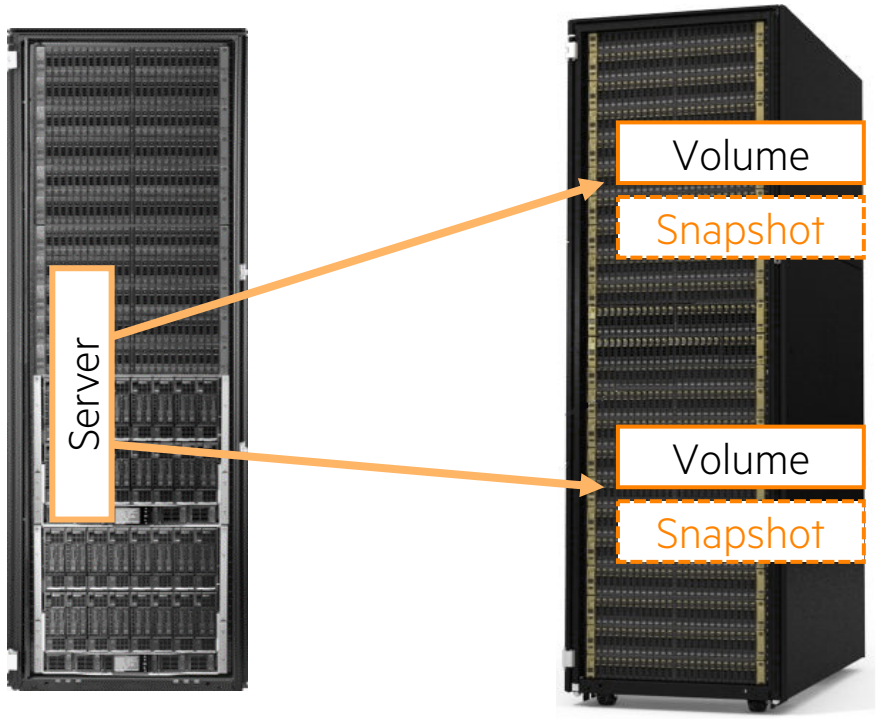


GROWING VOLUME CAPACITY

- Edit volume capacity (cannot be decreased)
- Up to available pool capacity (fully provisioned)
- Up to 16 TB (thin provisioned)



SAN VOLUME SNAPSHOTS / CLONES

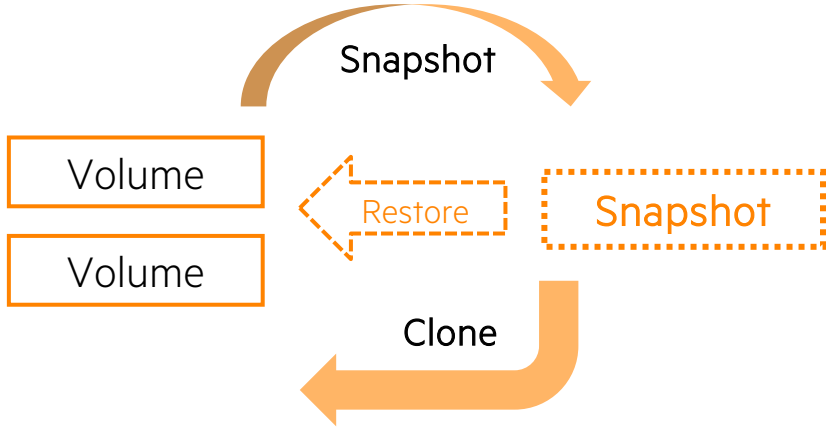


HPE Synergy

HPE Storage
3PAR StoreServ

SAN volume snapshots and clones

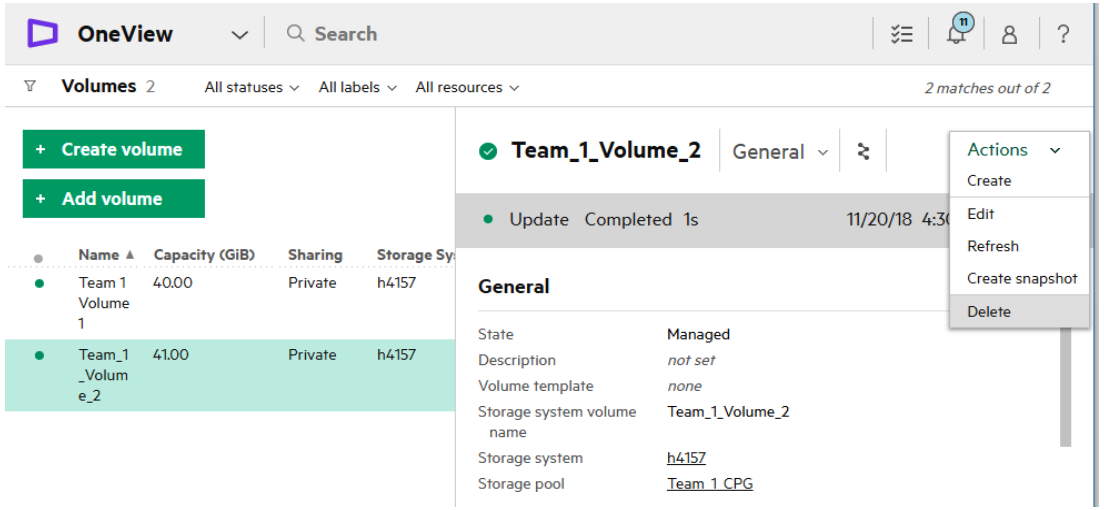
- Server admin can create and use snapshots and clones of SAN volumes directly within HPE OneView
- Single snapshot/clone experience across storage arrays

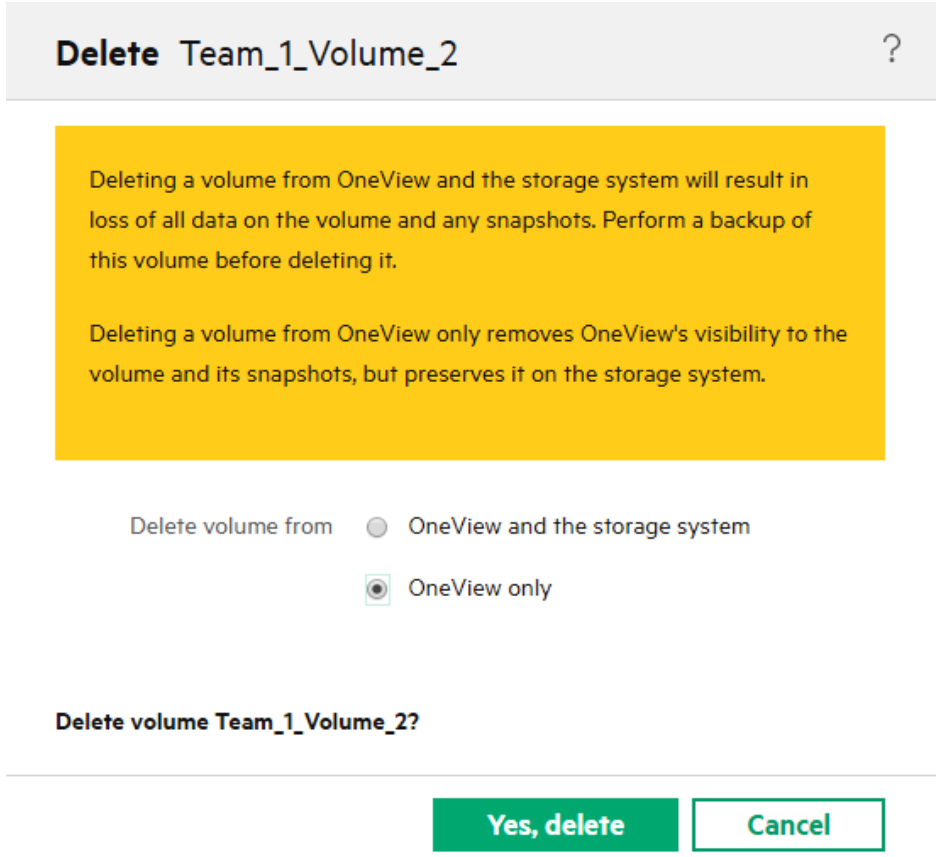


IMPORTANT: HPE OneView makes the snapshot request (via the 3PAR REST API), which will fail if the storage system does not have a snapshot license.

DELETING THE VOLUME ATTACHMENTS AND VOLUMES

- Deleting a volume options:
  - Only from the HPE OneView provisioning list
  - Removes a volume on the storage system
- If the volume is associated with a server profile, HPE OneView will not allow you to remove it.

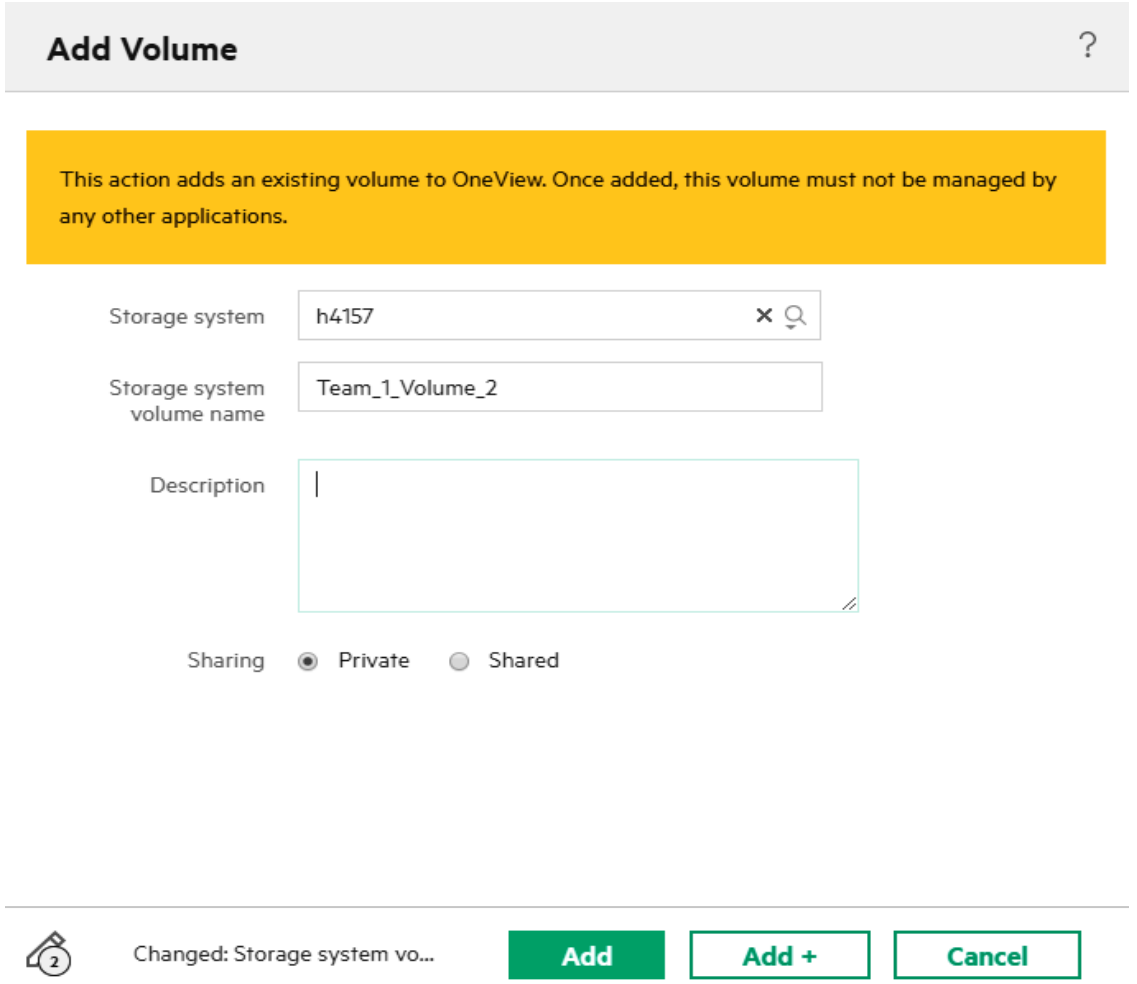




IMPORTING A STORAGE VOLUME

You can add an existing storage volume into HPE OneView.

- HPE OneView does not differentiate between volume created and volume added.



MANAGING HPE SYNERGY COMPUTE

Compute Hardware

HPE SY 480/660 GEN 10 COMPUTE MODULES

IT goals:

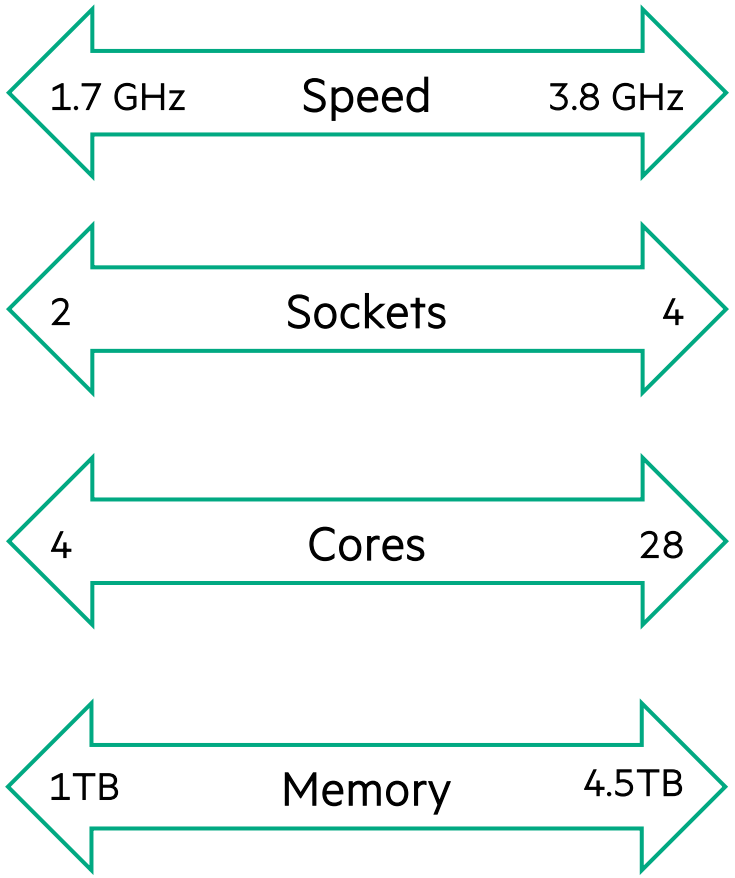
- Enterprise Standard Solution across workloads
- Flexible Resource Pool
- Consolidation of Workloads

Everyday workload examples:

- General Enterprise Applications
- Business Management
- Data Management
- IT infrastructure

Popular workload examples:

- Virtualization and VDI
- Software Defined Storage
- Data Management
- Data Analytics
- Collaboration
- ERP
- Private cloud
- Containers



Scale economically from 1 to 2 or 2 to 4 processors

Choose from the Intel® Xeon™ Scalable Family processors **up to 205W**
(Generation 1 or 2 – **with GPU option support** in SY480 Gen10

Run multiple tiers and multiple levels of availability in one infrastructure

Provision and re-provision rapidly and simply through Composability/OneView

Hewlett Packard Enterprise | intel

MORE CHOICE TO RUN WORKLOADS BETTER

Generalized Deployment Type -- VIRTUALIZATION: Virtual Machines support ANY workload

HPE Synergy 480 Gen10	HPE Synergy 660 Gen10	HPE Synergy 620 Gen9	HPE Synergy 680 Gen9
Most economic general purpose compute platform Most processor choices, easy to buy and deploy for most workloads and deployment types	General purpose scale-up with highest memory density General purpose computing with double the I/O and memory for larger scale applications	Most optimized software licensing by core For best core to memory ratio, high performance, and the most 2S I/O for choice and availability 2x memory & IO vs SY480	Mission Critical performance, memory and I/O density For the largest memory demands, high performance, with the most 4S I/O 2x memory & IO vs SY660
General Enterprise Applications*			
Engineering, VDI			
Object Storage			
Networking			
Content, App Dev			
Data Warehouse		Data Analytics	
	Business Management: ERP, CRM, HCM; Data Management		

*General enterprise applications: VDI, email, collaboration, system management, web serving, engineering

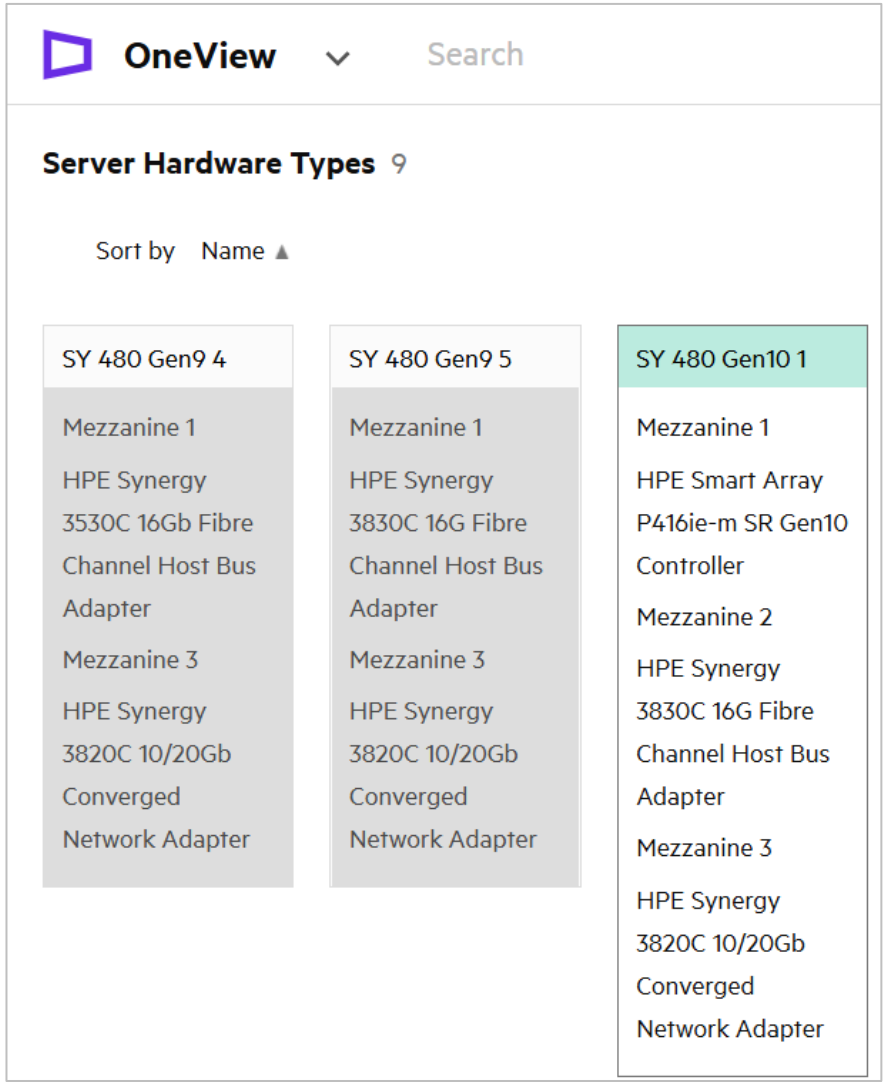
Hewlett Packard Enterprise | intel

MANAGING HPE SYNERGY COMPUTE

OneView Server Configuration

SERVER HARDWARE TYPE

- For any managed server, hardware type defines the physical configuration for server hardware and which settings are available to server profiles.
- A unique S.H.T will be created automatically for different architecture and mezzanine card configurations.
- The S.H.T will capture different parameters for different architectures; port information will be available only for HPE BladeSystem and Synergy.



MANAGING HPE SYNERGY COMPUTE

Server Profile Templates

SERVER PROFILES AND SERVER PROFILE TEMPLATES

Any single Synergy compute node must have a server profile defined:

- Individual profile can be created
- Server profile template can be used (to standardize provisioning and compliance check)

A server profile captures key aspects of a server configuration in one place, including:

- Unique IDs (WWNs, MACs, SN)
- Network and storage connectivity
- Firmware update selection and scheduling
- OS deployment settings
- BIOS and boot configuration settings
- Local storage and SAN storage (including D3940)
- iLO settings
- Advanced settings

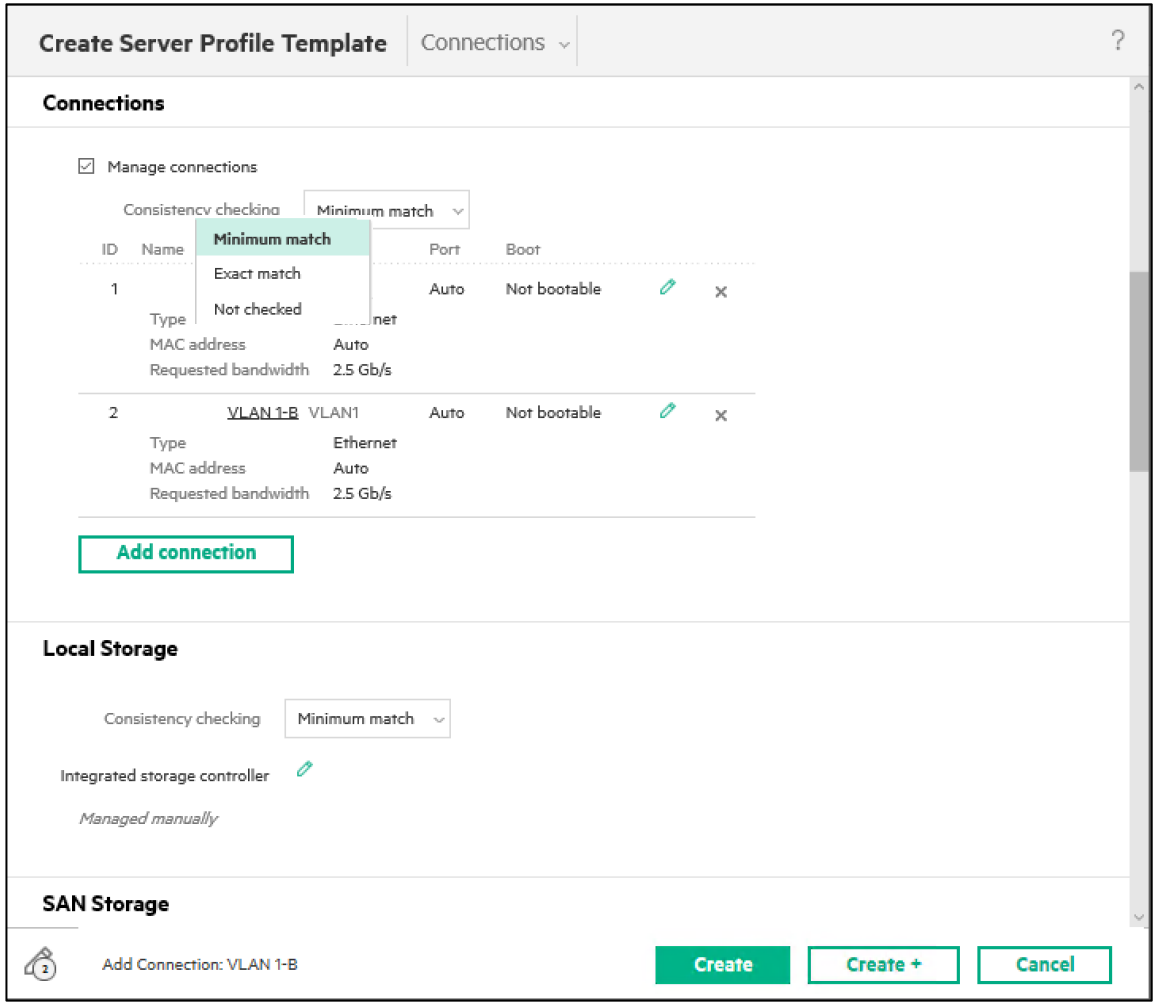
WHEN TO USE A SERVER PROFILE TEMPLATE

A server profile template allows you to do the following tasks:

- Update many server profiles with the same configuration.
- Easily generate new server profiles from one template.
- Control configuration changes for multiple servers at once. HPE OneView checks compliance in all the server profiles that are referenced to the template.
- Automatically resolve the compliance issues using the **Update from Template** action.

SERVER PROFILE TEMPLATE PARTIAL COMPLIANCE TRACKING

- Customers can define minimum requirements or not to track.
- Three settings:
  - Minimum match
  - Exact match
  - Not checked
- Granular control of each profile section:
  - OS Deployment
  - Firmware
  - Connections
  - Local Storage
  - SAN Management
- Exceptions:
  - BIOS
  - Boot Mode
  - iLO
- It is also available with Logical Interconnect Group resources.



SIMPLIFY MANAGEMENT OF SERVER PROFILE UPDATES

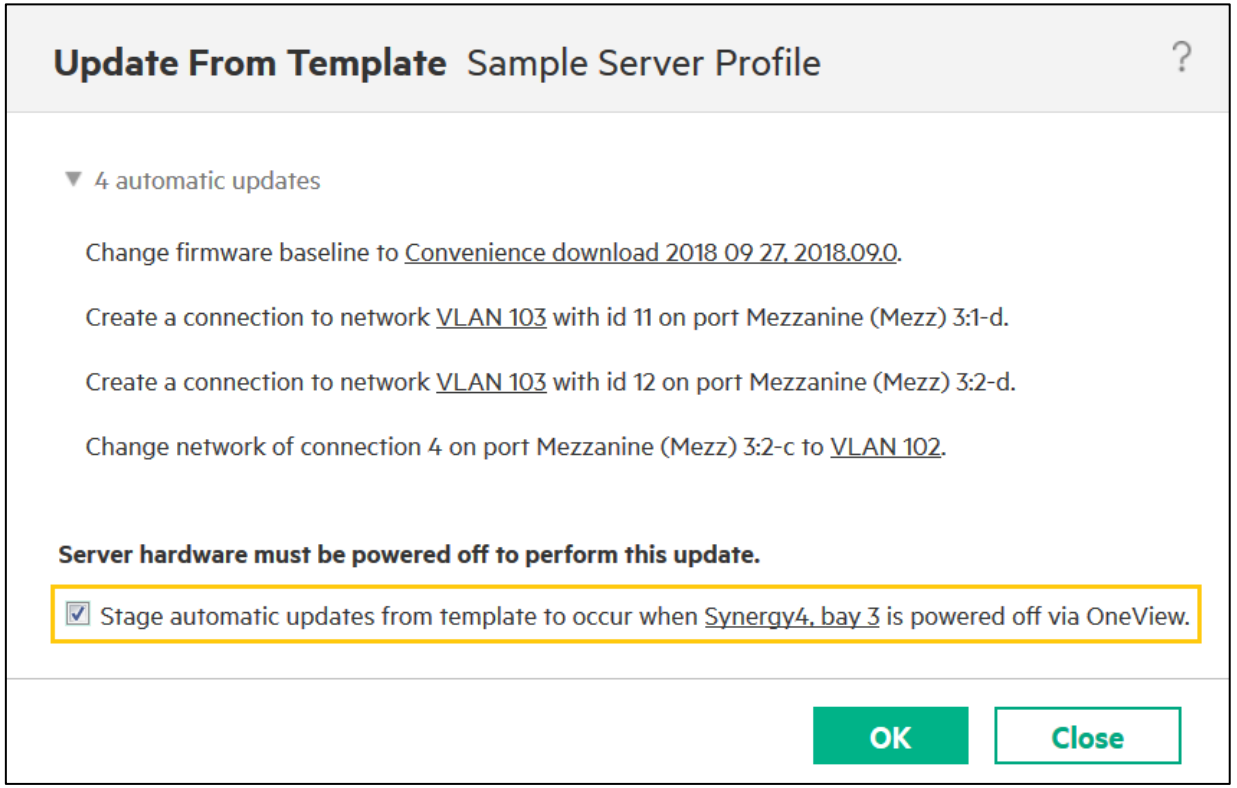
Apply staged updates when server hardware is powered off.

OneView expands update management to powered on servers:

- OneView displays server profile changes.
- User requests staged update.
- The server profile is automatically updated from the template when the server is next powered off.

Best practices for server profile updates:

- Update the server profile template.
- Identify noncompliant server profiles.
- Complete the update from the template.

