

VMware vSphere Life Cycle Manager (vLCM) and Dell EMC integration

Abstract

This white paper describes how to use the new VMware vSphere Life Cycle Manager (vLCM) with Dell EMC add-on installation workflows. Also discussed are guidelines on how to use the Dell EMC OpenManage Integration for VMware vCenter (OMIVV) with vLCM to provide firmware updates to the server along with add-ons to configure a Desired State.

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Acknowledgements

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Table of contents

Re	vision	IS	2			
Acl	knowl	edgements	2			
Tal	ole of	contents	3			
Exe	ecutiv	e summary	4			
1	Intro	duction	5			
	1.1	Audience and Scope	5			
	1.2	vSphere Lifecycle Manager (vLCM) and VMware Update Manager (VUM)	5			
	1.3	Dell EMC OpenManage Integration for VMware vCenter (OMIVV)	6			
2	Dell EMC Add-on and vLCM					
	2.1	Converting VMware native ESXi 7.0 image to customized Dell EMC image	7			
3	Conf	figuring vSphere Desired State for Dell EMC PowerEdge VMware cluster using vLCM	9			
	3.1	Set the Firmware Catalog from a Network Shared Folder (NFS or CIFS)	9			
	3.2	Set the Firmware Catalog from a custom webserver	11			
	3.3	Create a Cluster Profile and set up the image for the cluster	12			
4	Usin	g vCenter 7.0 to manage previous versions of VMware ESXi	15			
	4.1	Managing VMware ESXi 6.7 using vCenter 7.0	15			
5	Sum	imary	17			
6	Refe	erences	18			

Executive summary

vLCM (vSphere Lifecycle Manager) is a new software feature that is introduced in vSphere 7.0. It is an extended version to the existing VUM (vSphere Update Manager). In expanding lifecycle controls for clusters, vLCM helps in setting software baselines for clusters that contain an ESXi base image and an add-on image. vLCM allows coordinating these software updates with firmware through a hardware support manager (HSM). vSphere 7.0 and later versions support vLCM. For more information about vLCM, see <u>vSphere 7 – Lifecycle</u> Management.

1 Introduction

vLCM is the new way to control lifecycle operations in vSphere 7. The legacy functions of vSphere Update Manager (VUM) are integrated with in vLCM and provides great new features and capabilities that extend beyond what VUM could do.

vLCM enables coordinated update of vSphere clusters, including firmware updates with the help of OEM plugins registered to vCenter server such as <u>Dell EMC OpenManage Integration for VMware vCenter</u>. vLCM also includes software upgrades and installs for ESXi hosts, device drivers and third-party applications.

For more information about vSphere Lifecycle Manager (vLCM), see Managing Host and Cluster Lifecycle.

1.1 Audience and Scope

The intended audience for this white paper includes system administrators who are familiar with data center operations and administrators working on virtual environments with multiple ESXi hosts. This white paper is helpful for administrators to understand the options that are provided by VMware and Dell EMC together to maintain a Desired State on all ESXi hosts for firmware and software across a given cluster.

1.2 vSphere Lifecycle Manager (vLCM) and VMware Update Manager (VUM)

The following table shows the similarities and differences between vSphere Lifecycle Manager (vLCM) and VMware Update Manager (VUM).

Feature	vSphere Lifecycle Manager (vLCM)	VMware Update manager (VUM)
Compatibility	vSphere 7.0 and later versions.	vSphere 6.x and older versions.
Installation	Integrated with vCenter 7.0 by default. For information on how to install vCenter, see vCenter Server Installation and Setup. The windows installer is no longer supported. For more information, see VMware vSphere 7.0 Release Notes.	Available as a plugin for vCenter.
Patch updates	Old baseline concepts can be used to patch and update individual ESXi hosts. Provides Desired State experience at cluster level.	Current baselines are used to patch and update ESXi hosts. Does not provide Desired State concepts.
Third-party software upgrade, installation and OEM plugin support	Software is packaged as components on the hosts. OEM add-ons available on selected hosts or cluster. (Creating the equivalent of an OEM custom ISO).	Software is packaged as offline bundles on the hosts.

