

HP Discover 2015

HOL 1484

# HP OneView Integration with VMware vCenter

## Lab Guide

Rev. 1.3

© Copyright 2015 Hewlett-Packard Development Company, L.P.



© Copyright 2015 Hewlett-Packard Development Company, L.P.

The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

This is an HP copyrighted work that may not be reproduced without the written permission of HP. You may not use these materials to deliver training to any person outside of your organization without the written permission of HP.

Microsoft® and Windows® are U.S. registered trademarks of Microsoft Corporation.

Intel®, Xeon®, and Itanium® are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

UNIX® is a registered trademark of The Open Group. Opteron is a trademark of Advanced Micro Devices, Inc.

**HOL 1484 HP OneView Integration with VMware vCenter Lab guide**  
June 2015

Lab 1 — Accessing the LAB Environment	
Objectives .....	1
Summary.....	1
Lab 2 — Installing HP OneView for vCenter Plugin	
Objectives .....	1
Summary.....	13
Lab 3 — Configuring HP OneView for vCenter Plugin	
Objectives .....	1
Summary.....	14
Lab 4 — Using HP OneView for vCenter – Claiming an Enclosure and Grow an ESX Cluster	
Objectives .....	1
Summary.....	11
Lab 5 — Mapping Virtual to Physical	
Objectives .....	1
Summary.....	4
Lab 6 — Using HP OneView for vCenter – Managing Firmware	
Objectives .....	1
Summary.....	4
Lab 7 — Using HP OneView for vCenter – Provisioning Additional Capacity	
Objectives .....	1
Part 1 – Creating a new Datastore.....	2
Part 2 – Expanding an Existing Datastore.....	7
Summary.....	11
Lab 8 — Trouble Shooting	
Objectives .....	1
Part 1 – General Trouble Shooting.....	2
Part 2 – Troubleshooting the product.....	5
Part 3 – Server Data is missing.....	7
Part 4 – Storage Data is missing.....	8
Summary.....	8

---

# Accessing the LAB Environment

Lab 1

## Objectives

After completing this lab, you should be able to:

- Access the remote lab network
- Log in to the various consoles (vCenter, OneView and the BladeSystem OA)
- Verify the environment

## Introduction

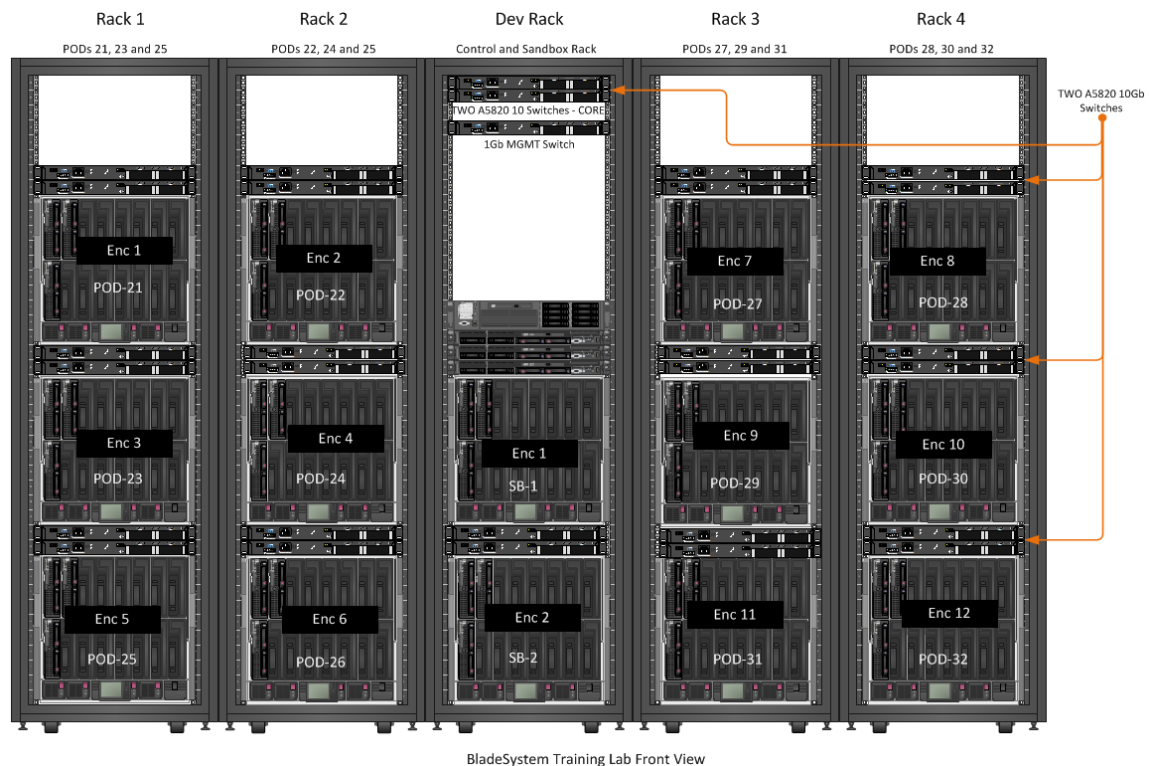
In this lab, you will gain access to the Remote LAB equipment. Each POD consists of a c7000 enclosure with FlexFabric modules in Bays 1 and 2, BL460c Gen8 Blade Servers in Bays 1,2 and 9, a pair of HPN 5820 LAN switches, its own vCenter and OneView appliances, and a Windows 2012R2 virtual machine where the OneView plug in will be installed. Each POD has full control over their dedicated c7000 enclosure, vCenter and OneView appliances. In addition, there is a shared HP StoreServ 10000 series SAN for use with the Labs, and an installation of Insight Control Server Provisioning (ICSP) that will be used to deploy the ESXi OS during the Grow Cluster LAB. You will not have administrative access to either the 3PAR Array or ICSP, but will be able to utilize them during the Labs.

Once logged in you will notice that OneView and vCenter are already installed and configured. The Labs will have you install the HP OneView for vCenter plug in and integrate it with the BladeSystem enclosure, VMware vCenter and HP OneView environments.

## Remote Lab Equipment

This section summarizes the various hardware components comprising the HP remote lab environment used for this Lab. The various login accounts used and application services are also identified.

Figure 1 Front View of Training Lab Equipment and Racks

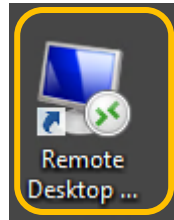


There are 12 student PODs (equipment stations). Each student POD consists of a c7000 BladeSystem Enclosure and two 5820 switches.

Each POD has cabling in place for connecting the instructor’s Core switches to each student POD’s switches and connects the Student POD’s switches to the Virtual Connect modules in the BladeSystem enclosure.

The Core switches provide access to the Internet and other remote access equipment such as Microsoft Remote Desktop Protocol (RDC) servers. In addition, Figure 2 and 3 provide a closer look at the equipment and connectivity.

1. Once logged in to the LAB environment you will need to open an additional Remote Desktop Session to the server in which the OneView for vCenter plugin will be installed, to do so, open a Remote Desktop Connection from the current Terminal Services desktop and connect to the system noted below for your POD, login using the OneView-xx account and password used earlier. Note; click on the MSTSC icon on the desktop, (If that icon does not exist, simply run MSTSC from PowerShell).



**Note:** The System number is the POD # corresponds to your POD ID.

POD ID	RDP Computer Name
21	Windows-21.cinetworking.lab
22	Windows-22.cinetworking.lab
23	Windows-23.cinetworking.lab
24	Windows-24.cinetworking.lab
25	Windows-25.cinetworking.lab
26	Windows-26.cinetworking.lab
27	Windows-27.cinetworking.lab
28	Windows-28.cinetworking.lab
29	Windows-29.cinetworking.lab
30	Windows-30.cinetworking.lab
31	Windows-31.cinetworking.lab
32	Windows-32.cinetworking.lab

Student logins are shown in the table below.

vCenter Login		
	User Name	Password
	Local\administrator	hpinvent

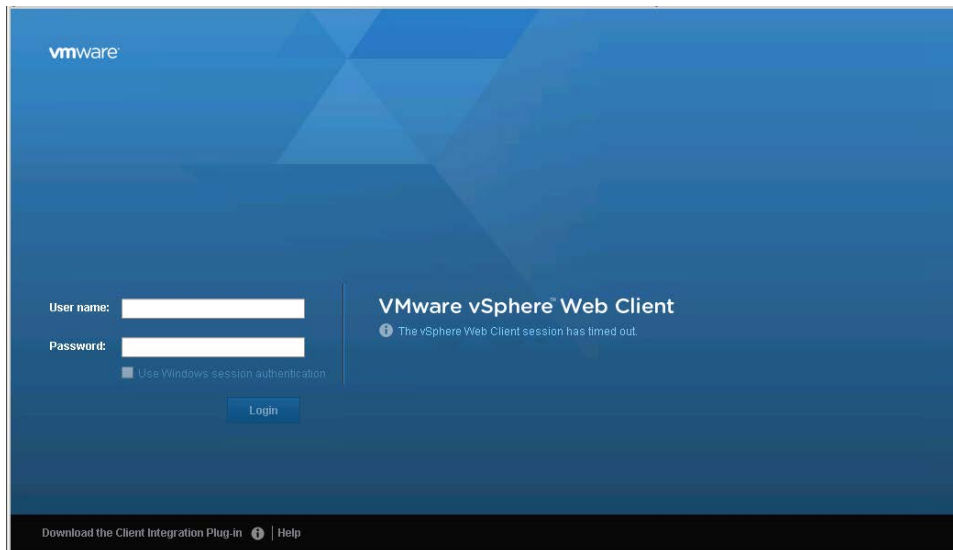
- Once logged in, open a Web Browser, you will notice links for BladeSystem, OneView and vCenter. vCenter should be the default web page for your POD, log in to vCenter with the credentials noted in the following step.

POD ID	URL
21	https://vCenter-21.cinetworking.lab:9443/vsphere-client
22	https://vCenter-22.cinetworking.lab:9443/vsphere-client
23	https://vCenter-23.cinetworking.lab:9443/vsphere-client
24	https://vCenter-24.cinetworking.lab:9443/vsphere-client
25	https://vCenter-25.cinetworking.lab:9443/vsphere-client
26	https://vCenter-26.cinetworking.lab:9443/vsphere-client
27	https://vCenter-27.cinetworking.lab:9443/vsphere-client
28	https://vCenter-28.cinetworking.lab:9443/vsphere-client
29	https://vCenter-29.cinetworking.lab:9443/vsphere-client
30	https://vCenter-30.cinetworking.lab:9443/vsphere-client
31	https://vCenter-31.cinetworking.lab:9443/vsphere-client
32	https://vCenter-32.cinetworking.lab:9443/vsphere-client

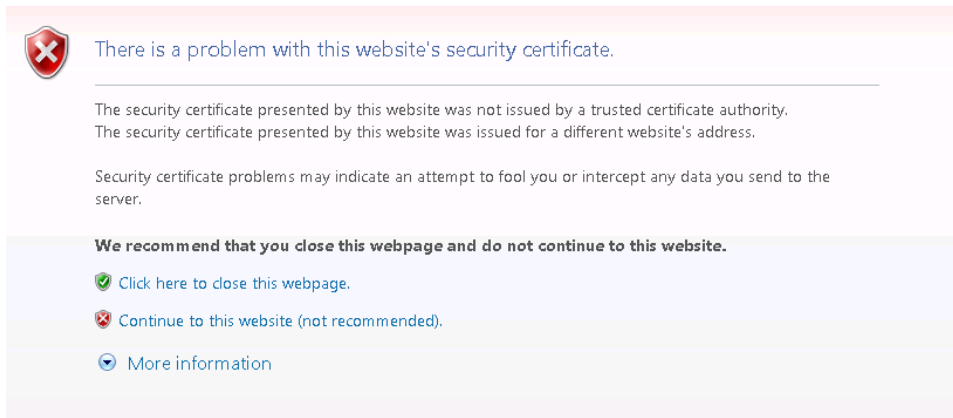
- Enter the following user credentials to log in to the vCenter Server.

Student logins are shown in the table below.

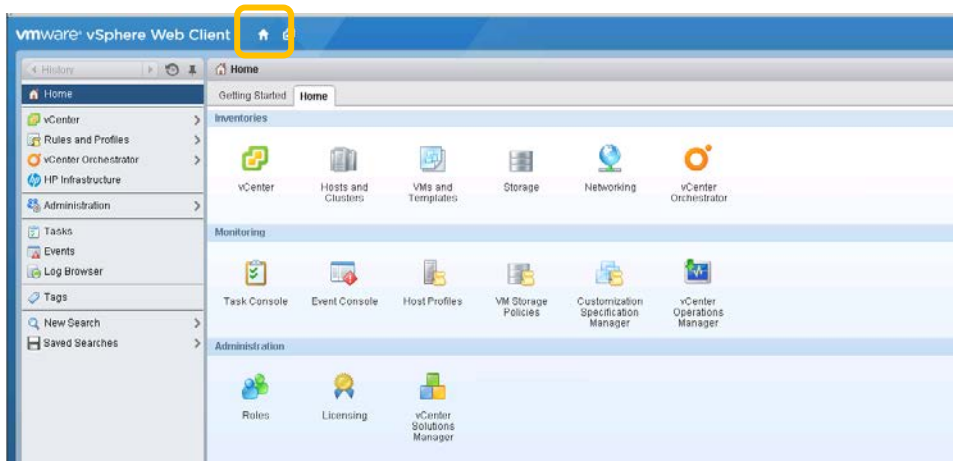
vCenter Login		
POD ID	User Name	Password
	Administrator@vsphere.local	hpinvent



- You might see the following certificate error. Click on Continue to this website link. Normally you would install a certificate at this point to avoid these messages in the future. However, for the sake of time this will not be covered in this lab.



- Once the vCenter console opens, click the HOME icon and View the vCenter console, expand out the vCenter view. There is a single ESX host currently configured within a vCenter Cluster, view and verify the ESX host configuration. We will review this environment later; after the Plugin has been installed.



- OneView – Although we don't make any changes directly to the OneView environment through these labs, you can log in to OneView and take a look around. Open another tab in your Web Browser and access your OneView server as shown below.

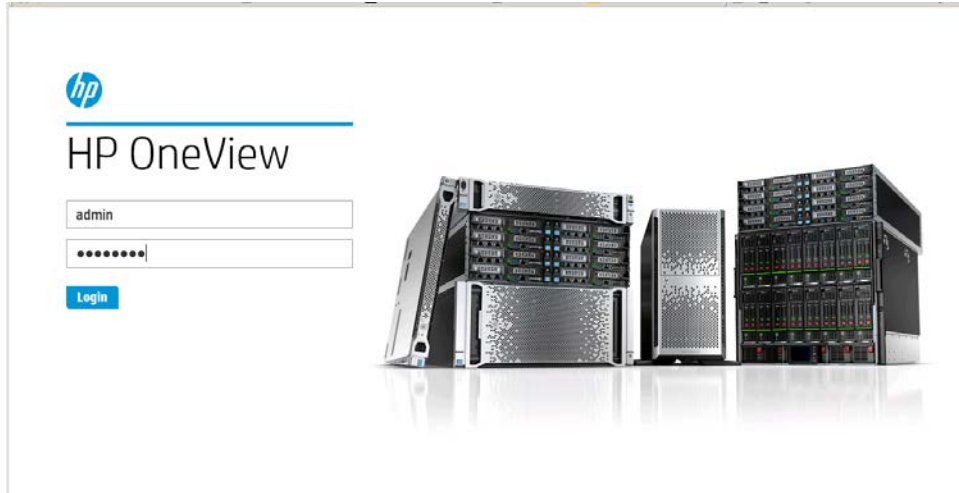
POD ID	URL
21	https://pod21-hpov.cinetworking.lab
22	https://pod22-hpov.cinetworking.lab
23	https://pod23-hpov.cinetworking.lab
24	https://pod24-hpov.cinetworking.lab
25	https://pod25-hpov.cinetworking.lab
26	https://pod26-hpov.cinetworking.lab
27	https://pod27-hpov.cinetworking.lab
28	https://pod28-hpov.cinetworking.lab
29	https://pod29-hpov.cinetworking.lab
30	https://pod30-hpov.cinetworking.lab
31	https://pod31-hpov.cinetworking.lab
32	https://pod32-hpov.cinetworking.lab



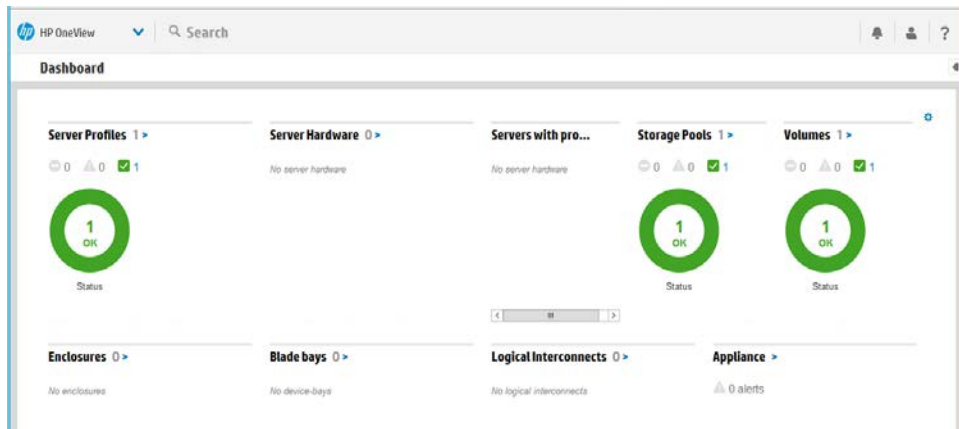
7. Enter the following user credentials to log in to the OneView.

Student logins are shown in the table below.

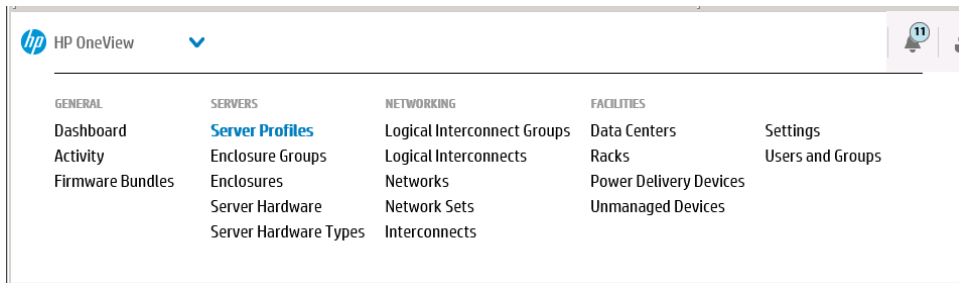
Remote Desktop Servers: Windows Login Accounts		
POD ID	User Name	Password
xx	admin	hpinvent



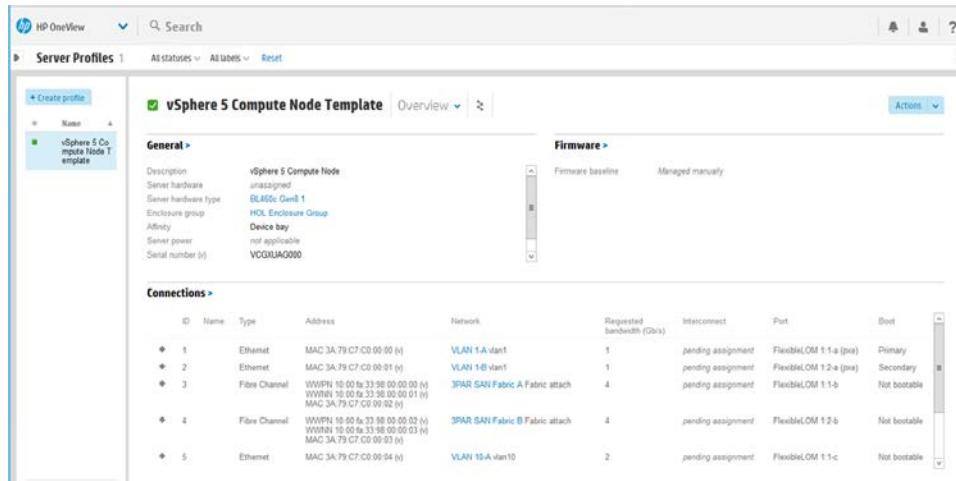
OneView Dashboard, once logged in.



OneView Server profile, Blade 9.



OneView Server profile, Blade 9.



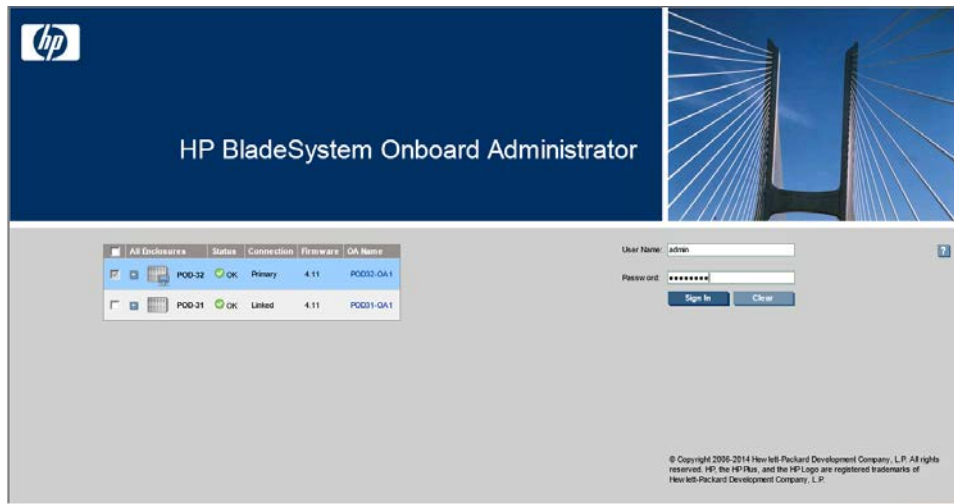
8. BladeSystem – Although we don't make any changes directly to the BladeSystem environment through these labs, you can log in to the BladeSystem OA and open an iLO session to a Blade or observe some of the actions taken by the plugin to deploy a server or upgrade firmware, for example.
9. Open another tab in your Web Browser and access your BladeSystem enclosure as shown below.

