



**Hewlett Packard**  
Enterprise

# **HPE TechJam 2025**

## **Hands-On Labs**

**HPE ProLiant/VMware Integration  
using Compute Ops Management and  
the GreenLake Compute Ops  
Management vCenter Integration plugin**





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## Introduction

Welcome to the HPE 2025 Hands-On Labs (HOL). For the next two hours you will complete a self-paced lab using HPE ProLiant DL-series servers, VMware vCenter, GreenLake Compute Ops Management, and the new GreenLake Compute Ops

Management vCenter Integration Plugin (COM4VC). The diagram below provides a reference of the physical and virtual resources used in this lab.

## Lab Objectives

- Experience the first-time setup of COM4VC and the registration with vCenter and Compute Ops Management
- Experience COM4VC's integration with VMware Lifecycle Manager.

## Team Assignments

This lab has 25 stations. Each station will have its own individual COM4VC instance and vCenter. Likewise, each team will be assigned 1 HPE DL-series server.

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.

## Hands-On Lab Flow

During the next two hours you will receive a high-level overview of HPE's Compute Ops Management to vCenter integration (COM4VC). You will register COM4VC with vCenter 8.0, you will create a vSphere cluster. You will then create an API token and register COM4VC with HPE Compute Ops Management. Finally, you'll set up a cluster image and remediate a host using VLCM and the COM integration.

### Lab 1: Registering COM4VC with vCenter

Lab 1a: Logging into COM4VC and Registering the vCenter

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

Lab 1c: Adding an ESXi Host to vCenter.

### Lab 2: Creating the API Key Registering the plugin with COM.

### Lab 3: Integrating COM4VC 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.



## 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.

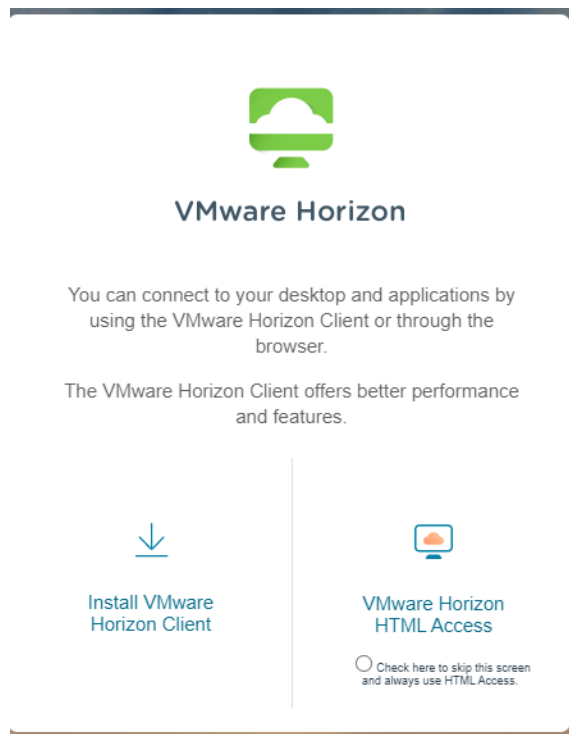
Each team will have the following physical and virtual infrastructure:

- Administrator credentials to a unique VMware vCenter
- Administrator credentials to a unique COM4VC instance
- One ProLiant DL-series server (vSphere host)
- A login to the HPE GreenLake

## Connecting to the Lab

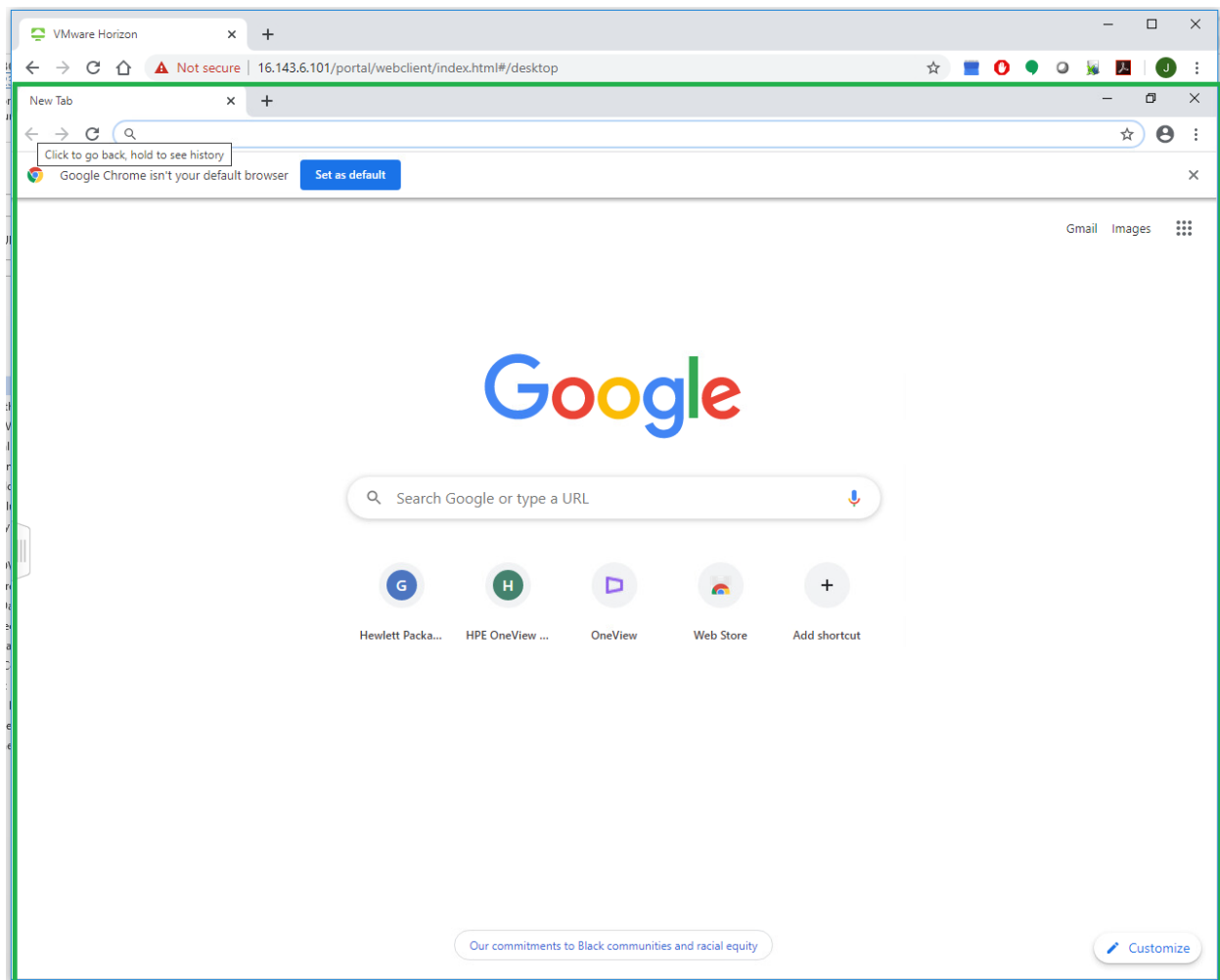
One of the HPE Discover HOL instructors will be happy to assist with getting you setup for this lab.

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. Since Horizon is presenting a “Chrome browser” inside of your desktop’s primary browser, it may be helpful to hit F11 at this time to put Chrome into kiosk mode.
5. Choose the “Google Chrome” option
6. After a few moments, a Horizon-Published-Application Chrome window will appear. (Skip through any “Sign in” / “welcome to Chrome” or similar screens)



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

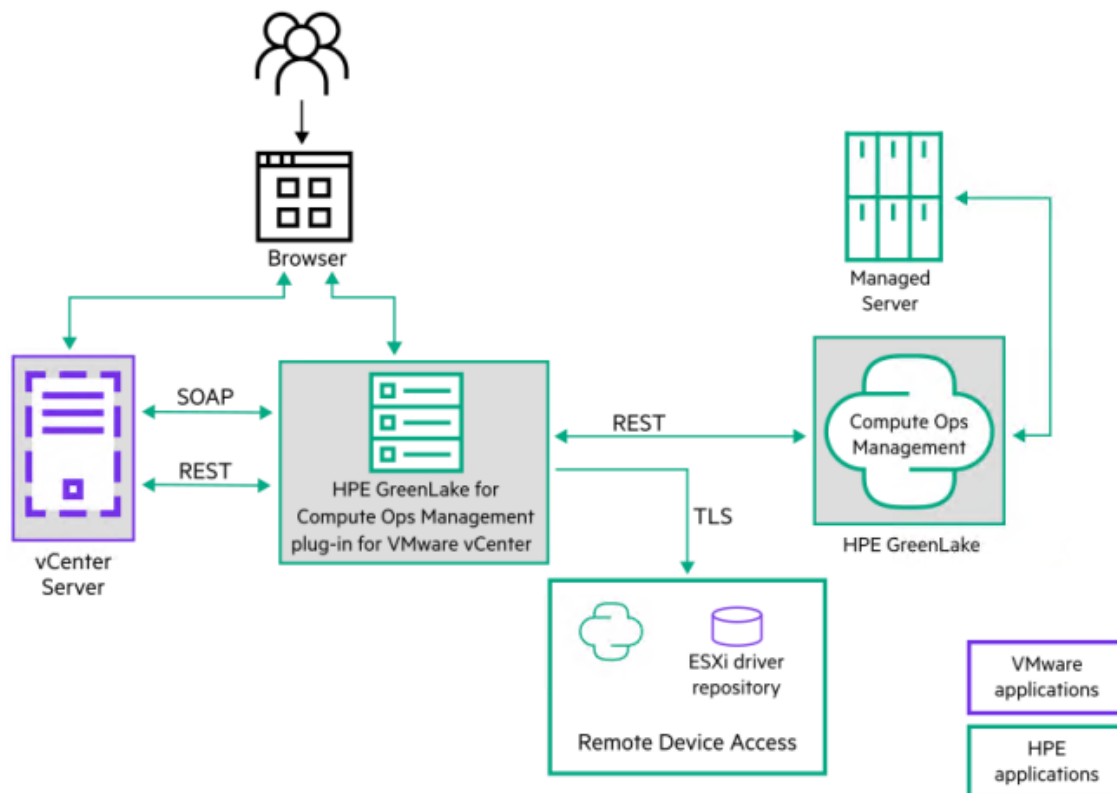
## What is HPE GreenLake for Compute Ops Management

HPE GreenLake for Compute Ops Management plug-in for VMware vCenter is a firmware management solution. This plug-in allows administrators to perform firmware updates on servers managed by HPE GreenLake for Compute Ops Management through VMware vCenter console.

The plug-in performs incremental firmware updates rather than downloading an entire firmware bundle. This solution also provides the latest firmware and hotfix supplement information for HPE servers that are managed through the VMware vCenter console.

You can configure and manage Compute Ops Management in the plug-in UI. The plug-in facilitates you to use the Compute Ops Management firmware update capability.

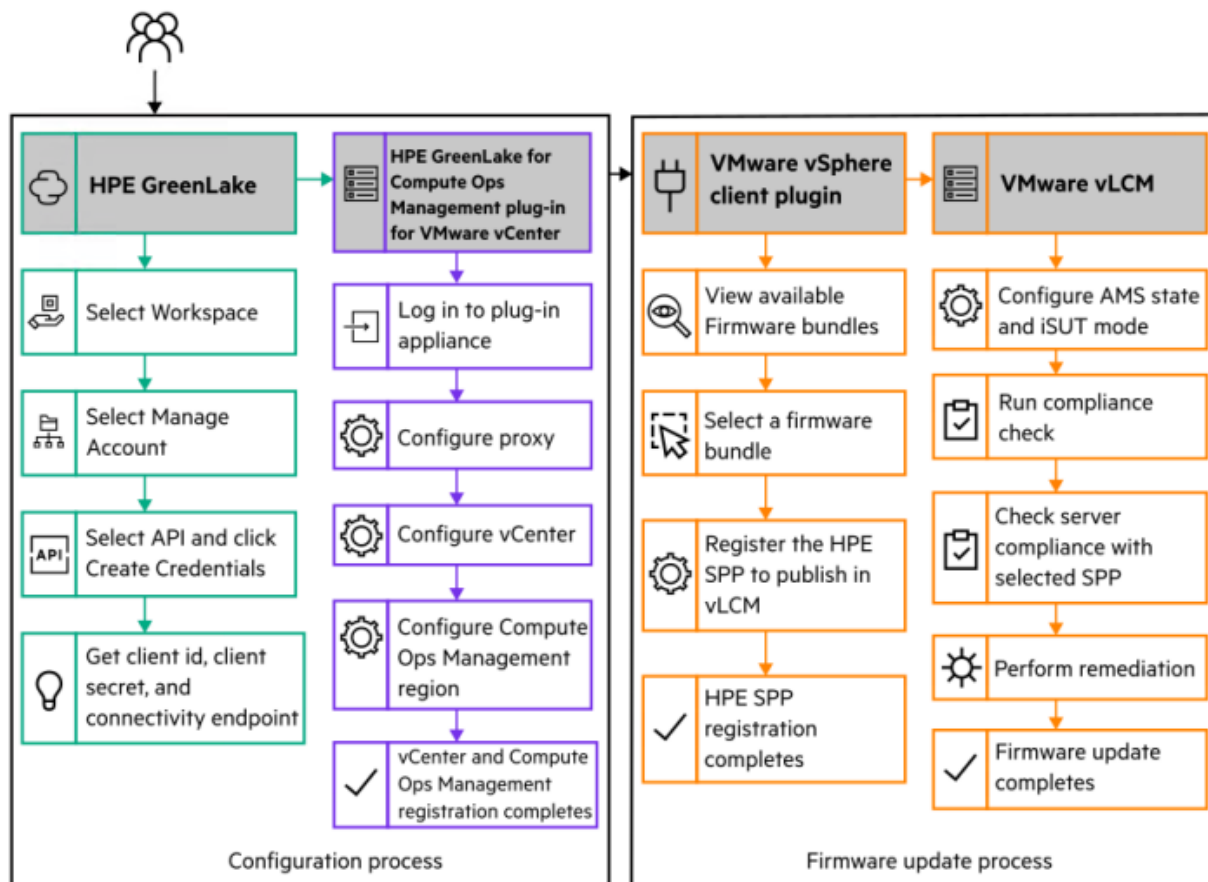
Compute Ops Management simplifies compute management operations by providing a centralized cloud experience. It integrates with the VMware vSphere Lifecycle Manager (vLCM) to update the firmware and drivers of HPE ProLiant Servers from within the VMware vCenter console. It provides a single pane view and automates firmware updates for HPE ProLiant Servers.