Table 1 Similarities and differences between vLCM and VUM.

Feature	vSphere Lifecycle Manager (vLCM)	VMware Update manager (VUM)
	Firmware stack can be installed or updated on all ESXi hosts in a cluster using OEM plugins.	
Functionality	Dependent on Hardware Support Manager (HSM) to update firmware of the servers in each cluster.	Independent of any OEM-specific tool for software stack updates. Firmware updates are not supported through VUM.

1.3 Dell EMC OpenManage Integration for VMware vCenter (OMIVV)

VMware vCenter is used by IT administrators as their primary console to manage and monitor VMware vSphere ESXi hosts. Dell EMC provides a vCenter plugin called Dell EMC OpenManage Integration for VMware vCenter (OMIVV). It reduces complexity of managing the data center by streamlining the tasks associated with the management and monitoring of Dell EMC server infrastructure in the vSphere environment.

OMIVV serves as a HSM connected to vLCM to invoke firmware update workflows for supported Dell EMC PowerEdge servers. OMIVV 5.1 version released by Dell EMC supports VMware vSphere 7.0. For more information, see <u>OpenManage Integration for VMware vCenter</u>. The following sections in this document will present use cases for vLCM.

2 Dell EMC Add-on and vLCM

In earlier releases of VMware vSphere, OEMs such as Dell EMC merged extensions with the base or native image that VMware provided. This created a custom image which was distributed as an ISO file and as an offline bundle (ZIP file). OEMs released custom images in accordance with major, update and patch releases on a regular cadence.

Starting with VMware vSphere 7.0, in addition to the usual custom ISO images and offline bundles, OEMs can release the vendor add-on, which is the delta between the custom image and the ESXi base image and an add-on image is provided to use with vLCM. The use case noted in the imminent section demonstrates converting hosts installed using a VMware native image to a Dell EMC customized image at the cluster level using the image concept of vLCM.

The base image is a collection of components that is complete and can boot up a server - the core ESXi installation. Base image and native image can be used interchangeably. An add-on is a collection of components that does not represent a complete bootable image – it is a collection of drivers released or changed since the base image was created. Vendor add-ons cannot be used as bootable image.

When combined with an ESXi base image, an add-on can add, update, or remove components that are a part of the ESXi base image. For the Dell EMC Add-ons, we add standalone packages and async drivers on top of the ESXi base image. Vendor add-ons can be configured independently to update the ESXi version of your hosts. For more information on add-ons, see <u>DellEMC Add-on for VMware vSphere 7.0</u>.

2.1 Converting VMware native ESXi 7.0 image to customized Dell EMC image

The following use case performs the steps below to convert a native image installed on the hosts to a Dell EMC customized image using vLCM:

 Download the native VMware ESXi 7.0 image from the product page of VMware's website and import the image into the vCenter server. For more information on importing updates, see <u>Import Updates to</u> <u>the vSphere Lifecycle Manager Depot</u>.

Note: The native VMware ESXi 7.0 images are loaded into a vCenter Server 7.0 database by default through <u>vmware online depots</u>.

2. Download the Dell EMC specific add-ons available on the VMware download page.

Note: Dell EMC Add-ons are downloaded automatically to a vLCM patch database by default through <u>VMware online add-on depots</u>.

3. Set up the image by selecting the imported VMware ESXi image and the Dell EMC Add-ons. For more information, see <u>Setting Up an Image</u>.