POD ID	URL
21	<a href="https://pod21-0a1.cinetworking.lab">https://pod21-0a1.cinetworking.lab</a>
22	<a href="https://pod22-0a1.cinetworking.lab">https://pod22-0a1.cinetworking.lab</a>
23	<a href="https://pod23-0a1.cinetworking.lab">https://pod23-0a1.cinetworking.lab</a>
24	<a href="https://pod24-0a1.cinetworking.lab">https://pod24-0a1.cinetworking.lab</a>
25	<a href="https://pod25-0a1.cinetworking.lab">https://pod25-0a1.cinetworking.lab</a>
26	<a href="https://pod26-0a1.cinetworking.lab">https://pod26-0a1.cinetworking.lab</a>
27	<a href="https://pod27-0a1.cinetworking.lab">https://pod27-0a1.cinetworking.lab</a>
28	<a href="https://pod28-0a1.cinetworking.lab">https://pod28-0a1.cinetworking.lab</a>
29	<a href="https://pod29-0a1.cinetworking.lab">https://pod29-0a1.cinetworking.lab</a>
30	<a href="https://pod30-0a1.cinetworking.lab">https://pod30-0a1.cinetworking.lab</a>
31	<a href="https://pod31-0a1.cinetworking.lab">https://pod31-0a1.cinetworking.lab</a>
32	<a href="https://pod32-0a1.cinetworking.lab">https://pod32-0a1.cinetworking.lab</a>

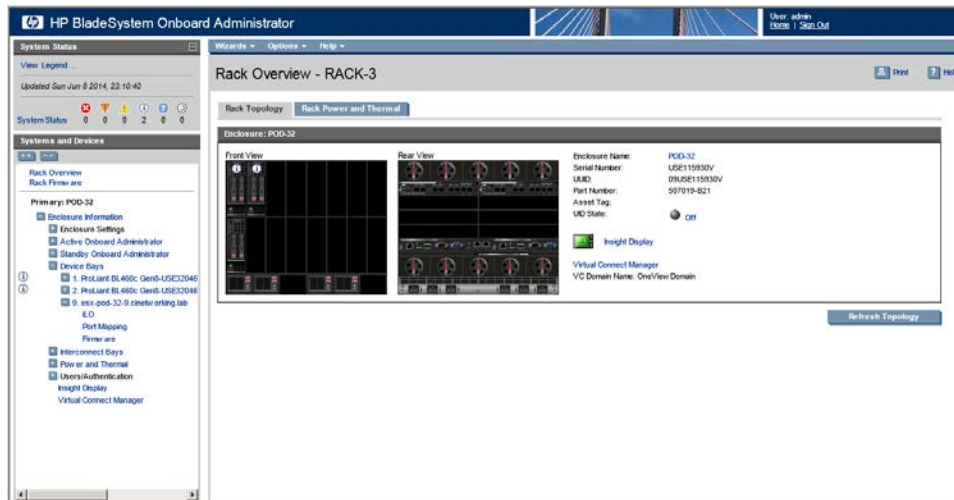
- Enter the following user credentials to log in to the BladeSystem OA. Ensure only your POD is selected. (Do NOT change this or any password).

Student logins are shown in the table below.

Remote Desktop Servers: Windows Login Accounts		
POD ID	User Name	Password
xx	admin	hpinvent



OA Home page, once logged in.



Note: Blades 1 and 2 should be off, this will be indicated by an orange power button LED on the front of each Blade. Blade 9 will be on, indicated by a green horizontal status LED and a green power button LED. If Blades 1 and 2 are not off, you can power them off, if you need assistance, please ask the instructor.

11. Take a few minutes and familiarize yourself with the vCenter Web, OneView and BladeSystem OA consoles.

## Summary

During this lab exercise you accessed the environment, logged in to the vCenter web appliance, OneView and the BladeSystem OA and viewed the current state of vCenter and the deployed Blade Server.

---

# Installing HP OneView for vCenter Plugin

Lab 2

## Objectives

After completing this lab, you should be able to:

- Install and configure the OneView for vCenter Plug in on a Windows server.

## Introduction

In this lab, you will install the Insight Control for vCenter (7.6) plugin onto a Windows 2012 R2 server, configure the storage component, then log in to vCenter to complete the configuration of the plugin.

The product installer is available on the desktop of that system.

---

**Note** this VM will be in a **non-persist** state, do not power off the VM before you are finished the labs, as all changes will be lost.

---

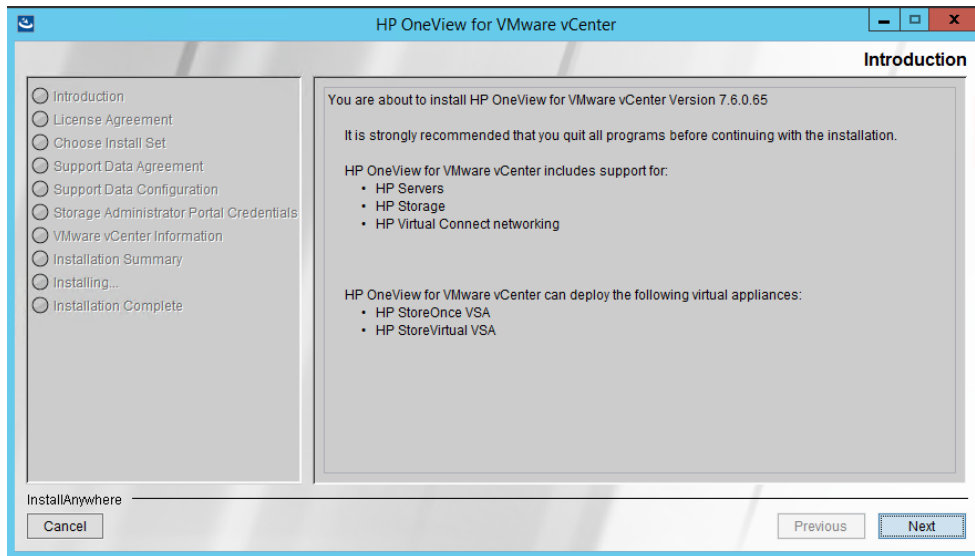
## 1. Installing the software

To launch the installation, from the desktop of the Windows 2012R2 system you should now be logged in to, and execute the plugin installer on the desktop - "HP\_OneView\_for\_VMware\_vCenter\_7.6\_April\_2015\_Z7550-01710.exe".

Click Continue...

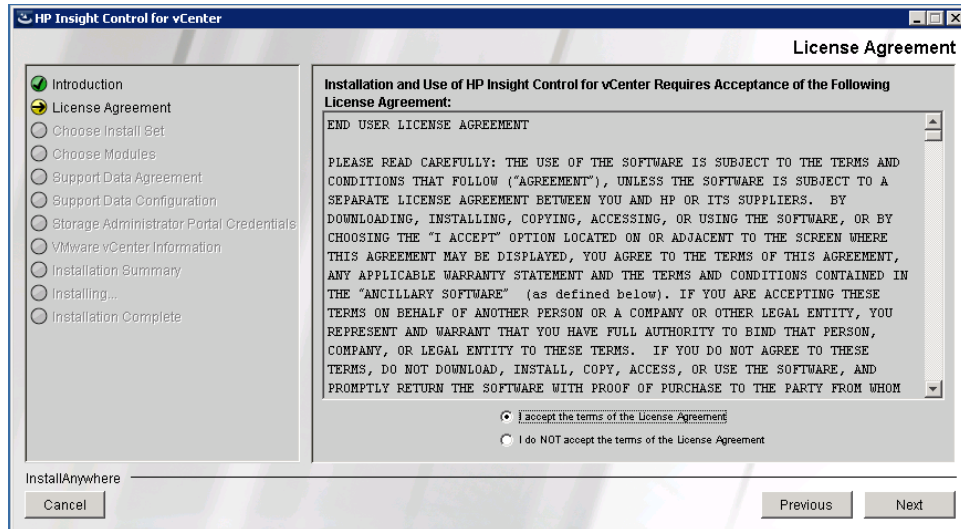


Click Next...



## 2. License Agreement

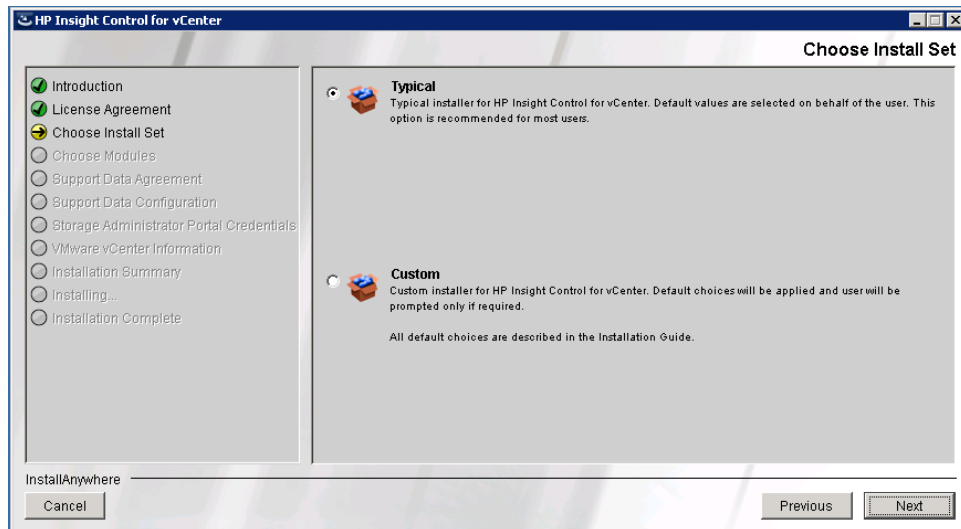
Click I accept, then click next.



### 3. Choose Install Set

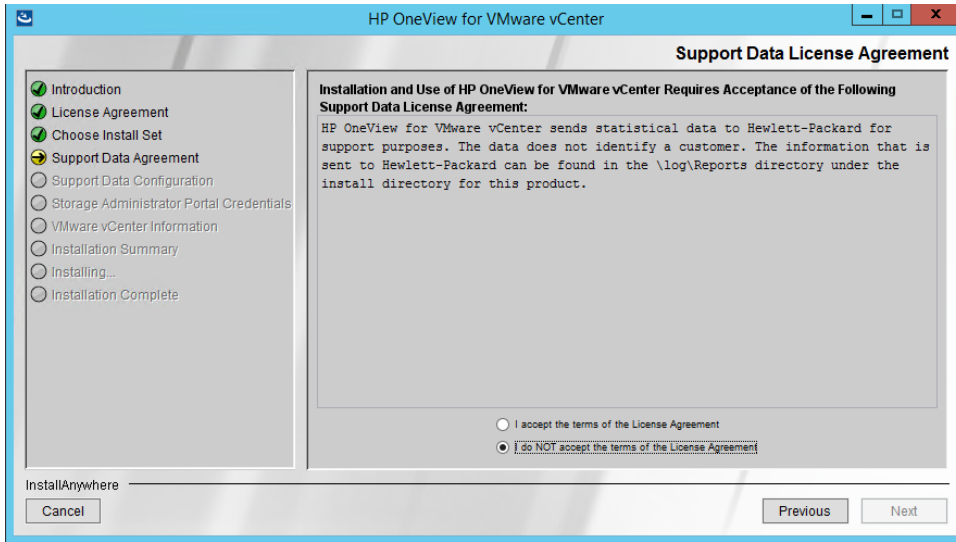
This will be appropriate for most customers. There are very few situations where you would want to select Custom. The custom screens are included in this topic with a description of when you would use them. However, you will not see them since you are following the Typical path. More information is also available in the product user guide.

Select Typical as the installation type. Then click next.



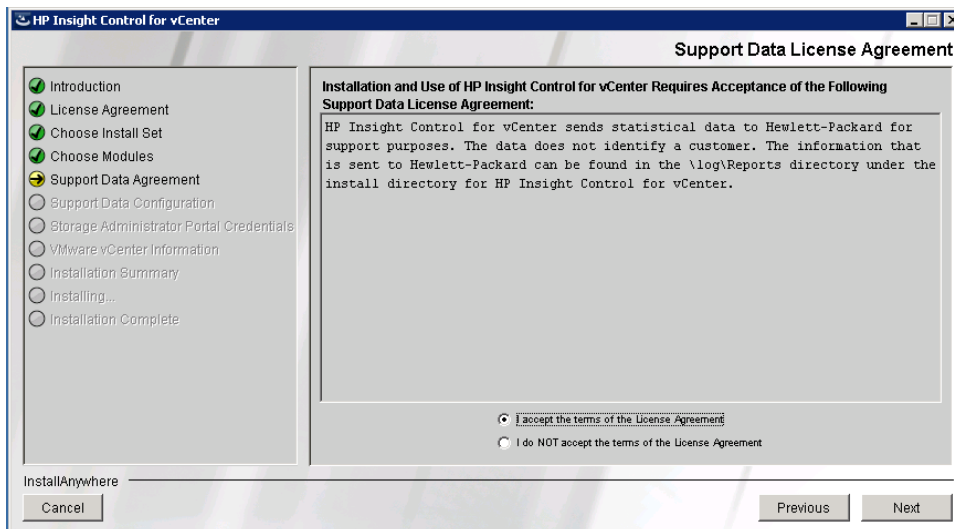
### 4. New in the 7.6 release is for the plugin to collect and send anonymous data back to HP.

Select "I Accept the terms" to continue.



5. Support Data License Agreement, Click I accept, then click next.

The product will periodically upload statistical information regarding the size of your environment and the types of HP storage arrays managed. This is very important information used by the development team when planning new features and testing product performance and scalability. Please make sure that you also configure the proxy server correctly on the next screen.



Here is an example of the support data uploaded by the tool.

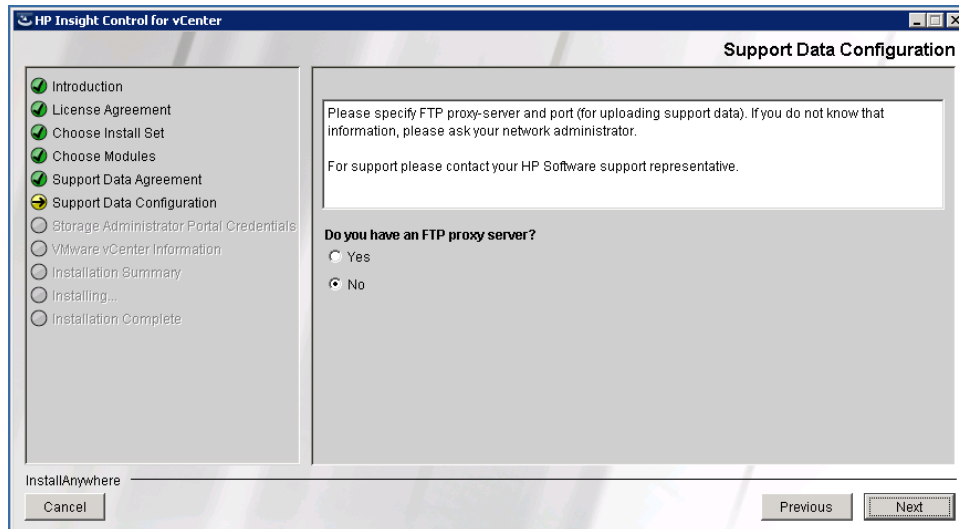
```
<?xml version="1.0" encoding="UTF-8"?>
<SupportData app="HPI CSM" supportDataVersion="2">
<Application app="HPI CSM" version="7.0.0.0"/>
<Application app="HPI CSMBuild" version="244"/>
<Application HPI CSM_InstallDate="Fri Apr 27 08:12:41 EEST 2012"/>
<Application app="HPI C" version="7.0.0.0"/>
<VCID UUID="01B5BC19-433E-42B1-AA29-A9E13C02D41A"/>
<Metric type="XP Count" value="0"/>
<Metric type="P9000 Count" value="0"/>
<Metric type="EVA Count" value="7"/>
```



```
<Metric type="P2000 Count" value="0"/>
<Metric type="P4000 Count" value="0"/>
<Metric type="MSA Count" value="0"/>
<Metric type="Cluster Count" value="36"/>
<Metric type="Host Count" value="197"/>
<Metric type="DataStore Count" value="908"/>
<Metric type="VM Count" value="2362"/>
<Metric type="Disk Count" value="4155"/>
<Metric type="3PAR Count" value="1"/>
<Metric type="vCenter Count" value="1"/>
<ESXVersions ESXVERS="VMware ESXi 4.1.0 build-502767, VMware ESXi 4.1.0 build-582267, VMware ESXi 5.0.0 build-623860, VMware ESXi 4.1.0 build-348481, VMware ESX 4.0.0 build-208167, VMware ESX 4.0.0 build-261974, VMware ESXi 4.1.0 build-433742, VMware ESXi 5.0.0 build-515841, VMware ESX 4.1.0 build-320092, VMware ESX 4.1.0 build-260247"/>
<VCVersions VCVERS="Virtual Center 5.0"/>
</SupportData>
```

## 6. Support Data Configuration

If a proxy is required to communicate with the internet, it is important that you configure the proxy information here. This is used to upload support data to HP. Support data is discussed in the previous step, Support Data License Agreement.

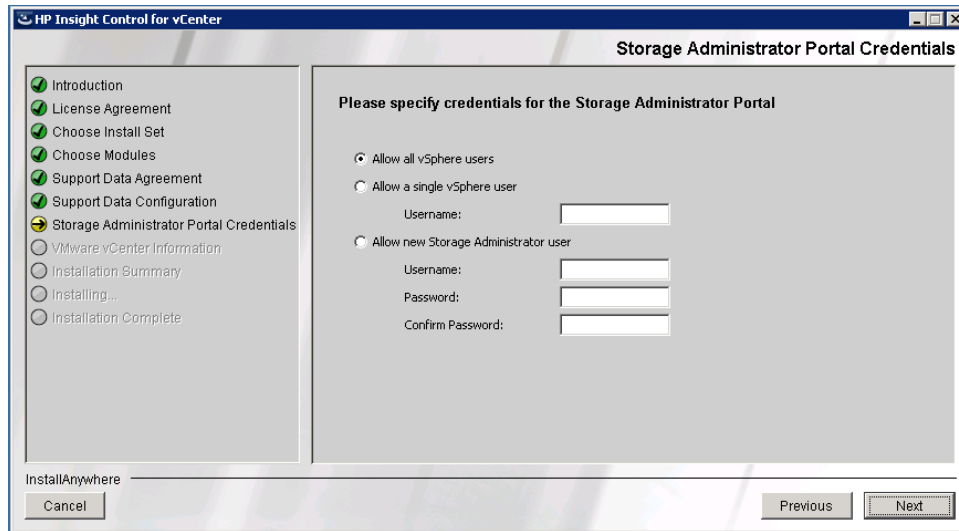


## 7. Storage Administrator Portal Credentials, Click "Allow all vSphere users", and then click next.

This is an important configuration step used to control access to the Storage Administrator Portal. The Storage Administrator Portal is used to configure which storage arrays are managed by the plug-in and which storage pools can be used for provisioning. This option is intended to support customers from various customer segments.

- **Allow all vSphere users:** This will allow any VMware user to login to the Storage Administrator Portal. This is appropriate for small IT departments where the same administrators manage both VMware environments as well as storage environments. This also allows the Storage Administrator Portal to be launched from within the plug-in and automatically log the user into the Storage Administrator Portal.
- **Allow single vSphere user:** This will allow a single VMware user to login to the Storage Administrator Portal. This is useful where you want to allow a single user to configure storage arrays in the Storage Administrator portal. This is applicable for customers with a dedicated storage administrator. In this situation, VMware will manage the credentials for the user (which allows the password to be changed). If multiple storage administrators will need access to the Storage Administrator Portal they will need to share these credentials.

- **Allow new user for Storage Administrator portal:** This will allow a single user to login to the Storage Administrator Portal. This is useful where your storage administrator does not have access to VMware. The credentials for this user cannot be changed. If multiple storage administrators will need access to the Storage Administrator Portal they will need to share these credentials.



## 8. Importing the configuration data from previous release

Note: This step is part of a custom install and will not be performed during the Hands-on Lab.

When performing a typical install, the product automatically performs an import of data from the following locations:

- "C:\Program Files (x86)\HP\HP Insight Control for vCenter" for exported storage and server data from version 7.x of the plug-in.
- "C:\Storage Integration" for exported storage data from earlier versions of the plug-in.
- "C:\temp\ic4vc" for exported server data from earlier versions (pre 7.0) of the plug-in.

If you do not want your data imported, you should delete it from these locations or perform a custom installation and select not to import data.

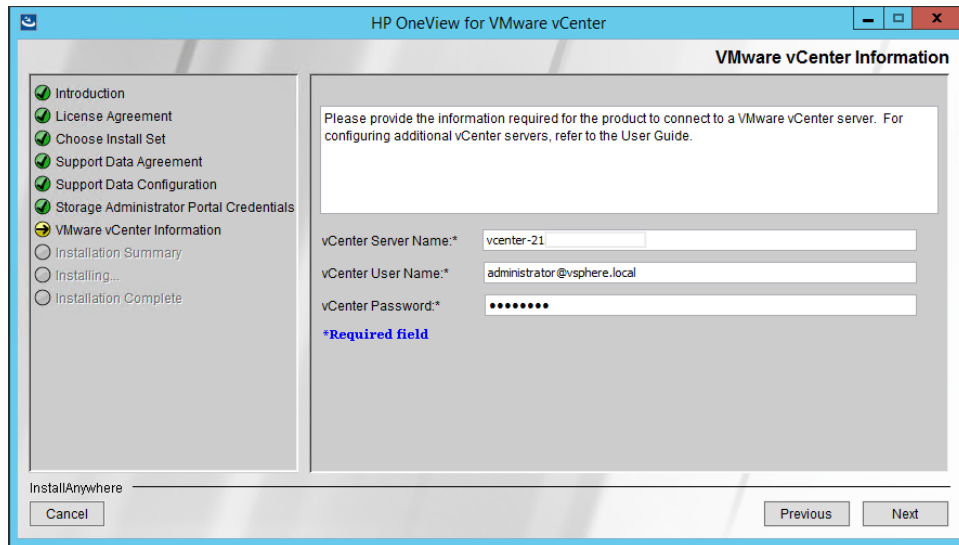
If you perform a custom install and select yes to import data, you will be asked where you would like to import storage data from. If you select yes, server data will automatically be imported from either "C:\Program Files (x86)\HP\HP Insight Control for vCenter" or "C:\temp\icvc".

