Hewlett Packard Enterprise

HPE TechJam 2025

Hands-On Labs

HPE Synergy/VMware Integration using OneView for vCenter

Contents

Introduction

Welcome to the HPE TechJam 2025 Hands-On Labs (HOL). For the next two hours you will complete a self-paced lab using HPE Synergy, VMware vCenter, and OneView for vCenter (OV4VC). The diagram below provides a reference of the physical and virtual resources used in this lab.

Lab Objectives

- Experience the first-time setup of OV4VC and the registration with vCenter and a Synergy Composer
- Experience the various features and capabilities of OV4VC.
- Experience OV4VC's integration with VMware Lifecycle Manager.

Team Assignments

This lab has 25 stations. Each station will have its own individual OV4VC instance and vCenter. Likewise, each team will be assigned 1 HPE Synergy Compute module to complete the deployment module.

Your team assignments will be on a separate sheet of paper issued to you by your lab proctor. Please return the team assignment sheet to your proctor when finished with this lab.

HOL Environment

This Hands-On-Lab consists of a Synergy 3-Frame Environment using the following hardware:

- Three HPE Synergy 12000 Frames
- Redundant 100Gb F32 master modules with satellite modules
- Two Synergy Composer2 appliances
- Redundant Frame Link Modules
- 36 x SY 480 Gen10/Gen10+ Compute Nodes
- Brocade 16GB fabric edge switches
- 3PAR and Nimble Storage Systems

Hands-On Lab Flow

During the next two hours you will receive a high-level overview of HPE's OneView for vCenter integration (OV4VC). You will register OV4VC with vCenter 8.0, you will create a vSphere cluster, and using OV4VC's deployment plans, deploy a Synergy Compute Node to this cluster. You will perform the steps to integrate VMware Lifecycle Manager (vLCM) with OV4VC's HSM and step through a rolling cluster firmware update and review cluster compliance. Finally, you will have a chance to walk through the various screens that OV4VC adds to vCenter to bring the power of Composability on HPE Synergy to VMware vCenter for a single-console experience.

Lab 1: Registering OV4VC with vCenter

- Lab 1a: Logging into OV4VC and Registering the vCenter
- Lab 1b: Verifying the installation of the vCenter Plugin.
- Lab 1c: Adding an ESXi Host to vCenter.
- Lab 1d: Registering the Synergy Composer

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- Lab 2b: Exploring Server Data

Lab 3: Setting up the Proactive HA Provider

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- Lab 4b: Demonstrate Profile-to-Template Inconsistency

Lab 5: Integrating OV4VC with vSphere Lifecycle Management

- Lab 5a: Host Prerequisites
- Lab 5b: Registering the HSM Certificate with vCenter
- Lab 5c: Registering a Service Pack to be used by vLCM.
- Lab 5d: Creating a Cluster Image
- Lab 5e: Exploring Image Compliance
- Lab 5f: Remediating a host.

Lab 6: Exploring Bare Metal Deployments in OV4VC

Virtual Lab Environment

Upon access to the lab, you'll be presented with a Chrome Desktop with multiple tabs open. You will have this document which you downloaded earlier.

Each team will have the following physical and virtual infrastructure:

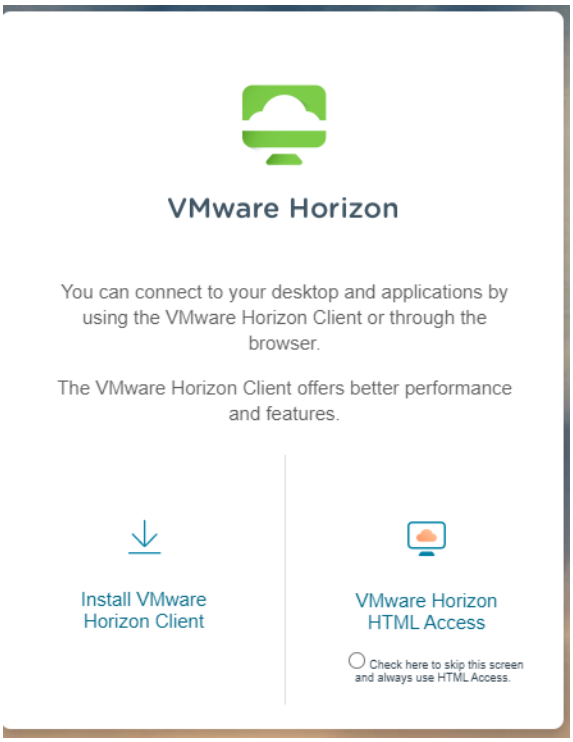
- Administrator credentials to shared HPE Synergy Composer (OneView)
- Administrator credentials to a unique VMware vCenter
- Administrator credentials to a unique OV4VC instance
- One Synergy SY480 Compute Node (vSphere host)

Connecting to the Lab

One of the HPE Discover HOL instructors will be happy to assist with getting you setup for this lab.

1. Open a Chrome or similar HTML5 capable browser and navigate to: **https://16.103.2.129**

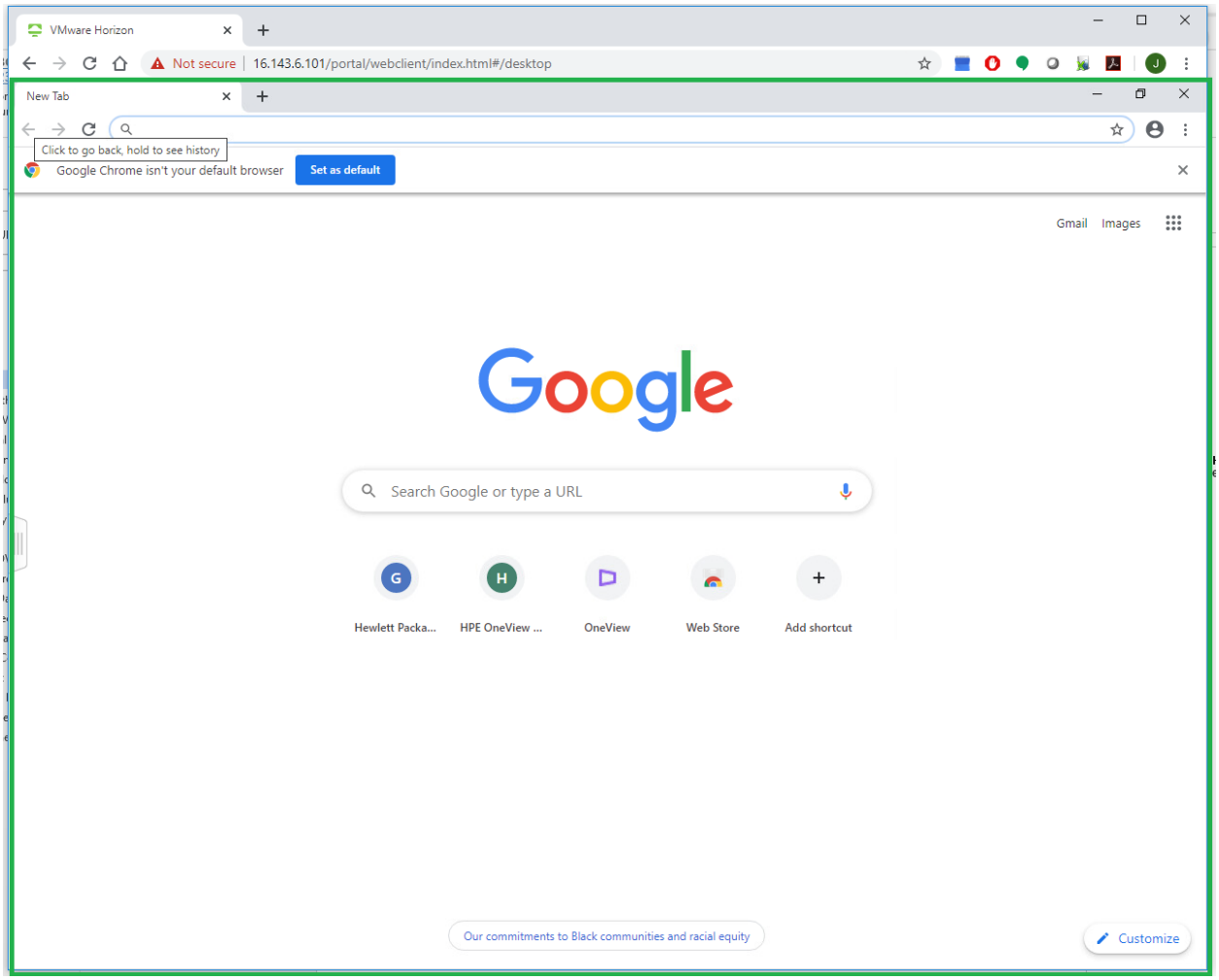
2. Choose "VMware Horizon HTML Access"



3. Login with your provided credentials

4. Choose the “Google Chrome” option.

5. After a few moments, a Horizon-Published-Application Chrome window will appear.



Note: Work within the area highlighted in Green above if you do not put Chrome into Kiosk mode.

What is HPE OneView for VMware vCenter

HPE OneView for VMware vCenter is an integrated plugin application for VMware vCenter management which enables the vSphere administrator to quickly obtain context-aware information about HPE Servers in their VMware vSphere DataCenter directly from within vCenter. This application enables the vSphere administrator to easily manage physical servers. By providing the ability to clearly view and directly manage the HPE Infrastructure from within the vCenter console, the productivity of VMware administrator increases, as does the ability to ensure quality of service.

HPE OneView for VMware vCenter offers the following benefits:

- Simplified administration through integration of the physical and virtual infrastructure.
- Accurate problem indicators through the hardware events generated in the VMware vSphere Management Console.
- Single-click launch of trusted HPE management tools from the vSphere dashboard.
- Ability to proactively manage or view changes with detailed relationship dashboards of server, and networking.
- Simplified on-demand server provisioning.
- Visualization of complex configuration relationships:
- Virtual connect end-to-end networking view

The HPE OneView for VMware vCenter consists of components which provide the following features:

- HPE OneView for VMware vCenter—HPE OneView for VMware vCenter offers the following server hardware management.
- capabilities for HPE ProLiant (BL, DL, XL, ML, and HPE Synergy) servers:
- Comprehensive monitoring using HPE OneView within VMware vCenter environment.
- Firmware update
- vSphere/ESXi image deployment
- Remote support information
- End-to-end monitoring for Virtual connect for HPE ProLiant BL servers.
- Provides detailed infrastructure inventory for HPE ProLiant Gen 10 and newer servers that includes information on memory, NIC, HBA, and
- Smart Array storage components.

While this lab runs in an HPE Synergy environment, the knowledge, features, and capabilities are applicable and transferrable to a ProLiant installation.

Lab 1: Registering OV4VC with vCenter

In this lab, you will log into your assigned OV4VC, and set up the registration with your assigned vCenter. Then, you will register the Synergy Composer with OV4VC.

Lab 1a: Logging into OV4VC and Registering the vCenter

1. From the Chrome Window, open a session to your assigned OV4VC instance.

   https://teamNN-ov4vc.hol.enablement.local – where "NN" is your assigned Team number. Remember, for Teams 1 thru 9, there is a leading zero:

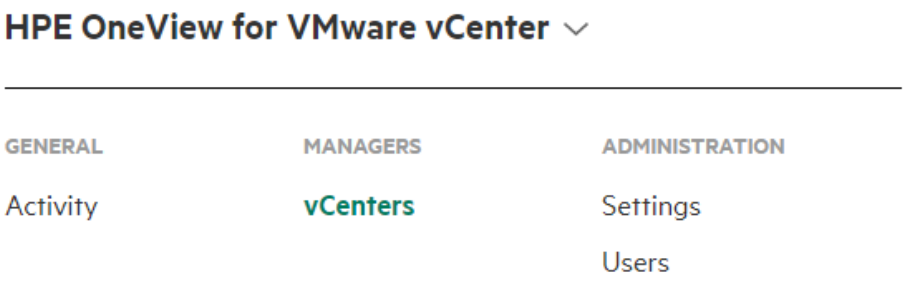
   e.g. https://team01-ov4vc.hol.enablement.local

   Accept any "credential / certificate" challenges.

2. Click the SETUP button to continue.

   Since this is a freshly deployed OV4VC, you will need to input a password for the first time. Input something you can easily remember, such as **TechPr02025!** .

3. At the home screen of OV4VC, click “HPE OneView for VMware vCenter” to select the main menu in the upper left and then choose “vCenters”



4. Click the Add vCenter button
5. In the vCenter Add Wizard, input the following in the appropriate fields:

   Name: teamNN-vcsa.hol.enablement.local

   Note: NN = your team assignment

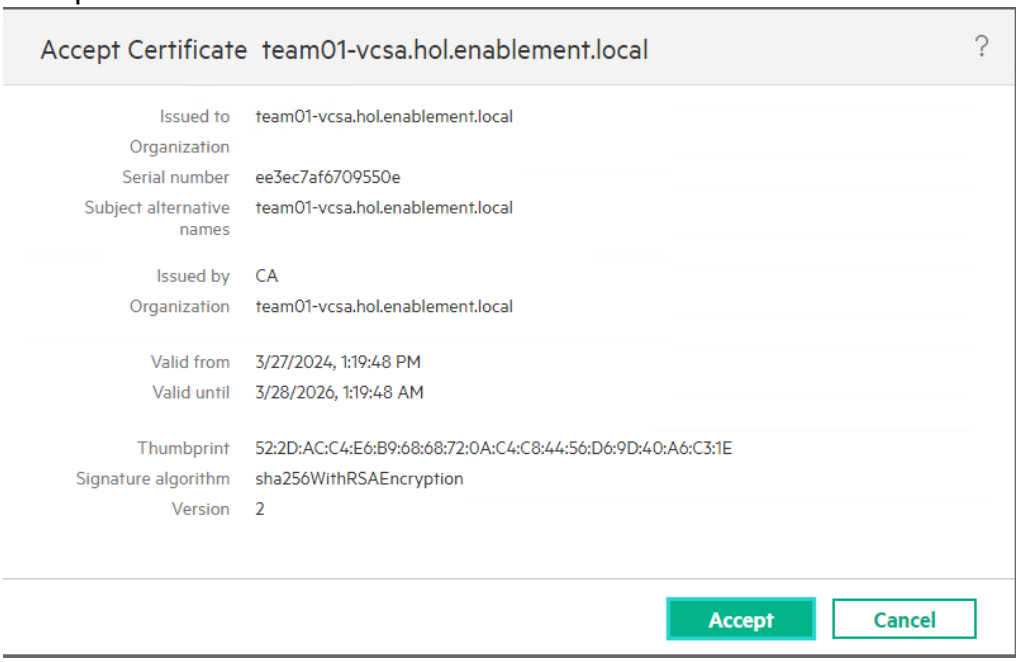
   e.g. team01-vcsa.hol.enablement.local

   Username: administrator@vsphere.local

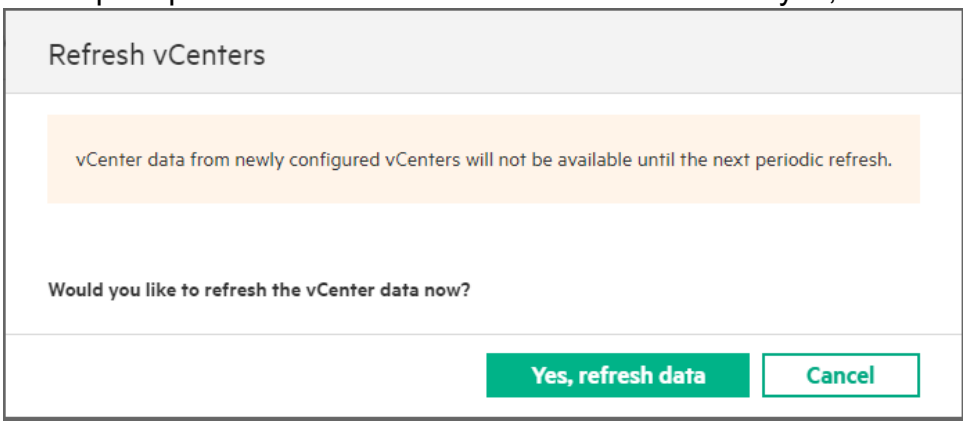
   Password: TechPr02025!

6. Click Add.

7. Accept the certificate.



8. When prompted to “refresh the vCenter Data” choose “yes, refresh data”



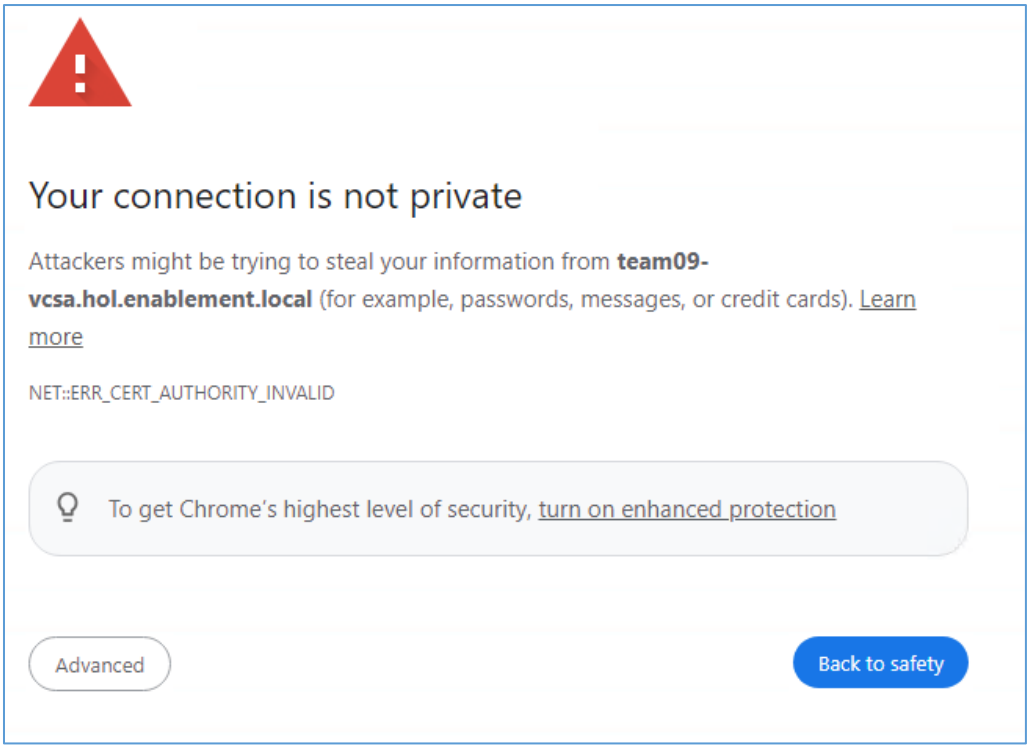
Lab 1b: Verifying the installation of the vCenter Plugin.