### Configuration and firmware Update Process



The configuration and firmware update process details the steps required to be performed on various applications. The configuration process is a one time process which facilitates firmware updates.



## Device Subscription

Managing servers with HPE GreenLake for Compute Ops Management requires a device subscription. Supported servers are associated with a device subscription. You can view and manage device subscriptions in HPE GreenLake. To renew an expired subscription, contact your HPE sales representative.

With the device subscription, you can perform the following:

- Monitor and manage individual servers, multiple servers, and server groups
- Policy-based actions on server groups
- Access REST API functionality

## Lab 1: Registering COM4VC with vCenter

In this lab, you will log into your assigned COM4VC, and set up the registration with your assigned vCenter. Then, you will register the Synergy Composer with COM4VC.

### Lab 1a: Logging into COM4VC and Registering the vCenter

1. From the Chrome Window, open a session to your assigned COM4VC instance.

<https://teamNN-com4vc.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-com4vc.hol.enablement.local>

Accept any “credential / certificate” challenges.



#### HPE GreenLake for Compute Ops Management plug-in for VMware vCenter

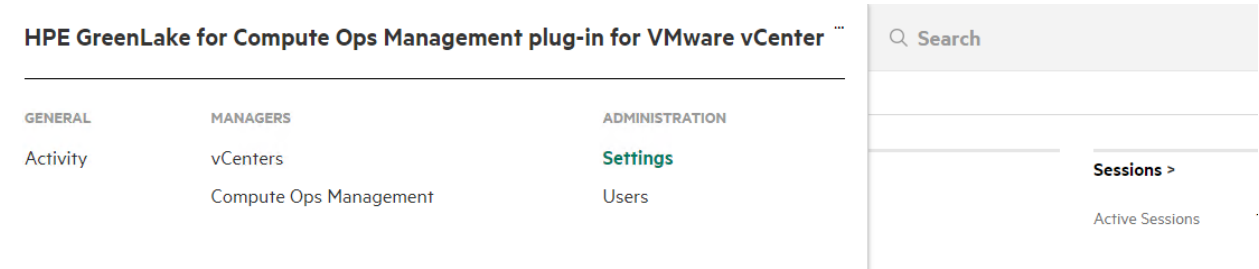
Setup

2. Click the SETUP button to continue.

Since this is a freshly deployed COM4VC, 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 COM4VC, click “HPE GreenLake for Compute Ops Management plug-in 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-vcса.hol.enablement.local

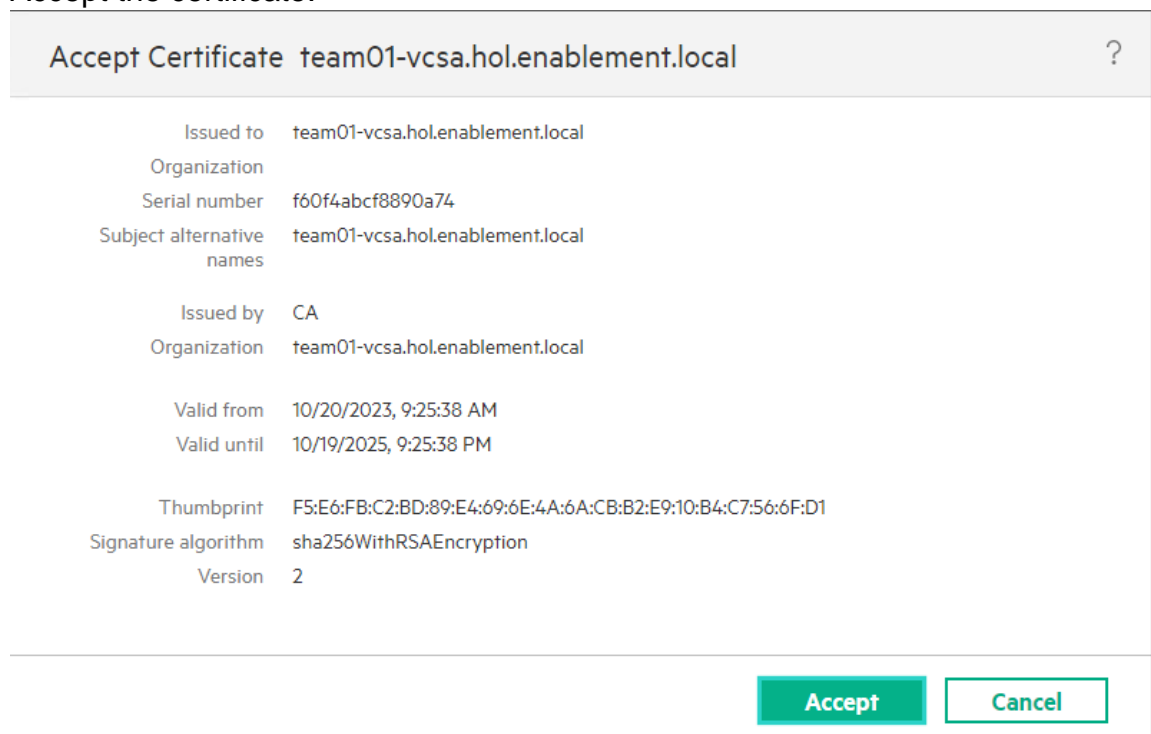
*Note: NN = your team assignment*

*e.g. team01-vcса.hol.enablement.local*

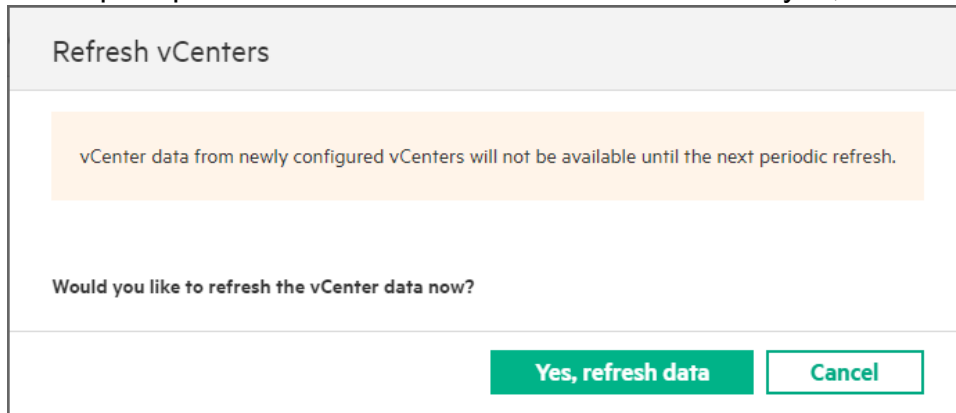
**Username:** [administrator@vsphere.local](mailto:administrator@vsphere.local)

**Password:** TechPr02025!

6. Click Add.
7. Accept the certificate.



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



Refresh vCenters

vCenter data from newly configured vCenters will not be available until the next periodic refresh.

Would you like to refresh the vCenter data now?

Yes, refresh data Cancel

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

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

Your vCenter is **teamNN-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



### Your connection is not private

Attackers might be trying to steal your information from **team02-vcsa.planolab.us.hpecorp.net** (for example, passwords, messages, or credit cards). [Learn more](#)

NET::ERR\_CERT\_AUTHORITY\_INVALID



To get Chrome's highest level of security, [turn on enhanced protection](#)

Hide advanced

Back to safety

This server could not prove that it is **team02-vcsa.planolab.us.hpecorp.net**; its security certificate is not trusted by your computer's operating system. This may be caused by a misconfiguration or an attacker intercepting your connection.

[Proceed to team02-vcsa.planolab.us.hpecorp.net \(unsafe\)](#)

## 2. Click Launch vSphere Client (HTML5)



### Getting Started

LAUNCH VSPHERE CLIENT (HTML5)

### Documentation

[VMware vSphere Documentation Center](#)

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

VMware® vSphere

administrator@vsphere.local

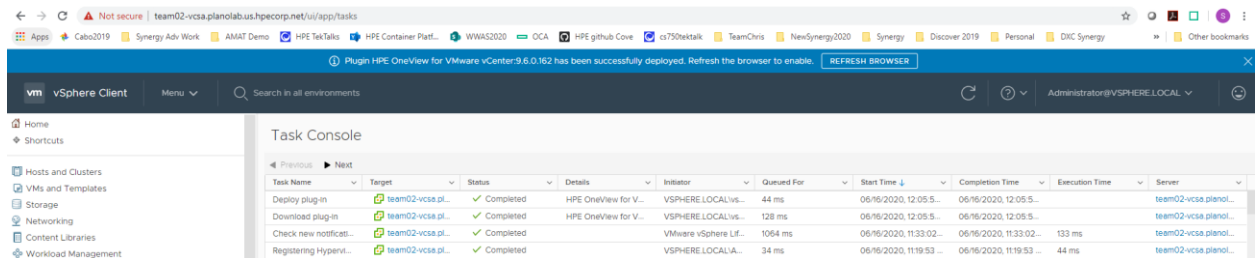
\*\*\*\*\*

☐ Use Windows session authentication

LOGIN

previous section.

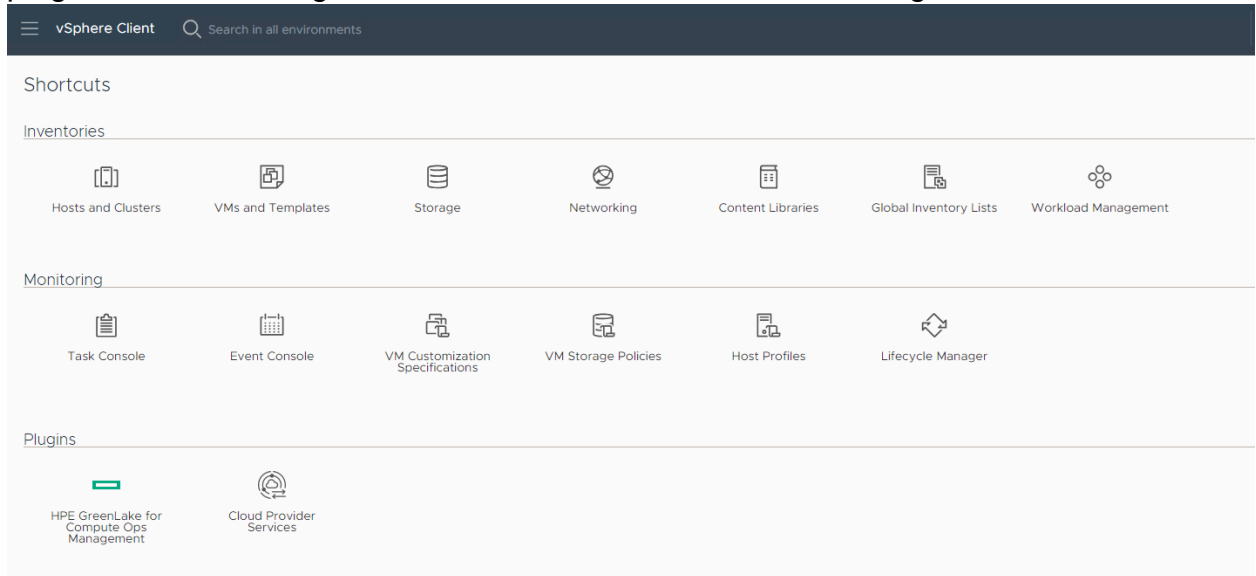
4. Once logged in, you may see a “blue bar” across the top of the screen advising you of the installation of a new plugin. (If the plugin was fully deployed before you logged into vCenter, you will not see the blue bar).