9. VMware vCenter Information – Enter your vCenter hostname (vCenter-xx)

Hostname	Username	Password
vcenter-xx	Administrator@vsphere.local	hpinvent

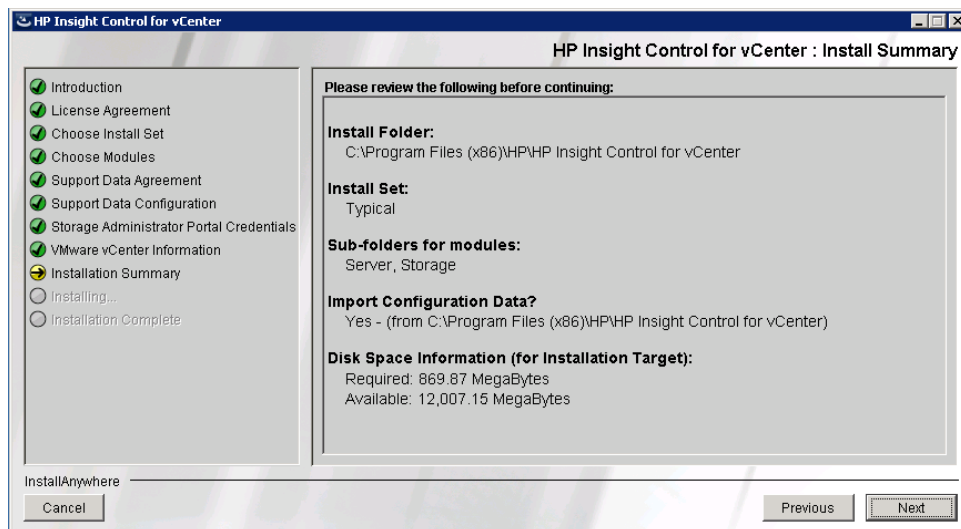
**Note:** Please ensure you use the correct “vCenter-xx” name otherwise your labs (and someone else’s), won’t work correctly.

Configure credentials to be used by the plug-in for connecting to VMware vCenter. The configured user must have administrator rights for the vCenter.

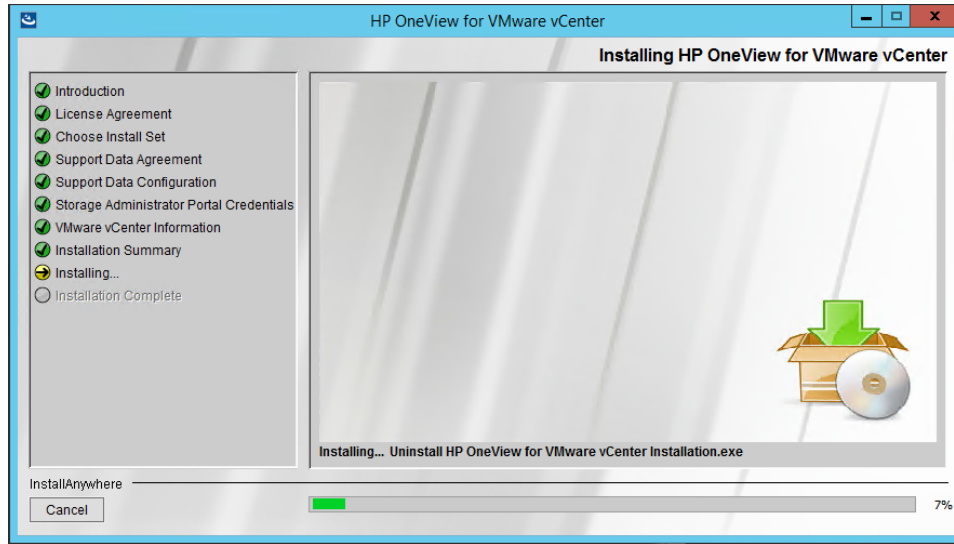


**Note:** The plug-in can be configured for more than one vCenter once the initial vCenter has been configured. This will not be covered in this lab.

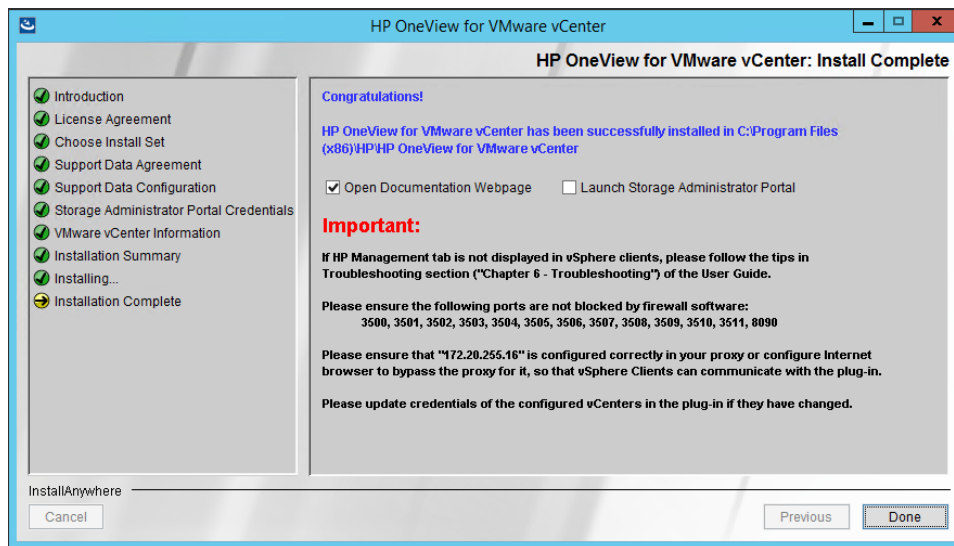
10. Pre-Installation Summary - Click Next to begin the installation process



11. Installing HP Insight Control for vCenter - Wait for the installation process to complete.



12. Install Complete - Uncheck "Open Documentation Webpage" and Click done



13. Once the installation has completed, reboot the server (Optional).

14. Once the server has rebooted, log back in to Windows-xx using a Remote Desktop Session using the OneView-xx account and password used earlier. Note; click on the MSTSC icon on the desktop, (If that icon does not exist, simply run MSTSC from PowerShell).




---

**Note:** *The System number is the POD # corresponds to your POD ID.*

---

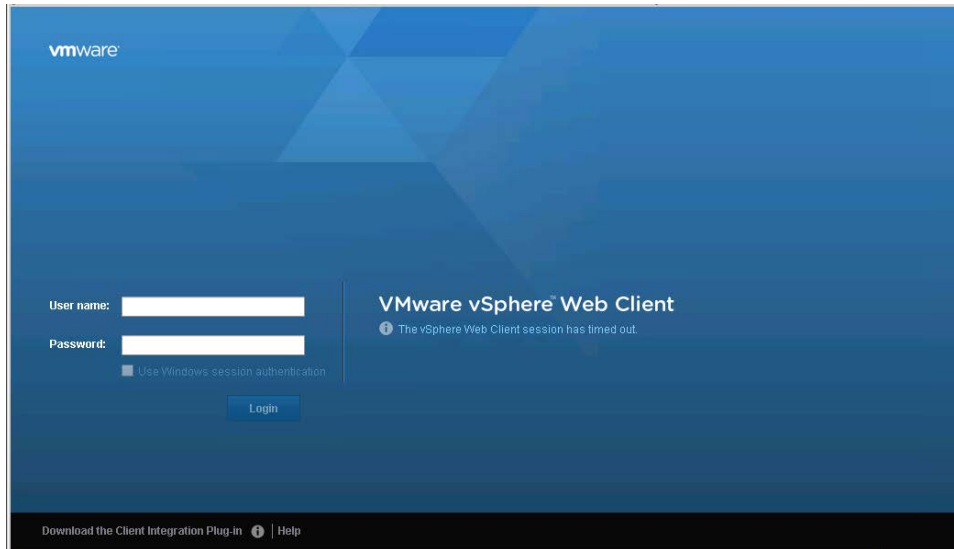
POD ID	RDP Computer Name
21	Windows-21.cinetworking.lab
22	Windows-22.cinetworking.lab
23	Windows-23.cinetworking.lab
24	Windows-24.cinetworking.lab
25	Windows-25.cinetworking.lab
26	Windows-26.cinetworking.lab
27	Windows-27.cinetworking.lab
28	Windows-28.cinetworking.lab
29	Windows-29.cinetworking.lab
30	Windows-30.cinetworking.lab
31	Windows-31.cinetworking.lab
32	Windows-32.cinetworking.lab

15. Once logged in, open a Web Browser, you will notice three Favorite links for BladeSystem, OneView and vCenter. vCenter should be the default web page for your POD, log in to vCenter with the credentials noted in the following step.

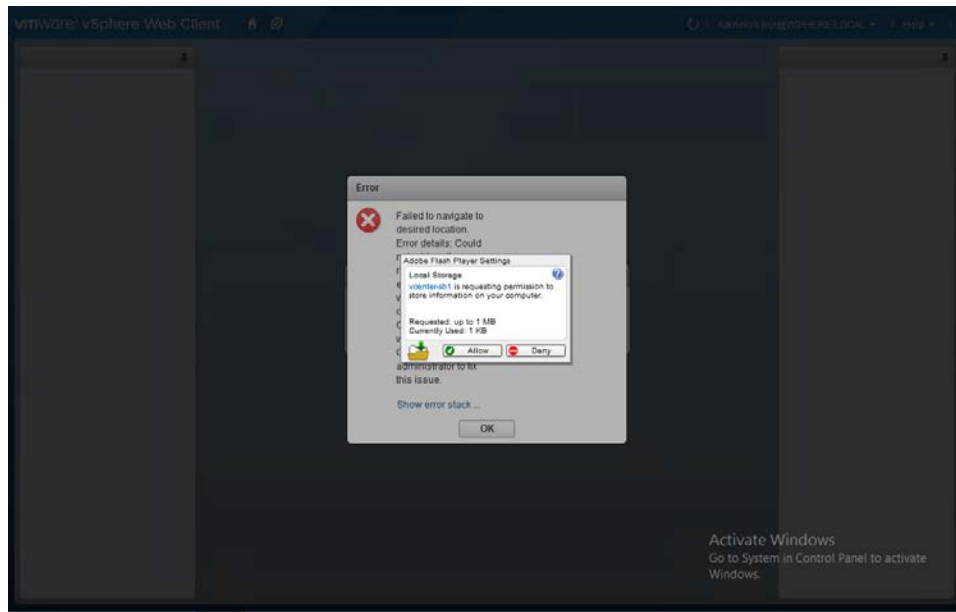
POD ID	URL
21	<a href="https://vCenter-21.cinetworking.lab:9443/vsphere-client">https://vCenter-21.cinetworking.lab:9443/vsphere-client</a>
22	<a href="https://vCenter-22.cinetworking.lab:9443/vsphere-client">https://vCenter-22.cinetworking.lab:9443/vsphere-client</a>
23	<a href="https://vCenter-23.cinetworking.lab:9443/vsphere-client">https://vCenter-23.cinetworking.lab:9443/vsphere-client</a>
24	<a href="https://vCenter-24.cinetworking.lab:9443/vsphere-client">https://vCenter-24.cinetworking.lab:9443/vsphere-client</a>
25	<a href="https://vCenter-25.cinetworking.lab:9443/vsphere-client">https://vCenter-25.cinetworking.lab:9443/vsphere-client</a>
26	<a href="https://vCenter-26.cinetworking.lab:9443/vsphere-client">https://vCenter-26.cinetworking.lab:9443/vsphere-client</a>
27	<a href="https://vCenter-27.cinetworking.lab:9443/vsphere-client">https://vCenter-27.cinetworking.lab:9443/vsphere-client</a>
28	<a href="https://vCenter-28.cinetworking.lab:9443/vsphere-client">https://vCenter-28.cinetworking.lab:9443/vsphere-client</a>
29	<a href="https://vCenter-29.cinetworking.lab:9443/vsphere-client">https://vCenter-29.cinetworking.lab:9443/vsphere-client</a>
30	<a href="https://vCenter-30.cinetworking.lab:9443/vsphere-client">https://vCenter-30.cinetworking.lab:9443/vsphere-client</a>
31	<a href="https://vCenter-31.cinetworking.lab:9443/vsphere-client">https://vCenter-31.cinetworking.lab:9443/vsphere-client</a>
32	<a href="https://vCenter-32.cinetworking.lab:9443/vsphere-client">https://vCenter-32.cinetworking.lab:9443/vsphere-client</a>

16. Enter the following user credentials to log in to the vCenter Server.

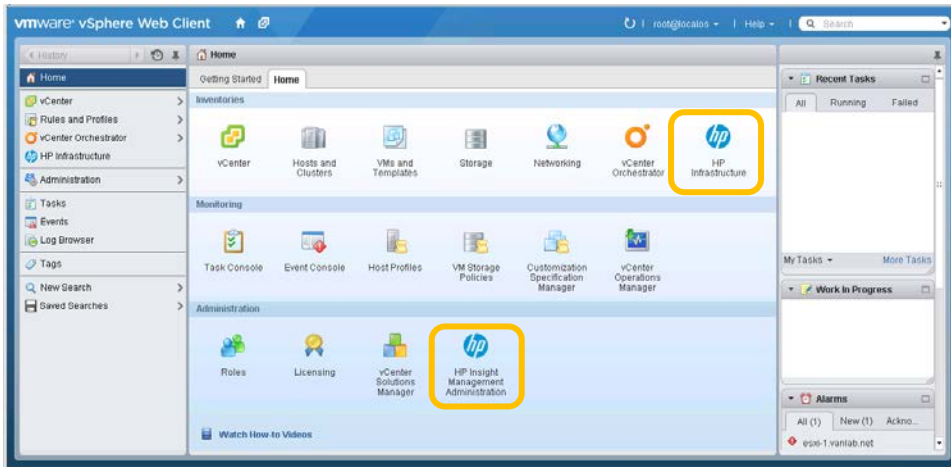
Username	Password
Administrator@vsphere.local	hpinvent



**Note:** If you receive the following, click Allow, and then refresh your browser's window (Shift+F5).



17. Once the vCenter console opens, click the HOME icon and View the vCenter console, expand out the vCenter view. You will now notice the HP icons shown in the graphic below and can move to the next LAB.





## Uninstalling the plugin

1. Uninstalling a typical install implicitly exports configuration data for the Storage Systems and the vCenters to the installation directory.
2. Uninstalling a custom install displays an option for exporting the configuration data and selecting a destination directory.

**Important:** Uninstalling the product is not part of the Hands-on Lab. Do NOT uninstall the product.

## Summary

During this LAB you logged in to the remote LAB environment and installed the Insight Control for vCenter Plugin. The next lab will focus on configuration

---

# Configuring HP OneView for vCenter

Lab 3

## Objectives

After completing this activity, you should be able to configure the plugin for:

- HP BladeSystem environment, including iLO and OA
- HP OneView
- HP 3PAR storage

## Introduction

In this lab, you will configure the Plugin to communicate with the LAB environment.

## 1. Configuring the product

There are several steps for configuring the product. Each topic will discuss not only how to configure the product but also what will not be displayed if you fail to correctly configure each step.

The following topics cover configuring the product:

- Validate the product is installed correctly
- Configuring vCenter credentials: How to update vCenter credentials and configure multiple vCenter consoles to be managed by the plug-in
- Configuring the server module: How to configure credentials for vSphere (ESX), iLO, OA, OneView and Insight Control Server provisioning (ICSP)
- Configure Port Group mappings to OneView networks
- Configuring the storage module: How to configure storage array credentials using Storage Administrator Portal

## 2. Validating correct product installation

Validate all HP OneView for vCenter plug-in services are started. These should have started automatically after the installation completed.

There are six services related to IC4VC. HP OneView for vCenter UI Manager is always installed. The vSphere client communicates directly with this service. It also uses the HP OneView for vCenter Database Service. HP Common Services, HP OneView for vCenter HC Server Service and HP OneView for vCenter Server are used by the server module. HP OneView Storage Module for vCenter is used by the storage module. If the server or storage module is not installed, the corresponding services will not be present.

To check these services, navigate to Start → Administrative Tools → Services. The following should be listed:

Service Name	Status	Startup Type	Path
HP Common Services	Running	Automatic	Local System
HP OneView for vCenter Database	Running	Automatic	Local System
HP OneView for vCenter Host Configuration	Running	Automatic	Local System
HP OneView for vCenter Server Module	Running	Automatic	Local System
HP OneView for vCenter Storage Module	Running	Automatic	Local System
HP OneView for vCenter UI Manager	Running	Automatic	Local System
Human Interface Device Service	Stopped	Manual (Trig...	Local System

3. Login to the vCenter vSphere Web Client using the link and credentials provided earlier for your POD. Launch Internet Explorer from your desktop and open a connection to your vCenter web client at <https://vcenter-xx.cinetworking.lab:9443/vsphere-client>.

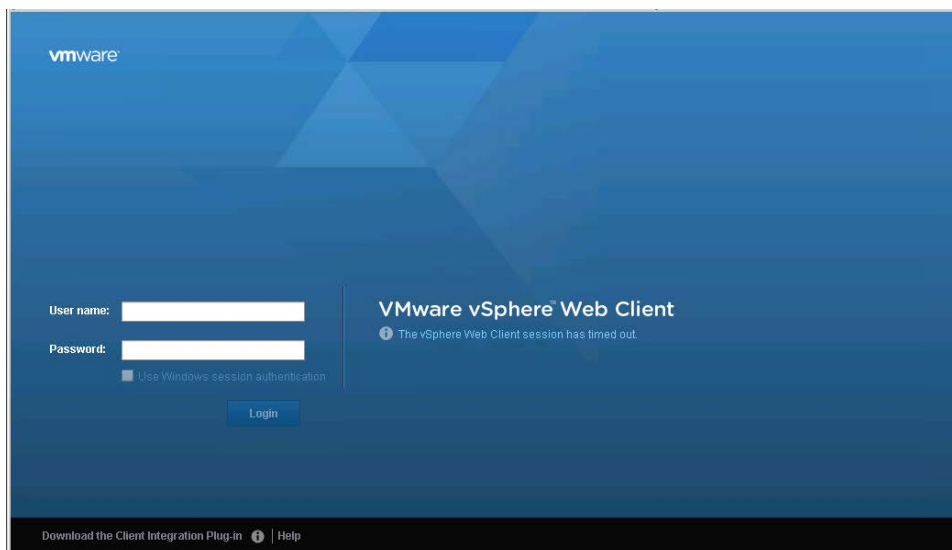
---

**Note:** "xx" is your POD number.

---

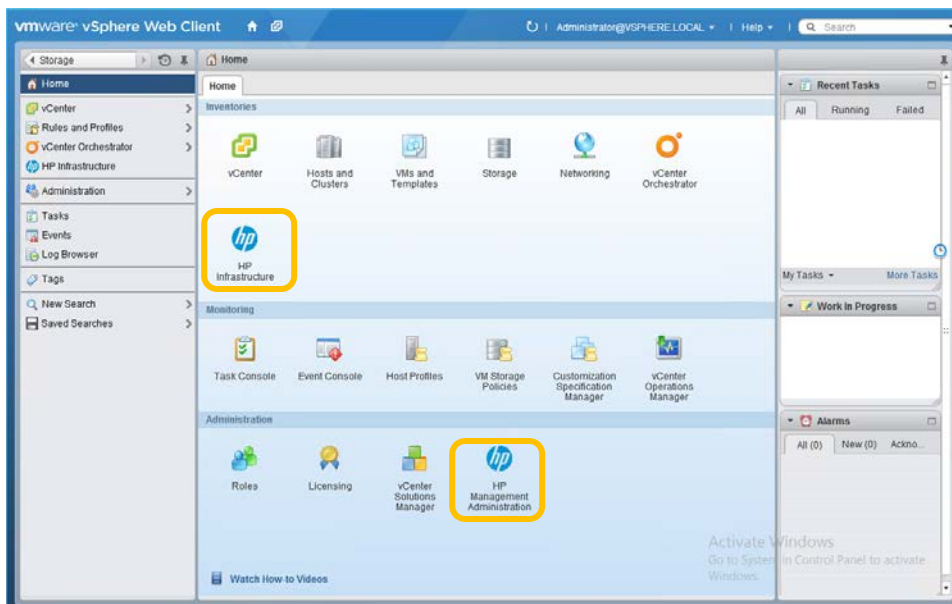
4. Enter the following user credentials to log in to the vCenter Server.

Username	Password
Administrator@vsphere.local	hpinvent



5. Configuring the server module - The key steps to configuring the server module is setting up global credentials to be used for connecting to vSphere (ESX) hosts, iLO, Onboard Administrator, OneView, Insight Control Server Provisioning, etc.). These could be later overridden for each individual host but is not common and will not be part of this lab. Note; it is recommended that each platform (iLOs, OA, OneView etc.) have a common user name and password configured, this eliminates the need to configure unique username/passwords for each system.

Once logged, you will see the following screen:



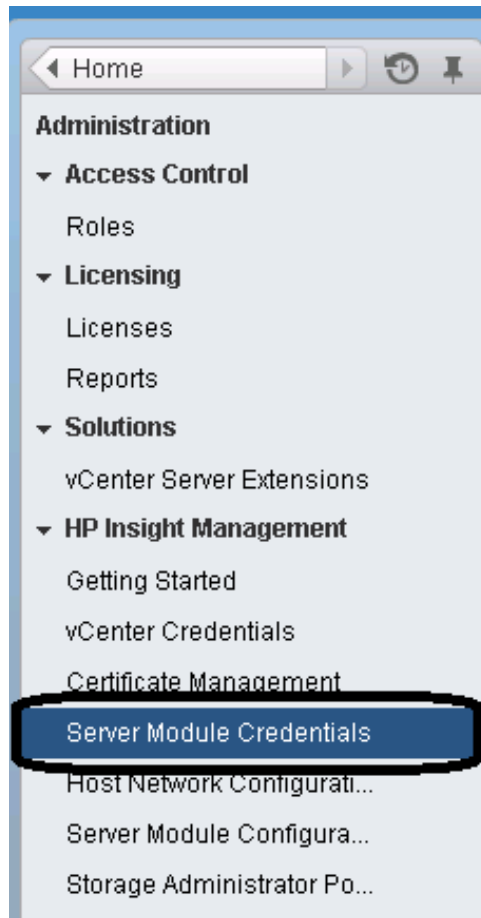
6. Navigate to the Home screen and select the Home link at the top of the vSphere Web Client page.



7. Click on the HP Management Administration icon (located in the Administration panel of the home page)



8. Select Server Module Credentials from the dropdown box.



Configure the Global Credentials for each device (except Virtual Connect)

Click the “+” button to add unique Device credentials below (will not be using unique credentials for this lab)

Add global credentials of the following types by using an asterisk (\*) for the Host:

Resource	Username	Password
ESXi Username	root	hpinvent
iLO	admin	hpinvent
Onboard Administrator	admin	hpinvent

Click SAVE

**Note:** After entering these credentials within the vSphere Client it could take 10-15 minutes for the data to fully populate within the environment.