1. From the context of your Horizon session, open a new browser tab and navigate to your vCenter.

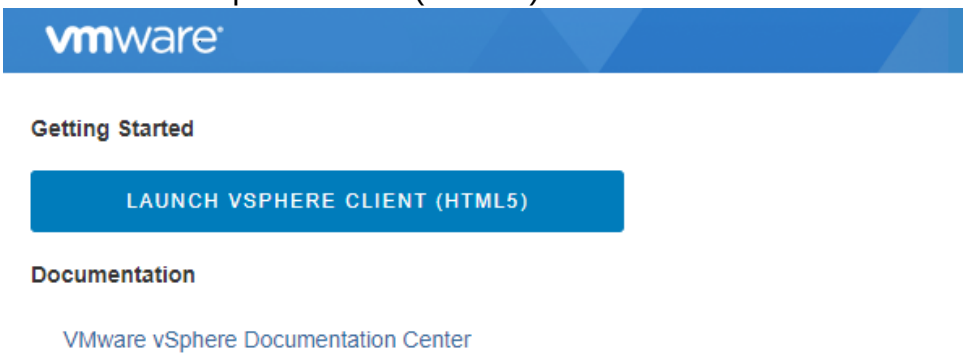
   Your vCenter is **team*NN*-vcsa.hol.enablement.local**

   (Note: NN is your team assignment: 01, 02, 03, 11, 12, 13, etc)

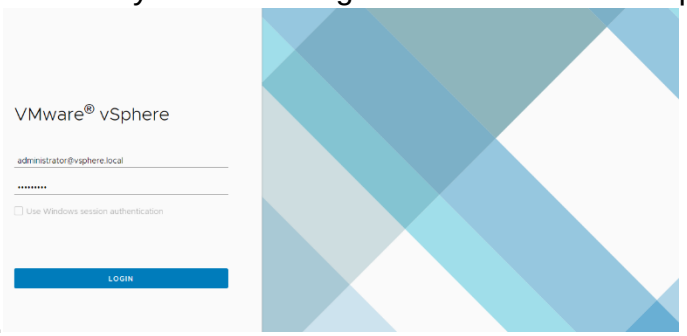
   Accept the browser warning on the certificate and click proceed



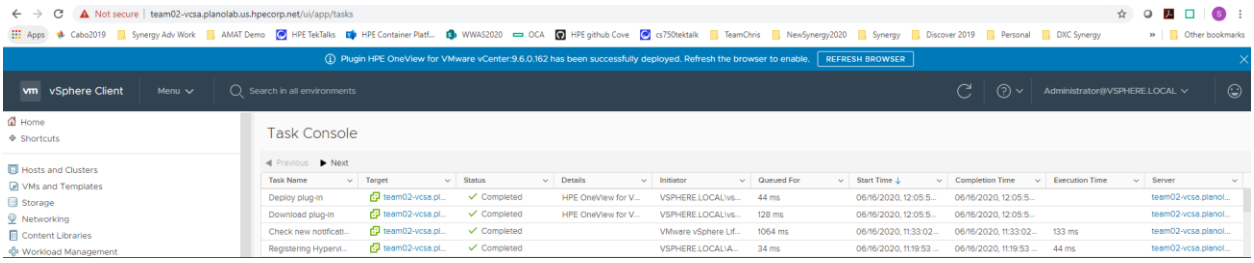
2. Click Launch vSphere Client (HTML5)



3. Login with the credentials you used to register the vCenter in Step 4 from the previous section.

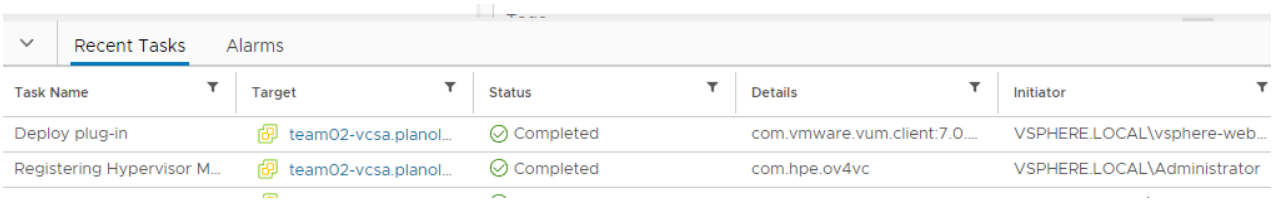


4. Once logged in, you may see a “blue bar” across the top of the screen advising you of the installation of a new plugin. (If the plugin was fully deployed before you logged into vCenter, you will not see the blue bar).



Optionally, you can navigate to vCenter’s tasks menus to see the download and deploy task.

Note: If you see a “failed to register hypervisor cluster manager” error in the tasks list, ignore the error and continue with the lab.



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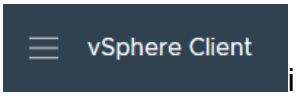
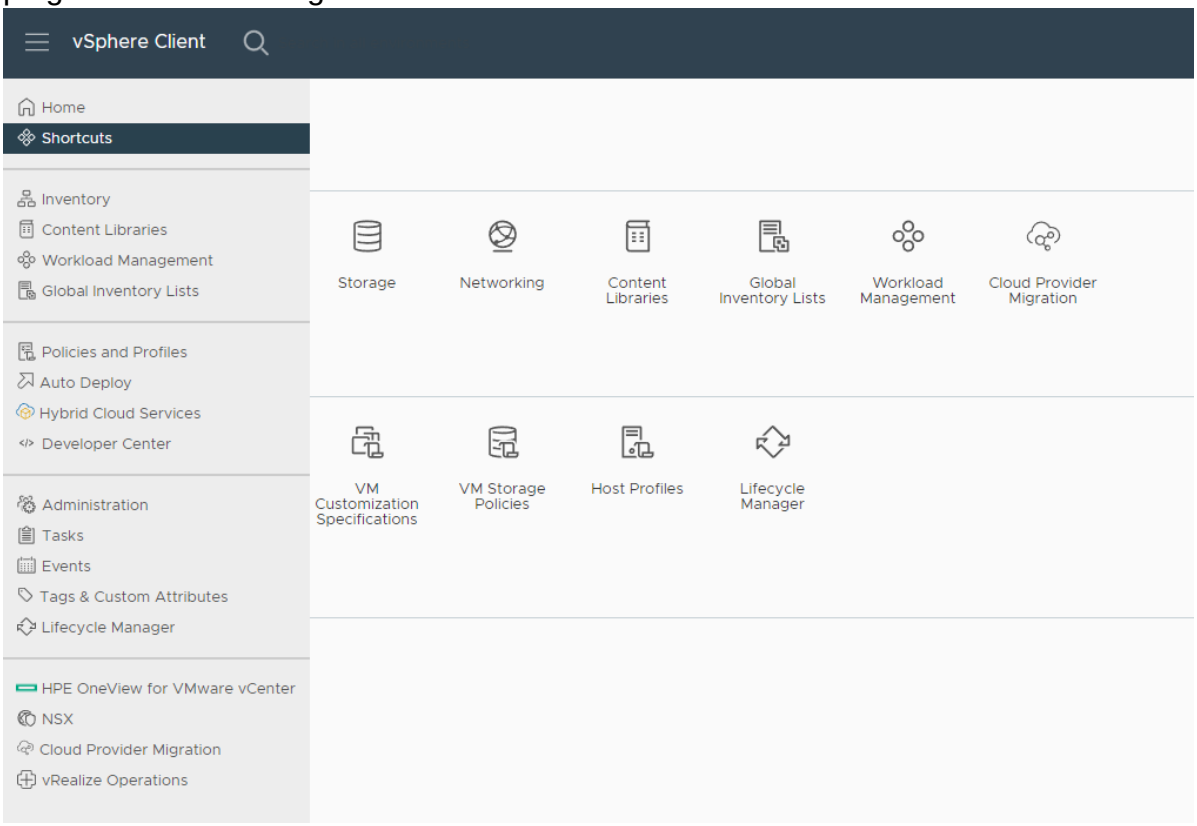
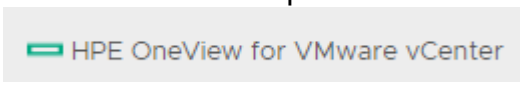
5. Click the vCenter “Menu” 

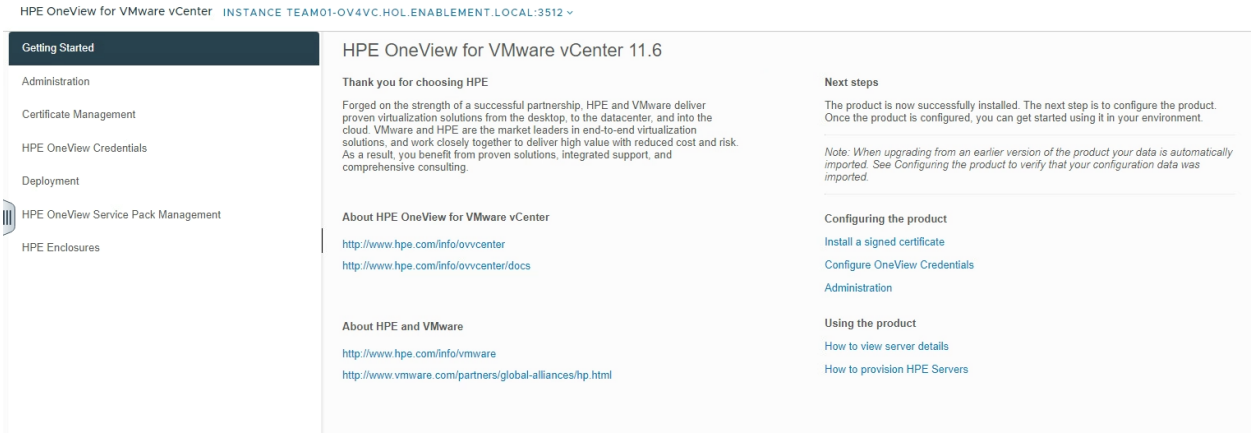
icon and select “Shortcuts”. The plugin should have registered several HPE shortcuts on this menu.



6. From the pulldown menu, a new icon has been added towards the bottom of the list. Click the icon to proceed.



7. The OV4VC main page is displayed.



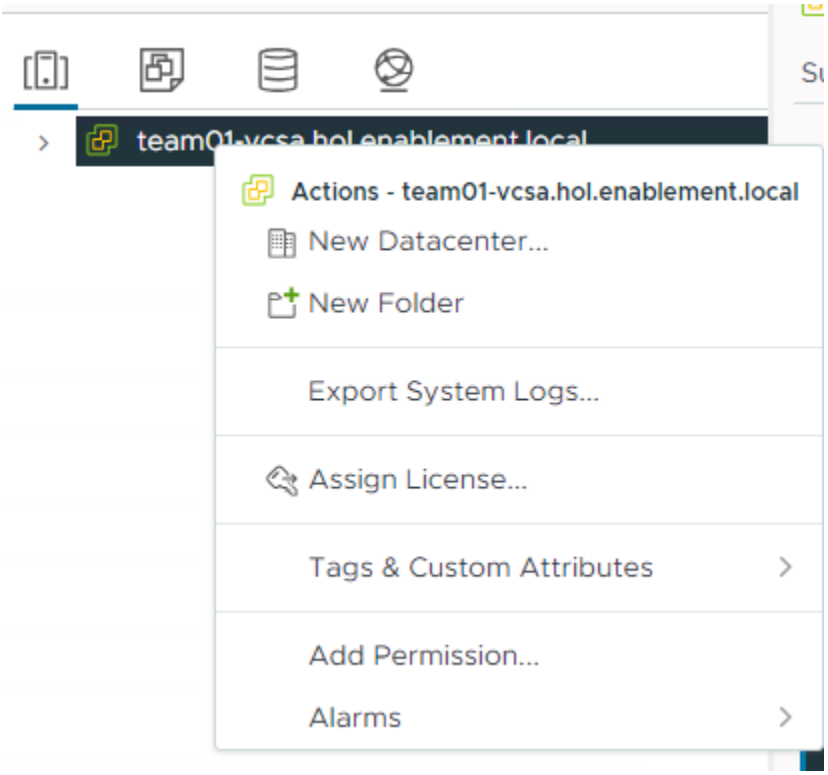
If the short cuts are not visible, refresh your browser (or logout/login to vCenter).

Lab 1c: Adding an ESXi Host to vCenter.

The OV4VC plugin is installed in vCenter, however, various features and capabilities of OV4VC will not show until at least 1 ESX host is installed.

Before adding our ESXi host, there are a couple prerequisite setup items to be completed.

1. With the Shortcuts screen still displayed, click on “Hosts and Clusters” .
2. In the left-hand column, right click on the vCenter name, and choose “New Datacenter…”



3. Keep the default name of “Datacenter” and choose OK.

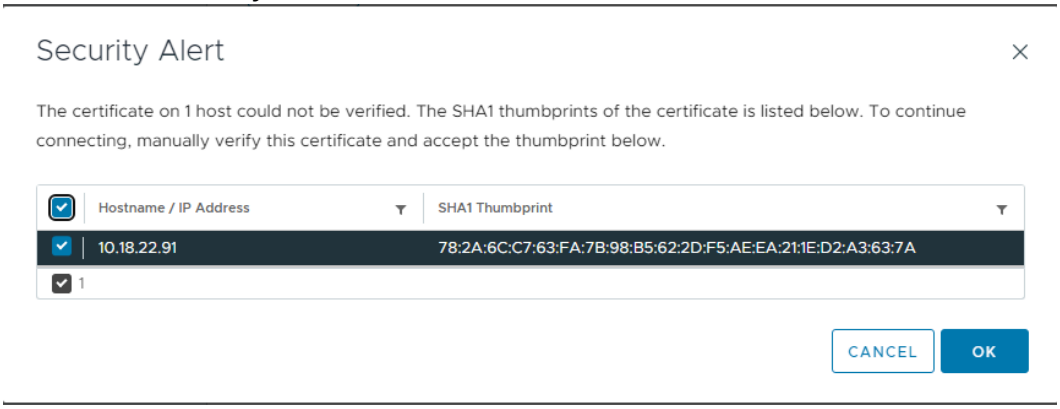
4. Right Click on the Datacenter object you just created and select “New Cluster”.

5. Uncheck “Manage all Hosts in the cluster with a single image. (We will do this in a later step in the lab). Click Next, and then Finish.

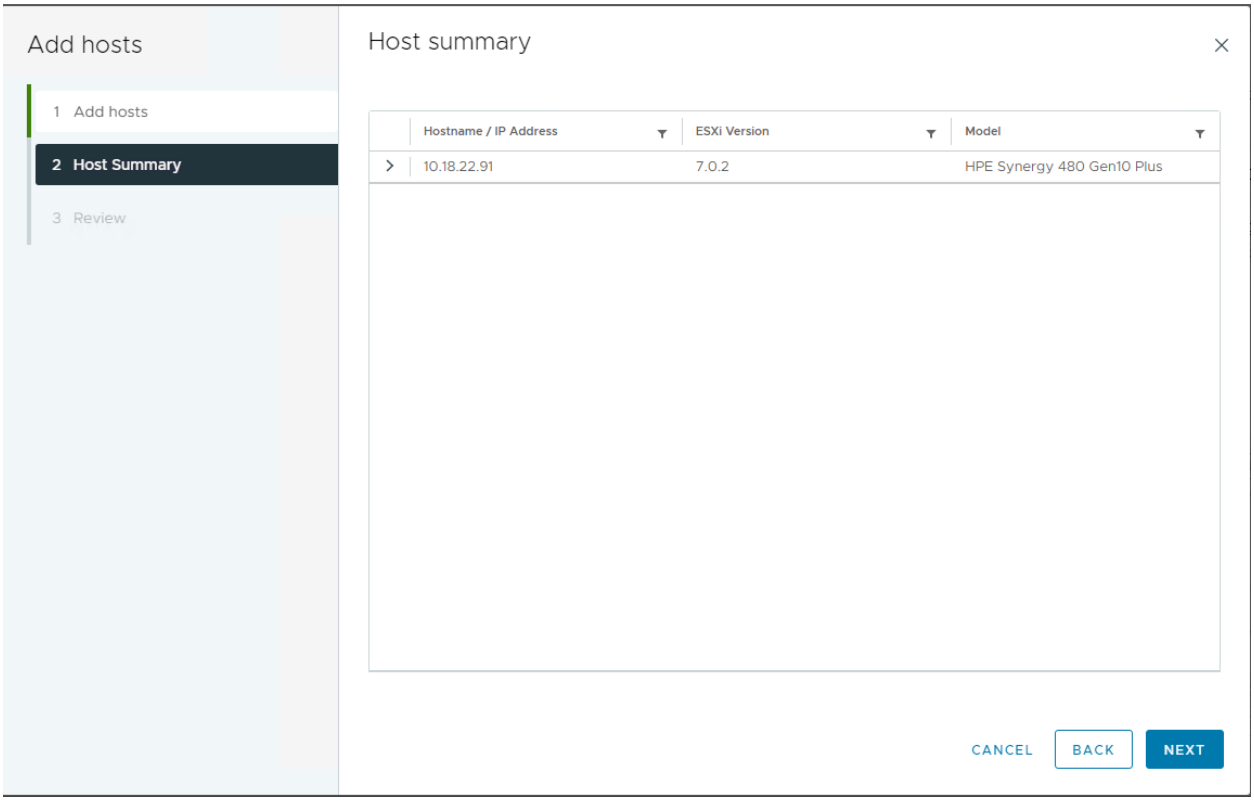
6. Right click on the Cluster object you just created and choose Add Hosts.

7. Add the ESXi host using the information that corresponds to your team name in the table at the end of this section. You can add either by IP address or by FQDN.

8. Accept the “Security Alert” and continue through the Add Hosts wizard. Click the checkbox next to your host, and click the OK button



9. Click Next to continue



10. Click the FINISH button

11. Within vCenter the new host will display disconnected for a few seconds, then change to maintenance mode

Common for All Teams:

ESX Root User: root

ESXi Password: TechPr02025!