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

Recent Tasks					Alarms
Task Name	Target	Status	Details	Initiator	
Deploy plug-in	team02-vcsla.planol...	Completed	com.vmware.vum.client:7.0...	VSPHERE.LOCAL\vsphere-web...	
Registering Hypervisor M...	team02-vcsla.planol...	Completed	com.hpe.ov4vc	VSPHERE.LOCAL\Administrator	

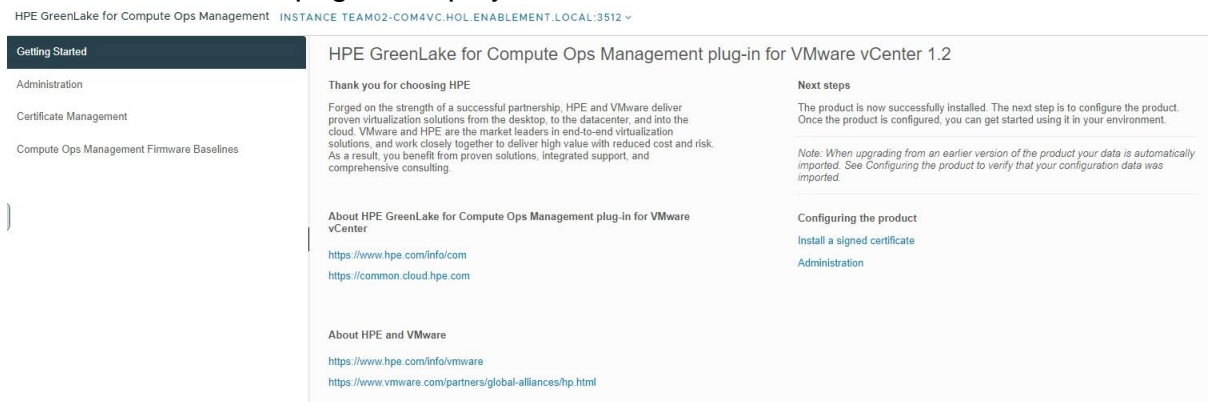
1. Click the vCenter “Menu”  icon and select “Shortcuts”. The plugin should have registered a shortcut on this menu in the Plugins section.



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



3. The COM4VC main page is displayed.



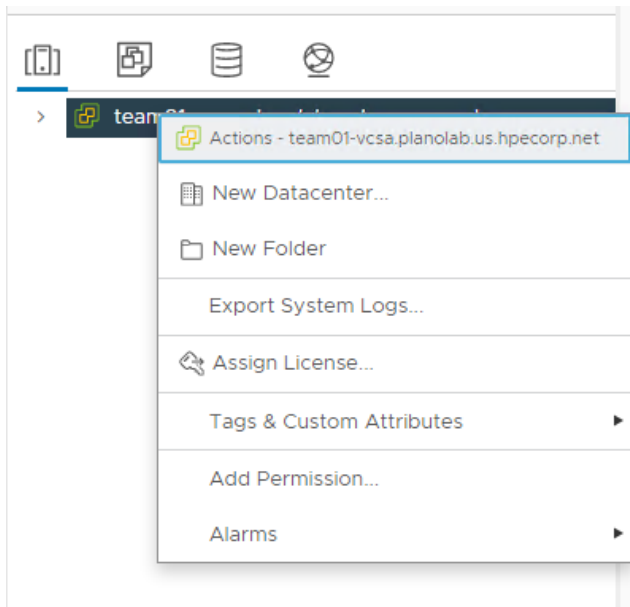
If the short cuts are not visible, refresh your browser (or logout/login to vCenter).

## Lab 1c: Adding an ESXi Host to vCenter.

Once the plugin has been registered to vCenter, the next step is to add a host to vCenter.

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

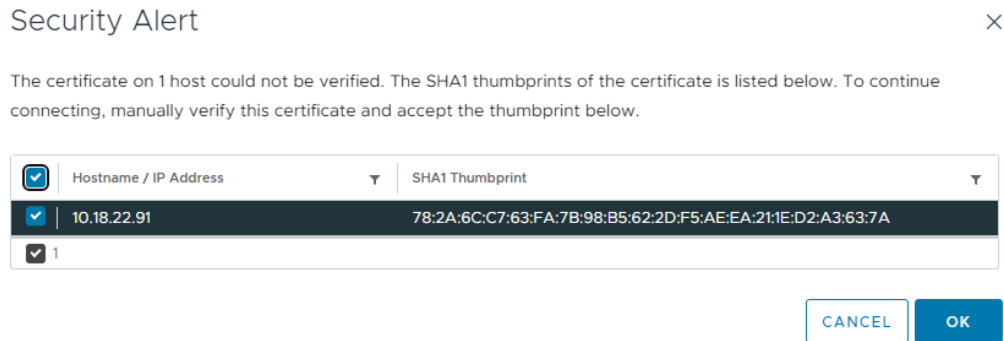
1. With the Shortcuts screen still displayed, click on “Hosts and Clusters” .
2. In the left-hand column, right click on the vCenter name, and choose “New Datacenter...”



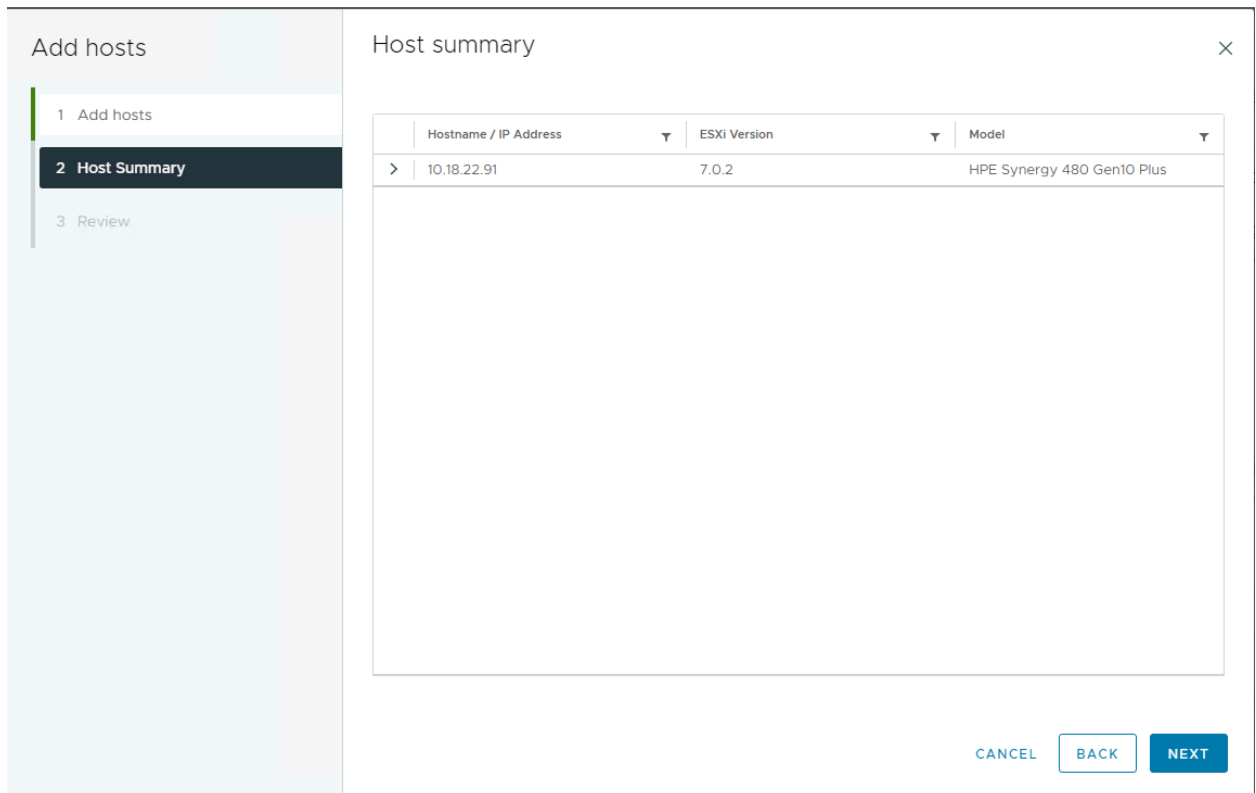
3. Keep the default name of “Datacenter” and choose OK.
4. Right Click on the Datacenter object you just created and select “New Cluster”.
5. Uncheck “Manage all Hosts in the cluster with a single image. (We will do this in a later step in the lab). Click Next, and then Finish.
6. Right click on the 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 ESXi hosts on page 18.



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



- Click Next to continue



- Click the FINISH button
- Within vCenter the new host will display disconnected for a few seconds, then change to maintenance mode

**Common for All Teams:**

ESXi Username and Password for All Hosts: User: root / Password: TechPr02025!

FQDN: *Hostname.hol.enablement.local* (e.g. com-team01.hol.enablement.local)

Caution: There are two columns of teams in this table. Verify that you are not choosing the server belonging to the wrong team.

*Table 1 ESXi hosts*

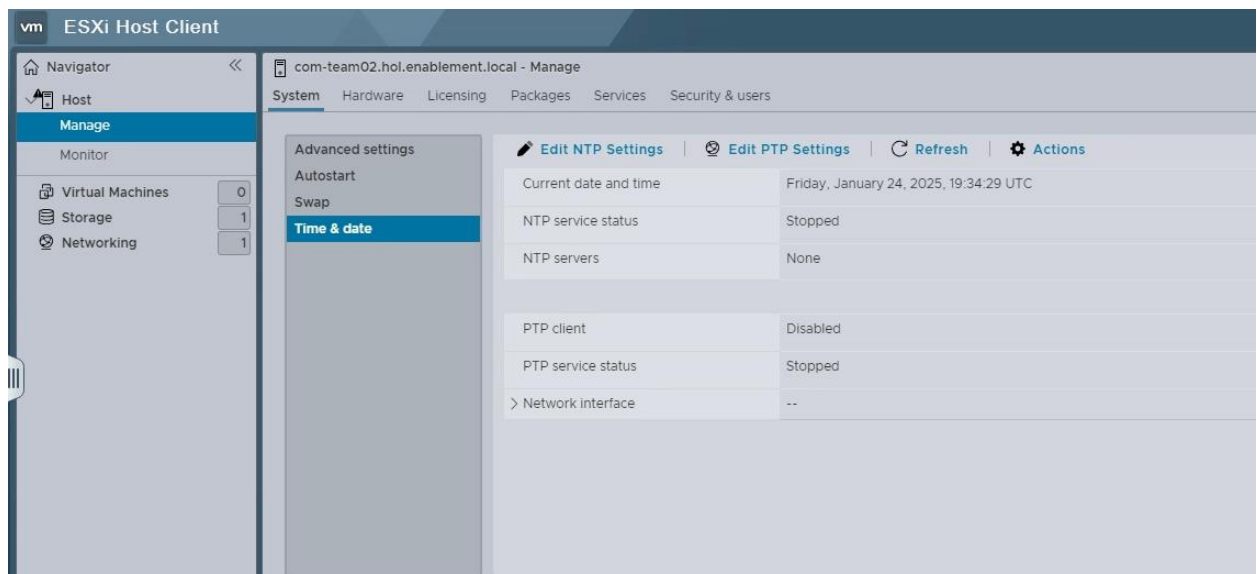
Team	IP Address	Hostname		Team	IP Address	Hostname
Team 01	10.18.22.101	com-team01		Team 14	10.18.22.114	com-team14
Team 02	10.18.22.102	com-team02		Team 15	10.18.22.115	com-team15
Team 03	10.18.22.103	com-team03		Team 16	10.18.22.116	com-team16
Team 04	10.18.22.104	com-team04		Team 17	10.18.22.117	com-team17
Team 05	10.18.22.105	com-team05		Team 18	10.18.22.118	com-team18
Team 06	10.18.22.106	com-team06		Team 19	10.18.22.119	com-team19
Team 07	10.18.22.107	com-team07		Team 20	10.18.22.120	com-team20
Team 08	10.18.22.108	com-team08		Team 21	10.18.22.121	com-team21
Team 09	10.18.22.109	com-team09		Team 22	10.18.22.122	com-team22
Team 10	10.18.22.110	com-team10		Team 23	10.18.22.123	com-team23
Team 11	10.18.22.111	com-team11		Team 24	10.18.22.124	com-team24
Team 12	10.18.22.112	com-team12		Team 25	10.18.22.125	com-team25
Team 13	10.18.22.113	com-team13				

**Troubleshooting:**

If your host does not add successfully or throws an error, such as an “Unable to push signed certificate to host,” the time on the server may be off.