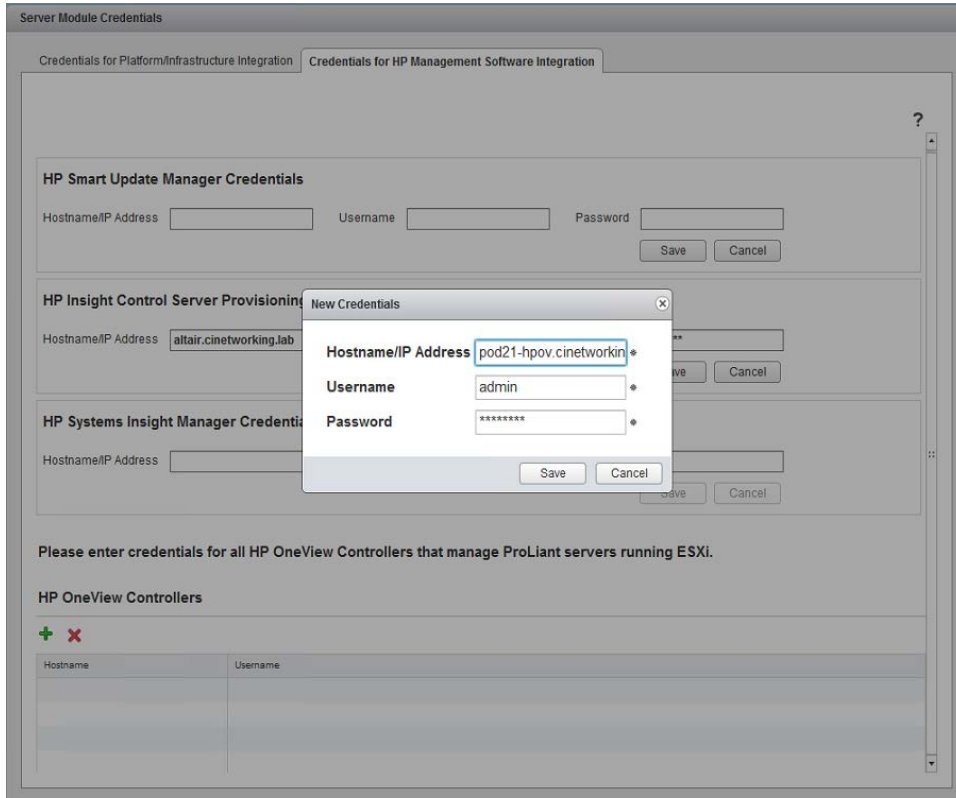
- Configure the plug-in to use HP OneView Server Provisioning by selecting the “Credentials for HP Management Software Integration” Tab.

The screenshot shows the 'Server Module Credentials' configuration window. The 'Credentials for HP Management Software Integration' tab is selected and highlighted with a red box. The window contains three sections for credential entry: 'HP Smart Update Manager Credentials', 'HP Insight Control Server Provisioning Credentials', and 'HP Systems Insight Manager Credentials'. Each section has fields for Hostname/IP Address, Username, and Password, along with Save and Cancel buttons. Below these is a section for 'HP OneView Controllers' with a table for adding credentials.

- Enter the HP SUM and HP OneView Server Provisioning IP, Username & Password and click Save.

Resource	Hostname	Username	Password
HP Smart Update Manager	hpsum.cinetworking.lab	admin	hpinvent
HP Insight Control Server Provisioning	altair.cinetworking.lab	admin	hpinvent

11. Click the green plus to add FQDN of your HP OneView appliance, Username & Password, then click Save.

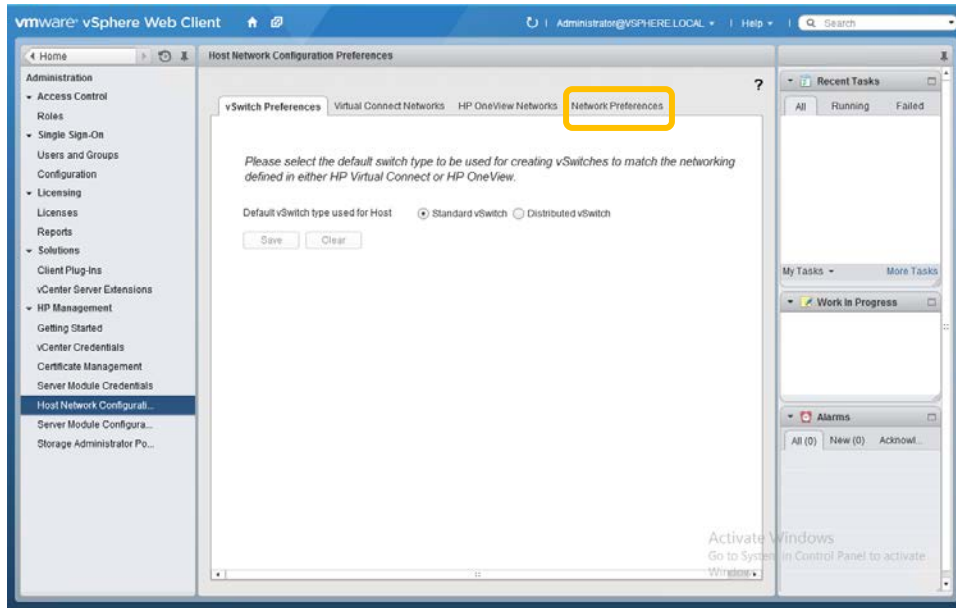


Hostname	Username	Password
Podxx-hpov.cinetworking.lab	admin	hpinvent

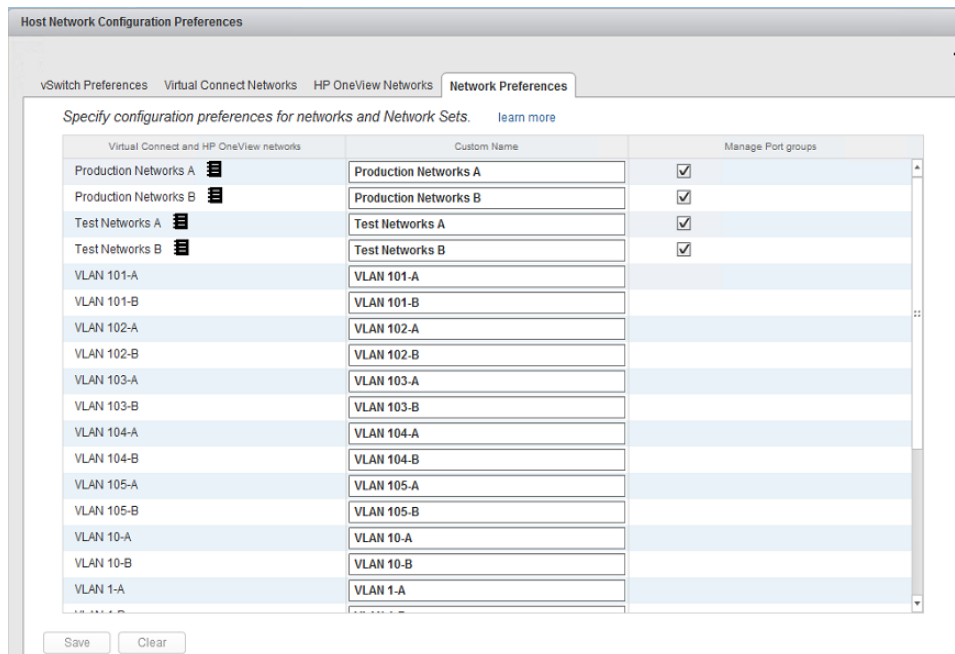
12. Configuring the Networks - vCenter will learn the Networks provisioned within OneView and present them during a server deployment event, however, you will need to ensure that the OneView networks are mapped to Port Groups to ensure the deployment goes as expected.



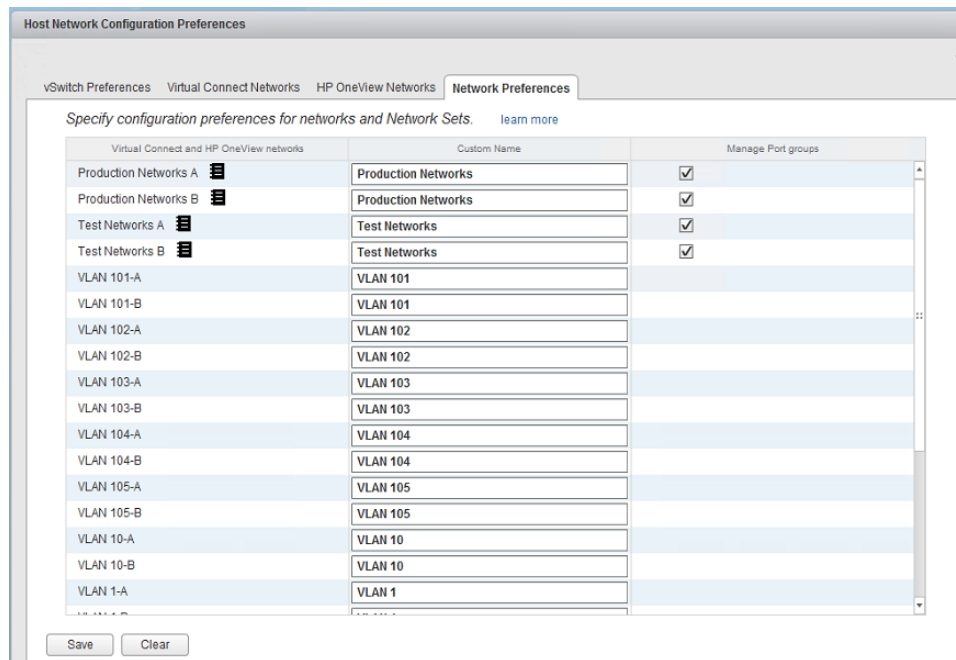
13. Open the Host Network Configuration page, in the right hand pane, select the Network Preferences tab.



14. Configuring the Network Preferences - If the OneView networks presented to this enclosure is an Active/Active design, you will see networks named as below (with a suffix of an a, b, 1 or 2). Note: it can take up to 10 minutes after configuring the plugin for the following Network Preferences to appear.



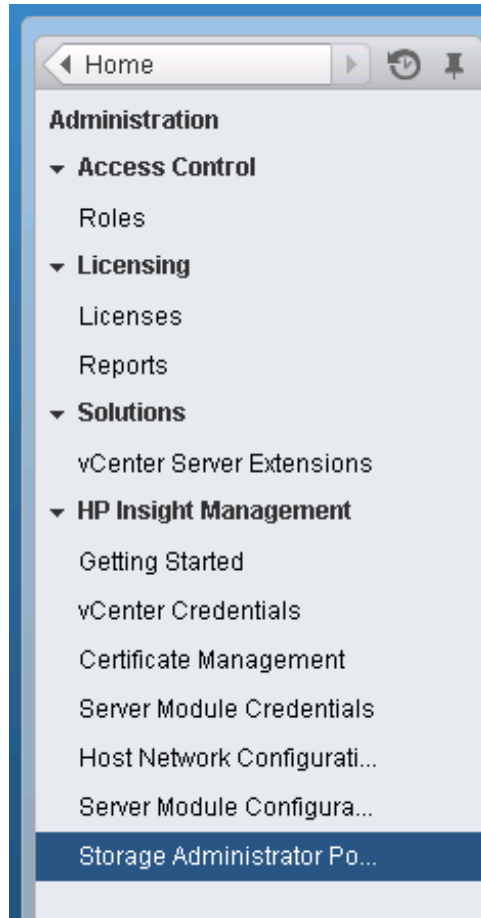
You will need to ensure that the Custom Name on the right align to the appropriate HP OneView Networks on the left that they will support. In order to also align with existing Port Groups on the server, use the naming of {NetworkName}-xx, where xx is the VLAN number, such as shown below. This will ensure that the vSwitches are correctly configured during the automated deployment and configuration of the ESX host. See the following graphics.



15. Configuring the storage module - The Storage Administrator Portal is used to configure storage array credentials. It is also used to limit provisioning from within the plug-in to specific storage pools.

There are two methods to launch the Storage Administrator Portal:

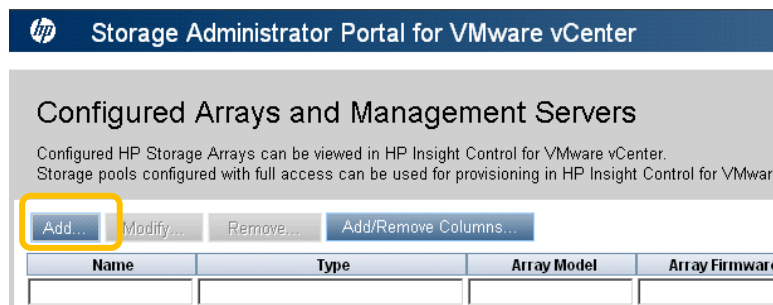
- Externally by URL: USE THIS METHOD FOR THE LAB A shortcut is provided on the desktop and in the start menu that allows the Storage Administrator Portal to be launched directly. This URL can be provided directly to a storage administrator. The start menu shortcut is accessed via Start → All Programs → HP OneView for vCenter → Storage Administrator Portal for vCenter. The desktop shortcut is titled "HP OneView Storage Administrator Portal for vCenter". Note that you may see a certificate warning about a name mismatch (because you connect to "localhost" rather than the server's hostname).
- From within the plug-in: The configuration menu (gear icon) includes a link to the Storage Administrator Portal. If the logged in user has permission to use the Storage Administrator Portal, this will bypass the login screen.



- a. Open the Storage Administrator Portal using one of the two methods documented above. Click on the Desktop Shortcut
- b. (If necessary) Login with your vCenter username and password (since you selected the “all VMware users” option during installation)

Username	Password
Administrator@vsphere.local	hpinvent

- c. Click the “Add...” button to configure the 3PAR Storage



- d. Select HP 3PAR StoreServ from the pull-down menu and click next

This is where you could select other types of HP storage arrays as well if your environment included them. The plug-in supports a heterogeneous mixture of HP storage arrays.

### Add Storage System or Management Server

Storage systems or management servers configured in this wizard will be managed by the management server.

Type:

- e. Enter the FQDN and credentials for the HP 3PAR StoreServ storage array in our Hands-on Lab environment.

Storage System FQDN	Username	Password
3par-array.cinetworking.lab	3paradm	3pardata

### Add HP 3PAR StoreServ

This HP 3PAR StoreServ is managed by the HP 3PAR OS.

Please specify connection parameters for the HP 3PAR OS. If the CIM service is not running on the Next button is clicked.

Management Server:   
 User Name:   
 Password:

Then click Next

- f. Click Next to accept the storage systems SSL certificate

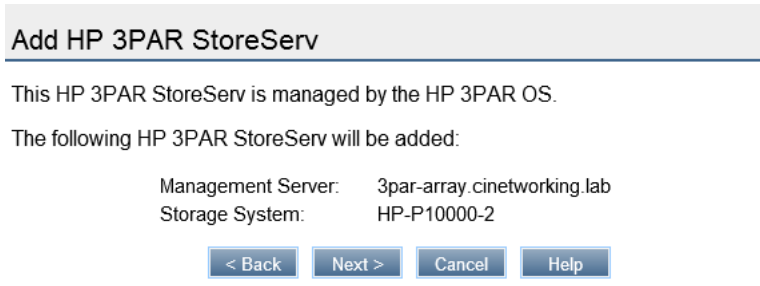
### Add HP 3PAR StoreServ

This HP 3PAR StoreServ is managed by the HP 3PAR OS.

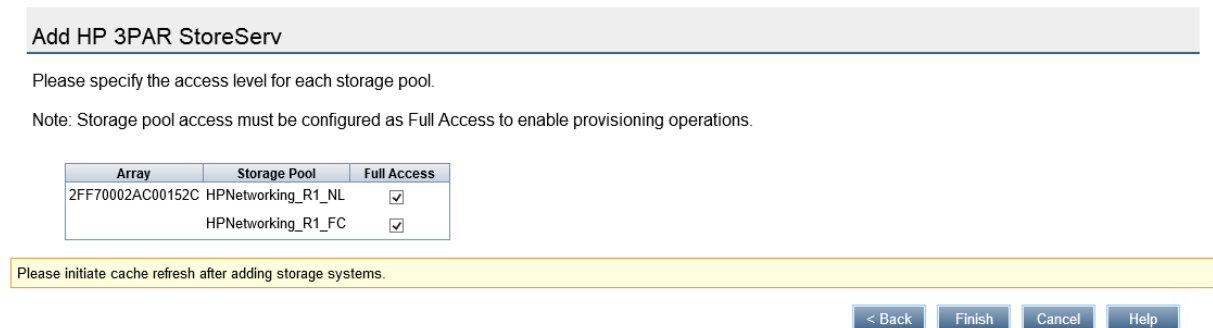
The following is the certificate for the HP 3PAR StoreServ. Please validate the certificate and continue.

```
-----BEGIN CERTIFICATE-----
MIICWDCCAagCAQAwDQYJKoZIhvcNAQEFBQAwwJlEKMCIGAlUEAxMBSFAgM1BBU1BjB
1N1cnYgVjQwMCAxNDAlNDIwMB4XDTEOMDQxOTAzMDCzOFoxDTIOMDQxNjAzMDCzOF
owJjEKMCIgAlUEAxMBSFAgM1BBU1BjB1N1cnYgVjQwMCAxNDAlNDIwMIIBIjANBgk
qhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEARvKRNvONEXBk8DPRFHuWgqV4G+S1Lqqn
4bTGH0e4QpTuzXOWxcxFG6/p2qykbu+Yz6avjBfMMndhiI6YB51wrF9RqBE8ZPuS
kYq8ORgxiT8DBJXC5QFSVj8X6Q78NUEGsId+b0dnQU9CoS4xGeWZZO/D1W1jBdxQK
sqA5xs/64Pw7md+/tQsst5yHgMemMcEs159EyvUw62y5ahIo1CiU+ViiC6NpgQu7m
zBzCmQ6uT8jyWoPQ2FoBhp3f8FTmrUsgRrYuAeTjalq1L3AaYlNfAhRQS8/BWZ1av
vcoRij9Vhd+1DHytgBARJZTHWGdGpEBXMX4ArnKpCfEGax6oowIDAQABMA0GCSqG
S1b3DQEBAQA4IQAQ/VRZxNTxr+S0jN53aCeGXJSfzC3Zqgjt7mrkV11gVFJHwzN3
jUAQBj212EVA8d3pcus/cCAWFHVcbLQ7/Yn2q2t3wQHqLB+y4cSghk1p0DYDF+
9ZA4/RxqDDK2Xpn07KxsHj9N1Q4GiZnQaZrAMdJ/eIhZB8cef0pgssEgiGxhk1wU
11Evvv27v/xmIDe64+I1tpbqBvaqct2+2AUA4NygHGGEcXoX12qBE0o229DHJA4
-----
```

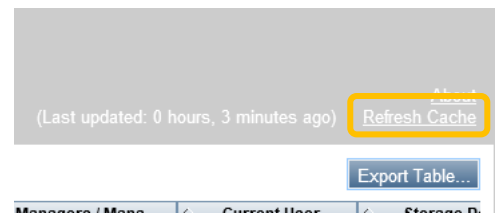
- g. At this point the information is verified to make sure that you can connect to the storage array using the supplied credentials. Summary information for what will be added is displayed. Click next



- h. Finally, a list of storage pools will be retrieved so that you can select which storage pools can be used by the plug-in for storage provisioning operations. Check the Full Access checkbox to enable storage provisioning, then click Finish



- i. The final step is to start a refresh of the storage cache. If you were configuring multiple storage arrays, you would complete configuring all of them and then perform this step last. Click the Refresh link



- j. A message will indicate that the refresh has been started. Click OK

## Refresh

A background refresh has started.

Estimated time remaining: 1 minutes, 6 seconds.



Progress of the refresh will be displayed in the header of the Storage Administrator Portal. Progress can be checked by clicking the “Check Progress” link.

**Cache-Refresh in progress**

The cache data is being refreshed in the background.  
 Elapsed time: 0 minutes 4 seconds. Estimated time remaining: 0 minutes 3 seconds.

[Check progress](#)

**Configured Storage Systems and Management Servers**

Only the configured HP Storage Systems can be viewed in HP OneView for VMware vCenter.  
 Only the storage pools configured with full access can be used for the provisioning tasks in HP OneView for VMware vCenter.

Once the storage is configured, you should see an entry as shown below.

**Configured Storage Systems and Management Servers**

Only the configured HP Storage Systems can be viewed in HP OneView for VMware vCenter.  
 Only the storage pools configured with full access can be used for the provisioning tasks in HP OneView for VMware vCenter. (Last updated: 0 hours, 0 minutes ago) [About](#) [Refresh Cache](#)

[Add](#) [Modify...](#) [Remove](#) [Add/Remove Columns...](#) [Export Table...](#)

System Name	System Type	System Model	System Firmware	System Identifier	Managers / Mana...	Current User	Storage P...
HP-P10000-2	HP 3PAR StoreServ	HP 3PAR StoreServ...	3.1.3	2FF70002AC00152C	3par-array.clnetwork...	3paradm	HPNetworking_ HPNetworking_

---

# Summary

In this lab, you configured the plugin within vCenter for Server, Network and storage.

The subsequent labs will tour through the plugin and cover the following usage scenarios. Depending on time, you may NOT be able to complete ALL LABs, so pick the lab that interests you the most. The Grow your Cluster lab takes the most time, the firmware lab to the 2<sup>nd</sup> longest lab.

1. Growing your cluster: This topic covers deploying a new physical server into your environment.
2. Managing firmware: This topic covers checking that firmware is up-to-date and showing how to deploy new firmware to servers.
3. Provisioning additional capacity: This topic covers creating a new Datastore on an existing ESX host.
4. Mapping virtual to physical: This topic covers mapping your virtual environment to the physical servers, enclosures, virtual connect networking, and storage.
5. Troubleshooting power failure: This topic uses the plug-in to remotely troubleshoot a power failure.
6. Troubleshooting poor virtual machine performance: This topic addresses using the plug-in to troubleshoot poor virtual machine performance.

---

# Using HP OneView for vCenter – Claiming an Enclosure and Grow an ESX Cluster

Lab 4

## Objectives

After completing this lab, you should be able to:

- Claim an HP BladeSystem c7000 Enclosure for Management using HP OneView
- Use the Plugin to expand an existing VMWare ESX Cluster with additional servers

## Introduction

In this lab, you will utilize the vSphere Web Client to log in to vCenter and then tour through the various additional screens provided by the plugin to gain a better understanding of the capabilities and features provided by the plugin.

Your POD Enclosure has not been provisioned by HP OneView. You will walk through the steps needed to claim the enclosure for management using HP OneView.

Once the Enclosure claim has been performed, you will then initiate the deployment of a new Cluster member. Upon completion of the lab, you will be presented with a fully configured and deployed ESX host. The host will be left in Maintenance Mode, ready to accept virtual machine workloads.