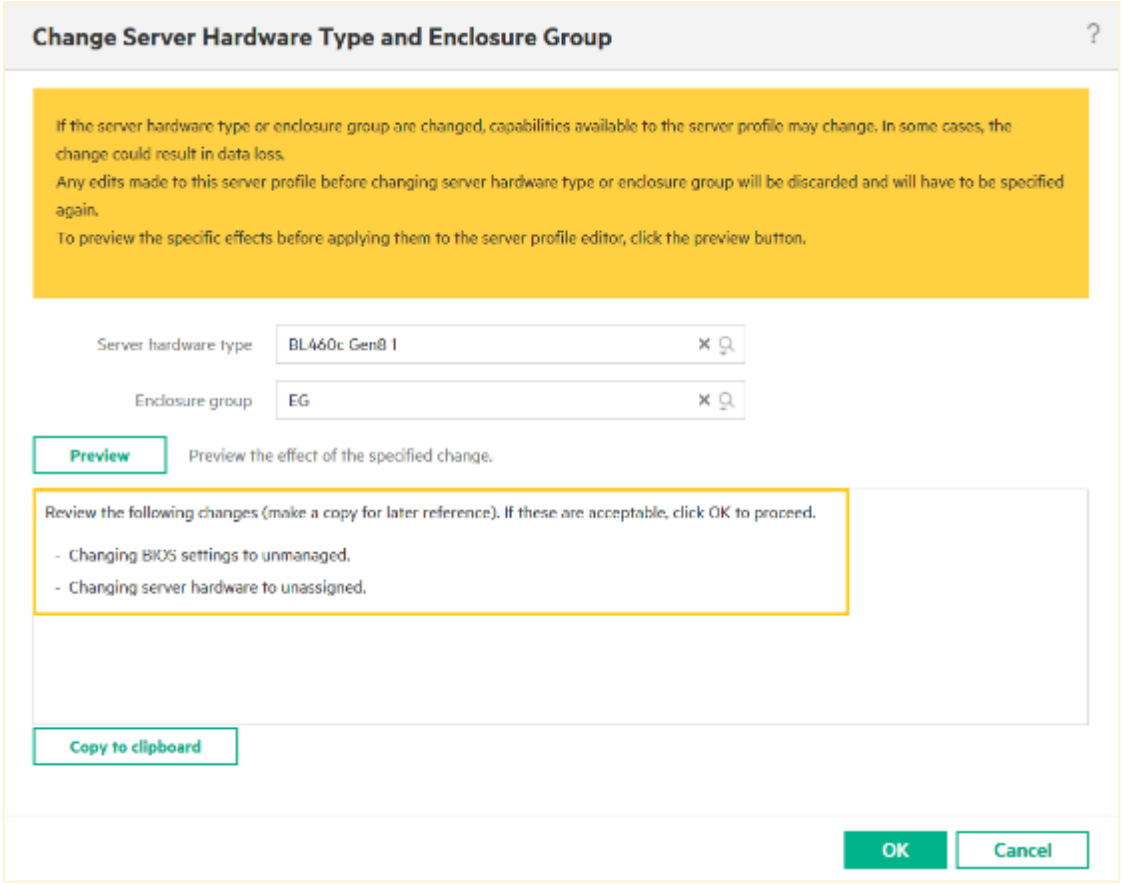


SERVER PROFILE ENHANCEMENT

Change server hardware type & enclosure group

Detailed profile changes when performing a server profile move

- Server profiles can be assigned to a server with a different server hardware type or in a different enclosure group
- Some server profile settings may need to be adjusted when the profile is moved
- Enhanced assignment lists every setting that will be adjusted.
- No server profile changes are committed until the edit session ends.



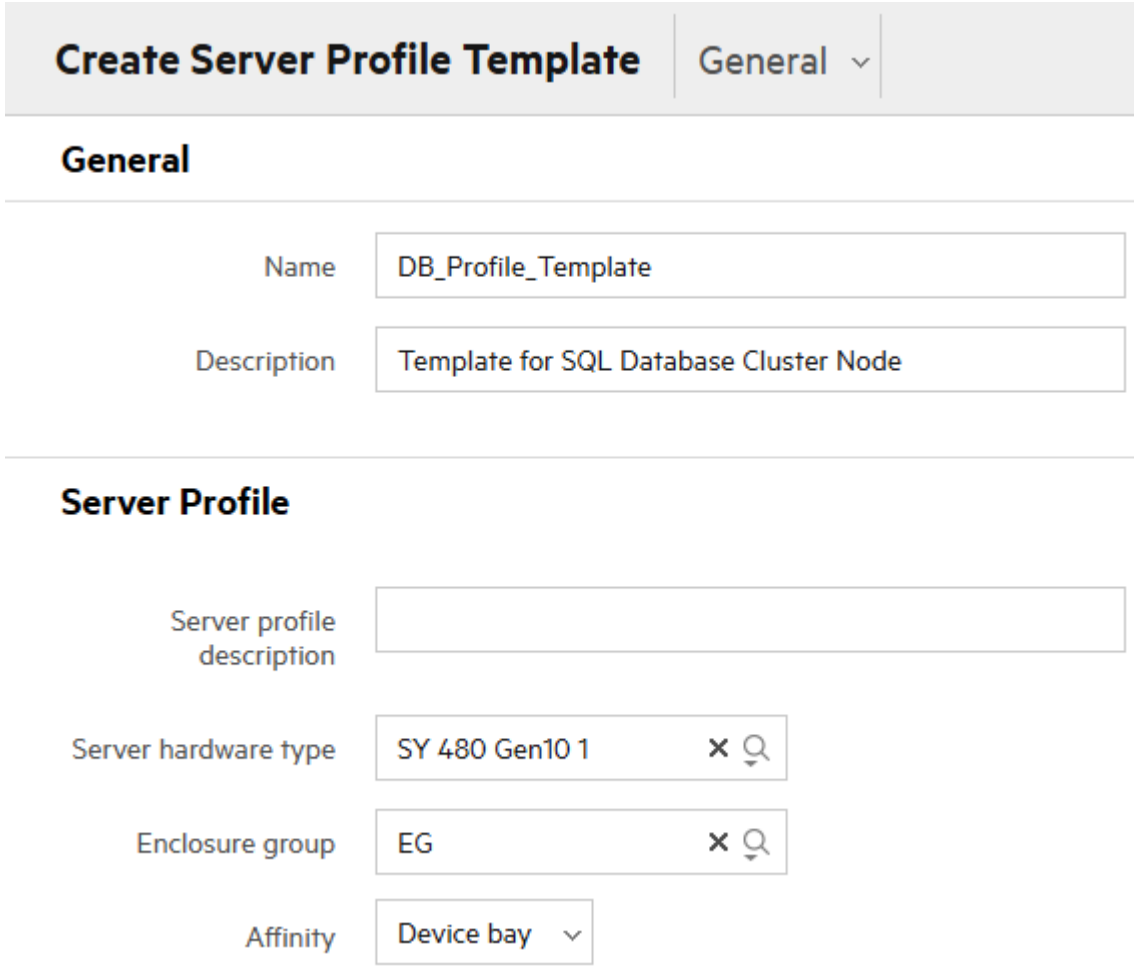
GENERAL AND SERVER PROFILE

General

- Provide the server profile name.
- Enter an optional description.

Server Profile

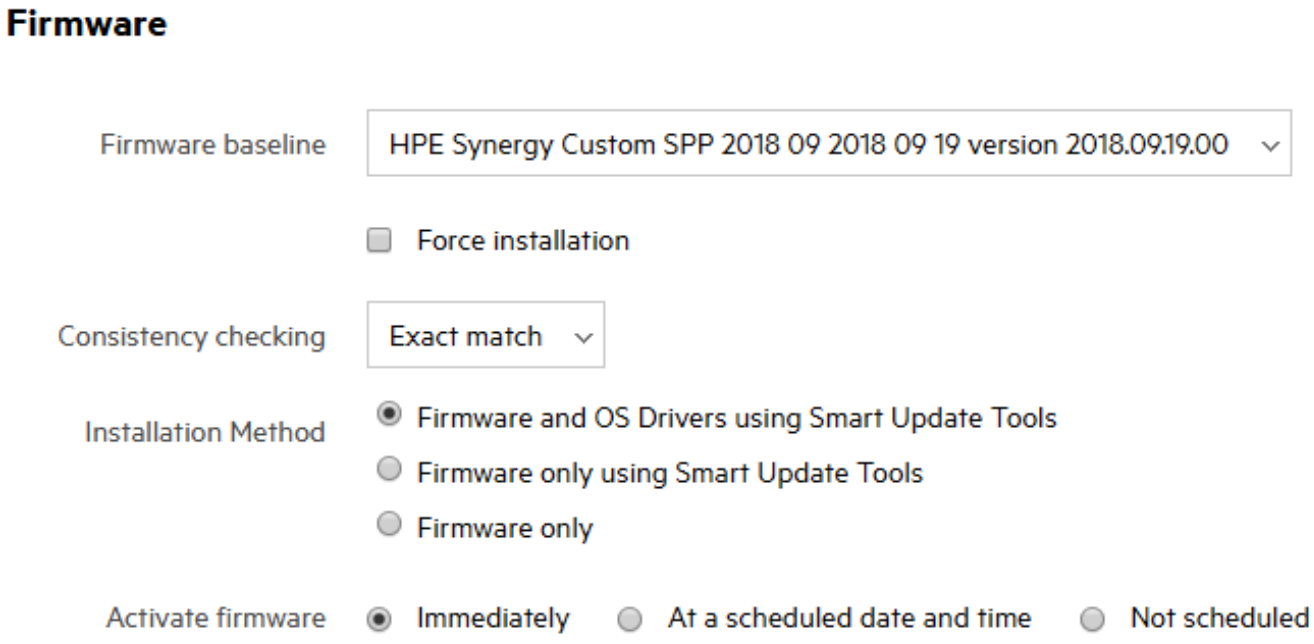
- Enter the optional server profile description.
- Select **Server Hardware Type**.
- Select **Enclosure Group**.
- Select the Affinity:
  - Device bay
  - Device bay + server hardware



FIRMWARE

Firmware

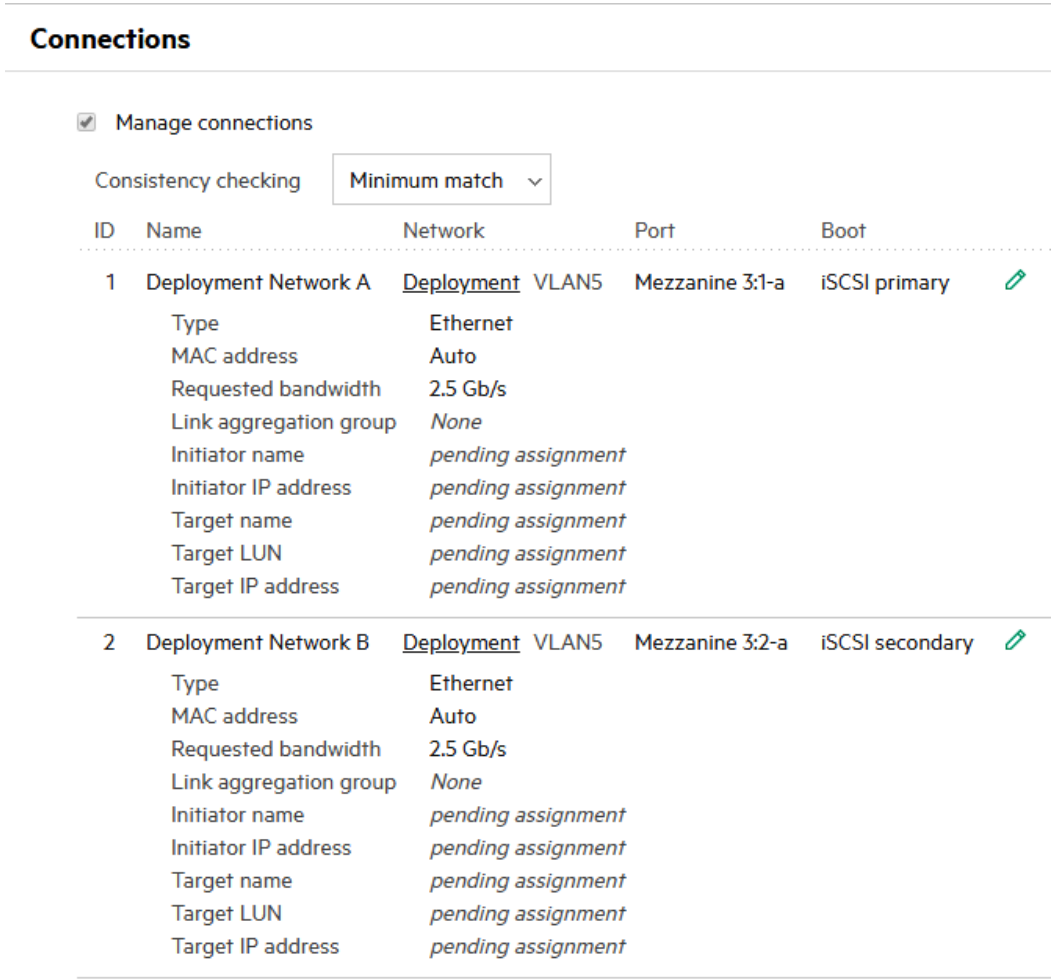
- Select the SPP from the repository to be used as a firmware baseline.
- Force the installation options:
  - Unchecked, only updates will be installed.
  - Checked, downgrades and rewrites will be allowed.
- Select the installation method.
- Select the activation method (reboot time).



CONNECTIONS

Connections

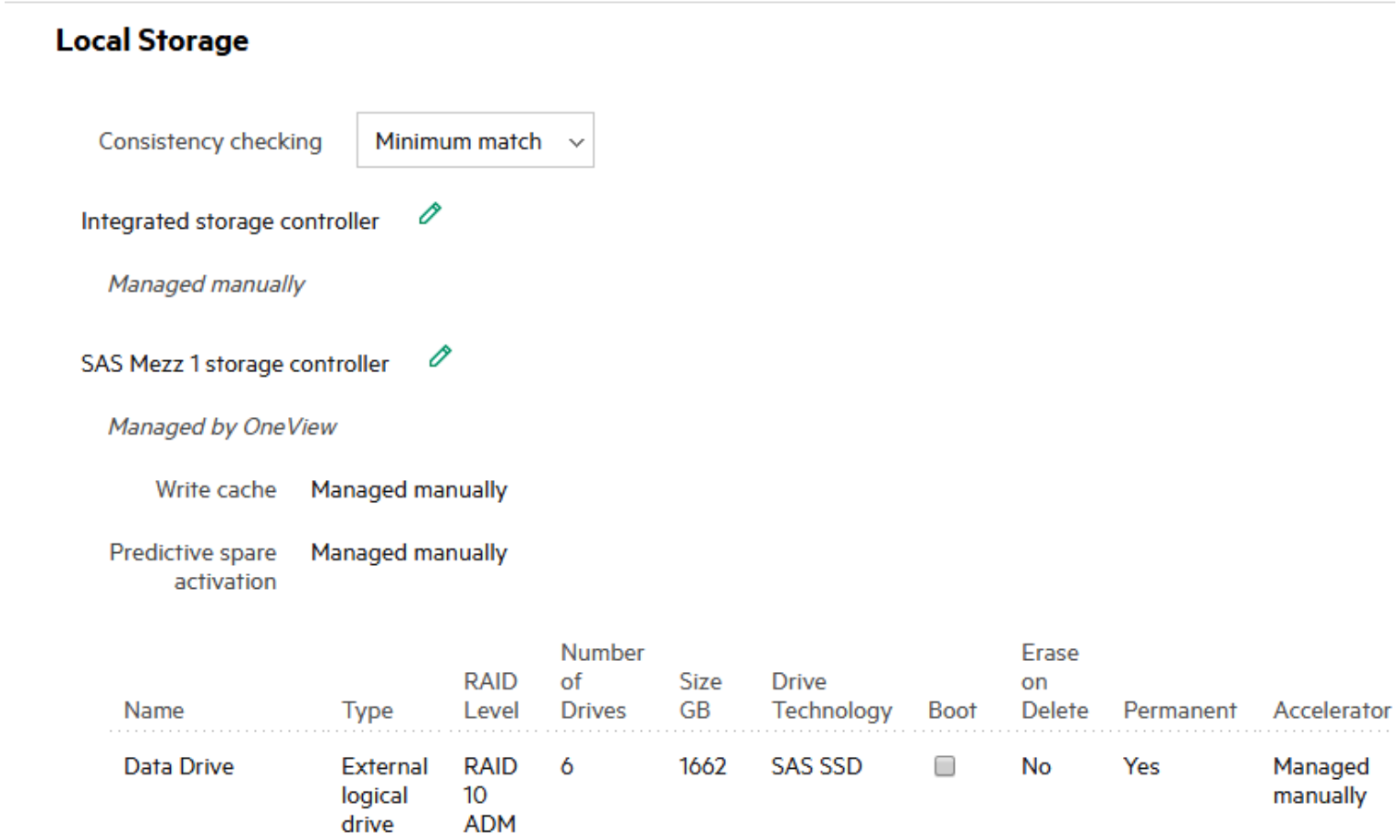
- Selecting the checkbox next to Manage connection option, enables connection definition (Ethernet, FC, FCoE).
- If an Image Streamer is used, the first connections from NIC are used to provide connectivity to the boot volumes.



LOCAL STORAGE

Local storage parameters

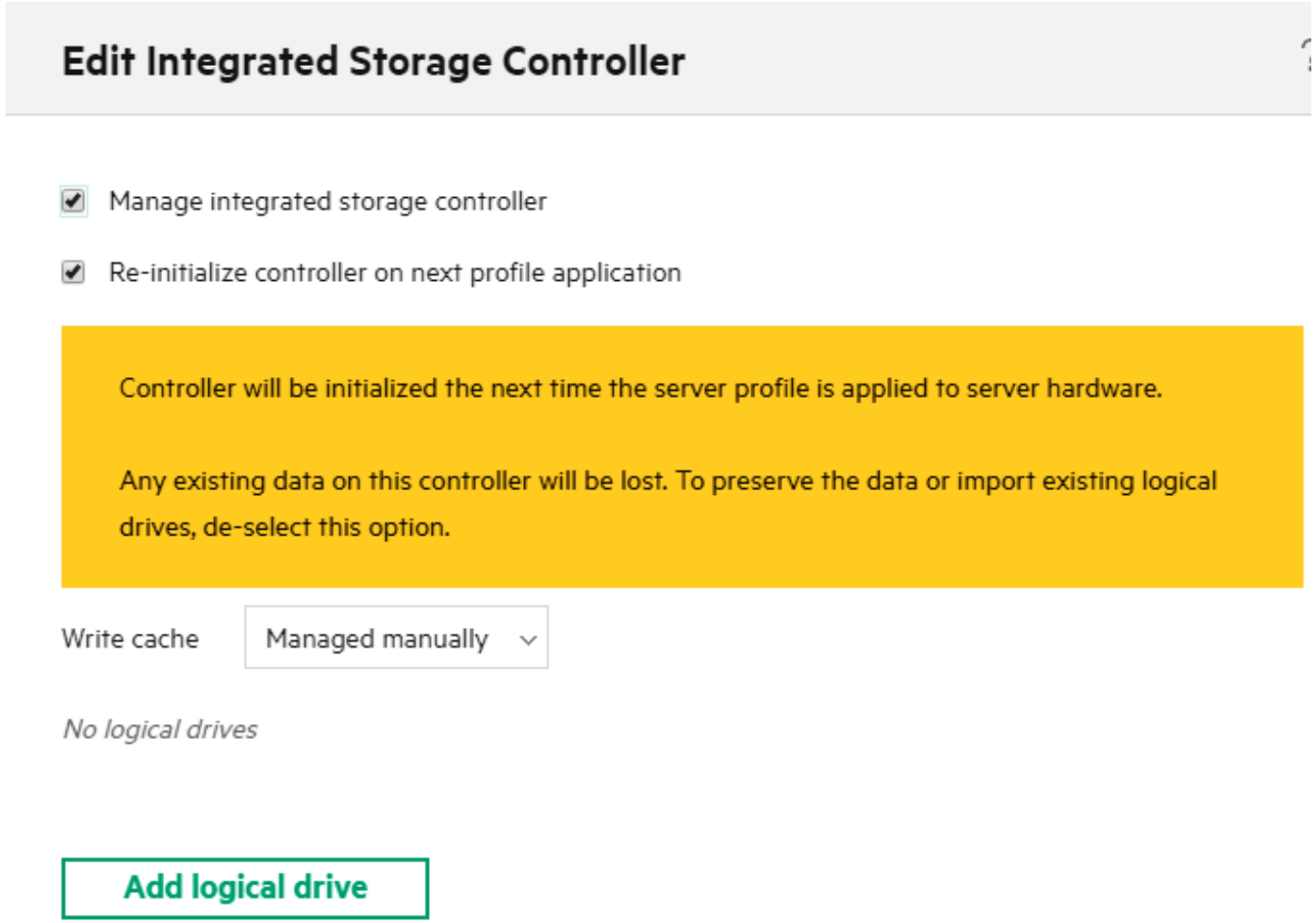
- Select the consistency check level.
- Select the controller to configure.
  - Integrated controller
  - SAS controller (D3940 connectivity)



CONFIGURING AN INTEGRATED STORAGE CONTROLLER

Integrated storage controller

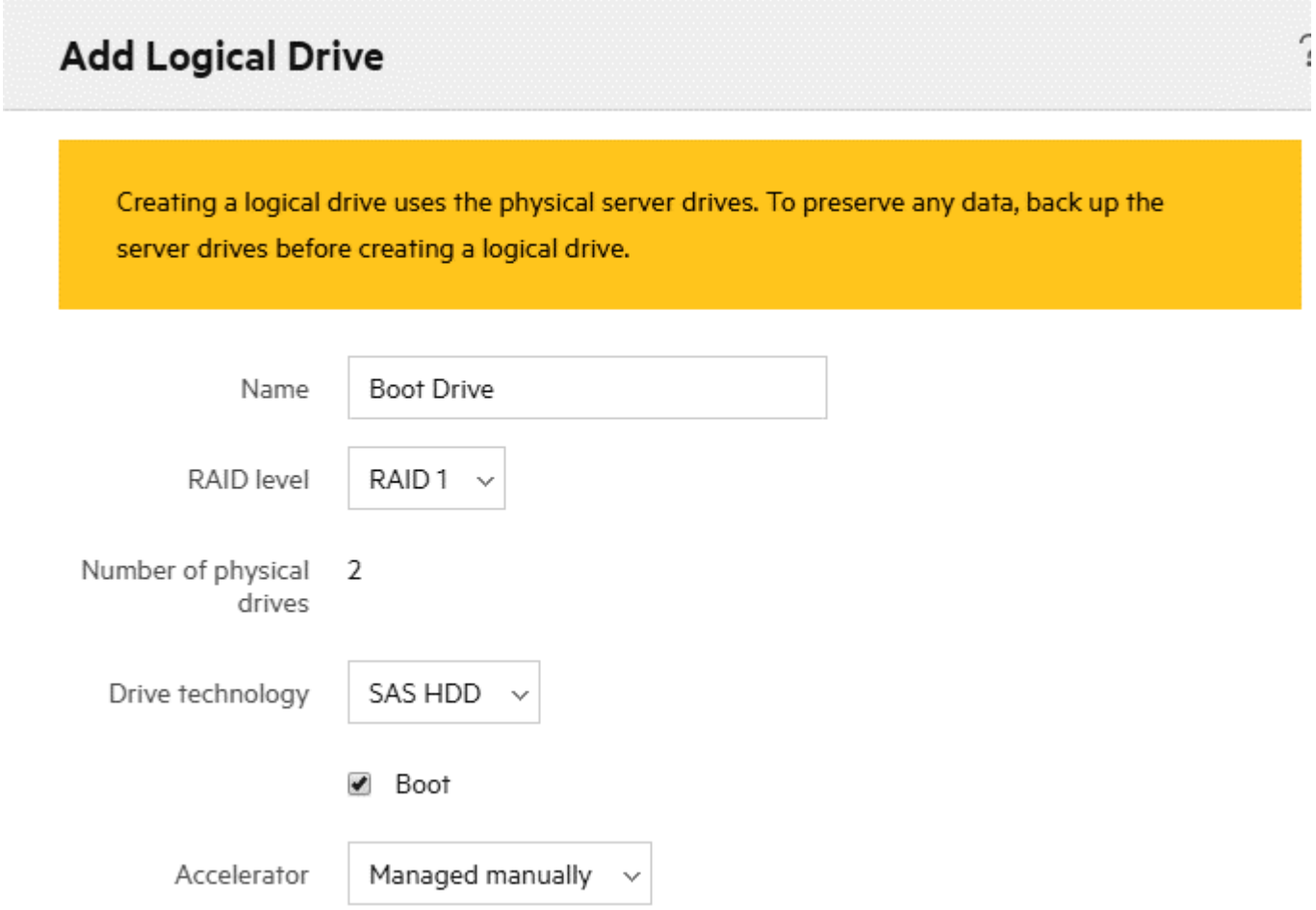
- Select the re-initialization mode.
- Configure the write cache settings.
- Configure the logical drive.



ADDING A LOGICAL DRIVE

Adding a logical drive for an integrated controller

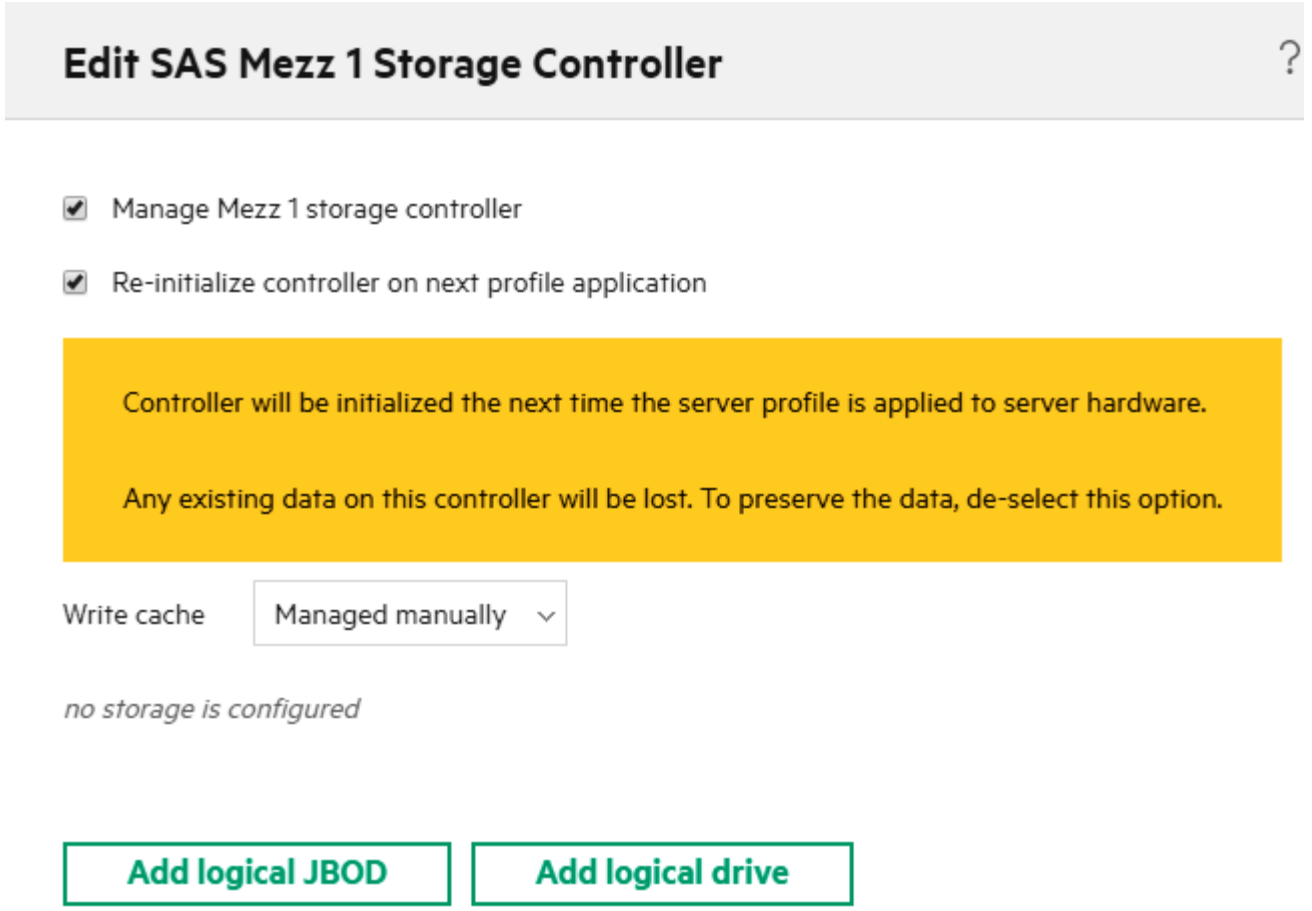
- Enter the logical drive name.
- Select the RAID level.
- Select the number of the drives and drive technology.
- Enable/disable the boot from the drive.
- Configure the acceleration.



CONFIGURING A MEZZANINE SAS CONTROLLER

Mezzanine SAS controller

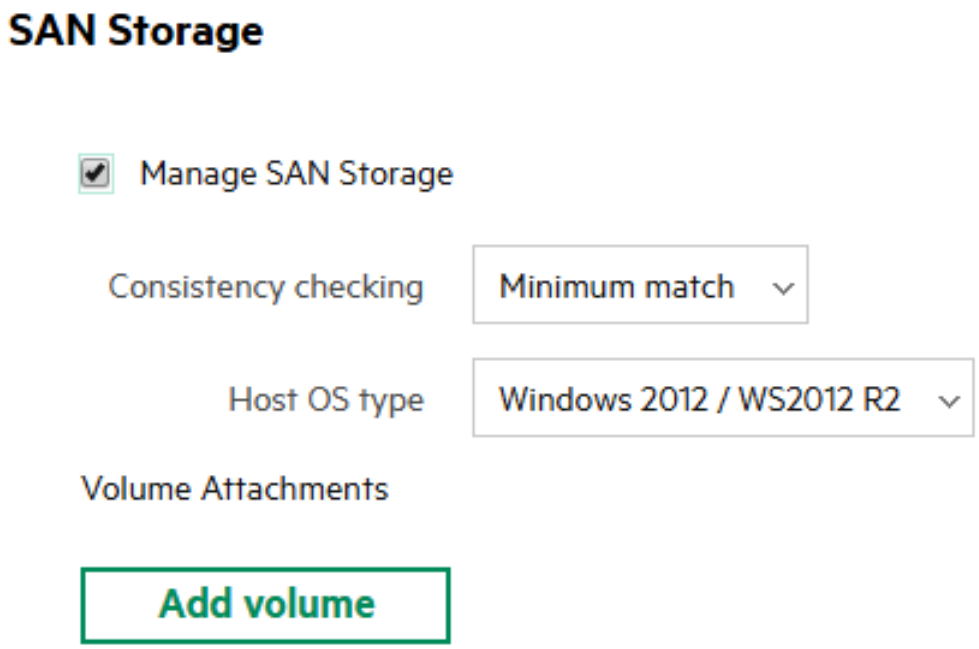
- Select the re-initialization mode.
- Configure the write cache settings.
- Configure the logical drive / logical JBOD.



