Hewlett Packard Enterprise

Amilcar Petroleum Operations

Hewlett Packard Enterprise

Installation and configuration Guide for Frame

HPE SYNERGY 12000

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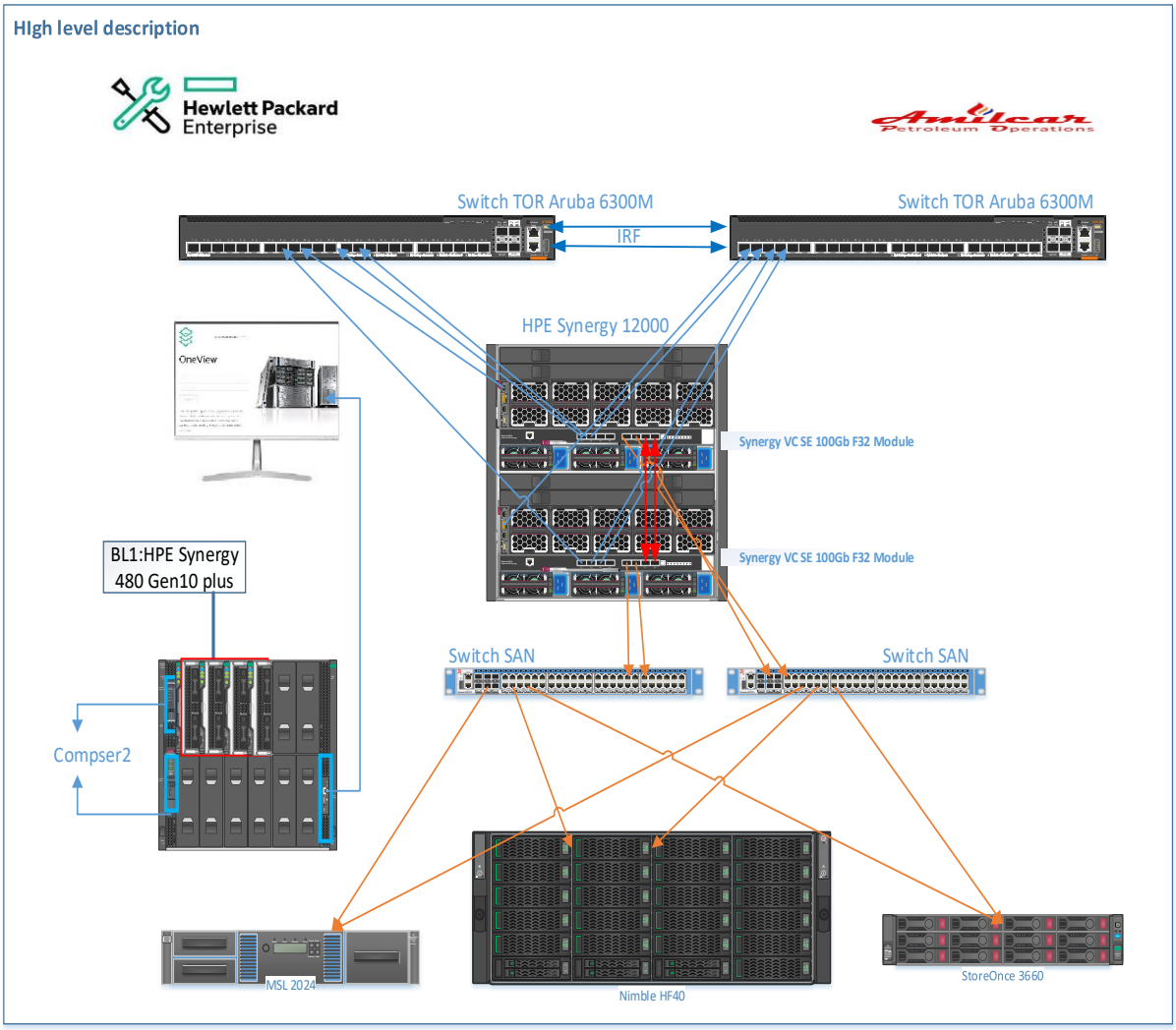
1. Objective

This document provides instructions for installing and configuring the HPE SYNERGY frame

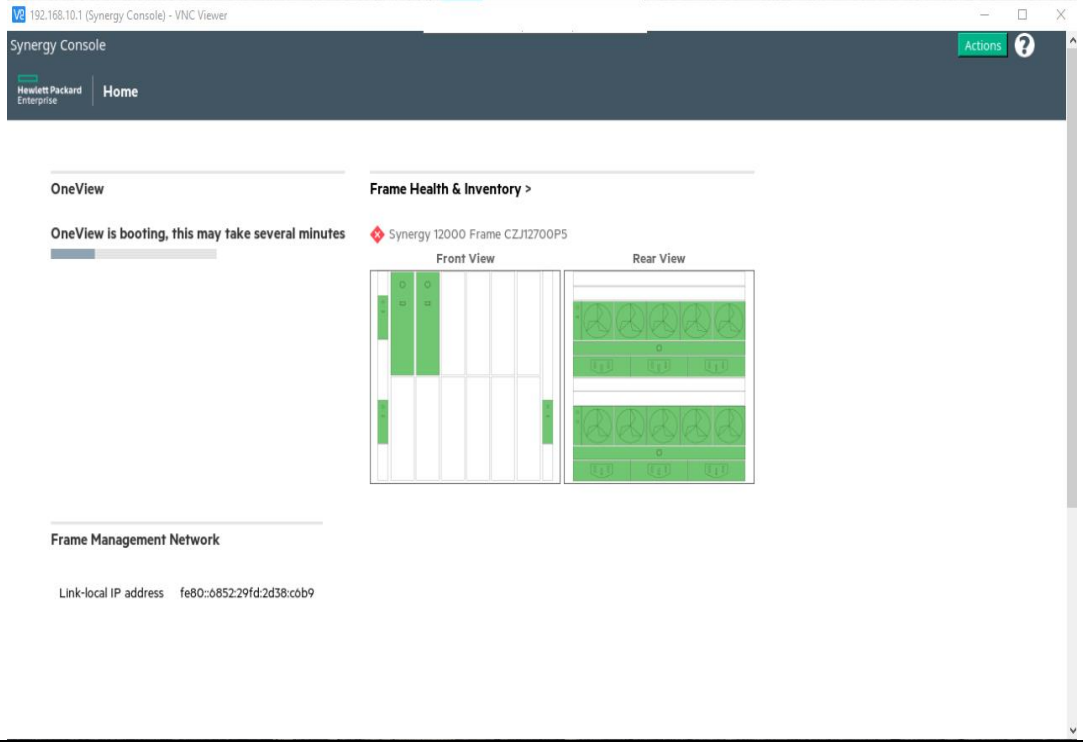
2. HLD Architecture

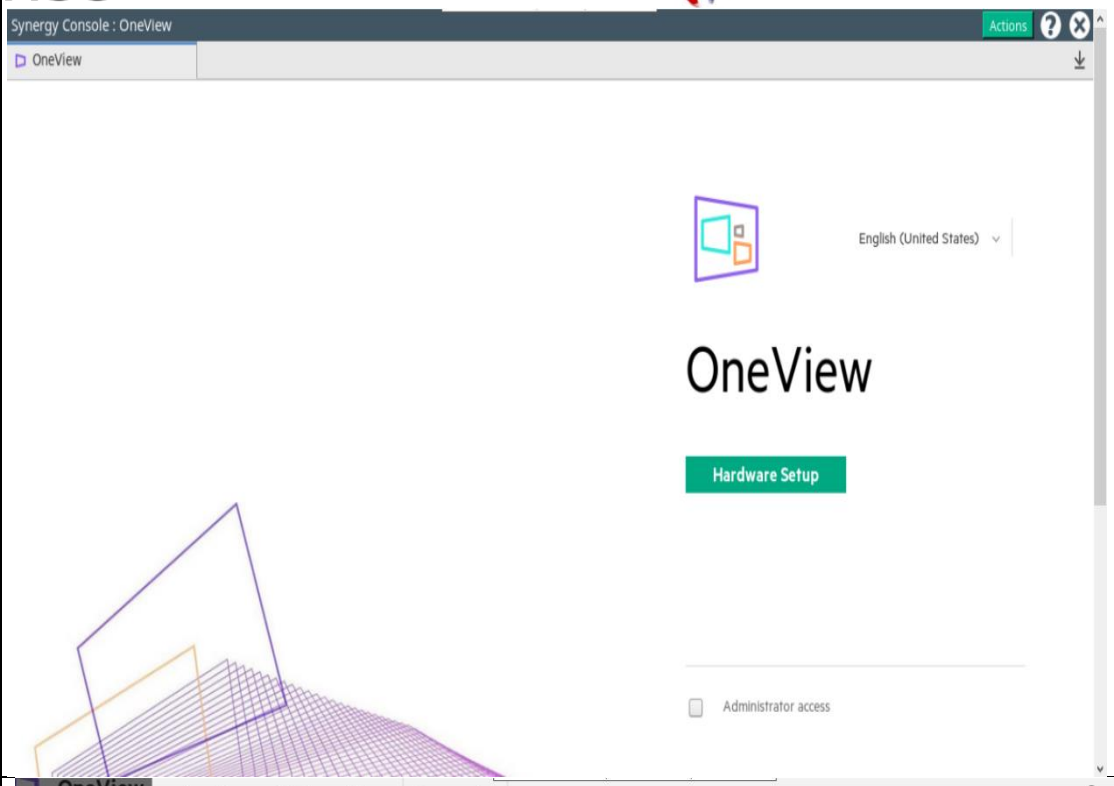
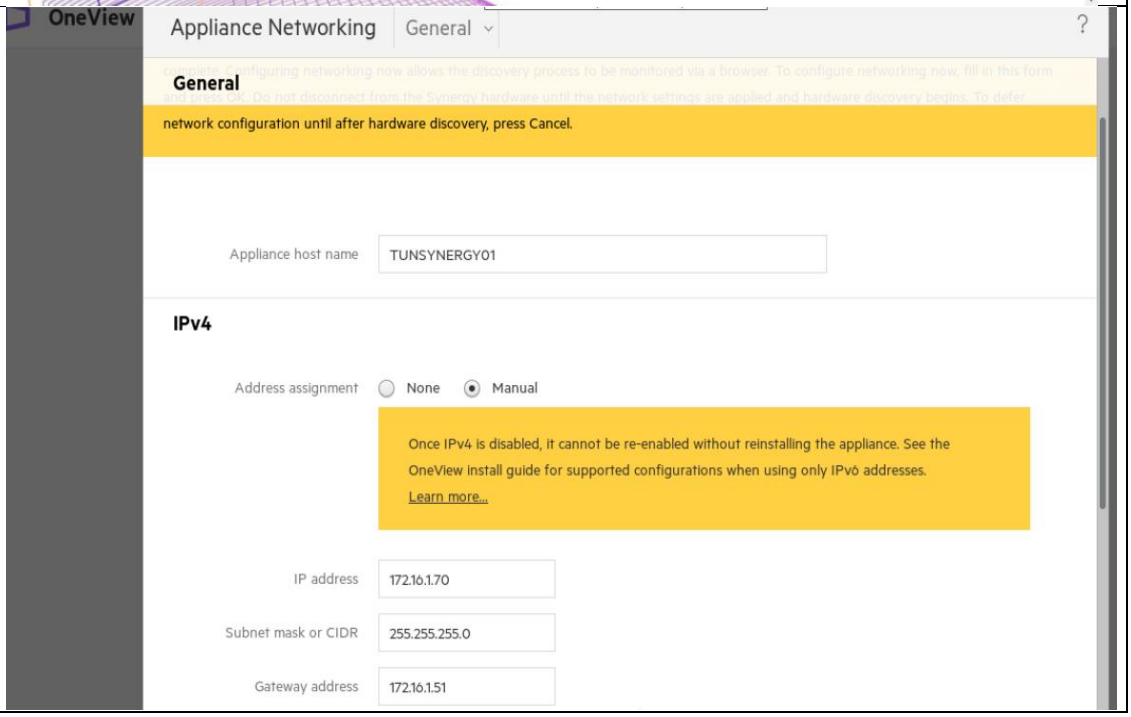


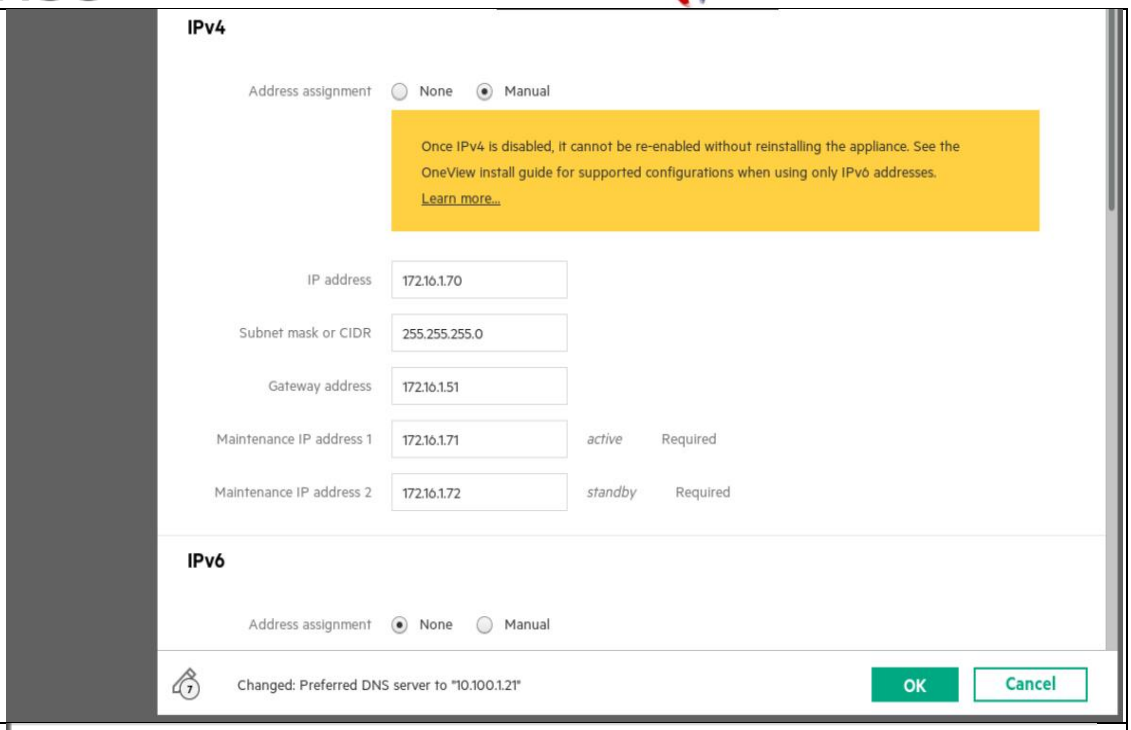
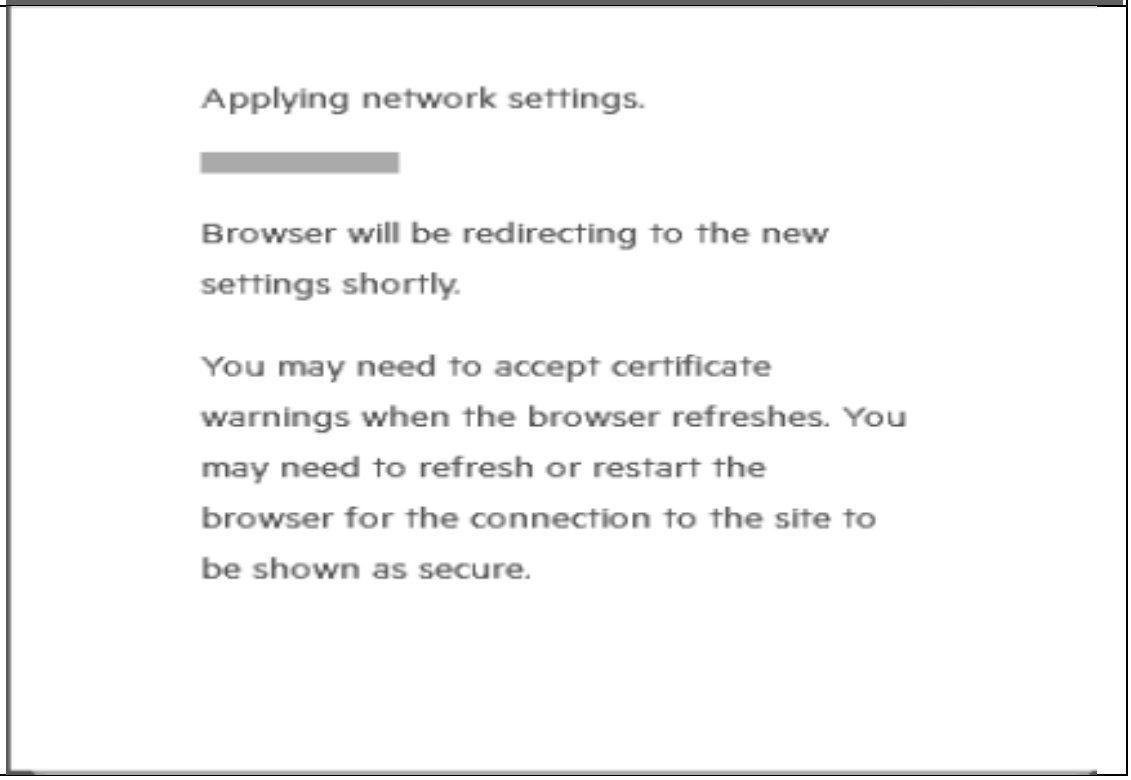
3. Port connections

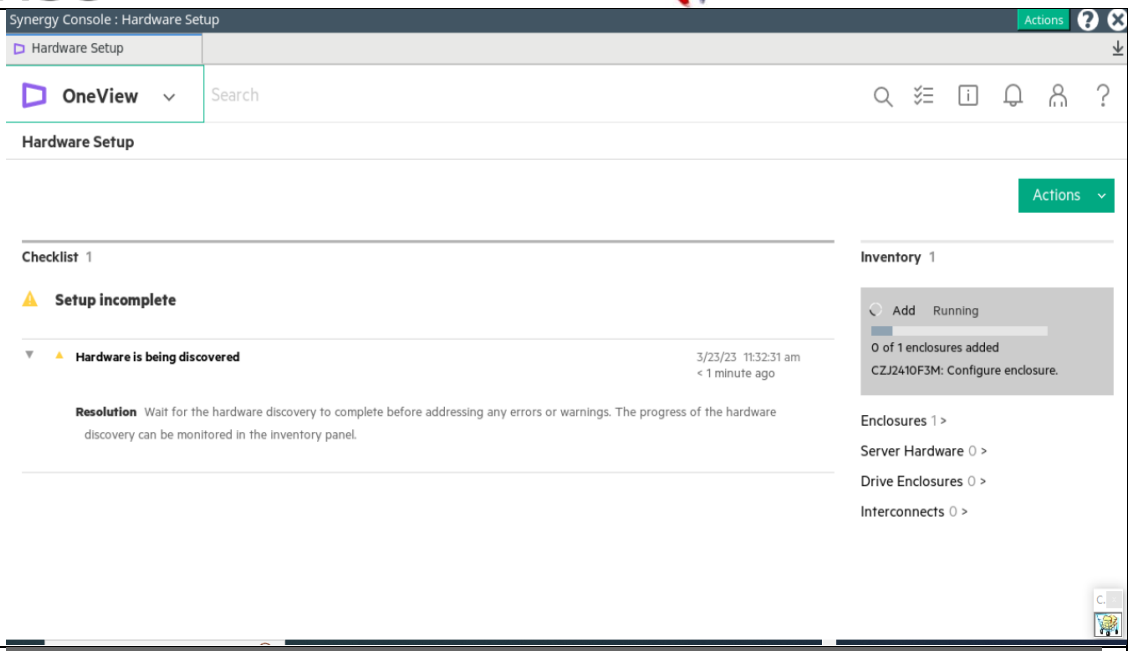
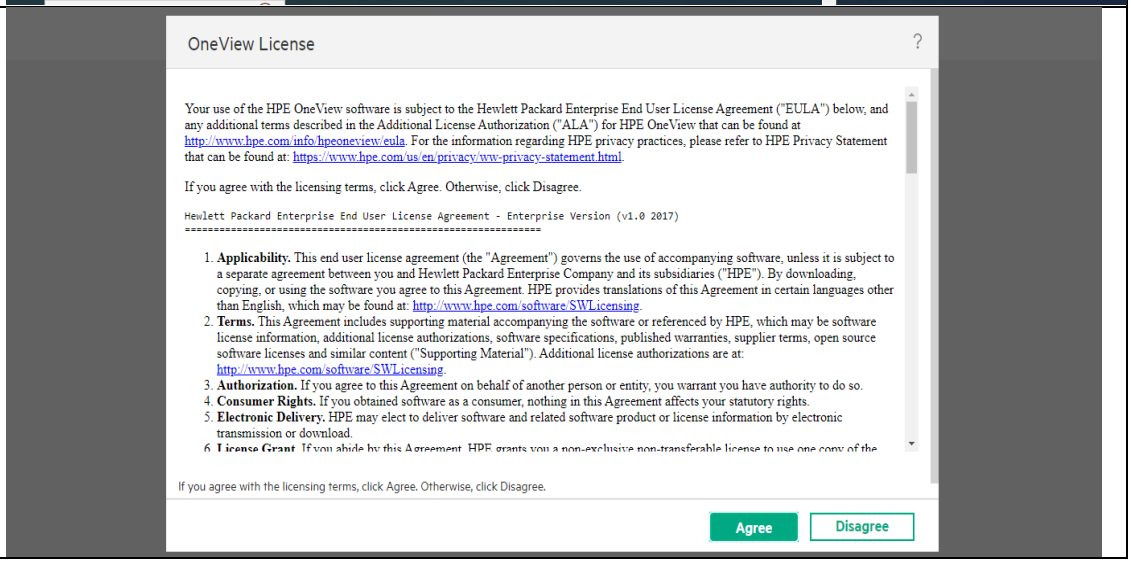
	Virtual Connect		port	Switch
Synergy Tunis	VC3	Q1 (LAN)	3	Core LAN
		Q2 (LAN)	5	Core LAN
		Q3	1	Switch SAN 1
		Q4	2	Switch SAN1
		Q5	7	Core LAN
		Q6		
	VC6	Q1 (LAN)	4	Core LAN
		Q2 (LAN)	6	Core LAN
		Q3	1	Switch SAN 2
		Q4	2	Switch SAN 2
		Q5	7	Core LAN
		Q6		
	MGMT	FLM 1	1	Core LAN
		FLM 2	2	Core LAN