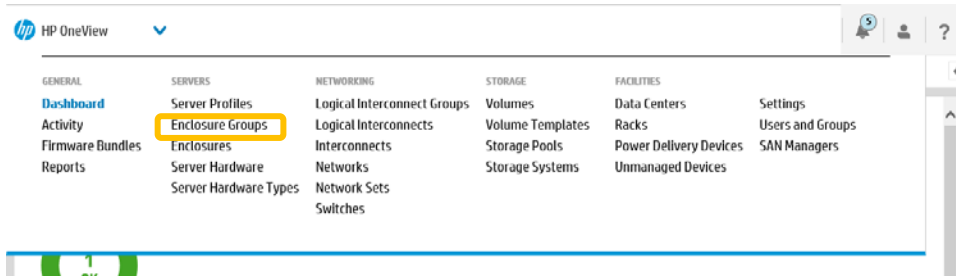


## Lab 4.1 Claim POD Enclosure

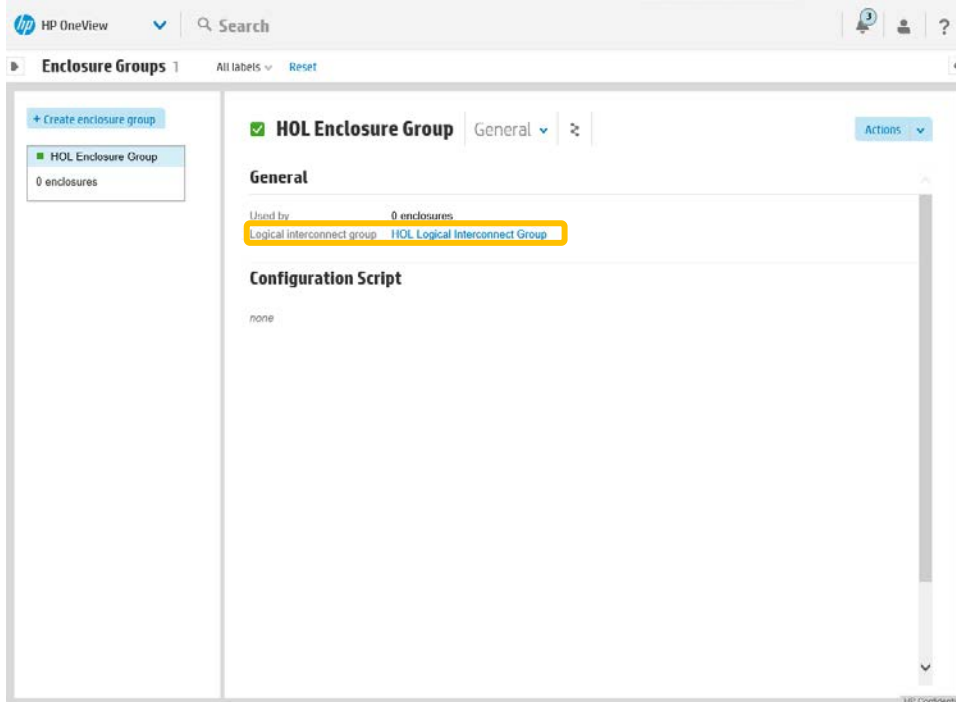
- Using a web browser, log into your HP OneView appliance.

Hostname	Username	Password
Podxx-hpov.cinetworking.lab	admin	hpinvent

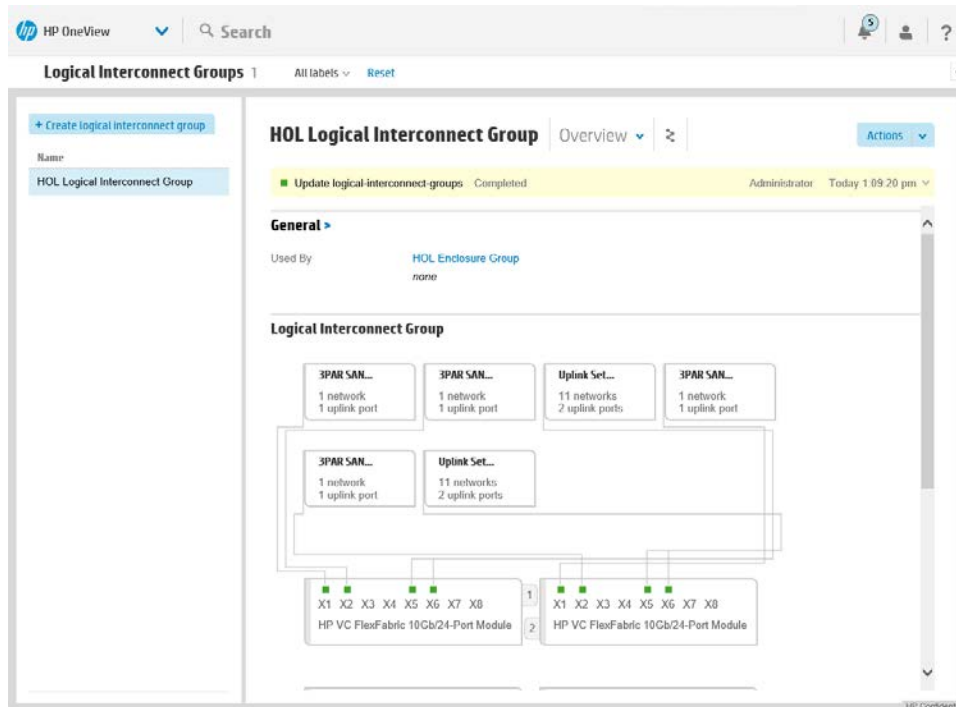
- Navigate to the Top Level Menu, and select Enclosure Groups.



- Examine the pre-configured Enclosure Group. Click the HOL Logical Interconnect Group link to review the pre-configured Logical Interconnect Group.

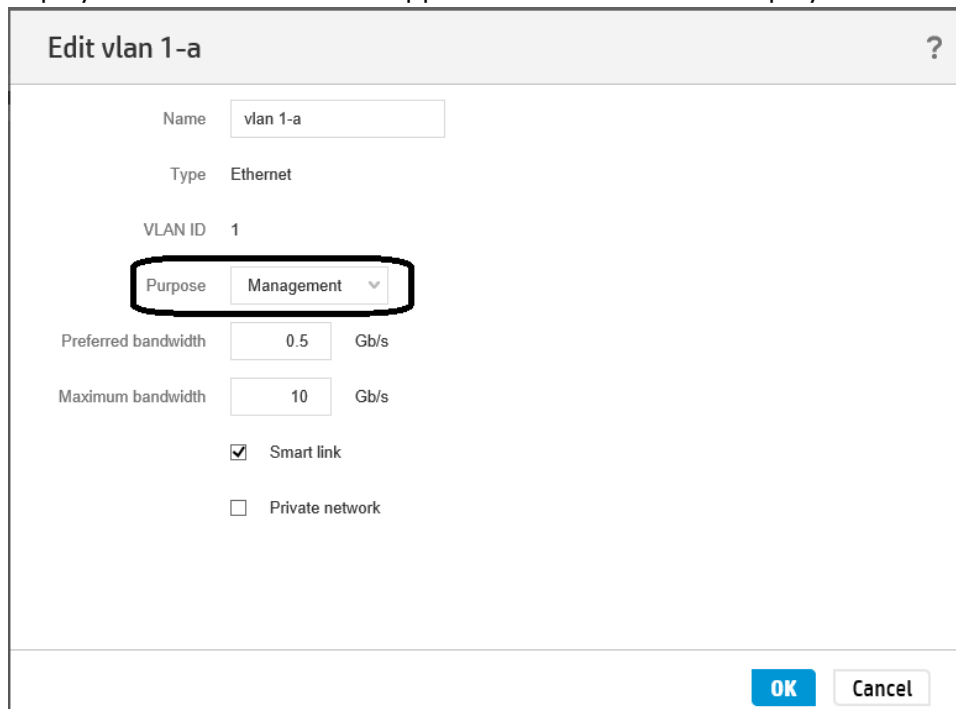


## 4. Review the Logical Interconnect Group.

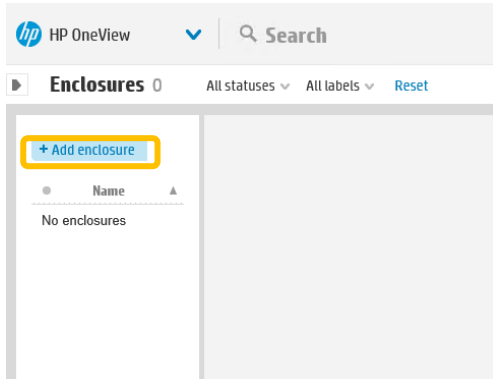


## 5. Select the Top Level Menu, and then Networks.

6. Examine the pre-configured Networks. Notice VLAN 1-A and VLAN 1-B have their “purpose” set as a “Management”, such as shown below. This network will be used to deploy Cluster nodes, which happens to be the ICSP PXE Deployment Network.



7. Select the Top Level Menu, and then Enclosures.
8. Click the Add Enclosure button, and begin the Claim Enclosure process.



9. In the Add Enclosure screen, enter the following, and then click the Add button.

Field	Value
OA IP Address or Host Name	podxx-0a1.cinetworking.lab
Add Enclosure As	Managed
Credentials Username	admin
Credentials Password	hpinvent
Enclosure Group	HOL Enclosure Group
Licensing	HP OneView Advanced
Firmware baseline	Manually

Add Enclosure
?

OA IP address or host name

Add enclosure as  Managed  Monitored

---

**Credentials**

User name

Password

---

**General**

Enclosure group

Licensing  HP OneView Advanced  HP OneView Advanced w/o iLO [Learn more](#)

---

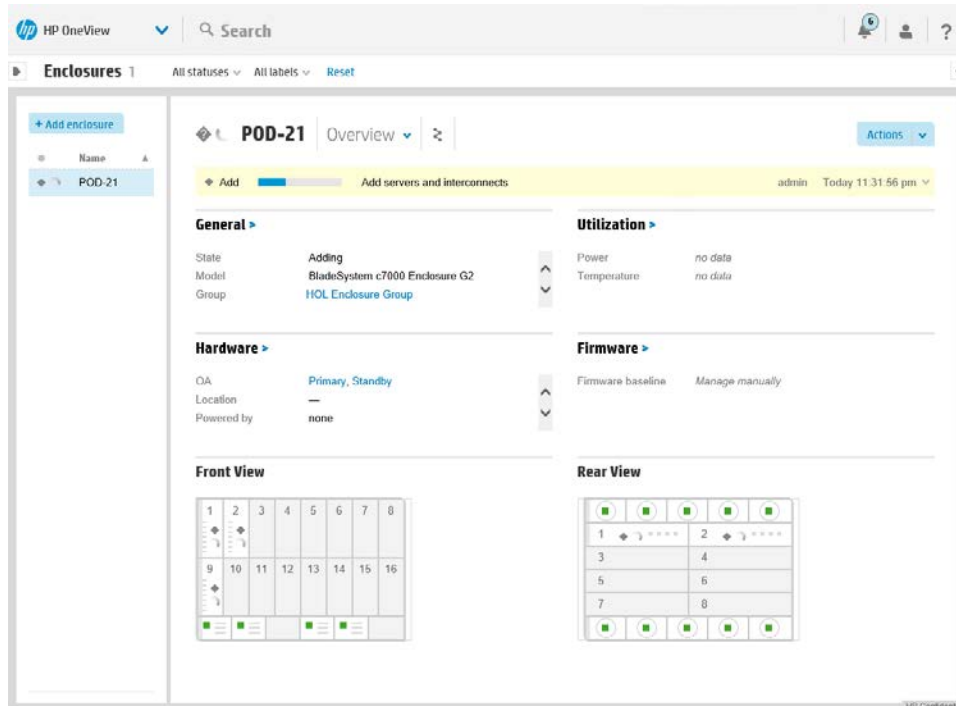
**Firmware**

Firmware baseline

Changed: Password

Add
Add +
Cancel

10. HP OneView will now execute an asynchronous background task that will configure your enclosure. Note; as the enclosure is being claimed you click on the yellow bar and select details, to see a listing of the background activities being executed. This step takes approximately 5 minutes to complete.



11. Once the task is finished, this part of the lab is complete.

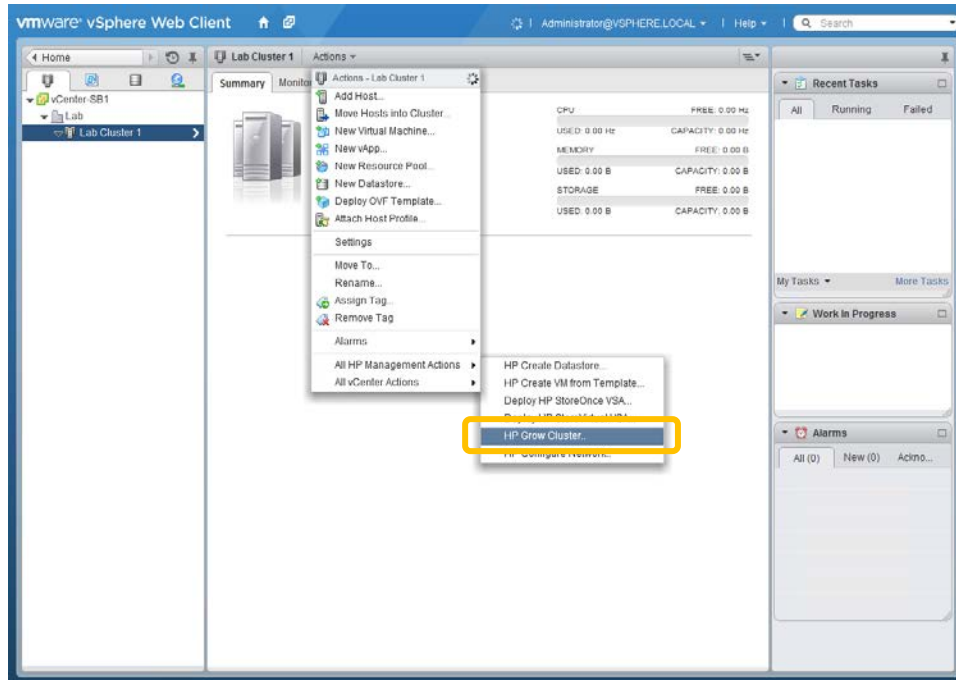
## Lab 4.2 Deploy ESX Cluster

### 1. Growing a Cluster

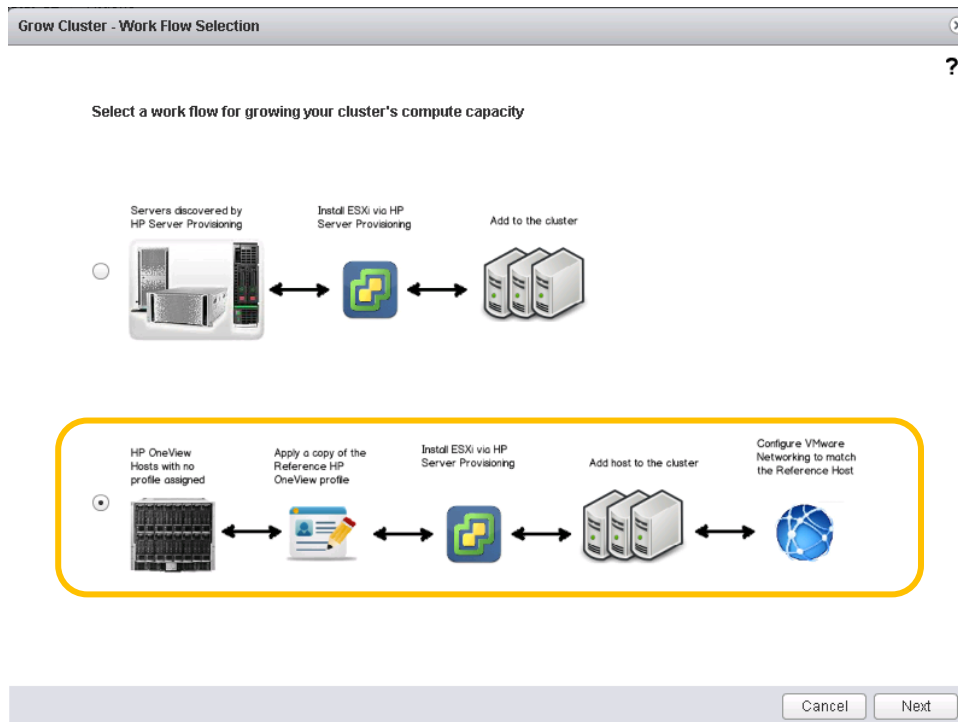
The Grow Cluster feature is for both New Cluster and Expand Existing Cluster operations.

You have recently procured a new blade server to add capacity to your vCenter environment. You now need to quickly add this to your environment.

- Open a web browser to the vCenter Web Client.
- Navigate to your Data Center
- Create a new Cluster
- Under the Actions Menu select "All HP Management Actions" and then "HP Grow Cluster."



2. Select the lower of the two actions and click next,



3. Select the OS Build Plan as shown in the drop down and select a Blade server, we will use the Blade in bay 1. Multiple servers could be deployed at once; we will deploy only one server here.

**Note:** If you did not do so in Lab 1, go to the OA and verify that Blade 1 is OFF.

Grow Cluster Step 1 - Choose a build plan and target servers

OS Build Plan : 1 - OV4VC ProLiant OS - ESXi 5.5u2 Scripted I...

Reference Server Profile : vSphere 5 Compute Node Template - (pod21-...  
[Unassigned profiles](#)

Please select one or more target servers for deployment

<input type="checkbox"/>	Enclosure	Bay	Model	iLO IP
<input type="checkbox"/>	POD-21	9	BL460c Gen8	172.20.21.110
<input type="checkbox"/>	POD-21	2	BL460c Gen8	172.20.21.103
<input checked="" type="checkbox"/>	POD-21	1	BL460c Gen8	172.20.21.102
<input type="checkbox"/>				
<input type="checkbox"/>				
<input type="checkbox"/>				
<input type="checkbox"/>				
<input type="checkbox"/>				
<input type="checkbox"/>				
<input type="checkbox"/>				

[HP OneView managed servers with no profile assigned](#)

Cancel Next

4. Complete the Step 2 page as shown in the graphic below, then click next:

Field	Value
NIC0 Static IP Address	172.20.xx.11
Netmask	255.255.0.0
Hostname	esx-pod-xx-1
DNS Domain	cinetworking.lab
DNS Server	172.20.200.13
ESXi Root Password	hpinvent

**Note:** xx is your POD #

Growing Cluster : New Cluster

Common Host Network Configuration

Netmask : 255.255.0.0      DNS Domain : cinetworking.net *Optional*

Gateway : 172.20.0.1      DNS Server : 172.20.200.13 *Optional*

---

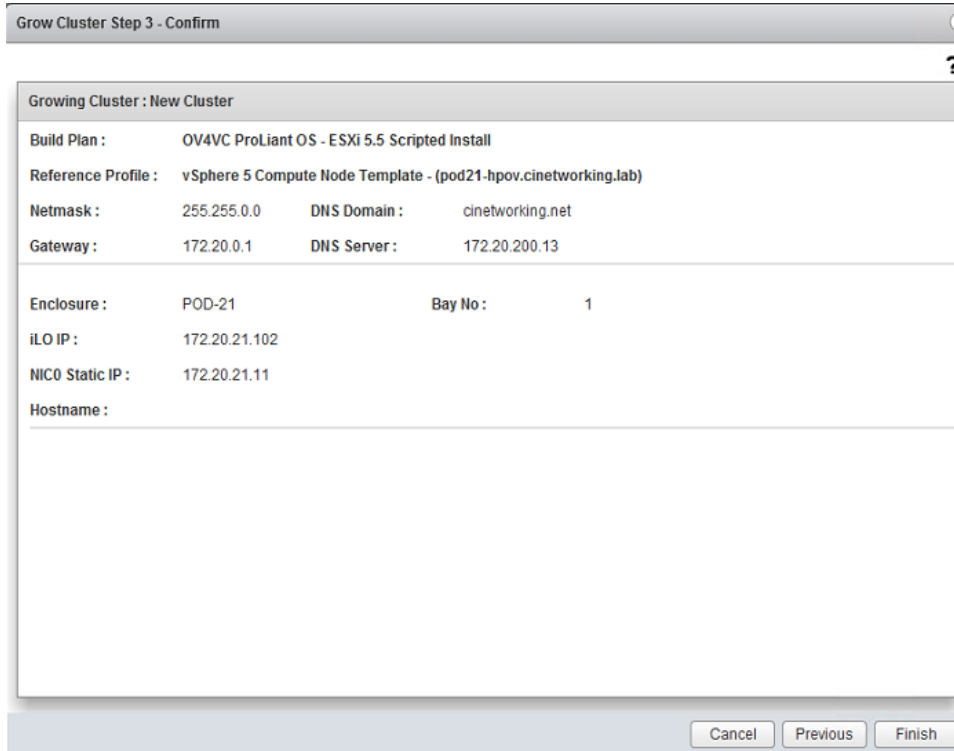
Enclosure : POD-21 Bay : 1

iLO IP : 172.20.21.102

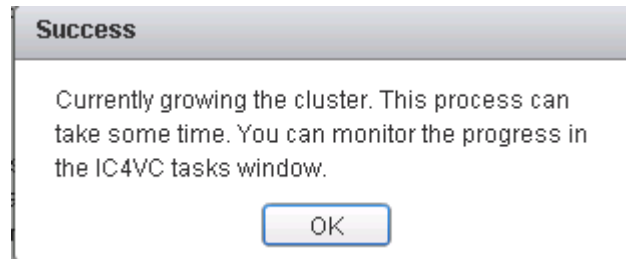
NIC0 Static IP Address : 172.20.21.11      ESXi Root Password : \*\*\*\*\*

Hostname :  *Optional*

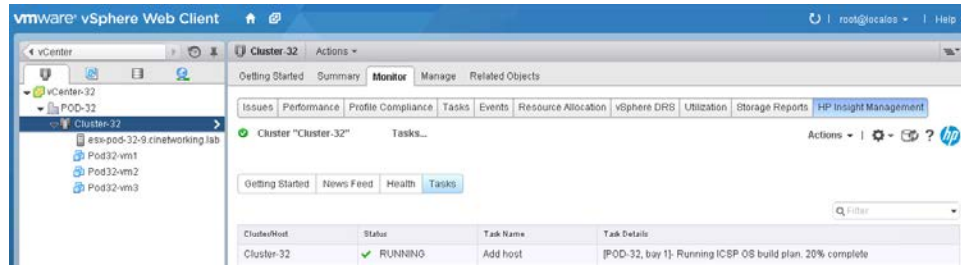
5. Confirm the Summary page and click finish.