Note: Hosts in the cluster are managed collectively. The created image will be applied to all hosts in this cluster.

vm vSphere Client Menu v	Q Search in all environments					C 0 ~	Administrator@VSPHERELOCAL ~	(:)
□	Cluster Action	NS ✔ Configure Permissions Hosts	VMs Datasto	ores Networks	Updates			
 Ω Datacenter Quiter Quiter No0.98.13.199 No0.98.13.199 No0.98.13.185 100.98.15.82 	Hosts V Image Hardware Compatibility VMware Tools VM Hardware	Image Hosts in this cluster are managed co ESXI Version Vendor Addon () Firmware and Drivers Addon () Components ()	Illectively. This ima 7.0 GA - 1584380 DellEMC addon fo None No additional com	age below will be applie 7 or PowerEdge Servers rur nponents Show details	ed to all hosts in this clus	ter.	TIGE	
		Image Compliance Last checked on 05/12/2020, 6:27:11 PM (()	0 days ago) h the cluster's image				CHECK COMPLIANCE	
		Hosts . 100.98.15.82 . 100.98.13.199	Ŧ	100.98.15.82 ▲ Host is out of com	pliance with the image		Show Only drift comparison	
			2 hosts	Image Vendor Addon	Host Version None	Image Version DelIEMC addon for Power	Edge Servers running ESXi 7.0 A00	

Figure 1 Hosts non-compliant with cluster image

4. Notice that two out of three hosts are noncompliant with the cluster image. The screenshot shows a cluster consisting three hosts. In this example, two hosts are installed with VMware ESXi native 7.0 image and Dell EMC customized VMware ESXi 7.0 image is installed on the third host. This causes the hosts to be noncompliant with the cluster image.

	Cluster ACTIO	ons 🗸	
Pe-dhcp-100-98-13-67.helab.in Datacenter Dutter	Summary Monitor (Configure Permissions Hosts VMs Datastores Networks Updates	EDIT
100.98.13.199 100.98.14.185 100.98.15.82	Image Hardware Compatibility VMware Tools VM Hardware	Hosts in this cluster are managed collectively. This image below will be applied to all hosts in this cluster. ESXI Version 7.0 GA - 15843807 Vendor Addon () DelEMC addon for PowerEdge Servers running ESXI 7.0 A00 Firmware and Drivers Addon () None Components () No additional components Show details	
		Image Compliance CHEC Last checked on 05/12/2020, 633:14 PM (0 days ago) Q Q All hosts in this cluster are compliant	K COMPLIANCE
	Remediation completed successfully Completed 05/12/2020, 6.32.57 PM ③ 3 Hosts completed * 3 hosts remediated to	Remediation completed successfully SKIF Completed 05/12/2020. 6:32:57 PM SKIF Image: State of State	REMAINING HOSTS X

Figure 2 Hosts compliant with cluster image after remediation

5. Click **REMEDIATE ALL** to make the host image complaint with the cluster image.

3 Configuring vSphere Desired State for Dell EMC PowerEdge VMware cluster using vLCM

This section describes how to maintain a Desired State Configuration for the hosts within a cluster with the image concept of vLCM. Dell EMC regularly releases firmware catalogs for VMware ESXi (which can be subscribed to via the Dell EMC Repository Manager as well as the process outlined below). For more information, see Firmware catalog for Dell customized VMware ESXi images.

Dell EMC also releases customized versions of ESXi images which includes the validated and certified driver versions integrated with it. When the firmware catalog for hardware testbed and the corresponding customized ESXi ISO image on a given server is used, a reference for a combined good vSphere state is achieved.

vSAN clusters will need an additional check on the storage controller versions that vLCM does as well. If an older version of vSAN is used, it may require a firmware downgrade of the storage control firmware from the base ESXi catalog. More information on customizing the baselines can be found with the Dell EMC Repository Manager documentation.

Note: The firmware catalog mentioned in the section below is compatible with vSphere and not compatible for vSAN.

The following components are required to create a Desired Sate configuration through vLCM:

- Base or native ESXi image.
- Dell EMC Add-ons which includes the async drivers.
- Firmware catalog for Dell customized VMware ESXi images.
- Dell EMC's OMIVV vCenter plugin as the Hardware Support Manager (HSM). See the OMIVV documentations to deploy and register the same to vCenter.