FQDN: <hostname>.hol.enablement.local

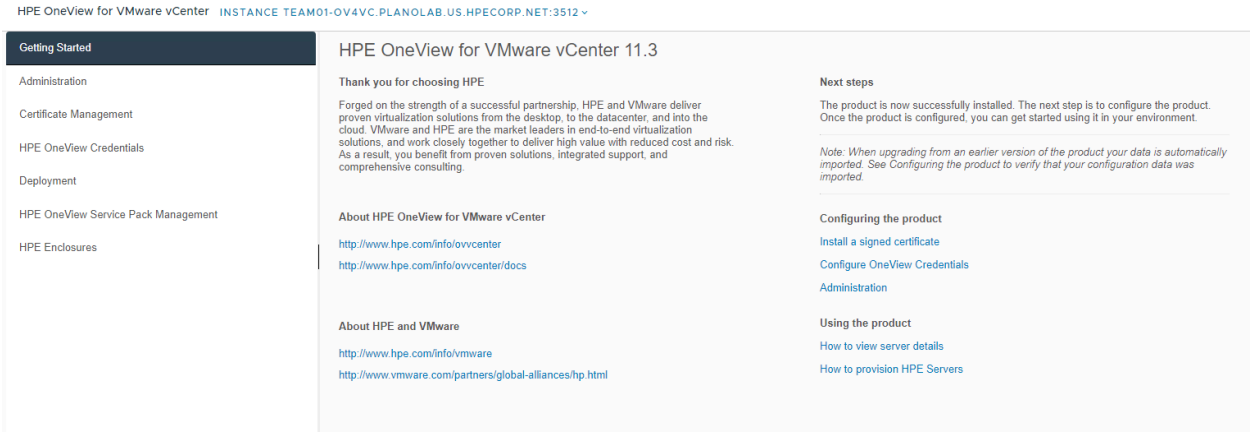
Team	IP Address	Hostname		Team	IP Address	Hostname
Team 01	10.18.22.76	team01-esx		Team 14	10.18.22.89	team14-esx
Team 02	10.18.22.77	team02-esx		Team 15	10.18.22.90	team15-esx
Team 03	10.18.22.78	team03-esx		Team 16	10.18.22.91	team16-esx
Team 04	10.18.22.79	team04-esx		Team 17	10.18.22.92	team17-esx
Team 05	10.18.22.80	team05-esx		Team 18	10.18.22.93	team18-esx
Team 06	10.18.22.81	team06-esx		Team 19	10.18.22.94	team19-esx
Team 07	10.18.22.82	team07-esx		Team 20	10.18.22.95	team20-esx
Team 08	10.18.22.83	team08-esx		Team 21	10.18.22.96	team21-esx
Team 09	10.18.22.84	team09-esx		Team 22	10.18.22.97	team22-esx
Team 10	10.18.22.85	team10-esx		Team 23	10.18.22.98	team23-esx
Team 11	10.18.22.86	team11-esx		Team 24	10.18.22.99	team24-esx
Team 12	10.18.22.87	team12-esx		Team 25	10.18.22.100	team25-esx
Team 13	10.18.22.88	team13-esx				

Lab 1d: Registering the Synergy Composer

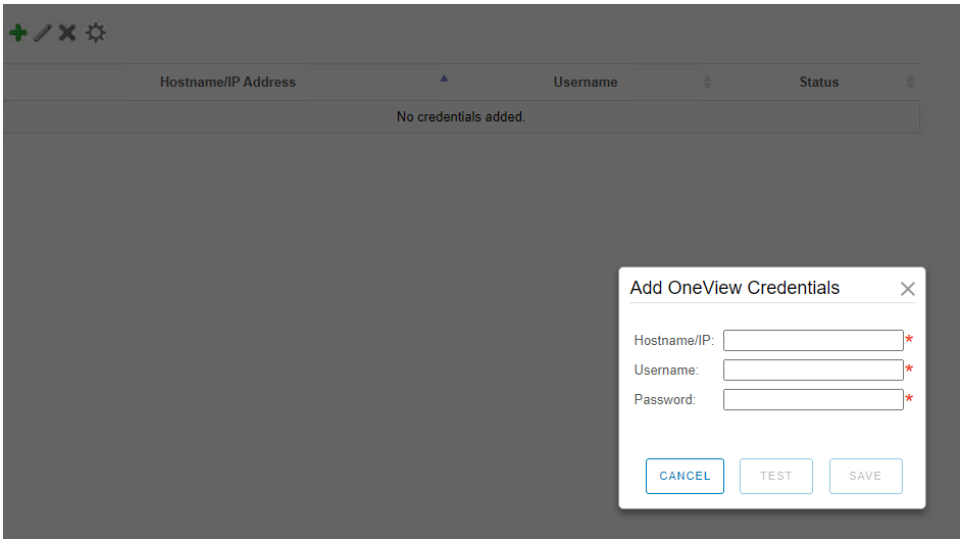
The next step is to register the Synergy Composer to vCenter.

1. In the upper left-hand corner of vCenter, click the 3 Horizontal Lines to reveal the menu. Near the bottom of the menu, choose HPE OneView for VMware vCenter.

This should bring you to a “Getting Started” page



2. On the far-left hand menu, select “OneView Credentials”
3. Click the green “plus” icon and when prompted enter the following:



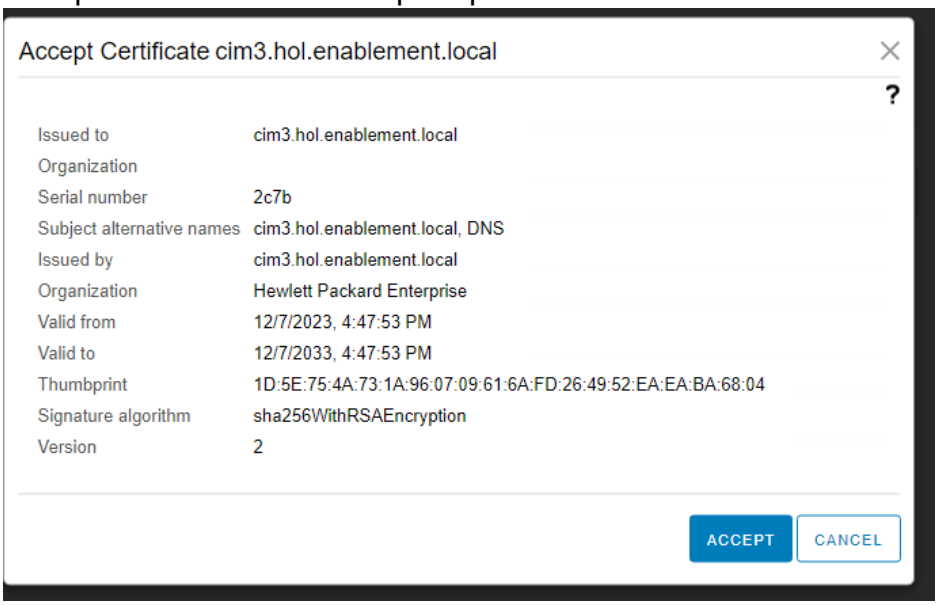
Hostname/IP: cim3.hol.enablement.local

Username: TeamNN-Admin (where NN is your team assignment)

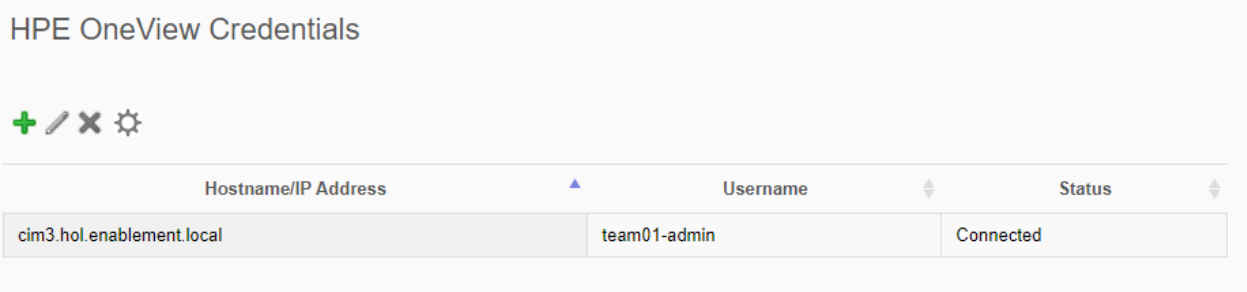
Password: TechPr02025!

4. Choose “Test” and then “Save”

5. Accept the credential when prompted



A registered Synergy system is completed and displayed:



Lab 1 Summary:

- You have logged into your OV4VC instance
- You have logged into your vCenter instance
- You have registered vCenter in OV4VC and deployed the plug-in in vCenter
- Within vCenter, you created a datacenter and cluster structure, then added a pre-built ESXi host to that cluster.
- You have registered HPE Synergy Composer (aka OneView) in vCenter

Next lab: Exploring OV4VC features!

Lab 2: Exploring Features in OV4VC

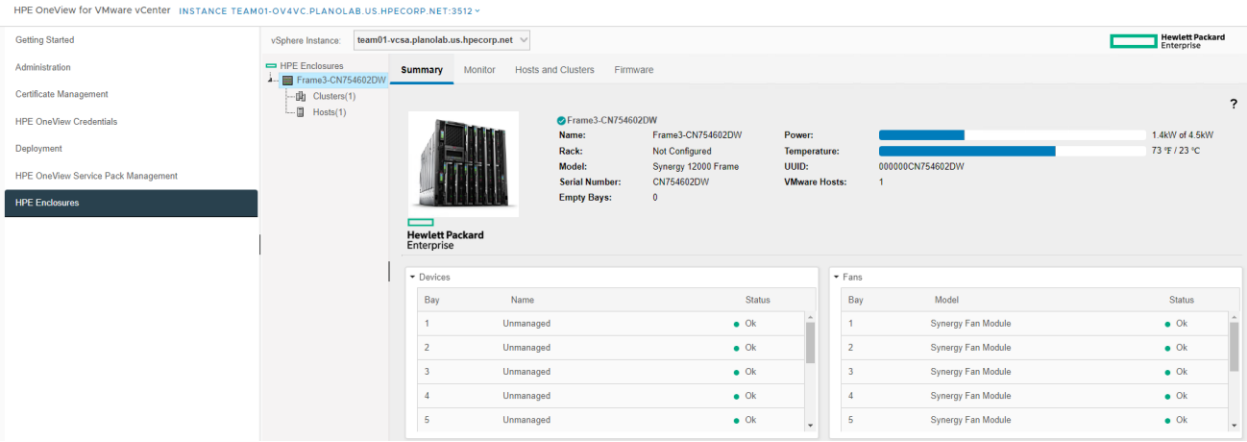
HPE OV4VC seamlessly integrates the manageability features of HPE Synergy, HPE ProLiant servers, HPE Networking, and HPE Storage into the VMware vCenter console. The integration of HPE OneView with VMware vCenter enables you to take the next step toward the SDDC by allowing virtualization administrators to automate control of HPE compute, storage, and networking resources without detailed knowledge of each device. Today, HPE OneView for VMware vCenter is the only platform that can provision, monitor, update, and scale resources without having to leave the vCenter console.

By integrating HPE Converged Infrastructure management features directly into VMware vCenter, administrators can use a familiar VMware management tool to provision, monitor, update, and scale HPE compute, storage, and network resources without having to leave the vCenter console. This integration simplifies everyday management tasks. Using wizards, administrators can deploy a VMware vSphere cluster uniquely in quickly and easily create storage volumes and vSphere data stores. OneView makes the delivery and maintenance of IT services fast, cost-effective, and reliable. The visual mapping of virtualized workloads to physical resources makes it possible to troubleshoot network problems quickly rather than login to disparate consoles.

One of the valuable features of OV4VC is that much of the rich data contained within the Synergy Composer is rendered by the OV4VC Plugin for vCenter.

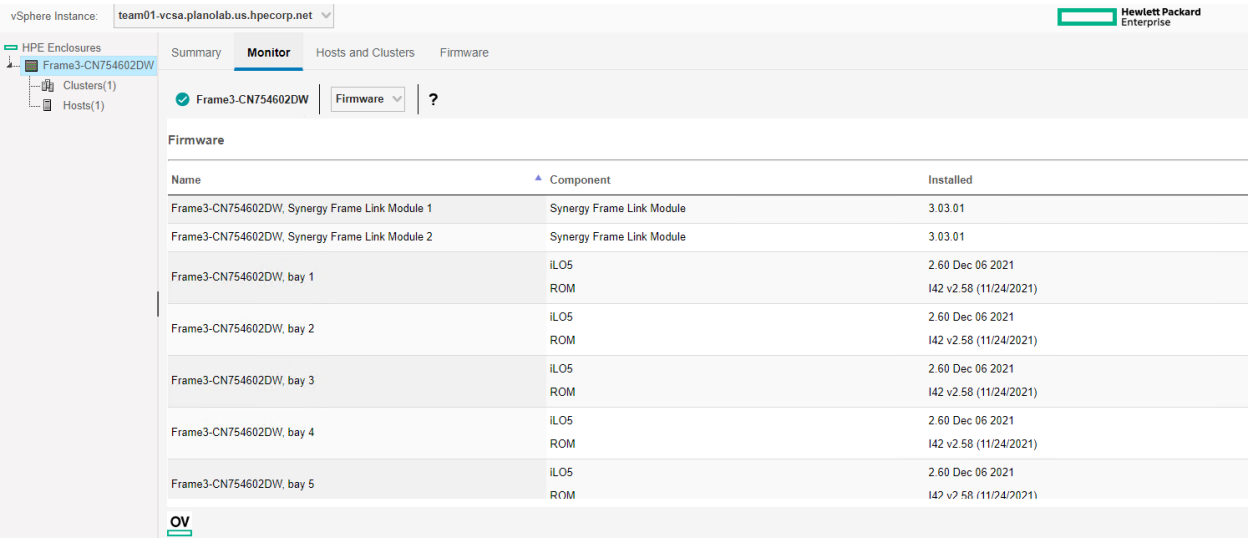
Lab 2a: Exploring Enclosure and Cluster Data

1. Click the vCenter “Menu” button, navigate to the “HPE OneView for VMware vCenter” plugin toward the bottom of the menu.
2. Select “HPE Enclosures”
3. Select the enclosure in the “left hand” pane, and after a moment, the enclosure data will render in the right-hand pane.

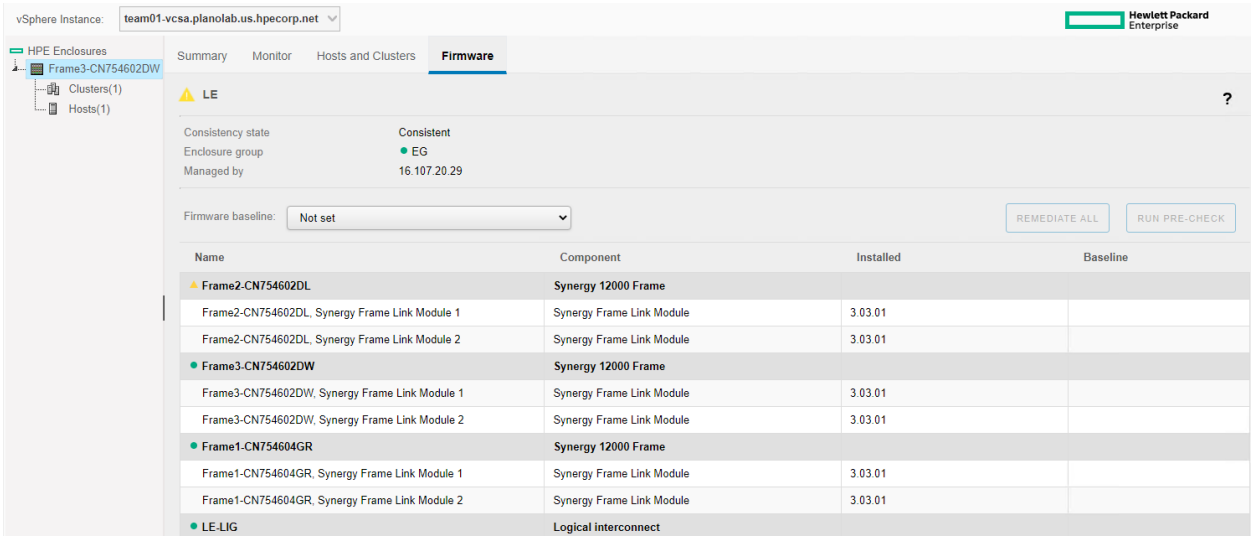


Note: Enclosure data will be restricted to show only the enclosure in which an HPE compute host exists in vCenter. Since each team has one ESX host, they only see the enclosure in which their ESX host lives.

4. Click the “Monitor” option, and then take a moment to see what data can be pulled on the various submenus. For example, Firmware shows a summary of all ILO and Server BIOS firmware in that enclosure.



5. Choose the “Firmware” option across the top menu in the plugin. The entire Synergy 3-Frame logical enclosure will be displayed.



From this menu, the firmware of the logical enclosure can be updated directly from vCenter.

6. Select a new firmware baseline from the pull down.
7. Scroll up and down to see if there any deviations from the selected firmware baseline.
8. Choose a different baseline and check for differences, but **DO NOT** deploy the firmware.

From here, if a firmware baseline was selected, it could be activated on the logical enclosure by choosing “remediate all” - but please**, do not deploy new firmware** since this is a shared environment supporting multiple students and multiple labs.

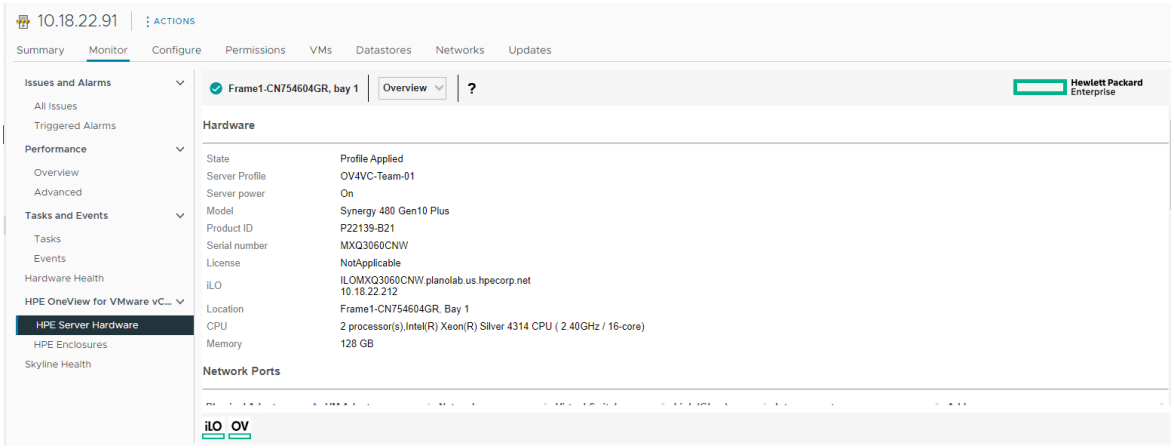
Lab 2b: Exploring Server Data

In the previous step through the OV4VC plugin you were able to view and potentially upgrade/downgrade the *shared* infrastructure component firmware (through remediation). Now let's navigate within vCenter to view the wealth of information is available for the compute node itself.