SAN STORAGE

SAN storage

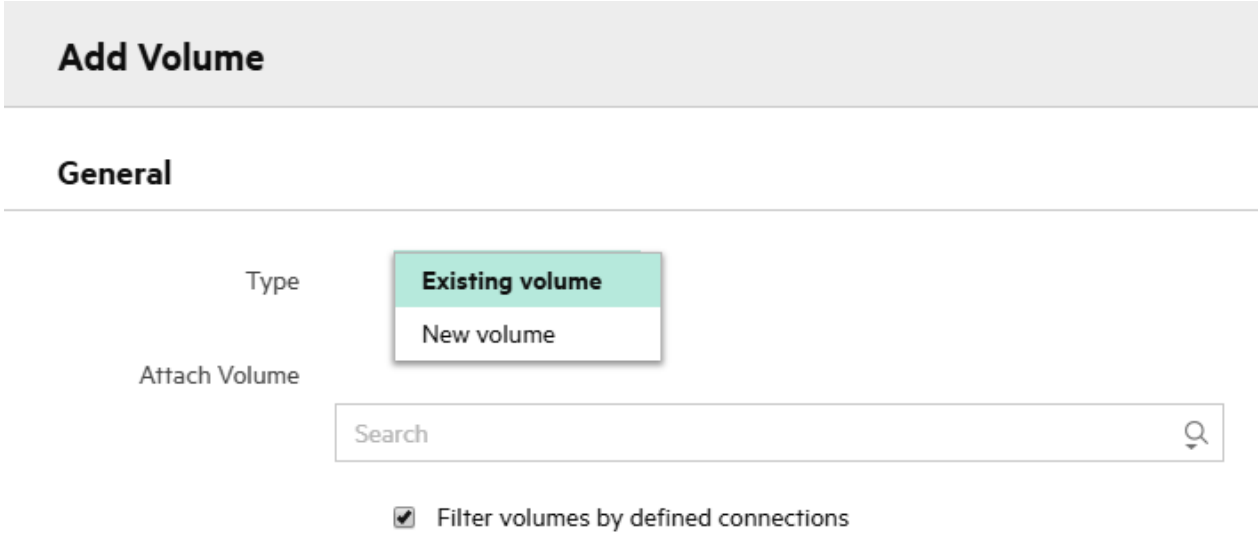
- Select the consistency check level.
- Select the host OS type—it must match the OS that will be installed on the server.
- Click **Add volume**:
  - Existing one
  - Create a new volume on demand



ADDING SAN VOLUME

Adding SAN volume

- Select the existing volume form the list. If SAN manager is present and configured, zoning will be configured automatically.
- Adding the new volume on demand manually:
  - Using volume template
  - By providing all parameters manually
  - Permanent option



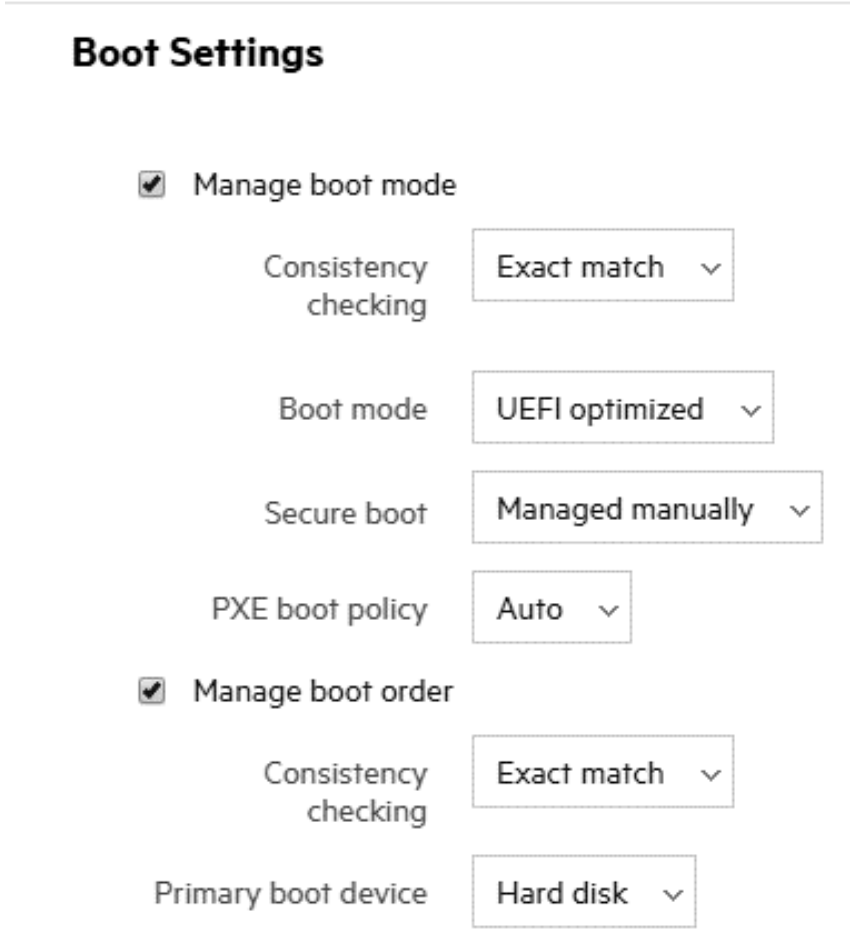
BOOT SETTINGS

Boot settings

- Select the consistency check level.
- Select the boot mode (UEFI, UEFI optimized, Legacy Boot).
- Enable or disable the secure boot.
- Select the PXE boot policy (Auto, IPv4, IPv6).

Boot order

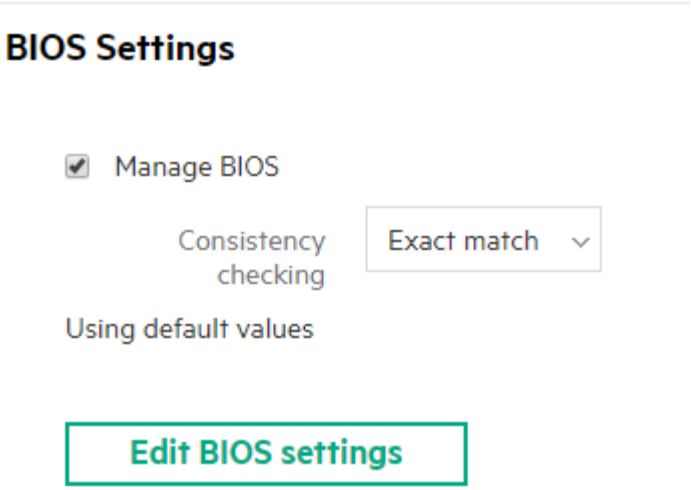
- Select the consistency check level.
- Select the primary boot device (Hard disk, PXE, SD card).

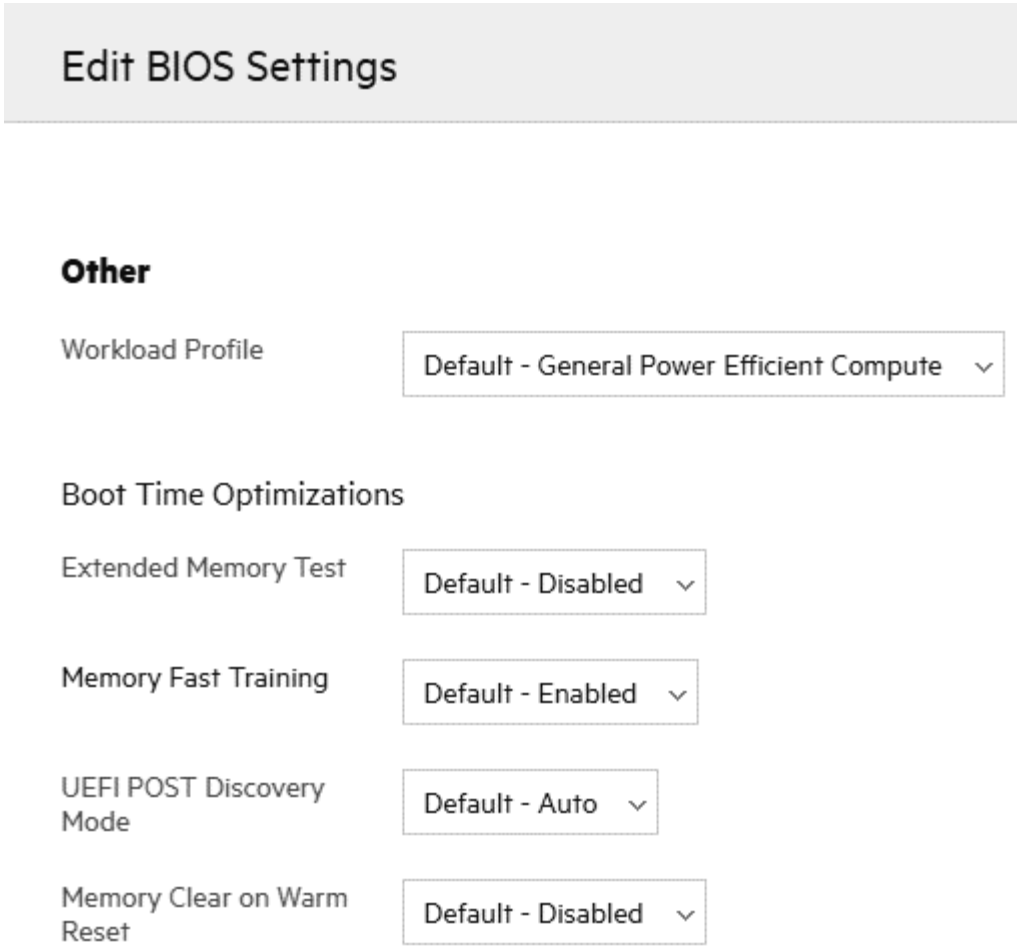


BIOS SETTINGS

BIOS settings

- Select the consistency check level.
- Select the **Edit BIOS settings** to define the default server config[illegible]

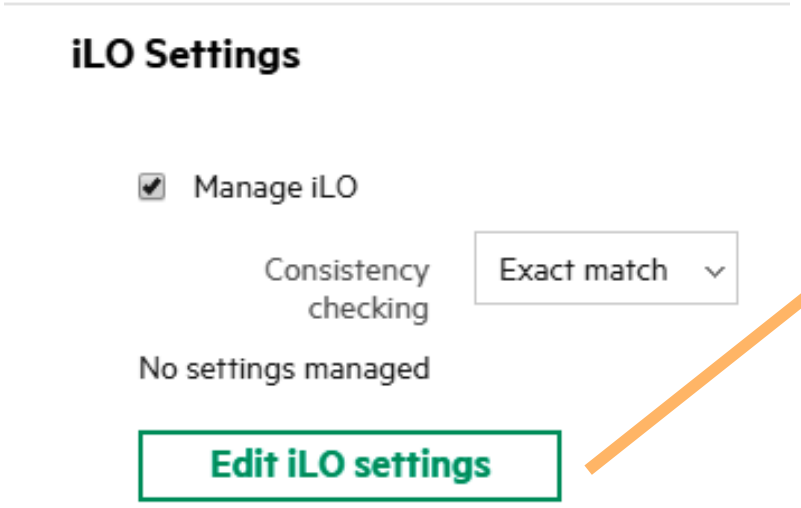


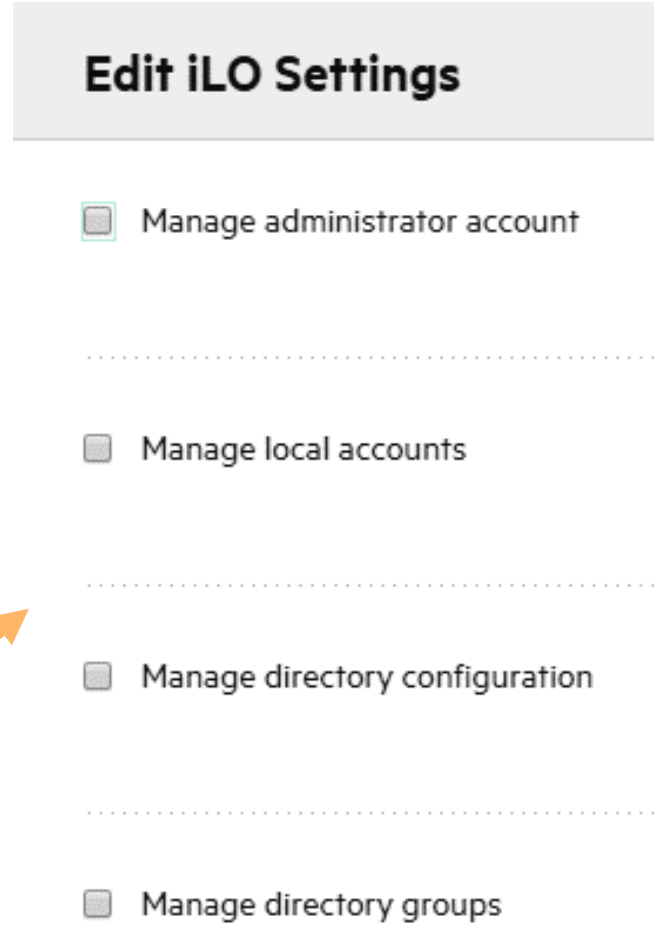


ILO SETTINGS

iLO settings

- Select the consistency check level.
- Select **Edit iLO settings**, then select:
  - Manage administrator account
  - Manage local accounts
  - Manage directory configuration
  - Manage directory groups



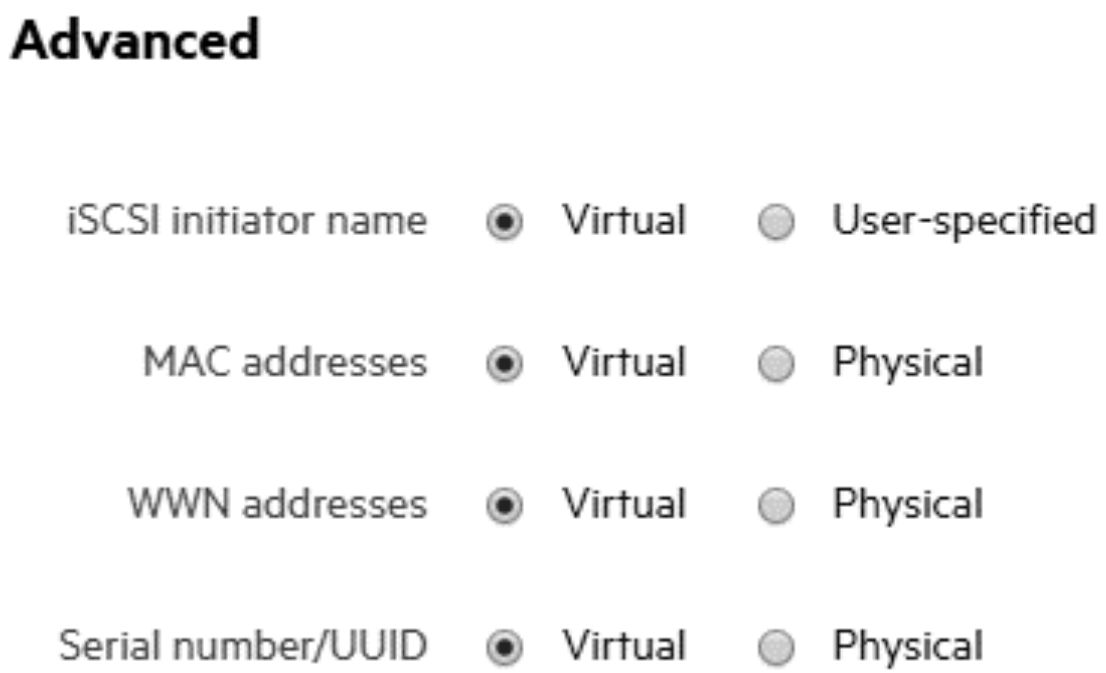


ADVANCED SETTINGS

Advanced settings

Configure settings for:

- iSCSI initiator name
- MAC addresses
- WWN addresses
- Serial number and UUID



ADDRESSES AND IDENTIFIERS

HPE OneView manages pools of the virtual IDs:

- WWNs pools
- MACs pools
- Serial numbers pools
- IP pools

MAC Addresses

Type	Enabled	Start	End	Count	Allocated	Remaining
Generated	enabled	26:3B:81:70:00:00	26:3B:81:7F:FF:FF	1048576	14	1048562
			Total	1048576	14	1048562

World Wide Names

Type	Enabled	Start	End	Count	Allocated	Remaining
Generated	enabled	10:00:4E:1C:7D:70:00:00	10:00:4E:1C:7D:7F:FF:FF	1048576	12	1048564
			Total	1048576	12	1048564

Serial Numbers

Type	Enabled	Start	End	Count	Allocated	Remaining
Generated	enabled	VCGJB1X000	VCGJB1XZZZ	46656	3	46653
			Total	46656	3	46653

By default, one virtual ID pool each of contiguous MAC addresses, WWNs, and serial numbers are created automatically when you initialize the appliance.

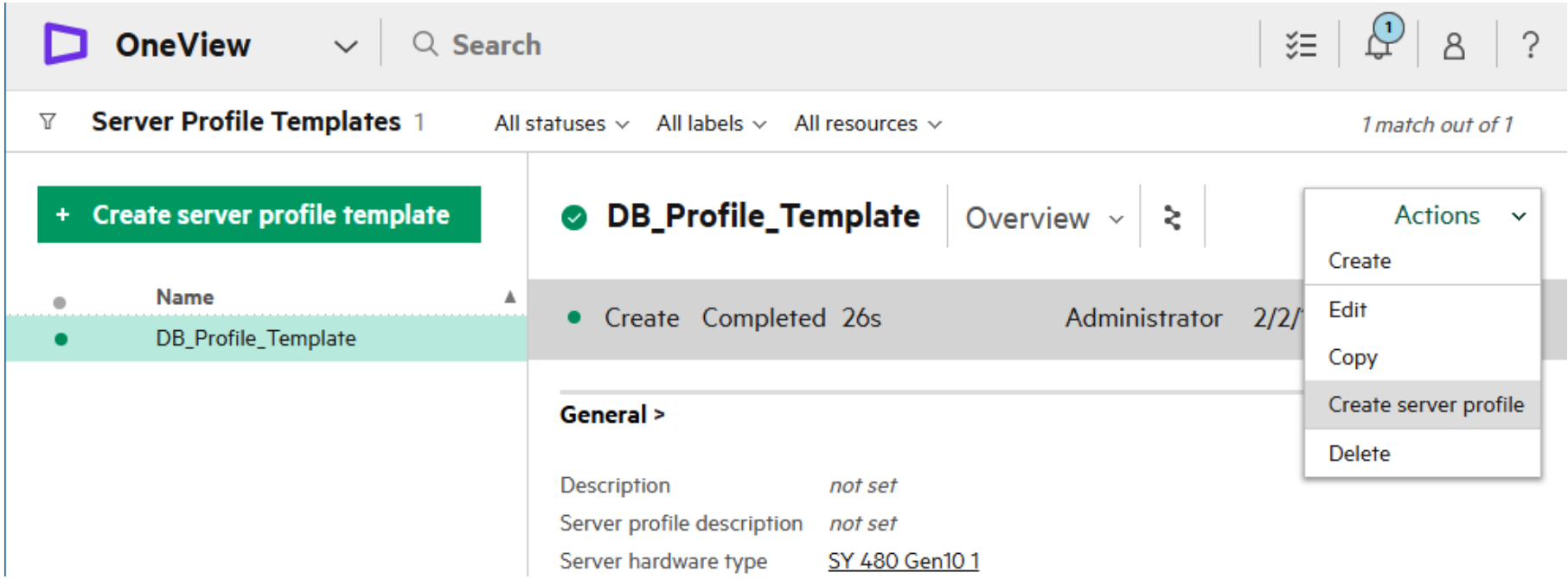
MANAGING HPE SYNERGY COMPUTE

Server Profiles

CREATING A SERVER PROFILE FROM A TEMPLATE

Creating a server profile from a template

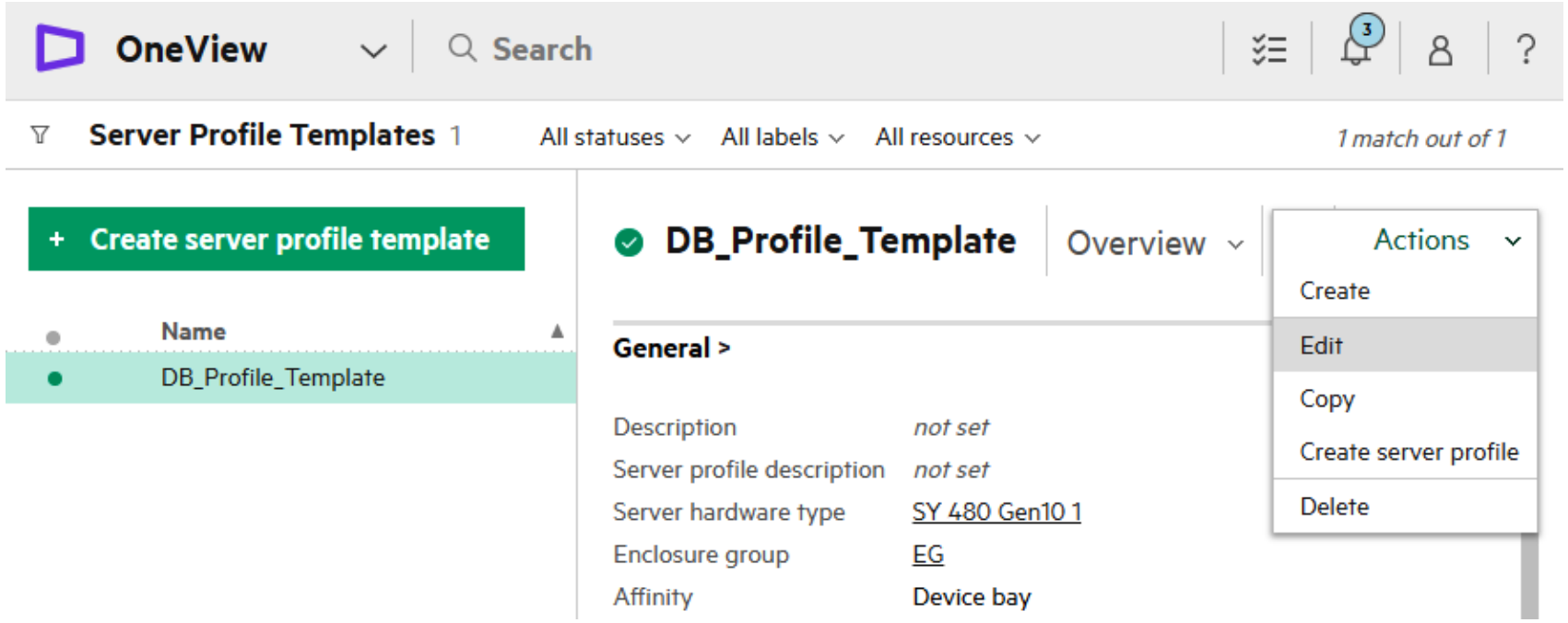
- From the Action menu, select **Create server profile**.
- The profile can be assigned only to the server which is powered off.



MODIFYING A SERVER PROFILE TEMPLATE

Modifying server profile template

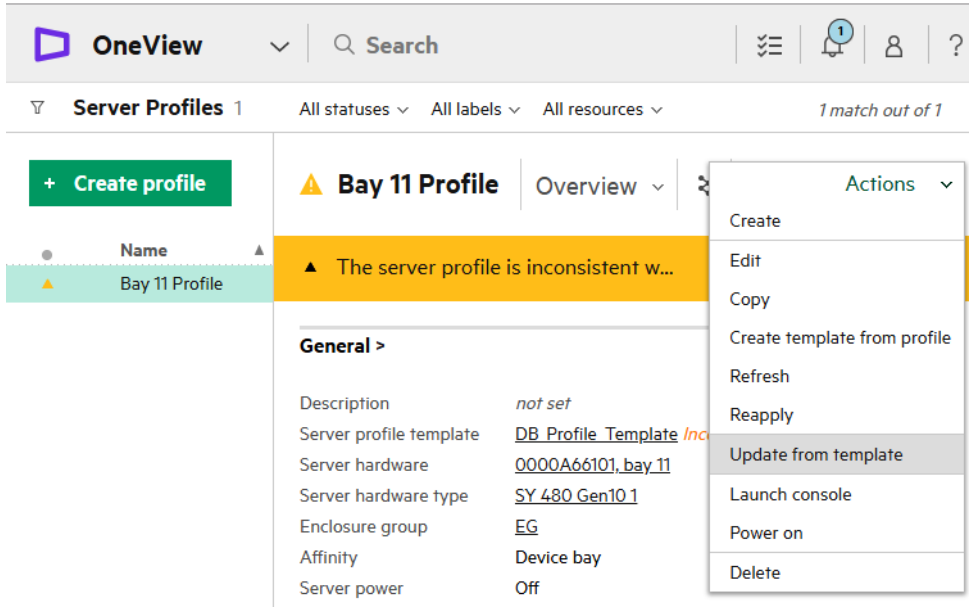
- To edit the server profile template, select **Edit** from the Actions menu.
- If changes are applied to the server profile template, all profiles created from this template will become inconsistent.

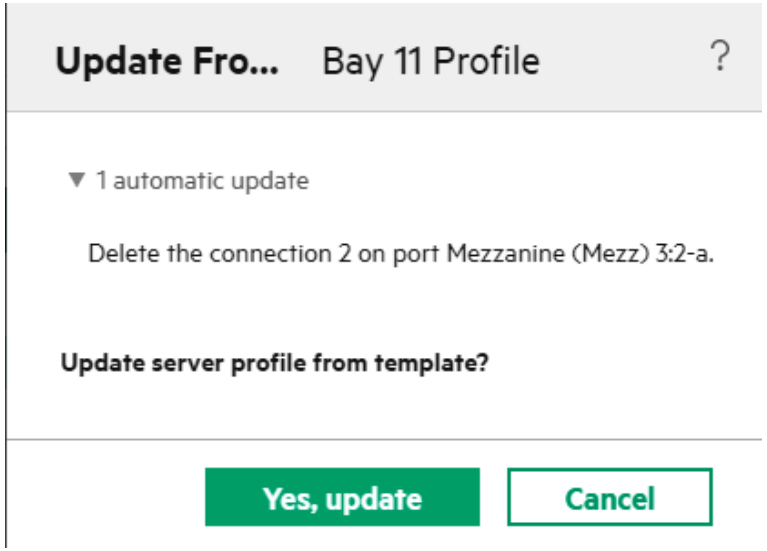


FIXING PROFILE INCONSISTENCIES

Fixing profile inconsistencies

- If the server profile is inconsistent, it can be updated to match the template by selecting **Update from template** from the Actions menu.
- Before updating the server profile, review the update impact.
- Multiple profiles can be updated simultaneously.

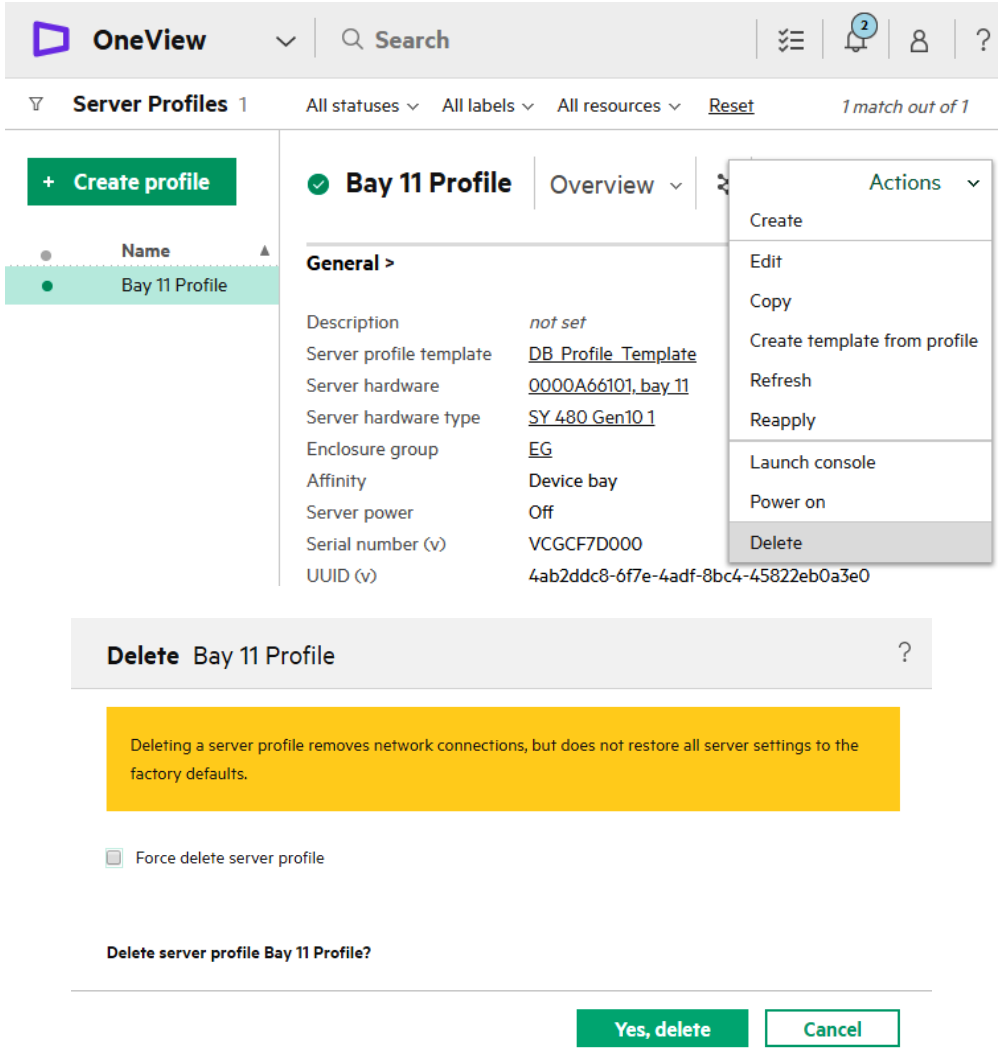




DELETING A SERVER PROFILE

Deleting a server profile

- You can delete a server profile that you no longer need while associated with a powered-on server hardware.
- Logical JBODs and logical drives on mezzanine controllers are deleted when the profile is deleted, and their data will not be recoverable.
- Deleting a server profile that defines non-permanent volumes will result in those volumes being deleted from the storage system.