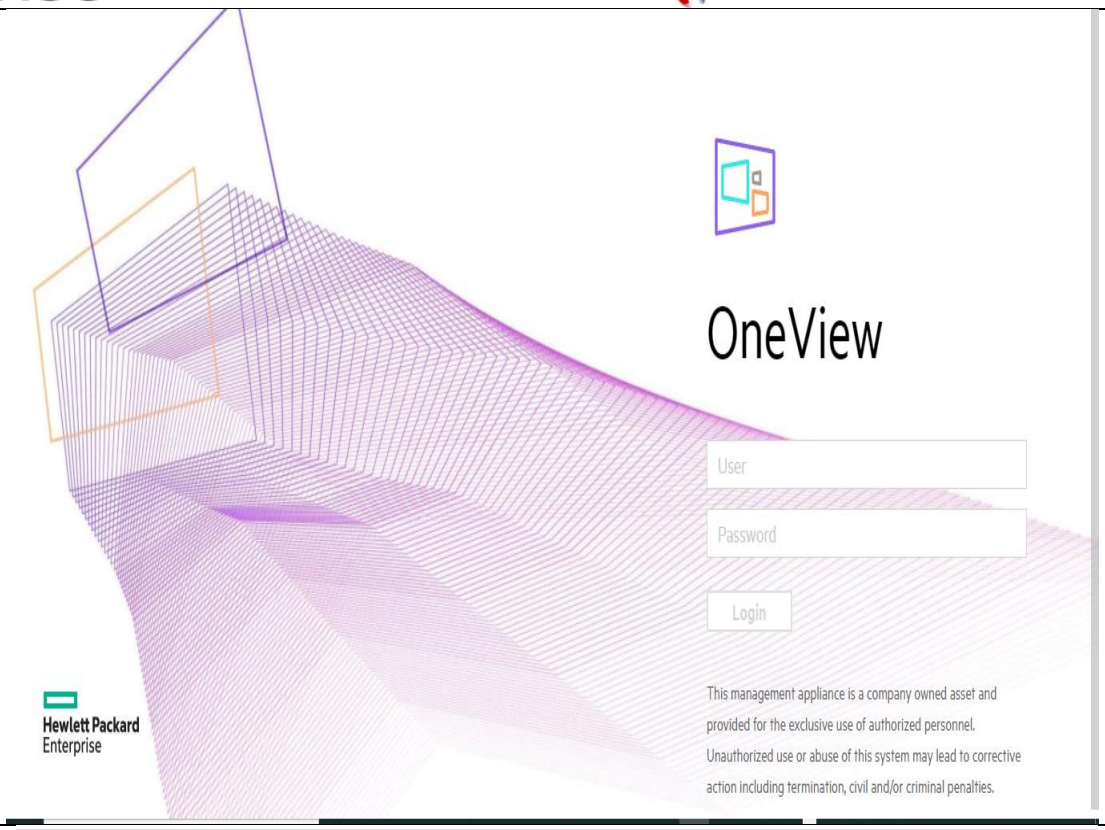
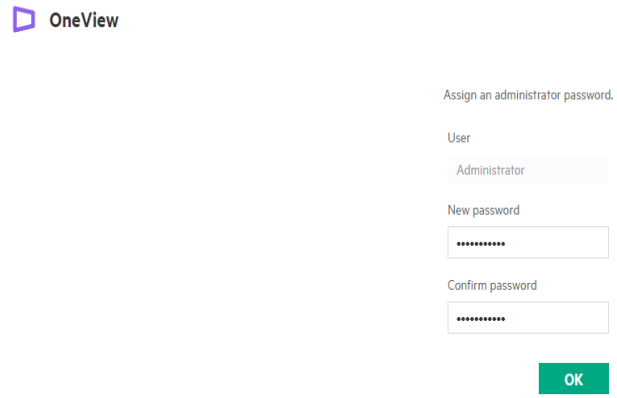
4. HPE SYNERGY Frame Initialization

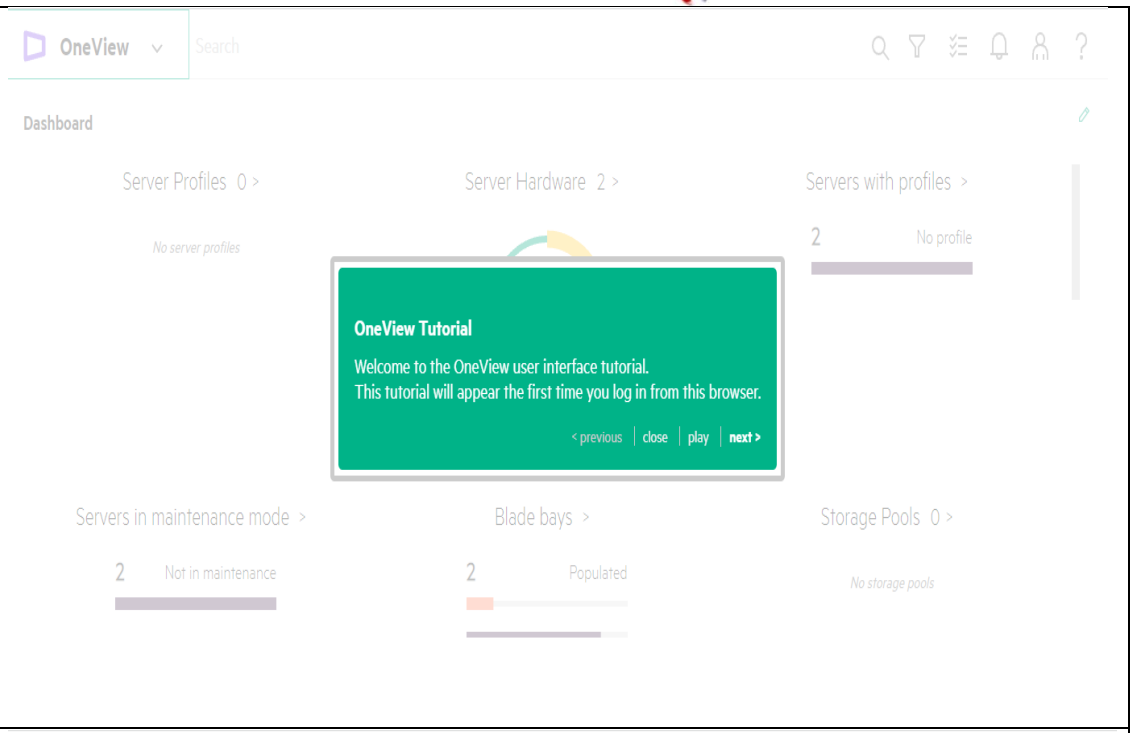
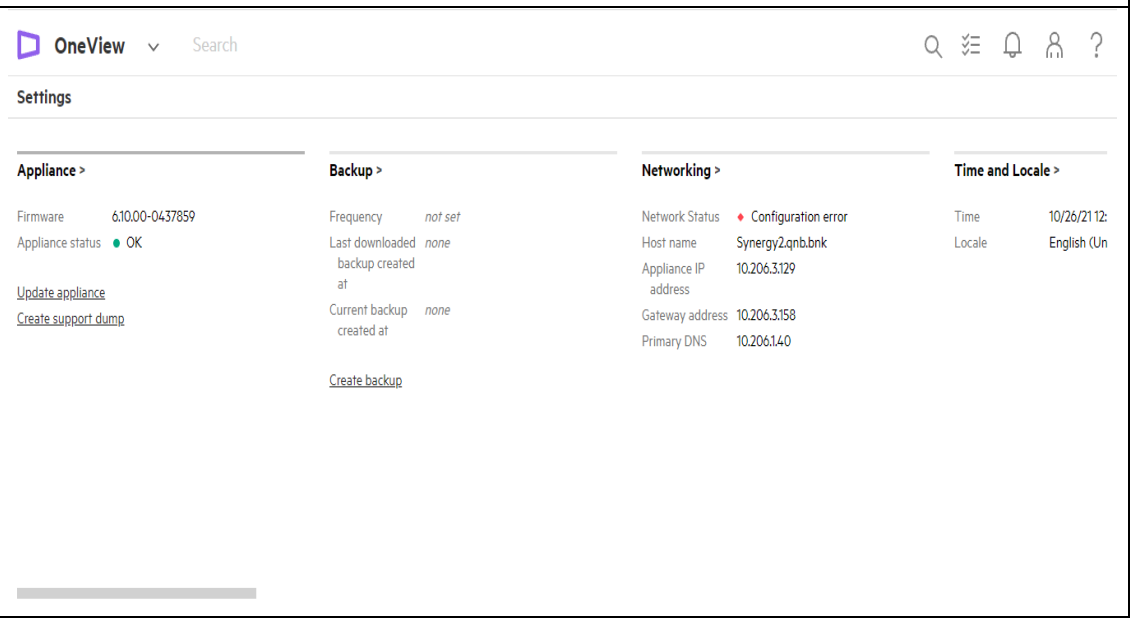
- Access the HPE Synergy Console using the VNC Viewer.	
- Connect to the Synergy Console and launch “Hardware Setup procedure” through Frame Health & Inventory-- Connect	

- Connect to HPE OneView and select Hardware Setup.	
- Configure the necessary Synergy network settings. - Specify the IP address as well as the two service addresses, subnet mask and gateway.	

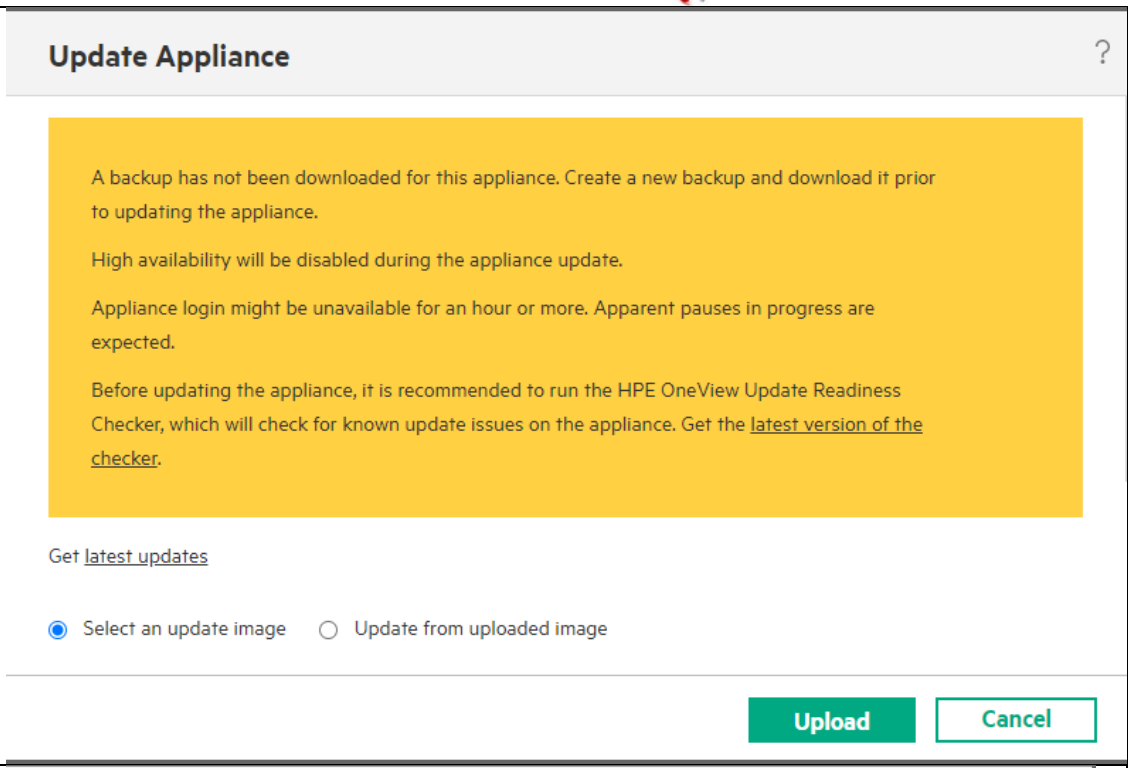
- Add the two DNS servers (primary and secondary).	
- Wait for the network settings application to finish	

- Wait until the hardware discovery to complete	
-Agree with OneView licensing terms .	

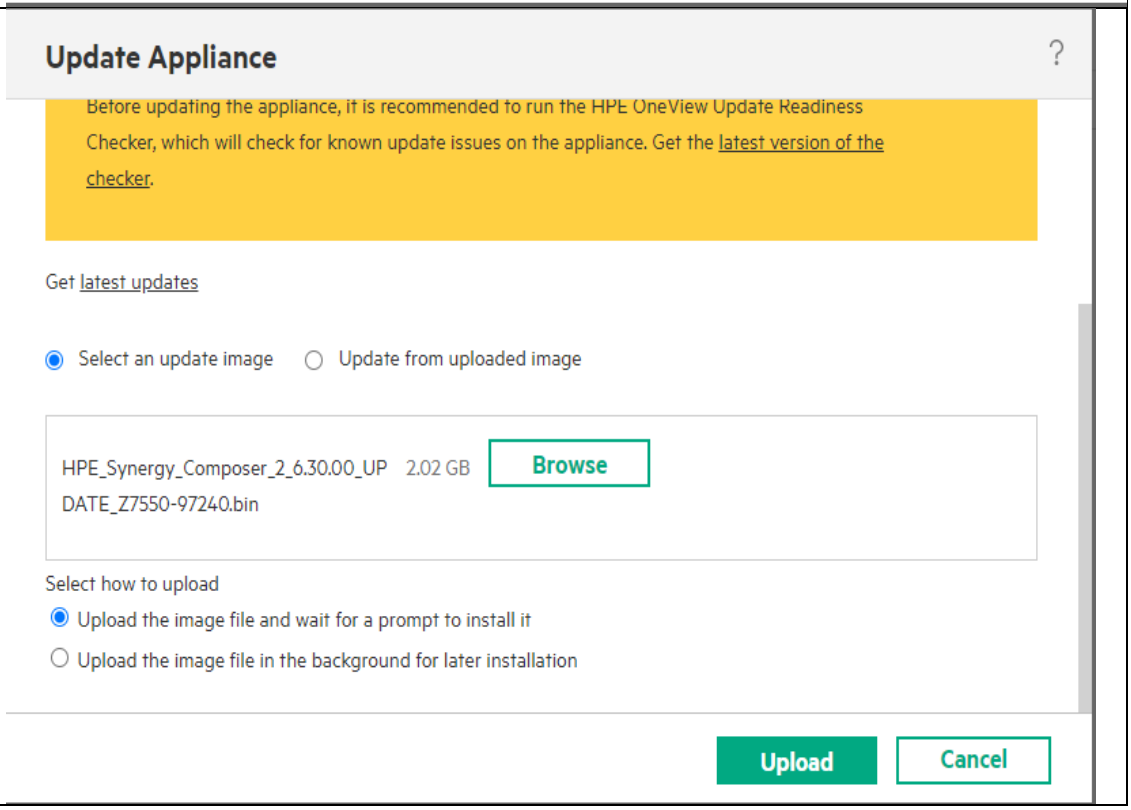
- Log in to the HPE OneView management interface using default credentials.	
-change the default password	

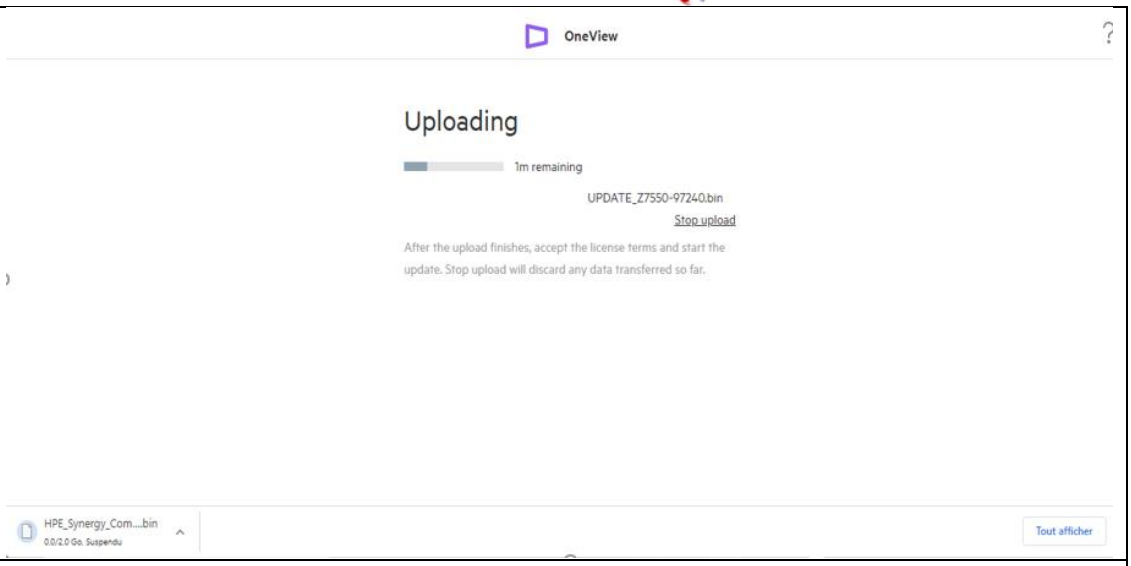
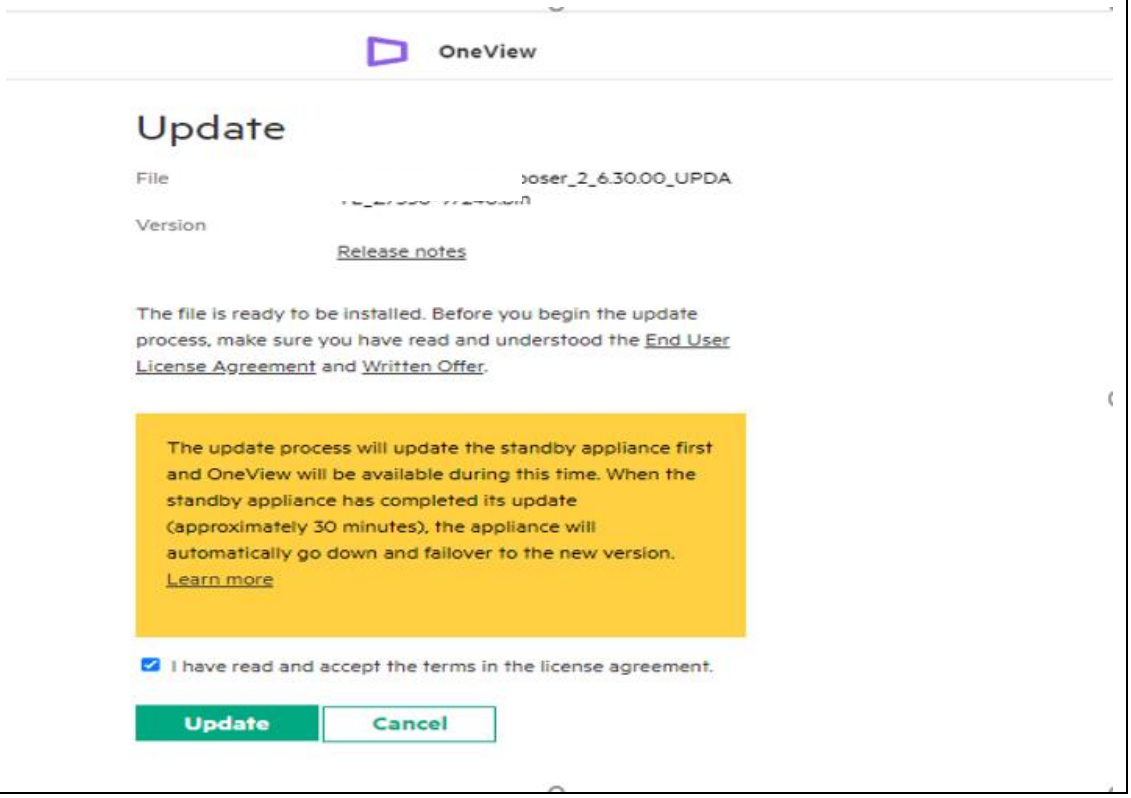
-Access to Onview Dashboard	
- Choose Update appliance at Appliance > Settings level. The version is 6.5	