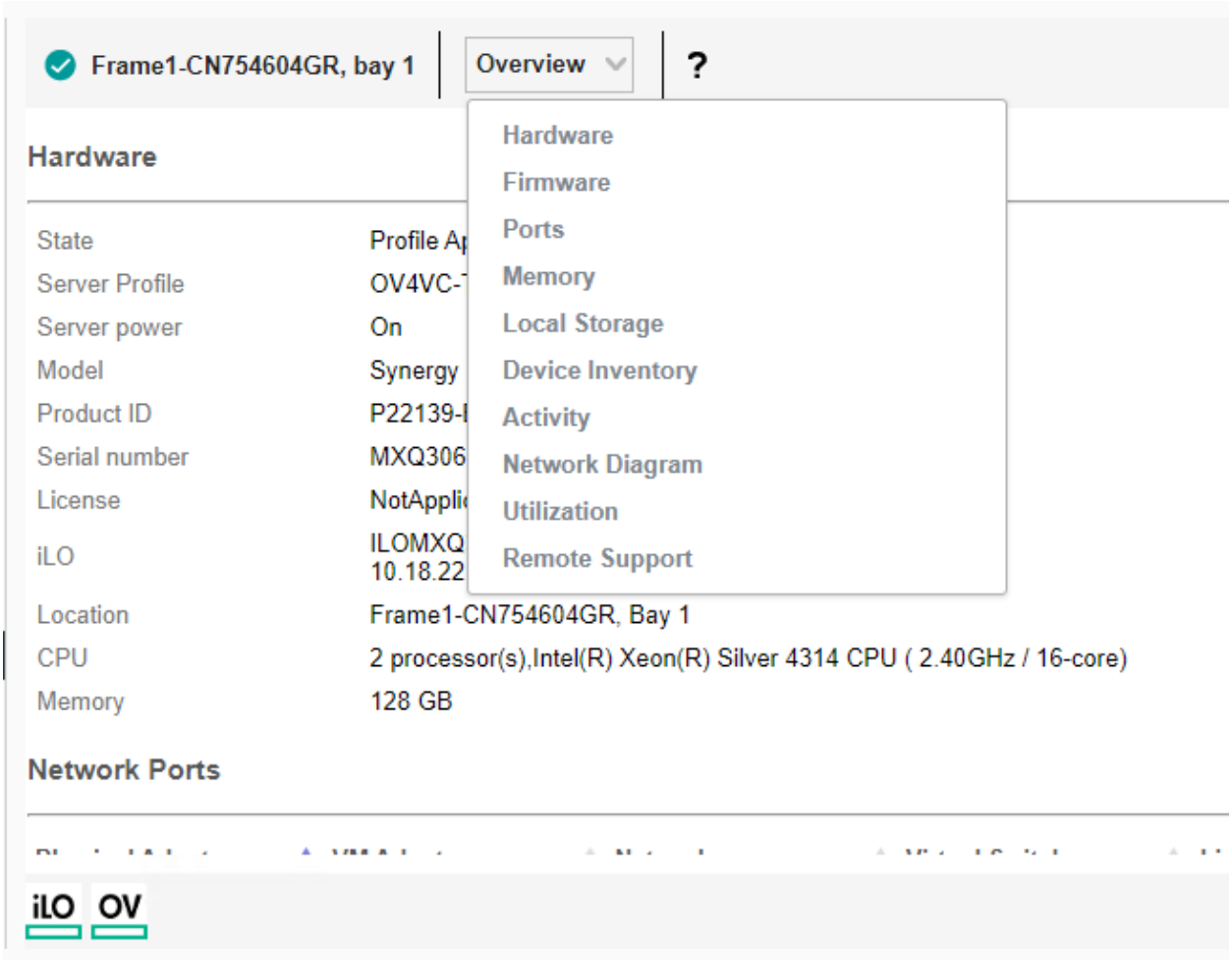
1. In vCenter, click the main menu item, select Inventory, and select the host you added to vCenter in the first exercise.

2. Chose "Monitor" in the right panel and scroll down to "HPE Server Hardware".

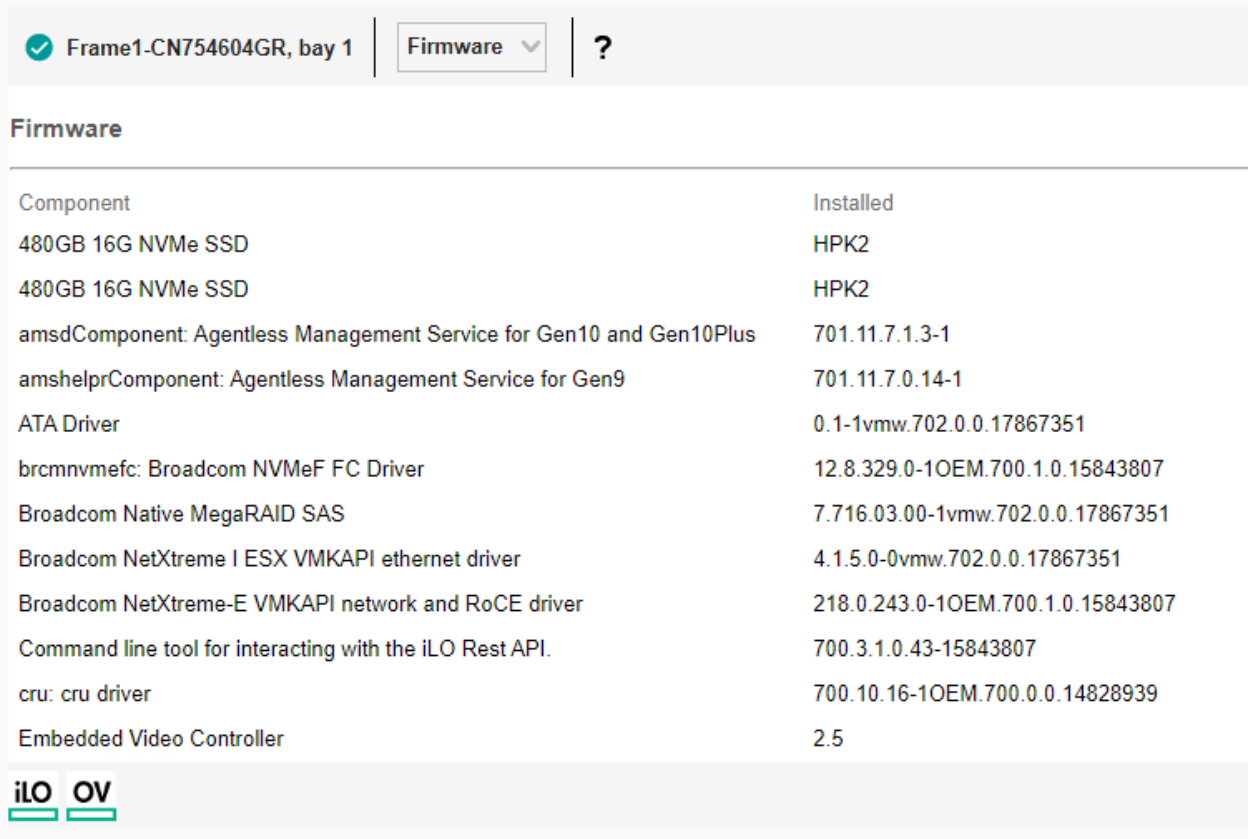
Note: If this option is not yet visible, click the vCenter refresh button - 



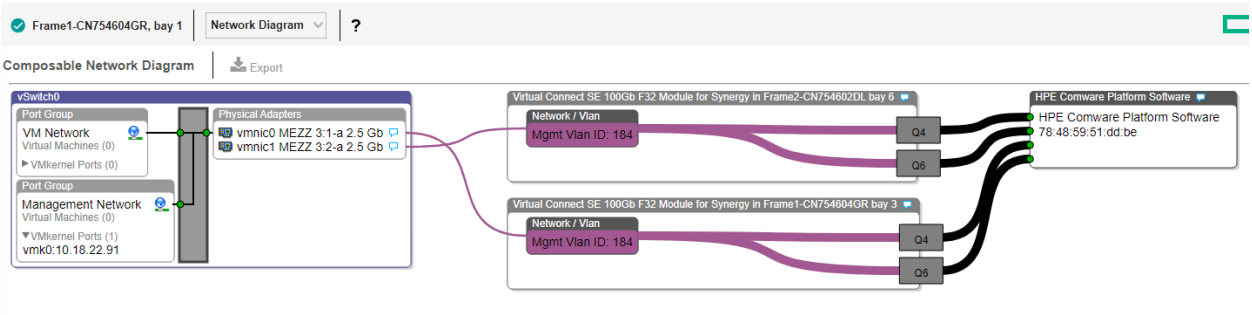
3. Take a moment to explore the various menu items available in the plugin screen.



4. Choose the “Firmware” option. This option shows not only firmware but also the driver and utility VIB versions.



5. Change the view from “Firmware” to “Network Diagram”



After a moment, a diagram illustrating the data path from VM all the way to switch port will be rendered.

A wealth of data is embedded as “hover-over” objects in this screen , you can also hover over the Synergy shared uplink sets (Q4 and Q6) to view active network status and statistics. Click one of the black thick lines that represent a

physical update to the ToR switch. Now hover over the ToR switch for information about the switch including model and firmware versions.

6. Notice also the “OV” and “ILO” icons that are displayed near the bottom of the OV4VC data. These are quick links that take you directly to the Synergy Composer (or OneView in the case of ProLiant servers), launch a remote console, or take you to the server’s ILO login page to view additional ILO data.
7. Continue to explore the other menu options. When finished, move on to the next section.

A summary of the various menu items available from the Monitor tab:

- **Overview** — Provides the details of the selected host and ports that it connects to.
- **Hardware** — Provides detailed information about the selected host server such as the health state of that server, server profile,
- model type, location of the server, iLO IP address, memory, serial number, and product ID.
- **Firmware** — Provides the details of the firmware component installed for the selected host.
- **Network Ports** — Provides the details of the network ports IP address and Virtual switch.
- **Activity** — Provides information about any active alerts in HPE OneView managed servers.
- **Network Diagram** — Displays a graphical representation of the network topology of the server. This feature requires HPE Blade Enclosures or Frames with HPE Interconnects.
- **Remote Support** - Provides support or contract information for specific vCenter host.
- **Utilization** - Provides the detailed information on Telemetry graphs of HPE OneView Server Hardware Temperature (Average), Power (Average, Peak, Cap), CPU (Speed, Utilization) in the vCenter.

Lab 2 Summary:

In this lab, you were able to see the frame and logical enclosure level data OV4VC provides to vCenter. In addition, you were able to see how to one could deploy a firmware baseline to the enclosure.

You also were able to see the multitude of valuable HPE Synergy or ProLiant specific information that OV4VC provides to the host-itself, such as firmware and driver versions, SSD wear information, as well as VM-to-Switch Port Network diagrams.

Next Lab: Proactive HA Provider

Lab 3: Setting up the Proactive HA Provider

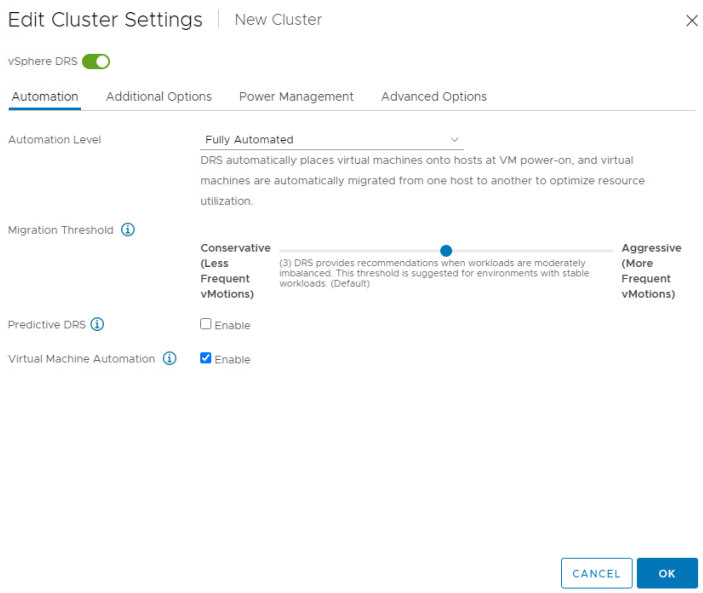
Another valuable feature of OV4VC is its capability to serve as a Proactive HA Provider.

VMWare Proactive HA is an availability feature within vCenter that, in conjunction with a server-vendor-provided HA Provider feeds hardware health data into vCenter HA and allows you to evacuate the virtual machines before a hardware issue can cause an outage.

Proactive HA works in conjunction with hardware vendors management solutions to receive the health status of the hardware components such as memory, fans, and power supplies. You can configure vSphere HA to respond according to the failure of hardware components.

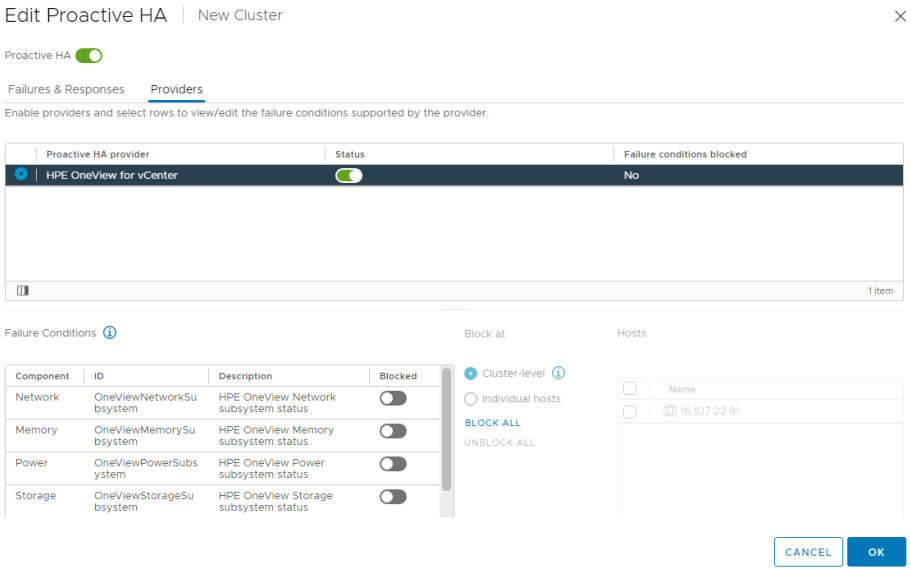
To enable Proactive HA and register OV4VC as the Proactive HA Provider, perform the following steps.

1. Navigate back to the Cluster object you created in the earlier steps of this lab
2. Right click on the cluster object and choose settings
3. Proactive HA requires vSphere DRS to be enabled, so this must be turned on first
    a. Choose from the menu “vSphere DRS” and select “Edit” in the right-hand frame
    b. Enable DRS by clicking the vSphere DRS slider and accept all the defaults
    c. Choose OK.



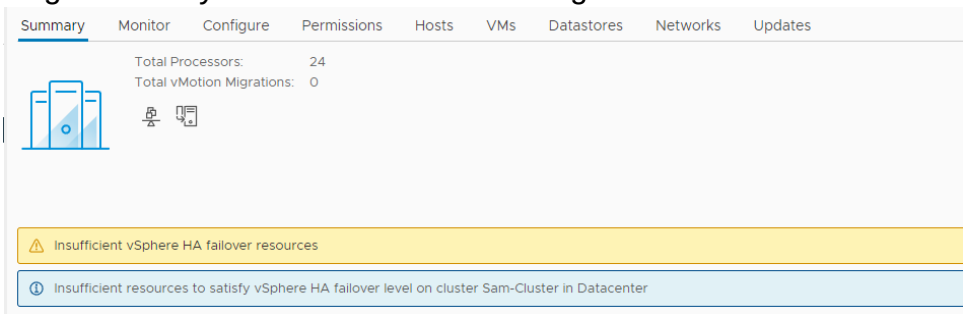
4. Navigate one option below to vSphere Availability.

5. Enable “vSphere HA” first.
    a. Choose “Edit” and toggle on vSphere HA and select OK.
6. Find “Proactive HA is Turned Off” and choose “Edit” to the right.
    a. Enable Proactive HA by toggling the slider.
    b. Change the Automation Level to Automated.
    c. Change the Remediation method to “Maintenance Mode”
    d. Choose “Providers” and enable HPE OneView for vCenter as a provider.



Select “HPE OneView for vCenter” to reveal Failure Conditions filtering. Here, you can mask certain hardware failures from generating a Proactive HA condition by toggling the “blocked” item.

Note: Enabling DRS and Proactive HA will flag an error since you only have a single host in your HOL cluster. Please ignore this error.



Lab 3 Summary

In this short lab you saw how to configure vSphere Proactive HA and to enable the "Proactive HA Provider" facility from OV4VC.

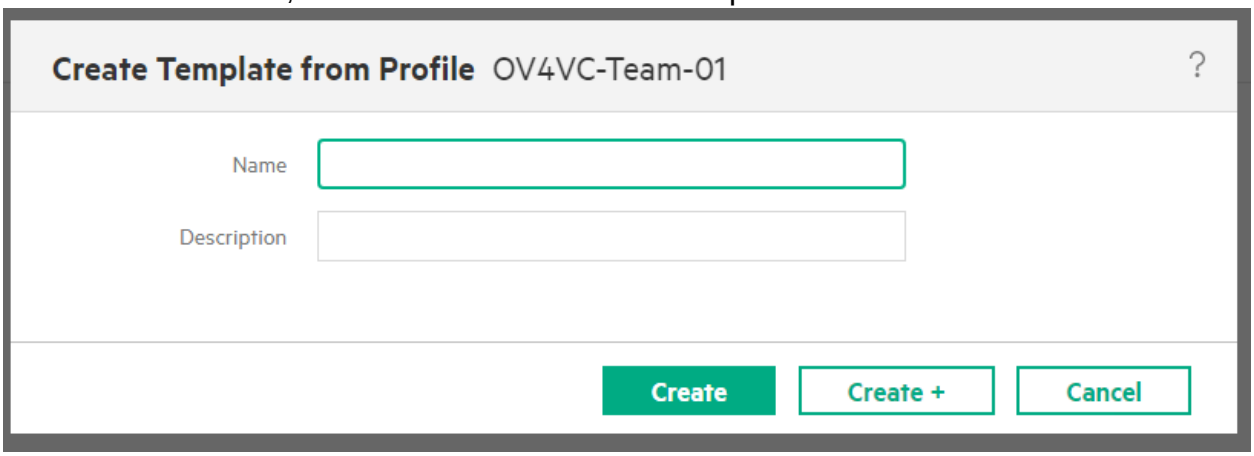
Lab 4: Cluster Consistency Management

Another useful feature of OV4VC is its ability to monitor the Server Profile of a host and its consistency with its parent Server Profile Template.