To solve this problem perform the following steps:

1. Open a new tab, and go directly to your ESX host's DCUI by inputting `https://<your host's ip>` in the URL bar.
2. Login using username "**root**" and password "**TechPr02025!**"
3. Go to "manage" / "system" / "time & date"



4. Click "edit NTP settings" and verify the system time, adjusting as necessary. (These systems are in US Central Time (UTC -6).

### Lab 1 Summary:

- You have logged into your COM4VC instance.
- You have logged into your vCenter instance.
- You have registered vCenter in COM4VC 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.

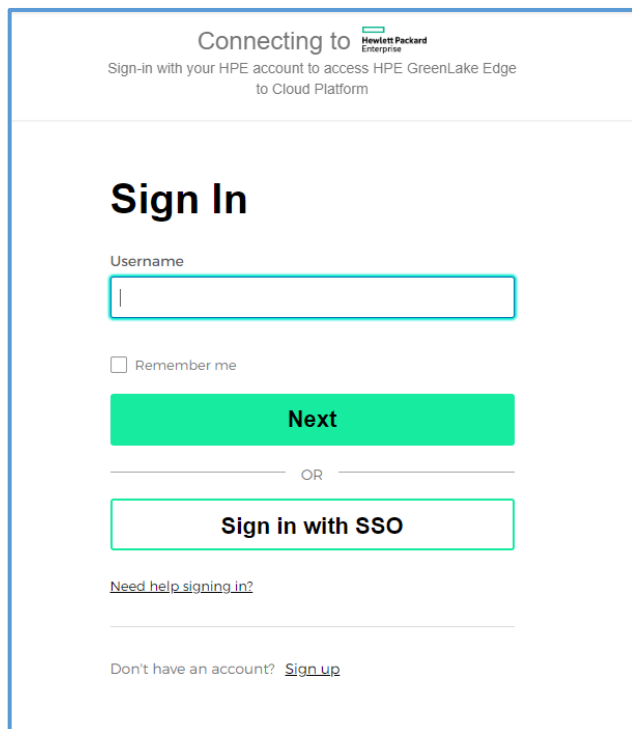
### Next lab: Creating the API Keys

## Lab 2: Creating the API Keys

### Lab 2a: Logging into Compute Ops Management

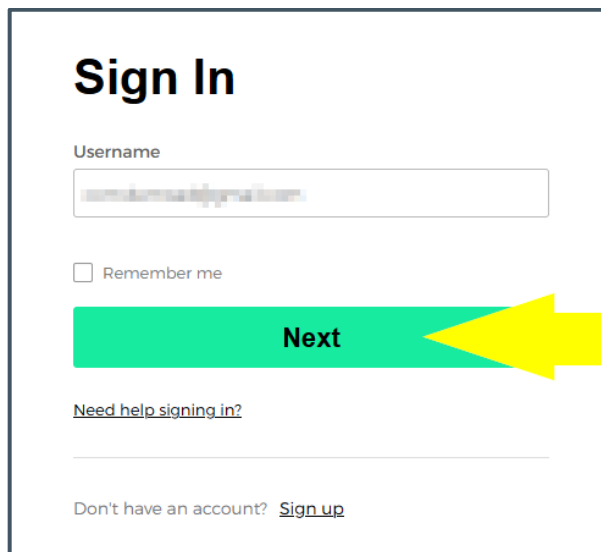
First login to HPE's GreenLake. We will then initiate a server action from the server details page. To get to your Compute resources and view the server details page, follow the steps below.

1. Using the browser, go to <https://common.cloud.hpe.com>



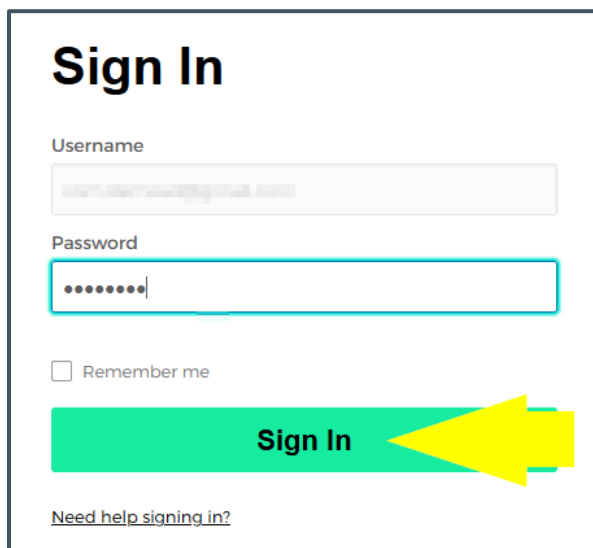
The screenshot shows the sign-in interface for the HPE GreenLake Edge Cloud Platform. At the top, it says "Connecting to Hewlett Packard Enterprise" and "Sign-in with your HPE account to access HPE GreenLake Edge to Cloud Platform". The main heading is "Sign In". Below this is a "Username" label and a text input field. There is a "Remember me" checkbox. A large blue "Next" button is present. Below the button is an "OR" separator. Underneath is a "Sign in with SSO" button. At the bottom, there is a link "Need help signing in?" and a link "Don't have an account? Sign up".

- This will take you to the HPE GreenLake sign-in page.  
Please enter the HPE GreenLake username provided in your login sheet and click **Next**:



The screenshot shows the HPE GreenLake sign-in page. At the top, the title "Sign In" is displayed in a large, bold, black font. Below the title, there is a "Username" label followed by a text input field containing a blurred username. Underneath the input field is a checkbox labeled "Remember me". A large, teal-colored button with the text "Next" in white is positioned below the checkbox. A large yellow arrow points to the right, highlighting the "Next" button. Below the button, there is a link that says "Need help signing in?". At the bottom of the form, there is a line of text that reads "Don't have an account? [Sign up](#)".

- Enter the password and click **Sign In**:



The screenshot shows the HPE GreenLake sign-in page. At the top, the title "Sign In" is displayed in a large, bold, black font. Below the title, there is a "Username" label followed by a text input field containing a blurred username. Below the username field is a "Password" label followed by a password input field with masked characters (dots). Underneath the password field is a checkbox labeled "Remember me". A large, teal-colored button with the text "Sign In" in white is positioned below the checkbox. A large yellow arrow points to the right, highlighting the "Sign In" button. Below the button, there is a link that says "Need help signing in?".

- Upon login, you'll be presented with a list of workspaces. Choose the "HPE Tech Enablement HOLs" workspace.

## Welcome to HPE GreenLake

Here's a list of workspaces we found associated with **comholuser+2@gmail.com**:

### Workspaces

2 Workspaces

H

HPE Tech Enablement HOLs

Go to Workspace

C

COM Security Lab 02

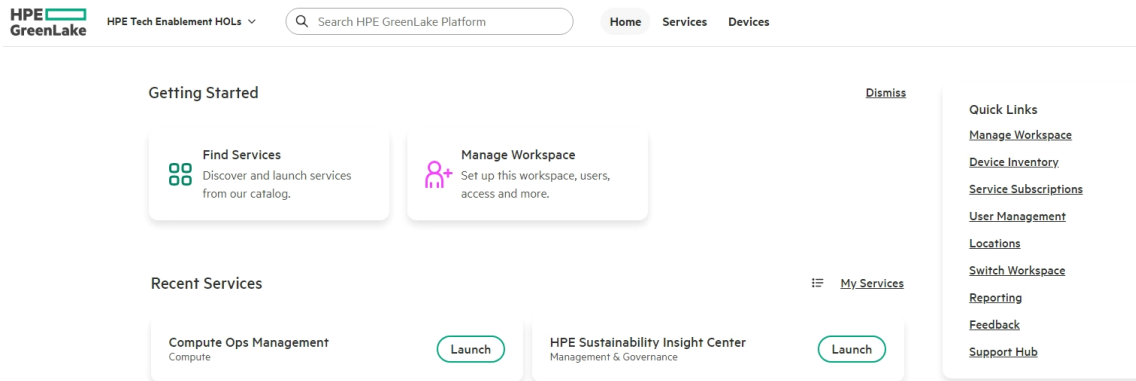
Go to Workspace

## Lab 2b: Generate Access Token to access APIs

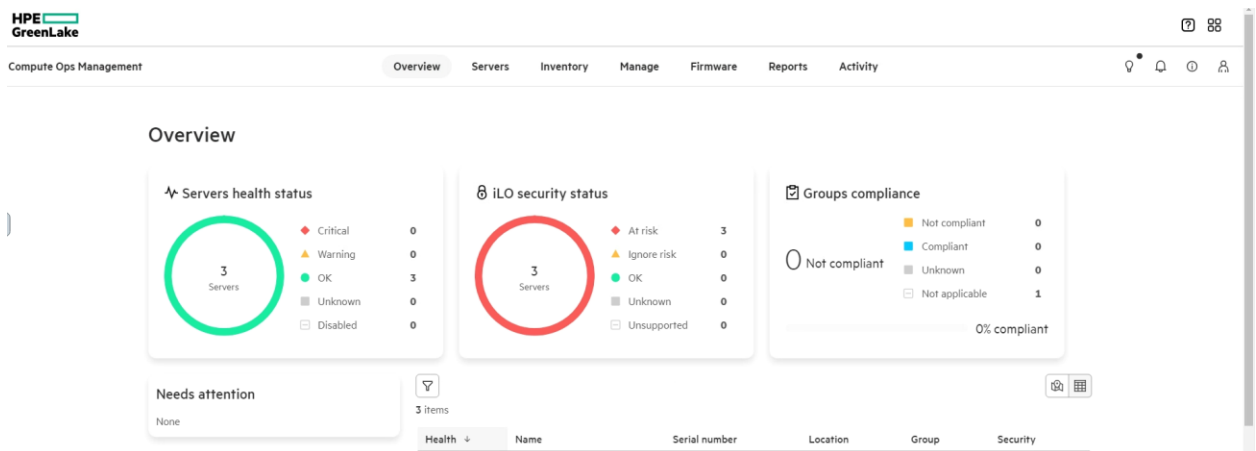
The Compute Ops Management REST API uses the OAuth 2.0 GLCP authentication flow. A limited lifetime access token needs to be provided in the header of each REST API request as the authorization bearer. The access token is associated with a subject (person or service) and has all the same permissions and privileges of the subject. The access token expires after a short period of time.


This next task will walk through the essential steps required to generate the limited lifetime access token.

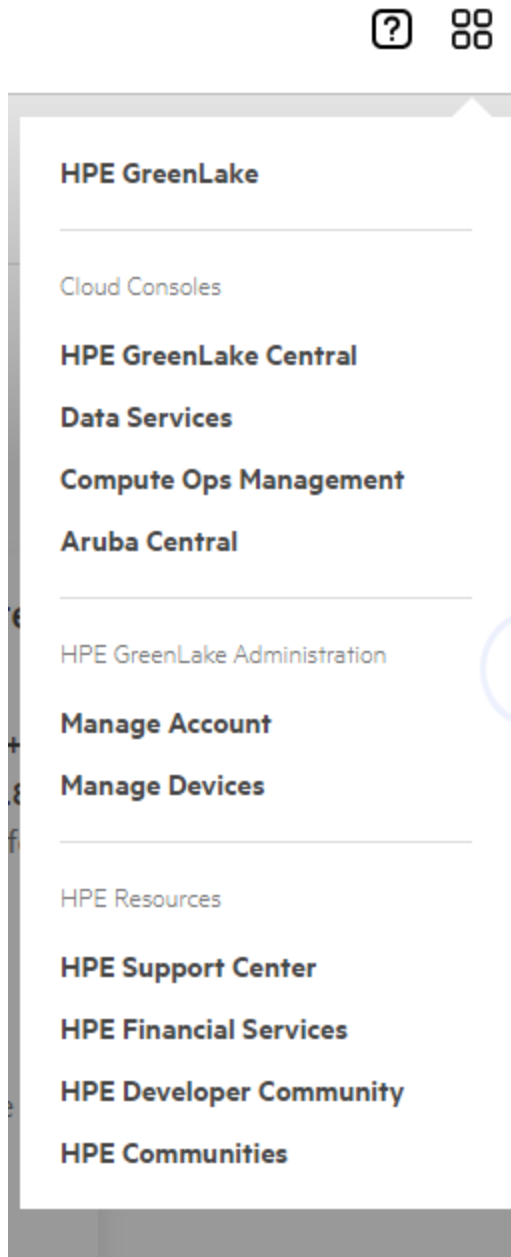
1. After selecting the “HPE Tech Enablement HOLs” workspace, you’ll be presented with the Getting Started page. Click the “Launch” button under Recent Services: Compute Ops Management



2. You will now be at the Compute Ops Management Overview page.



In the upper righthand side corner, click on the **Services** icon  and select **Manage Account**.