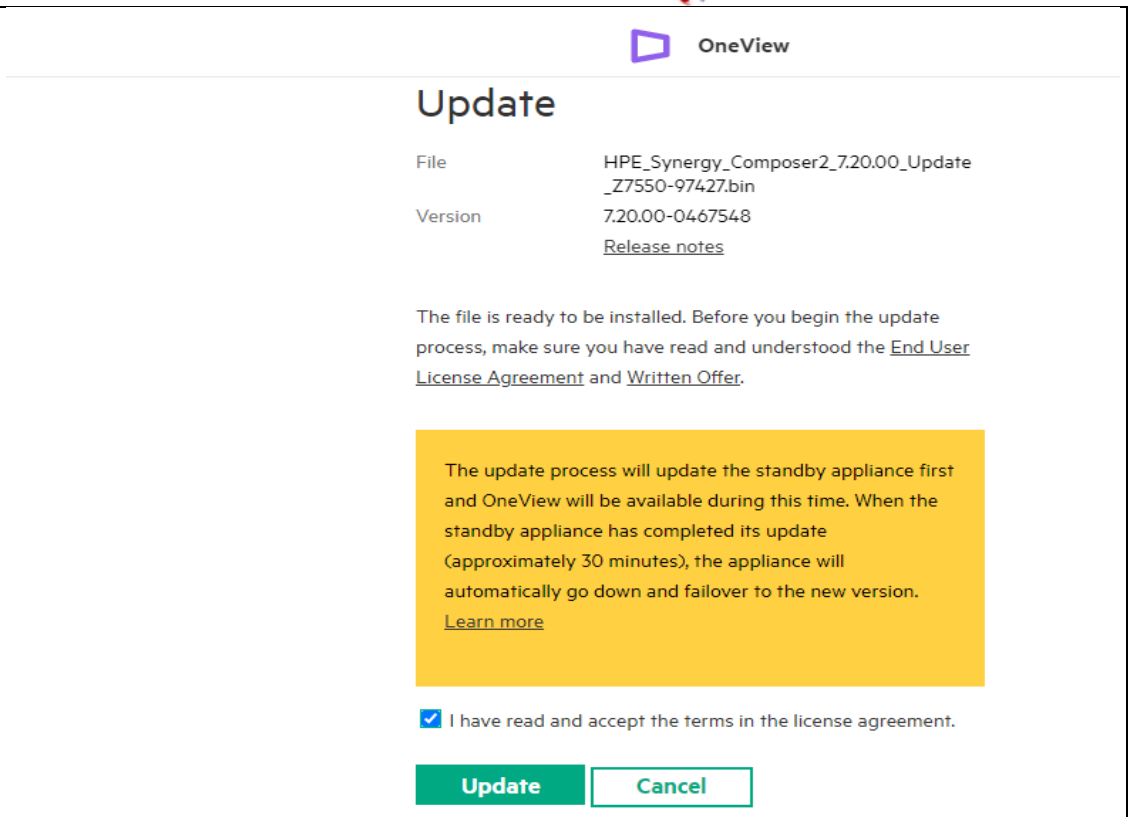
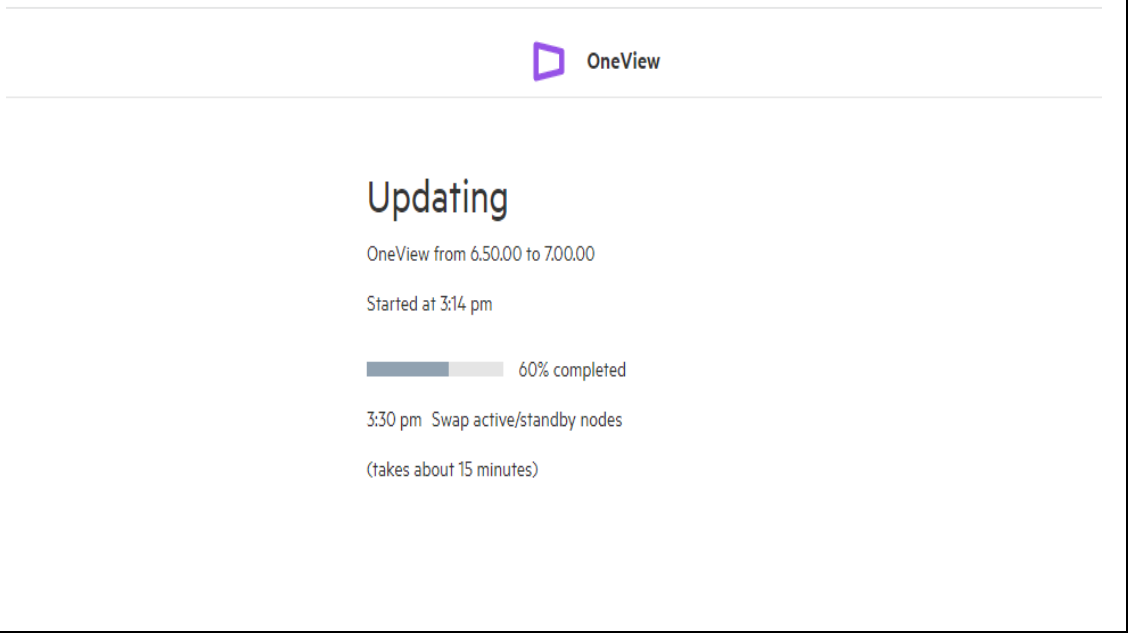
- Select the update image after downloading it

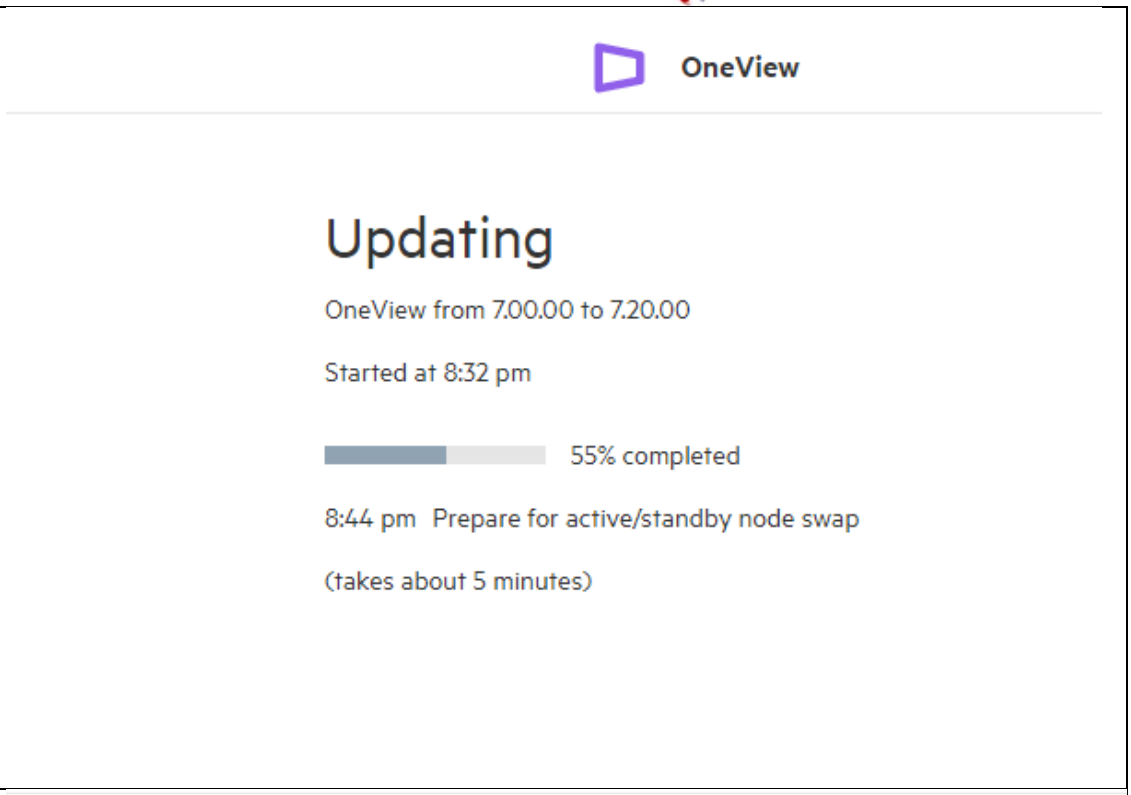
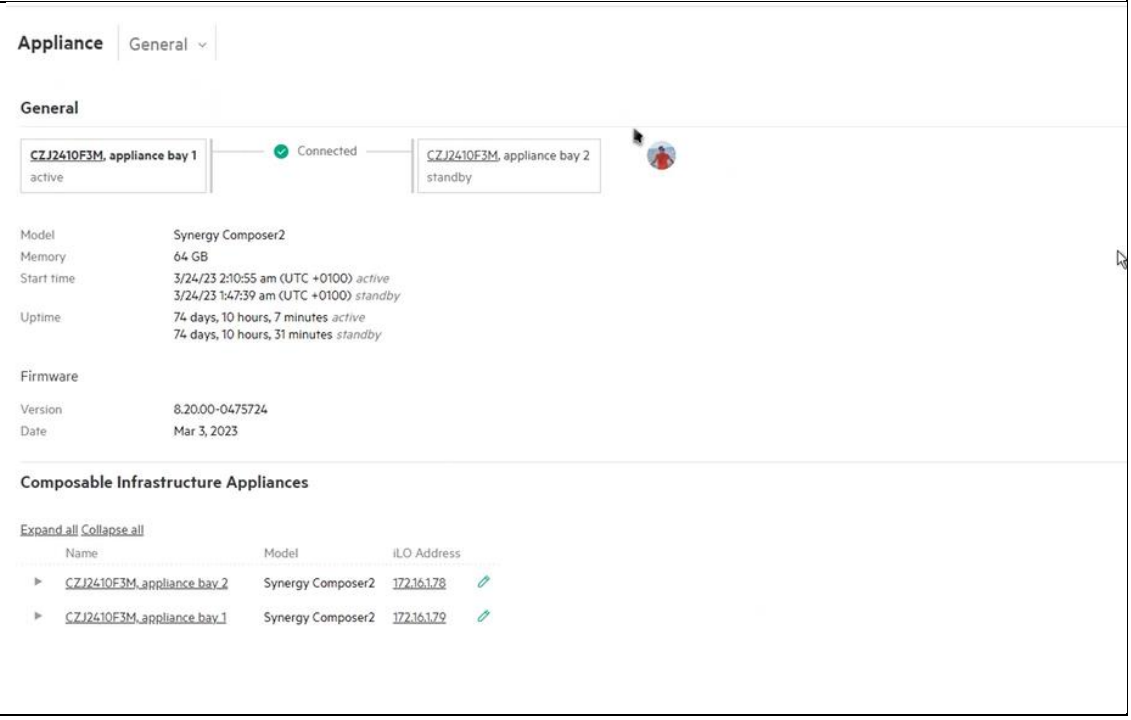


-choose Upload the image file and wait for a prompt to install it and click Upload



- Wait for the image to finish downloading	
-Accept the terms in the license agrement and click Update	

-Click yes update	
- Monitor the progress of the update	

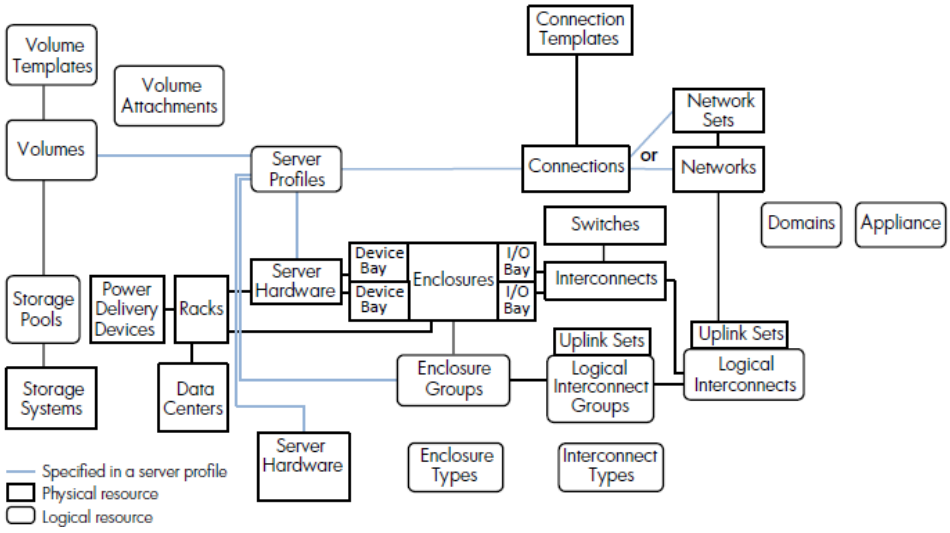
-when the update process from 6.5 to 7.0 ,is accomplished. Update again the Oneview Appliance To version 7.2 then to version 8.2	
The version of HPE OneView is 8.2	

5. HPE OneView Management Console

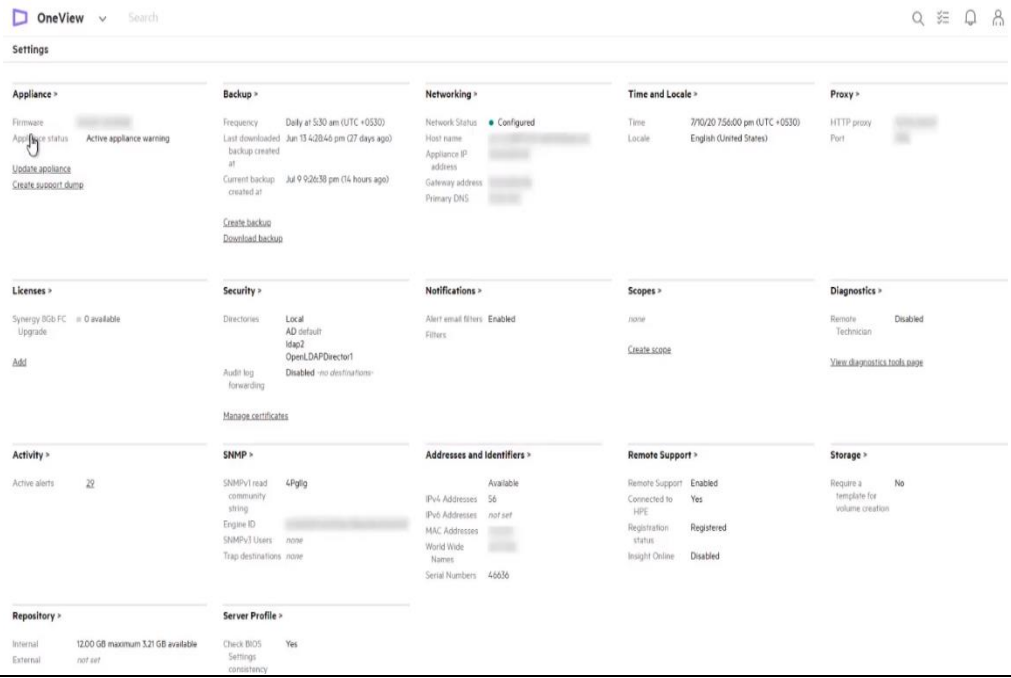
HPE OneView uses a resource model that reduces complexity and simplifies managing your data center. This pattern provides logical resources, including models, groups, and sets, which when applied to physical resources provides a common structure across your data center.

Summary diagram of resource models

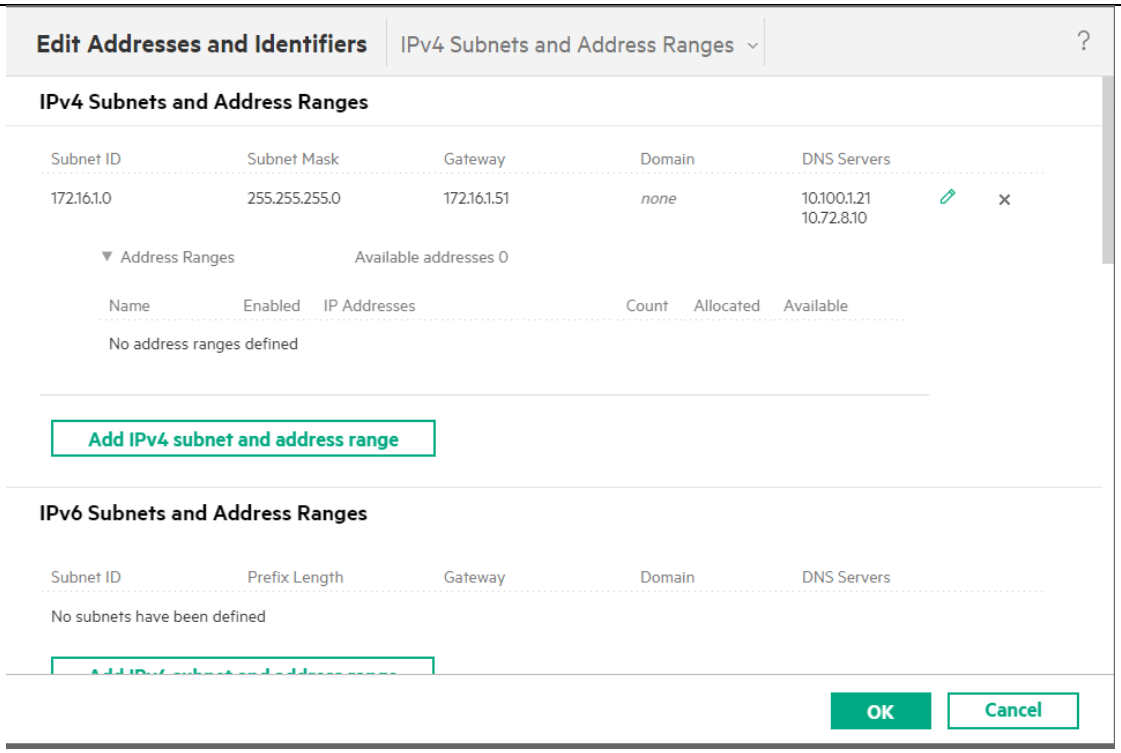
The following figure summarizes some of the most frequently used resources and shows the relationships between them.

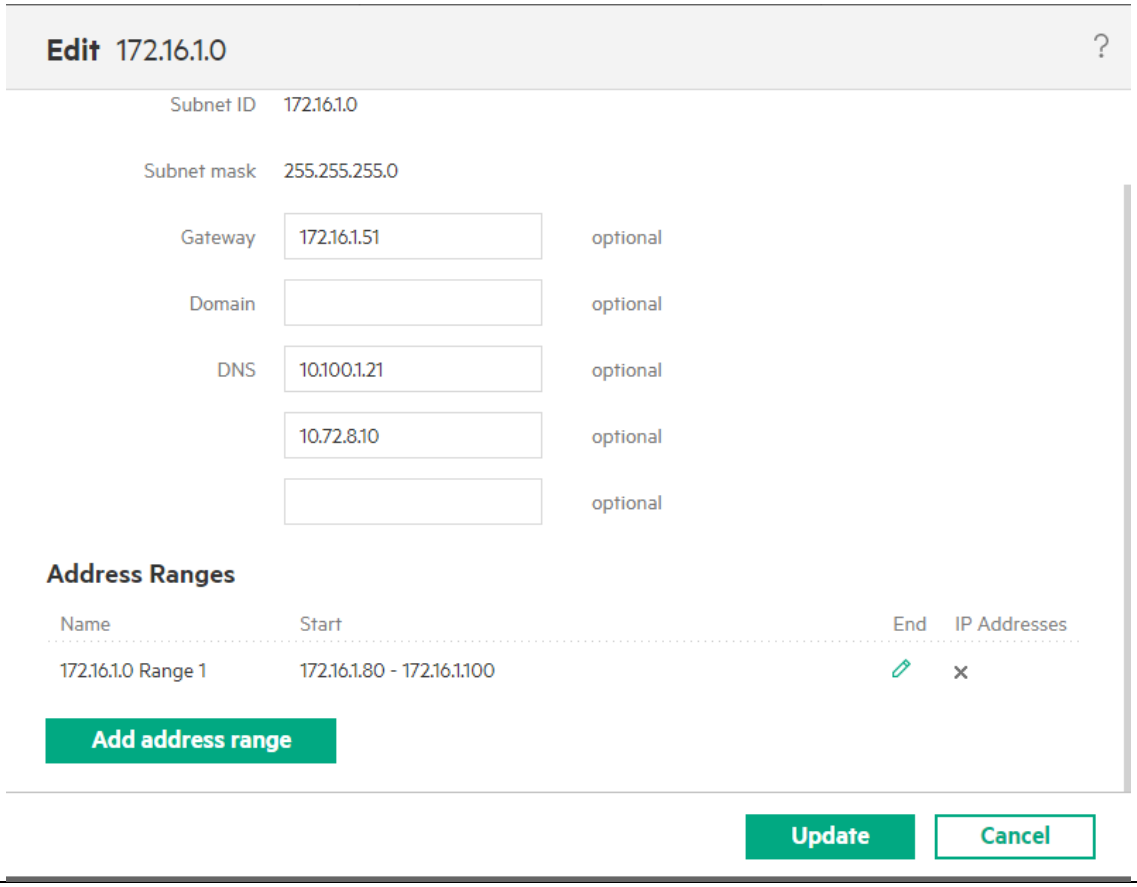


a. Set IP address and subnet ranges

Connect to the HPE Oneview management console, Select Settings then Addresses & Identifiers	

Choose Add IPV4 subnet and address range

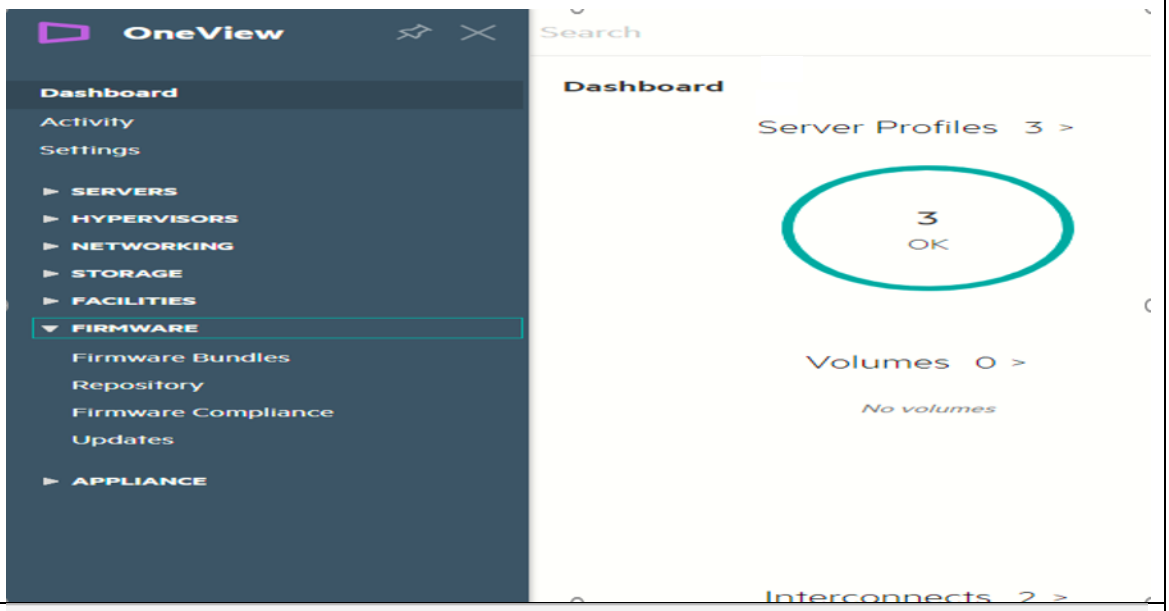
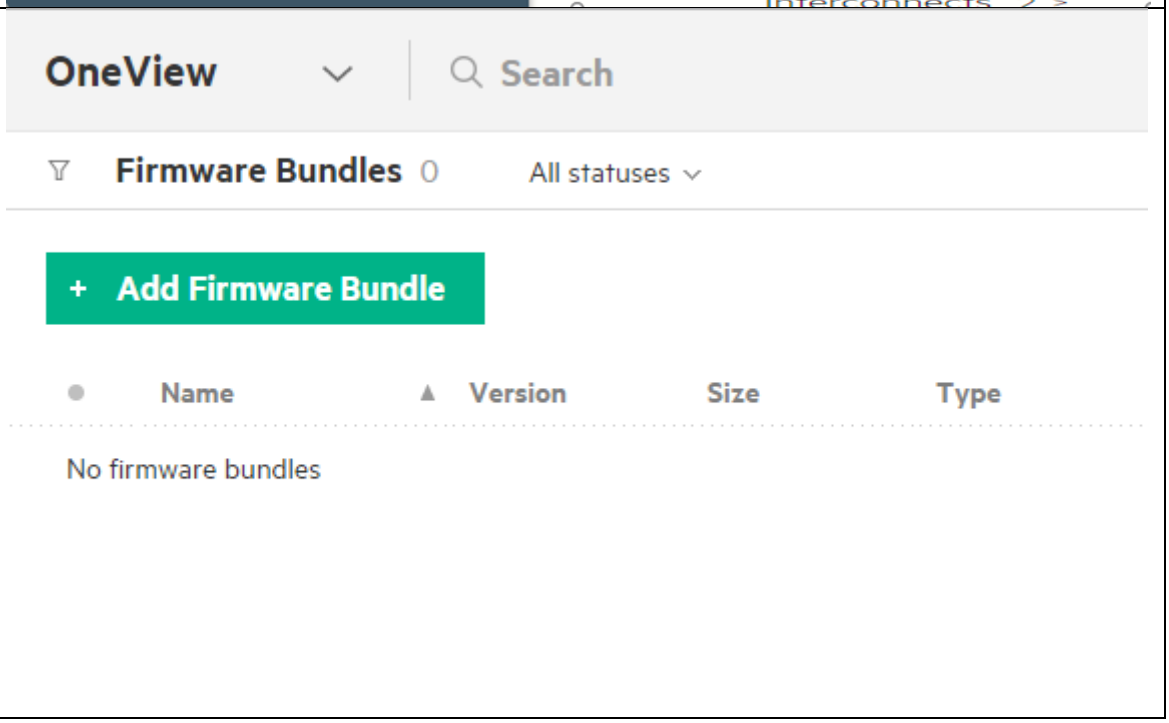