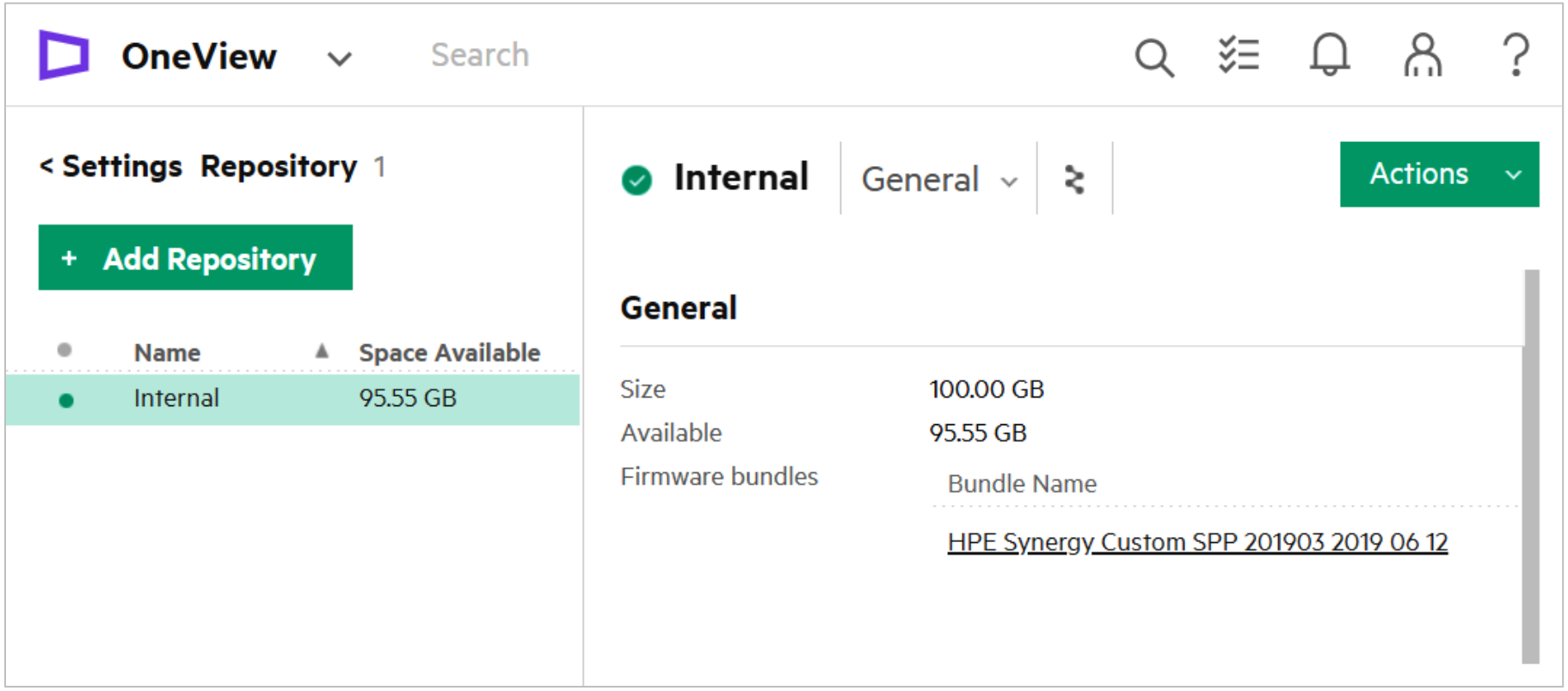
MANAGING HPE SYNERGY COMPUTE

Firmware Management

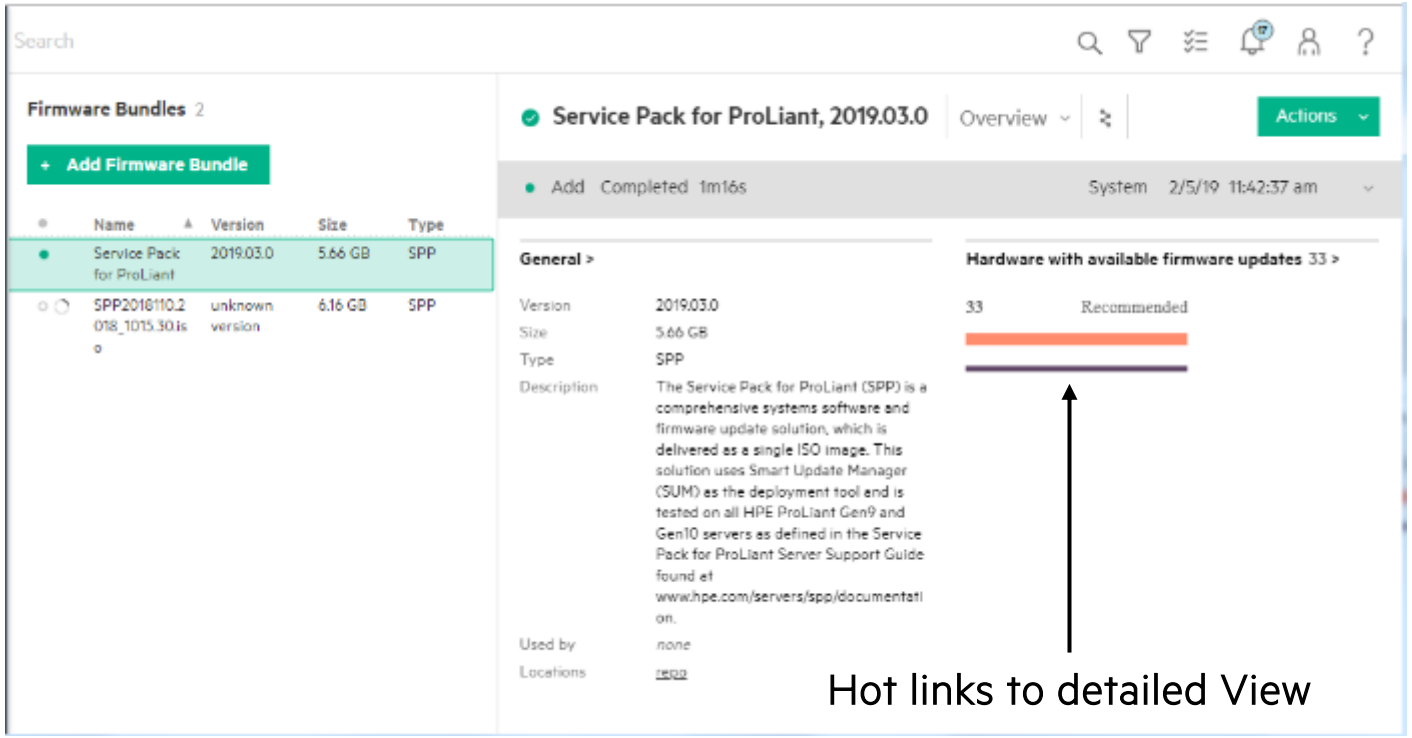
FIRMWARE REPOSITORY

Two types of the repositories for firmware bundles are available:

- Internal
- External



FIRMWARE COMPLIANCE DASHBOARD



The bar graph summary is available in:

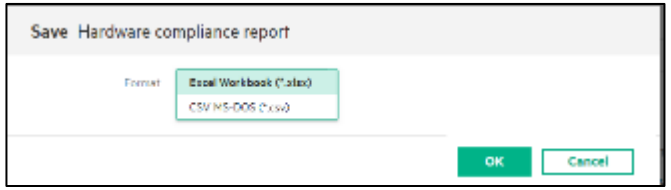
- *OneView dashboard (all SPPs)*
- *Each individual SPP*

"I need a way to determine which servers or other managed hardware are out compliance with my baseline . . "

The Compliance Dashboard

- Simplifies management of FW compliance for 100's of servers
- Compares firmware compliance to any selected SPP within the OneView SPP library
- Groups by the severity of update (Critical, Recommended, Optional)
- Firmware baselines (SPP) have a new section that shows the FW compliance of all managed hardware
- Available for both Synergy and OneView virtual appliance ecosystems
  - Initial release for Gen10 servers
  - Future extension to Gen8/9

FIRMWARE COMPLIANCE DASHBOARD



Spreadsheet Export

"I need to share a report to the teams looking at compliance. And they don't use OneView . . ."

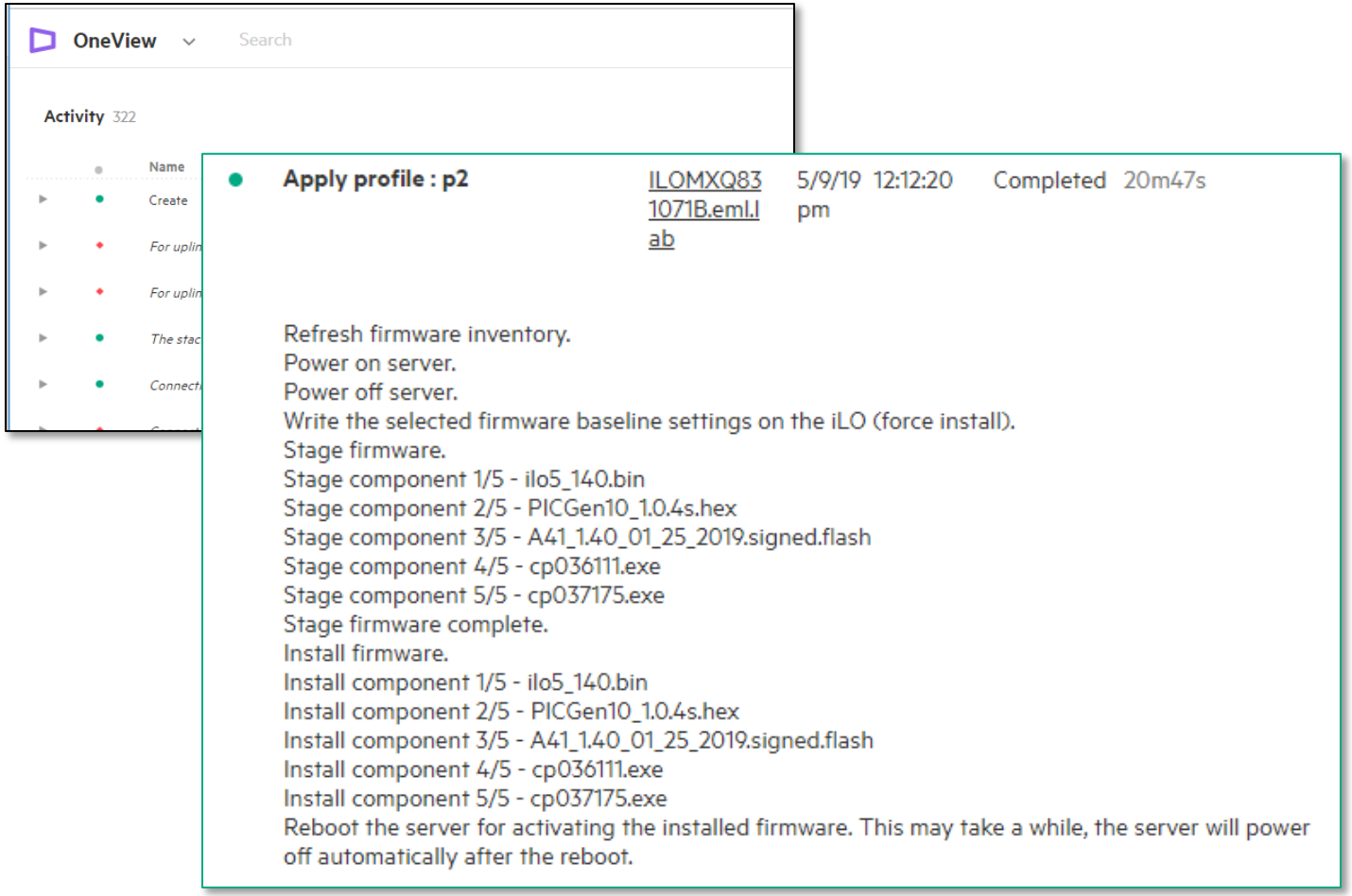
Hardware	Model	Hardware category	Logical resource name	Firmware bundle	Component	Update category	Installed version
MXQ824072B, bay 1	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,2BB1,	Service Pack for ProLiant 2019.03.0	System ROM	RECOMMENDED	I42 v1.50 (12/13/2018)
MXQ824072B, bay 1	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,2BB1,	Service Pack for ProLiant 2019.03.0	Drive	RECOMMENDED	HPD3
MXQ824072B, bay 1	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,2BB1,	Service Pack for ProLiant 2019.03.0	HPE Smart Array E208i-c SR Gen10	RECOMMENDED	1.65
MXQ824072B, bay 1	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,2BB1,	Service Pack for ProLiant 2019.03.0	Server Platform Services (SPS) Firmware	OPTIONAL	4.0.12.224
MXQ824072B, bay 1	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,2BB1,	Service Pack for ProLiant 2019.03.0	Innovation Engine (IE) Firmware	OPTIONAL	0.1.5.2
MXQ824072B, bay 1	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,2BB1,	Service Pack for ProLiant 2019.03.0	iLO 5	RECOMMENDED	1.30 May 31 2018
MXQ824072B, bay 1	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,2BB1,	Service Pack for ProLiant 2019.03.0	Synergy 3830C 16G FC HBA	RECOMMENDED	06.01.59
MXQ824072B, bay 2	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,SP2BB2,	Service Pack for ProLiant 2019.03.0	Drive	RECOMMENDED	HPD3
MXQ824072B, bay 2	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,SP2BB2,	Service Pack for ProLiant 2019.03.0	Synergy 3830C 16G FC HBA	RECOMMENDED	06.01.59
MXQ824072B, bay 2	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,SP2BB2,	Service Pack for ProLiant 2019.03.0	HPE Smart Array E208i-c SR Gen10	RECOMMENDED	1.65
MXQ824072B, bay 2	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,SP2BB2,	Service Pack for ProLiant 2019.03.0	iLO 5	RECOMMENDED	1.30 May 31 2018
MXQ824072B, bay 2	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,SP2BB2,	Service Pack for ProLiant 2019.03.0	System ROM	RECOMMENDED	I42 v1.50 (12/13/2018)
MXQ824072B, bay 2	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,SP2BB2,	Service Pack for ProLiant 2019.03.0	Innovation Engine (IE) Firmware	OPTIONAL	0.1.5.2
MXQ824072B, bay 2	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,SP2BB2,	Service Pack for ProLiant 2019.03.0	Server Platform Services (SPS) Firmware	OPTIONAL	4.0.12.224
MXQ824072B, bay 3	Synergy 480 Gen10	server-hardware	SP2BB3,LogicalEnclosureSEART,	Service Pack for ProLiant 2019.03.0	System ROM	RECOMMENDED	I42 v1.50 (12/13/2018)
MXQ824072B, bay 3	Synergy 480 Gen10	server-hardware	SP2BB3,LogicalEnclosureSEART,	Service Pack for ProLiant 2019.03.0	Synergy 3830C 16G FC HBA	RECOMMENDED	06.01.59
MXQ824072B, bay 3	Synergy 480 Gen10	server-hardware	SP2BB3,LogicalEnclosureSEART,	Service Pack for ProLiant 2019.03.0	Innovation Engine (IE) Firmware	OPTIONAL	0.2.0.5
MXQ824072B, bay 3	Synergy 480 Gen10	server-hardware	SP2BB3,LogicalEnclosureSEART,	Service Pack for ProLiant 2019.03.0	iLO 5	RECOMMENDED	1.22 Mar 06 2018
MXQ824072B, bay 3	Synergy 480 Gen10	server-hardware	SP2BB3,LogicalEnclosureSEART,	Service Pack for ProLiant 2019.03.0	HPE Smart Array E208i-c SR Gen10	RECOMMENDED	1.65
MXQ824072B, bay 3	Synergy 480 Gen10	server-hardware	SP2BB3,LogicalEnclosureSEART,	Service Pack for ProLiant 2019.03.0	Server Platform Services (SPS) Firmware	OPTIONAL	4.1.2.224
MXQ824072B, bay 4	Synergy 480 Gen10	server-hardware	SP2BB4,LogicalEnclosureSEART,	Service Pack for ProLiant 2019.03.0	HPE Smart Array E208i-c SR Gen10	RECOMMENDED	1.65
MXQ824072B, bay 4	Synergy 480 Gen10	server-hardware	SP2BB4,LogicalEnclosureSEART,	Service Pack for ProLiant 2019.03.0	Synergy 3830C 16G FC HBA	RECOMMENDED	06.01.59
MXQ824072B, bay 4	Synergy 480 Gen10	server-hardware	SP2BB4,LogicalEnclosureSEART,	Service Pack for ProLiant 2019.03.0	System ROM	RECOMMENDED	I42 v1.50 (12/13/2018)
MXQ824072B, bay 4	Synergy 480 Gen10	server-hardware	SP2BB4,LogicalEnclosureSEART,	Service Pack for ProLiant 2019.03.0	Server Platform Services (SPS) Firmware	OPTIONAL	4.0.12.224
MXQ824072B, bay 4	Synergy 480 Gen10	server-hardware	SP2BB4,LogicalEnclosureSEART,	Service Pack for ProLiant 2019.03.0	iLO 5	RECOMMENDED	1.22 Mar 06 2018
MXQ824072B, bay 4	Synergy 480 Gen10	server-hardware	SP2BB4,LogicalEnclosureSEART,	Service Pack for ProLiant 2019.03.0	Innovation Engine (IE) Firmware	OPTIONAL	0.1.5.2
MXQ824072B, bay 5	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,2BB5,	Service Pack for ProLiant 2019.03.0	Synergy 3830C 16G FC HBA	RECOMMENDED	06.01.59
MXQ824072B, bay 5	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,2BB5,	Service Pack for ProLiant 2019.03.0	iLO 5	RECOMMENDED	1.22 Mar 06 2018
MXQ824072B, bay 5	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,2BB5,	Service Pack for ProLiant 2019.03.0	Innovation Engine (IE) Firmware	OPTIONAL	0.2.0.5
MXQ824072B, bay 5	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,2BB5,	Service Pack for ProLiant 2019.03.0	System ROM	RECOMMENDED	I42 v1.50 (12/13/2018)
MXQ824072B, bay 5	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,2BB5,	Service Pack for ProLiant 2019.03.0	HPE Smart Array E208i-c SR Gen10	RECOMMENDED	1.65
MXQ824072B, bay 5	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,2BB5,	Service Pack for ProLiant 2019.03.0	Server Platform Services (SPS) Firmware	OPTIONAL	4.1.2.224
MXQ824072B, bay 6	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,2BB6,	Service Pack for ProLiant 2019.03.0	Synergy 3830C 16G FC HBA	RECOMMENDED	06.01.59
MXQ824072B, bay 6	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,2BB6,	Service Pack for ProLiant 2019.03.0	Drive	RECOMMENDED	HPD3
MXQ824072B, bay 6	Synergy 480 Gen10	server-hardware	LogicalEnclosureSEART,2BB6,	Service Pack for ProLiant 2019.03.0	Server Platform Services (SPS) Firmware	OPTIONAL	4.1.2.224

ONEVIEW 5.0 – NEW FIRMWARE CHANGES

"I'd really like a way to determine the progress of firmware operations; current status and remaining to go . . .

Applies to Gen9/10

- Accessed from the OneView Activity page
- The profile task shows fine grained information regarding the staging and installation of each individual component.
- Shows the current and total number of components being staged and installed.
- For Gen9 servers, starts with SPP 2019.03.0 and later
- Available for all managed server models (BLs, Rack mounts, Synergy etc.)
- Any component failuresare listed in the task progress

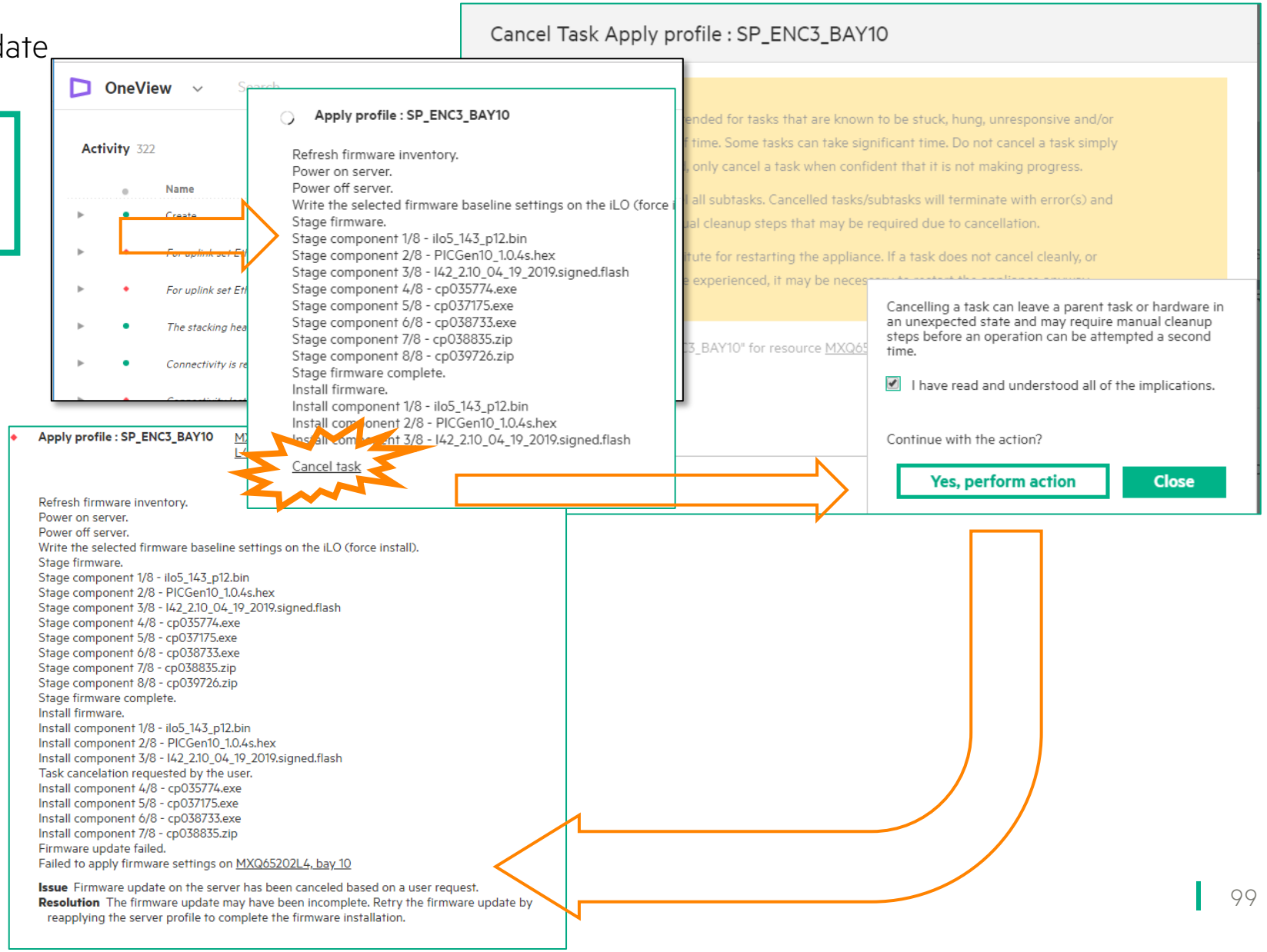


ONEVIEW 5.0 – CANCEL FIRMWARE UPDATE TASK

Easing out of a user mistake or failed update

I need to cancel a firmware task to stop a firmware operation . . .

- Accessed from the OneView Activity page
- A server profile update now provides a “Cancel task” link for the server task.
- Previously this required an OV restart in order to terminate the profile task.
- It is recommended to be used only in exceptional cases. For example, a case where a component installation is stuck.



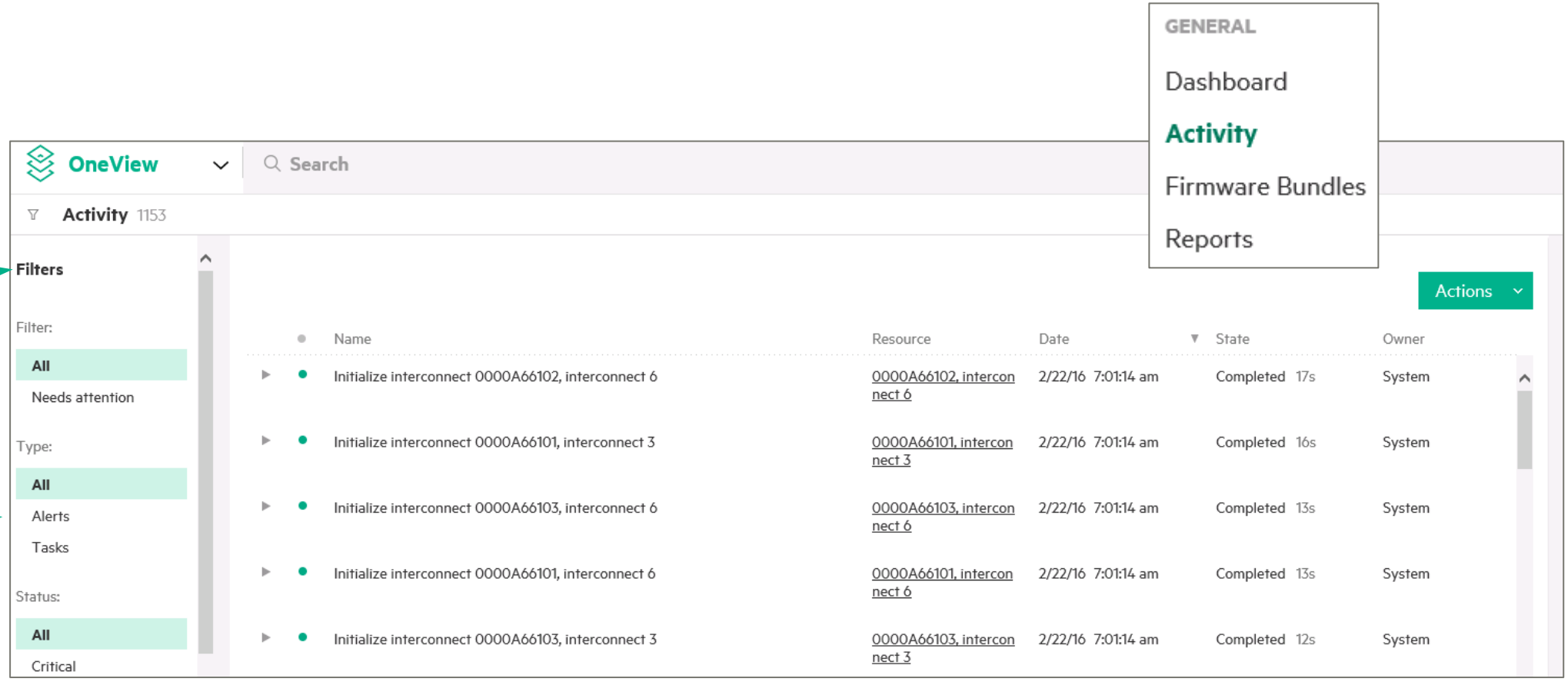
MONITORING FEATURES OF HPE ONEVIEW

Monitoring with HPE OneView

ONEVIEW ACTIVITY PAGE

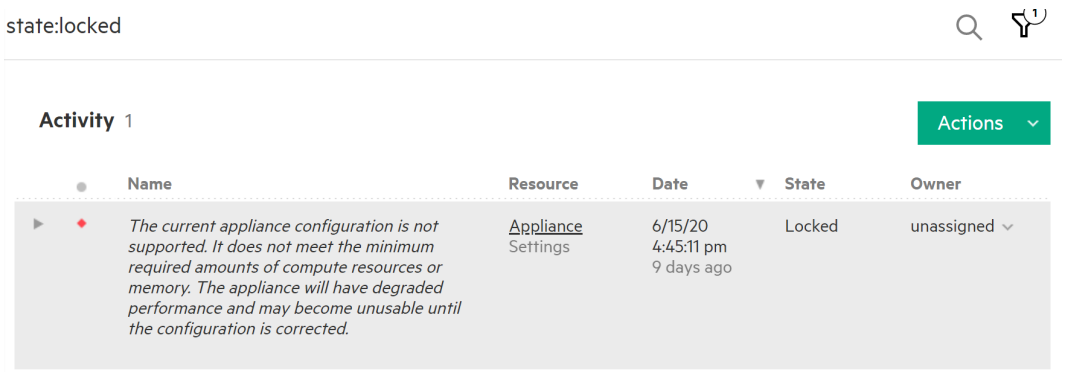
Click to expand or close the Filters pane

Click a filter to toggle



CLEAR LOCKED ALERTS

Customers want to clear locked alerts



Request:

```
PUT /rest/alerts/{ID}?force=true
```

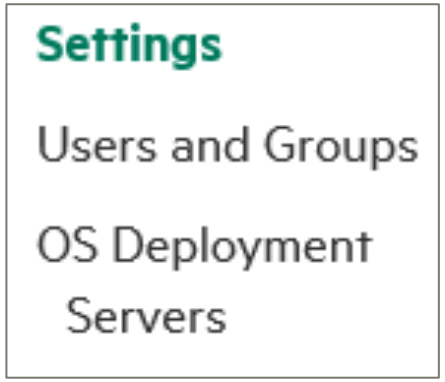
Request Body:

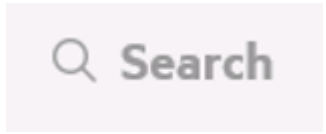
```
{
    "alertState": "Cleared",
    "assignedToUser": null,
    "notes": "Cleared locked alert.",
    "eTag": "2020-06-24T14:50:07.586Z"
}
```

Customers can clear locked alerts, via the REST API, which would not force them to open support cases

ALERT EMAIL NOTIFICATIONS

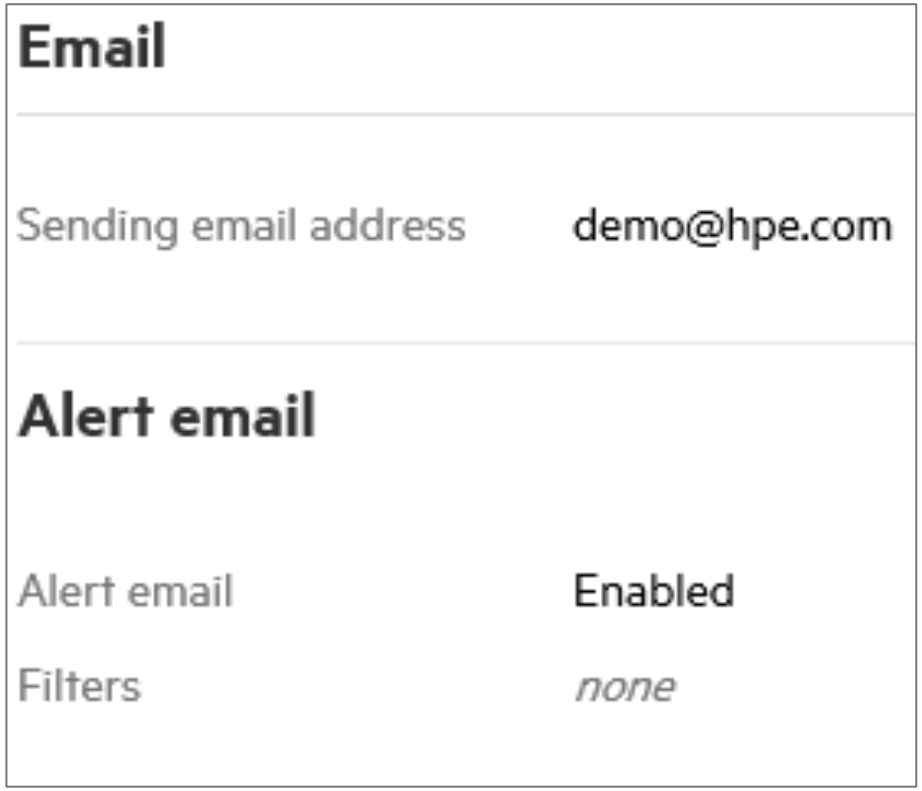
- Send an email notification when an alert is generated
- Use any supported filter search criteria to specify the alerts of interest
- Fine-tune alert messages sent



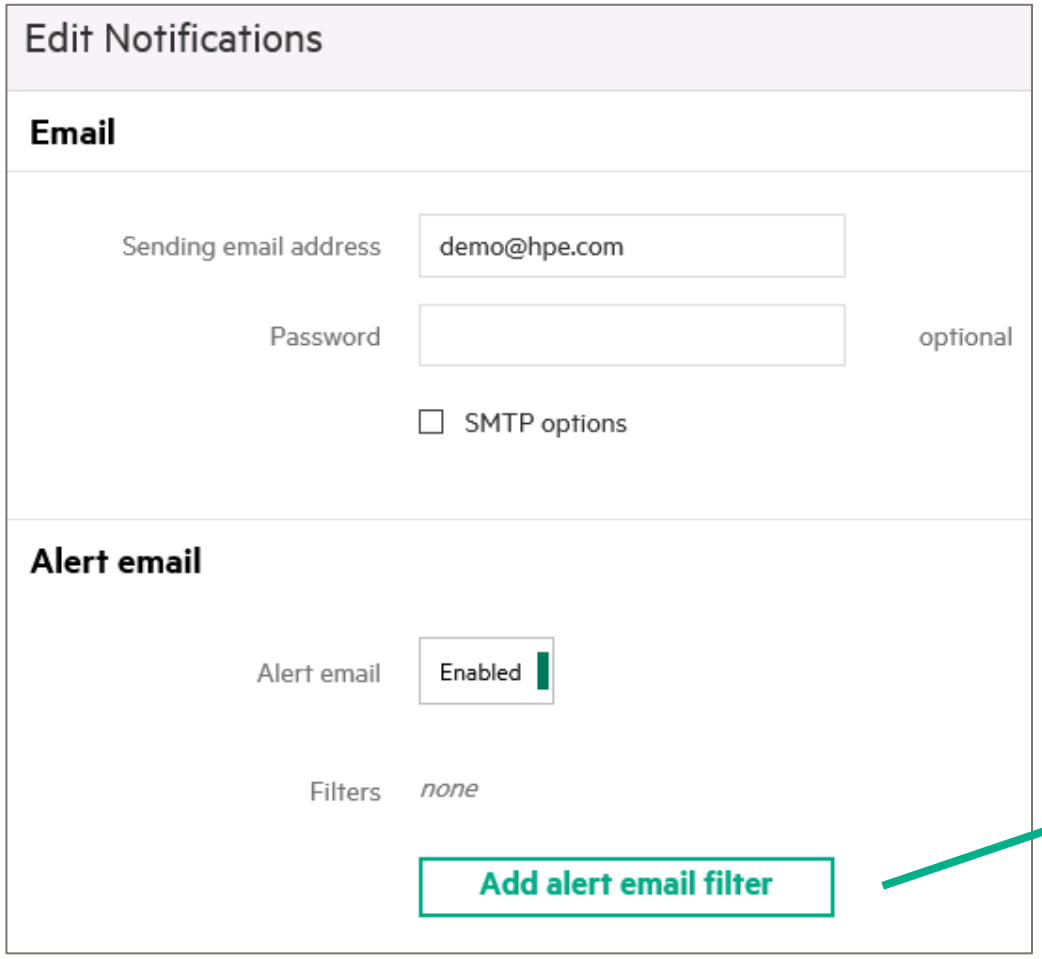


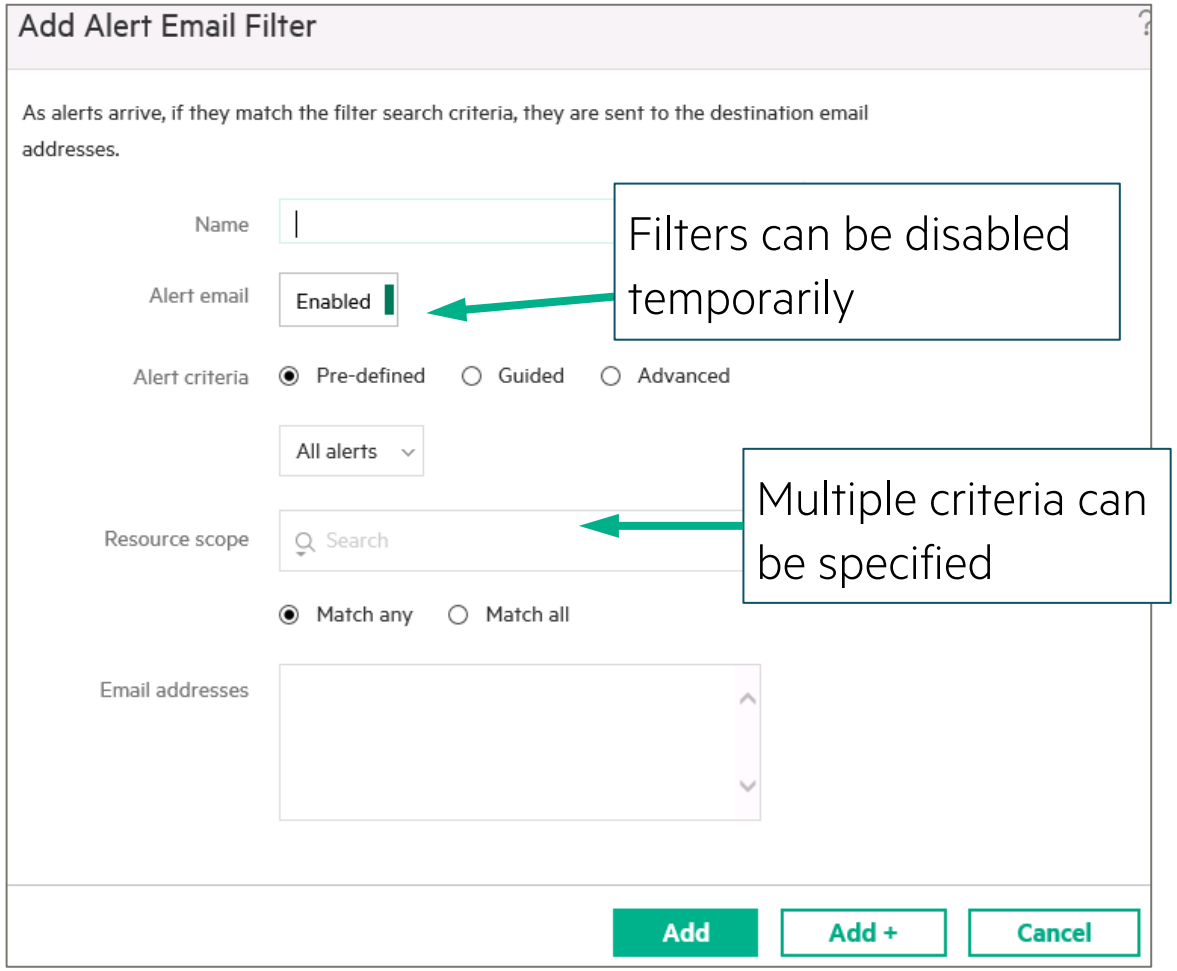
– status:critical

– status:critical cpu



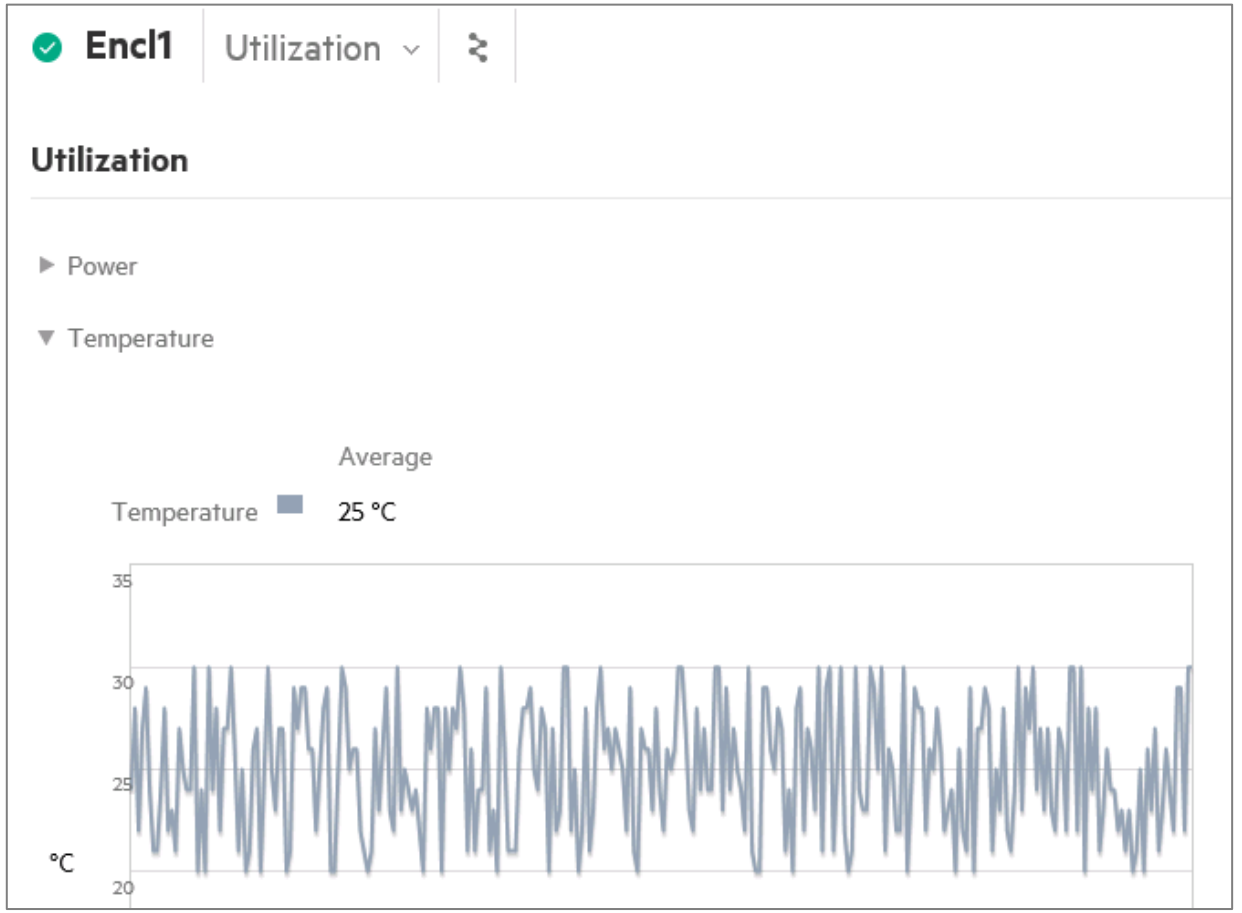
ADDING ALERT EMAIL NOTIFICATIONS





UTILIZATION DATA COLLECTION AND DISPLAY

- Utilization history
- Common utilization infrastructure for all device types
- Text labels with capacity information and maximum value for the metric
- Navigation graph

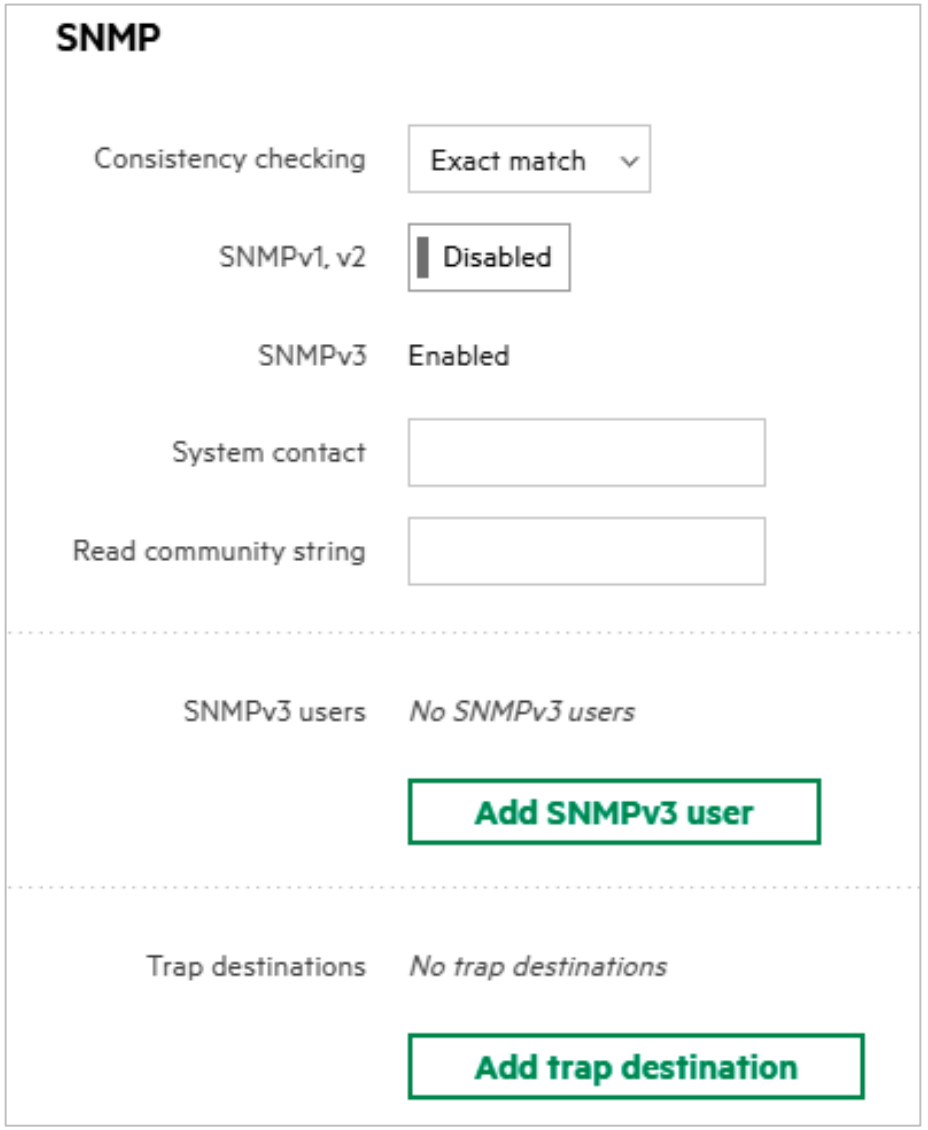


A closer look at temperature utilization over a specified time period

SNMP

It is possible to enable third-party SNMP managers to monitor (read-only) network status information from the interconnects:

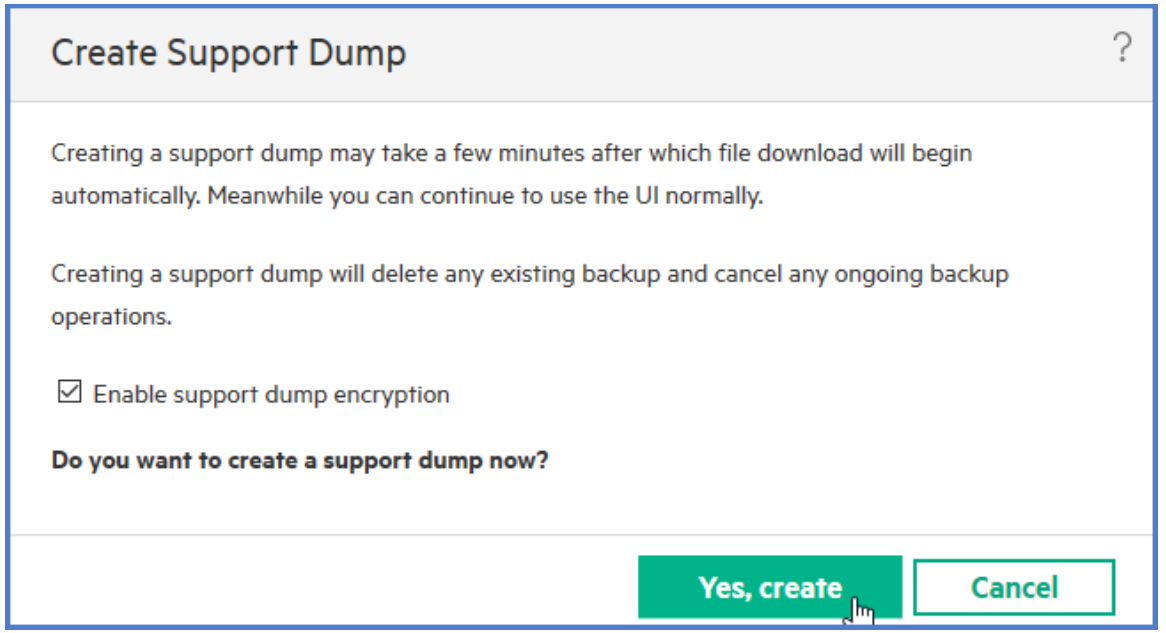
- Designate the SNMP manager to which traps will be forwarded. By default, SNMP is enabled with no trap destinations set.
- When a logical interconnect is created, it inherits the SNMP settings from its LIG.
- LIG and logical interconnect settings support SNMPv1, SNMPv2, and SNMPv3 protocols for forwarding traps.



CREATING SUPPORT DUMP FILES

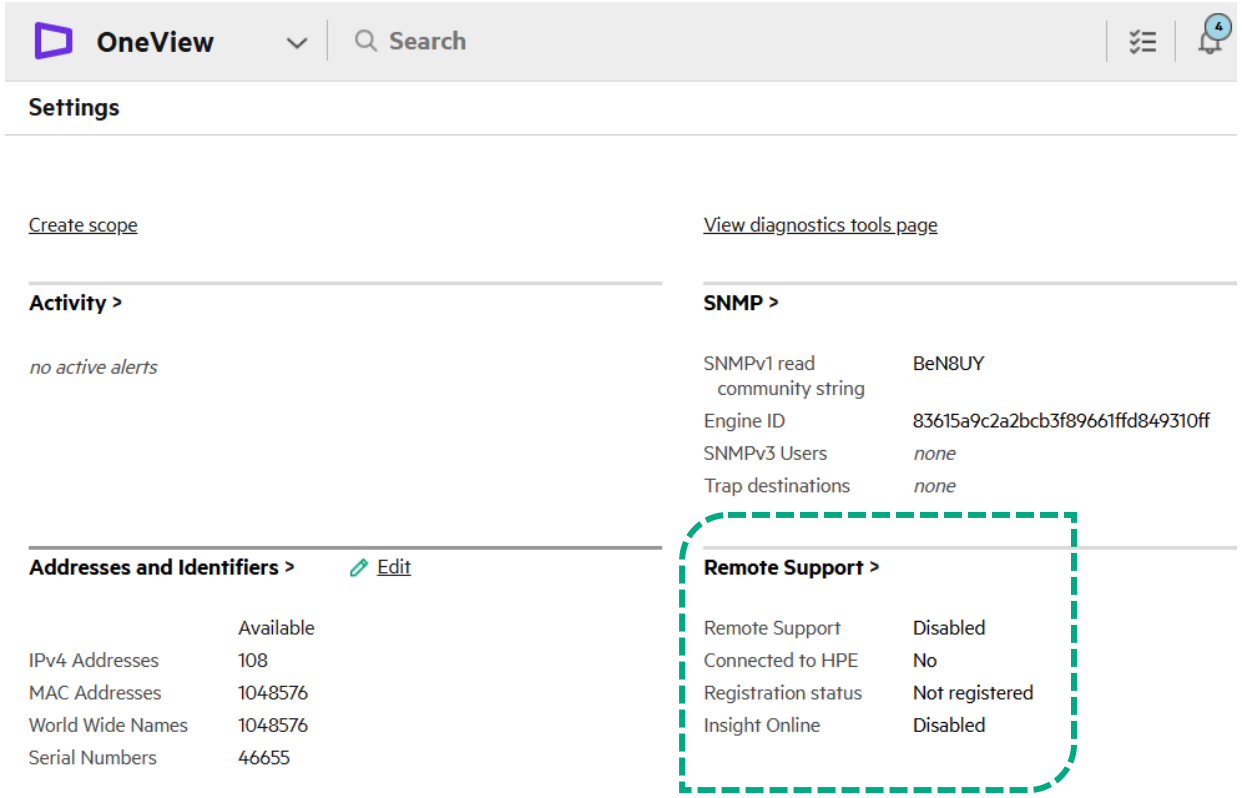
A support dump file:

- Is encrypted
- Does not contain credentials included in backups
- Is protected using 128-bit AES encryption and an SHA-256 hash
- Does not prevent a customer from seeing contents
- Is generated from the Settings page



The username and password are not stored on the OneView appliance

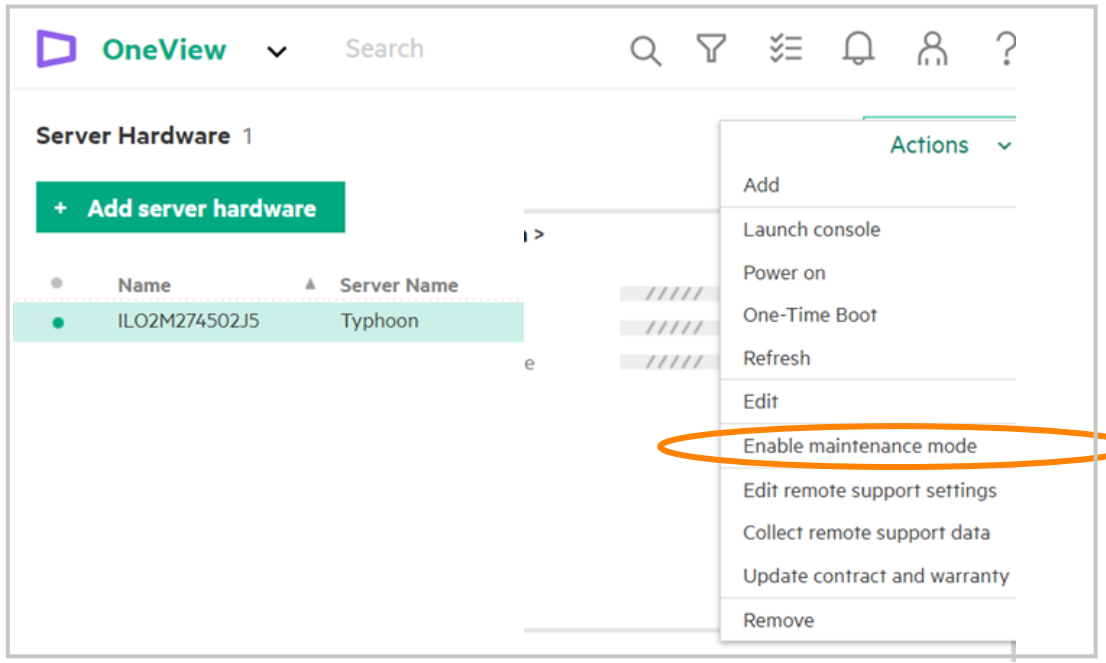
ENABLING HPE ONEVIEW EMBEDDED SUPPORT

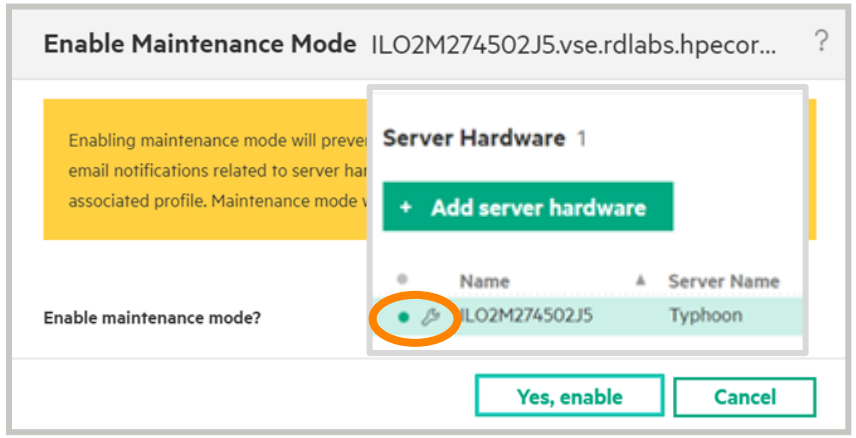


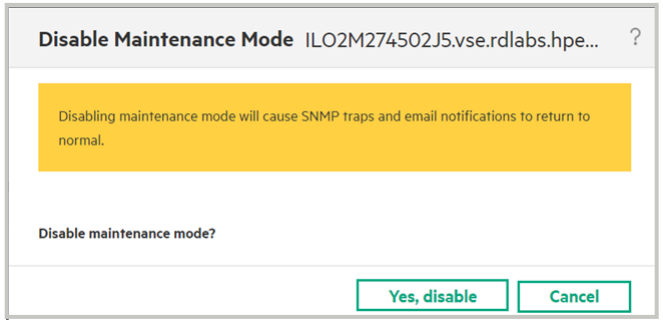
1. On the Settings page, select **Remote Support**.
2. Click the **Enable Remote Support** radio button.
3. Enter the system manager contact information and site location, then click **Register**.