3.1 Set the Firmware Catalog from a Network Shared Folder (NFS or CIFS)

OMIVV provides an option to set the firmware catalog residing in a network share. Follow the steps below to set the firmware catalog from a local network shared folder:

- Download the desired <u>Firmware catalog</u> from the direct links mentioned on the blog and place it in a shared folder (NFS or CIFS). For example, you may see that there is a firmware catalog posted for the A00 version of Dell EMC's customized version of VMware ESXi 7.0.
- In vCenter Server, from the Menu tab select OpenManage Integration > Compliance and Deployment > Profiles.
- 3. Under the **Repository Profile** tab, click **Create New Profile**.

Repository Profile	Profile Name and	Description	0
1 Welcome	Profile Name	<u>1630</u> -2	
2 Profile Name	Drofilo Description		
3 Profile settings	Profile Description	Profile Description	
4 Synchronize			//
5 Summary			
		CANCEL	BACK

Figure 3 Setting a profile name

4. Under Profile Name and Description page, provide a name for the profile and click Next.

Repository Profile	Profile settings	?
1 Welcome	(1) Test connection should be successfully performed before proceeding further.	
2 Profile Name		n
3 Profile settings	Choose a Repository Type	
4 Synchronize	 Pirmware (i) Driver (i) 	
5 Summary		
	Specify the Repository Location	
	Repository Share Location (1)	
	100.98.15.18:/home/storage01/ESXi_Catalog.xml.gz	-
	CANCEL BACK N	EXT

Figure 4 Repository share location

5. Under the **Profile Settings** tab, select **Firmware** and provide the share path folder address.

	Repository Profile	Profile settings	Domain\User-or Domain/User-or User@Domain	?▲
	1 Welcome	Password		
	2 Profile Name	Verify Password		
	3 Profile settings			
	4 Synchronize	Test Settings		
	5 Summary	Repository access	;	
		Repository auther	ntication	- 14
		BEGIN TEST		- 11
				1
				-
			CANCEL BACK NE	хт

Figure 5 Test the connectivity to the shared folder by clicking on Begin Test

- 6. Scroll down and test the connectivity to the shared folder by clicking on **BEGIN TEST**.
- 7. Click Next and then, click Finish.

3.2 Set the Firmware Catalog from a custom webserver

OMIVV also provides an option to set a firmware catalog via a webserver. The use case demonstrated below describes a user creating a local webserver in a network environment and then download and maintain desired Firmware Catalog from the webserver.

Note: Prerequisite for this task is a simple webserver and a copy of both the catalog and corresponding signature file mentioned on the blog. Place both the catalog.xml.gz file and the signature file in the same folder on the local webserver. For more information, see <u>Dell Knowledge Base article SLN311042</u>.

Follow the steps below in OMIVV to set the firmware catalog on a webserver:

1. From the Menu tab select OpenManage Integration > Compliance and Deployment > Profiles.

OpenManage™ Integration for VMware vCenter Appliance : he-dhcp-100-98-14-236.helab.in CHANGE								
0	Dashboard Hosts & Chassis Compliance & Deployment Logs Jobs Settings							
Repository Profile ()								
	Deployment	,	CREATE	NEW PROFILE EDIT DI	ELETE		Search	
	Profiles	\sim		Profile Name	Description	Туре	Share Path	
	Cluster Profile		E	Dell Default Catalog	Latest Firmware From Dell	Firmware	https://downloads.dell.com/FOLDER06165376M/1/ESXi_Catalog.xml.gz	
	Repository Profile		69	Validated MX stack Catalog	A validated Online catalog from Dell EMC for MX chassis and its sleds.	Firmware	https://downloads.dell.com/catalog/ValidatedMXstack_Catalog.xml.gz	
	ISO Profile							
	Host Credential Profile							
	Chassis Credential Profile		4					
Fi	aure 6 OM	IV	/ Re	pository Profi	le			

- 2. Select **Dell Default Catalog** and click **Edit**.
- 3. Do not edit the name of the repository (Dell Default Catalog). Click Next.