For this lab, we will create a server profile template from an existing server and make a few changes to demonstrate the plugin's capability to monitor drift.

Lab 4a: Create the Server Profile Template

1. Open a tab and connect to the Synergy Composer at https://cim3.hol.enablement.local. Use the same credentials you used to register the Composer in Lab 1.
2. Navigate to Server Profiles and find the Server Profile for your Team and select it.
3. In the Actions menu, click and choose "Create Template from Profile"

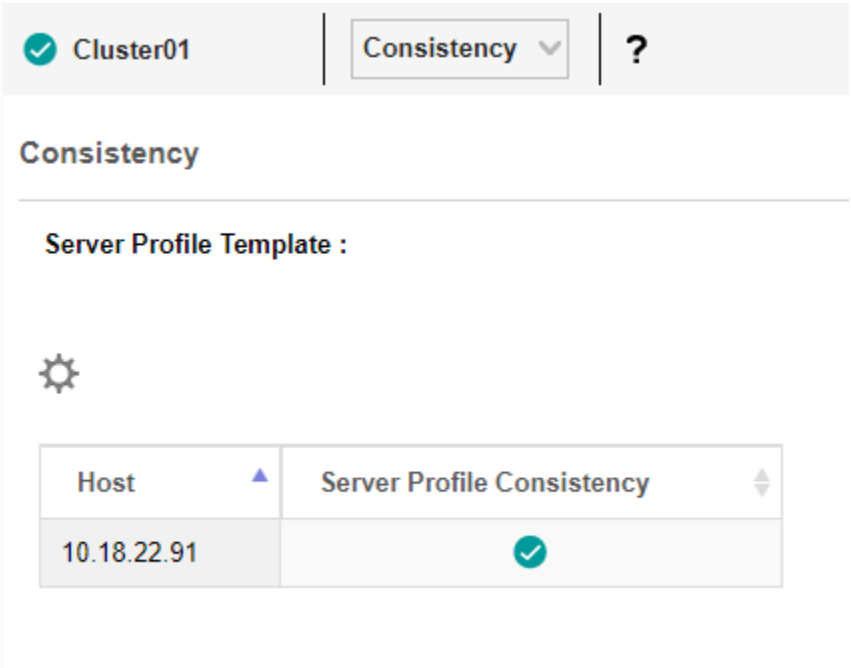


4. Name your profile "Team-NN-Template" where NN is your team number and select "Create"
5. Navigate back to Server Profiles, select your team's server profile, and Edit it.
6. Change Server Profile Template from None to the Template you just created in the previous step and choose OK.

Lab 4b: Demonstrate Profile-to-Template Inconsistency

1. Switch back to your vCenter tab.
2. In the Inventory view, select your cluster, and then click the “Configure” tab.
3. In the Configure menu, scroll to HPE OneView for VMware vCenter and select HPE Server Hardware
4. Choose “Consistency”

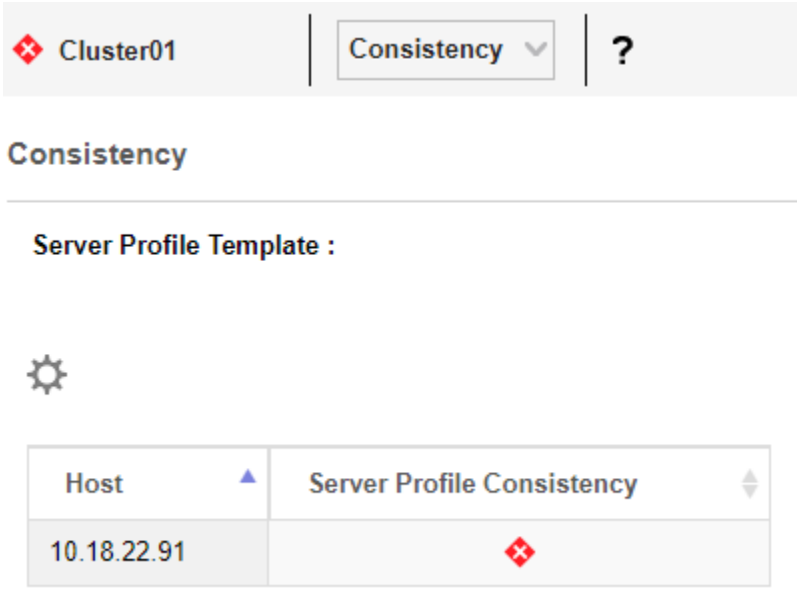
   All members of the cluster are consistent with their Server Profile Template.



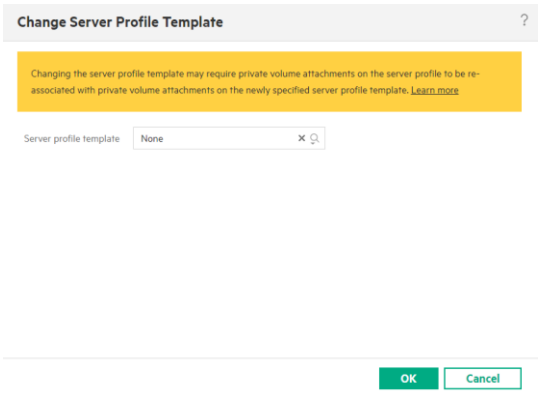
5. Navigate back to your OneView / Synergy Composer browser tab.
6. Select the OneView Menu and navigate to Server Profile Templates.
7. Select your team’s template and from the Actions menu, choose Edit.
8. Make a change to the template. For example, enable the “Manage BIOS” option and choose OK.

9. Navigate back to your vCenter tab and click the “refresh” item at the top of the vCenter screen.

   The Server Profile now shows as inconsistent.



10. Navigate back to your Synergy Composer Tab.
11. Decouple your profile from the Server Profile Template by selecting your Profile from the Server Profile menu.
    a. Once in the Profile Edit screen, click “Change” after the Server Profile Template menu option.
    b. Click the “X” and select “none”



    c. Choose OK. And then click “OK” again to save the profile.
    d. Navigate over to Server Profile Templates, select your template, and delete it.

Lab 4 Summary:

In this lab you were able to see some of the Cluster Profile consistency features that OV4VC provides.

Next Lab: Integrating OV4VC with vSphere Lifecycle Manager.

Lab 5: Integrating OV4VC with vSphere Lifecycle Manager

vSphere Lifecycle Manager or VLCM is the next version of Update Manager that enables centralized, automated patch and version management for VMware vSphere. It offers support for VMware ESXi hosts, virtual machines, and virtual appliances. With vSphere Lifecycle Manager, a user can upgrade and patch ESXi, and update third-party software on hosts. vSphere Lifecycle Manager can also perform firmware updates on hosts in addition to OS, drivers, and software updates by way of an integration with an server hardware vendor-provided hardware support manager, or “HSM.”

OneView for vCenter provides the HSM functionality to vSphere Lifecycle Manager.

The full VLCM experience with vSphere 7 and newer, vSphere Lifecycle Manager, and HPE OneView for vCenter is supported with HPE Synergy or HPE ProLiant hosts that are Gen10 or newer and are deployed using the HPE ESXi Custom ISO.

Lab 5a: Host Prerequisites

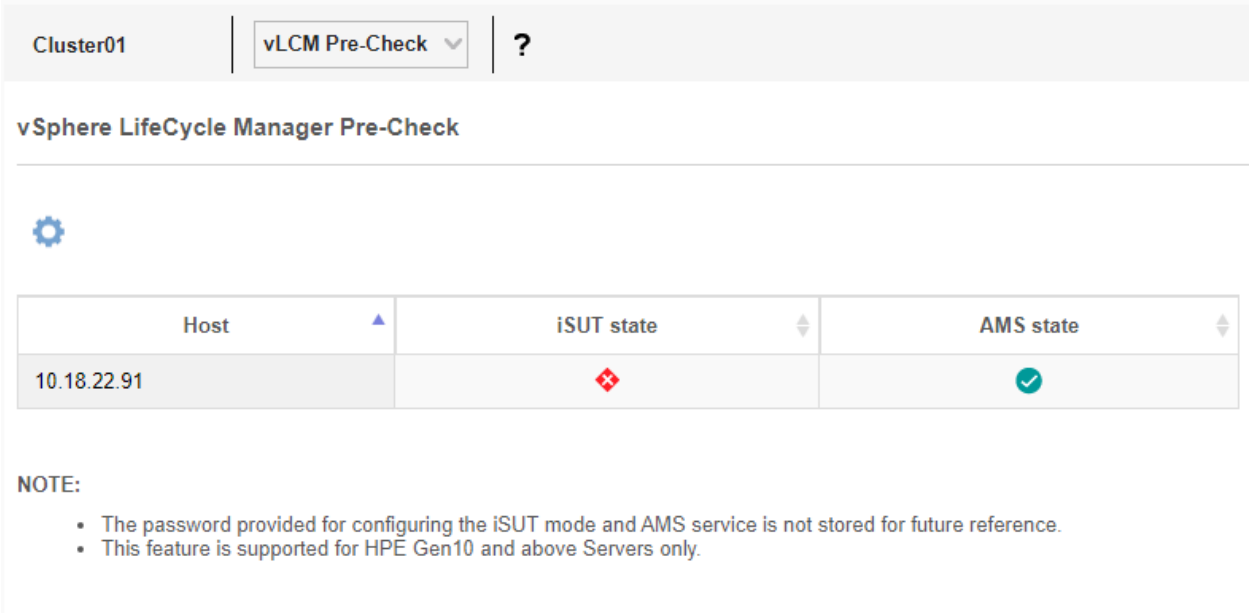
OV4VC integration with vSphere Lifecycle Manager is supported on HPE Gen10 servers and newer. In order to fully leverage VLCM on HPE Gen10 or newer hardware, the host must be installed using the HPE ESXi Custom ISO and the integrated SmartUpdateTools (iSUT) settings modified to support the VLCM update workflows.

HPE OneView for vCenter has a built in VLCM readiness checker to can be used to evaluate the host and verify its compatibility with VLCM.

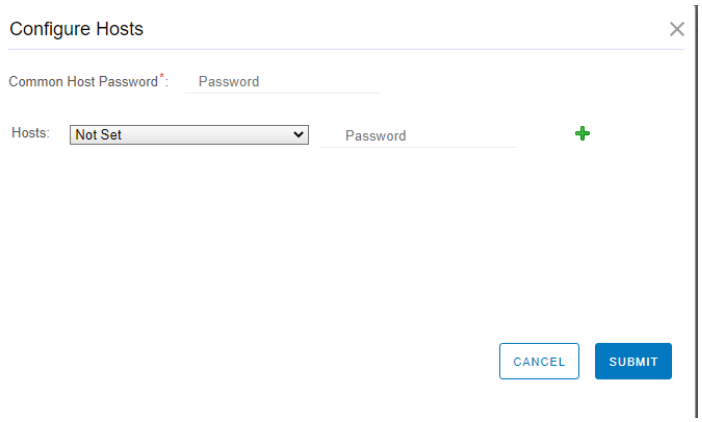
1. In vCenter, select your cluster, and in the center of the screen, choose the Configure tab, navigate to the HPE OneView for vCenter plugin and select HPE Server Hardware.

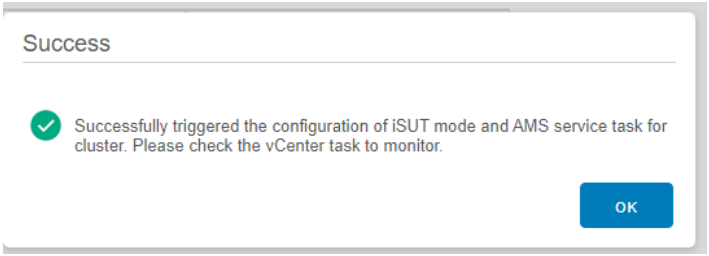
2. Change the pull down in the plugin to VLCM Pre-Check.

   The host will be evaluated for VLCM readiness.



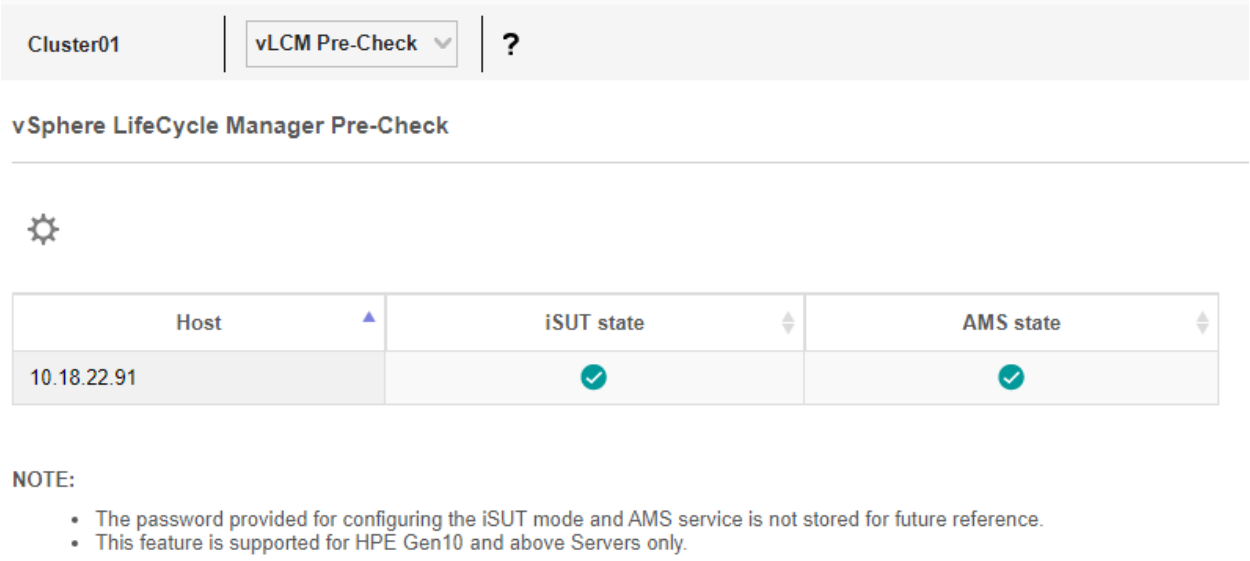
3. If the iSUT state is incorrect, the host can be remediated from the plugin by clicking the “gear,” inputting a password into the “Common Hosts Password” field and clicking submit. For this lab, use the Disc0ver2024! password.





4. You can monitor the task progress by viewing the “Recent Tasks” at the bottom of vCenter. Wait about a minute or two for the task to finish and refresh the vCenter page.

5. The host is now ready.



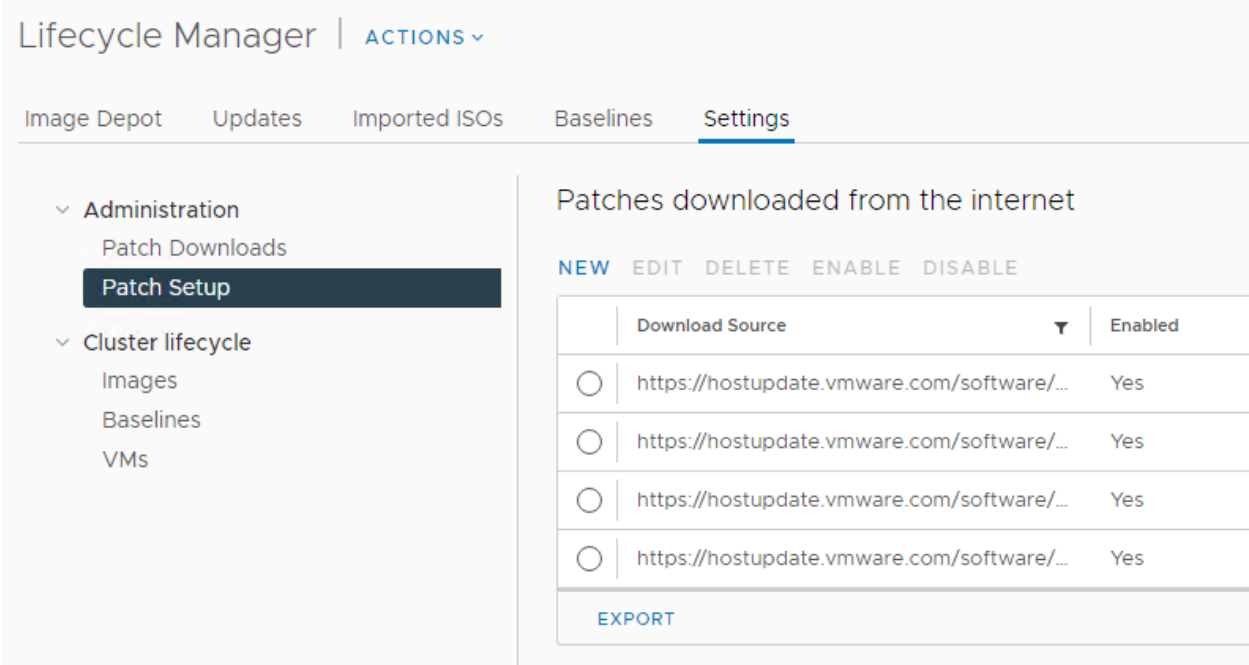
Behind the scenes, this workflow is changing the iSUT deploy method to “AutoDeploy”

This could also be performed manually by logging into the ESXi host console and running the following command: `sut -set mode=AutoDeploy`

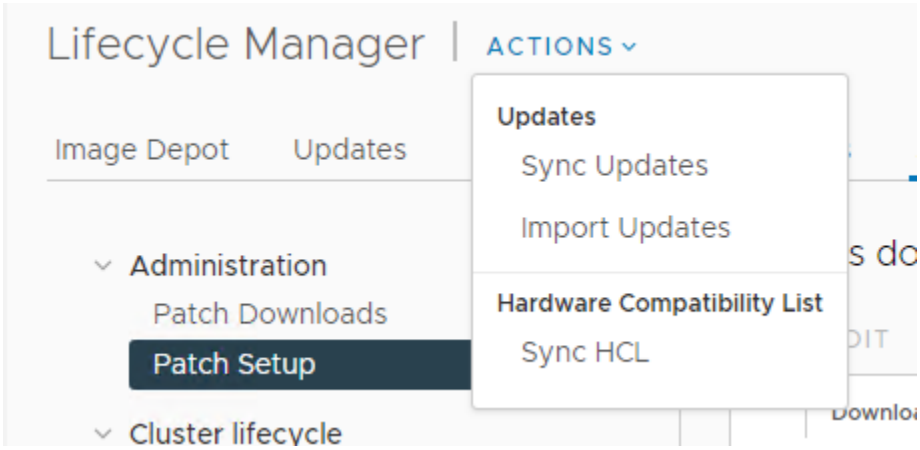
Lab 5b: Speed-up the Synchronizing Packages steps.