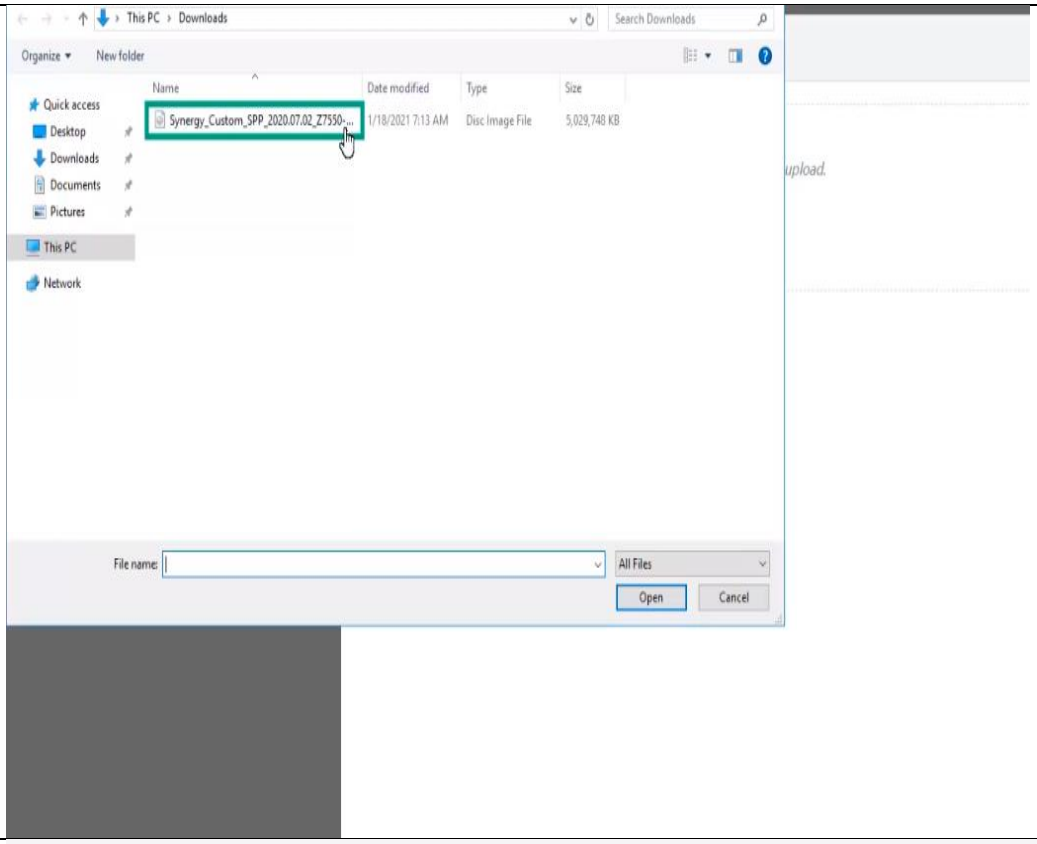
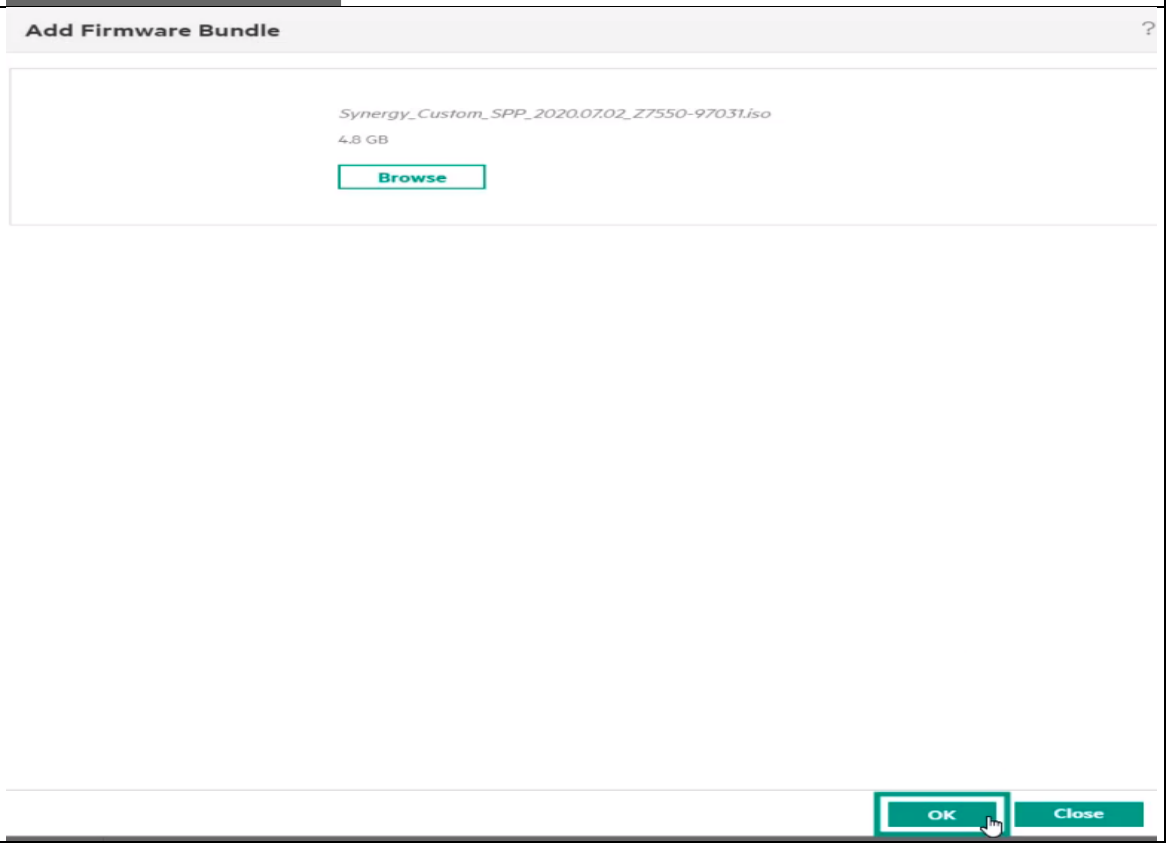


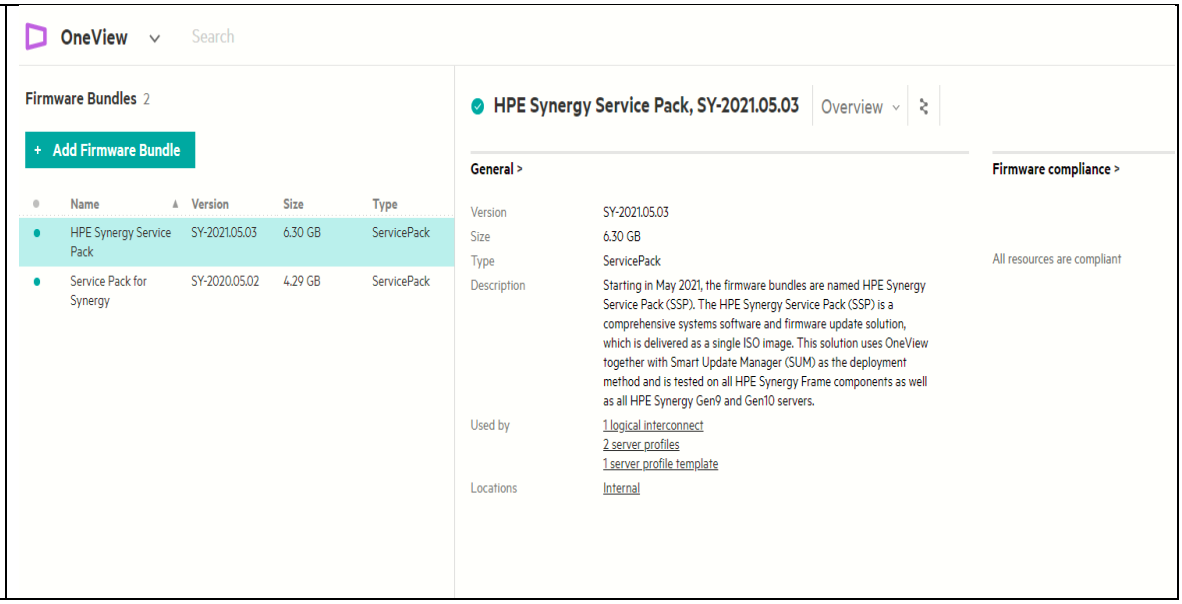
b. Firmware Bundle Synergy service Pack

A firmware bundle, also known as an SPP, is a comprehensive collection of firmware and system software components, all tested together as a single solution stack that includes drivers, agents, utilities, and firmware packages.

You can apply SPPs as baselines to frames, interconnects, and server profiles, establishing a desired version for firmware and drivers across devices. Each SPP deliverable contains the Smart Update Manager (SUM) and firmware smart components. Hot fixes are software and firmware component updates that have an additional release outside the normal SPP release cycle and that address specific issues. Each hot fix is listed on the "Hot Fix and Advisories" page associated with a specific SPP. These pages are available from the SPP download page at the site that is displayed on the slide

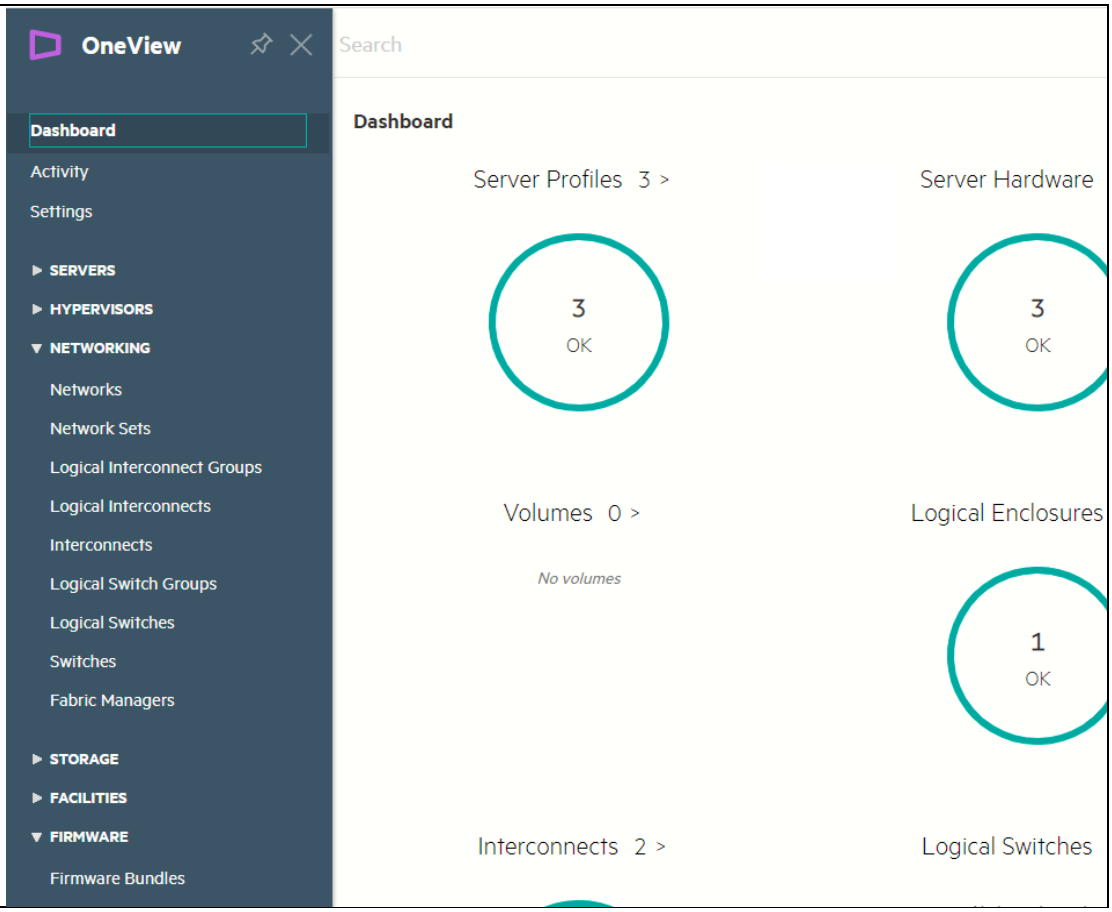
In the main menu choose Appliance then Firmware Bundle	
Cliquer Add firmware Bundle	

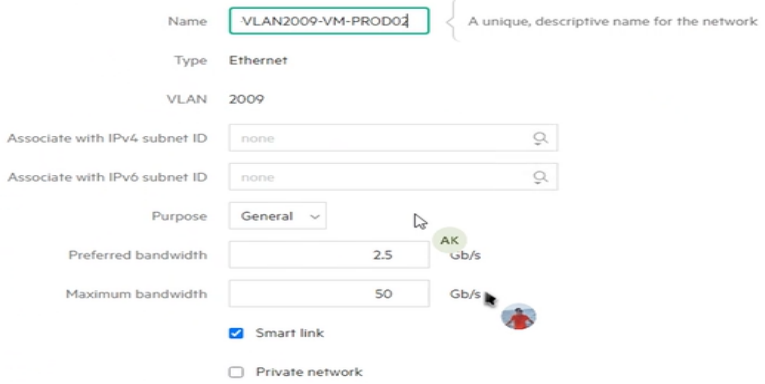
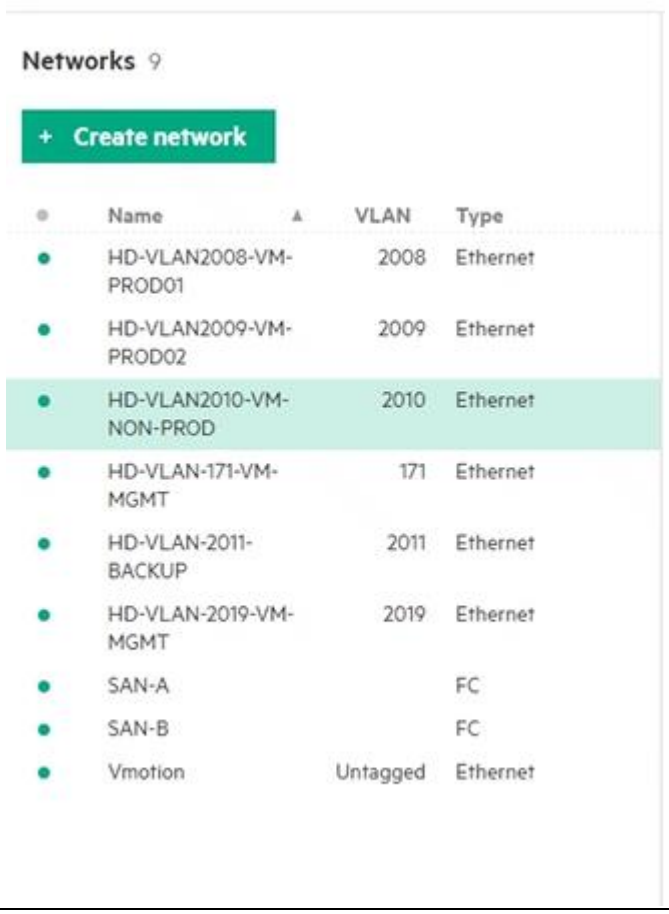
Choose SPP	
Click OK in order to start Click Start upload.	

Adding the SPP bundle is successfully completed	

c. Configuring Networks and Network Set

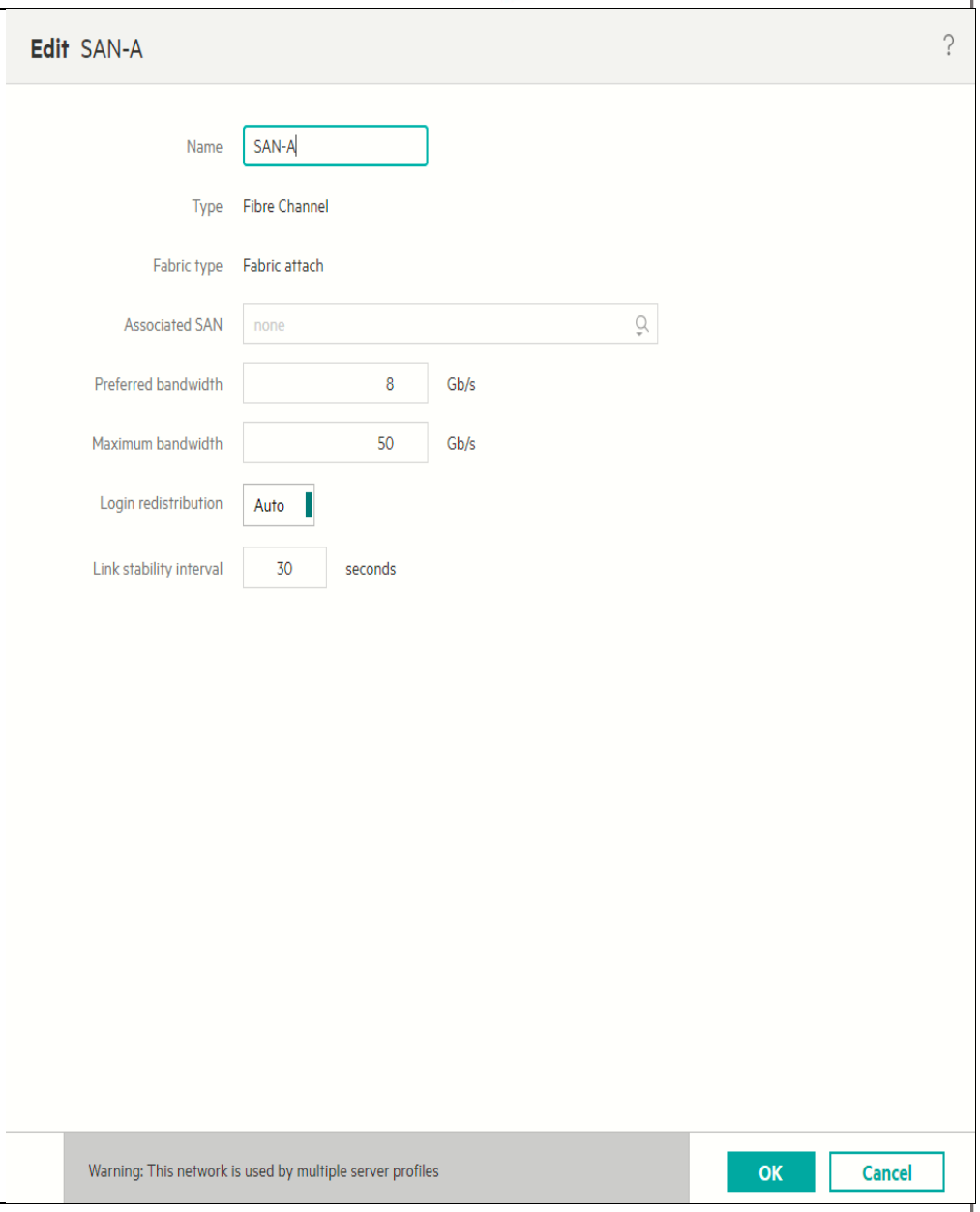
i. Configuring Ethernet networks

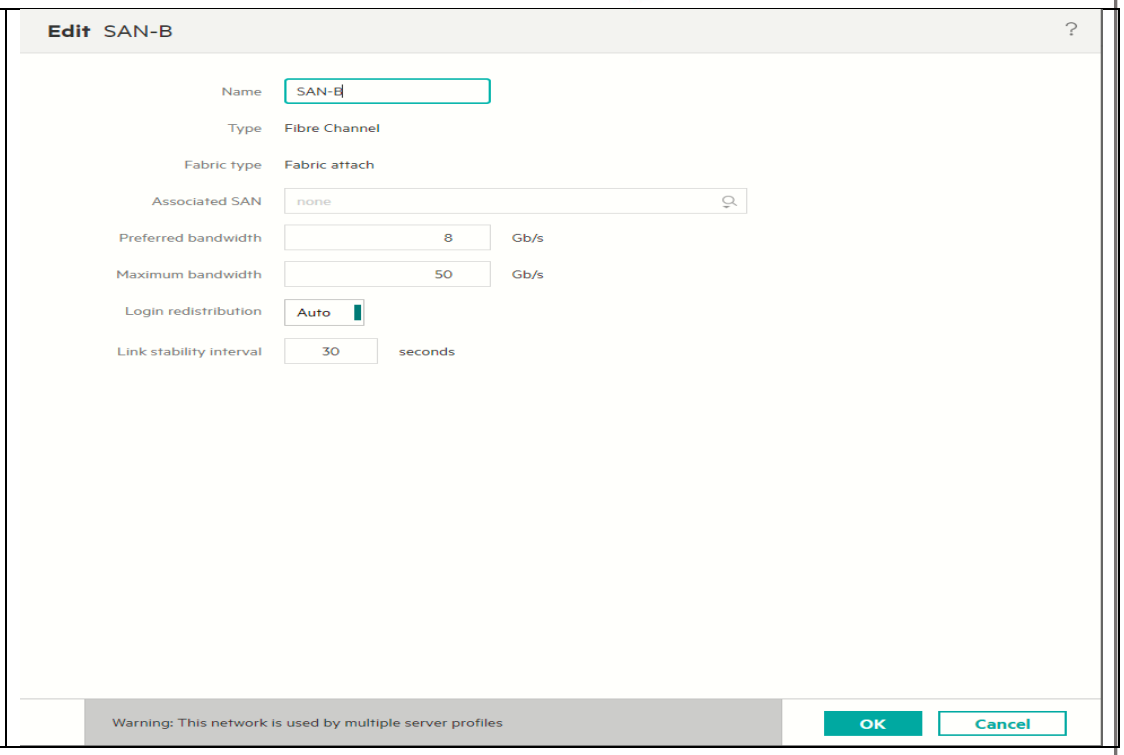
In the main menu, select Networks then click on + Create network The Create network dialog opens	