Repository Profile	Profile settings	0	
1 Welcome	Choose a Repository Type		
3 Profile settings	O Driver (1)		
4 Synchronize	Specify the Repository Location		
5 Summary	https://downloads.dell.com/catalog/Catalog.gz		
	Custom Online (1)		
	http://100.98.15.18/ESXi_Catalog.xml.gz		
		-	
	CANCEL BACK	NEXT	

Figure 7 Link pointing to firmware catalog in a web server

- 4. Select the option **Custom Online** and enter the path of the catalog file on webserver, such as: http://<webserver IP_ADDR>/<PATH>/<FILE_NAME>
- 5. Scroll down and click on **BEGIN TEST** to check the connectivity with the catalog.
- 6. Once the test for connectivity is complete, click **Next** and then, click **Finish**. The Dell Default Catalog link has been successfully set to point to the firmware catalog on the webserver.

3.3 Create a Cluster Profile and set up the image for the cluster

Once the firmware repository is set up, the next step is to create a Cluster Profile and to set up the image for the cluster which contains ESXi host(s):

- 1. Click on Menu and select OMIVV > Compliance and Deployment tab > Cluster Profile. Click Create New Profile.
- Provide a name for the Cluster Profile and Associate Profiles (select a valid system profile, firmware repository profile, driver repository profile or its combinations). Select the cluster and click Next and then, click Finish.
- 3. Click on the Menu and select Hosts and Clusters. Choose a Cluster and click on the Updates tab.

vm vSphere Client Menu v	Q Search in all environments
 ▶ 100-98-13-67.helab.in ▶ Datacenter ▶ Cluster ▶ 100.98.13.199 	Cluster ACTIONS V Summary Monitor Configure Permissions Hosts VMs Datastores Networks Updates Hosts V Baselines Image Lifecycle Manager enables you to have all hosts in a cluster inherit the same image, thus removing variability between hosts. Using a single image means faster upgrades, improved reliability and easier overall maintenance. Hosts must be running ESXi 7.0 or higher - - - Hosts may not be stateless Iterure IMAGE Import IMAGE -

Figure 8 Setup Image for the cluster

- 4. From the left pane, select **Image** and click **SETUP IMAGE**.
- 5. Select the ESXi version and then, select the Dell EMC add-on as the Vendor Add-on.

Cluster ACT	ons 🗸									
Summary Monitor	Configure Permissions Hosts	VMs Datastores Networks Updates								
Hosts V	Edit Image Select the version of ESXi and other co	Edit Image Select the version of ESXi and other components that you want for the hosts in this cluster. The same image will be applied consistently to all t								
Hardware Compatibility										
VMware Tools	ESXi Version	7.0 GA - 15843807 - (released 03/16/2020)								
VM Hardware	Vendor Addon (j)	DellEMC addon for PowerEdge Servers running ESXi 7.0 A00 🧷 📋								
	Firmware and Drivers Addon (j)	SELECT (optional)								
	Components (j)	No additional components Show details								
	SAVE VALIDATE CANC	CEL								

Figure 9 Options provided by Image to select ESXi base image, Vendor Add-on and firmware

- 6. From the **Firmware and Driver Add-ons** window, select **Dell EMC OMIVV**. A window indicating the Cluster profile will come up. Click on the **Cluster profile** and then, click **SELECT**.
- 7. Click SAVE. The image for the cluster has been set up.