6. You will receive a Success message. The Grow Cluster task could take from 30-60 minutes to complete.



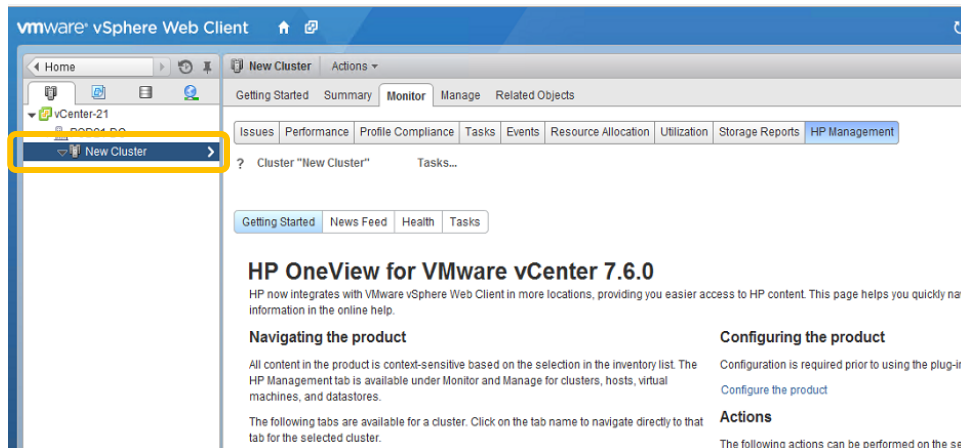
A server profile will be applied to the target server, it will be powered on automatically and the ESX operating system will be deployed. You can check the status of the job by opening the iLO of the Blade in Bay 1 of your enclosure and watching the server as it is being deployed, but do not interrupt it in any way. You can also verify the status of the task by going to the Monitor tab as shown in the graphic below. Note that this page does not refresh automatically. Once the task is complete, the ESX server will be placed in the cluster in Maintenance mode. Once storage is assigned you can take it out of Maintenance mode.



7. Once the task has completed, check the server and see how it was configured. Verify that the vSwitch has the correct NICs and Port Groups, the host name and IP address should also be configured. Check for any deficiencies.
8. Once the deployment has completed, you may have to click the refresh button to see the host in the left pane.



9. Once refreshed, you can see the new server within vCenter.



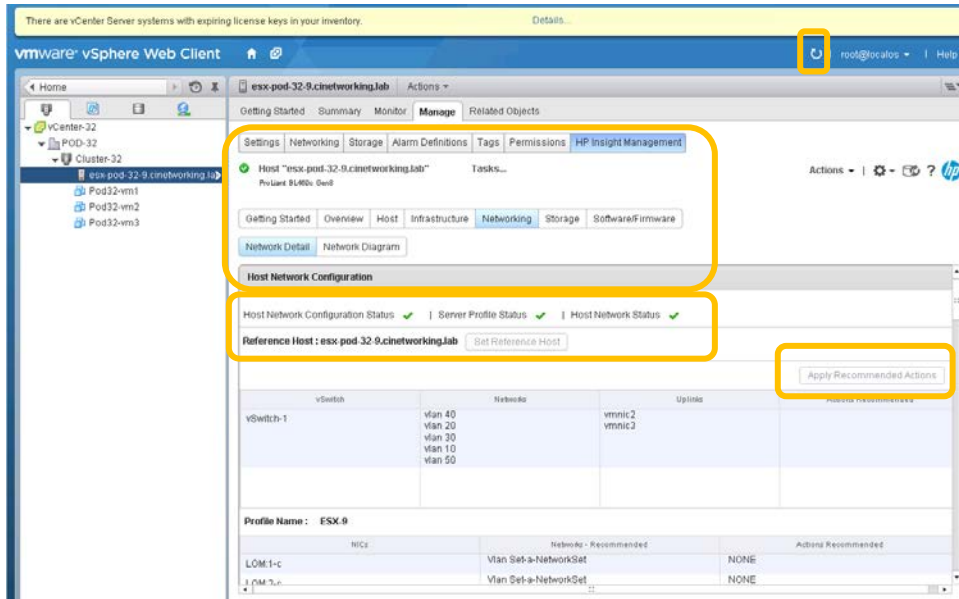
10. Setting the Reference ESX Host - Within vCenter, go to Hosts and Cluster and then click on the ESX host in the cluster that will be your reference host, in the right hand pane, select Manage, HP Insight Management, Networking, Networking Details, as shown below. If "Set Reference Host" is not set, set it now.

**Note:** In order to set a reference host, three conditions must be met and will be shown by the green check marks, once set correctly:

- a. Host Network Config Status
- b. Server Profile Status
- c. Host Network Status



After clicking on Set Reference Host, if you don't get the three green check marks, click on the refresh icon in the top right of the screen. If Host Network configuration and/or Host Networks status are still not correct, click on the Apply Recommended Actions button on the right and follow those instructions, if it is greyed out then it is likely not required and should be fine.



## Summary

During this lab, you expanded your cluster by adding a bare metal server to the cluster. The server was configured within OneView, the OS was deployed, the vSwitches were correctly configured and it was placed in Maintenance mode, ready for storage provisioning.

Note: as this lab could take most of the time available for this session, move on to another lab while this runs in the background and come back and check on it from time to time.

---

# Using HP OneView for vCenter – Mapping Virtual to Physical

Lab 5

## Objectives

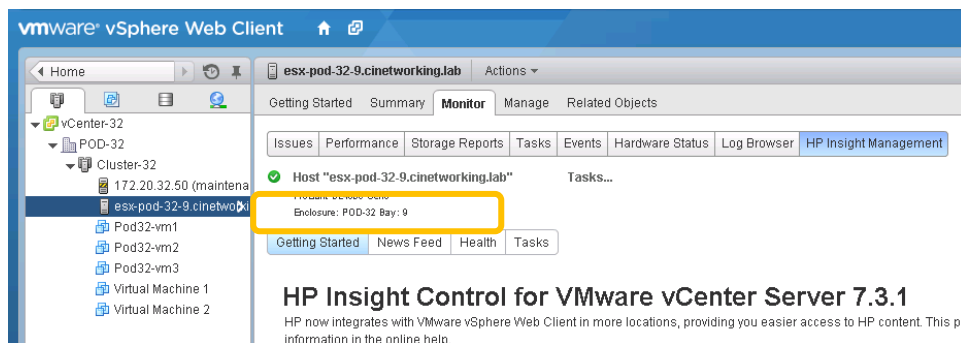
After completing this lab, you should be able to:

- Use Insight Control for vCenter to Map the Virtual Machines in your cluster to the physical host they reside on.

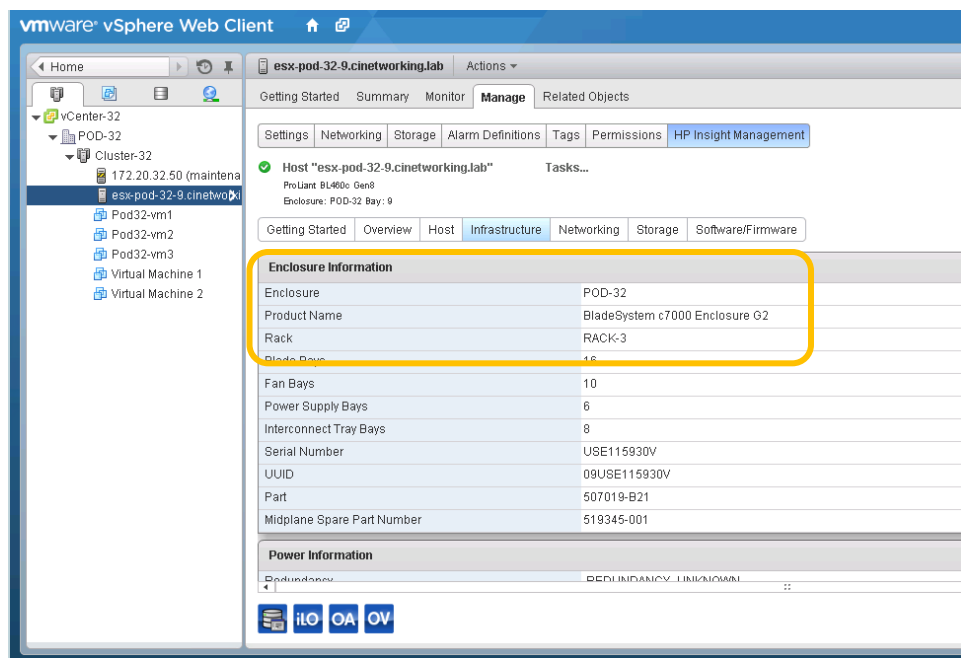
## Introduction

In this lab, you will utilize the vCenter web client to log in to vCenter and map out the physical infrastructure that your VM's are running on and gain a better understand of exactly where a virtual machine may reside at a given time. This information can be very helpful during trouble shooting exercises.

1. Mapping virtual to physical - As a VMware administrator it is your responsibility to understand the relationship between the virtual environment and physical environment. Before using the plug-in you may have tracked relationships in spreadsheets manually. The plug-in has eliminated this manual task. To demonstrate this capability, you will use the plug-in to find all the virtual environment's relationships with HP hardware.
2. You will determine the blade server and enclosure for your host. Select this host in the inventory panel and open the HP Insight Management tab's overview page.
3. The header of every HP Insight Management tab includes a description below the name of the VMware object. For HP blade servers, this description specifies the name of the enclosure and the bay number.



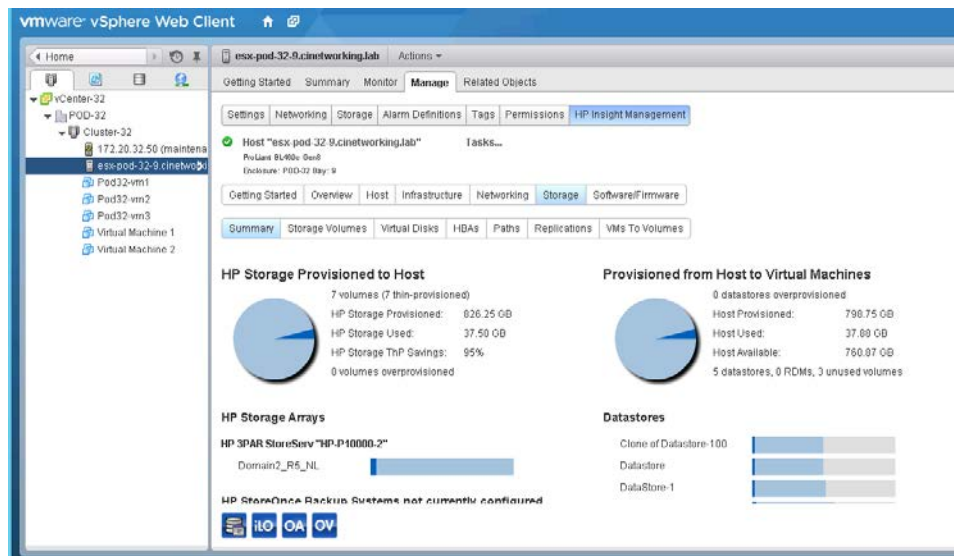
4. The overview page is a dashboard for this host and provides summary information for various aspects of the host via portlets. The infrastructure portlet includes additional information that helps identify the rack containing the enclosure.



- You can scroll down within the Enclosure Information table and gain additional information about the enclosure, its power/cooling information, inter-connects, logs etc.

Note: Installation of the Server Module is required to view this host infrastructure information (including the description displayed in the header).

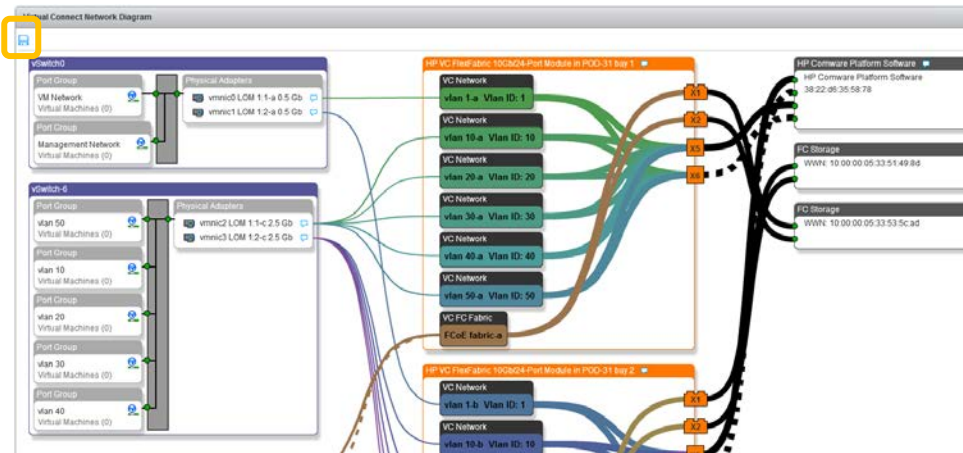
- Determining the storage associated with a host, cluster, virtual machine, or Datastore is also easy. Navigate to the object of interest (the already selected host for example) and view the Summary page, also take a few minutes and tour through each of the pages associated with storage. You will see that you enclosure is connected to a 3PAR P10000 series SAN fibre channel SAN.



The storage volumes tab displays a list of each volume mounted by the host and the paths tab displays the specific paths for each of those volumes. Each of these tables provides the array-specific labels used to identify these volumes in the corresponding array management consoles. This allows the VMware administrator to have a meaningful conversation with the storage administrator. Also worth pointing out is the VMs to Volumes tab which gives you a full storage mapping from virtual machines to virtual disks to Datastore to storage volumes on storage arrays, as well as the paths to the host where the virtual machine is currently located. Feel free to explore each of the tabs on this storage details page to get a better understanding of what information is exposed by the plug-in.

Note: Installation of the storage module is required for mapping storage.

- Your final piece of mapping the virtual infrastructure is understanding how virtual machines are mapped to physical networks. From the Networking page, Click Network Diagram. This will open the Networking Diagram which shows how virtual machines are connected to vSwitches (defined within vSphere hosts), how those virtual networks are connected Virtual Connect, and how Virtual Connect connects to the physical switches. The Networking Diagram also shows how Datastore are connected to physical switches via Virtual Connect FlexFabric or Fibre Channel modules.



Note: The save button allows you to save the diagram as an image file. The Virtual Connect Network Diagram requires installation of the server module.

## Summary

During this lab, you utilized Insight Control for vCenter to view the Infrastructure configuration and status of the c7000 Blade enclosure, the connected storage and the virtual networking used to connect the virtual machines to the external LAN and SAN infrastructures.

---

# Using HP OneView for vCenter – Managing Firmware

Lab 6

## Objectives

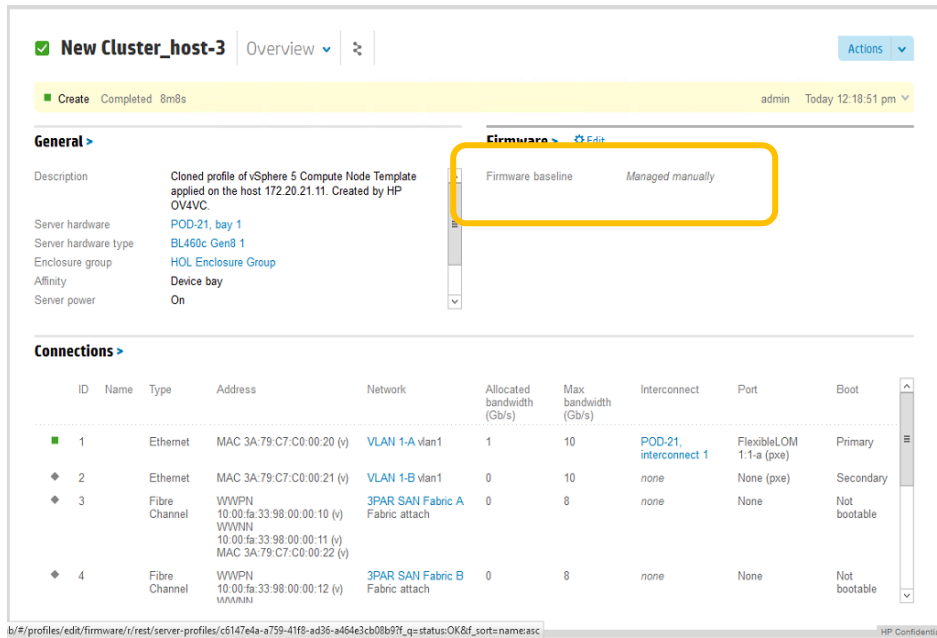
After completing this lab, you should be able to:

- Use the Plugin to manage firmware within the vCenter console.

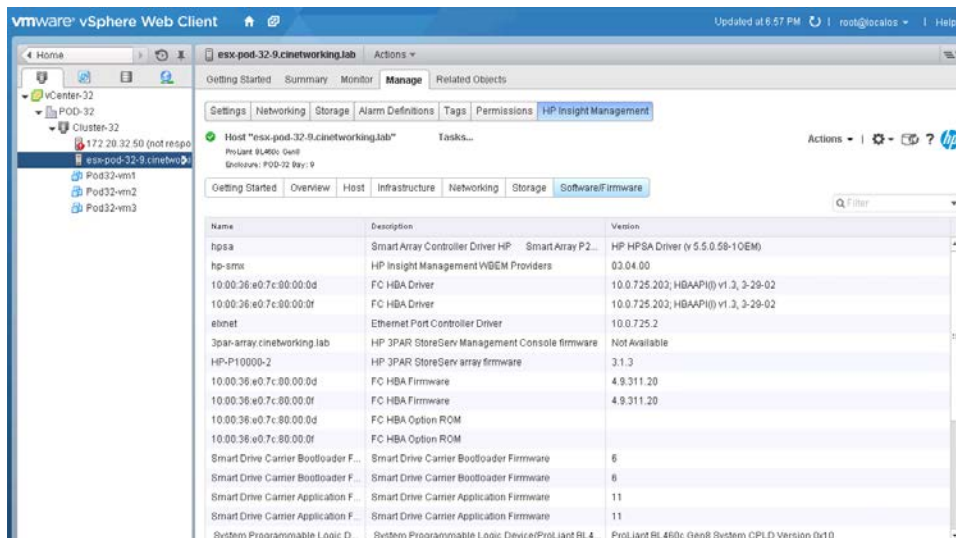
## Introduction

In this lab, you will utilize the vCenter web client to log in to vCenter and then tour through the various additional screens provided by the plugin to gain a better understanding of the capabilities and features provided by the plugin. You will initiate a firmware upgrade on server 9 in your blade enclosure.

1. Managing Firmware - OneView provides the ability to set a Firmware Baseline, within the server profile, as shown below, in order to manage Blade firmware from within the plugin the OneView profile must be set to manage the blade firmware. Once a new baseline firmware bundle is uploaded to the OneView appliance it will be made available to all blades within the enclosure. Ensure that a baseline is set within each profile.
2. Open a connection to OneView and go to Server profiles, click on the server In Bay 1 that you deployed in the prior lab and verify whether there is a firmware baseline set. If this is not already set, the server will need to be powered off, have the baseline set, at which time it will power up and run the new baseline upgrade.

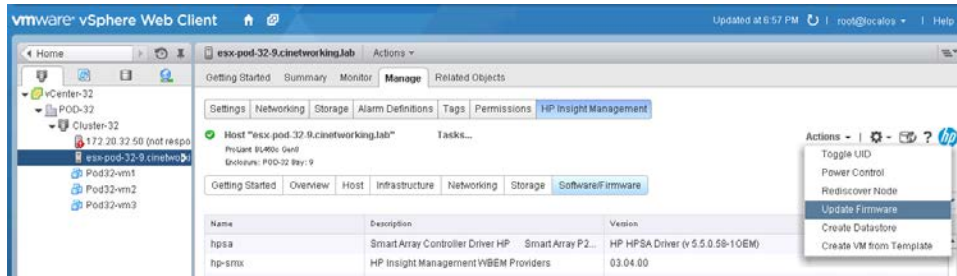


3. Open the vSphere web Client and navigate to the host you want to upgrade (use esx-pod-xx-9 for this lab), click on the HP Insight Management tab, then the Software firmware TAB as shown below.

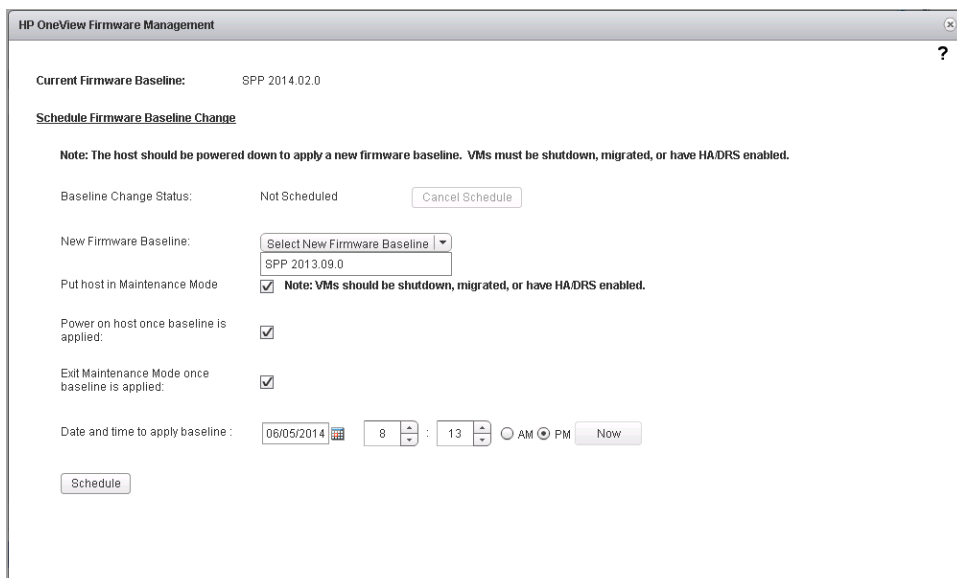




4. Under Actions on the top right of the pane, select Update Firmware.

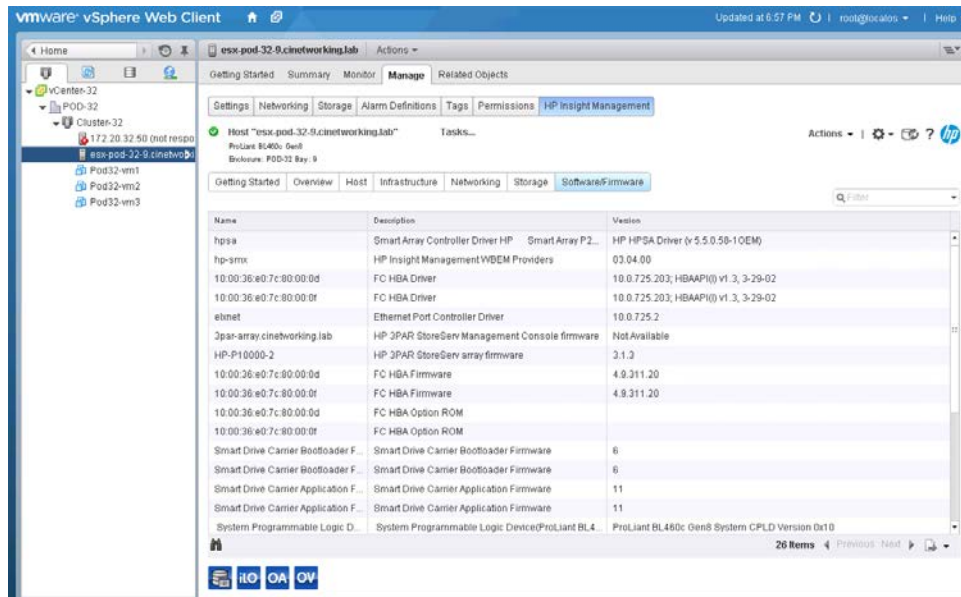


5. The HP OneView Firmware Management page will appear, Select the New Firmware baseline for this host, adjust the check boxes according to your needs and set a scheduled time/date for the update, or click NOW and the Schedule for the task to start.