Create Ethernet Network For Name: VLAN2009-VM-PROD2 Type **Ethernet**. For VLAN, select **Tagged** For VLAN ID (ID de VLAN), enter **ID** For Purpose General	
Vue of all networks created	

ii. Configuration SAN Fibre Channel Networks

From the main menu, select Networks then click + Create network in the main pane.
The Create network dialog opens.
2. For Name SAN-A enter FC For Type, select Fiber Channel.
For Fabric type, select Direct attach. For this datacenter, use the default values for the other attributes of configuration. Click Create +



For Name SAN-B enter FC For Type, select Fiber Channel. For Fabric type, select Direct attach. For this datacenter, use the default values for the other attributes of configuration. Click Create	

Same procedure to create other networks

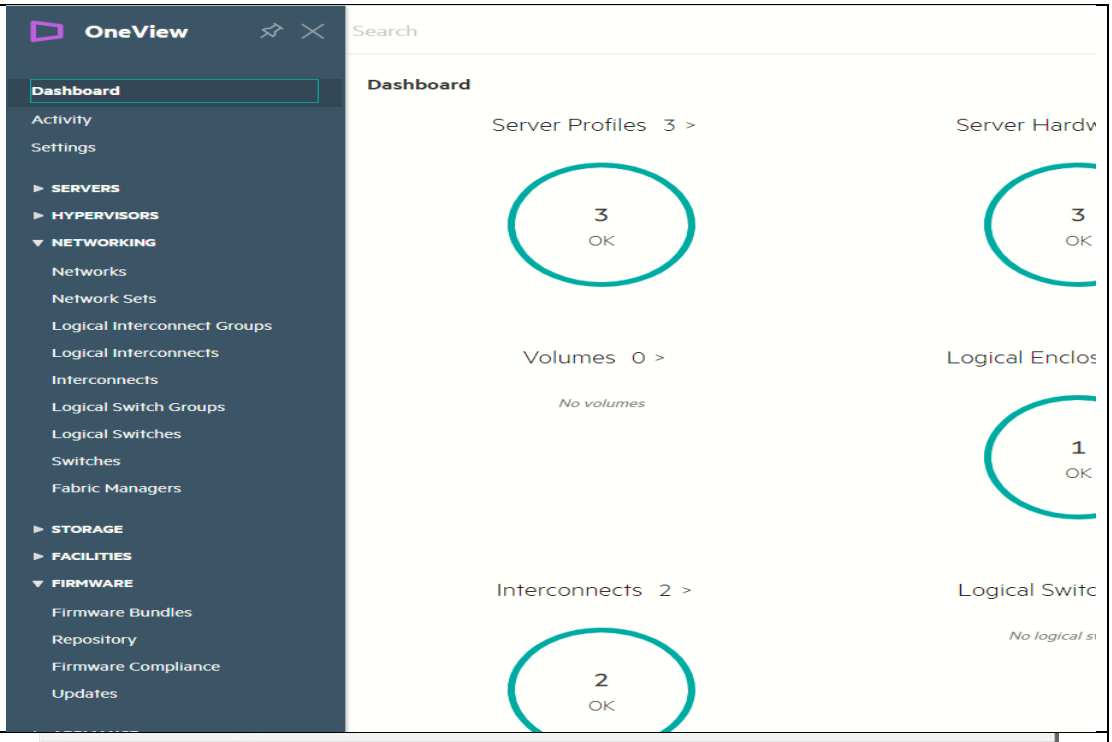
- **Site Tunis**

Network Name	VLAN	Ethernet/FC	Purpose
Corporate	101	Ethernet	General
DMZ	192	Ethernet	General
Management DNS	172	Ethernet	General
Management SRV	171	Ethernet	General
BACKUP	170	Ethernet	General
SAN-A		FC	
SAN-B		FC	
Vmotion	Untagged	Ethernet	VM Migration

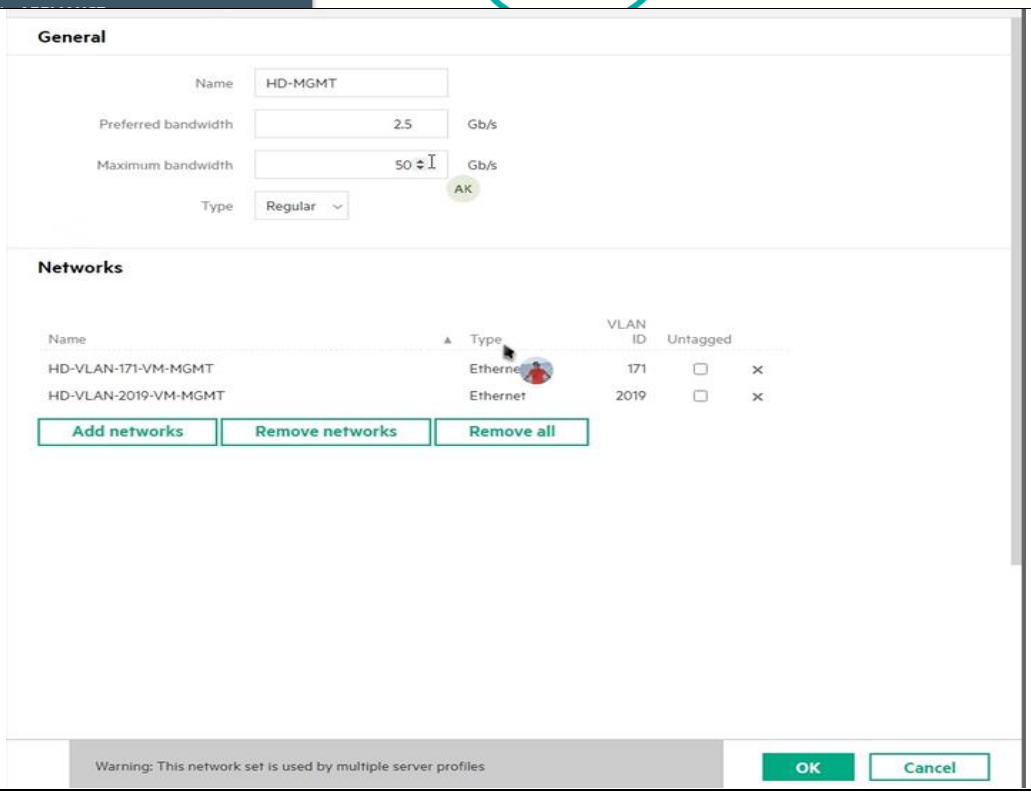
iii. Configuration des ensembles de réseaux

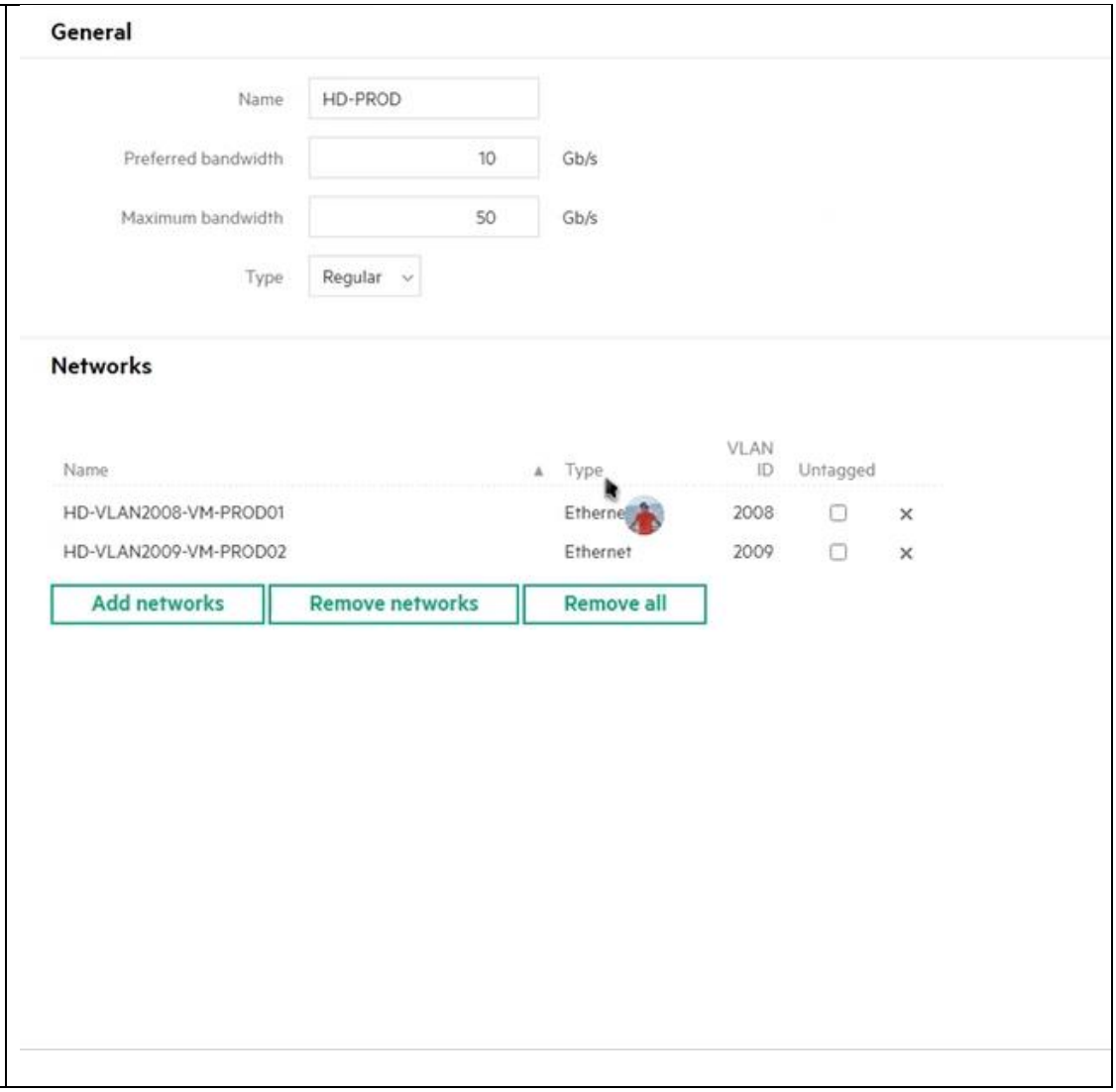
You use network sets to create multiple networks per connection. During this task, you will use the device's smart search capabilities to quickly narrow the list of networks that you add to the network set.

From Main Menu
Select Network Sets),
then click
network set.



Create Network set for
Management and for
Prod
and select Networks

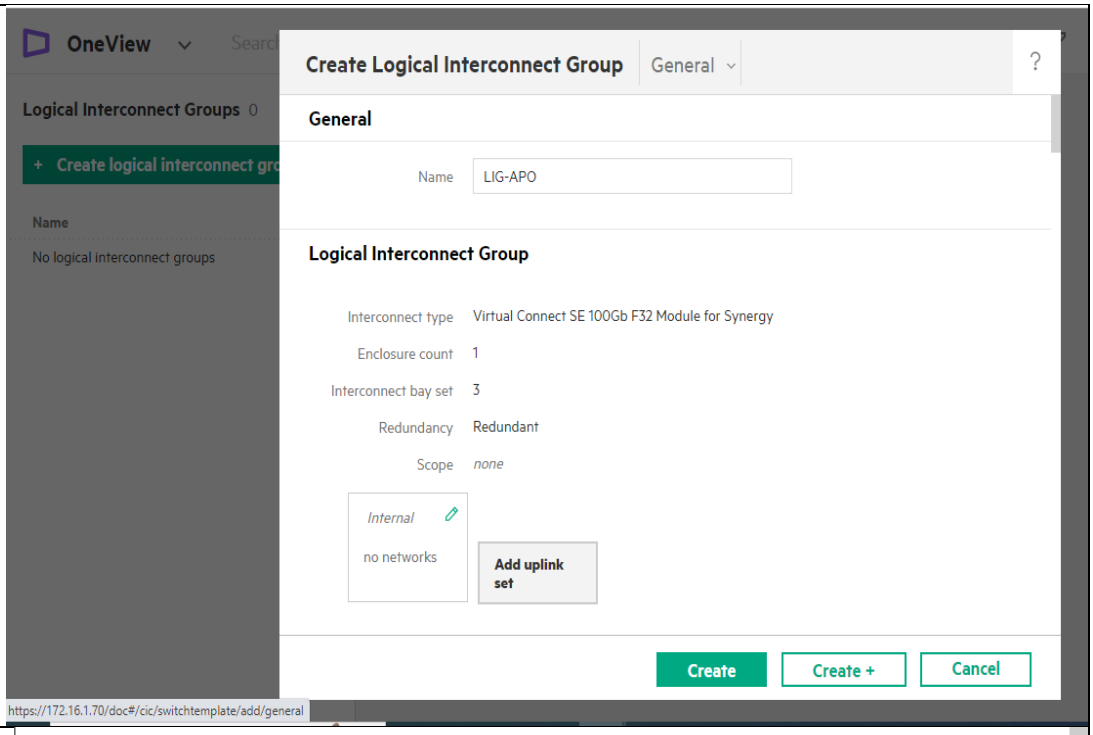




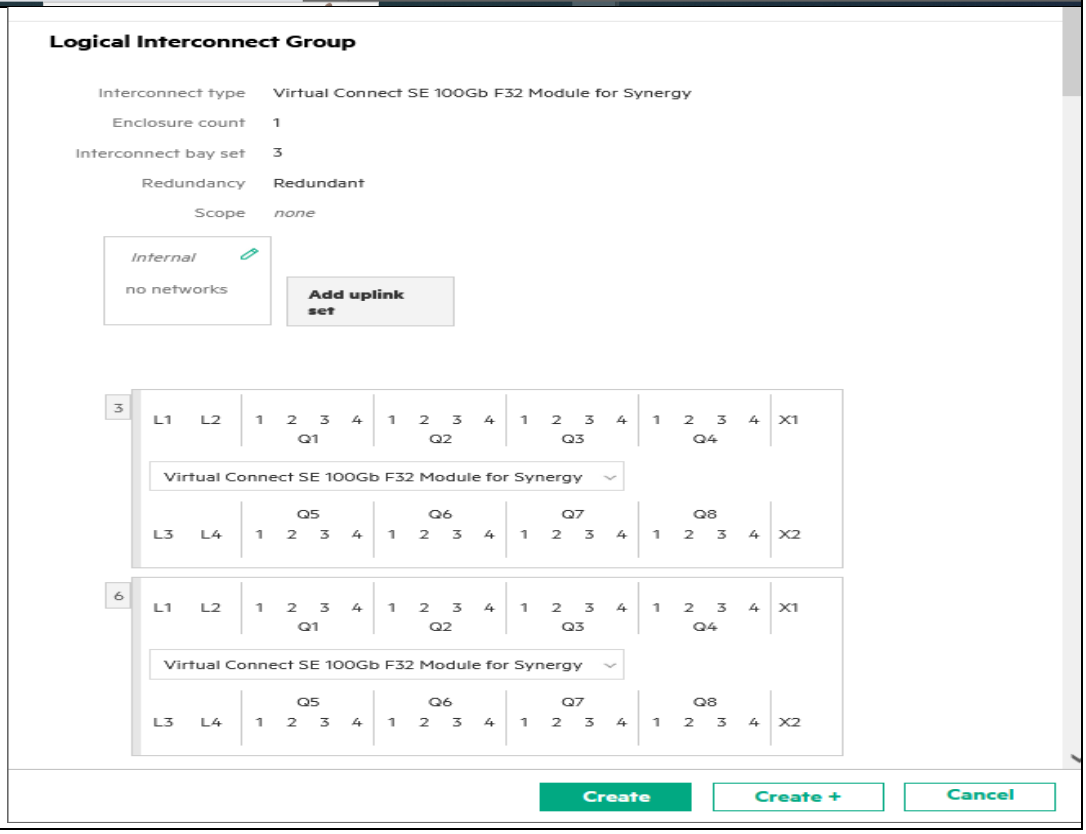
d. Create Logical Interconnects Groups : LIG

A logical interconnect group is a set of logical interconnects that represent the available networks based on internal networks, uplink sets, and interconnect settings for a set of physical interconnects in a single enclosure or set of enclosures. You can have multiple logical interconnect groups per enclosure group.

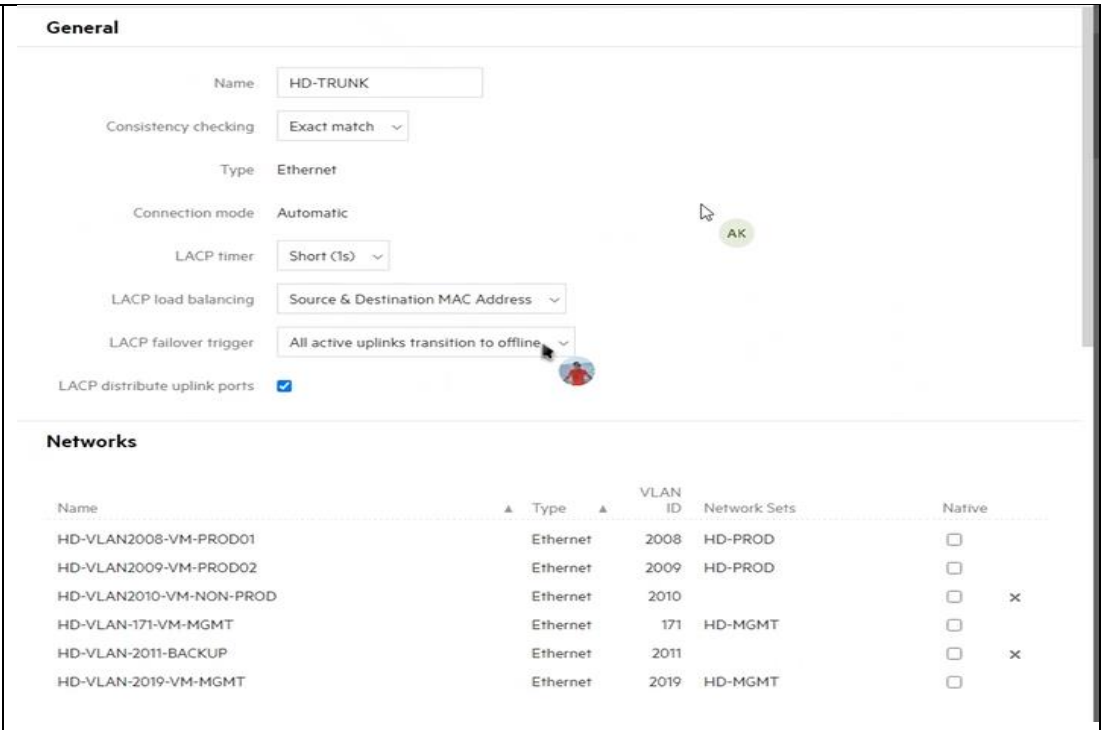
In the main Menu, sélect Logical InterConnect Groups and click + Create logical InterConnect group



Select HP VC 100Gb F32 Module For Synergy.
Choose Enclosure Count :1
Interconnect bay Set 3 & 6



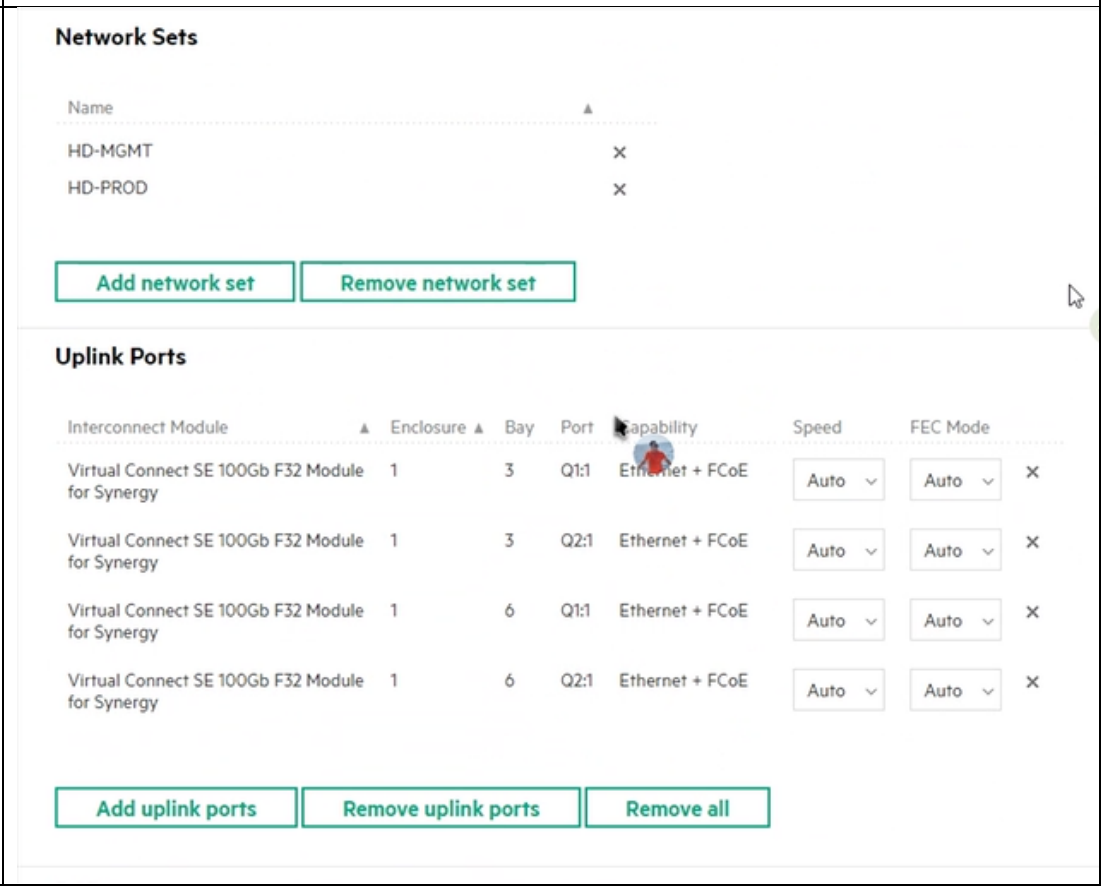
Click Add uplink set to create ethernet uplink set.
Add Networks