Cluster ACTION	s 🗸						
Summary Monitor Co	onfigure Permissions Hosts	VMs Datastores Network	updates				
Hosts Image Hardware Compatibility VMware Tools VM Hardware	ESXI Version Vendor Addon () Firmware and Drivers Addon () Components ()						
	Image Compliance Last checked on 04/29/2020, 4:44:47 Ph	4 (0 days ago) In the cluster's image				CHECK COMPLIANCE	
	Hosts : 100.98.13.199 : 100.98.15.82	¥	A Host is out of compliance with the image Software compliance of the software complisnes of the softw				
			Image	Host Version	Image Version		
			Vendor Addon	None	DellEMC addon for PowerEdge Serv	ers running ESXi 7.0 A00	
			Firmware and Drivers Addon None T630 1.0.0-0				
			Firmware compliance				
			Firmware component		Host Version	Image Version	
			PERC H730P Adapter		25.5.5.0005	25.5.6.0009	
			Disk 2 in Backplane 1 of RAID Controller in Slot 8		EJ24	EJ39	
			BP13G+EXP 0:1		3.03	3.35	
			BIOS		2.10.5	2.11.0	

Figure 10 Difference in the firmware and software between the hosts and the image

8. Under the **Image Compliance** tab click **CHECK COMPLIANCE**.

III I I I I I I I I I I I I I I I I I	Cluster ACTION Summary Monitor C	s 🗸 onfigure Permissions Hosts VMs Datastores Networks <mark>Updates</mark>	
 Cluster	Hosts V Image Hardware Compatibility VMware Tools VM Hardware	Image Hosts in this cluster are managed collectively. This image below will be applied to all hosts in this cluster. ESXI Version 7.0 GA - 15943807 Vendor Addon ① DelEMC addon for PowerEdge Servers running ESXI 7.0 A00 Firmware and Drivers Addon ① T633 10.0-0 Components ① No additional components Show details	EDIT
		Image Compliance Last checked on 05/13/2020, 2.25 30 PM (0 days ago) ② All hosts in this cluster are compliant	
		Remediation completed successfully Completed 05/13/2020, 224:04 PM © 2 Hosts completed + 2 hosts remediated: 100.98.15.82	SKIP REMAINING HOSTS X

Figure 11 Host is complaint with the image created.

The difference in firmware and software between the hosts and the image is displayed. Click
 REMEDIATE ALL to remediate the hosts according to the image created. Once the remediation is
 successful, the host becomes compliant with the image created.

A Desired State is now configured for Dell EMC PowerEdge VMware cluster. Note that Dell EMC revises their customized version of ESXi images, add-ons, and firmware catalog on a quarterly basis. You can choose a specific add-on and firmware catalog to publish for use in the corresponding ISO image, and thereby derive the Desired State that is required.

4 Using vCenter 7.0 to manage previous versions of VMware ESXi

vCenter Server 7.0 supports monitoring and managing VMware ESXi 6.5.x (ESXi 6.5 Update 2 and later) and VMware ESXi 6.7.x hosts. Listed below are the high-level operations that are supported when vCenter Server 7.0 is used to manage previous VMware ESXi versions.

- VMware ESXi host patching operations.
- VMware ESXi host upgrade operations such as, vSphere Lifecycle Manager which works with VMware ESXi 6.5, VMware ESXi 6.7 and their respective update releases.
- VMware Tools and virtual machine hardware upgrade operations such as, vSphere Lifecycle Manager which works with VMware ESXi 6.5, VMware ESXi 6.7, and VMware ESXi 7.0.

4.1 Managing VMware ESXi 6.7 using vCenter 7.0

Note: vCenter 7.0 allows offline bundles to be installed on VMware ESXi 6.x hosts through baselines.

This section demonstrates a use case where in you can manage VMware ESXi 6.x hosts using vCenter 7.0 and VMware Update Manager (UM). The vLCM interface provides options to create baselines much as did earlier versions of vCenter. This section describes the workflow used when installing iSM on a VMware ESXi 6.7.x host with vCenter 7.0 and VUM through a vLCM user interface.

Follow the steps to manage VMware ESXi 6.7 using vCenter 7.0:

- Download any offline bundle that is supported on a VMware ESXi 6.7 host. iDRAC Service Module (iSM) or Open Manage Server Administrator (OMSA) can be considered as an offline bundle. For information, see <u>Driver details</u>.
- Click on Menu and select Lifecycle Manager > Actions > Import Updates. Import the offline bundles into vCenter Server.