6. The server will be placed in to Maintenance mode and then taken down and the firmware upgrade will be run (note; if this is the only host in the cluster, and it has VMs on it, it may not go in to maintenance mode automatically and the VMs may need to be moved). The server will be shut down and will reboot to the firmware baseline defined, the upgrade will take approx. 20-30 minutes to complete. Note: there may not be sufficient time available to complete a firmware upgrade during this lab.

- Once completed, the server will boot back in to ESX and come out of Maintenance mode, after which, take a look at the Software/Firmware page and verify that firmware has been upgraded. If you wish to monitor the upgrade, you can open an iLO session to the blade.



- Note: that as this LAB is being run several times during Discover, the firmware version will not change during the LAB.

## Summary

During this lab, you utilized an existing SPP firmware baseline that had been added to the OneView server. The ESX host was put in to Maintenance mode, powered down and rebooted into the firmware upgrade process, once completed, the server booted back up to ESX and removed from Maintenance mode, at which time a software upgrade should be run using Update Manager.

---

# Using HP OneView for vCenter – Provisioning Additional Capacity

Lab 7

## Objectives

After completing this lab, you should be able to:

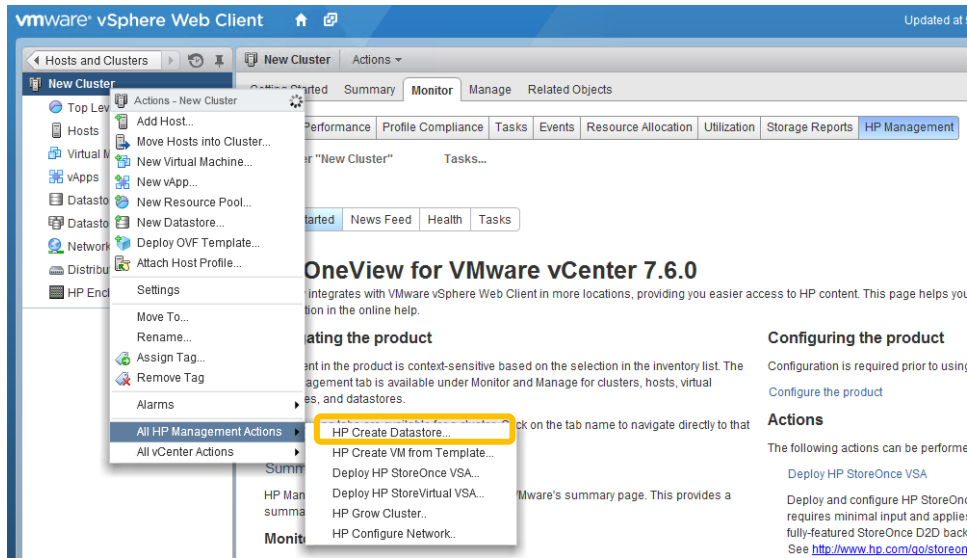
- Deploy additional storage capacity using Insight Control for vCenter.

## Introduction

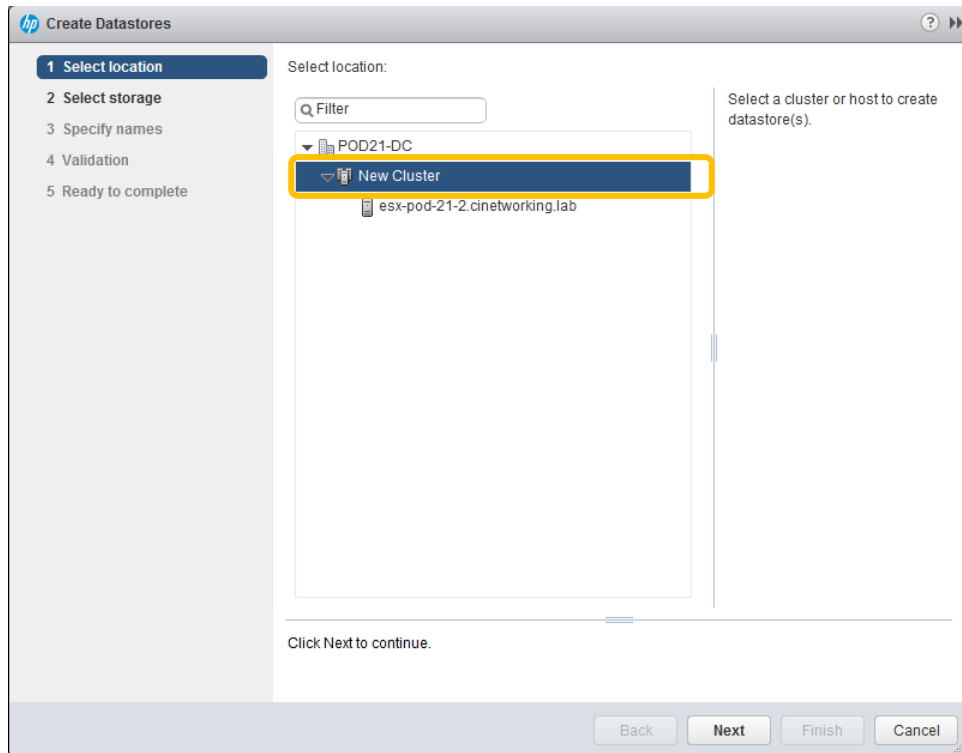
In this lab, you will utilize the vCenter web client to expand storage capacity.

## Part 1 – Creating a new Datastore

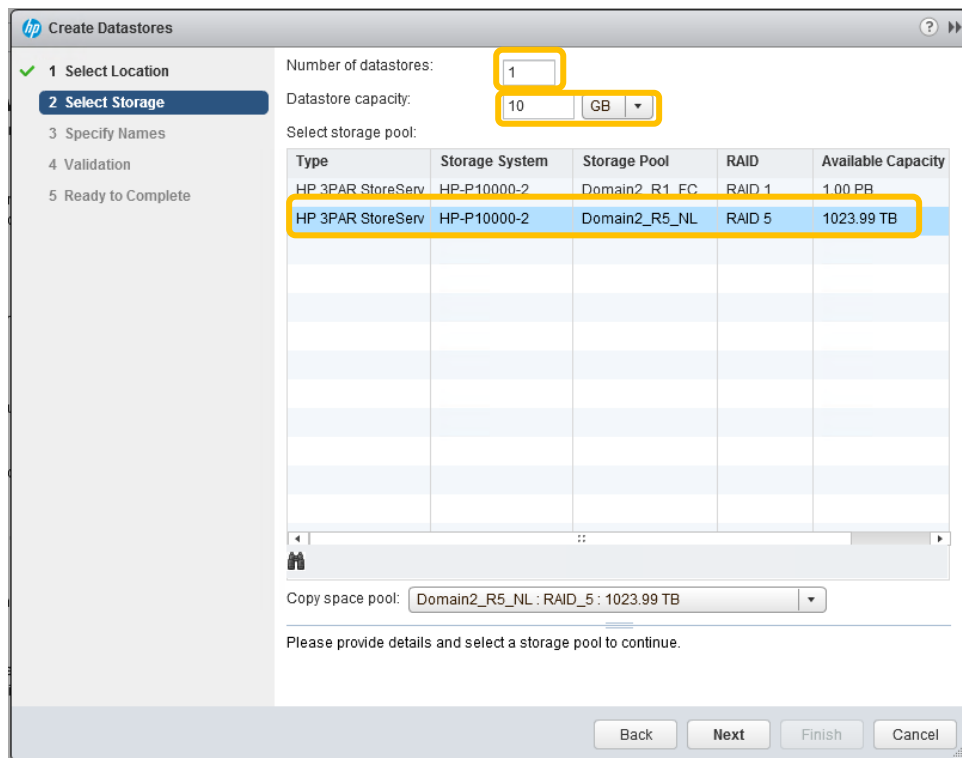
1. Provisioning new Datastore - An ESX Cluster is near disk capacity and you need a new Datastore. You can add a Datastore to an individual ESX host or an entire cluster at the same time. We will add a Datastore to the cluster.
2. In the VMware navigation bar open the Host and Cluster view. Locate your Cluster (PODxx-Cluster) you want to add a Datastore to and right click to open the VMware context menu. Select HP Create Datastore in the All HP Insight Management Actions sub-menu.



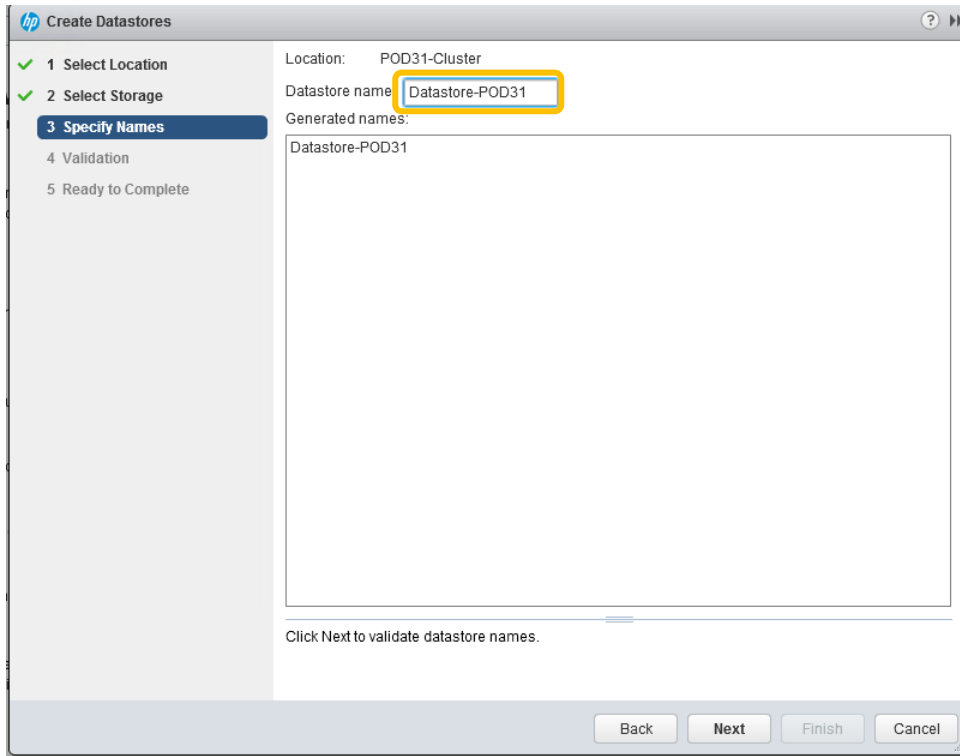
3. The Create Datastore dialog opens. Choose your cluster and then click next.



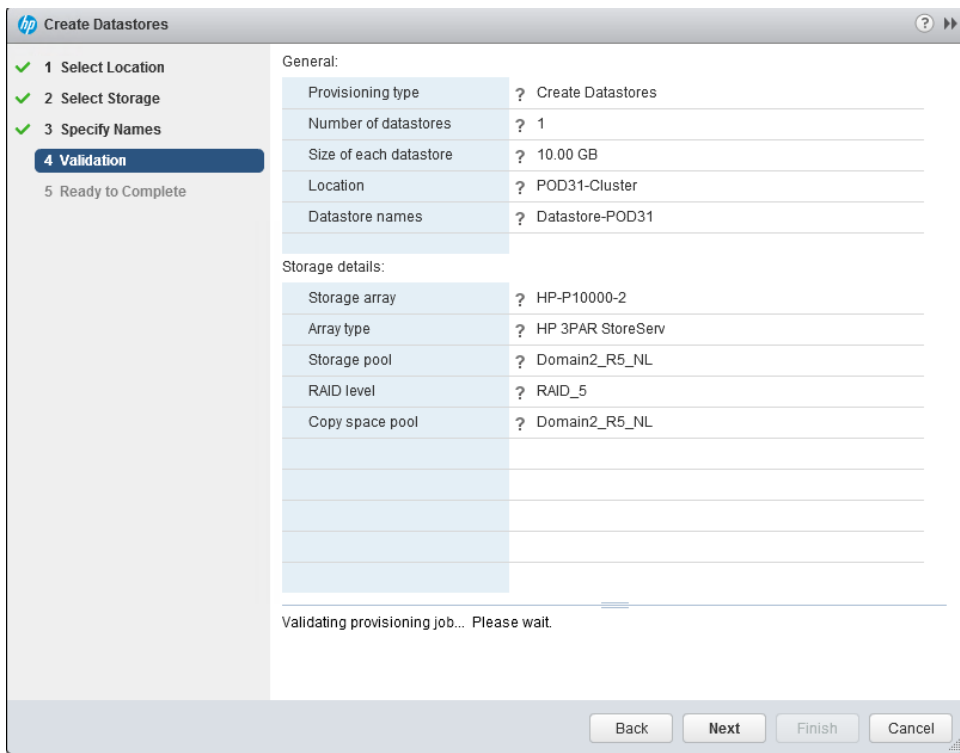
4. The select storage option appears, notice you can create multiple Datastores at once. For the lab we will only create 1 - 10GB Datastore using the Domain2\_R5\_NL Storage Pool as shown below, Click Next.



5. Now you need to name your Datastore. (Datastore-PODX) And click next.



6. The validation screen appears, wait a few seconds for it to complete validation.



7. Once validation completes successfully, Click Next.

The screenshot shows the 'Create Datastores' wizard in HP OneView. The left sidebar indicates the progress: 1 Select Location, 2 Select Storage, 3 Specify Names, 4 Validation (highlighted), and 5 Ready to Complete. The main area displays configuration details for the datastores, with a 'Validation successful. Click Next to continue.' message at the bottom. The 'Next' button is highlighted with a yellow box.

General:	
Provisioning type	✓ Create Datastores
Number of datastores	✓ 1
Size of each datastore	✓ 10.00 GB
Location	✓ POD31-Cluster
Datastore names	✓ Datastore-POD31

Storage details:	
Storage array	✓ HP-P10000-2
Array type	✓ HP 3PAR StoreServ
Storage pool	✓ Domain2_R5_NL
RAID level	✓ RAID_5
Copy space pool	✓ Domain2_R5_NL

Validation successful. Click Next to continue.

Buttons: Back, **Next**, Finish, Cancel

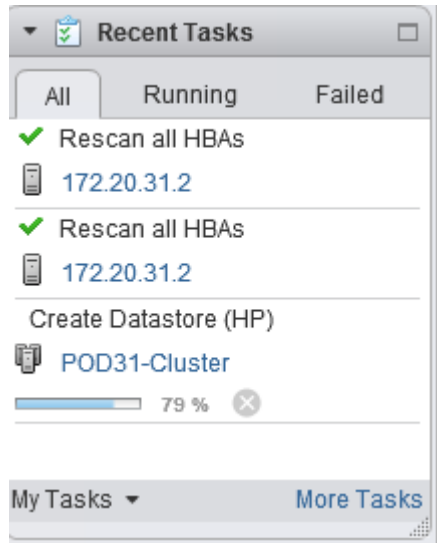
8. Lastly click Finish.

The screenshot shows the 'Create Datastores' wizard in HP OneView. The left sidebar indicates the progress: 1 Select Location, 2 Select Storage, 3 Specify Names, 4 Validation, and 5 Ready to Complete (highlighted). The main area displays the instruction: 'Click Finish to start the Create Datastore(HP) task. Progress can be monitored in the recent tasks window. Task will be listed shortly.' The 'Finish' button is highlighted with a yellow box.

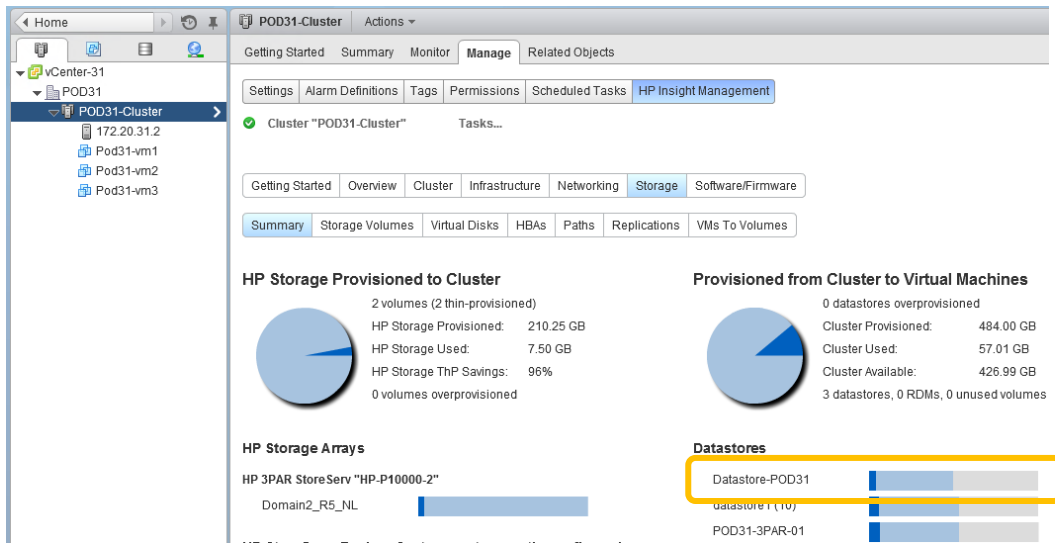
Click Finish to start the Create Datastore(HP) task. Progress can be monitored in the recent tasks window. Task will be listed shortly.

Buttons: Back, Next, Finish, **Cancel**

9. You can monitor the progress in your recent tasks window in the top right corner.



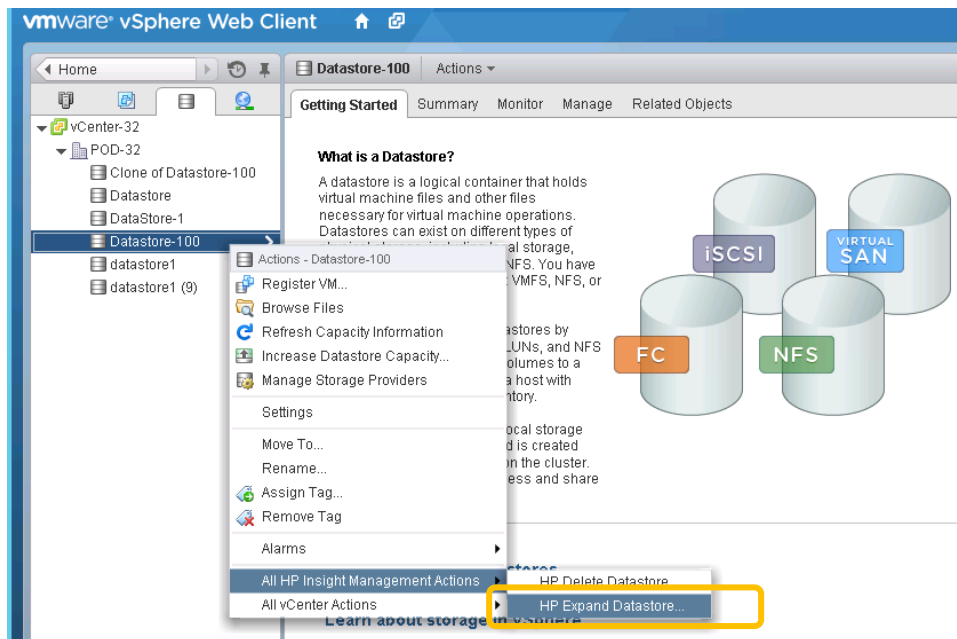
10. Next go to Hosts and Clusters, Choose your cluster and go to the Insight Management Tab. Then go to the storage area and you should see your new Datastore. You can also check this for every host in the cluster the same way by clicking on the host instead of the cluster.