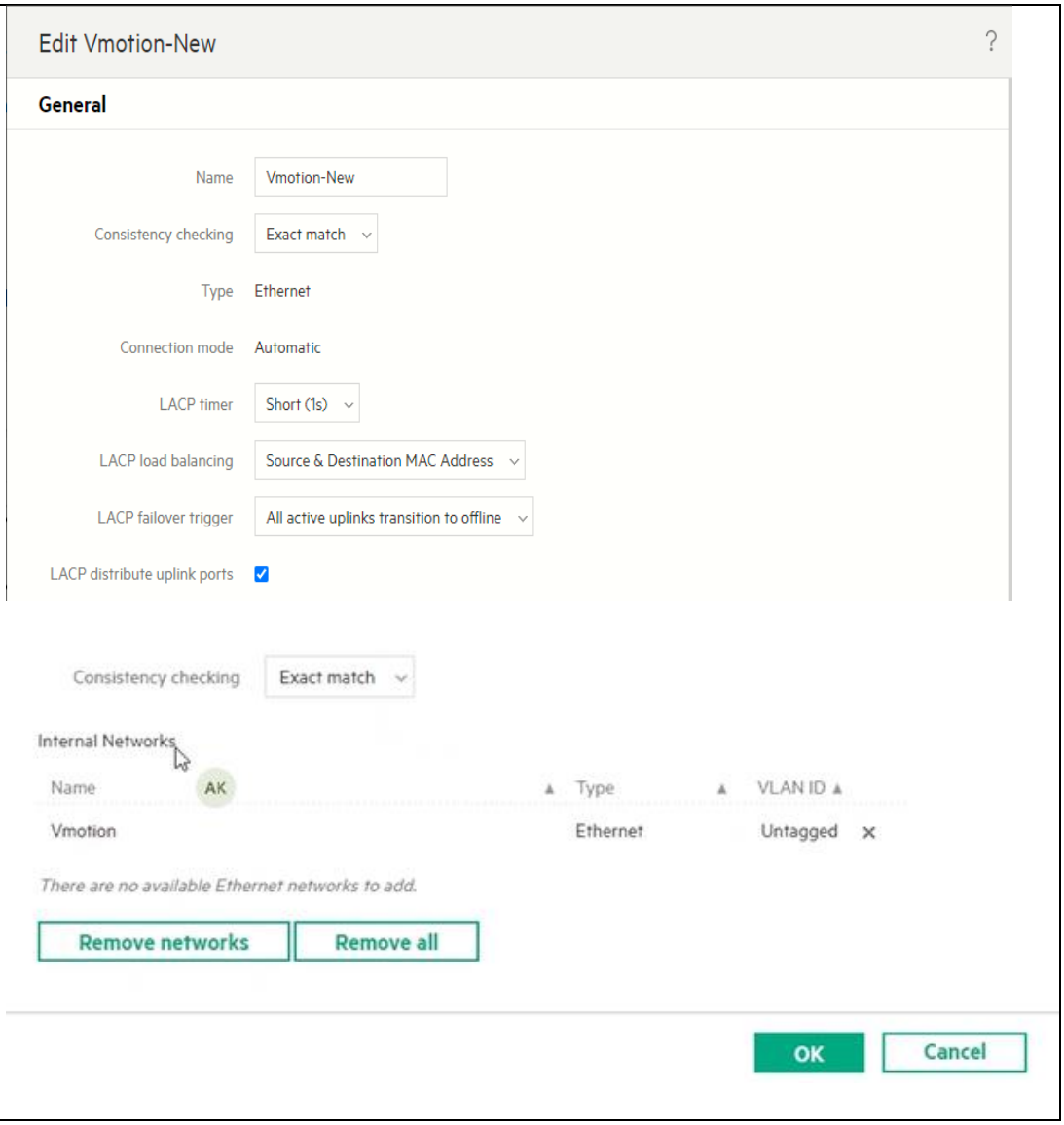


Configuration of uplinks ports

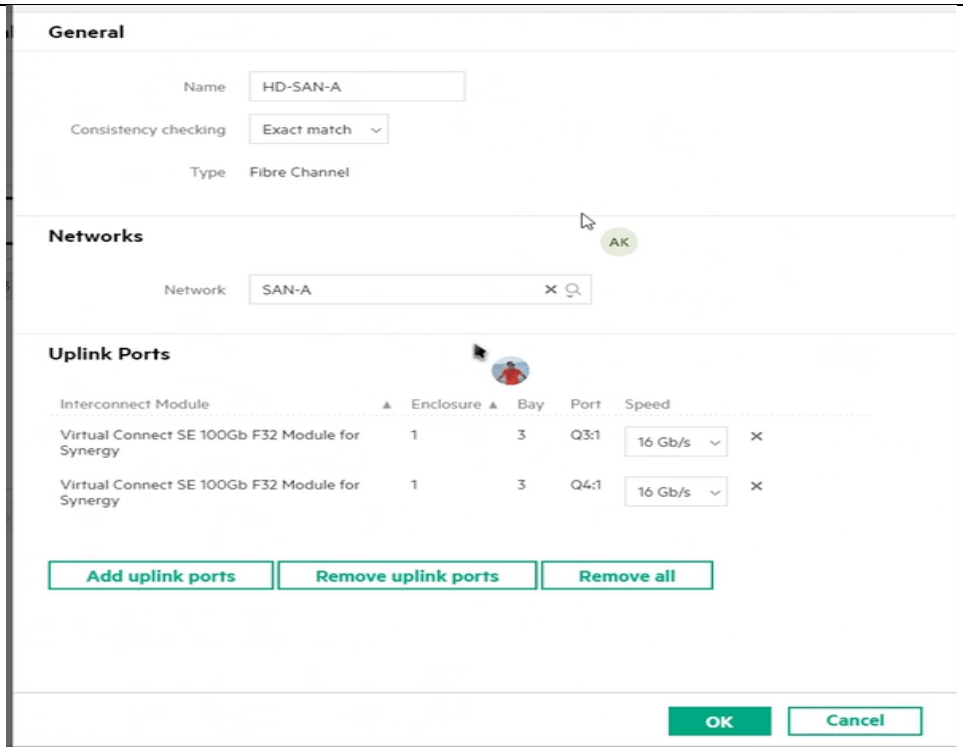
Choose
- ICM 3 : Q1 :1 Q2 :1

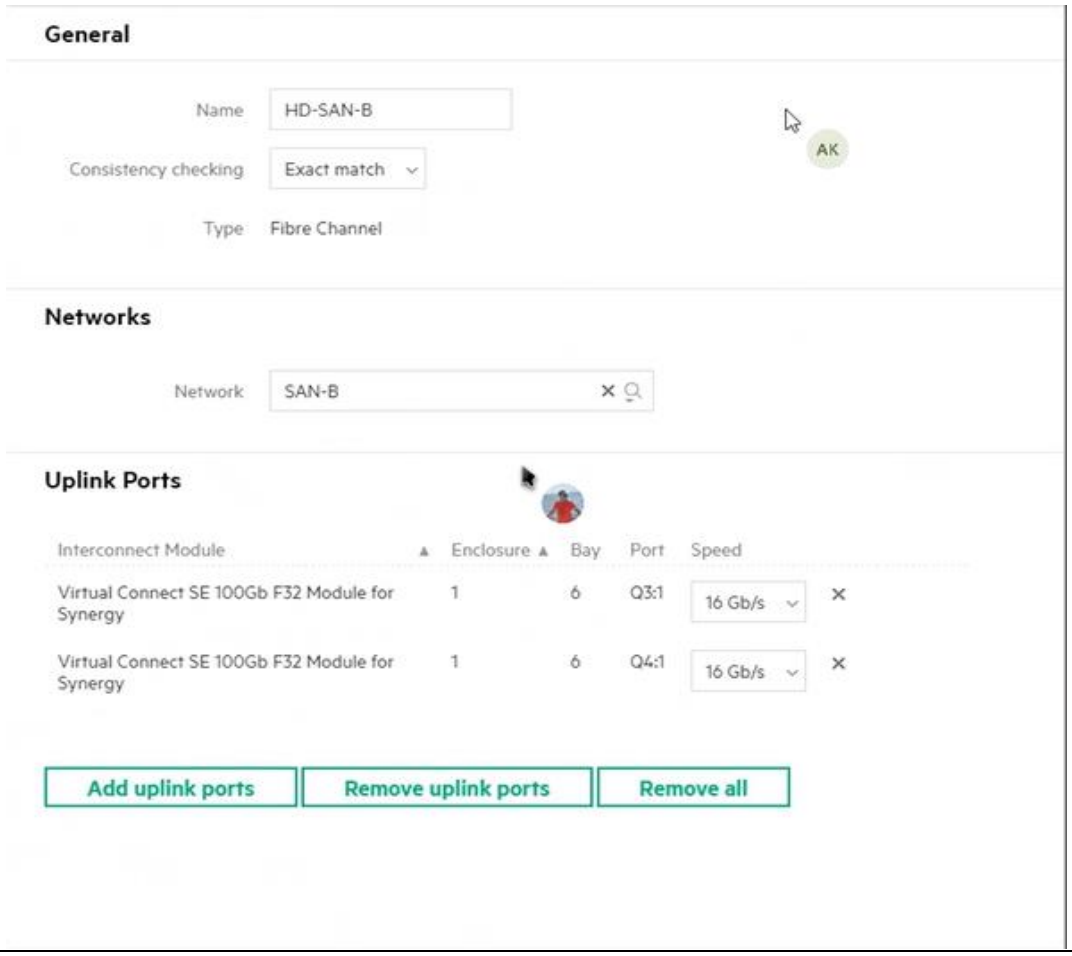
ICM 6 :Q1 :1 Q2 :1



Configure internal network for VMotion	

Configure Uplink set for **Fibre Channel network** and define the uplink ports
ICM3 :Q3 :1
ICM3 :Q4 :1
For SAN –B define uplink port
ICM6 :Q3 :1
ICM6 :Q4 :1



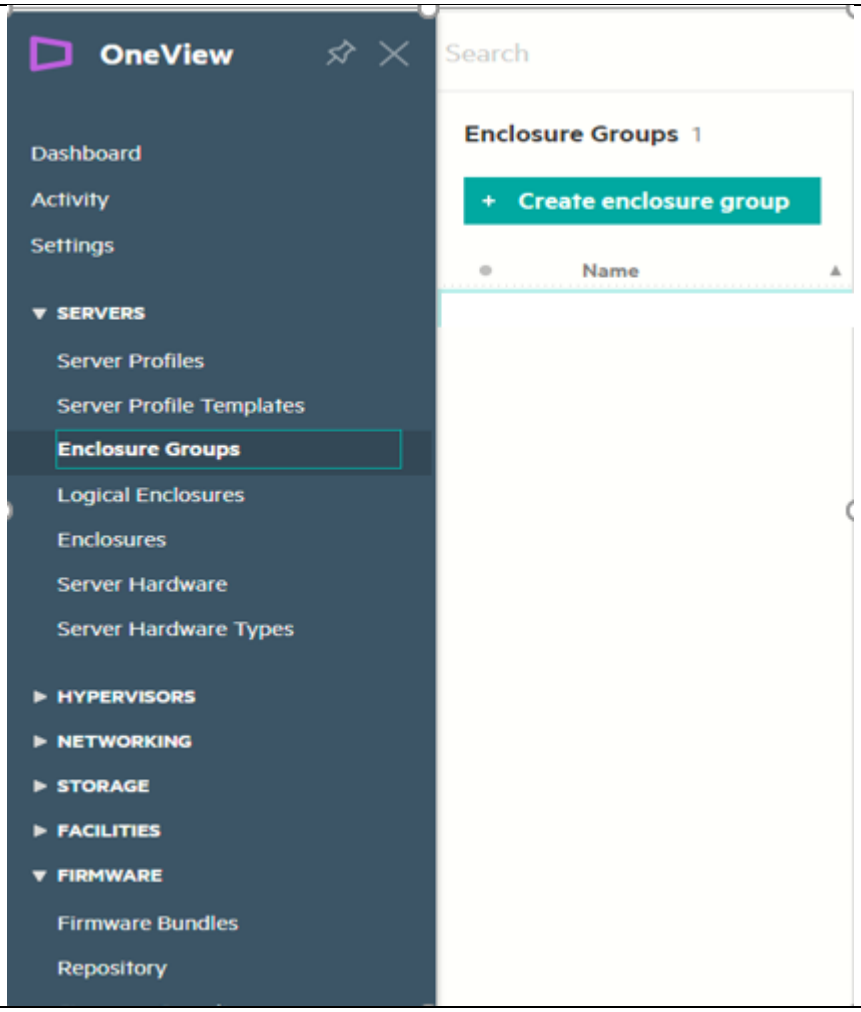


Site Tunis				
Uplink Set	**Type**	**Networks**	**Uplink Port**	
LAN	Ethernet	Corporate	ICM3	Q1:1
		DMZ		Q2:1
		Management DNS	ICM6	Q1:1
		Management SRV		Q2:1
RX-SAN -A	FC	SAN A	ICM3	Q3:1
			ICM3	Q4:1
RX-SAN -B	FC	SAN B	ICM6	Q3:1
			ICM6	Q4:1
Backup	Ethernet	Backup	ICM 3	Q5:1
			ICM 6	Q5:1

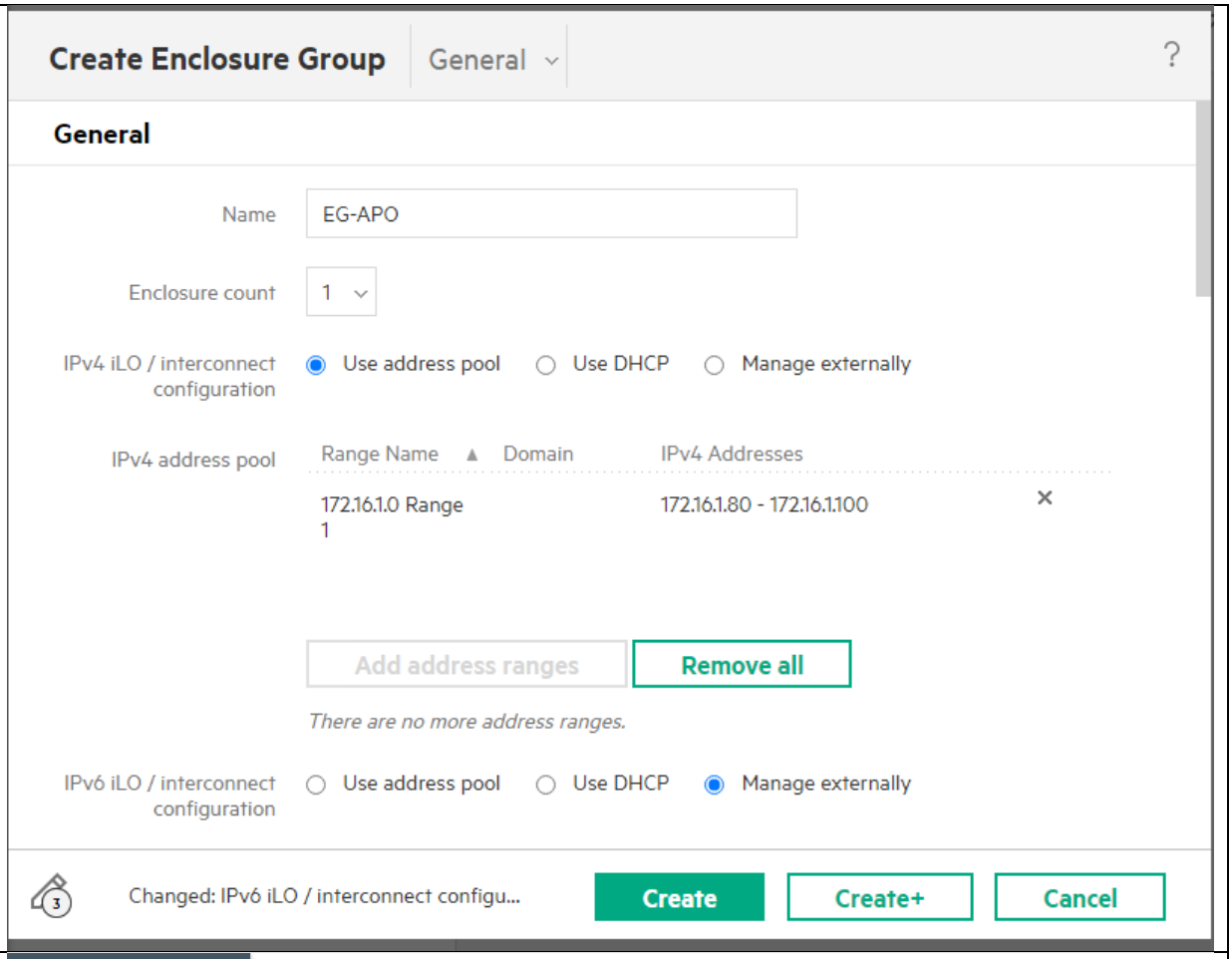
e. Create Enclosure Group

A part of the procedure to manage a frame includes specifying the enclosure group to which it will belong. Each enclosure group is associated with one or more logical interconnect groups that act as a recipe for creating and configuring the logical interconnects. That configuration is then applied to each enclosure added as a member of the enclosure group.

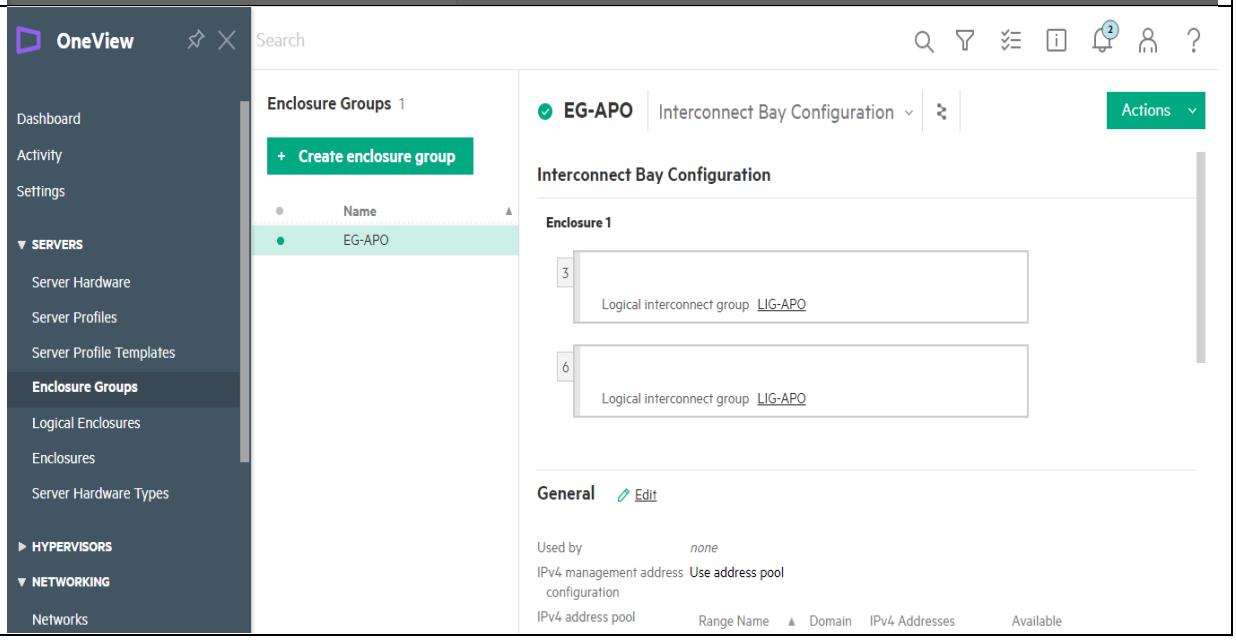
From the main menu, select Enclosure Groups, click Create enclosure group . The Create enclosure group dialog box appears.