3. You should notice that it takes you to the Manage Account window. Select the **Personal API Clients** tile

**Note:** The prerequisite to generate an API access token is that Compute Ops Management is provisioned/added to the user's customer account. The user must have a role that is required to perform the intended operation in the instance of Compute Ops Management (notice that the user account you use in this lab is already configured for this).

### Manage Workspace

Manage your HPE GreenLake workspace.

The screenshot displays the 'Manage Workspace' interface for HPE GreenLake. On the left is a sidebar with a user profile for 'HPE Tech Enablement HOLs', showing the Workspace ID '82e555f4951311eeac162a824d0bf3e2', a 'Registered' status, and a 'Standard Enterprise Workspace' type. The main area contains a grid of 10 management tiles:

- Workspace Details**: Manage your workspace's details including name, phone number, email, and MFA configuration.
- Workspace identity & access**: Manage users and their access to this workspace's services and resources.
- Audit Log**: View changes and processes within all your applications.
- Authentication**: Connect your company's single sign-on (SSO) with HPE GreenLake.
- Personal API clients**: Access application data programmatically through an API.
- IP Access Rules**: Set up and manage IP access.
- Locations**: Manage device addresses to automate supporting services.
- Usage Monitoring**: Track subscription and system resource usage.
- Reporting**: Manage and create reports on the platform from different data sources.

- From this tile, click **Create Personal API Client** button.

< Manage workspace

## Personal API clients

Personal API clients allow you to programmatically generate access tokens for accessing HPE GreenLake APIs using your own identity and roles. You can maintain a maximum of 5 personal API clients. Learn more about [HPE GreenLake APIs](#).

API client credentials

Create personal API client

On the Create Personal API client dialog, in the top item, under “Personal API client name” input your Team Name (e.g. Team-01). In the Service pull down, select the application **Compute Ops Management (US West)** from the drop-down list, then click **Create Personal API client**.

Create personal API client

Personal API client name\*

A short name describing the purpose for this client.

Team-02

Service\*

Select the service to be accessed via this personal API client.

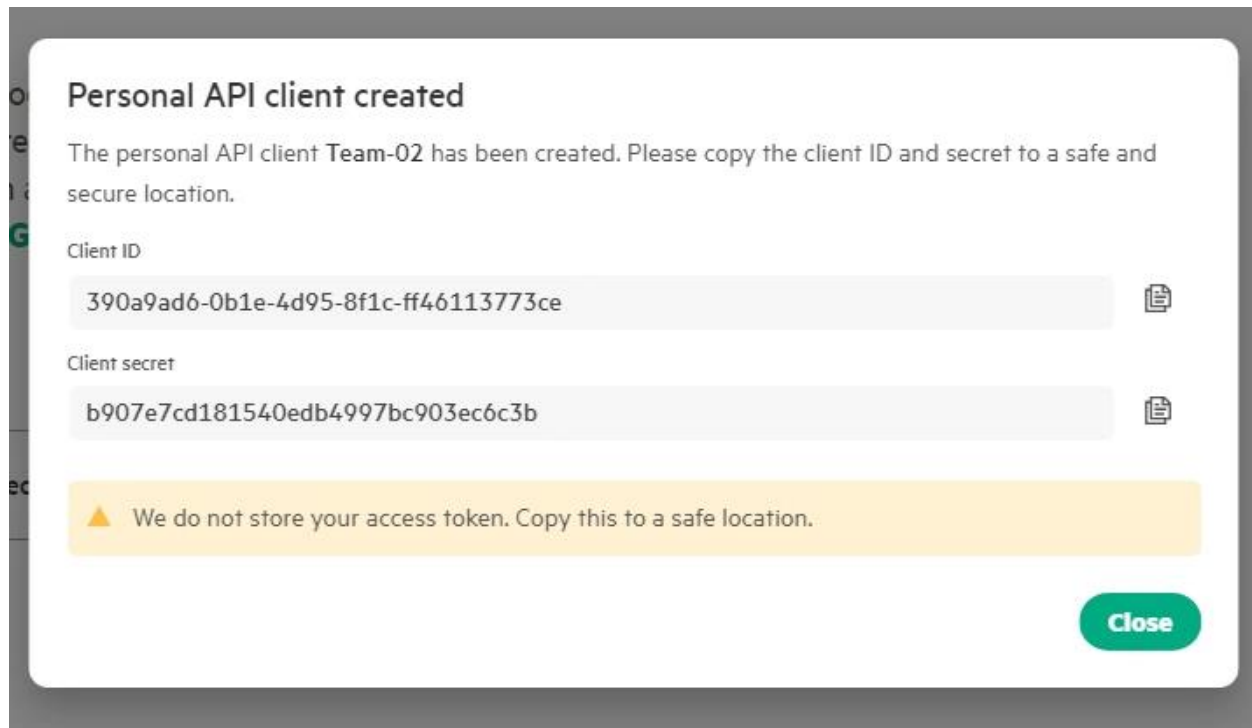
Compute Ops Management ( US West )

Cancel Create personal API client

- The **Personal API client Created** dialog appears.

**Note:** Follow these next instructions in the order provided because of the way Horizon handles the clipboard.

Copy the Client Secret. On the **second** line – Client Secret - select the **Copy** icon to save the Client Secret to the clipboard.



**Note:** HPE GreenLake does not store your Client Secret. This is the only time you can save this value. So, it is recommended you make a copy of your client secret and keep it in a safe location. Note: For this lab, some lab users have found it helpful to open a new tab and paste the client secret temporarily in the URL bar.

6. Click **Close** in the **Personal API Client Created** dialog and refresh the page. You will see the application's credentials you have created.

[< Manage workspace](#)

## Personal API clients

Personal API clients allow you to programmatically generate access tokens for accessing HPE GreenLake APIs using your own identity and roles. You can maintain a maximum of 5 personal API clients. Learn more about [HPE GreenLake APIs](#).

### API client credentials

[Create personal API client](#)

GLP-PowerShell\_Library\_Temporary\_Credential HPE GreenLake Cloud Platform



Team-02 Compute Ops Management ( US West )



**Note:** Credentials created for a user are valid until they are deleted, reset, or the user account is removed.

## Lab 2c: Integrating the access token with COM4VC

1. Switch back to your COM4VC browser tab, select “Compute Ops Management”

### HPE GreenLake for Compute Ops Management plug-in for VMware vCenter

#### GENERAL

Activity

#### MANAGERS

vCenters

**Compute Ops Management**

#### ADMINISTRATION

Settings

Users

2. Next, click “add-region” and using the information from the previous tasks, fill in the appropriate fields:

- A. Since the “Client Secret” is already in our clipboard, paste it first into the middle value.
- B. Flip back over to the Compute Ops Management Window, expand the credential you created, and copy and paste the values over for the ClientID and the Connectivity Endpoint
- C. Click Add when finished.

HPE GreenLake for Compute Ops Management

Compute Ops Management 0

+ Add Region

No compute ops management

Add Compute Ops Management Region ?

HPE GreenLake API Client Credentials

Client ID  { Enter the Client ID.

Client Secret

Connectivity Endpoint

NOTE: Associated user for the Client ID must have server administrator role or equivalent privileges to use all the features provided by HPE GreenLake for Compute Ops Management plug-in for VMware vCenter.

Add Add + Cancel

After a moment, the plugin will register... (you may need to click to a different screen in COM4VC and then go back to the “compute ops manager” section in the plugin to refresh the page).

**390a9ad6-0b1e-4d95-8f1c-ff46113773ce**

Status	● Connected
Client ID	390a9ad6-0b1e-4d95-8f1c-ff46113773ce
Connectivity Endpoint	<a href="https://us-west.api.greenlake.hpe.com">https://us-west.api.greenlake.hpe.com</a>
Region Name	

(Your Screenshot may vary – but the connectivity endpoint will be the same).

(If the status screen seems like it is taking a long time to populate, click to another section in the COM4VC plugin and then come back to this screen).

**NOTE: Do not continue with the lab unless your status is “Connected.”**

## Lab 3: Integrating COM4VC 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 a server hardware vendor-provided hardware support manager, or “HSM.”

COM4VC provides the HSM functionality to vSphere Lifecycle Manager.

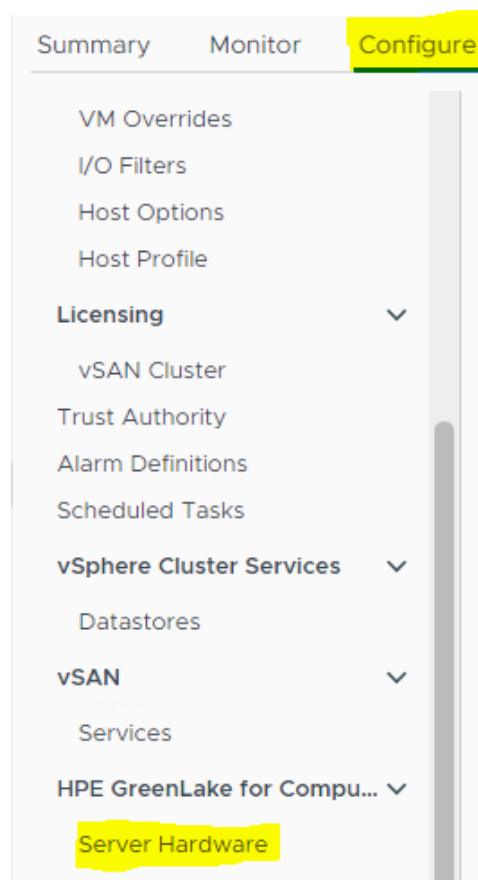
### Lab 3a: Host Prerequisites

COM4VC integration with vSphere Lifecycle Manager is supported on HPE Gen10 servers and newer that are registered in HPE GreenLake Compute Ops Management.

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. Lastly, the host must be in a member of a Compute Ops Management server group.

HPE COM4VC 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 GreenLake for Compute Ops Management plugin and select HPE Server Hardware.



2. You should now be at a screen entitled VLCM Pre-Check.

The host will be evaluated for VLCM readiness.


On this screen, we are looking for “green” under the iSUT state and the AMS state.




Cluster

vLCM Pre-Check

?

vSphere LifeCycle Manager Pre-Check



Host	iSUT state	AMS state	Compute Ops Management Server Group
10.16.160.31			NA 

**NOTE:**

- The password provided for configuring the iSUT mode and AMS service is not stored for future reference.
- This feature is supported for ProLiant Gen10 and above Servers only.
- All the hosts in the cluster should be part of same Compute Ops Management Server groups.
- Associated Compute Ops Management Server groups cannot have additional hosts.

3. If the iSUT and AMS state is Green, you can skip ahead and move to the next section in the lab.
4. If the iSUT state is RED, the host can be remediated from the plugin by clicking the “gear,” inputting a password into the “Common Hosts Password” and clicking submit. For this lab, use the **TechPr02025!** password, which is the root password for all ESX hosts.


Configure Hosts

×

Common Host Password\*:

Hosts: 

Not Set

CANCEL

SUBMIT





Success

 Successfully triggered the configuration of iSUT mode and AMS service task for cluster. Please check the vCenter task to monitor.

OK



5. 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 then manually refresh the vCenter page.
6. We see that the iSUT and AMS state is now green.