The steps illustrated in this section would normally not be performed in a production environment – however, for the purposes of this Hands-on-Lab, we need to perform them to avoid a painfully long (30+ minutes!) patch synchronization process.

1. In the upper left hand corner of vCenter, click the 3 horizontal bars to open the vCenter shortcut menu, and choose Lifecycle Manager.
2. Click settings, and on the left hand side of your screen, choose under Administration, “Patch Setup.”

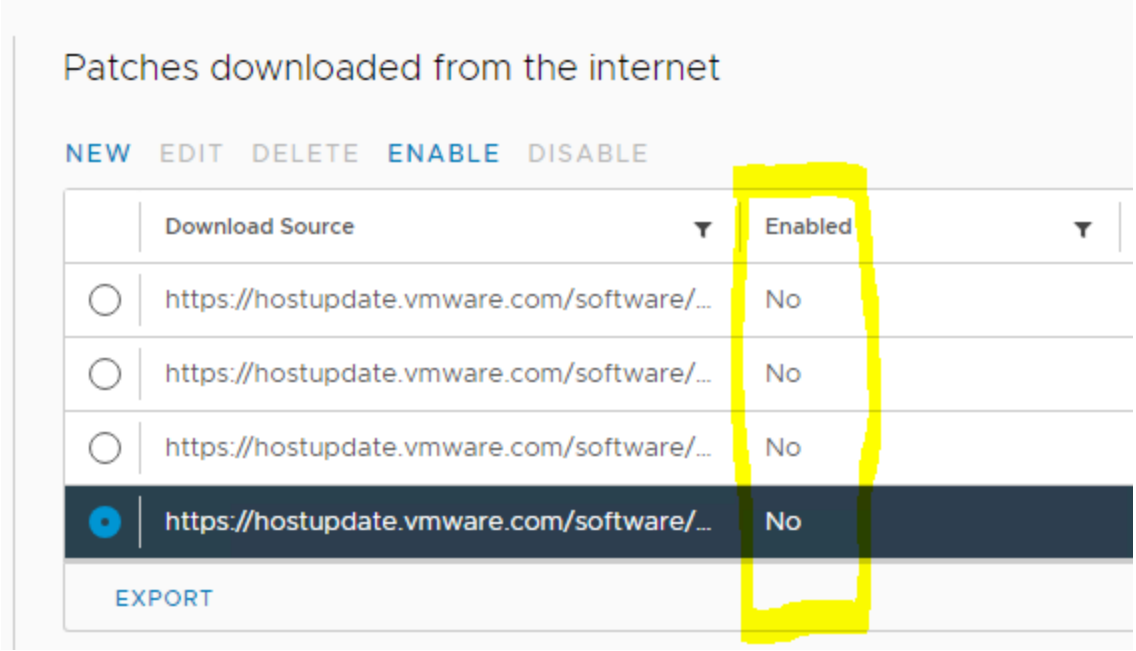


3. Under Actions, choose Sync Updates.



This sync process will take approximately **7** minutes to complete.

4. Once the sync process completes, for each download source, select it, and then mark it disabled.



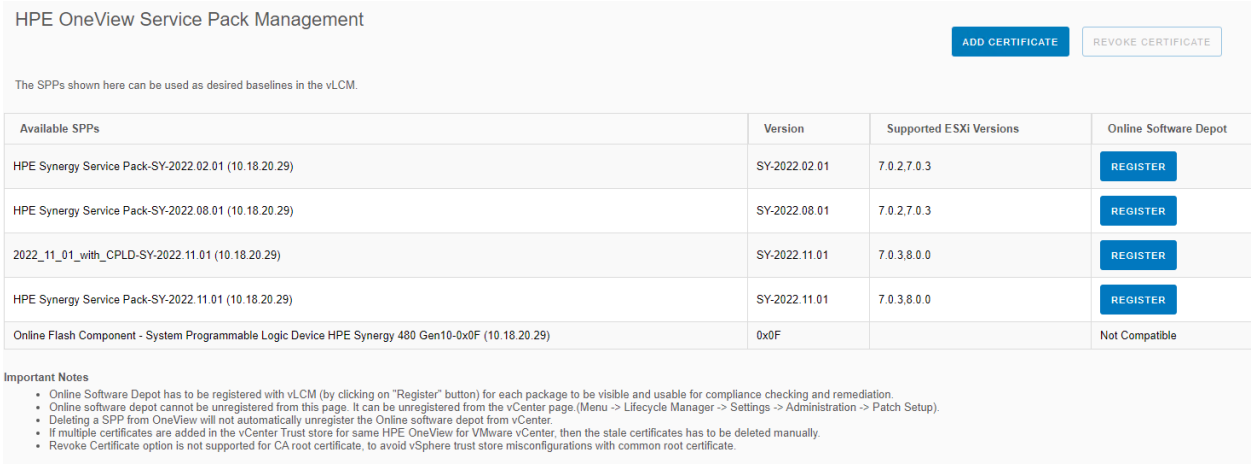
It is important that you do not skip this section, or else the remaining VLCM tasks will take a significantly long time to complete.

Lab 5c: Registering the HSM Certificate with vCenter

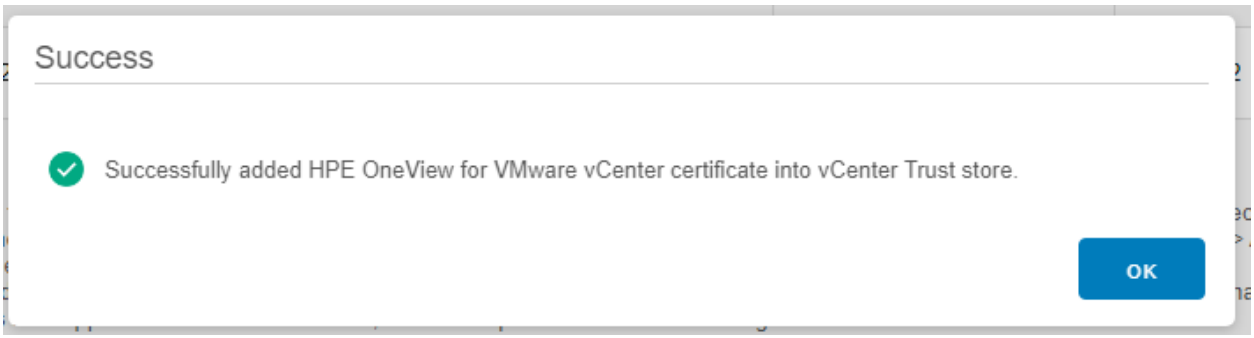
vCenter's VLCM needs to communicate with OV4VC's HSM API. In order to facilitate this communication path, a certificate needs to be installed.

OV4VC automates this certificate install via a single click.

1. Navigate to the OV4VC Plugin by clicking the vCenter menu.
2. Navigate to HPE OneView for vCenter.
3. Select HPE OneView Service Pack Management
4. Click "Add Certificate"



OV4VC will alert you to a successful certificate install.



Notice also the "Revoke Certificate" option. This allows a graceful clean-up of the certificate should you wish to uninstall the plugin.

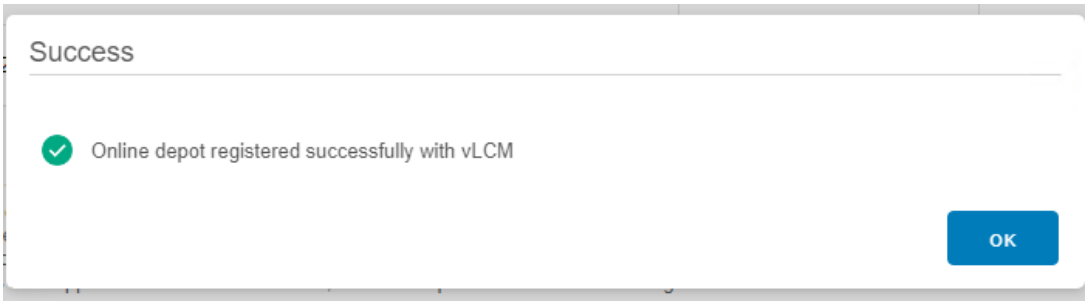
Lab 5d: Registering a Service Pack to be used by VLCM.

On the same screen where the certificate was added, you will see a list of all the service packs that are known to HPE OneView, either included in a local firmware repository or a remote repository.

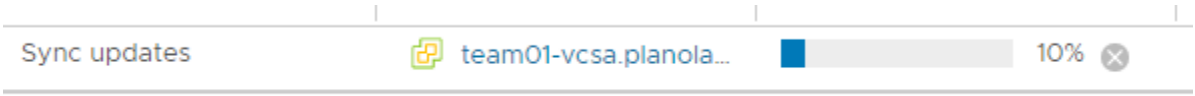
To utilize a service pack with VLCM, simply click “register” next to the appropriate service pack.

For this exercise, we are going to be setting up a vLCM cluster image that will do an in-place upgrade of an SY-480 Gen10 (or Gen10 plus) from ESX 7.0U2 to ESX 8.0 U3 (Build 24280767).

1. Choose the 2024.11.01 Synergy Service Pack and click Register



Notice that once you register the service pack, a “sync updates” task is kicked off in the activity monitor.



This task will take a few moments (5-7 minutes) to complete. Behind the scenes, the contents of the SPP are being catalogued.

While we wait for the task to complete, we can view the new Lifecycle Manager download source that was created by this registration:

1. Click the vSphere menu option and choose Lifecycle Manager”
2. Click Settings
3. Click Patch Setup.

4. Observe the new download sources created in the Lifecycle Manager download sources.

Download Source	Enabled	Connectivity Status	Source	Component	Description
https://hostupdate.vmware.com/software/...	Yes	Connected	VMware	Host	Partner provided Addons for ESXi
https://hostupdate.vmware.com/software/...	Yes	Connected	VMware	Host	Download vSphere ESXi and ESX patches
https://hostupdate.vmware.com/software/...	Yes	Connected	VMware	Host	VMware Certified Async Drivers for ESXi
https://hostupdate.vmware.com/software/...	Yes	Connected	VMware	Host	VMware Async Releases for VM-tools on ESXi
https://team01-ov4vc.planolab.us.hpecorp....	Yes	Connected	Custom	Host	HPE Synergy Service Pack-SY-2022.11.01-HPE-703.0.0.10.10.5.17-Nov2022-Synergy-Addon-depot
https://team01-ov4vc.planolab.us.hpecorp....	Yes	Connected	Custom	Host	HPE Synergy Service Pack-SY-2022.11.01-HPE-800.0.0.10.10.5.20-Nov2022-Synergy-Addon-depot

IMPORTANT: Wait for the “Sync update” tasks complete before moving on to the next exercise.

Lab 5e: Creating a Cluster Image

In this exercise we will create a vLCM cluster image and check our ESXi host for compliance.

A cluster image in VLCM is a definition consisting of 3 parts:

The first part is the ESXi Version. This is the “base” ESXi depot image.

The second part is the Vendor Add-in. The vendor add-in are the OEM vendor supplied drivers and utilities.

(Note: these two items together are what make up an OEM Custom ISO).

The third part is the Firmware definition.

An optional 4th component can be selected. This is usually when a 3rd party driver needs to be added into the cluster definition.

It is important to verify that all three of these components are compatible and supported with each other.

For HPE Synergy, the “OS Support Tool” may be useful for finding the supported combinations.

In a new tab, open up the support tool by going to the following site:

https://techhub.hpe.com/us/en/enterprise/docs/index.aspx?doc=/eginfolib/synergy/sw_release_info/OS_Support.html

(Alternative, one can go to vibsdepot.hpe.com, scroll down to the bottom in the “Learn More” category and click the link to the OS Support Tool – Synergy.

Once the tool is opened, choose VMware ESXi as the OS and either HPE Synergy 480 Gen10 Plus or HPE Synergy SY480 Gen 10 (depending on which model you are assigned in this lab) and choose submit.

Since this lab is using the HPE Synergy Service Pack 2024.11.01 SSP, select the “Vmware ESXi 8.0 U3 (HPE Synergy November 2024) option.

From this page, we can observe the supported software combinations with the 2024.11.01 SSP.

Base OS Image: ESXi 8.0U3 Build 24280767.

HPE Custom Image Identifier: HPE-Custom-Syn-AddOn_803.0.0.11.8.5-4

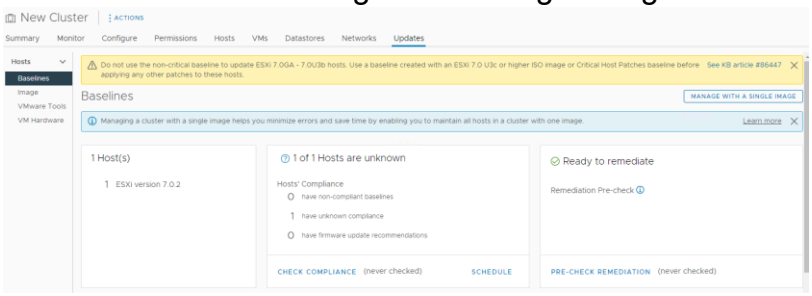
VMware OS support

VMware ESXi 8.0 Update 3 (HPE Synergy November 2024)

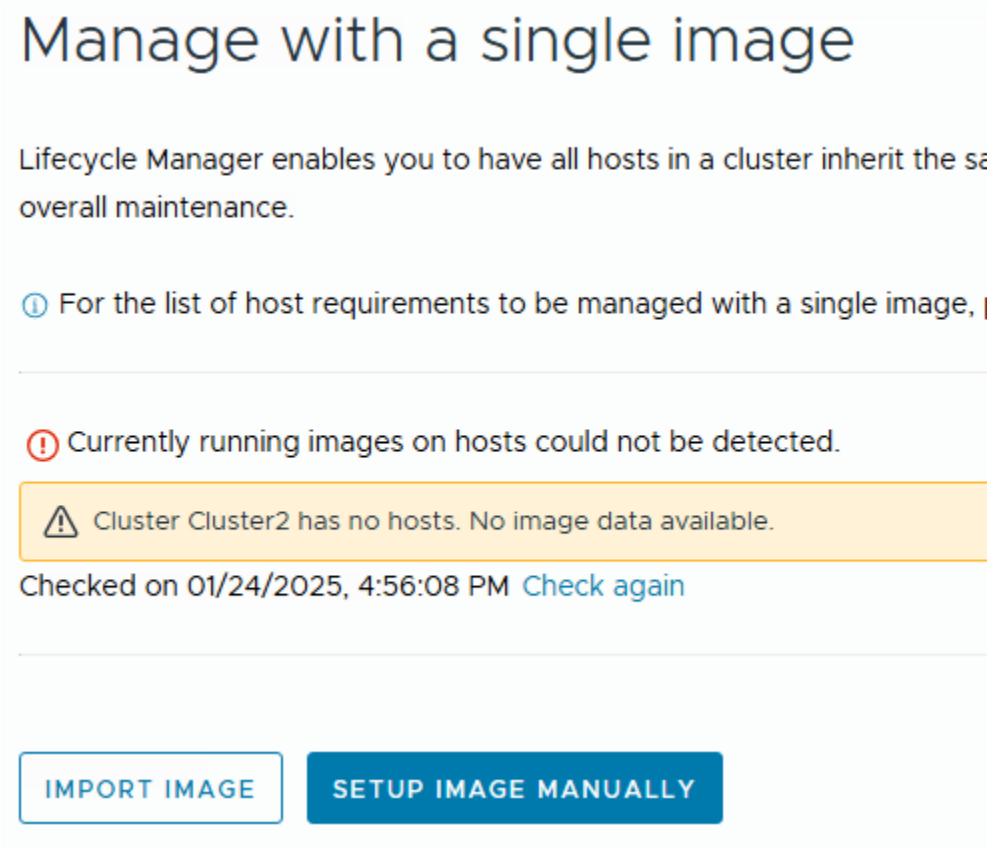
HPE Custom Image	HPE Synergy Custom ESXi Image for VMware ESXi 8.0 U3 (Nov 2024)
HPE Custom Image Identifier	HPE-Custom-Syn-AddOn_803.0.0.11.8.5-4
Driver updates	No driver updates are required with HPE SSP 2024.11.xx. The following list of drivers are included in HPE SSP 2024.11.xx and uniquely added to the base VMware image for this HPE Synergy Custom Image: iavmd: 9.0.0.1012-1OEM.800.1.0.20613240 i40en: 2.8.4.0-1OEM.800.1.0.20613240 nmst: 4.14.3.3-1OEM.700.1.0.15525992 qcnic: 2.0.66.0-1OEM.700.1.0.15843807 qedentv: 3.71.63.0-1OEM.800.1.0.20613240 qedf: 2.74.1.0-1OEM.800.1.0.20613240 qedi: 2.74.1.0-1OEM.800.1.0.20613240 qedrntv: 3.71.62.0-1OEM.800.1.0.20613240 qfle3: 1.4.46.0-1OEM.700.1.0.15843807 qfle3f: 2.1.33.0-1OEM.700.1.0.15843807 qfle3i: 2.1.14.0-1OEM.700.1.0.15843807 qlnativefc: 5.4.83.1-1OEM.803.0.0.23710970
HPE Management Services Updates	amsd: 701.11.10.0.4-1OEM.701.0.0.16850804 amsdv: 701.11.7.0.2-1OEM.701.0.0.16850804 fc-enablement: 800.3.9.0.30-1OEM.800.1.0.20172892 hpe-upgrade: 901.2.0.5-1OEM.800.0.0.20172892 ilo: 700.10.8.2.2-1OEM.700.1.0.15843807 ilorest: 800.5.2.0.0.18-21495797 ssacli2: 6.40.6.0-8.0.0.20613240.oem sut: 800.5.2.0.5-1OEM.800.1.0.20613240
Base OS Image	ESXi 8.0 U3 Build 24280767
vSAN certification status	Gen10 / Gen10 Plus / Gen11

Now that we know the supported combinations, let's set up your cluster for VLCM.