Life	cycle Manager ACTIONS~												
Image	Image Depot Updates Imported ISOs Baselines Settings												
NEW	EDIT DELETE DUPLICATE												
	Baselines T	Content T	Туре т	ESXi version T	Last Modified T								
0	ESXI70_ism	Extension	Custom	6.*	3 minutes ago								
0	Upgrade-6.5U2A00-7.0A01	Upgrade	Custom	7.0.0	1 day ago								
0	Non-Critical Host Patches (Predefined)	Patch	Predefined	7.0, 7.*, 6.5.0, 6.7.0, 7.0.*, 7.0.0, 6.7.*, 6.*	2 weeks ago								
$^{\circ}$	Critical Host Patches (Predefined)	Patch	Predefined	6.5.0, 6.7.0	2 weeks ago								
0	Host Security Patches (Predefined)	Patch	Predefined	6.5.0, 6.7.0	2 weeks ago								
EX	PORT				5 Baselines								
Base No de Conte	line ESXi70_ism scription nt												
Name	e _T ID _T Severity	т Туре т	Category ,	ESXi Version T Impact T Vendor	T Release Date T								
Dell	EMC IDRAC Se Dell_ISM_ESXI6_IS Important	Host Extension	Enhancement	6.* Dell Inc.	09/11/2019, 5:30:0								

Figure 12 Baselines tab shows the baseline created

3. Create a baseline with the imported update. For more information, see <u>Creating and Working with</u> <u>Baselines and Baseline Groups</u>. The baseline created will be listed under the **Baselines** tab.

 ✓ I he-dhcp-100-98-13-67.helab.in ✓ I Datacenter > Cluster 	Summary Monitor (Hosts ~	Configure Permissions VMs	Resource P	ools Datastores	Networks U	pdates					^
> 100.98.13.199	Baselines	SHOW INSTALLED	CHECK COMPLIANCE (checked 4 minutes ago)								
	Hardware Compatibility VMware Tools VM Hardware	sc		IEDULE			PRE-CHECK REMEDIATION (checked 3 minut			ecked 3 minutes ago)	; ago)
		Attached Baselines ATTACH V DETACH STAGE REMEDIATE									
		Attached Baselines	Τ	Status 🕆	Content	т Туре	Τ	ESXi version	Ŧ	Last Modified	Ŧ
		Host Security Patches (Predefine	ed)	▲ Non-compliant	Patch	Predefined		6.5.0, 6.7.0		2 weeks ago	
		Critical Host Patches (Predefined	0	\land Non-compliant	Patch	Predefined		6.5.0, 6.7.0		2 weeks ago	
		ESXi70_jsm		\Lambda Non-compliant	Extension	Custom		6.*		26 minutes ago	
											-
Recent Tasks Alarms											

Figure 13 Select the created baseline from the Attached Baselines pane

- 4. Click on the **Updates** tab of the host and select the created baseline. Click **Attach**.
- 5. In the Attached Baselines pane, select the created baseline and then, click Remediate.





6. Verify if the installation was successful by running the command: esxcli software vib list

5 Summary

vLCM provides a new and single scheduler that gives administrators and users more control when managing baselines in vCenter 7.0. It also leverages OMIVV to accomplish firmware updates in conjunction with software updates. This white paper is intended for users who want to use vCenter 7.0 to manage previous versions of ESXi releases such as 6.5.x and 6.7.x and includes instructions for configuration. Coincidently, both vLCM and OMIVV can help users easily maintain compliance baselines for their vSphere clusters.

6 References

- Dell EMC OpenManage Integration for VMware vCenter
- Managing Host and Cluster Lifecycle
- vSphere 7 Lifecycle Management
- ESXi Base Images and Vendor Add-Ons
- DellEMC Add-on for VMware vSphere 7.0