New Cluster   vLCM Pre-Check   ?			
vSphere LifeCycle Manager Pre-Check			
			
Host	iSUT state	AMS state	Compute Ops Management Server Group
10.18.22.102			NA 

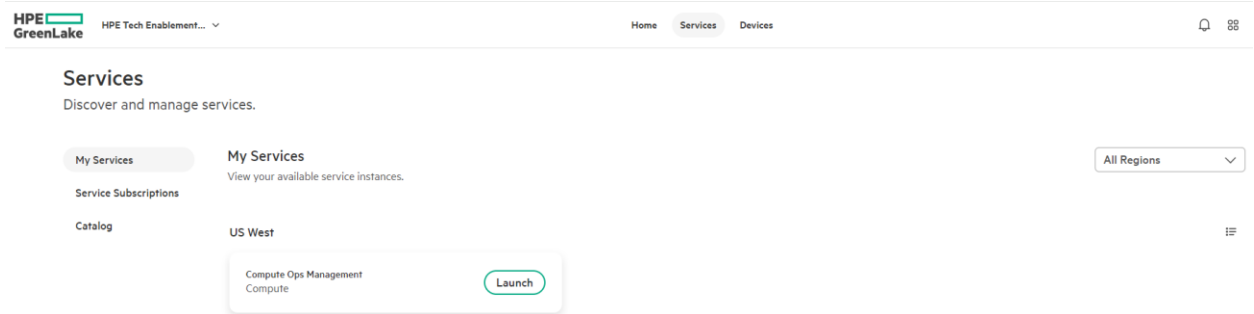
(Note: We can ignore the “red” status of the Compute Ops Management Server Group for now)

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

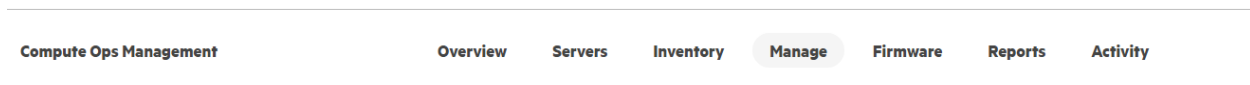
This could also be performed manually by logging into the ESXi host console and running the following command: `sut -set mode=AutoDeploy`

## Lab 3b: Creating a Server Group in HPE GreenLake for Compute Ops Management

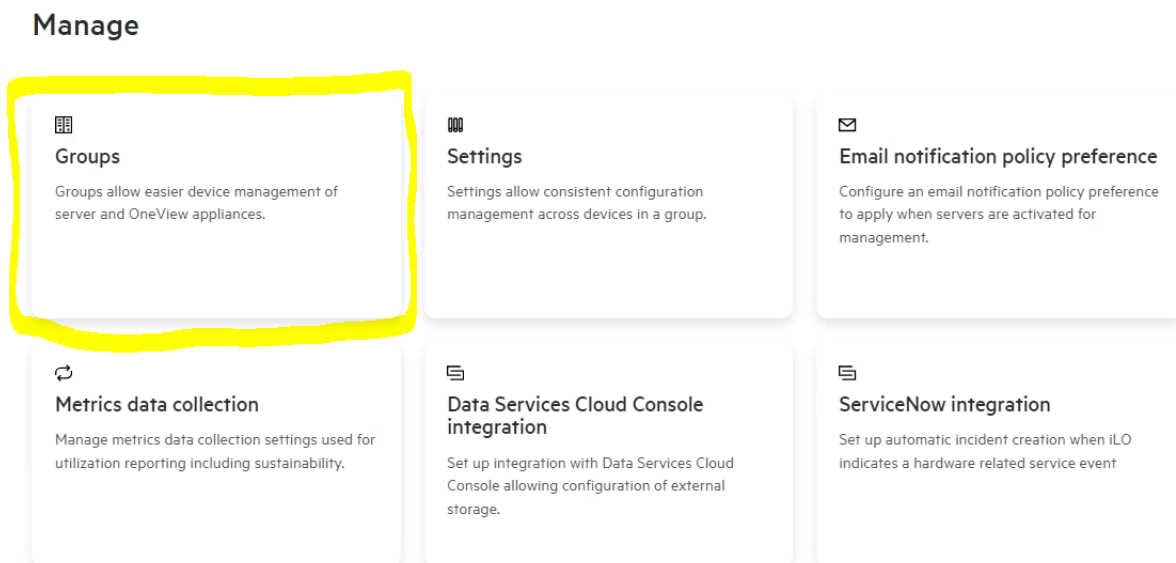
1. Switch to your HPE GreenLake browser tab. If you are not already in the “Compute Ops Management” services, from the HPE GreenLake menu, navigate to the top of the screen, select “Services”.
2. Find the “US West” Compute Ops Management service and select Launch.



3. Once in Compute Ops Management, choose “Manage” from the top menu.

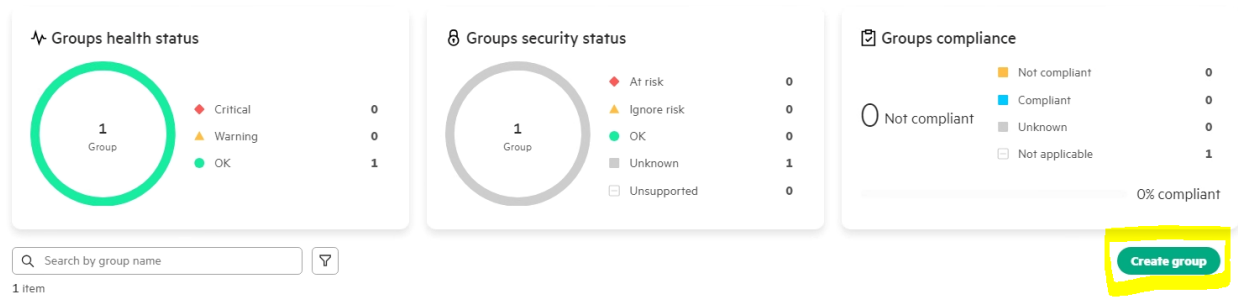


a. Select “Groups”



b. Select “Create Group”

## Groups



- c. Name your server group the same name as your team, optionally fill in a description, select type of “Server” and choose Next.

Step 1 of 4

## Group details

Name\*

Team02-Group

Description

Team02 Group

Type\*

Select a type for this group

Server

- d. Leave everything else blank on the next several screens, choosing “Next” to continue without providing any values. At the final screen, choose “Finish and create server group.”

Step 4 of 4

## Review server group

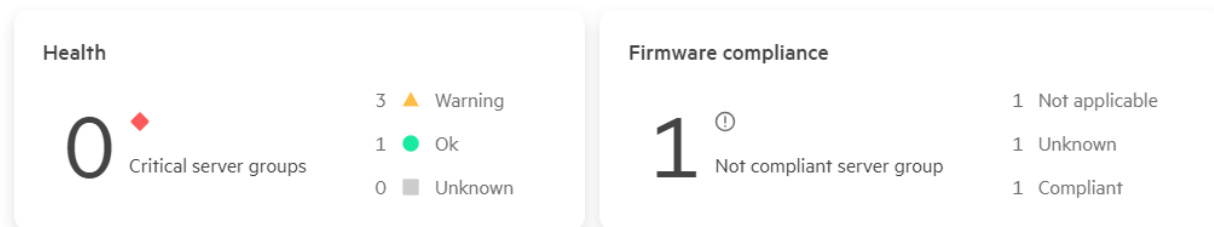
Name Team01-COM4VC  
 Description --  
 Settings None

[Finish and create server group →](#)

4. Servers can be added to the group from this screen, but due to the volume servers in this environment, we will add from the “servers” screen. At the top of the current screen, click the “< Manage” button.

[< Manage](#)

## Server groups - 4




[Create server group](#)

4 items

5. Click “Servers” from the top menu.
6. In the Server list, find the search box labelled “Search Server Attributes” – and find your server. Type “com-teamNN” where NN is your team number.

com-team01

All servers

Export servers

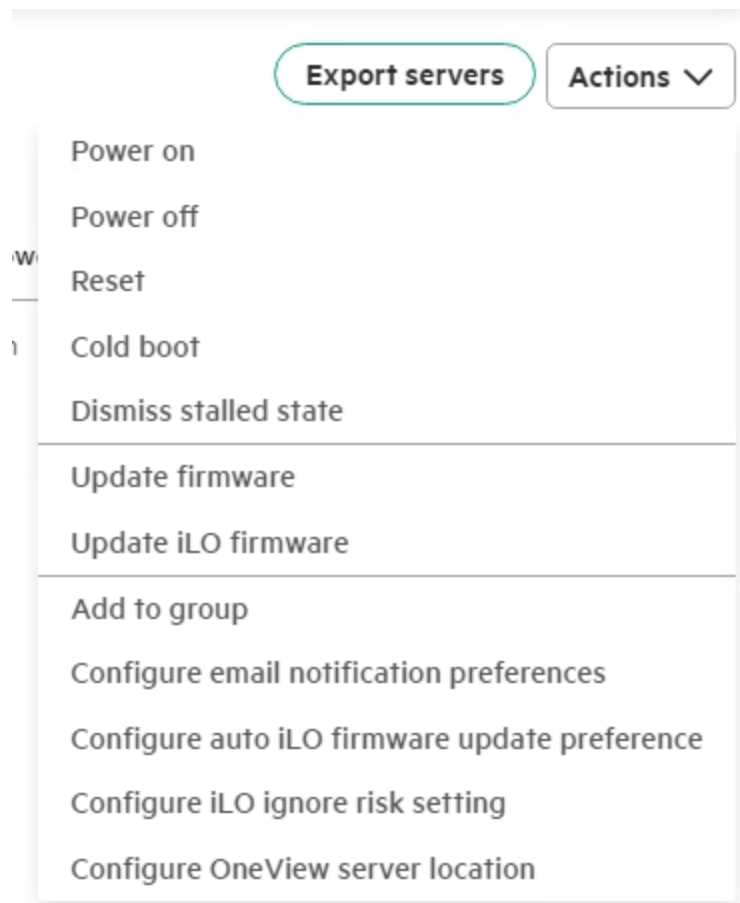
Actions

1 item

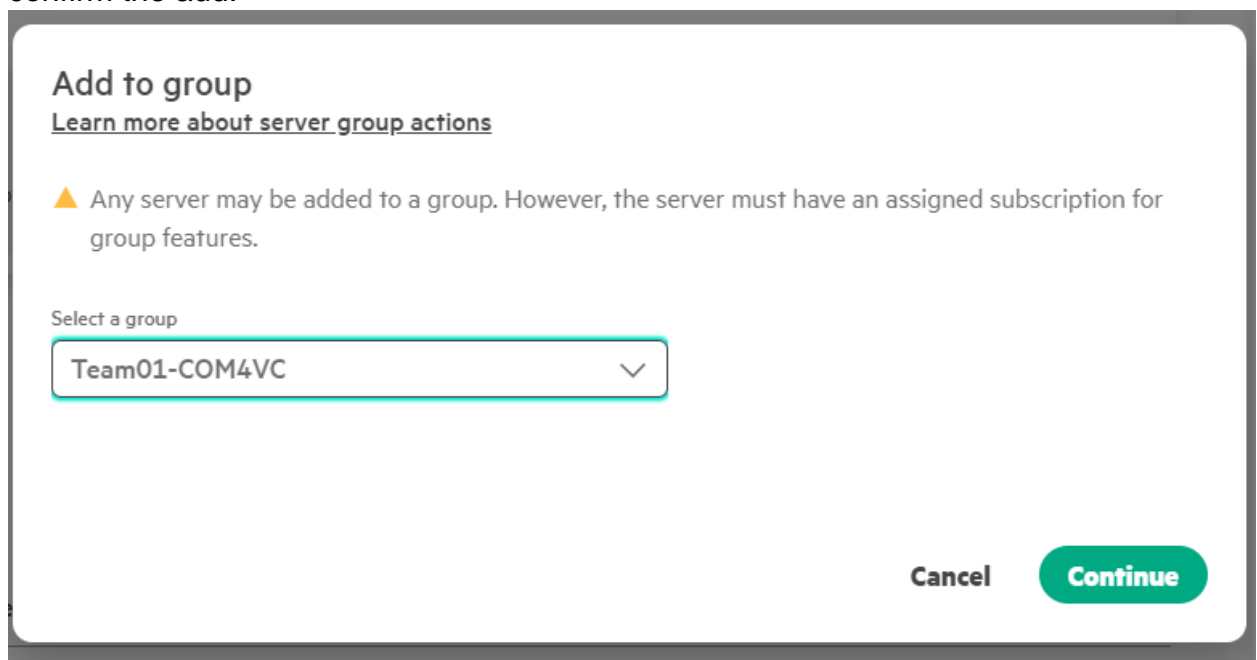
1 of 1 items selected

<input checked="" type="checkbox"/>	Status	Name	OneView name	Serial	State	Group	Power	Model
<input checked="" type="checkbox"/>		com-team01.hol.en...	--	2M294600DF	Connected	--	On	ProLiant DL160 Gen10

7. Tick the “check box” , and under “Actions” select “Add to Group”



8. Add this server to the group you previously created, choose “Continue” and confirm the add.



9. Now that the server is a member of a group, we can switch to our vCenter tab , refresh the page, and verify the group membership is being detected.

Make sure all fields are “green” before continuing to the next step.

#### vSphere LifeCycle Manager Pre-Check

---



Host	iSUT state	AMS state	Compute Ops Management Server Group
10.16.160.31	✓	✓	Team01-Com4VC ✓

**NOTE:**

- The password provided for configuring the iSUT mode and AMS service is not stored for future reference.
- This feature is supported for ProLiant Gen10 and above Servers only.
- All the hosts in the cluster should be part of same Compute Ops Management Server groups.
- Associated Compute Ops Management Server groups cannot have additional hosts.