MAINTENANCE MODE

Customers experience unwanted emails and activity alerts for routine server maintenance operations

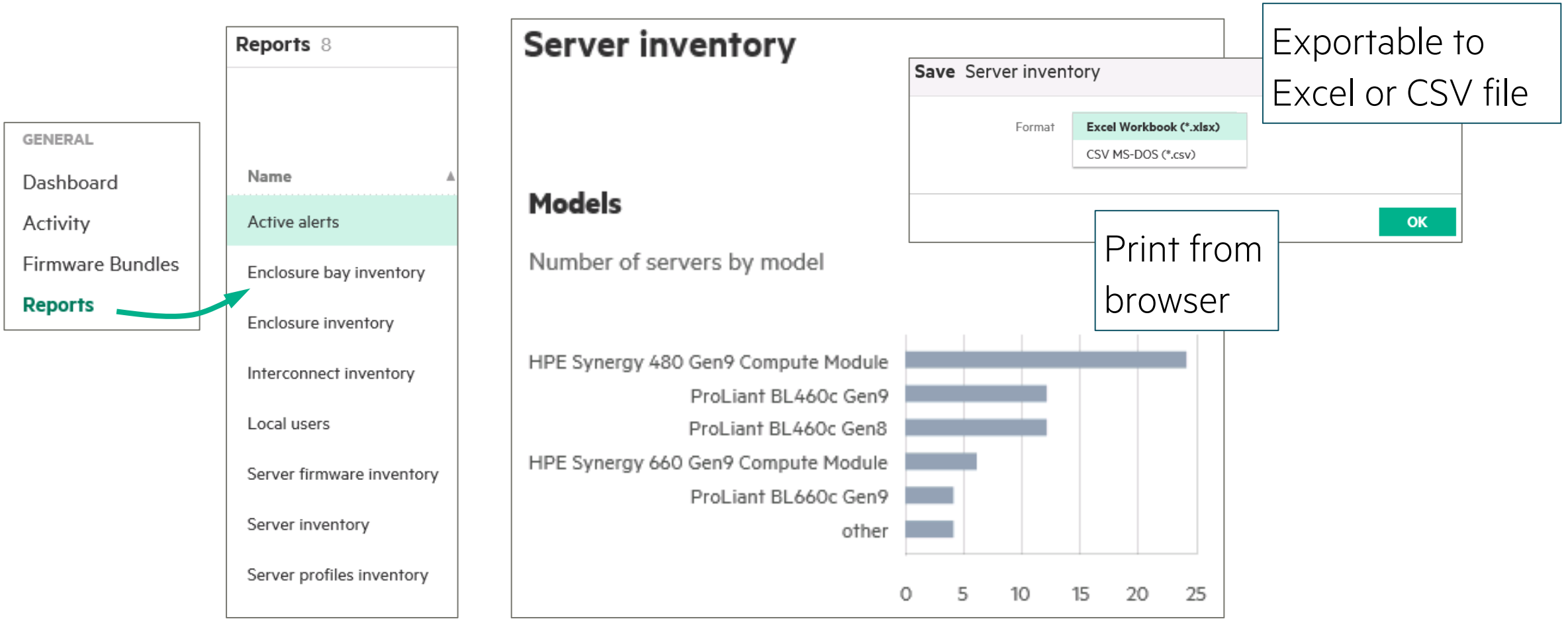






Reduced number of emails and alerts and a visual indicator of maintenance state

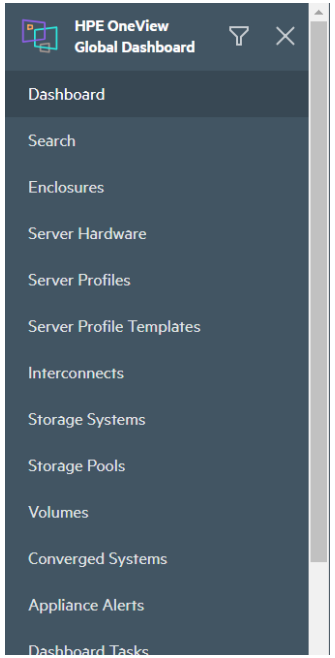
ONEVIEW REPORTING

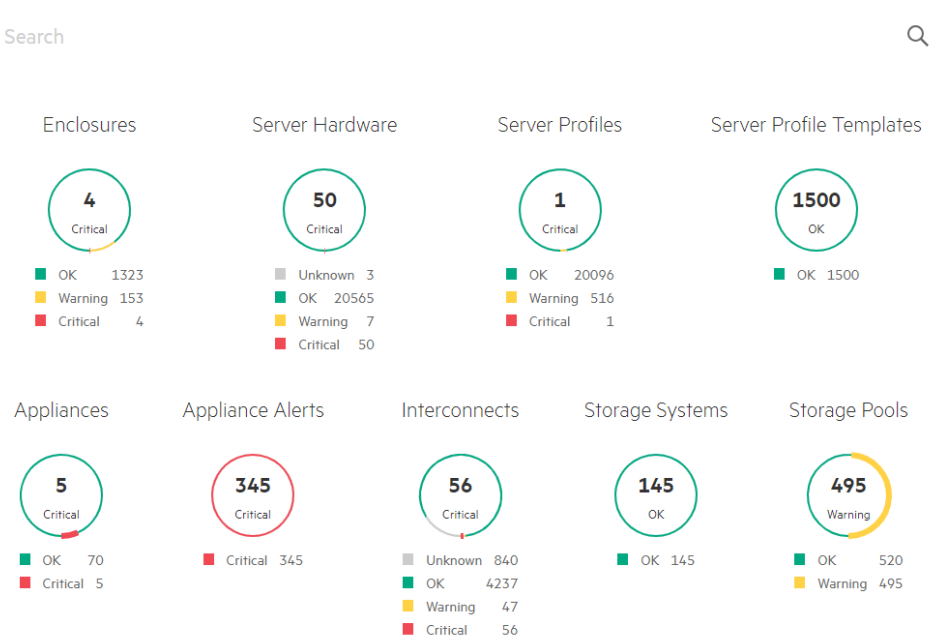


UNIFY MANAGEMENT WITH HPE ONEVIEW GLOBAL DASHBOARD

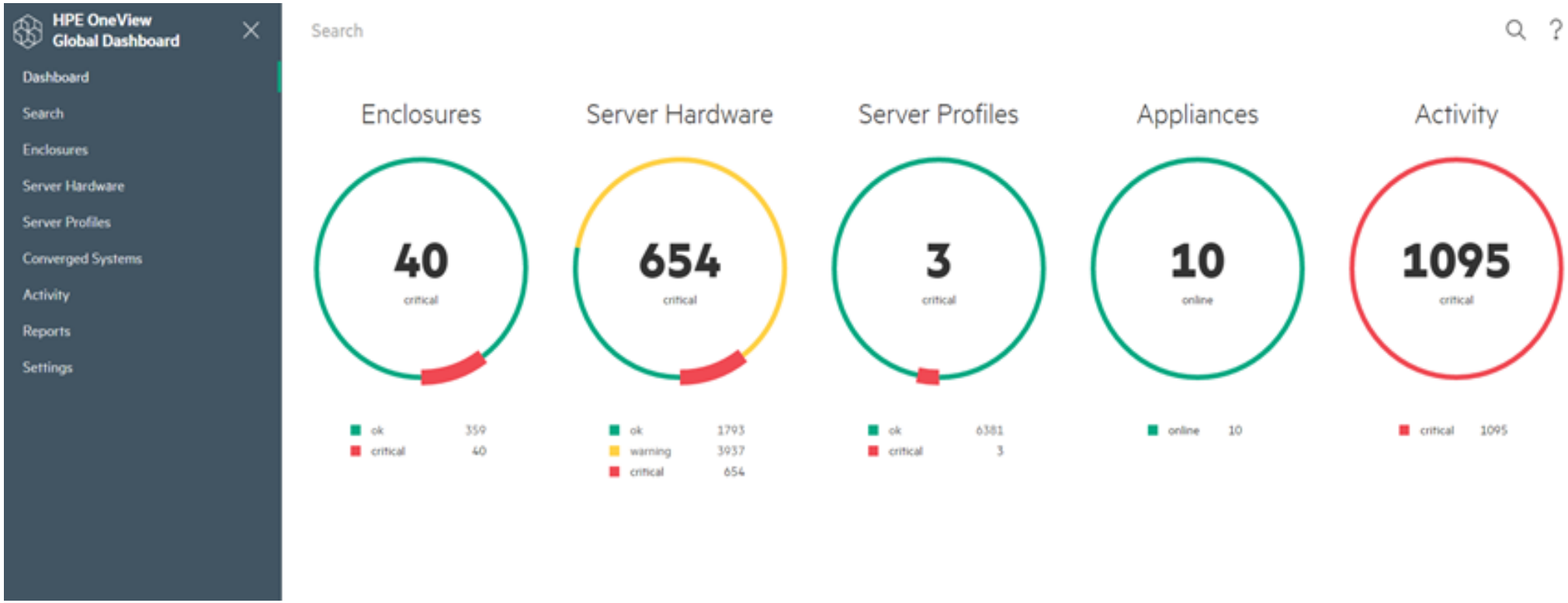
Provides unified view of health and alerting of resources managed by HPE OneView including c-Class, DL, ML, Apollo, HPE Synergy, HC380, and SimpliVity

- Instant search results for devices of interest
- In-context launch to HPE OneView, iLO and OA with SSO
- Flexible access to health and inventory data with HPE Global Dashboard API
- Delivered as a virtual appliance at no extra cost
- Supports HPE OneView from version 3.1
- Integrated reporting





HPE ONEVIEW GLOBAL DASHBOARD: HEALTH STATUS

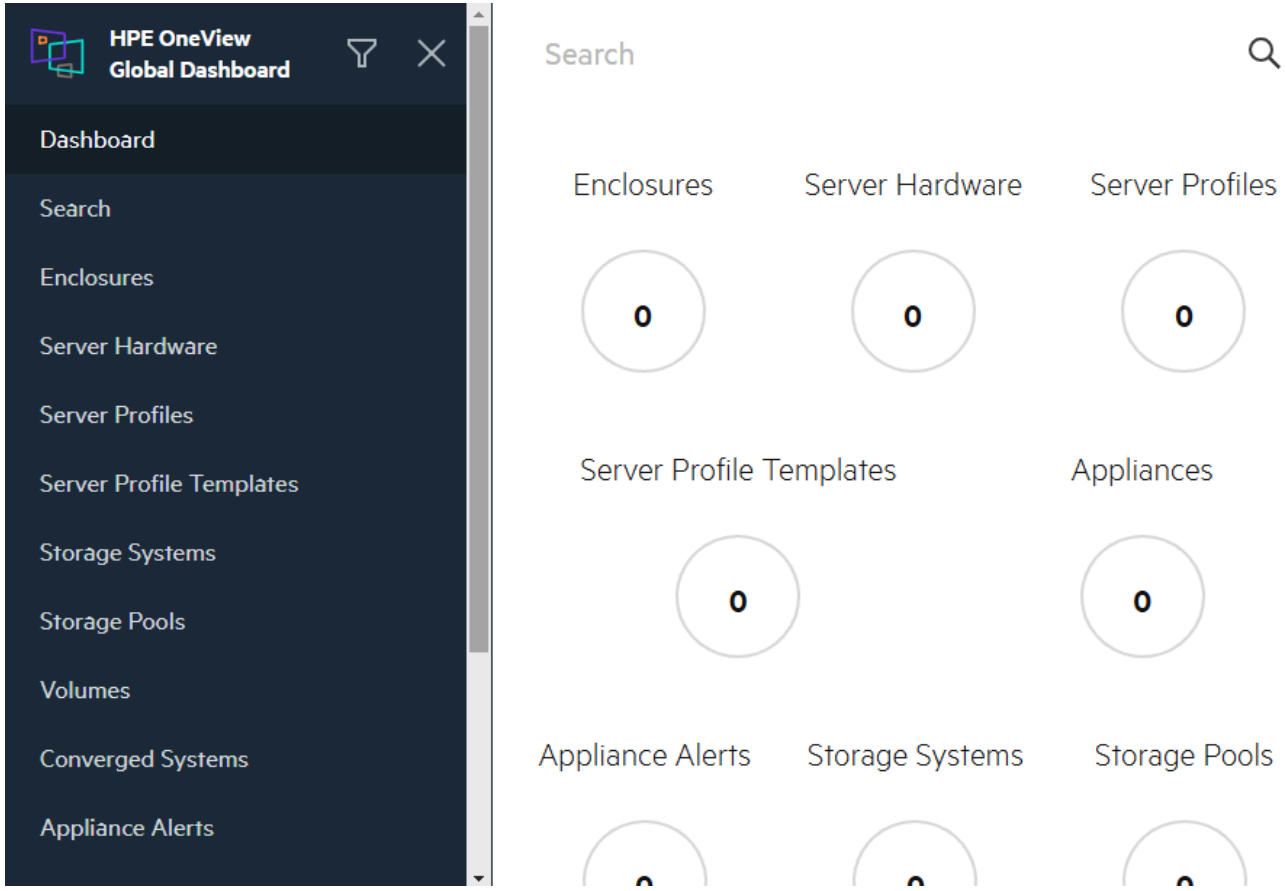


Green	A healthy status
Yellow	An event has occurred that might require your attention
Red	A critical condition that requires your immediate attention

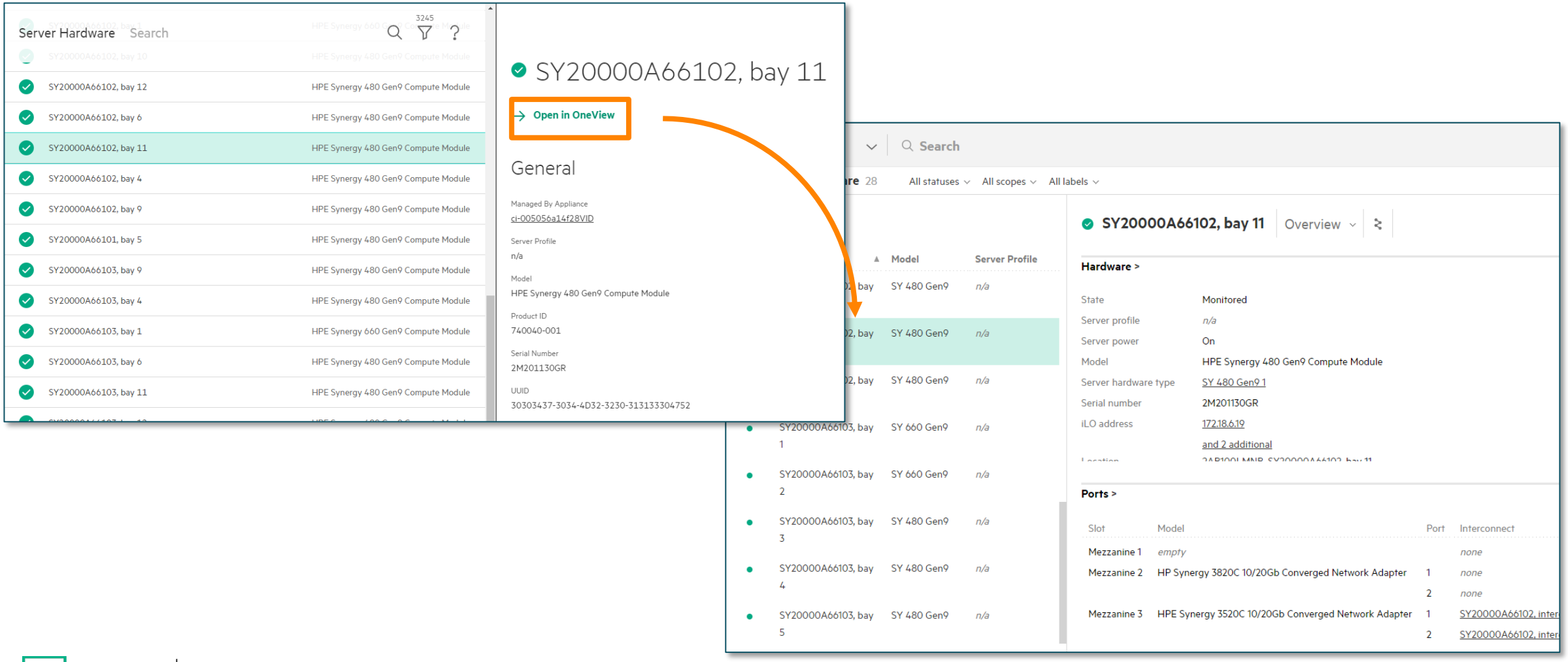
RESOURCES SUPPORT

Resources supported in Global Dashboard:

- Enclosures
- Server Hardware
- Server Profiles
- Server Profile Templates
- Storage Systems
- Storage Pools
- Volumes
- SAN Managers
- SANs
- Converged Systems

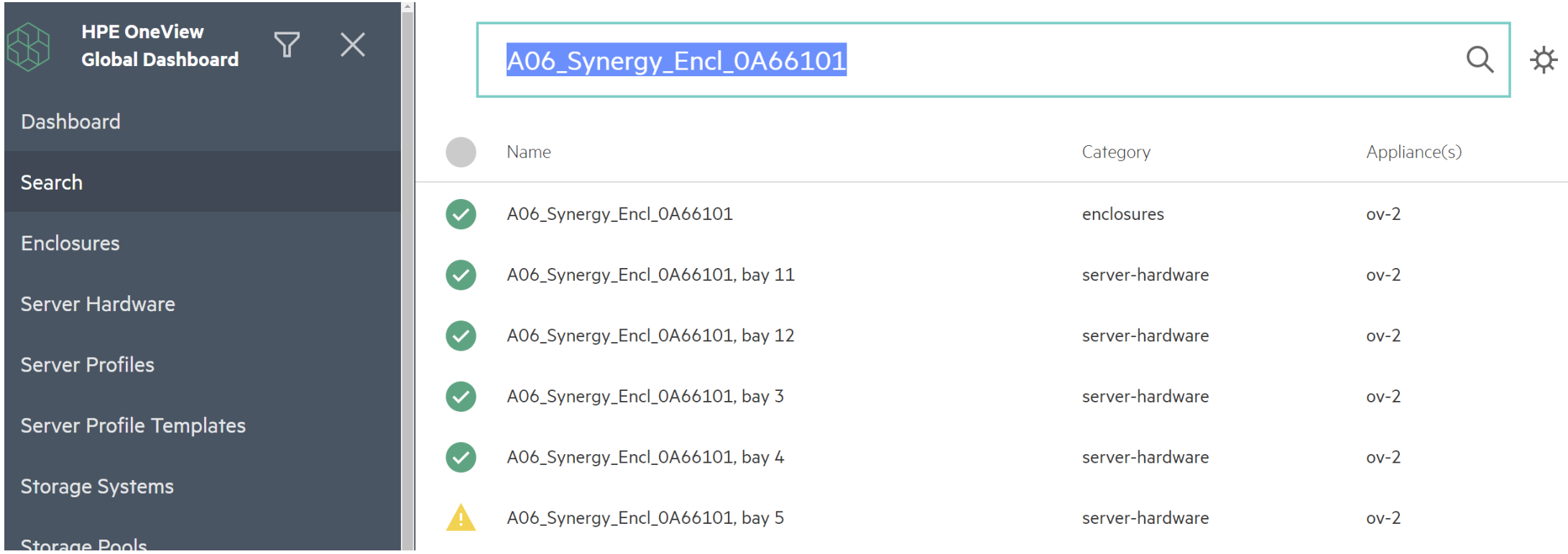


SINGLE SIGN-ON FROM HPE GLOBAL DASHBOARD



SEARCH

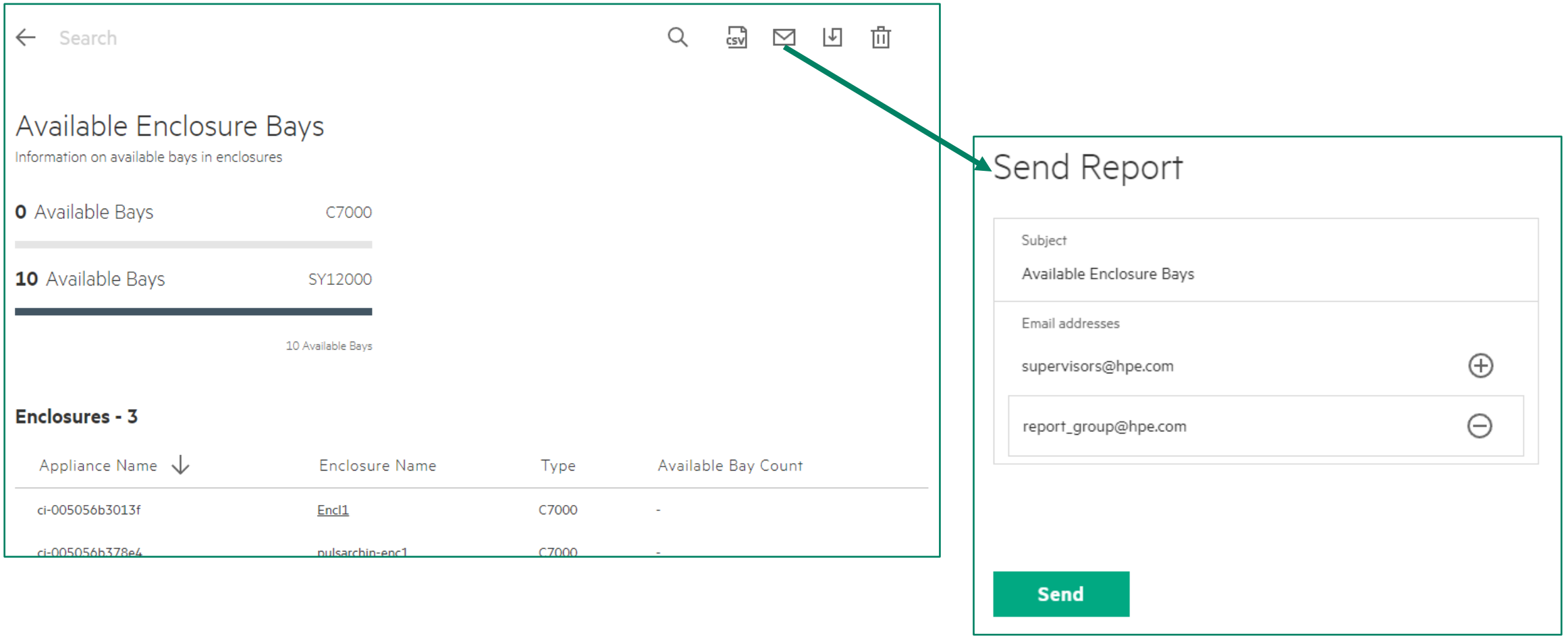
Search results are displayed in name, category, and appliance.



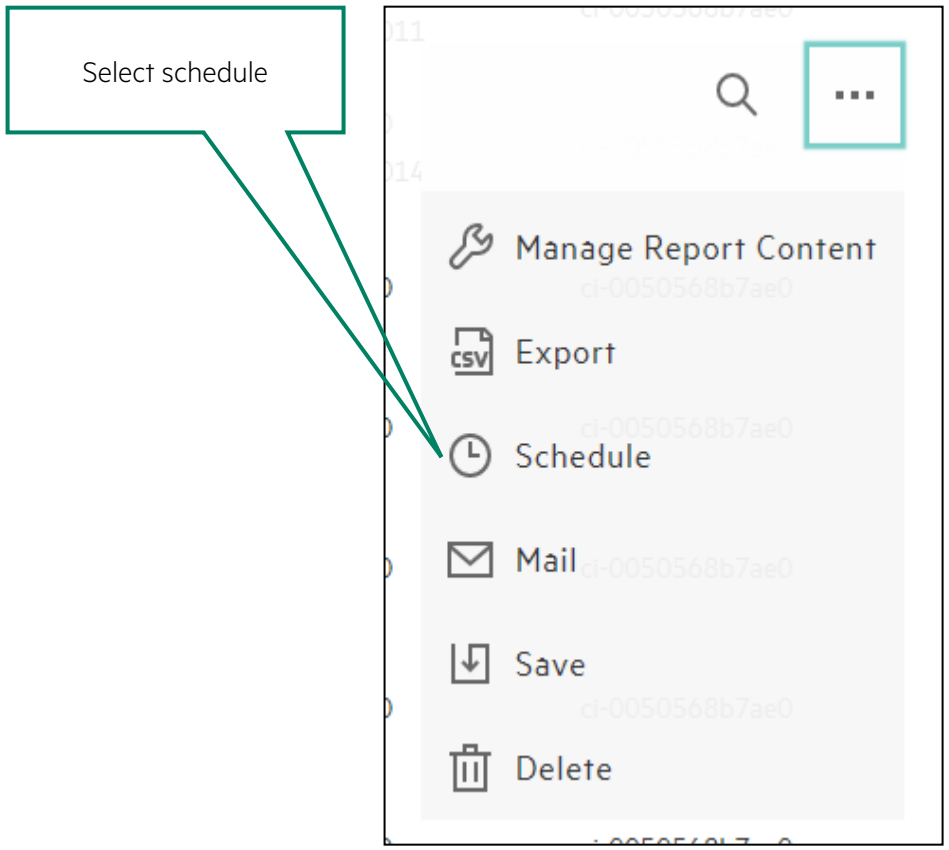
WORKING WITH THE REPORTS

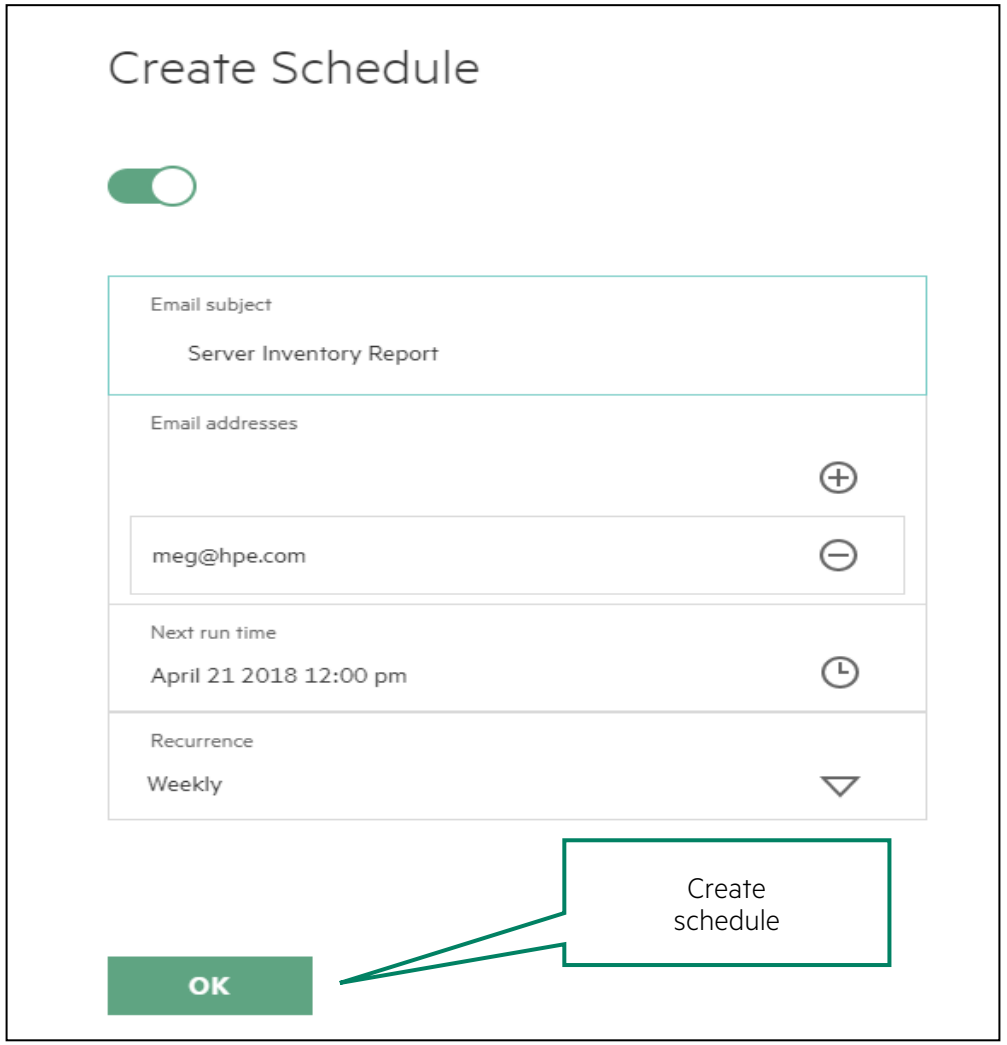
Available Enclosure Bays	Information on available bays in enclosures
Converged Systems Available Capacity	Converged Systems Available CPU, Memory, and Storage
Converged Systems Utilization	Converged Systems CPU, Memory, and Storage Usage
Firmware Compliance	Profile and Server compliance against Service Pack for ProLiant (SPP) baselines
Remote Support Service Events	Service Events triggered by Remote Support
Server Firmware Details	Server Firmware Components and Details
Server Inventory	Models, ROM and iLO versions, Server details
Server Profile Template Utilization	Available Server Profile Templates (SPTs) and Server Profile (SP) compliance
SPP Bundles	Service Pack for ProLiant (SPP) Bundles available and missing per Appliance
Storage Pool Utilization	Storage Pool Status and Utilization
Virtual ID Conflict	Virtual ID conflicts among Appliances

EMAIL REPORTS



SCHEDULE REPORT

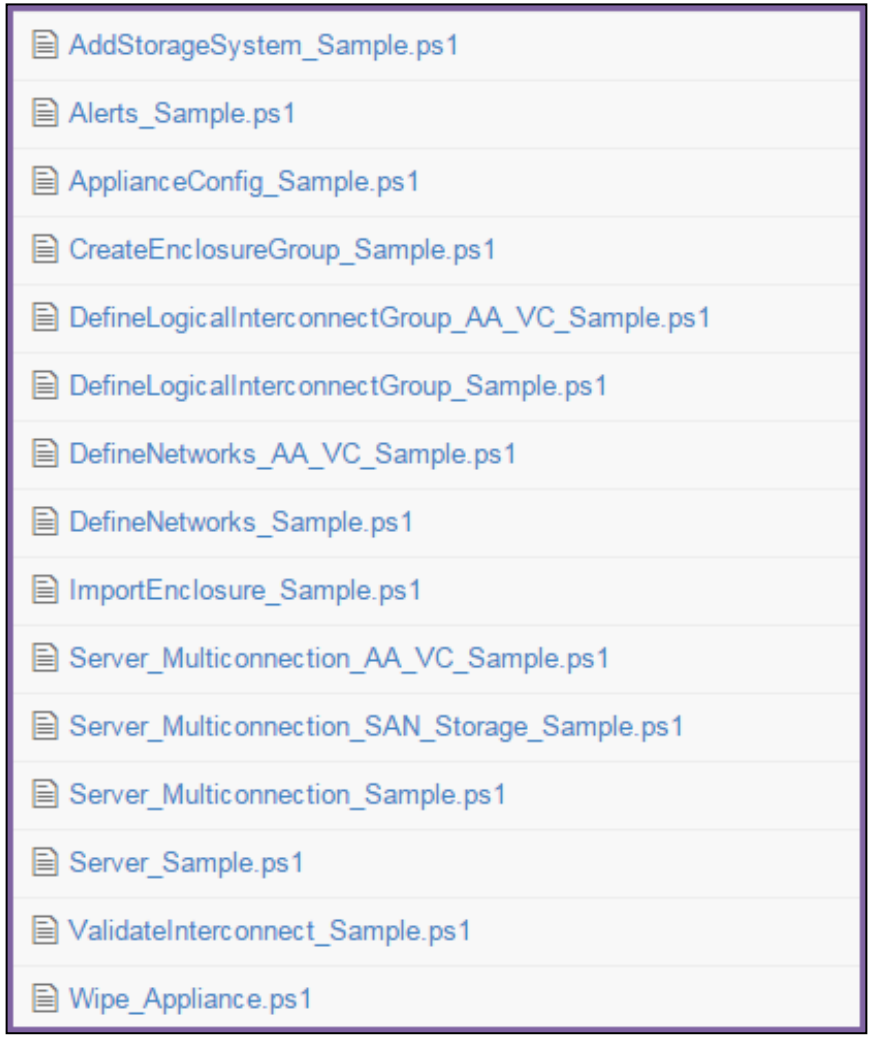




MANAGING HPE SYNERGY WITH POWERSHELL

HPE ONEVIEW POWERSHELL INTERFACE

- A Windows PowerShell interface to the HPE OneView REST APIs.
- The PowerShell project is developed for those that want to automate tasks within HPE OneView or use PowerShell as a CLI for HPE OneView operations.
- This is available from https://www.powershellgallery.com/