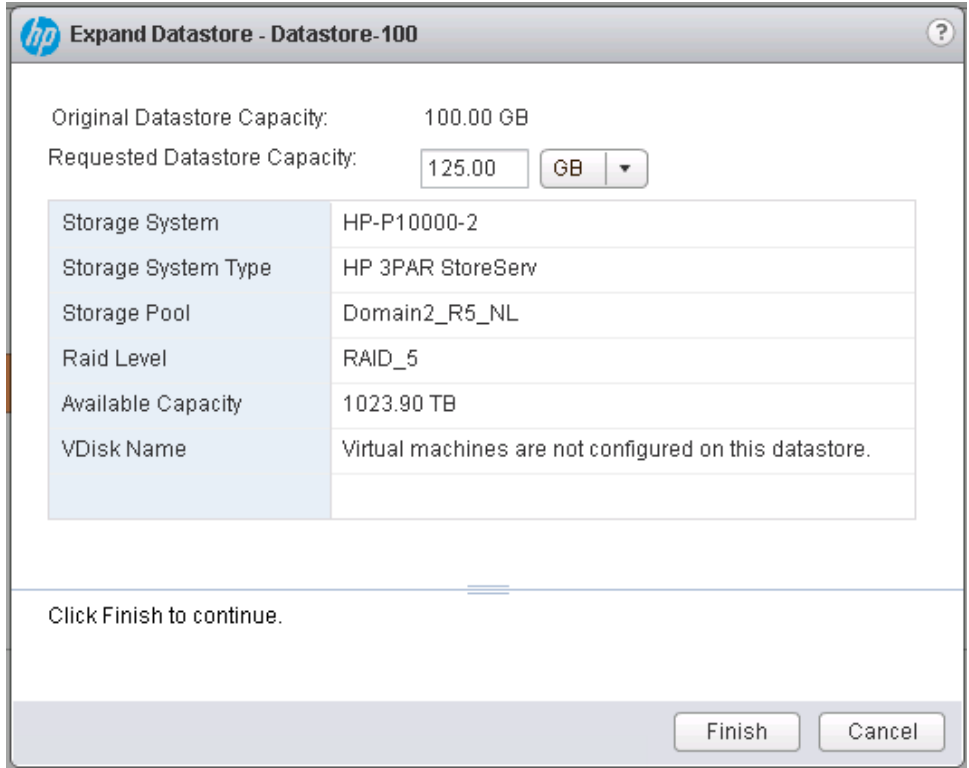


## Part 2 – Expanding an Existing Datastore

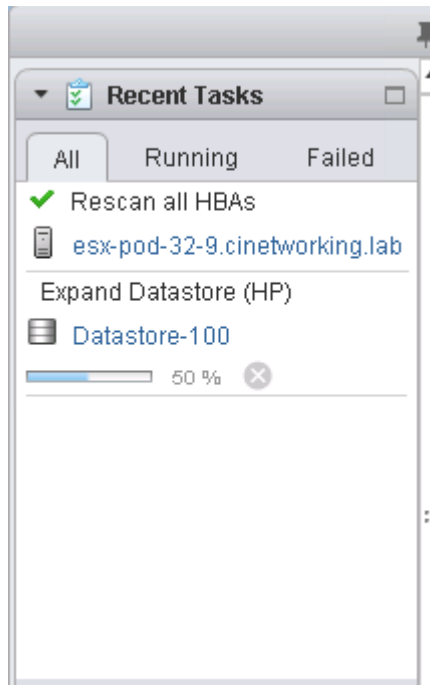
1. One of the virtual machines created is now running low on disk space. Increase the size of the virtual disk files presented to the host and increase the size of the Datastore where they are stored.
2. You should first increase the size of the Datastore. In the VMware navigation bar open the Storage view. Locate a Datastore within your POD (you use the Datastore-100 created in the earlier LAB), right click to open the VMware context menu. Select Expand Datastore in the HP Insight Management sub-menu.



3. The Expand Datastore dialog opens. Increase the size of the Datastore by 25 GB and then click finish.



4. Progress for expanding the Datastore can be monitored in the VMware recent tasks panel. The task name is "Expand Datastore (HP)".



5. You could also go in to the expand operation again to verify that the expansion occurred.

**Expand Datastore - Datastore-100**

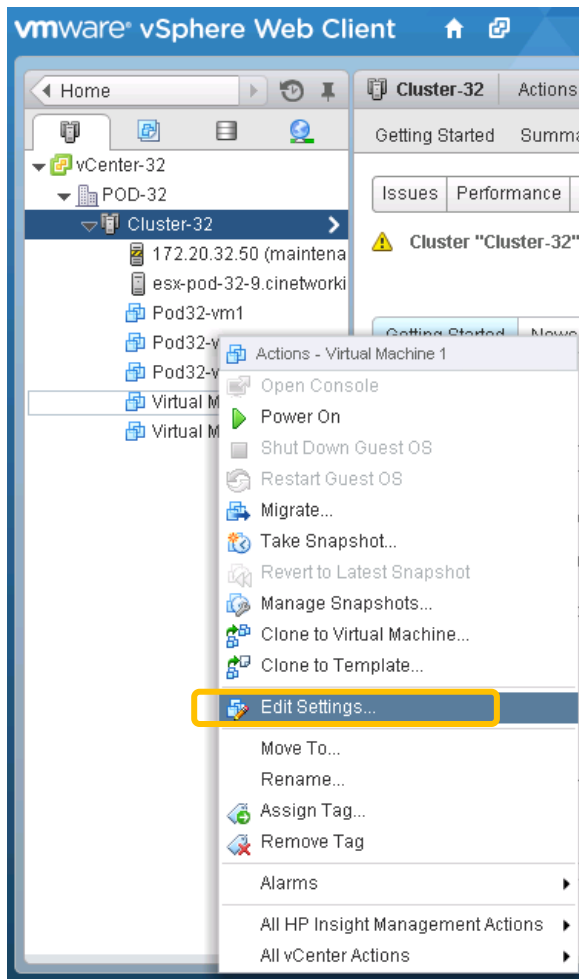
Original Datastore Capacity: 124.75 GB  
Requested Datastore Capacity: 124.75 GB

Storage System	HP-P10000-2
Storage System Type	HP 3PAR StoreServ
Storage Pool	Domain2_R5_NL
Raid Level	RAID_5
Available Capacity	1023.90 TB
VDisk Name	Virtual machines are not configured on this datastore.

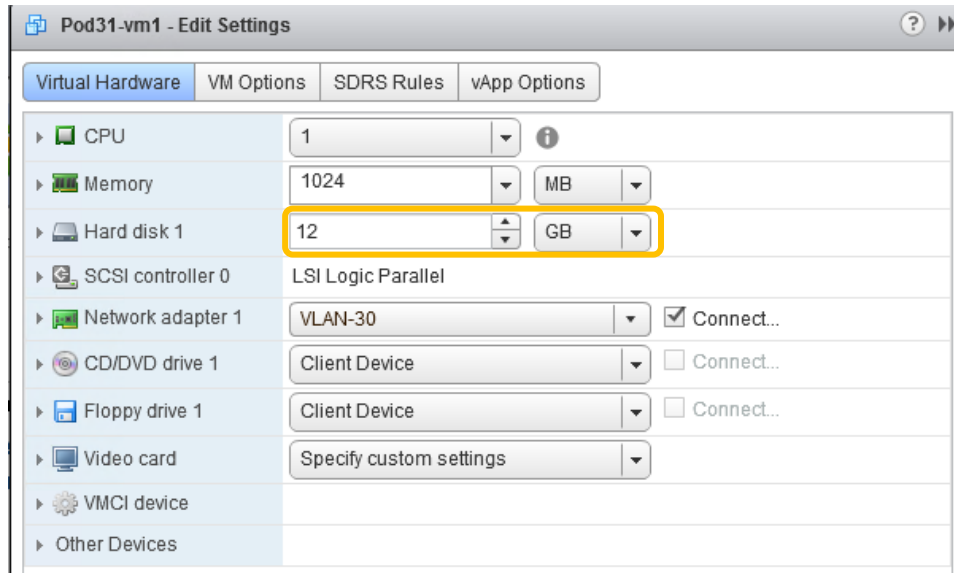
The datastore capacity after expansion may be more than the requested capacity to account for overhead.

Finish Cancel

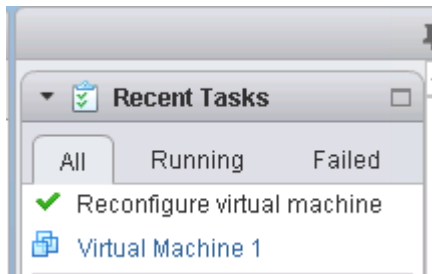
6. Increasing the size of the virtual disk files is an operation provided natively by VMware. Change to the "VMs and Templates" view and right click the virtual machine. Then select Edit Settings.



7. In the Virtual Machine Properties dialog select Hard disk 1 and increase the Provisioned Size to 20GB, from 12 and Click OK.



8. Task will complete very quickly, but can be monitored in the monitor tasks pane.



9. You could the long in to the virtual machine and expand the local disk as required.

## Summary

During this lab, you utilized Insight Control for vCenter to increase the size of a currently deployed Datastore and then increased the size of a virtual Disk within currently deployed virtual Machine.

---

# Using HP OneView for vCenter – Trouble Shooting

## Lab 8

## Objectives

After completing this lab, you should be able to:

- Use Insight Control for vCenter to trouble shoot problems within your infrastructure.

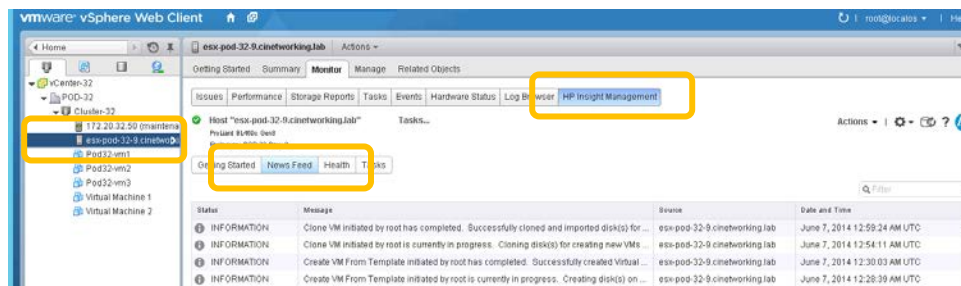
## Introduction

In this lab, you will utilize the vCenter web client to log in to vCenter and trouble shoot potential problems within your environment.

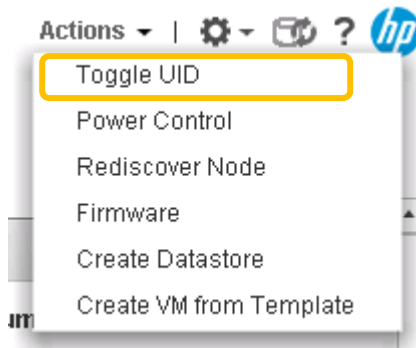
## Part 1 – General Troubleshooting

- 1 **Troubleshooting power failure** - A power supply failure is reported for an enclosure located at a remote site. Work with a colleague to troubleshoot the failure.
- 2 Open the Hosts and Clusters view and select your host in the VMware inventory panel. The power supply failure would be reported in the Newsfeed.

Note: For the Hands-on lab the newsfeed will not report a power supply failure because we have not disconnected a power supply.



- 3 Your colleague at the remote site will need detailed instructions to help you troubleshoot the power supply. The first thing you need to do is identify the rack where the enclosure is located and turn on the UID for one of the impacted servers in the enclosure.
- 4 Turn on the UID for the blade server by selecting Toggle UID in the Actions menu. You can now provide the information to your colleague so that he can troubleshoot the problem.

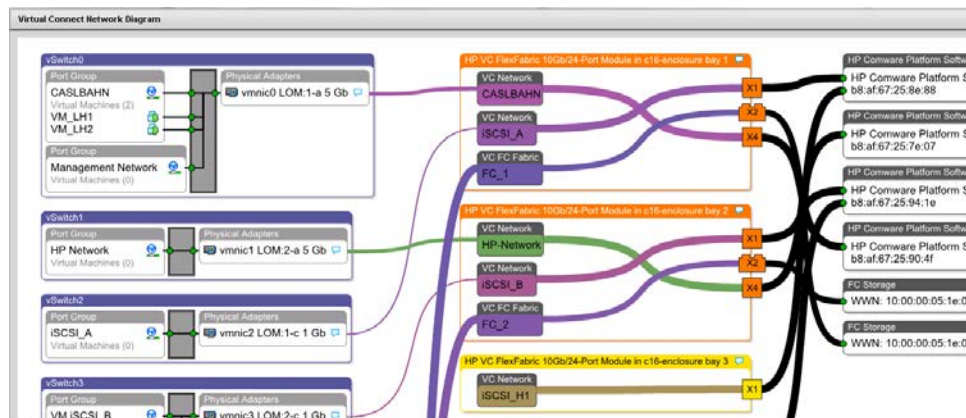


- 5 Your colleague checks that the power supply is in fact connected to power and it is a faulty power supply. You will need to look up the part number to order. In the pages dropdown select the Infrastructure page. You viewed the Infrastructure information in a previous LAB, under Manage, HP Insight Management, Infrastructure.

- 6 Scroll down the Infrastructure details page to the Power Supplies section. Record the part number and spare part number for one of the power supplies. These can be used to order the replacement part.

Power Supply Module Information						
Bay	Power Supply	Part Number	Warranty	Serial Number	Asset Tag	Barcode
1	HP 2400W HE PSU	2400	231	5AGUD0AHL0C1	499253-B21	500242-001
2	HP 2400W HE PSU	2400	0	5AGUD0AHL0C1	499253-B21	500242-001
3	Absent					
4	HP 2400W HE PSU	2400	231	5AGUD0AHL0C1	499253-B21	500242-001
5	HP 2400W HE PSU	2400	0	5AGUD0AHL0C1	499253-B21	500242-001
6	Absent					

- Troubleshooting performance problems** - A user of a virtual machine within your VMware vCenter environment is complaining of poor performance on their virtual machine. You will use the tool to identify the root cause for the performance issues.
- Navigate to the host where the VM is running. Open the HP Insight Management tab and Click on Network, the Network Diagram should open automatically, it can take a minute, so be patient.

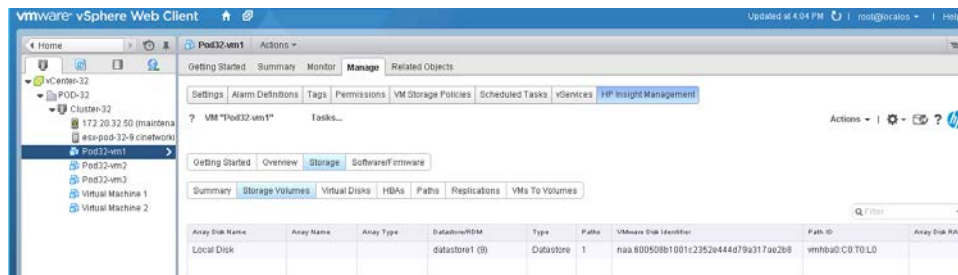


- The Virtual Connect Network Diagram is displayed. This diagram will allow you to quickly and clearly see which virtual connect networks the VM connects to.
- To determine if there is a problem with the network cable connection to the virtual switch – follow the network connection on the diagram and determine to which external switch port the uplink port connects to. The line color and thickness is of great significance. The network diagram draws the virtual connect switches with color that matches the slot colors at the back of the enclosure.





- 5 Mouse over the external switch port on the network diagram and the popup will show the Port ID.
- 6 The next area to check is whether there are any potential problems with the storage connected to the virtual machine. In the VMware inventory panel select the virtual machine and open the HP Insight Management tab. From the pages dropdown select the Storage Details page. Select the storage volumes tab. This displays all the storage volumes relevant to this virtual machine.



Note: That this virtual machine is located on the local disk. Moving this VM to the storage array could improve performance.

- 7 You could create a new Datastore and present it to all hosts in the cluster so the VM can move around as necessary. (Creating a new Datastore and moving the VM is not part of this LAB).

## Part 2 – Troubleshooting the product

- 1 **Troubleshooting the product - HP Insight Management tab missing** - The HP Insight Management tab is not displaying in the VMware vSphere Client when you have a host selected. See if you can quickly get it working again before calling support.
- 2 If the vSphere client was running when the product was installed, log out of the session, log back into the vSphere client. For the first invocation of the client after the product is installed, you might notice a delay before the GUI is presented.
- 3 If the data is not appearing, you may need to refresh the screen and you may have to click the refresh button to see the host in the left pane.



- 4 Verify that the HP Insight Management icon appears in the Home page. Check that communication between the nodes works properly. Ensure that there are no firewalls blocking communication.
- 5 Check that the Insight Control for vCenter server is up and running.
- 6 Check that the Insight Control for vCenter services are running. It is possible that they are hung, so restart them. There are four services related to Insight Control for vCenter. If you restart the “Database Service”, it will restart all related services, as shown below. HP Insight Control for vCenter UI Manager is always installed. The vSphere client communicates directly with this service. HP Common Services and HP Insight Control for vCenter Server are used by the server module. HP Insight Control Storage Module for vCenter is used by the storage module. If the server or storage module is not installed, the corresponding services will not be present.

Service Name	Description	Status	Start Mode	Location
HP Common Services		Running	Automatic	Local System...
HP OneView for vCenter Database	Provides Da...	Running	Automatic	Local System...
HP OneView for vCenter Host Configuration	Provides Ho...	Running	Automatic	Local System...
HP OneView for vCenter Server Module	Provides HP...	Running	Automatic	Local System...
HP OneView for vCenter Storage Module	Provides su...	Running	Automatic	Local System...
HP OneView for vCenter UI Manager	Provides vS...	Running	Automatic	Local System...
Human Interface Device Service	Activates an...		Manual (Trig...	Local System...

- 7 Restart all of these services to ensure that they are running properly (note that a dependency exists between HP Insight Control for vCenter Server and HP Common Services).
- 8 At this point, try restarting the vSphere client and check whether the HP Insight Management tab is displayed when a host is selected.
- 9 Check to ensure that the Insight Control for vCenter plugin is enabled in vCenter.

10 The next step is to check the log files to determine whether anything obviously wrong is being logged. If the tab is not displayed, the HP Insight Control for vCenter UI Manager service is the likely culprit. Its log file is located at:

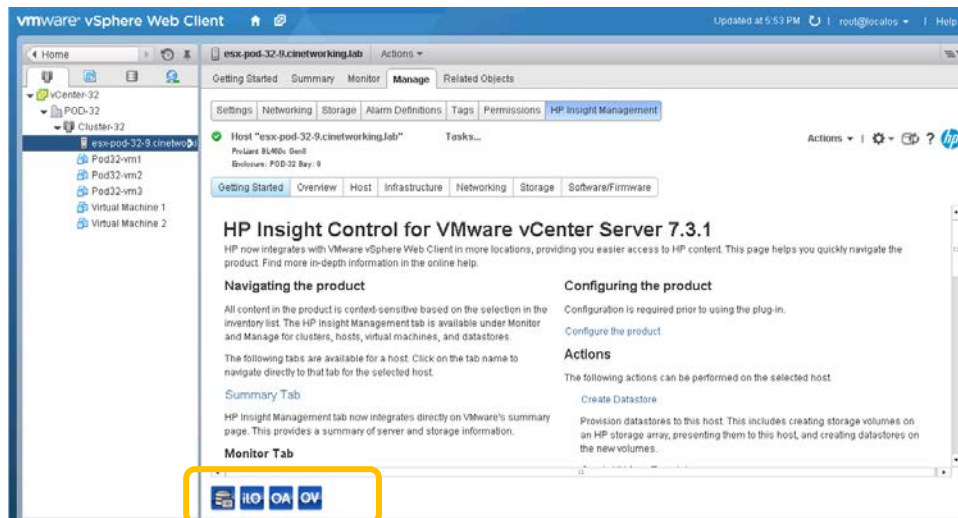
11 C:\Program Files (x86)\HP\HP Insight Control for vCenter\uim\hpuim.log

12 You should see log entries like the following:

```

2012-05-14 09:26:53,299 uim INFO Starting Insight Control for VMware vCenter UIM version 7.0
2012-05-14 09:26:53,315 uim INFO Connecting to vCenter: stuX-vc
2012-05-14 09:27:00,303 uim INFO Registering plugin on vCenter: stuX-vc
2012-05-14 09:27:00,381 vmware.hpsphere INFO Querying for plugin 'com.hp.ic4vc' on vCenter 'stuX-vc '
2012-05-14 09:27:00,428 vmware.hpsphere INFO Plugin 'com.hp.ic4vc' is registered on vCenter stuX-vc '
2012-05-14 09:27:00,428 vmware.hpsphere INFO Unregistering plugin 'com.hp.ic4vc' from vCenter stuX-vc '
2012-05-14 09:27:00,538 vmware.hpsphere INFO Registering plugin 'com.hp.ic4vc' on vCenter stuX-vc '
    
```

13 When Insight Control for vCenter is correctly installed and functioning, you should see a set of icons that link to the related consoles. If this were a Rack server, the OA and OV icons would not be presented. If this were an enclosure with traditional Virtual Connect, and not OneView, a VC icon would be presented instead of the OV icon. When an HP server is selected on the left and an expected icon is missing, this could be the resolve of a credential issue and credentials should be checked and verified.



14 The next might be to uninstall the product and then reinstall it. After uninstalling the product you can delete all folders so that it is a “clean” install. Delete the following folders if they exist:

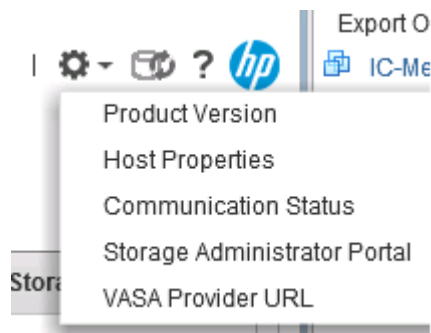
- C:\Program Files (x86)\HP\HP Insight Control for vCenter
- C:\temp\icvc

Now reinstall and configure the product.

15 The final step is to contact HP support. Server support is provided with your HP Insight Control license. Storage support is provided with your storage array’s support contract.

## Part 3 – Server Data is missing

- 1 **Server data is missing** - If Server data is not showing up it is usually because credentials have not been properly configured. Insight Control for VMware vCenter must be configured with Administrator vCenter credentials and Administrator credentials for iLO, OA, & Virtual Connect/OneView. Note: the OA credentials are only required for blades. Virtual Connect/OneView credentials are only required if you have Virtual Connect modules installed in the Blade enclosure.
- 2 In the header section under the "Gear" icon, select Communications Status. This will allow you to see if there is a problem communicating with your infrastructure.

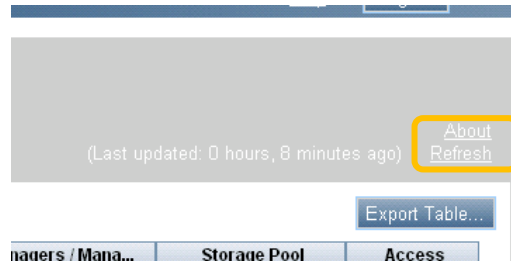


- 3 If you suspect a credential issue, you can go to the HP insight Control for vCenter Server home page and reconfigure the appropriate credentials.

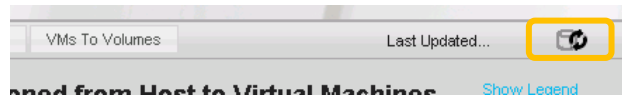


## Part 4 – Storage Data is missing

- 1 **Storage data is missing** - The data will not show up if: Storage Arrays are not configured in the HP Insight Control environment. The arrays can be configured using the Storage Administrator Portal. After configuring the arrays, initiate the Refresh process (using the Refresh link in the Storage Administrator Portal) to update the storage-related data in the plug-in.



- 2 Storage Arrays are configured but the Refresh process is not initiated. It can be initiated using the Storage Administrator Portal (as listed in the above bullet) or from the HP Insight Management tab in vSphere session using the refresh button shown in the figure below.



- 3 Once the refresh has completed go back to the administration console and validate that the storage information is provided.

## Summary

During this lab, you utilized Insight Control for vCenter to trouble various potential problems within the Virtual Environment.