## Lab 3c: 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.”

Lifecycle Manager | ACTIONS ▾

Image Depot   Updates   Imported ISOs   Baselines   Settings

▾ Administration  
    Patch Downloads  
    **Patch Setup**

▾ Cluster lifecycle  
    Images  
    Baselines  
    VMs

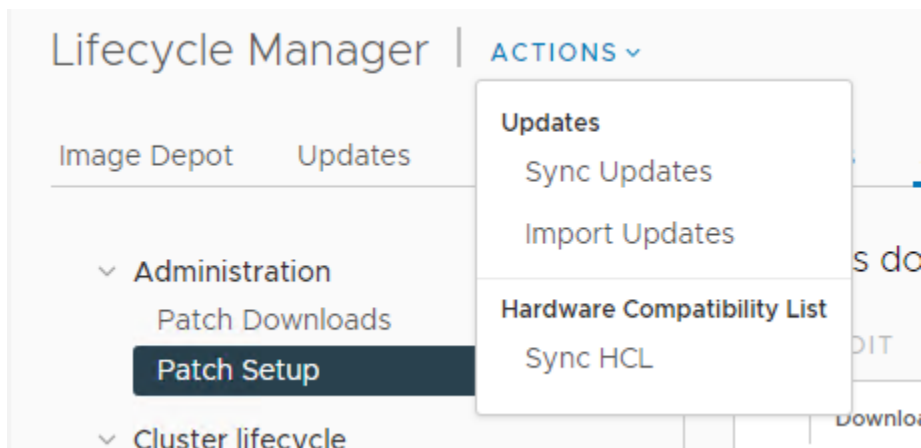
Patches downloaded from the internet

NEW   EDIT   DELETE   ENABLE   DISABLE

	Download Source	Enabled
<input type="radio"/>	https://hostupdate.vmware.com/software/...	Yes
<input type="radio"/>	https://hostupdate.vmware.com/software/...	Yes
<input type="radio"/>	https://hostupdate.vmware.com/software/...	Yes
<input type="radio"/>	https://hostupdate.vmware.com/software/...	Yes

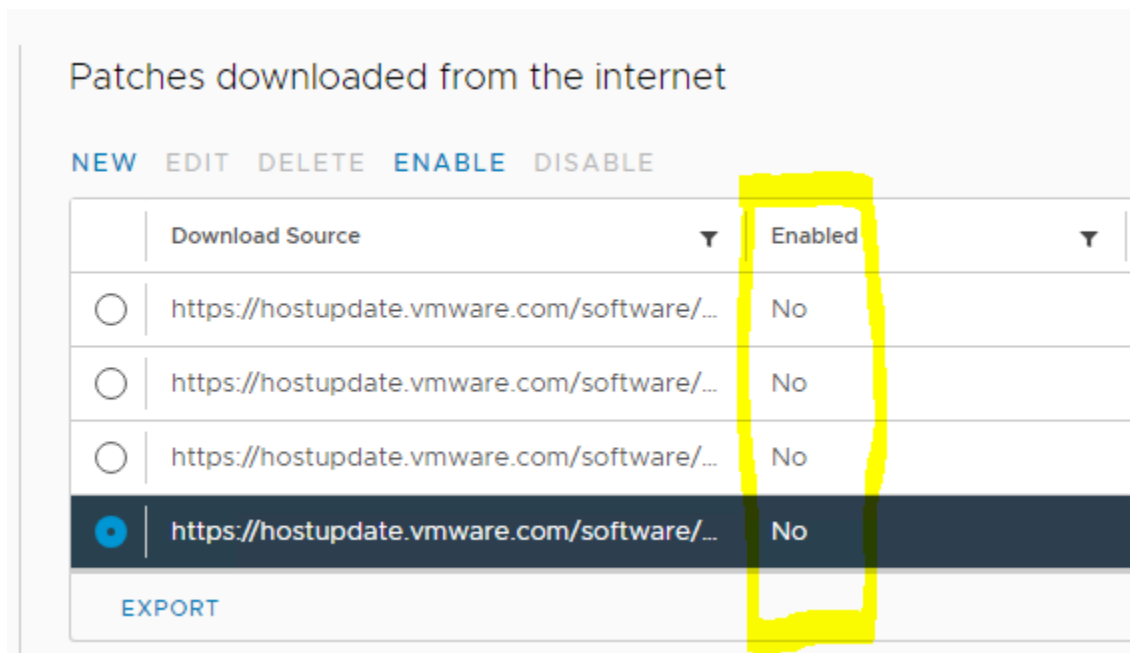
EXPORT

3. Under Actions, choose Sync Updates.



This sync process will take approximately **7** minutes to complete. Please wait for it to complete before continuing to the next step.

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



### Lab 3d: Registering the HSM Certificate with vCenter


vCenter's VLCM needs to communicate with HPE GreenLake Compute Ops Management via COM4VC's HSM API. In order to facilitate this communication path, an API certificate between COM4VC and vCenter needs to be installed.



COM4VC automates this certificate install via a single click.

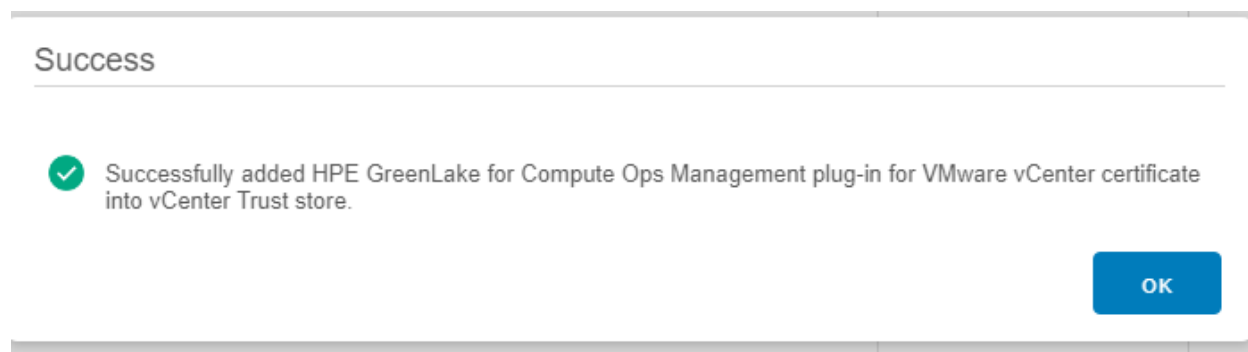
1. Navigate to the COM4VC Plugin by clicking the vCenter menu.
2. Navigate to HPE GreenLake for Compute Ops Management.
3. Select Compute Ops Management Firmware Baselines
4. Click “Add Certificate” in the top right.

Compute Ops Management Firmware Baselines

Software Depot Status  [RECONFIGURE](#) [ADD CERTIFICATE](#) [REVOKE CERTIFICATE](#)

Available SPPs	Version	Supported ESXi Versions	Online Software Depot
Patch bundle for Gen11 SPP 2023.10.00.00-2023.10.00.03	2023.10.00.03	8.0.2.8.0.1.7.0.3	<a href="#">REGISTER</a>
Patch bundle for Gen11 SPP 2023.10.00.00-2023.10.00.02	2023.10.00.02	8.0.2.8.0.1.7.0.3	<a href="#">REGISTER</a>
Gen11 Service Pack for ProLiant-2023.10.00.00	2023.10.00.00	8.0.2.8.0.1.7.0.3	<a href="#">REGISTER</a>
Patch bundle for Gen10 SPP 2023.09.00.00-2023.09.00.04	2023.09.00.04	8.0.2.8.0.1.7.0.3	<a href="#">REGISTER</a>
Patch bundle for Gen10 SPP 2023.09.00.00-2023.09.00.03	2023.09.00.03	8.0.2.8.0.1.7.0.3	<a href="#">REGISTER</a>
Patch bundle for Gen10 SPP 2023.09.00.00-2023.09.00.02	2023.09.00.02	8.0.2.8.0.1.7.0.3	<a href="#">REGISTER</a>
Gen10 Service Pack for ProLiant-2023.09.00.00	2023.09.00.00	8.0.2.8.0.1.7.0.3	<a href="#">REGISTER</a>

COM4VC 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.

Also notice the “Software Depot Status” icon.

This is confirmation that the COM4VC is indeed talking to COM.

## Compute Ops Management Firmware Baselines

Software Depot Status 

RECONFIGURE

### Lab 3e: Registering a Service Pack to be used by VLCM.

On the same screen, you will see a list of all the service packs and patch bundles that are known to HPE GreenLake for Compute Ops Management.

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

For this exercise, we are going to be setting up a vLCM cluster image that will do an in-place upgrade of an DL from ESX 8.0 GA to ESX 8.0U3 as well as patch firmware using an applicable firmware bundle.

Notice that firmware bundles do not support all ESX versions.

1. Identity your server generation – Gen10 or Gen11.
2. Select the appropriate 2024.11.00 Service Pack for your server model and click Register.

Files will be retrieved from Compute Ops Management – note this will take a few moments.

	2023.04.00.05	8.0.1,7.0.3,8.0.0,8.0.0
	2023.04.00.04	8.0.1,7.0.3,8.0.0
	2023.04.00.02	7.0.3,8.0.1,8.0.0
	2023.04.00.00	8.0.1,7.0.3,8.0.0
	2023.03.00.04	7.0.3,8.0.1,8.0.0
	2023.03.00.03	8.0.1,7.0.3,8.0.0

Downloading files from HPE Server







Success

✔

Online depot registered successfully with vLCM

OK

Notice that once you register the service pack, 3 “sync updates” tasks are kicked off in the activity monitor.

Task Name	Target	Status
Sync updates	 team01-vcsa.hol.ena...	<div><div></div></div> 10% 
Sync updates	 team01-vcsa.hol.ena...	<div><div></div></div> 10% 
Sync updates	 team01-vcsa.hol.ena...	<div><div></div></div> 10% 

This task will take a few moments (3 to 4 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
<input type="radio"/>	https://hostupdate.vmware.com/software/...	Yes	Connected	VMware	Host	Partner provided Addons for ESXi
<input type="radio"/>	https://hostupdate.vmware.com/software/...	Yes	Connected	VMware	Host	Download vSphere ESXi and ESX patches
<input type="radio"/>	https://hostupdate.vmware.com/software/...	Yes	Connected	VMware	Host	VMware Certified Async Drivers for ESXi
<input type="radio"/>	https://hostupdate.vmware.com/software/...	Yes	Connected	VMware	Host	VMware Async Releases for VM-tools on ESXi
<input type="radio"/>	https://team01-com4vc.hol.enablement.loc...	Yes	Connected	Custom	Host	Patch bundle for Gen11 SPP 2023.04.00.00-2023.04.00.05-HPE-802.0.0.11.3.5.1-Sep2023-Addon-depot
<input type="radio"/>	https://team01-com4vc.hol.enablement.loc...	Yes	Connected	Custom	Host	Patch bundle for Gen11 SPP 2023.04.00.00-2023.04.00.05-HPE-703.0.0.11.3.5.1-Sep2023-Addon-depot
<input type="radio"/>	https://team01-com4vc.hol.enablement.loc...	Yes	Connected	Custom	Host	Patch bundle for Gen11 SPP 2023.04.00.00-2023.04.00.05-HPE-800.0.0.11.3.5.2-Sep2023-Addon-depot
<input type="radio"/>	https://team01-com4vc.hol.enablement.loc...	Yes	Connected	Custom	Host	Patch bundle for Gen11 SPP 2023.04.00.00-2023.04.00.05-HPE-801.0.0.11.3.5.1-Sep2023-Addon-depot

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

## Lab 3f: 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 contains 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 4<sup>th</sup> component can be selected. This is usually when a 3<sup>rd</sup> 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 ProLiant hosts, the following document shows the valid combinations:

<https://vibsdepot.hpe.com/customimages/Valid-vLCM-Combos.pdf>

For this exercise, we are upgrading to 8.0U3 and applying the latest supported patch bundle.

For 8.0U3, and when using the 2024.11.00.00 SPP, the vibsdspot document specifies the following:

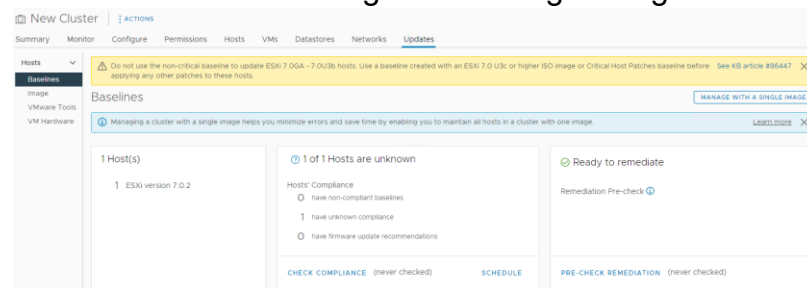
VMware Base Image: ESX 8.0U3 Build 24280767

HPE Add On: HPE ESXi 8.0 U3 Add-On 803.0.011.8.0

HPE VUP/SPP: Gen 10/Gen 11 Patch Bundle version 2024.11.00.00

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. With vCenter 8.0 U3, it will attempt to detect the image already present on the host. We wish to skip that, and instead define our own. Therefore, scroll down and at the bottom, choose "Setup Image Manually"

## Manage with a single image

Lifecycle Manager enables you to have all hosts in a cluster inherit the same image for overall maintenance.

① For the list of host requirements to be managed with a single image, please refer to the [Host Requirements](#) page.

### Currently running images in the cluster

The following images have been detected running on hosts in this cluster.