Set Name, Select The management pool.
Click Create



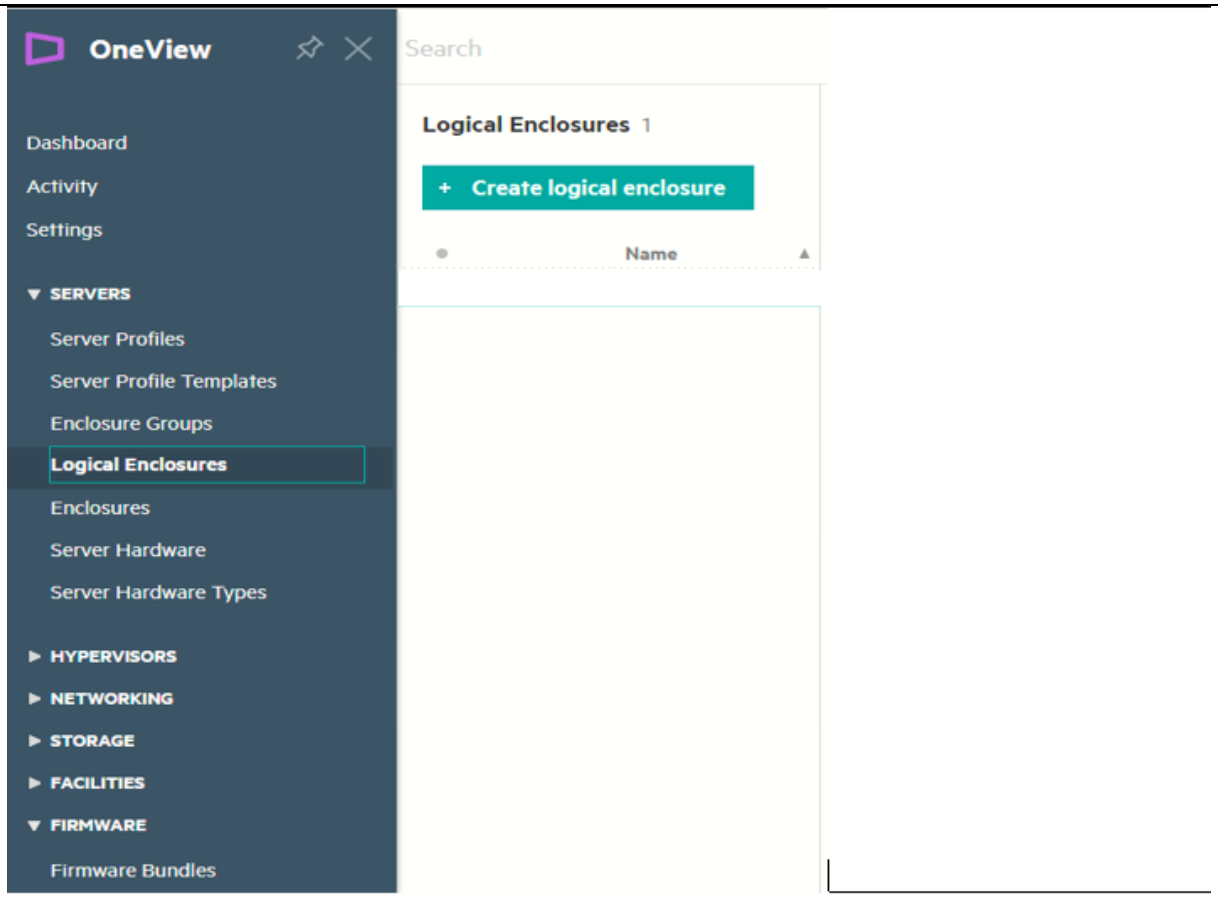
Select LIG in Inetrconnect Bay Configuration side



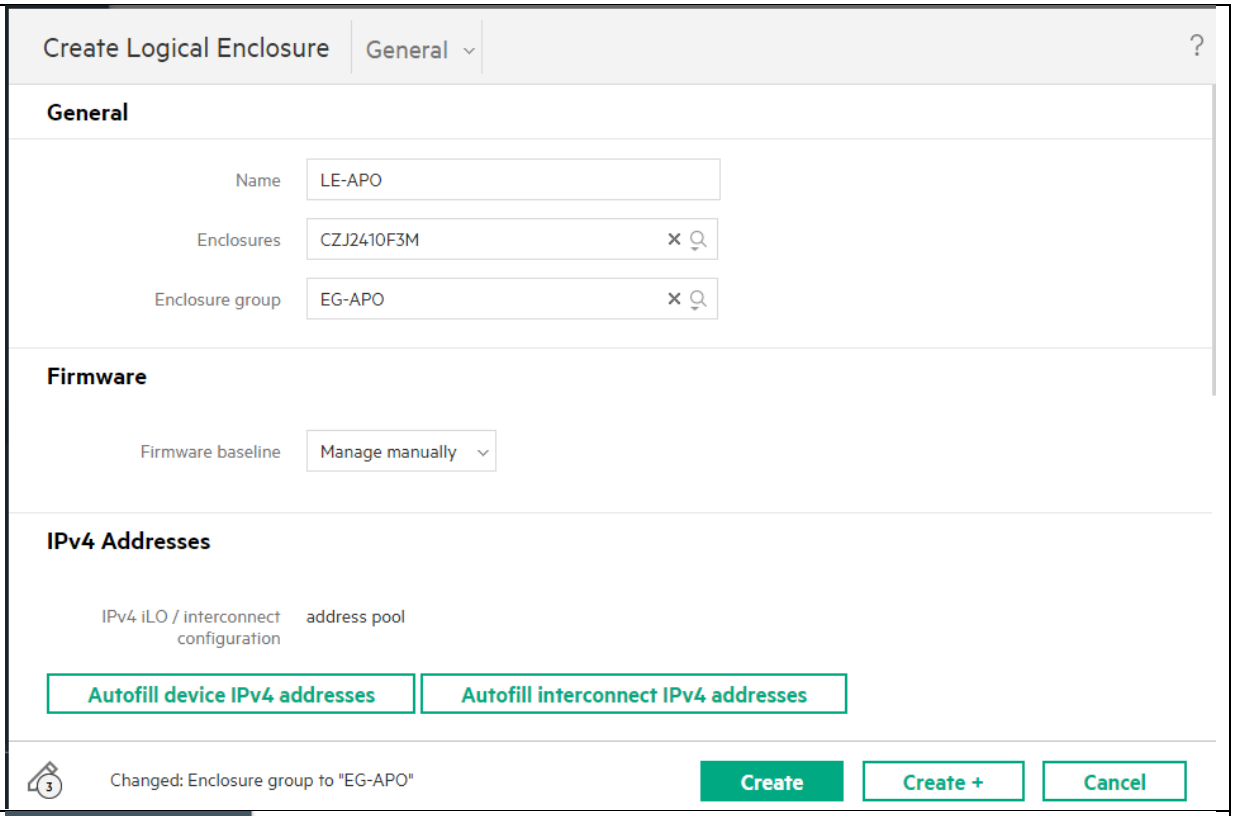
f. Add Logical Enclosure

A logical enclosure (LE) contains the configuration intended for a set of physical enclosures. It also automatically creates a logical interconnect (LI) for each logical interconnect group

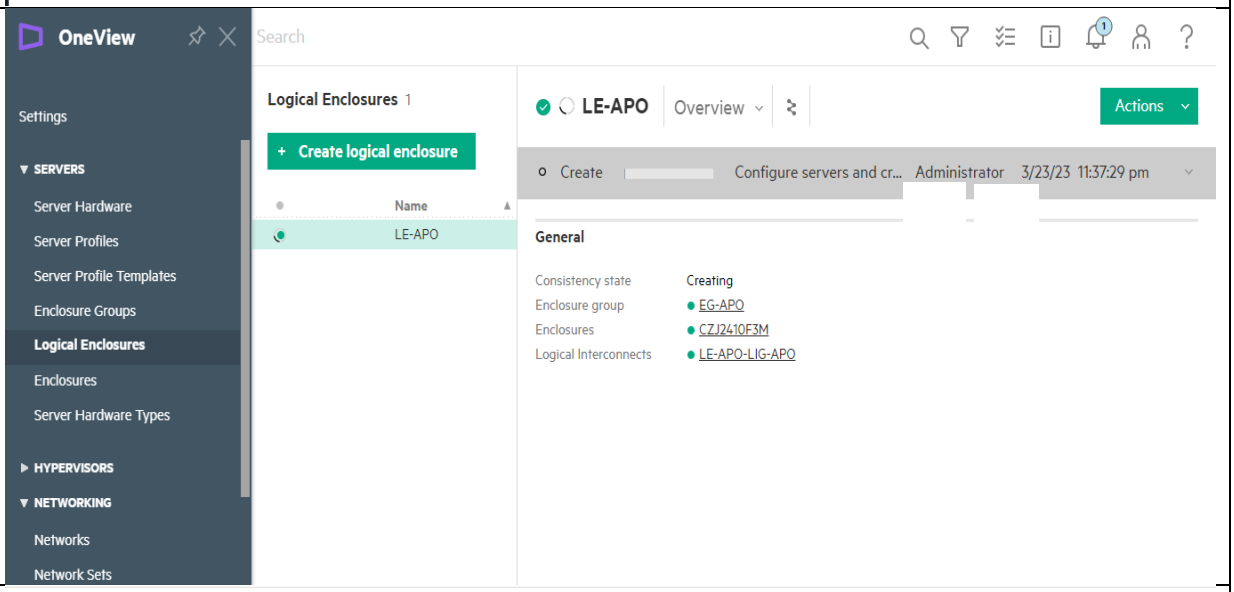
defined in an enclosure group.A logical enclosure is created by specifying the enclosures and the enclosure group template. Firmware baseline is an optional setting

In the main menu select servers, logical Enclosures then create logical Enclousure	

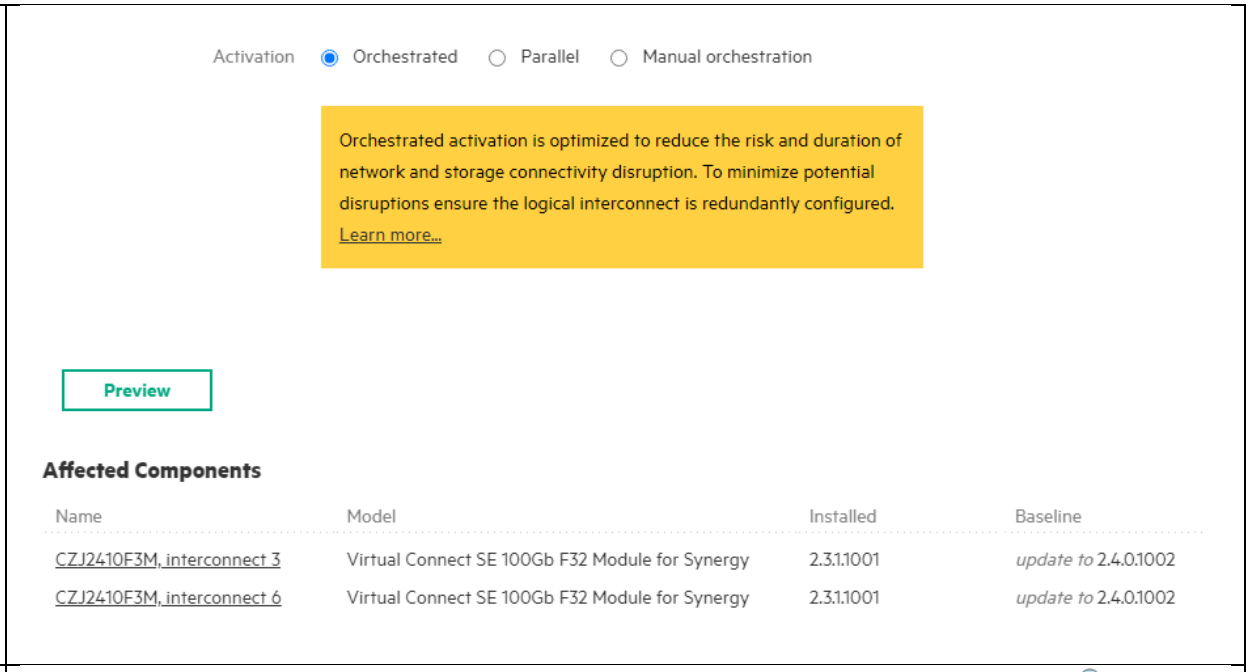
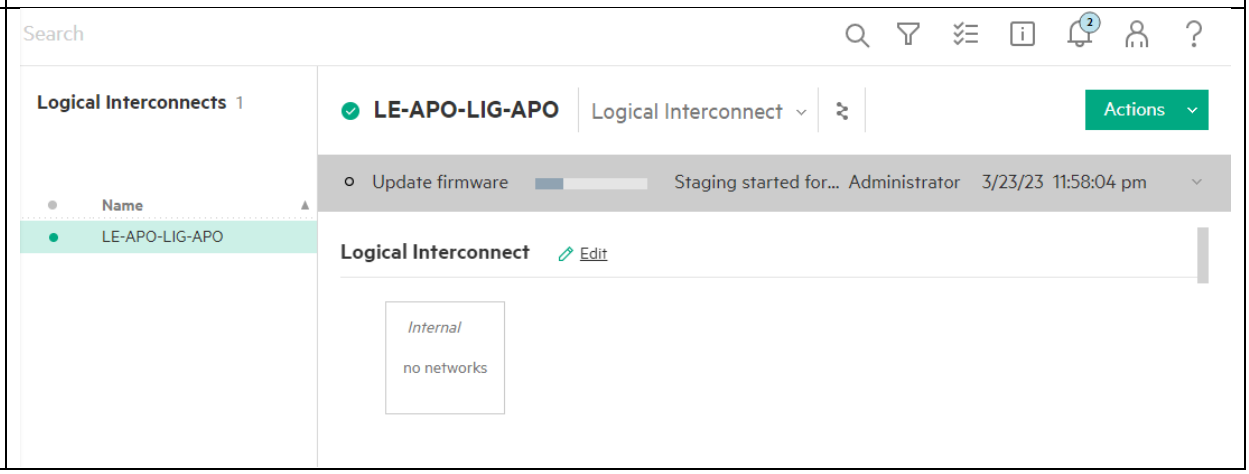
Set informations of the LE and EG



Wait until the end of the logical enclosure addition phase



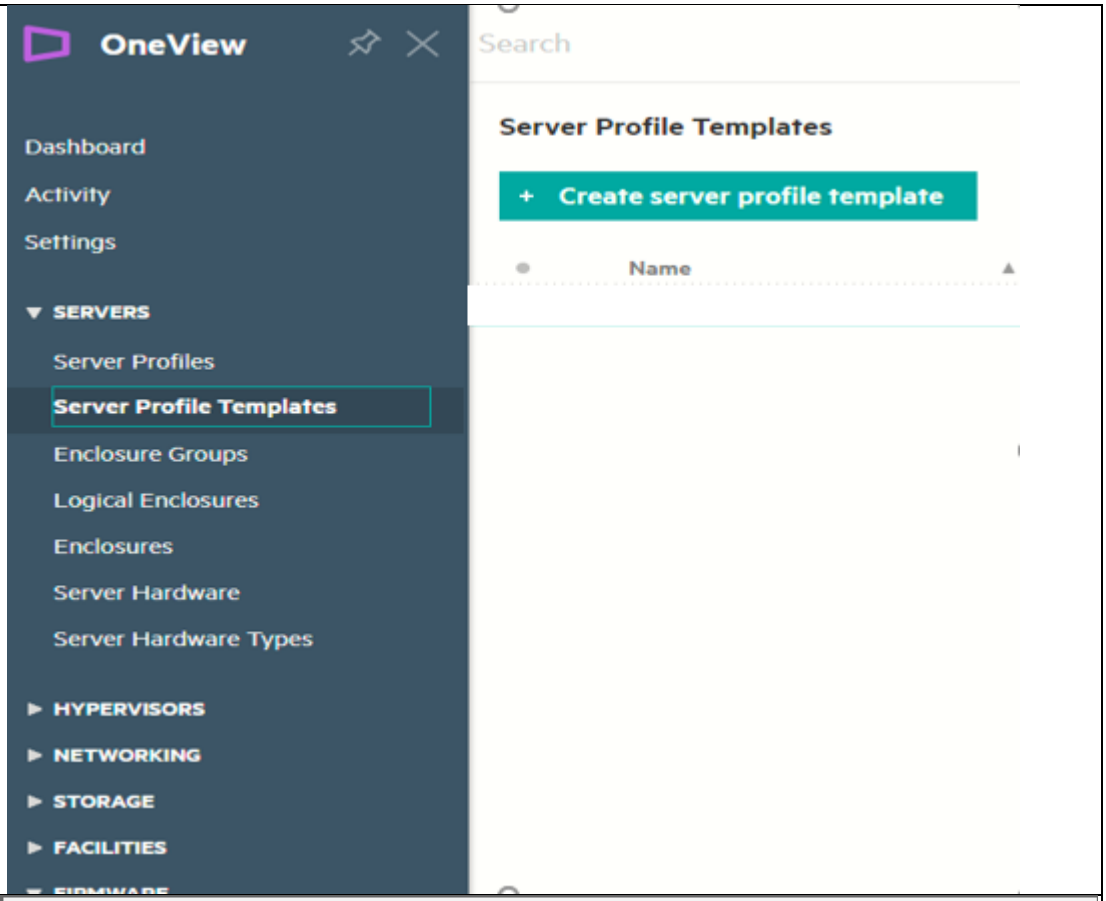
Update the Inteconnect Firmware version using SPP

Choose orchestrated activation and click update	
Wait untill the update firmware process finish	

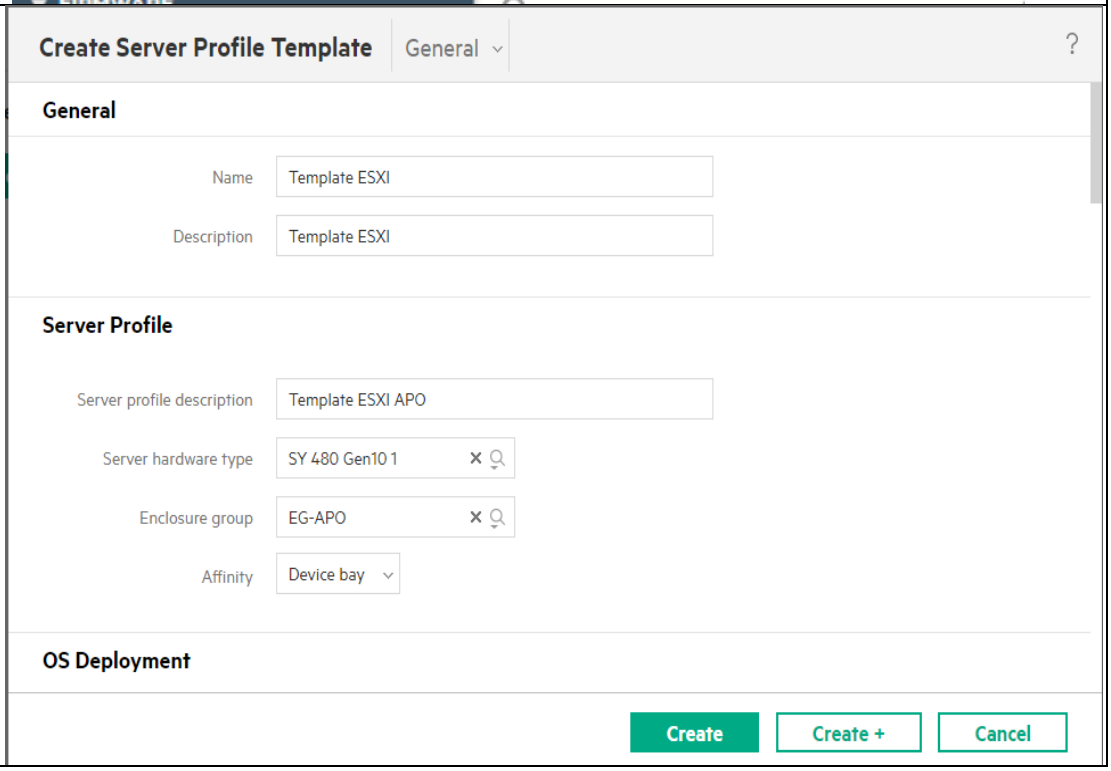
g. Server Profile template

Server profile templates help to monitor, flag, and update server profiles in HPE OneView. A server profile template serves as a structural reference when creating a server profile and defines the centralized source for the configuration of firmware, connections, local storage, SAN storage, boot, BIOS, profile affinity, and hides unused FlexNICs. Typically, you capture best-practice configurations in a server profile template, and then create and deploy server profiles.

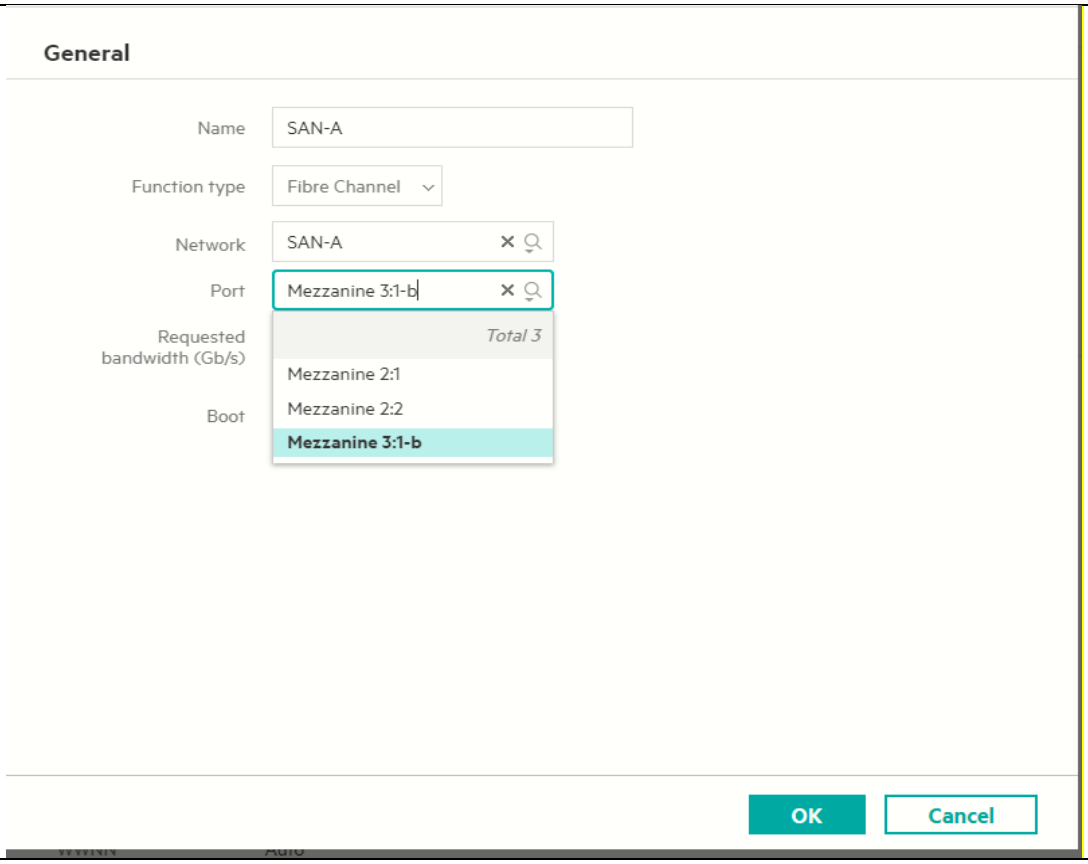
In the main menu select Server Profile Template