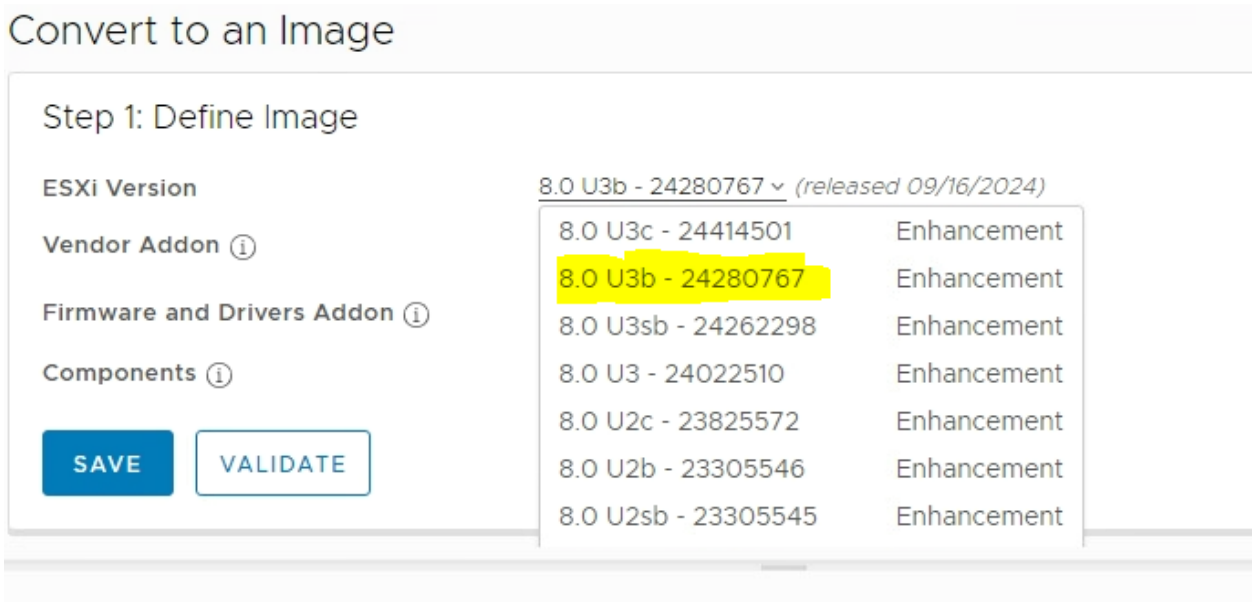
1. Click the vCenter Menu option and navigate to Inventory.
2. Select your cluster.
3. Click "Updates" and then click "Manage with a Single Image"



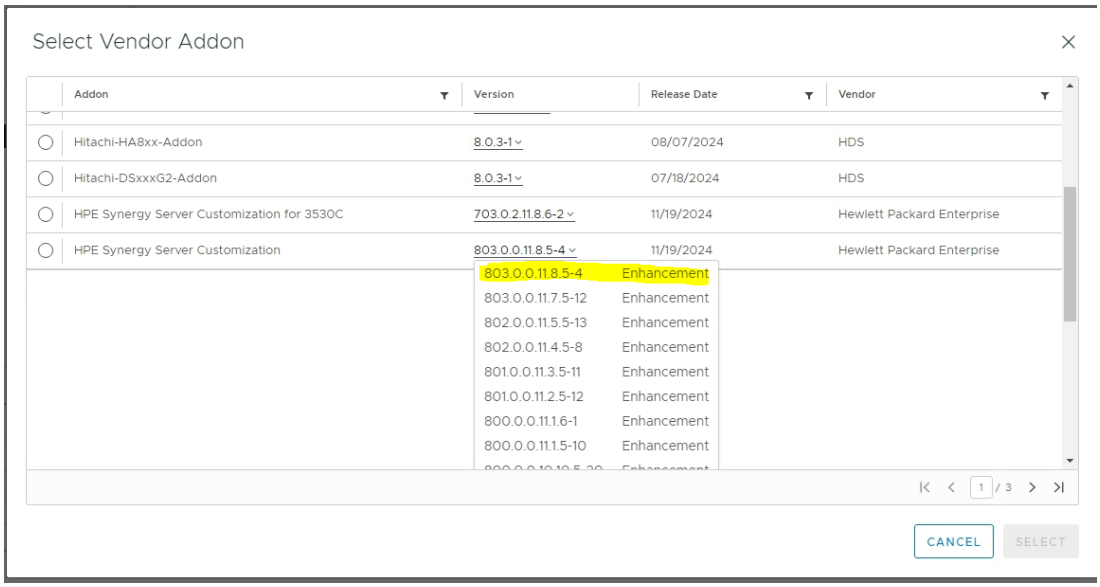
4. vCenter will attempt to derive the current image from the server and populate the image definition. For this lab, we want to start from scratch, so therefore, scroll down and choose "Setup Image Manually."



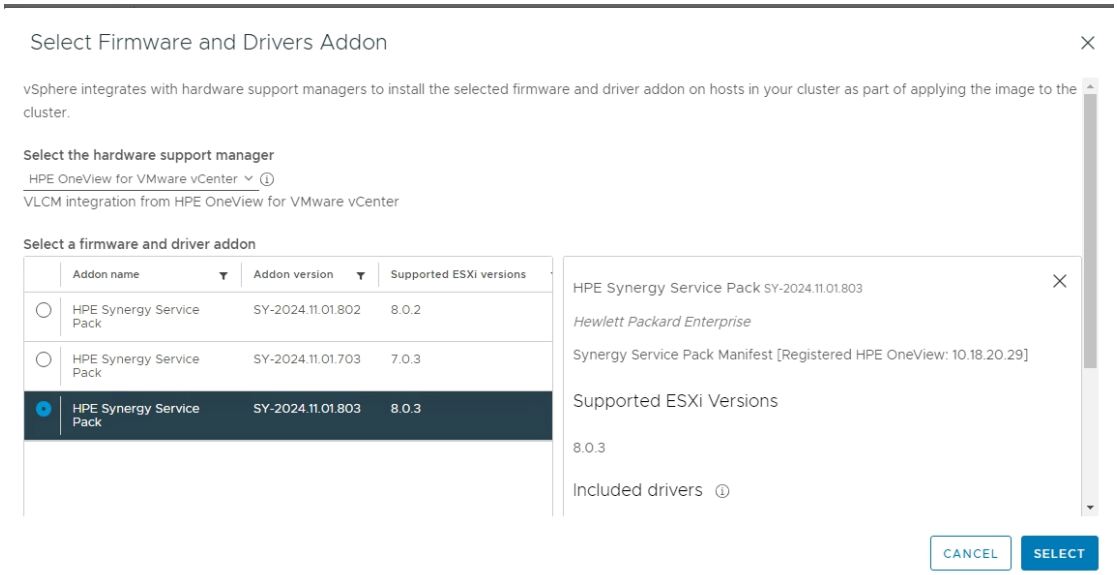
5. Next, we will define our three components for the cluster image.
    a. Choose ESX 8.0 U3b – 24280767 as the Base ESXi Version.


Convert to an Image
Step 1: Define Image
ESXi Version
8.0 U3b - 24280767
(released 09/16/2024)
Vendor Addon
Firmware and Drivers Addon
Components
SAVE
VALIDATE
8.0 U3c - 24414501 Enhancement
8.0 U3b - 24280767 Enhancement
8.0 U3sb - 24262298 Enhancement
8.0 U3 - 24022510 Enhancement
8.0 U2c - 23825572 Enhancement
8.0 U2b - 23305546 Enhancement
8.0 U2sb - 23305545 Enhancement

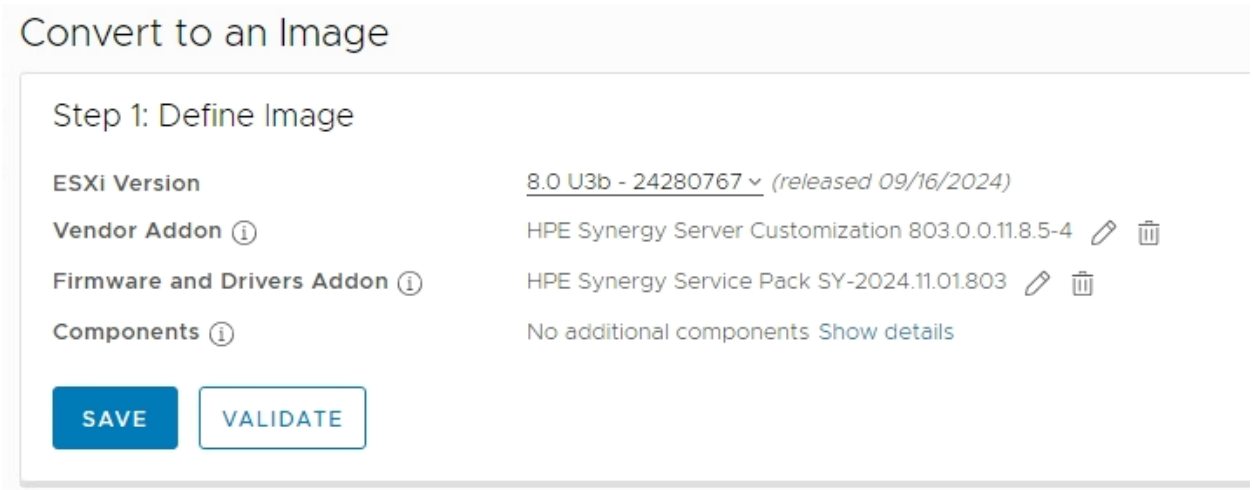
b. Under Vendor Add-in, choose the HPE Synergy Server Customization Add-on, version 803.0.0.11.8.5-4.



c. Under Firmware, select the OneView for vCenter HSM, and then select the 2024.11.01 Service Pack that is for ESX version 8.0.3..



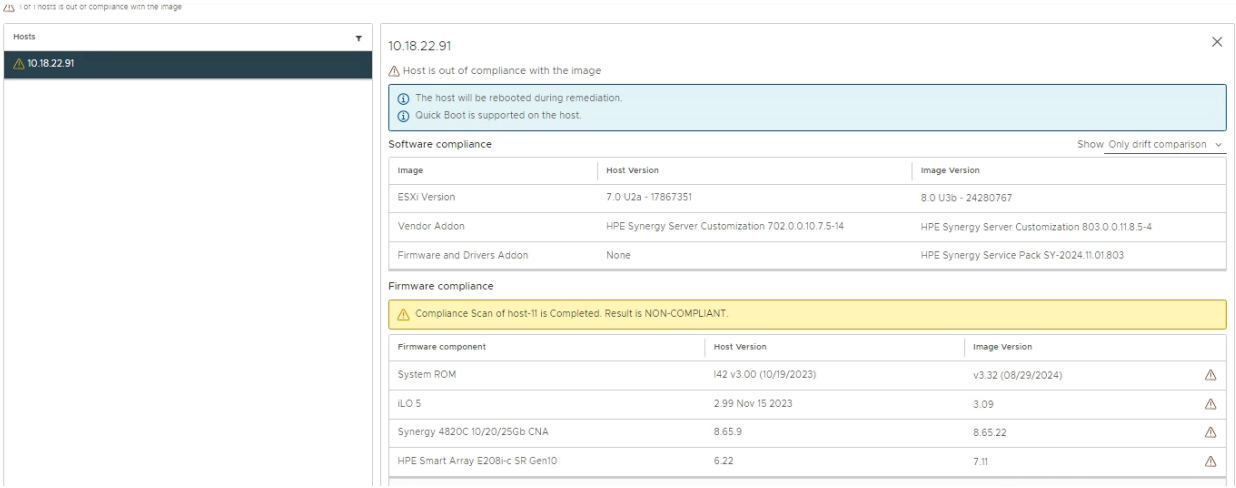
A completed cluster image should look like this:



6. Save the Image definition. A “Check Image Compliance” operation will now be started. Wait for it to finish and then click “Finish Image Setup.

Lab 5f: Exploring Image Compliance

Once a cluster image has been created, all members of the cluster will be inspected for their compliance against the image.



In the example above, we have one member in the cluster. If we had more than one host, it would be listed in a table – and selecting each host would show its compliance report in the righthand screen.

Our host is showing to be out of compliant with the cluster definition.

1. Our host is running vSphere 7.0 U2a, but our Image requires 8.0U3b.
2. Our host is running the 702.0.0.10.7.5-14 Synergy Server Customization, but our Image requires an 803-based Synergy Server Customization.
3. Finally, our host has no firmware definition defined, but one will be set with this image definition.

Scrolling down, if there were deviations from the firmware deployed on the host vs those firmware packages in the Synergy Service Pack, they would be displayed in the Firmware Compliance section.

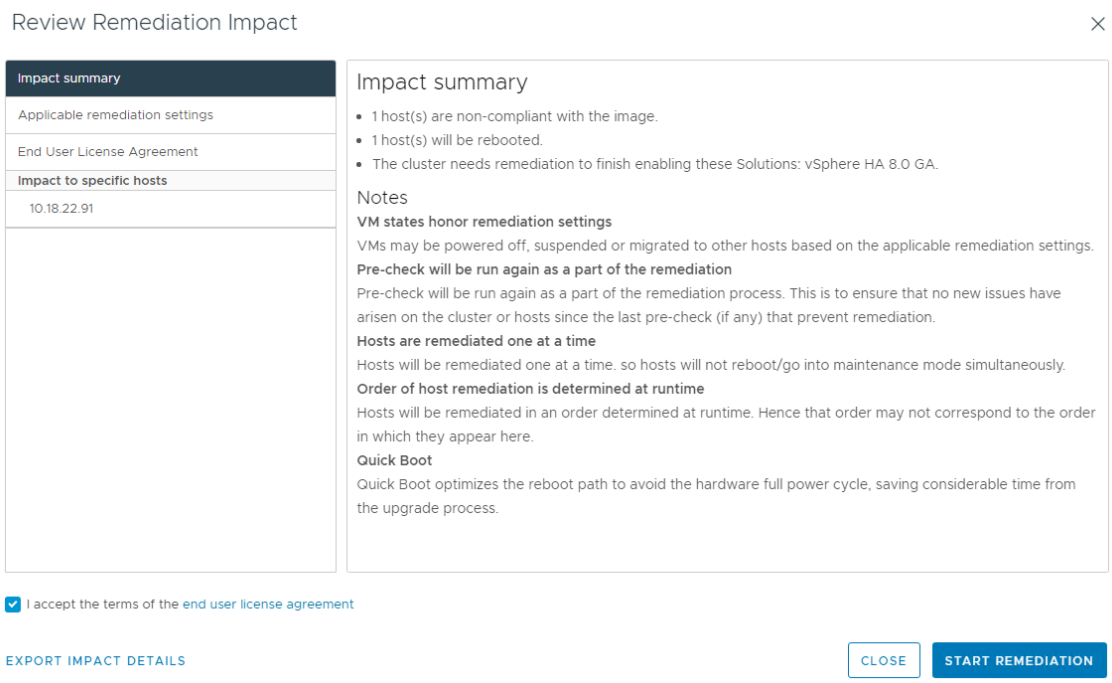
You can also change the “show” from “Only Drift comparison” to “Full Image Comparison” and, lower on the page, change from the default “4’ items per page to ‘100’ to see the full list.

Lab 5g: Remediating a host.

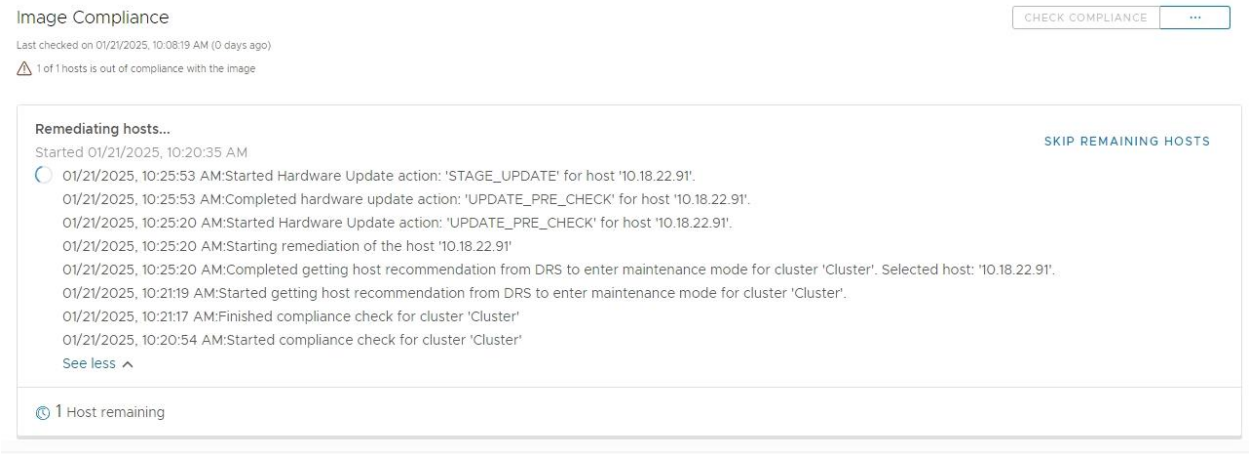
We can now begin a remediation of our host.

Please note: A full remediation can take up to 40 minutes per host to complete. You can skip ahead to the next lab while the remediation begins, or you can click "cancel" and skip the remediation and move to the next lab.

1. On the same screen, click "Remediate All"
2. Review the Remediation Impact and then select "Start Remediation"

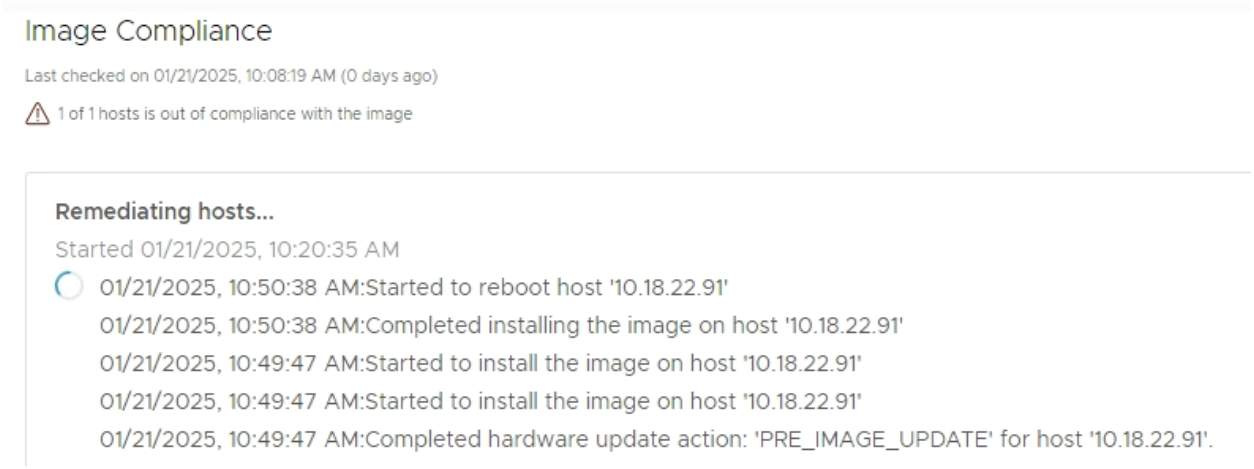


The remediation can be monitored in the middle section of the screen.