Checked on 01/24/2025, 5:41:08 PM [Check again](#)

☒ **ESXi 8.0 GA - 20513097**  
HPE Customization for HPE Servers 800.0.0.11.1.0-17  
No additional components

☒ All hosts are running this image

You can customize the image in the next step.

**PROCEED WITH THIS IMAGE**

### Other ways to set up an image for the cluster

[IMPORT IMAGE](#)

[SETUP IMAGE MANUALLY](#)

5. Next, we will define our three components for the cluster image.
  - a. Choose ESX 8.0U3b Build 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 ⓘ

8.0 U3c - 24414501 Enhancement

Firmware and Drivers Addon ⓘ

8.0 U3b - 24280767 Enhancement

Components ⓘ

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

8.0 U2 - 22380479 Enhancement

8.0 U1d - 23299997 Enhancement

8.0 U1c - 22088125 Enhancement

SAVE

VALIDATE

### Step 2: Check Image Compliance

Waiting for step 1 to finish.

- b. Under Vendor Add-in, we have to go to the second page to find the “HPE Customization for HPE Servers” section – and we will select the HPE ESXi 8.0 U3 Add-On 803.0.011.8.0 selection.

## Select Vendor Addon

Addon	Version	Release Date	Vendor
<input type="radio"/> HPE Customization for HPE Superdome X Servers	703.0.0.1.0.0-6	08/30/2021	Hewlett Packard Enterprise
<input type="radio"/> HPE Customization for HPE Superdome Flex Servers	803.0.0.12.0.0-14	06/25/2024	Hewlett Packard Enterprise
<input type="radio"/> HPE Customization for HPE Servers	803.0.0.11.8.0-6	09/26/2024	Hewlett Packard Enterprise
<input type="radio"/> FJT-Addon-for-FujitsuCustomImage	803.0.0.11.8.0-6	Enhancement	Fujitsu
<input type="radio"/> Dell addon for PowerEdge Servers running ESXi 7.0 U3	803.0.0.11.7.0-23	Enhancement	Dell Inc.
<input type="radio"/> DellEMC addon for PowerEdge Servers running ESXi 7.0 U2	802.0.0.11.6.0-5	Enhancement	Dell Inc.
<input type="radio"/> DellEMC addon for PowerEdge Servers running ESXi 7.0 U1	802.0.0.11.5.0-6	Enhancement	Dell Inc.
<input type="radio"/> DellEMC addon for PowerEdge Servers running ESXi 7.0 U1	802.0.0.11.4.0-14	Enhancement	Dell Inc.
<input type="radio"/> DellEMC addon for PowerEdge Servers running ESXi 7.0	801.0.0.11.4.0-6	Enhancement	Dell Inc.
<input type="radio"/> DellEMC addon for PowerEdge Servers running ESXi 7.0	801.0.0.11.3.2-2	Enhancement	Dell Inc.
<input type="radio"/> Dell addon for PowerEdge Servers	801.0.0.11.3.1-1	Enhancement	Dell Inc.
<input type="radio"/> Cisco-UCSE-Addon-ESXi	801.0.0.11.3.0-9	Enhancement	Cisco
<input type="radio"/> Cisco-UCSE-Addon-ESXi	800.0.0.11.3.1-1	Enhancement	Cisco

K &lt; 2 / 3 &gt; &gt;|

CANCEL


SELECT

- c. Under Firmware, select the HPE GreenLake for Compute Ops Management HSM, and then select the appropriate firmware bundle that is for ESX 8.0.3.

## Select Firmware and Drivers Addon

vSphere integrates with hardware support managers to install the selected firmware and driver addon on hosts in your cluster as part of applying the image to the cluster.

## Select the hardware support manager

HPE GreenLake for Compute Ops Management 

vLCM integration from HPE GreenLake for Compute Ops Management plug-in for VMware vCenter

## Select a firmware and driver addon

Addon name	Addon version	Supported ESXi versions
<input type="radio"/> Gen10 Service Pack for ProLiant	SPP-2024.11.00.00.802	8.0.2
<input type="radio"/> Gen10 Service Pack for ProLiant	SPP-2024.11.00.00.703	7.0.3
<input checked="" type="radio"/> Gen10 Service Pack for ProLiant	SPP-2024.11.00.00.803	8.0.3

Gen10 Service Pack for ProLiant SPP-2024.11.00.00.803

Hewlett Packard Enterprise

Service Pack for ProLiant Manifest

Supported ESXi Versions

8.0.3

Included drivers 

CANCEL

SELECT



A completed cluster image should look like this:

### Step 1: Define Image

ESXi Version	8.0 U3b - 24280767  (released 09/16/2024)
Vendor Addon 	HPE Customization for HPE Servers 803.0.0.11.8.0-6  
Firmware and Drivers Addon 	Gen10 Service Pack for ProLiant SPP-2024.11.00.00.803  
Components 	No additional components <a href="#">Show details</a>

[SAVE](#)[VALIDATE](#)

6. Save the Image definition. A “Check Image Compliance” operation will now be started. Wait for it to finish (about 5 minutes) and then click “Finish Image Setup.

Note: Sometimes, the compliance check will not finish successfully due to timing. Click “Finish Image Setup” and then “Check Compliance” again.

## Lab 3g: Exploring Image Compliance

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

Step 2: Check Image Compliance CHECK COMPLIANCE

Last checked on 01/24/2025, 2:19:39 PM (0 days ago)  
 ⚠️ 1 of 1 hosts is out of compliance with the image

Hosts

10.18.22.102

10.18.22.102

Host is out of compliance with the image

⚠️ The CPU in this host may not be supported in future ESXi releases. Please plan accordingly.


🔔 The host will be rebooted during remediation.  
 🔔 Quick Boot is supported on the host.

Software compliance Show Only drift comparison

Image	Host Version	Image Version
ESXi Version	8.0 GA - 20513097	8.0 U3b - 24280767
Vendor Addon	HPE Customization for HPE Servers 800.0.0.11.1.0-17	HPE Customization for HPE Servers 803.0.0.11.8.0-6
Firmware and Drivers Addon	None	Gen10 Service Pack for ProLiant SPP-2024.11.00.00.803

Firmware compliance

🔔 Compliance Scan of host-21 is Completed. Result is COMPLIANT.

Firmware component	Host Version	Image Version
		

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 8.0 GA , but our Image requires 8.0 U3b.
2. Our host is running the 800.0.0.11.1.0-17 Server Customization, but our Image requires an 803-based 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.

## Firmware compliance

⚠ Compliance Scan of host-12 is Completed. Result is NON-COMPLIANT.

Firmware component	Host Version	Image Version	
Broadcom P225p NetXtreme-E Dual-port 10Gb/25Gb Ethernet PCIe Adapter - NIC	223.1.96.0	226.1.107.0	⚠
BCM 57504 10/25GbE 4p SFP28 OCP3 Adptr	224.1.102	226.1.107	⚠
HPE MR408i-o Gen11	52.22.3-4650	52.24.3-4948	⚠
System ROM	v1.40 (07/12/2023)	v1.42 (08/16/2023)	⚠
Components per page <span>4</span> <span>▼</span> 4 components			

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.

## Software compliance

Show Full image comparison ▼

Image	Host Version	Image Version
-------	--------------	---------------

## Lab 3h: Remediating a host.

**Note:** Remediation can take some time to complete – up to **45 minutes** in some cases, especially if new firmware is being applied.

If you want to speed up your remediation, go back to your cluster image and delete the firmware section, leaving just the base ESX and the Vendor Add-on.

Or, you can simply view the screenshots for this section and continue to the lab summary.

We can now begin a remediation of our host.

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

## Review Remediation Impact



Impact summary
Applicable remediation settings
End User License Agreement
Impact to specific hosts
10.18.22.91

**Impact summary**

- 1 host(s) are non-compliant with the image.
- 1 host(s) will be rebooted.
- The cluster needs remediation to finish enabling these Solutions: vSphere HA 8.0 GA.

**Notes**

**VM states honor remediation settings**  
VMs may be powered off, suspended or migrated to other hosts based on the applicable remediation settings.

**Pre-check will be run again as a part of the remediation**  
Pre-check will be run again as a part of the remediation process. This is to ensure that no new issues have arisen on the cluster or hosts since the last pre-check (if any) that prevent remediation.

**Hosts are remediated one at a time**  
Hosts will be remediated one at a time, so hosts will not reboot/go into maintenance mode simultaneously.

**Order of host remediation is determined at runtime**  
Hosts will be remediated in an order determined at runtime. Hence that order may not correspond to the order in which they appear here.

**Quick Boot**  
Quick Boot optimizes the reboot path to avoid the hardware full power cycle, saving considerable time from the upgrade process.

☒ I accept the terms of the [end user license agreement](#)

[EXPORT IMPACT DETAILS](#) [CLOSE](#) [START REMEDIATION](#)

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

**Image Compliance** [CHECK COMPLIANCE](#) [...](#)

Last checked on 04/12/2023, 11:04:30 AM (0 days ago)

1 of 1 hosts is out of compliance with the image

**Remediating hosts...** [SKIP REMAINING HOSTS](#)

Started 04/12/2023, 11:03:49 AM

- 04/12/2023, 11:09:09 AM: Started to install the image on host '10.18.22.91'
- 04/12/2023, 11:09:09 AM: Started to install the image on host '10.18.22.91'
- 04/12/2023, 11:09:09 AM: Completed hardware update action: 'PRE\_IMAGE\_UPDATE' for host '10.18.22.91'.
- 04/12/2023, 11:09:07 AM: Started Hardware Update action: 'PRE\_IMAGE\_UPDATE' for host '10.18.22.91'.
- 04/12/2023, 11:09:07 AM: Completed hardware update action: 'PRE\_IMAGE\_UPDATE' for host '10.18.22.91'.
- 04/12/2023, 11:09:05 AM: Started Hardware Update action: 'PRE\_IMAGE\_UPDATE' for host '10.18.22.91'.
- 04/12/2023, 11:09:05 AM: Completed hardware update action: 'STAGE\_UPDATE' for host '10.18.22.91'.
- 04/12/2023, 11:09:03 AM: Started Hardware Update action: 'STAGE\_UPDATE' for host '10.18.22.91'.
- 04/12/2023, 11:09:03 AM: Completed hardware update action: 'UPDATE\_PRE\_CHECK' for host '10.18.22.91'.
- 04/12/2023, 11:08:31 AM: Started Hardware Update action: 'UPDATE\_PRE\_CHECK' for host '10.18.22.91'.
- 04/12/2023, 11:08:31 AM: Starting remediation of the host '10.18.22.91'
- 04/12/2023, 11:08:31 AM: Completed getting host recommendation from DRS to enter maintenance mode for cluster 'Cluster01'. Selected host: '10.18.22.91'.
- 04/12/2023, 11:04:31 AM: Started getting host recommendation from DRS to enter maintenance mode for cluster 'Cluster01'.
- 04/12/2023, 11:04:30 AM: Finished compliance check for cluster 'Cluster01'

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.


Image Compliance

Last checked on 04/12/2023, 11:04:30 AM (0 days ago)

 1 of 1 hosts is out of compliance with the image

Remediating hosts...

Started 04/12/2023, 11:03:49 AM

-  04/12/2023, 11:09:50 AM:Started to reboot host '10.18.22.91'
- 04/12/2023, 11:09:50 AM:Completed installing the image on host '10.18.22.91'
- 04/12/2023, 11:09:09 AM:Started to install the image on host '10.18.22.91'

If any firmware was to be applied, once can switch over to the Compute Ops Management server page and see that there is an update in progress.

	Team01-Com4VC	1	Group firmware update in progress	Not compliant	1	...
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Server groups

Team01-Com4VC

1 server

Details

Group status

●

Ok

Description

--

Job state

Group firmware update in progress

Health

Critical

◆

0 servers

Warning

▲

0 servers

Normal

●

1 server

Unknown

■

0 servers

Disabled

▢

0 servers

1 Server

×

Status	Name	State	Baseline
●	localhost.mgmt.hpe.local	Firmware update in progress - 54% complete	--

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

## Image Compliance

Last checked on 01/24/2025, 6:10:22 PM (0 days ago)

✓ All hosts in this cluster are compliant

Remediation completed successfully

Completed 01/24/2025, 6:10:31 PM

✓ 1 Host completed • Only one host remediated: 10.18.22.102

## Lab 3 Summary

Lab 3 showed you some of the richness of COM4VC and its ability to integrate with vSphere Lifecycle Manager (VLCM). In this Lab, you integrated COM4VC's "HSM" with VLCM. 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.

## 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 GreenLake for Compute Ops Management vCenter Integration.

In the exercises you accomplished you were able to:

- Register the COM4VC plugin with VMware vCenter.
- Create an API and register the plugin with COM
- Set up a VLCM Cluster Image and remediate a host.

**Please return your team assignment sheet to your lab proctor.**