HPE ONEVIEW POWERSHELL LIBRARY

A simple wrapper to map REST APIs to PowerShell objects

- Microsoft guidelines
  - Standard verb-noun command naming
  - Full integration with help and auto-complete
- HPE OneView resources
  - Library maps JSON to/from PowerShell objects
- REST interaction
  - Use New to create a new resource
  - Get-Modify-Set to change a resource
  - Remove to delete a resource

```
PS > Connect-HPOVMgmt appliance.acme.com
OK
PS > Get-HPOVNetwork "Net-14"

name                       : Net-14
type                       : ethernet-networks
vlanId                     : 14
purpose                    : Unspecified
defaultTypicalBandwidth    : 2500
defaultMaximumBandwidth    : 7500
smartLink                  : False
privateNetwork             : False
status                     : OK
```

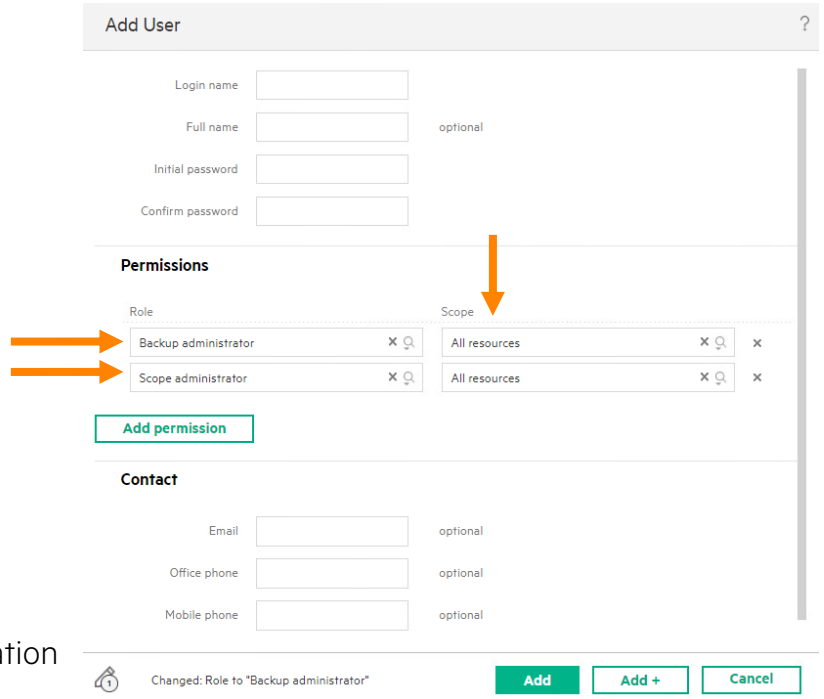
HPE SYNERGY MAINTENANCE AND MANAGEMENT

User Administration

USER ACCESS - ROLE-BASED ACCESS CONTROLS (RBAC)

RBAC grants access rights to the users based on one or more roles. There is a limited set of user roles:

- Infrastructure Administrator: Full access to create, read, update, and delete resources plus manage resource activities, notifications, and logs
- Read only: View resource information
- Specialized users:
  - Network, Server, or Storage Administrator: Specific resource admin roles
  - Backup administrator: Create and download backups, but cannot restore
  - Scope administrator: Create, update, and delete user scopes
  - Scope operator: Update scopes, including adding and removing scope resources
  - Server firmware operator: Able to view and edit server related resources
  - Server profile administrator: Manage server profiles and associated storage & networking
  - Server profile architect: Manage server profiles and templates, including associated storage & networking
  - Server profile operator: Able to edit server profiles, including associated storage and networking information
  - Software administrator: Manages the security certificates for the monitored and managed infrastructure



BASIC USER AUTHENTICATION

Security settings are independent of RBAC and SBAC and apply to all local user accounts

OneView default is local user name and password

- Password must be at least 8 characters with no other restrictions
- THIS IS NOT SAFE and may not even be adequate for dev or test environments

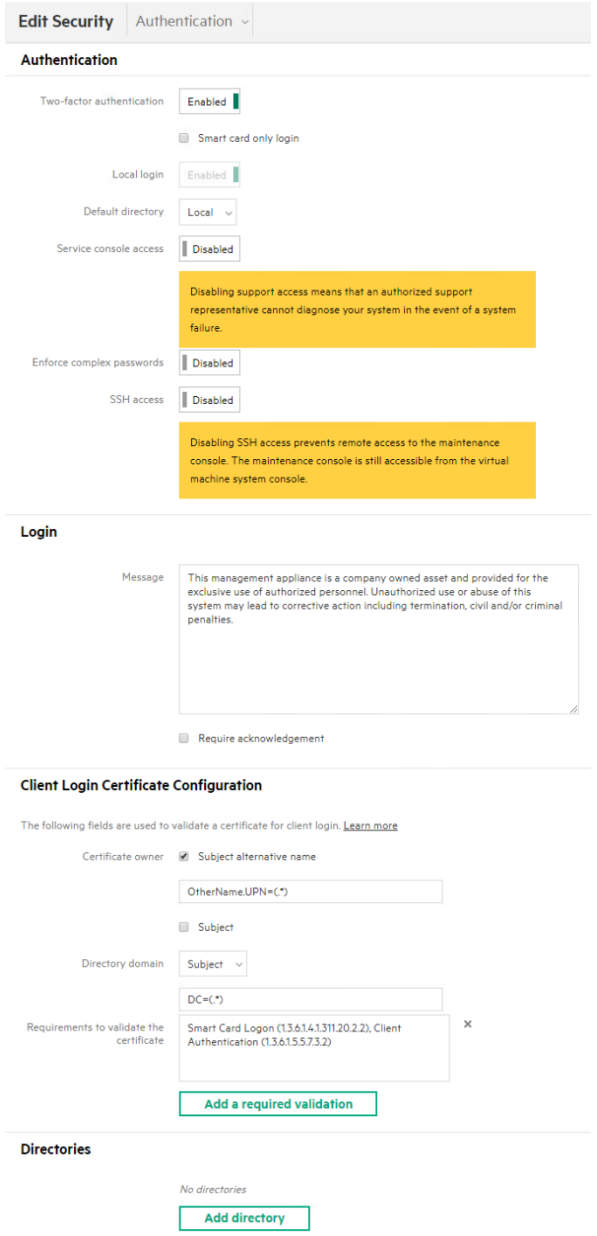
From the OneView menu => Settings => Security you can enable complex passwords

- Requires 14+ characters with uppercase, lowercase, number, special character, and no spaces

User passwords are stored in the OneView appliance using SHA384 hash

Additional local access security settings:

- Service console access for HPE remote support
- SSH access to the HPE OneView maintenance console
- Login message with optional required acknowledgement
- Certificate management for the appliance and monitored and managed devices
- Addition of the HPE public key used to validate the authenticity of updates
- Audit log forwarding to specified applications via device IP addresses or hostnames

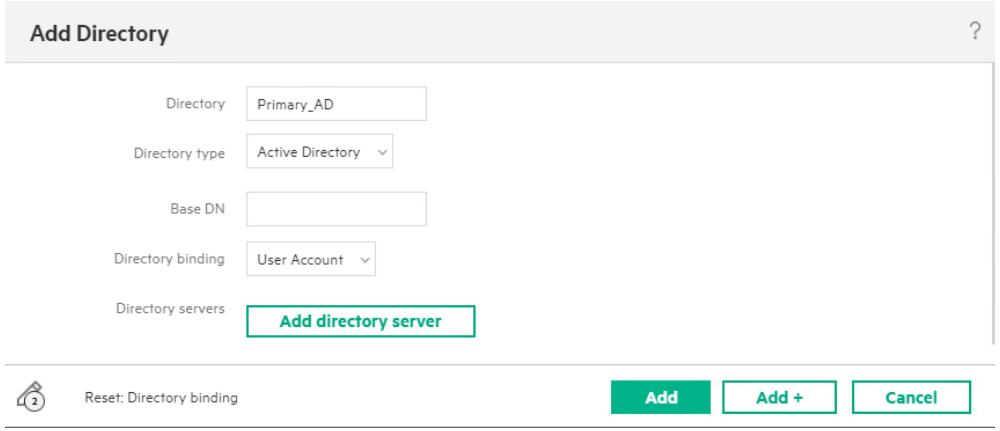


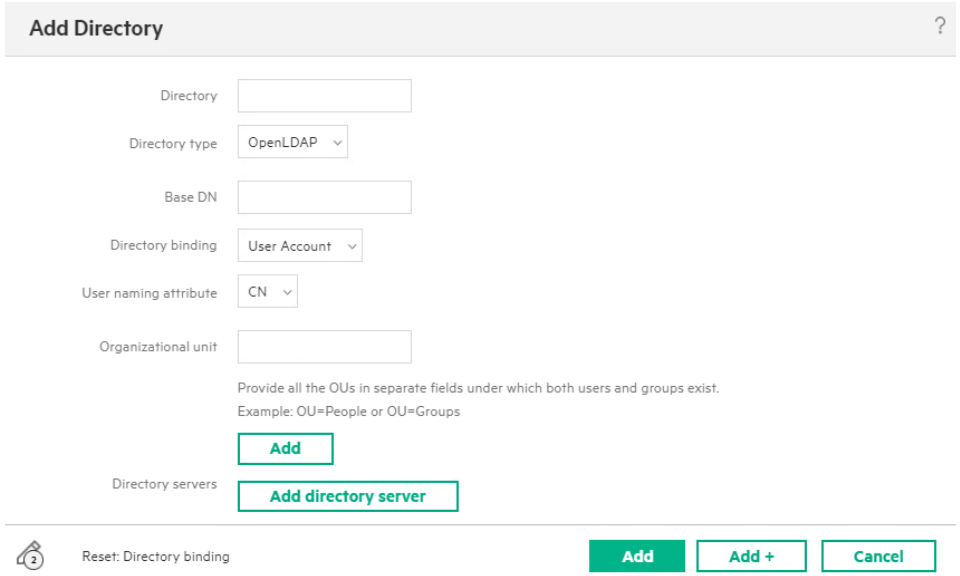
ENTERPRISE DIRECTORY AUTHENTICATION

Microsoft Active Directory and/or OpenLDAP

Enterprise directory services

- An option in addition to, or in place of, local user accounts
- Multiple enterprise directory services may be added
  - A directory service should not be added multiple times with different names
- TLS 1.2 communication between the directory service and OneView
  - If the directory service does not support TLS 1.2, 1.1 or 1.0 will be negotiated
- User groups can be configured in the directory service
- Two-factor authentication with a smart card and a user supplied PIN
  - Common Access Card (CAC) or
    Personal Identity Verification (PIV) X.509-based smart cards
  - Optional smart card only login to the browser UI
    - User name and password is still available to the appliance console

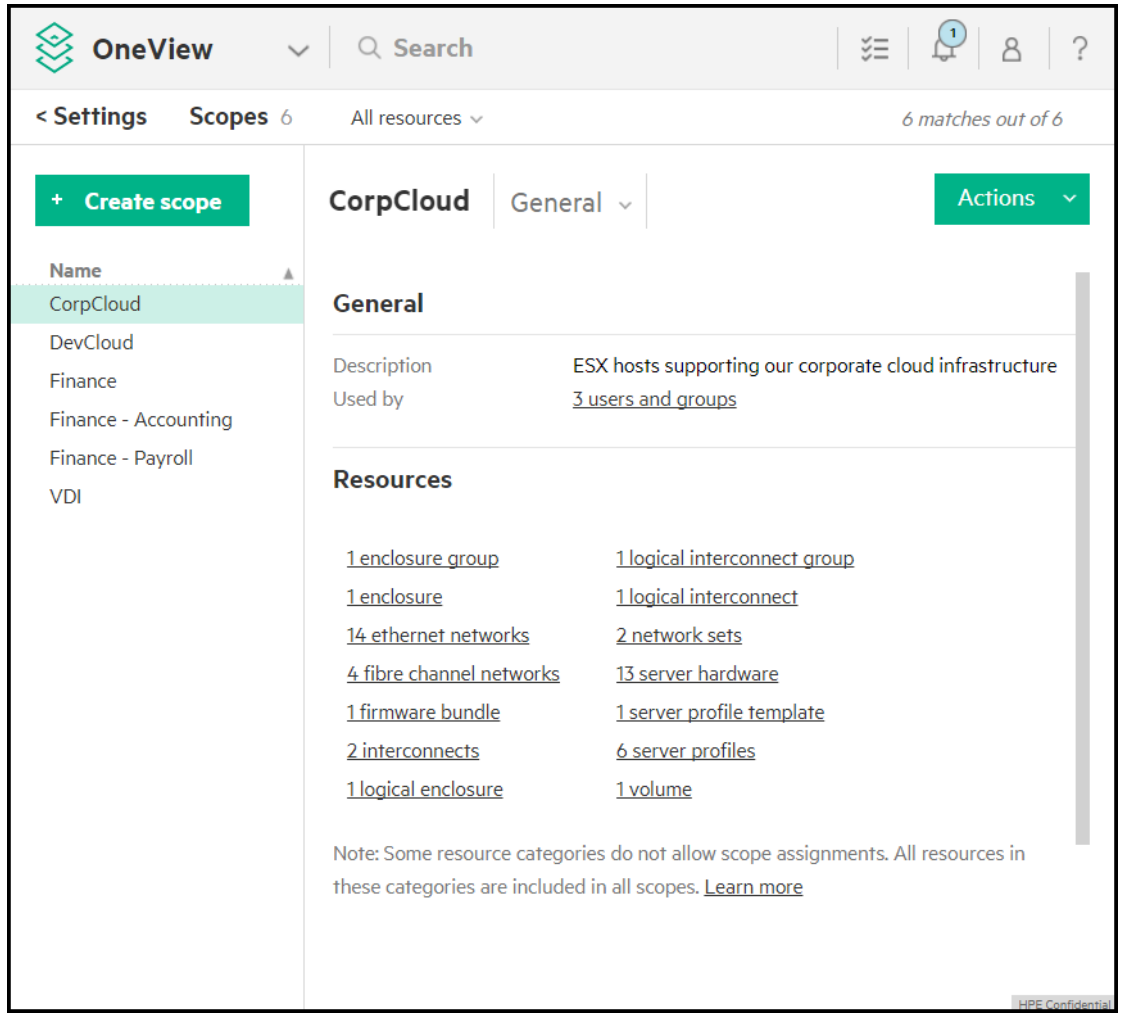




SCOPE-BASED ACCESS CONTROL

Create different scopes based on teams

- Adds an access control model on top of a scope
  - Restricts user permissions based on that user's associated scopes
- Allows a role to be restricted to a subset of resources managed by the appliance
- Is useful for large customer sites with a variety of users responsible for managing different groups of equipment
- Allows you to restrict the rights granted by a role to a subset of resources

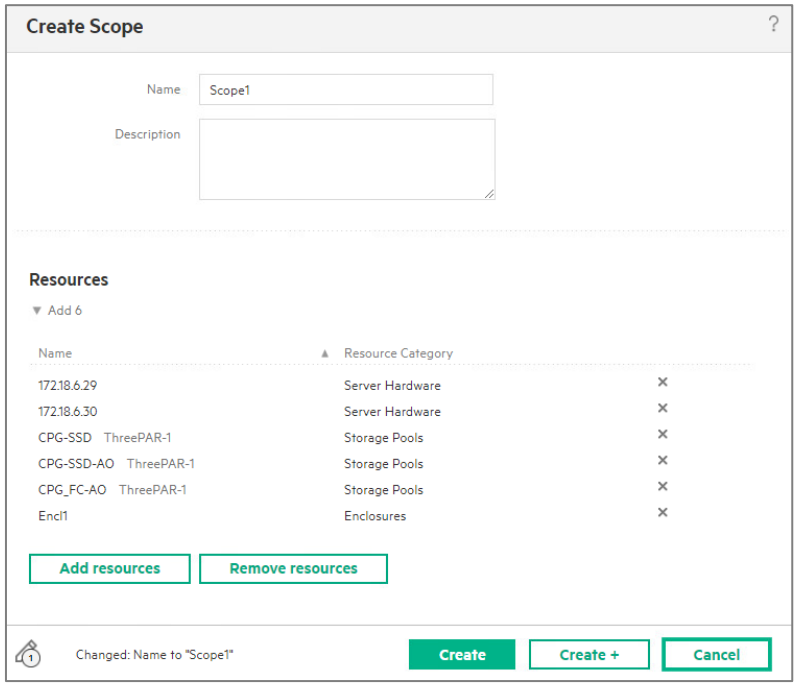


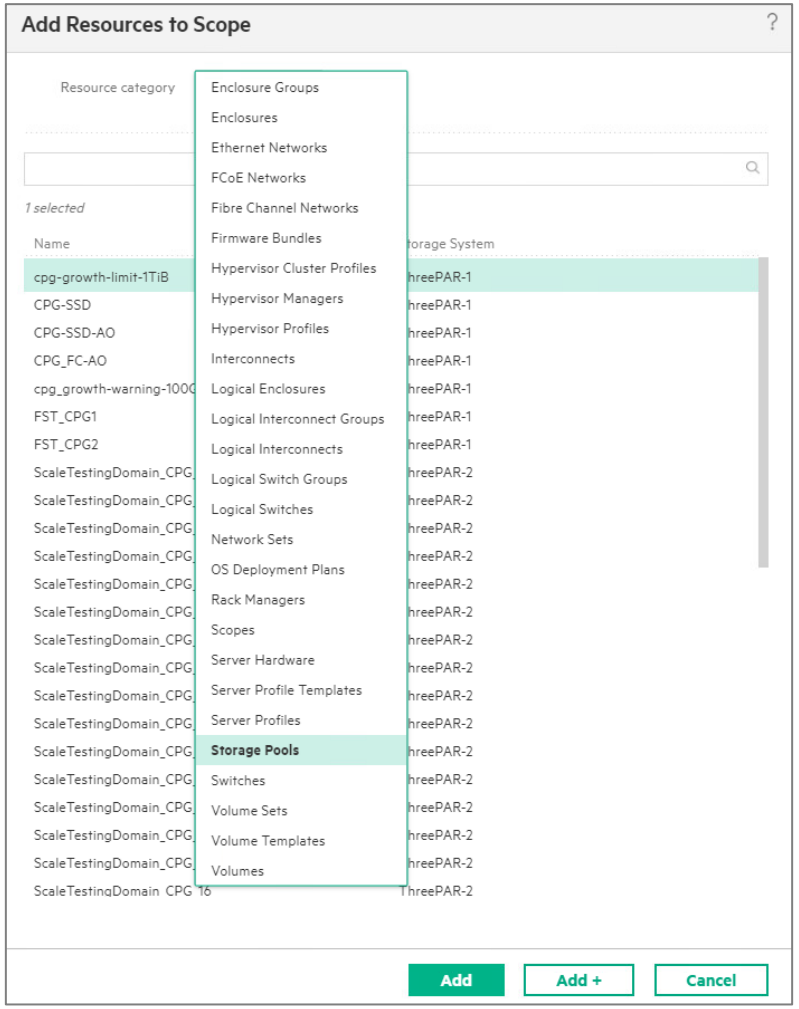
SCOPE-BASED ACCESS CONTROLS (SBAC)

Creating and assigning resources

SBAC assigns rights for a user's role to specific resources

- Scopes are defined from HPE OneView => Settings => Scopes
- A resource can be assigned to zero or more scopes
- A scope can contain one or more resources
- A scope can contain zero or more sub-scopes, for example
  - Scope1 contains resources A, B, and C
  - Scope2 contains resources D, E, and F
  - Scope3 contains resources X, Y, and Z, plus Scope1 and Scope2
  - A user assigned Scope3 will have access to resources A, B, C, D, E, F, X, Y, and Z

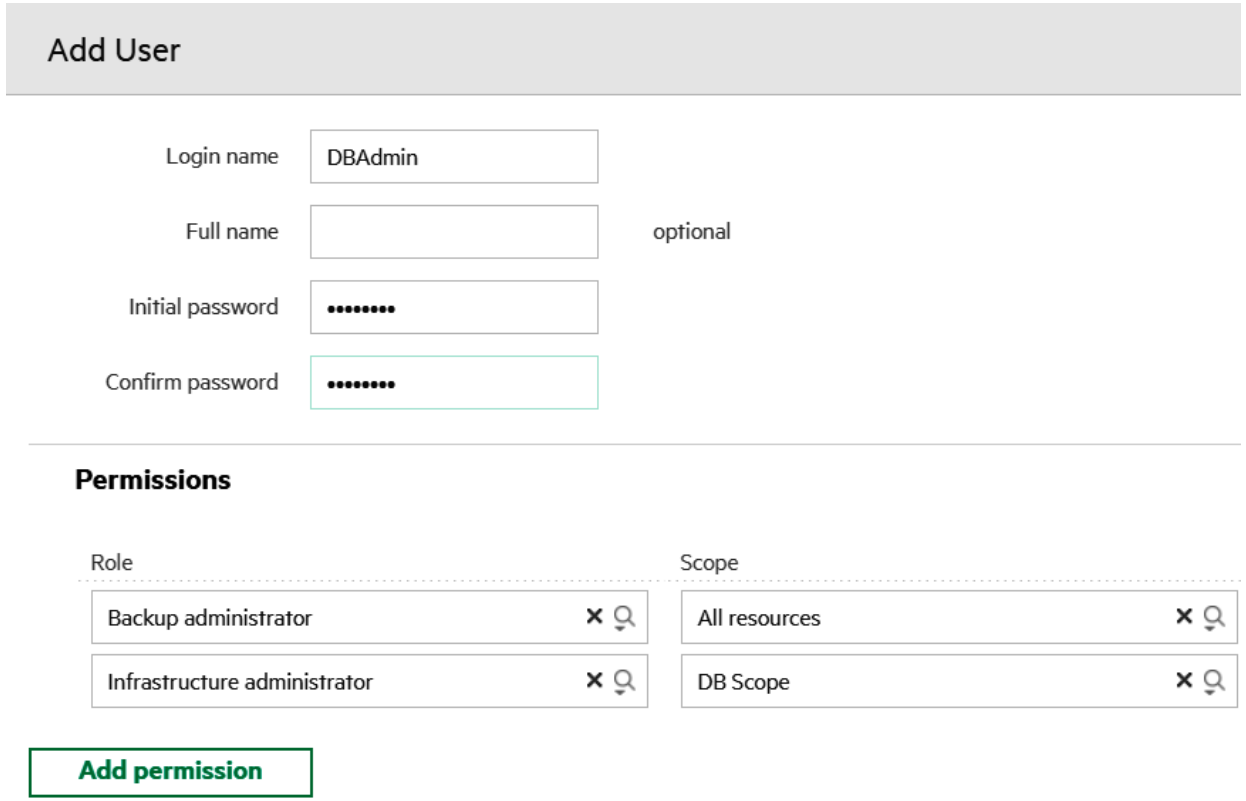




SCOPE-BASED ACCESS CONTROL

New user

- First configure a user's role, then restrict user access based on scopes.
- Assign scopes to:
  - User account
  - Directory group
- A user can be given access (by role) to multiple scopes.
- A user may have different roles for different scopes.



USER ACCESS BEST PRACTICE RECOMMENDATIONS

For secure production environments

The only local account should be an “administrator” maintenance account with a complex password

All other user accounts should be integrated with an enterprise directory

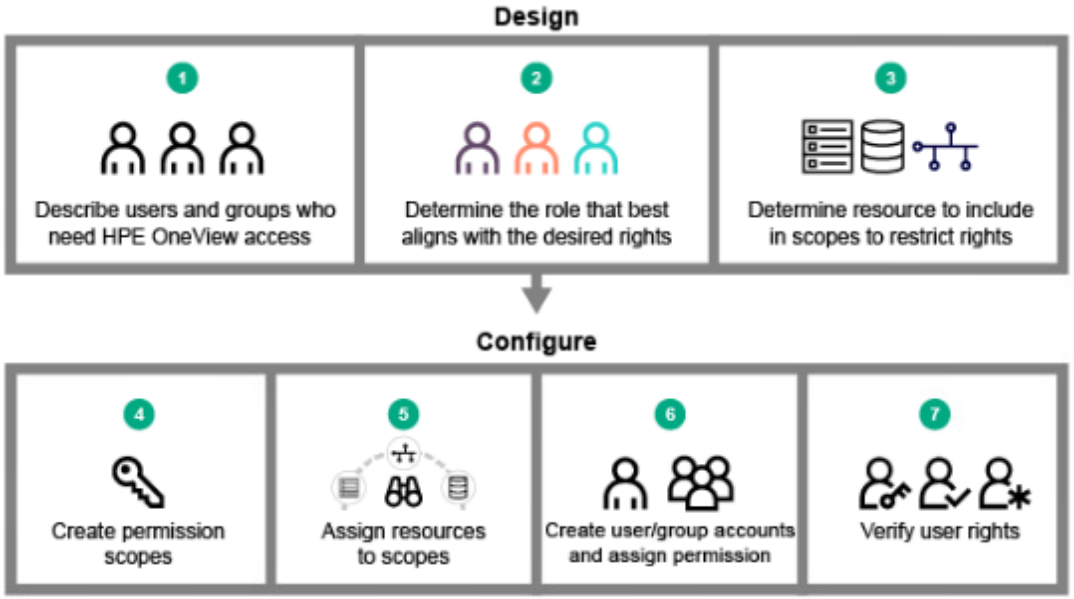
- After enabling the enterprise directory integration, all local user access can be disabled
- Optional “break glass in case of emergency” feature may remain for Administrator access in the rare event that the enterprise directory is not available

Consider using additional enterprise directory features

- User groups and domains
- Multiple forest security and nested domain security groups with AD

Consider optional enhanced security features:

- Two-factor authentication
- Complex passwords
- Disabling SSH and support access



HPE SYNERGY MAINTENANCE AND MANAGEMENT

Appliance Security

CERTIFICATE MANAGEMENT

Validating trust

- May be required for:
  - Users
  - Applications (for single sign-on)
    - HPE OneView web server RSA certificate (initially configured as a self-signed certificate)
      - **HPE Synergy Composer 2 appliance requires** CNSA-strength certificates that are 3072 bit and SHA-386
    - Enterprise directories and any domain controllers
    - HPE Remote Support
    - HPE Synergy Image Streamer
    - Proxy servers
    - Remote firmware repository
    - RabbitMQ message broker client

Monitored and managed infrastructure devices

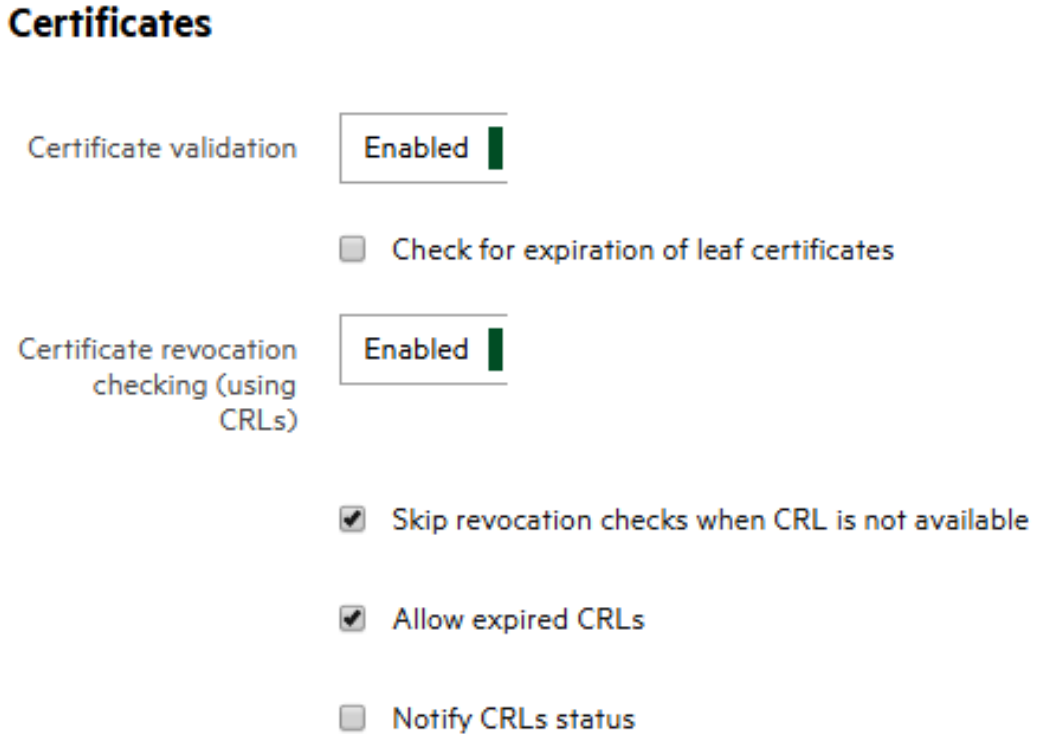
- Integrated Lights Out (iLO)
- Onboard Administrator (OA)
- Virtual Connect
- HPE Rack and Power Manager
- HPE Superdome Rack Management Controller (RMC)
- HPE Synergy Frame Link Module (FLM)
- HPE Synergy 12Gb SAS Connection Module

- Message bus Advanced Message Queuing Protocol (AMQP) (initially configured as self-signed)
- REST APIs for device Certificate Sign Request (CSR) and pushing CA-signed certs

CERTIFICATE MANAGEMENT

HPE OneView uses HTTPS to communicate with managed devices and remote servers.