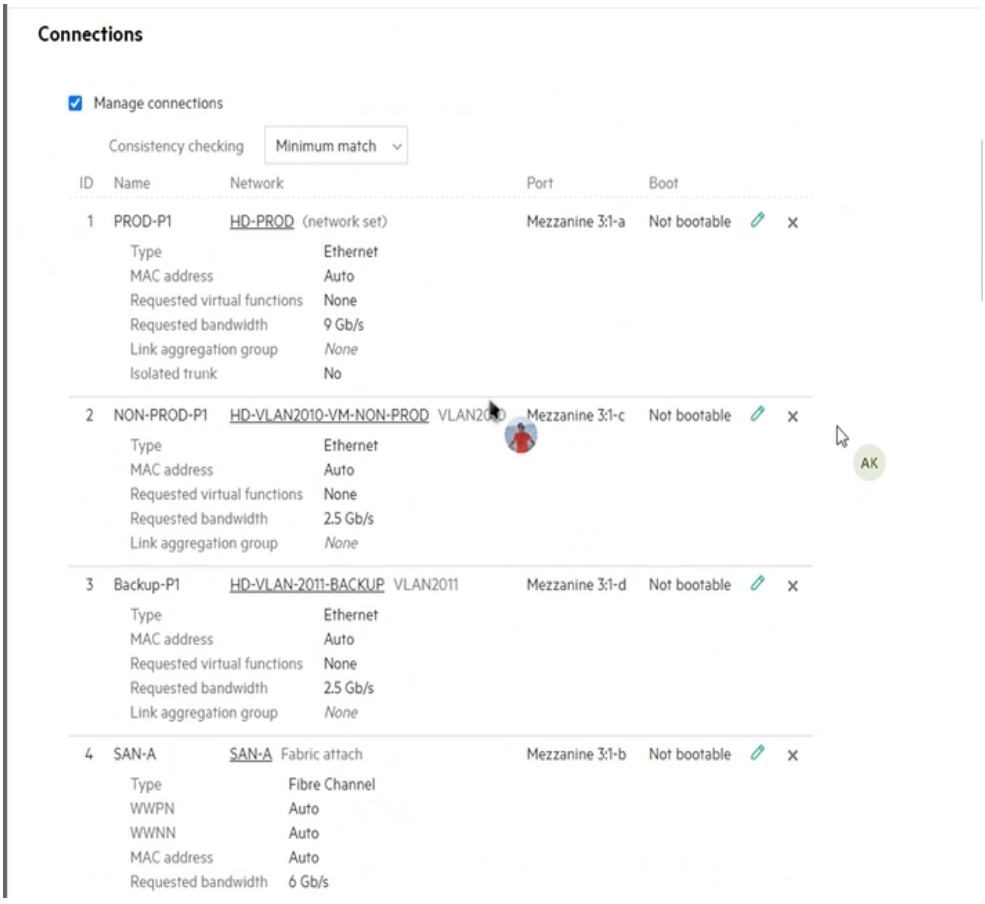
Choose create Server Profile Template.
Set the needed informations
NAME : ESXI-Template
Server Hardware Type : Sy 480Gen 10

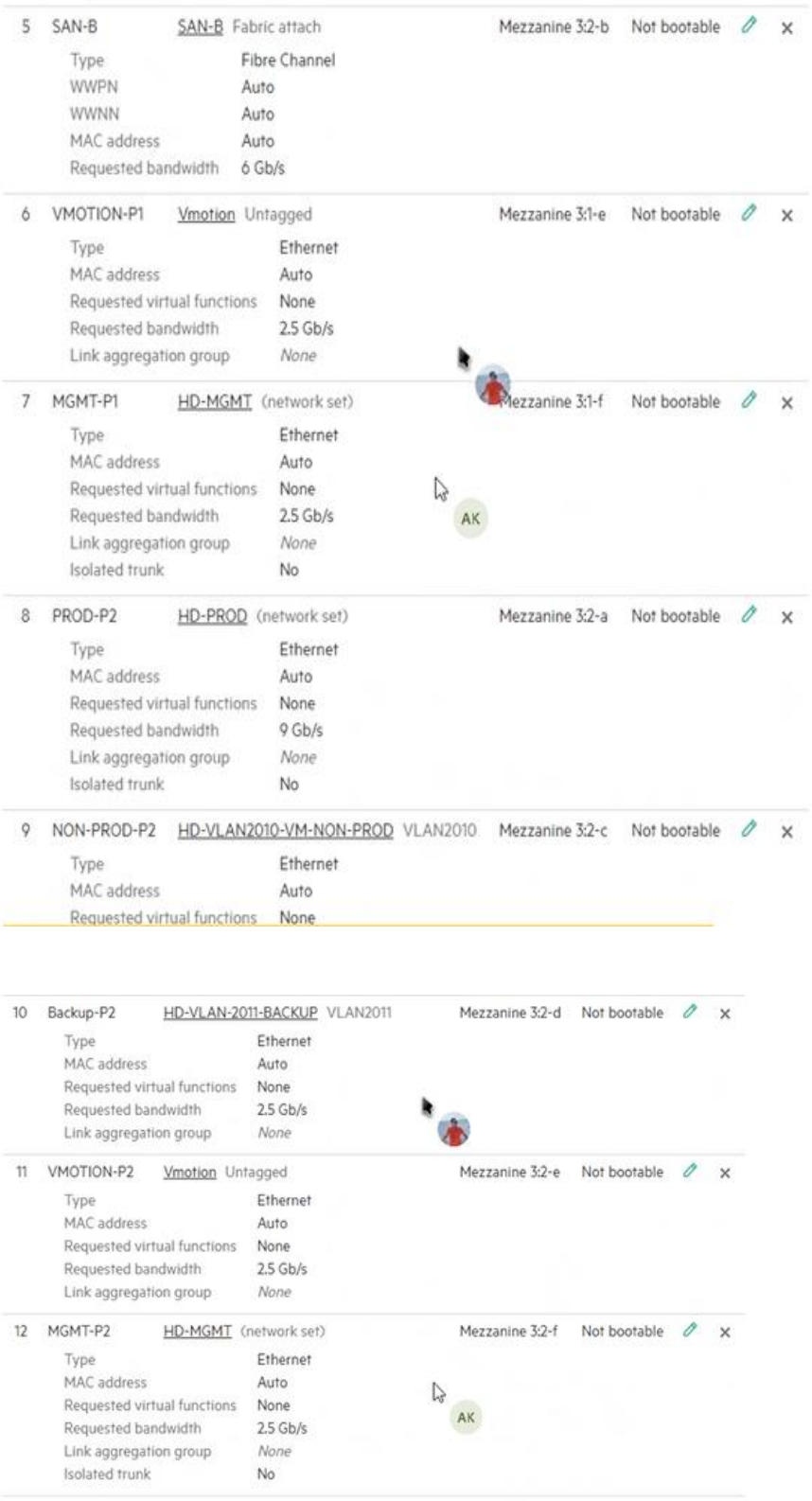


Click Add Connection and define Connections types for this profile.
Create Connection: SAN-A
And associate it to port Mezzanine 3 :1-b

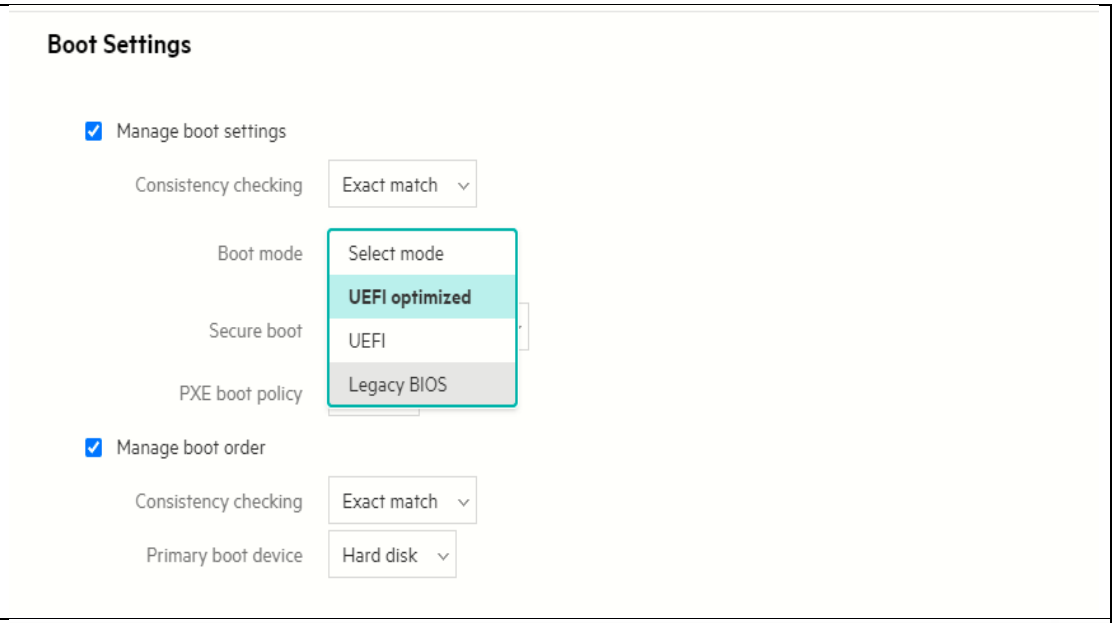
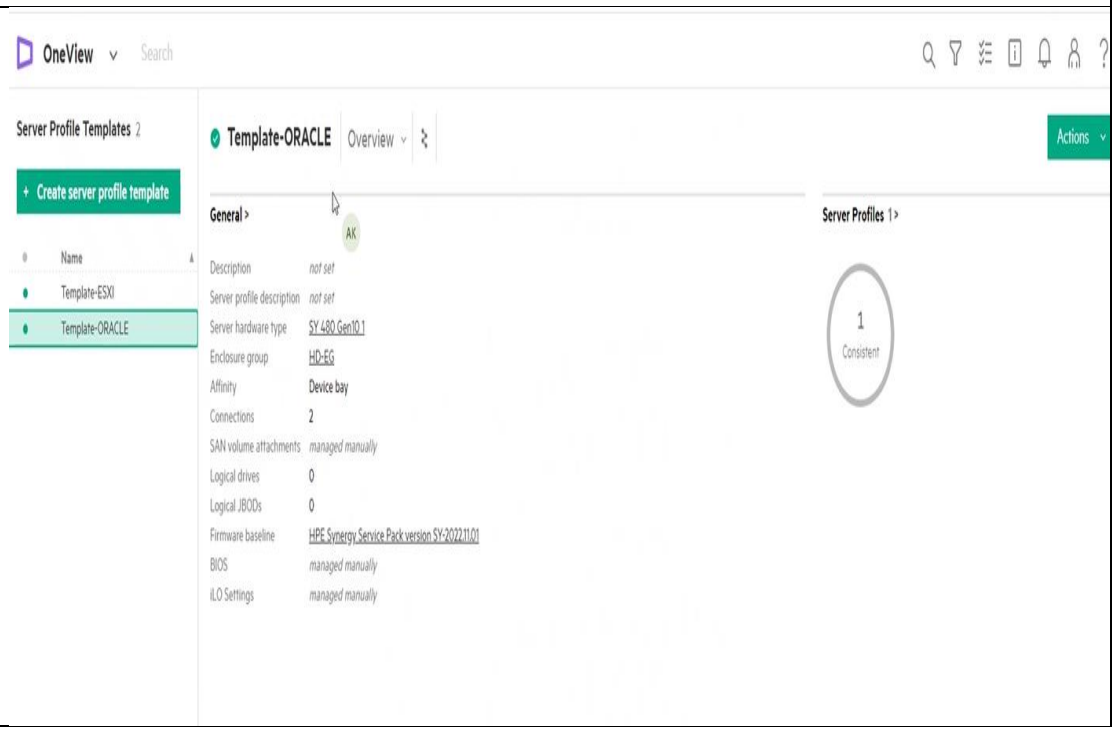


Vue sur les différents Connection crées





5	SAN-B	SAN-B Fabric attach		Mezzanine 3:2-b	Not bootable	
	Type	Fibre Channel				
	WWPN	Auto				
	WWNN	Auto				
	MAC address	Auto				
	Requested bandwidth	6 Gb/s				
6	VMOTION-P1	Vmotion Untagged		Mezzanine 3:1-e	Not bootable	
	Type	Ethernet				
	MAC address	Auto				
	Requested virtual functions	None				
	Requested bandwidth	2.5 Gb/s				
	Link aggregation group	*None*				
7	MGMT-P1	HD-MGMT (network set)		Mezzanine 3:1-f	Not bootable	
	Type	Ethernet				
	MAC address	Auto				
	Requested virtual functions	None				
	Requested bandwidth	2.5 Gb/s				
	Link aggregation group	*None*				
	Isolated trunk	No				
8	PROD-P2	HD-PROD (network set)		Mezzanine 3:2-a	Not bootable	
	Type	Ethernet				
	MAC address	Auto				
	Requested virtual functions	None				
	Requested bandwidth	9 Gb/s				
	Link aggregation group	*None*				
	Isolated trunk	No				
9	NON-PROD-P2	HD-VLAN2010-VM-NON-PROD VLAN2010		Mezzanine 3:2-c	Not bootable	
	Type	Ethernet				
	MAC address	Auto				
	Requested virtual functions	None				
10	Backup-P2	HD-VLAN-2011-BACKUP VLAN2011		Mezzanine 3:2-d	Not bootable	
	Type	Ethernet				
	MAC address	Auto				
	Requested virtual functions	None				
	Requested bandwidth	2.5 Gb/s				
	Link aggregation group	*None*				
11	VMOTION-P2	Vmotion Untagged		Mezzanine 3:2-e	Not bootable	
	Type	Ethernet				
	MAC address	Auto				
	Requested virtual functions	None				
	Requested bandwidth	2.5 Gb/s				
	Link aggregation group	*None*				
12	MGMT-P2	HD-MGMT (network set)		Mezzanine 3:2-f	Not bootable	
	Type	Ethernet				
	MAC address	Auto				
	Requested virtual functions	None				
	Requested bandwidth	2.5 Gb/s				
	Link aggregation group	*None*				
	Isolated trunk	No				

For boot mode choose :UEFI optimized	
Different server profile template created	

❖ Site Tunis

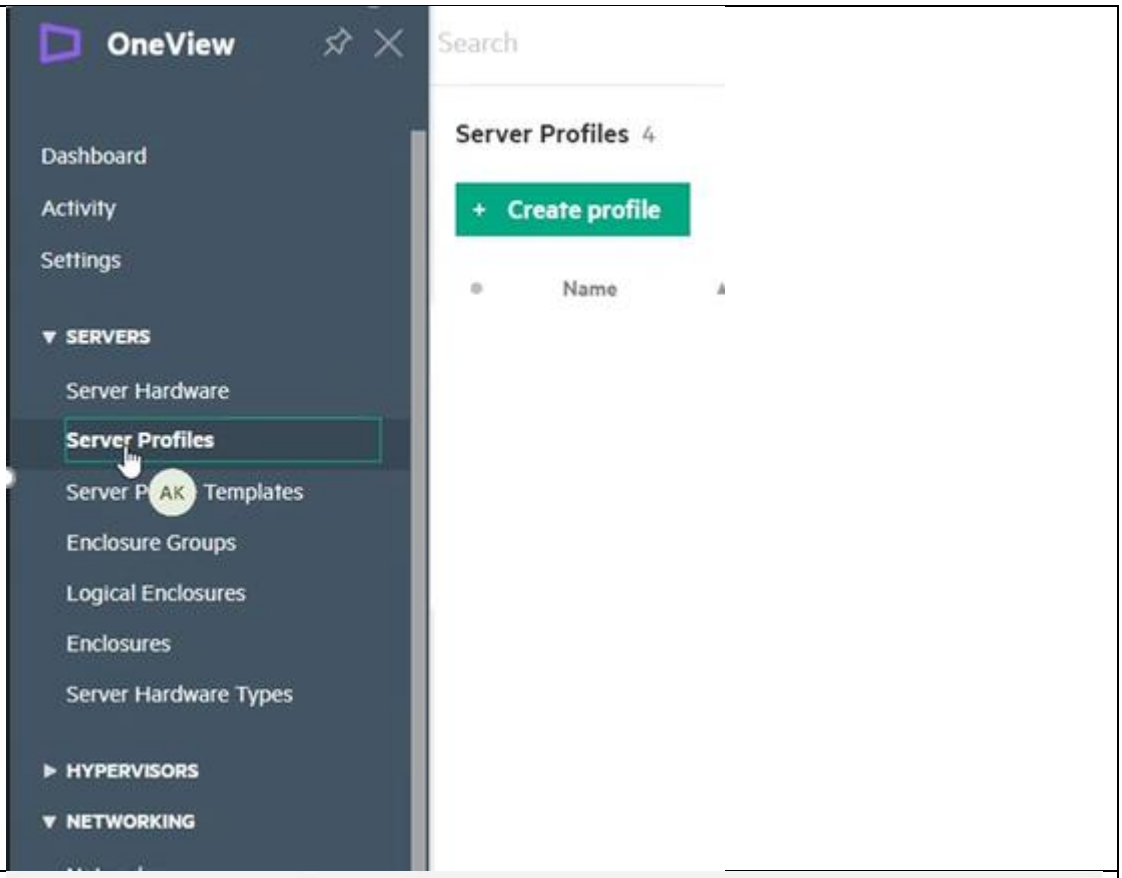
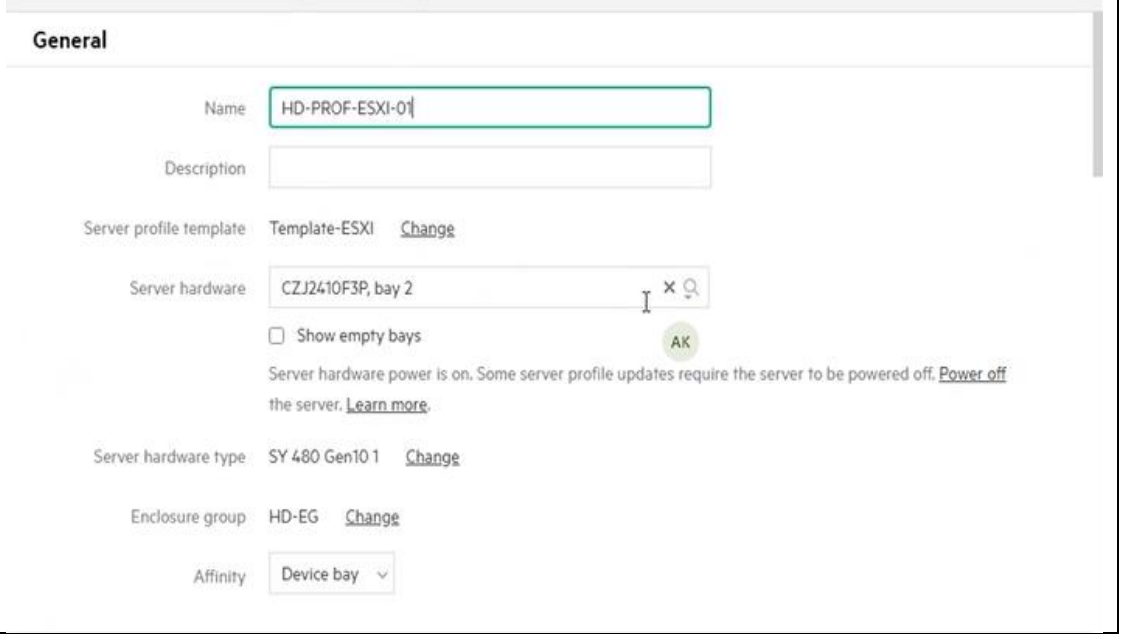
Profil connexion mapping for server profile Template "Template-ESXI"

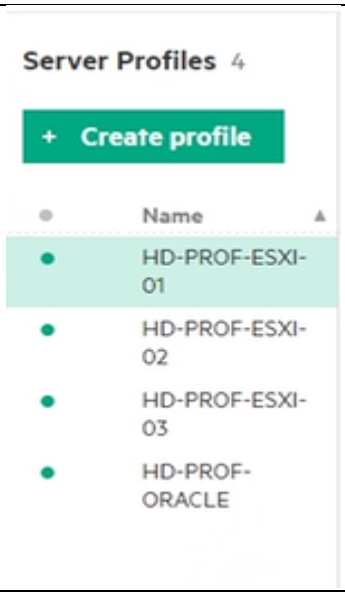
ref. name	Connection name	Network / network set name	Port	Requested bandwidth (Gb/s)
server connection #1	LAN MGMT P1	HD-MGMT	Mezz3-Port1-a	2GB
server connection #2	LAN MGMT P2	HD-MGMT	Mezz3-Port2-a	2GB
server connection #3	LAN DMZ P1	DMZ	Mezz3-Port1-c	2Gb
server connection #4	LAN DMZ P2	DMZ	Mezz3-Port2-c	2GB
server connection #5	LAN CORPORATE P1	Corporate	Mezz3-Port1-d	8GB
server connection #6	LAN CORPORATE P2	Corporate	Mezz3-Port2-d	8GB
server connection #7	LAN MGMT DNS P1	Management DNS	Mezz3-Port1-e	1,5GB
server connection #8	LAN MGMT DNS P2	Management DNS	Mezz3-Port2-e	1,5GB
server connection #9	LAN-Vmotion-P1	Vmotion	Mezz3-Port1-f	2,5GB
server connection #10	LAN-Vmotion-P2	Vmotion	Mezz3-Port2-f	2,5GB
server connection #11	RX-Storage-SAN-A	SAN-A	Mezz3-Port1-b	6GB
server connection #12	RX-Storage-SAN-B	SAN-B	Mezz3-Port2-b	6GB
server connection #13	LAN-BACKUP-P1	backup	Mezz3-Port1-g	3GB
server connection #14	LAN-BACKUP-P2	backup	Mezz3-Port2-g	3GB

Profil connexion mapping for server profile Template "Template-Windows"

ref. name	Connection name	Network / network set name	Port	Requested bandwidth (Gb/s)
server connection #1	LAN MGMT P1	Management SRV	Mezz3-Port1-c	2GB
server connection #2	LAN MGMT P2	HD-MGMT	Mezz3-Port2-c	2GB
server connection #3	LAN CORPORATE P1	Corporate	Mezz3-Port1-a	2Gb
server connection #4	LAN CORPORATE P2	Corporate	Mezz3-Port2-a	2GB
server connection #5	SAN-A	SAN-A	Mezz3-Port1-b	8GB
server connection #6	SAN-B	SAN-B	Mezz3-Port2-b	

h. Server Profile

From the main menu, select Server Profile Templates and select a template from the list of available templates.Click Actions → Create server profile in the menu on the upper right	
Provide a unique name and optional description for this new server profile. Select a server hardware to assign (enclosure and enclosure bay), or select unassigned if that profile will not be applied immediately. Click the Create button.	

List of server profile created “Site-Sfax”	

- Site Tunis

Server profile Name
ESXI-BAY2
ESXI-BAY3
HYPER-V-BAY1