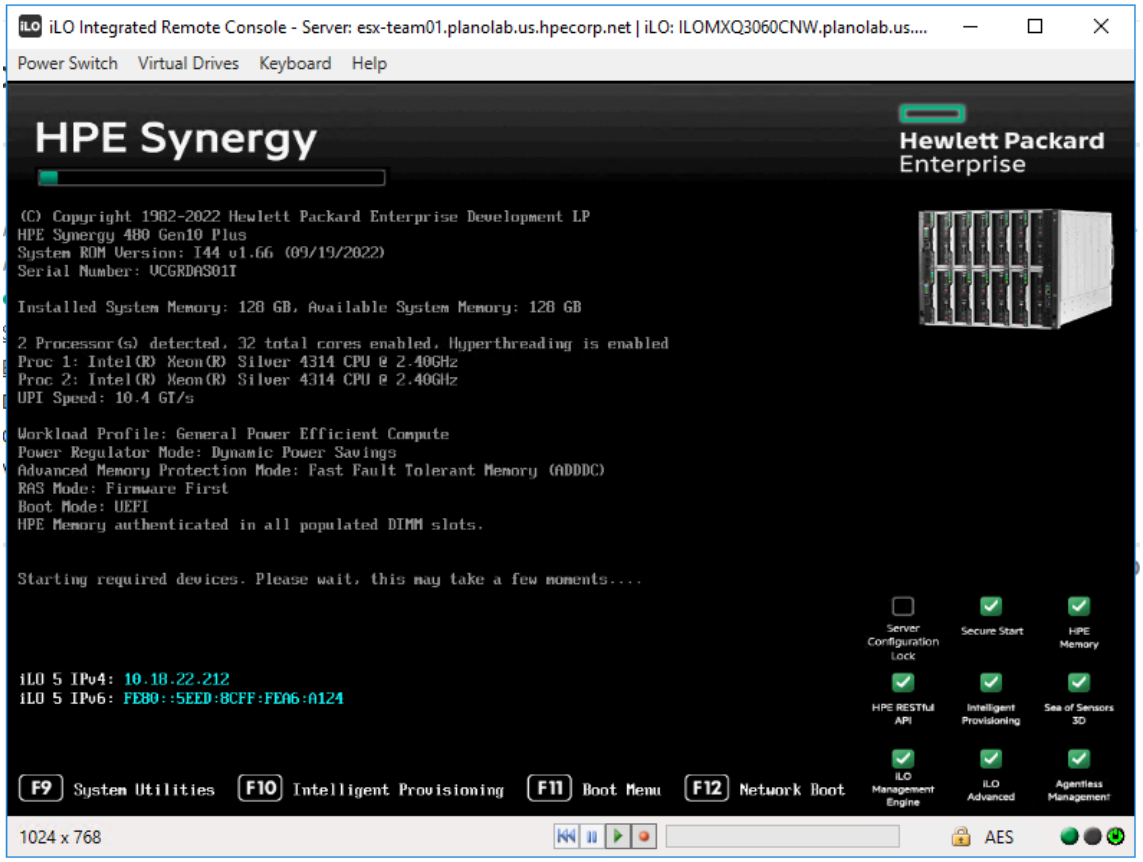


If the host was not in maintenance mode, it would enter maintenance mode at this time, and all running VMs would be vMotioned to other hosts in the cluster.

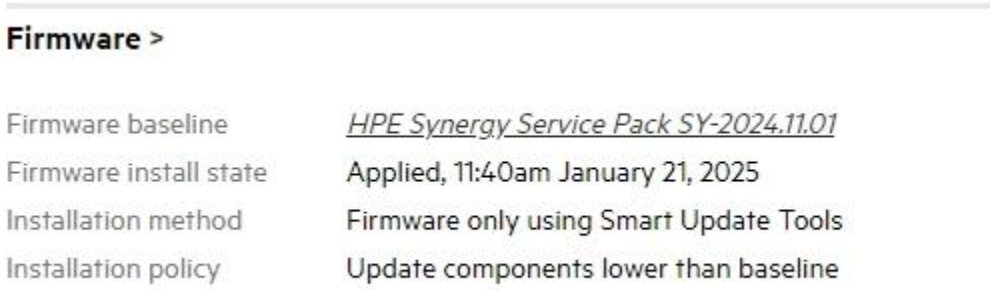
Once all software has been staged, the host is rebooted.



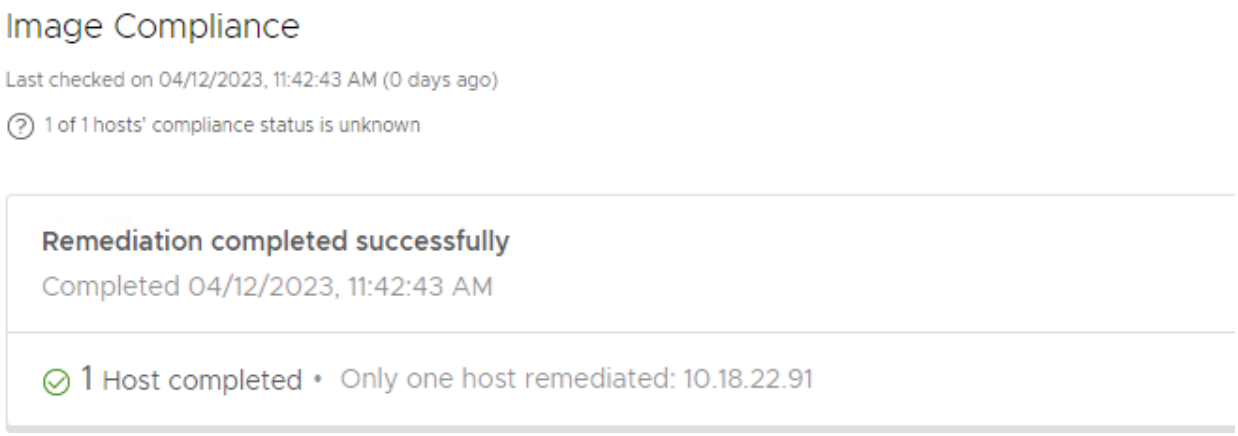
If you wish, you can follow the reboot by switching to your OneView Composer tab and launching a console. (Depending on how many updates are needed, there may be multiple reboots required).



From HPE OneView, can see the new firmware baseline has been applied to the Server Profile:



After the remediation is complete, the cluster will be checked for compliance again:



Lab 5 Summary

Lab 5 showed you some of the richness of OV4VC and its ability to integrate with vSphere Lifecycle Manager (VLCM). In this Lab, you integrated OV4VC's "HSM" with with VCLM. You also set up a cluster for "Image based" updates. Finally, you were able to check compliance of a host and remediate it using VLCM.

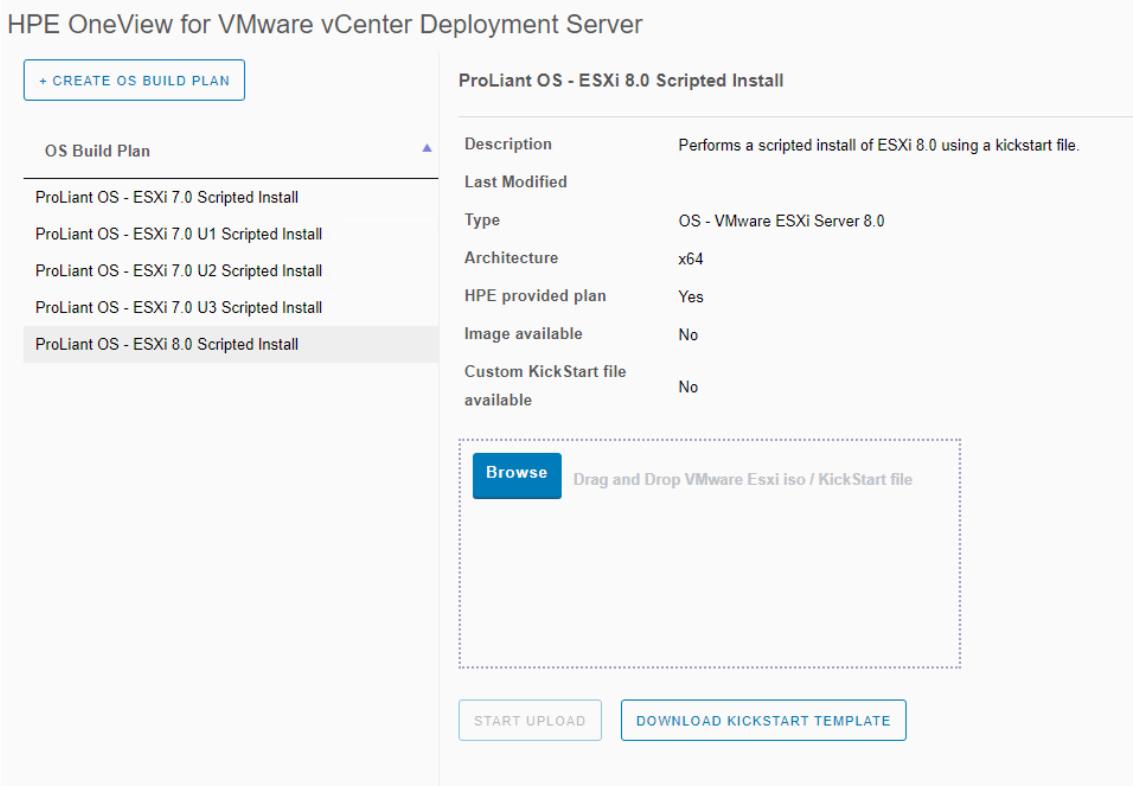
Next Lab: OV4VC Bare Metal Deployment

Lab 6: Exploring OV4VC's Bare Metal Deployment Capability

In this final exercise, we shall take a tour of OV4VC's bare metal deployment capabilities.

Note: we will not actually deploy a host in this exercise.

1. In the OV4VC menu, find the bottom option labelled “Deployment” and select it.

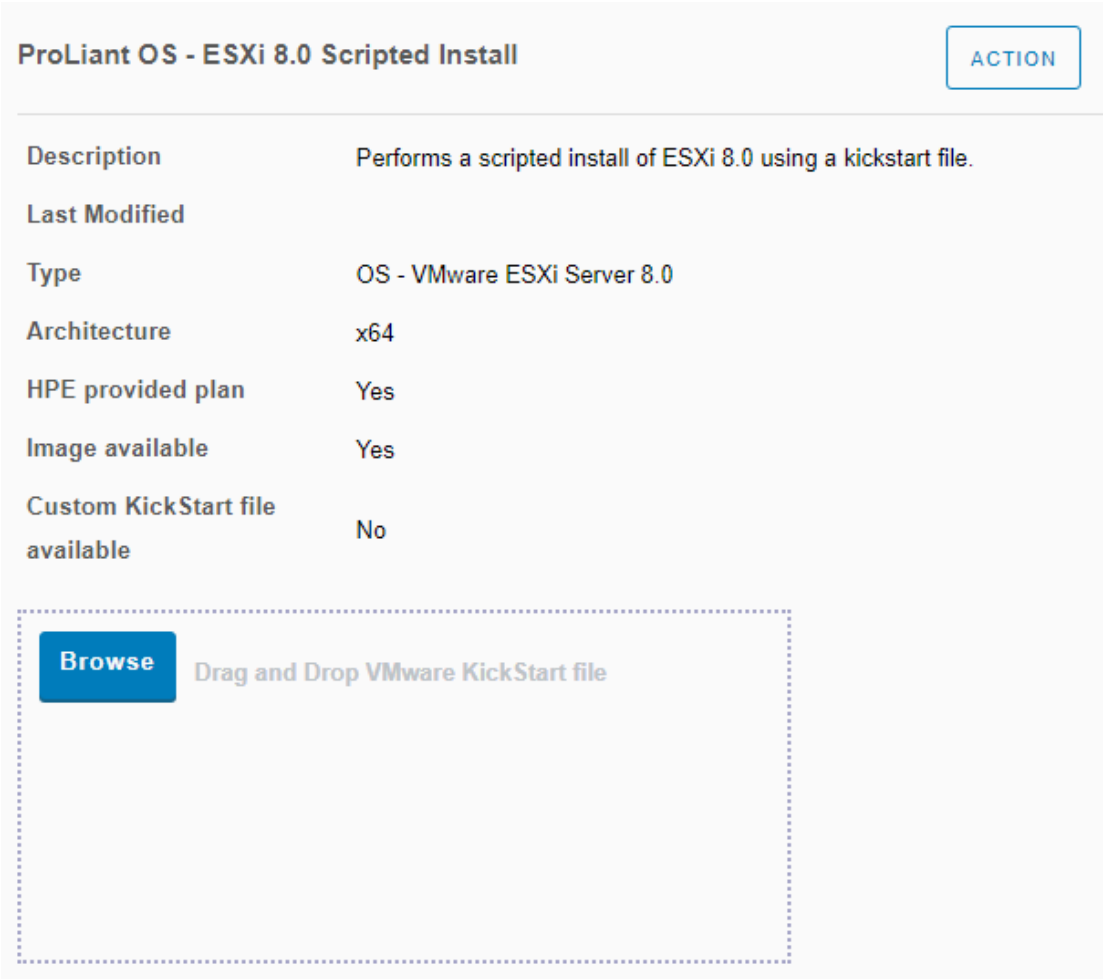


2. Select the bottom option, “ProLiant OS – ESXi 8.0 Scripted Install”. In the right hand side, choose “Browse” to upload an image. Navigate to C:\ISO and choose the ESX 8.0 iso. Click Start Upload.

3. Click “Start Upload”. An error will be thrown. You will have to “accept the certificate” of OV4VC” when prompted. This will spawn a new browser tab. In this tab, just accept any security warnings and then switch back to the previous tab.

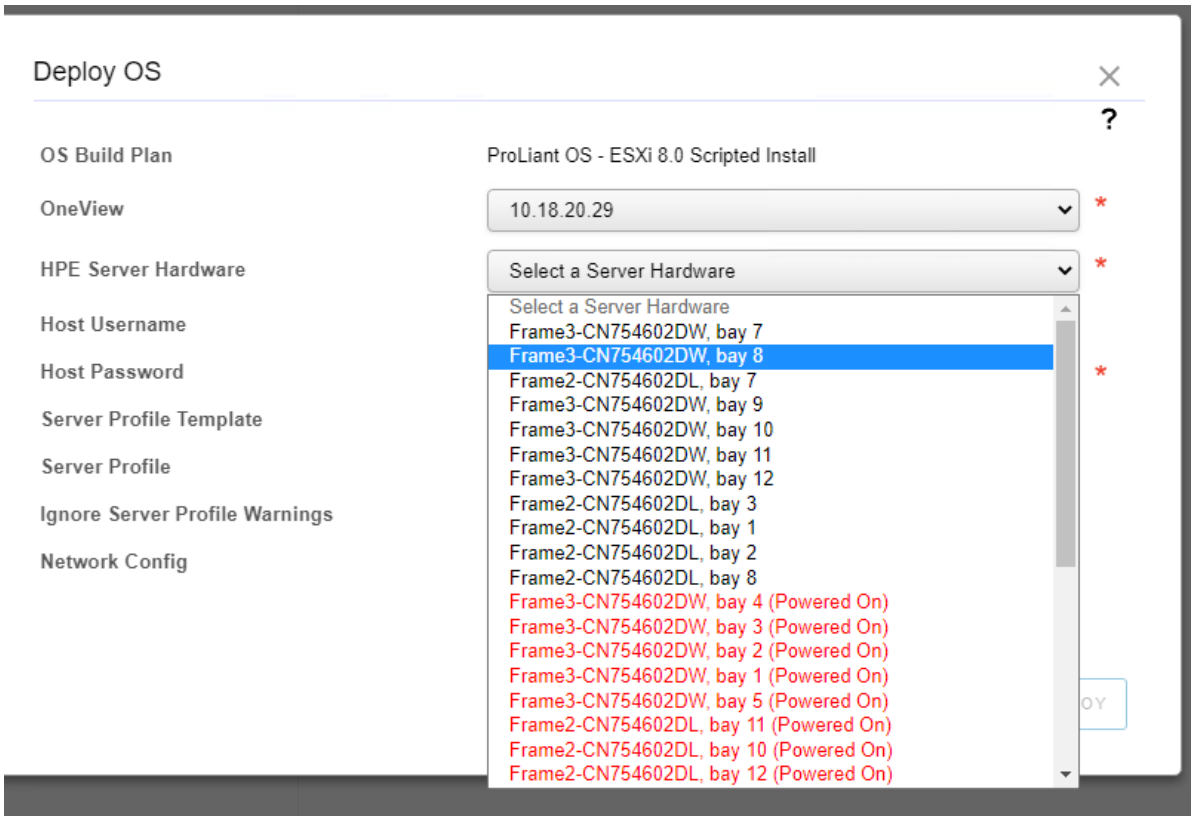
4. Start the upload again. This time it succeeds.

5. Notice the information associated with the uploaded ISO:



6. After a successful ISO upload, the “Image Available” option changes from “No” to “Yes.”

Following the completion of this step, everything is ready to perform a bare metal deployment.



Servers that are powered on are highlighted in Red and cannot be a deployment target unless this server is powered off. This is to prevent an accidental re-deployment to an in-use server.

Since there are not enough servers for all 20 participants, stop here and “cancel” from the deployment wizard.

Lab 6 Summary:

This lab showed you the bare metal deployment capabilities of OV4VC.

HOL Summary

This Hands-On Lab is now complete. Thank you for taking the time to participate, hopefully you received a deeper understanding of HPE Oneview for VMware vCenter.

In the exercises you accomplished you were able to:

- Register the OV4VC plugin with VMware vCenter.
- Explore the various HPE-specific data that is availble within vCenter via the plugin
- Register a Proactive HA provider.
- Set up a VLCM Cluster Image and remediate a host.
- See how OV4VC can also be used to deploy to bare metal

Please return your team assignment sheet to your lab proctor.