HPE OneView supports the use of both self-signed certificates and certificate authority-issued certificates in a formal PKI.



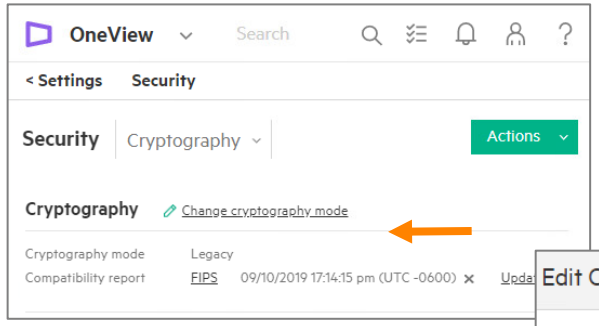
FIPS AND CNSA

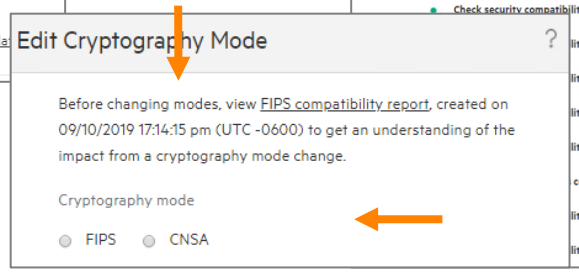
Enablement and compatibility reports

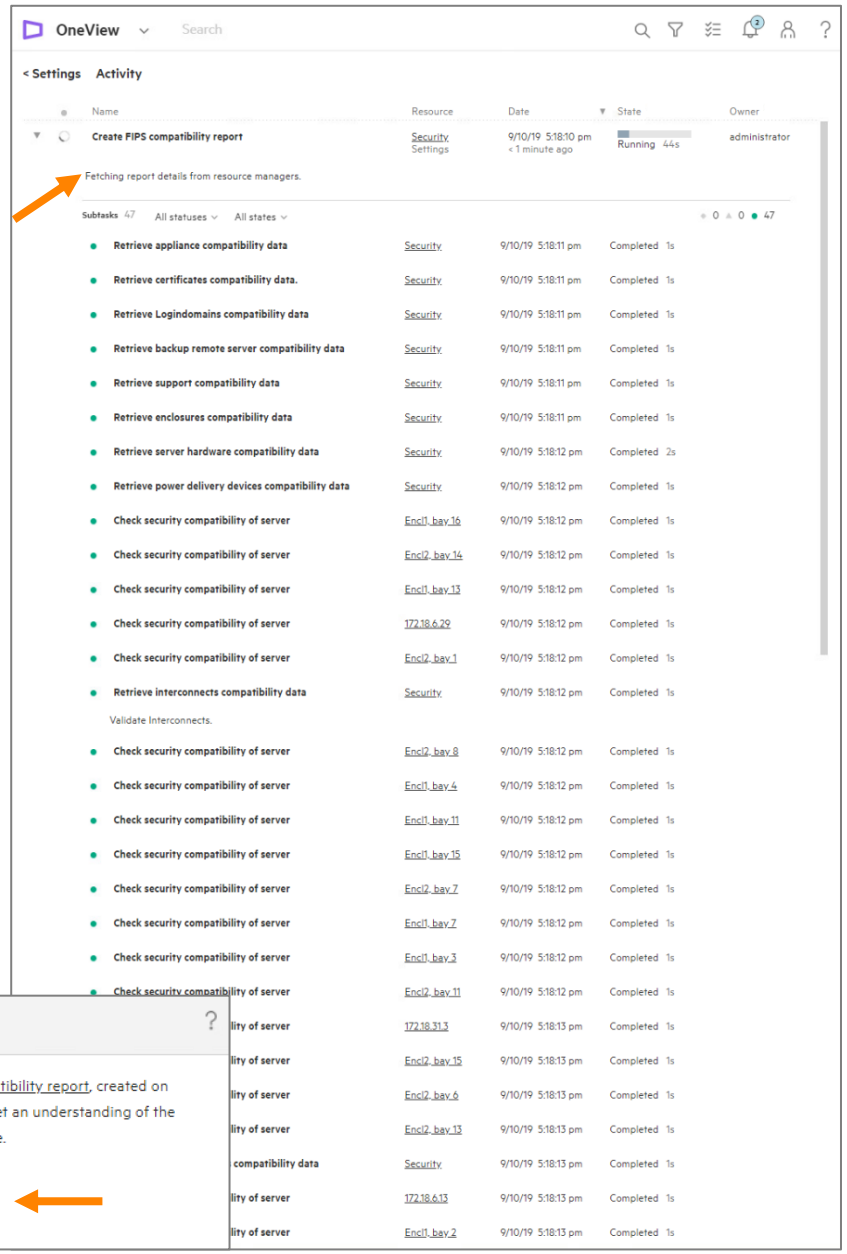
Enabled from OneView => Settings => Security => Cryptography

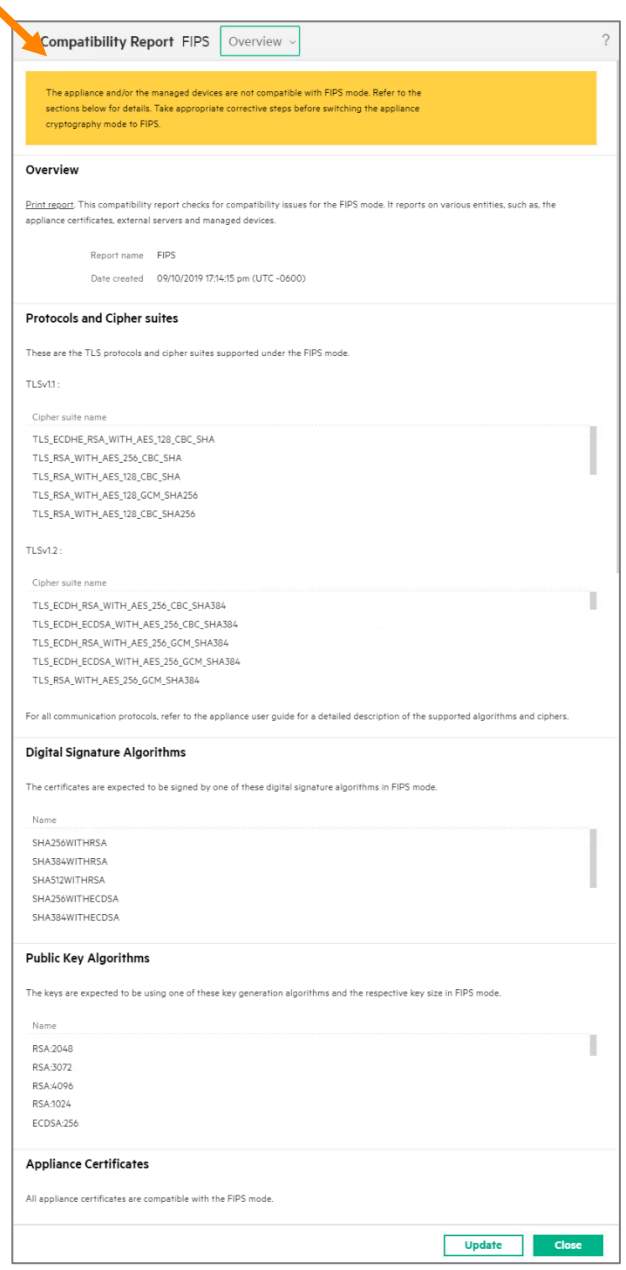
- **Change cryptography mode** to enable FIPS or CNSA
- **Actions** (drop-down) => **Create compatibility report** to generate the report
  - Report generation and results are shown to the right

CNSA ciphers provide the highest level of cryptography in the industry





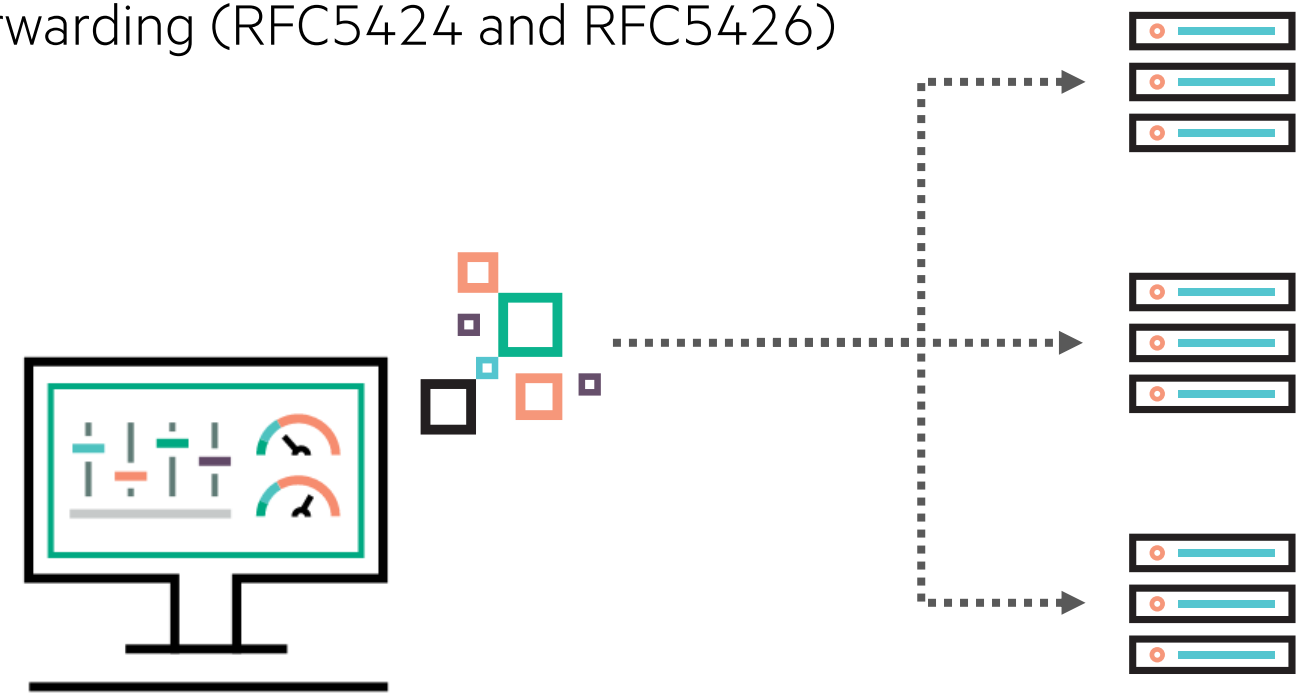




Hewlett Packard Enterprise | intel

AUDIT LOG FORWARDING

- Forward the OneView audit log to a remote log server
- Centralized log server enables audit compliance, monitoring, log analysis, and controlled retention policies
- Support for multiple remote forwarding destinations
- Uses standard UDP-based syslog forwarding (RFC5424 and RFC5426)



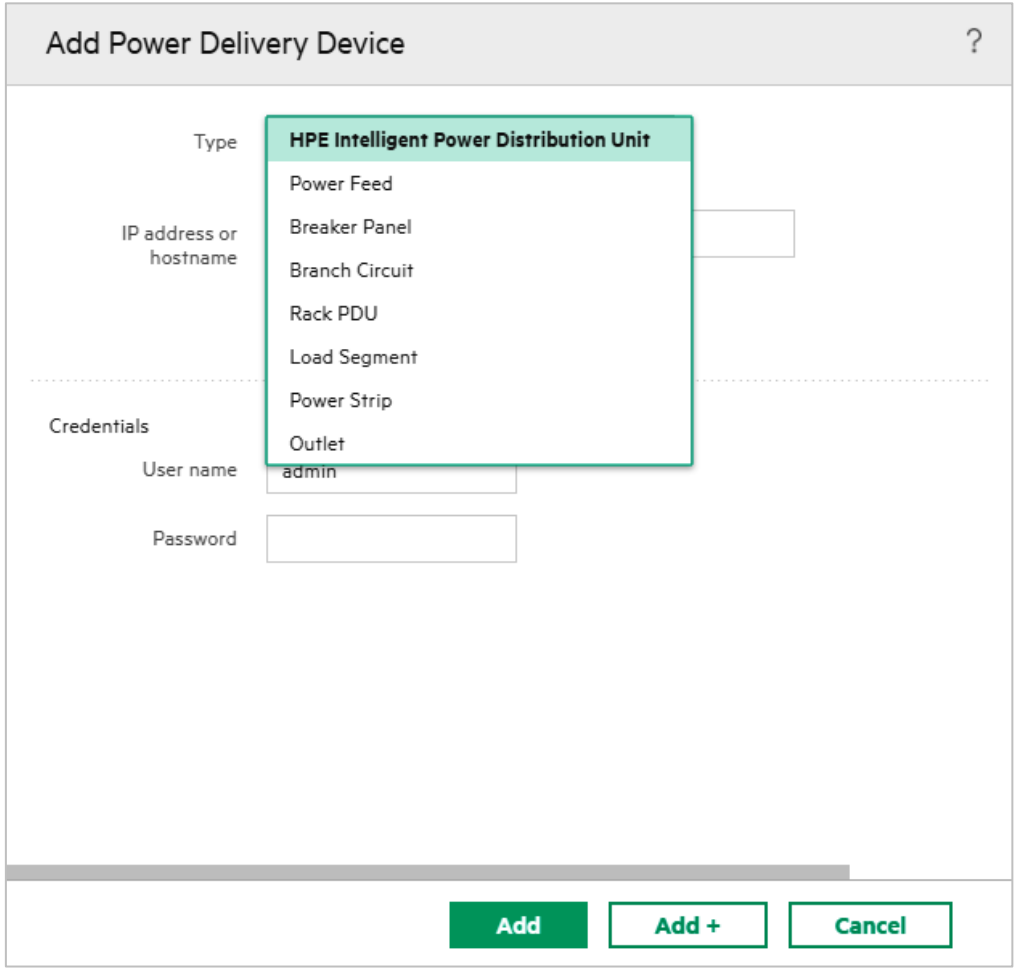
HPE SYNERGY MAINTENANCE AND MANAGEMENT

Unmanaged Devices

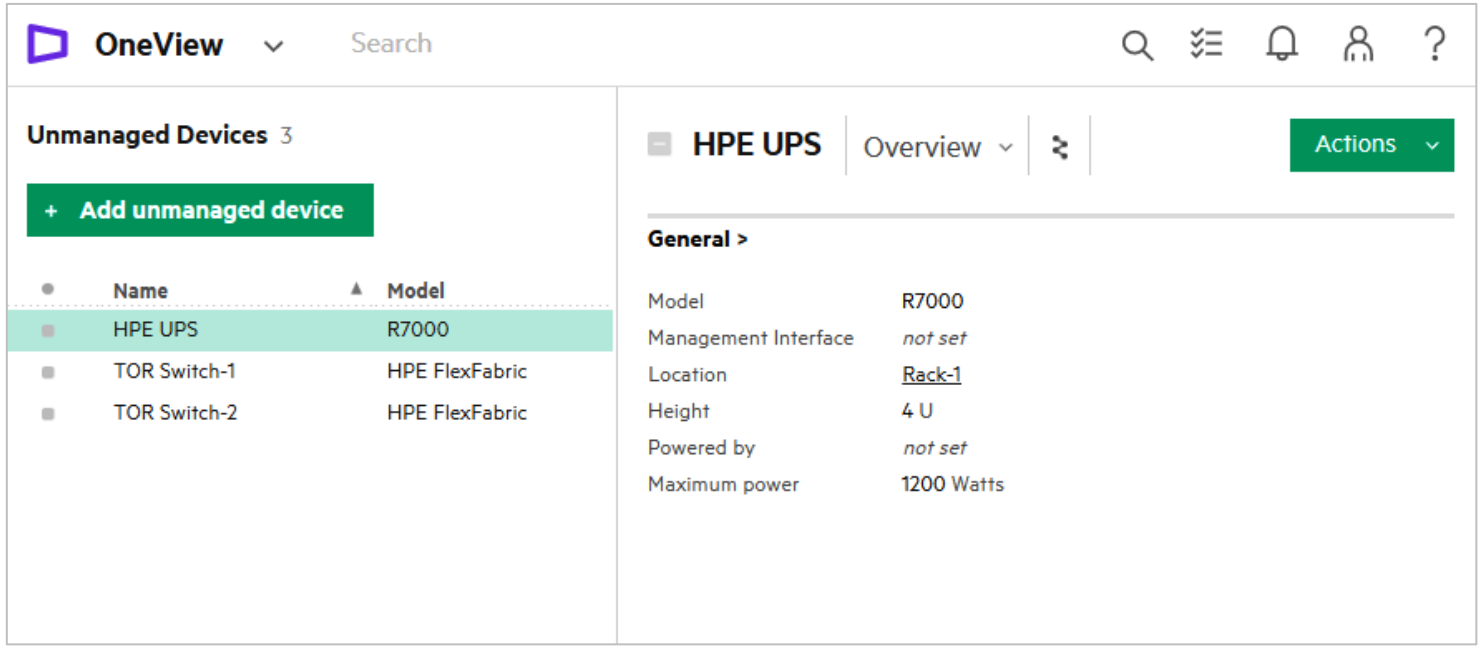
POWER DELIVERY DEVICES IN HPE ONEVIEW

The Power Delivery Devices screen describes the following classes of devices:

- iPDUs, which the appliance can automatically discover and control.
- Other power delivery devices that the appliance cannot discover.



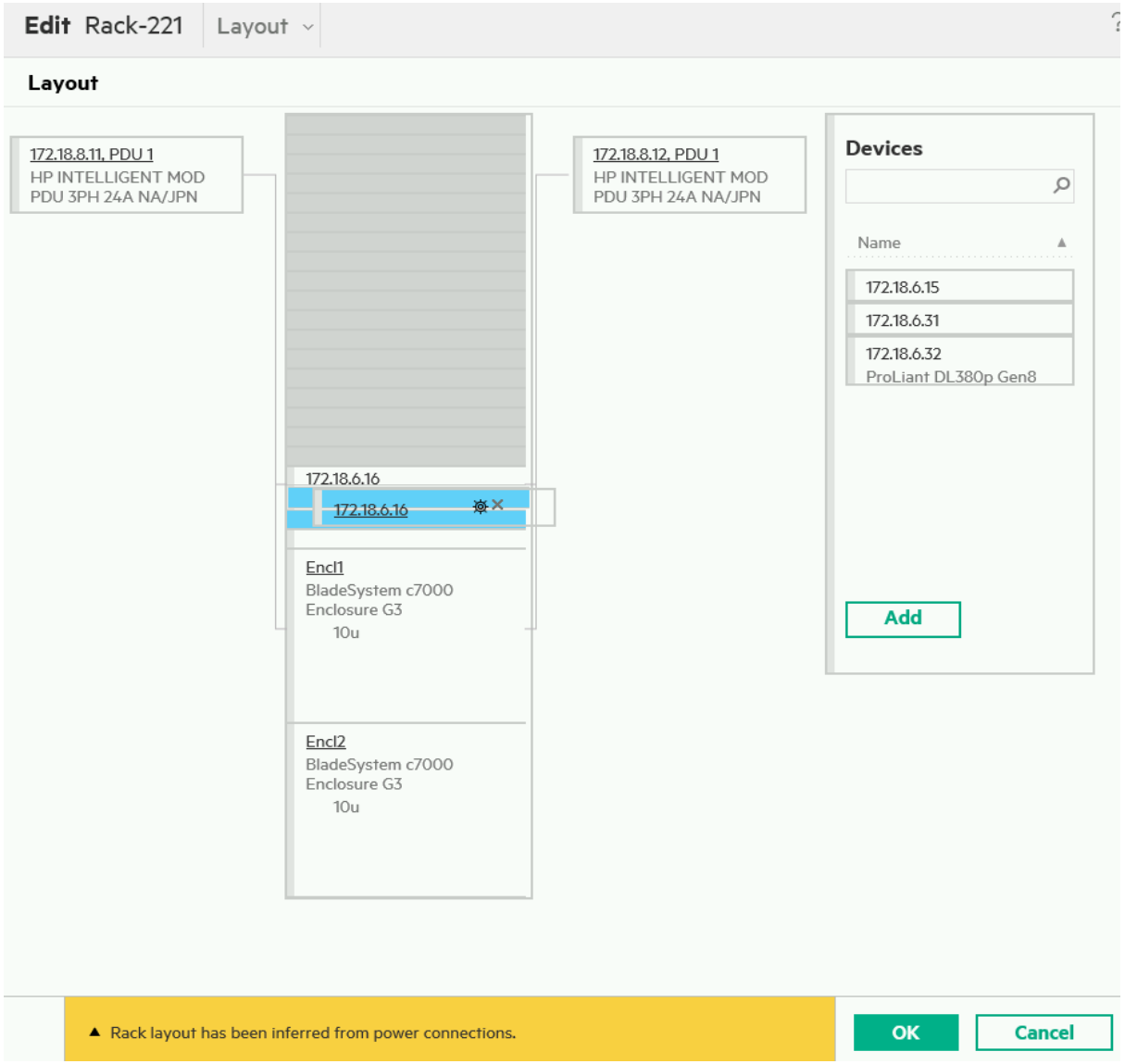
UNMANAGED DEVICES IN HPE ONEVIEW



An unmanaged device is a device, such as a server, enclosure, KVM switch, in-rack monitor/keyboard, or router that occupies space in a rack and/or consumes power, but is not managed by the appliance.

Unmanaged devices are created automatically to represent devices that are attached to an iPDU using Power Discovery Services connections.

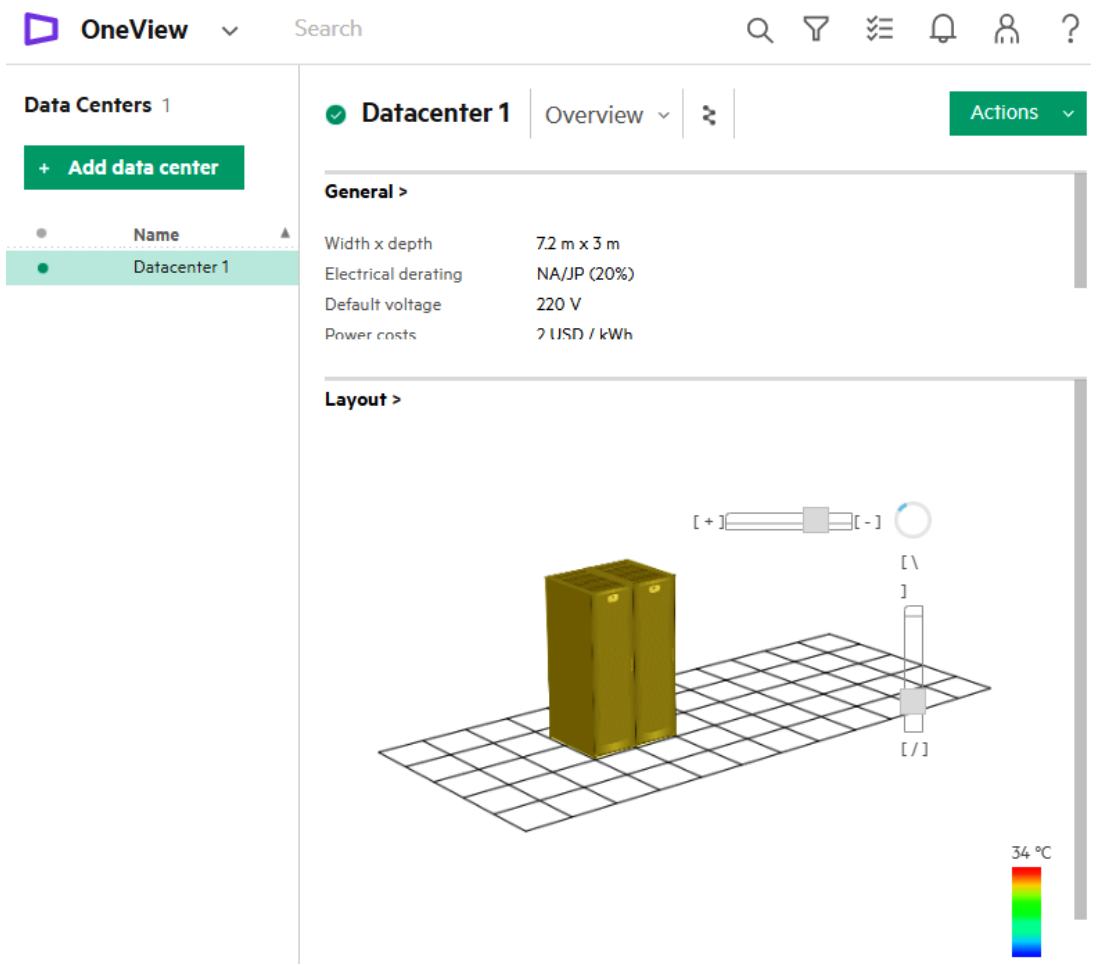
MANUAL DEVICE POSITIONING



DATA CENTERS IN HPE ONEVIEW

Data center object

- A data center represents a physically contiguous area in which racks containing IT equipment are located.
- When you initialize the appliance for the first time, it creates a data center named Datacenter 1.
- You can add a data center and specify its dimensions.



HPE SYNERGY MAINTENANCE AND MANAGEMENT

Backups and Restores

BACKUPS

- Backups use a specific user role that cannot access other resource views or tasks
- Backups are encrypted and contain configuration settings and management data
- Use the UI, REST API, or a custom-written PowerShell script to restore a corrupted appliance from a backup file
- The restore operation is required only to recover from catastrophic failures

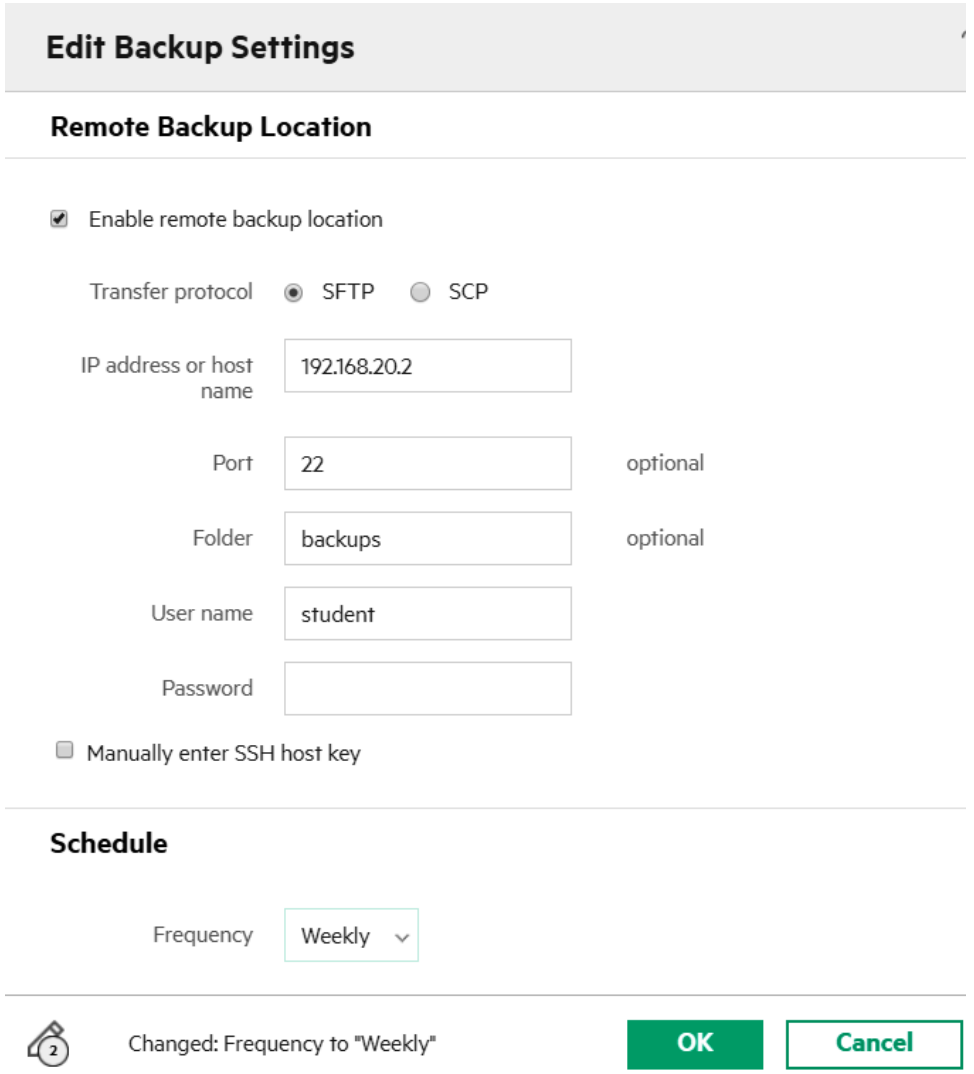
Recovering from catastrophic failures

- Restores the appliance from the backup file
- Replaces all management data and most configuration settings on the appliance with the data and settings in the backup file
- Reconciles the data in the backup file with the current state of the managed environment

SCHEDULED REMOTE APPLIANCE BACKUP

Appliance backup can be done:

Manually on demand

Scheduled to be uploaded to the remote location

- SFTP
- SCP