

# **Cluster Expansion—Compute-only Nodes**

- Overview, on page 1
- Pre-expansion Checklist, on page 1
- Cluster Expansion M5 Blade Servers (M.2 SATA) or M4 Blade Servers (Local SAS Drives), on page
   4
- Cluster Expansion M4 Blade Servers (Fibre Chanel SAN), on page 27

# **Overview**

You can add converged or compute-only nodes to expand a Hyper-V cluster. Below is the list of supported converged and compute-only nodes in Hyper-V clusters.

- Converged Nodes—HX220c M5, HX240c M5, HX220c AF M5, HX240c AF M5
- Compute-only Nodes—B200 M5, B200 M4 Blade Servers, and C220 M5 C-Series Rack Servers

The following procedure describes adding **compute-only** nodes to expand a Hyper-V cluster. This expansion workflow includes Windows OS installation and is not performed as part of cluster creation using HX Installer. To expand Hyper-V clusters with converged nodes, refer to Cluster Expansion—Converged Nodes.

# **Pre-expansion Checklist**

To add **compute-only** nodes to expand your Hyper-V cluster, complete the following pre-expansion checklist that summarizes key requirements, considerations and tasks.



Note

The following check-list applies to Cisco HX Release 4.5(x) and later.

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Requirement/Task	Description		
Supported Versions and	HX Data Platform	3.5(2a) and	later
Platforms		Important	If your cluster is running on releases earlier than 3.5(2a), ensure that you upgrade your existing cluster to 3.5(2a) at the minimum.
	Compute-only Nodes and Storage Options	Attention	UCS B200 M5 blade servers with M.2 SATA drives. HW RAID M.2 (UCS-M2-HWRAID and HX-M2-HWRAID) is not supported on Compute-only nodes. UCS B200 M4 blade servers with local SAS or Fibre Channel SANs.
	Windows ISO	Customer p Datacenter	provided Windows 2016 edition ISO.
Maximum Compute to Converged ratio	1:1	1	
Maximum Cluster Size	A single cluster can have a maximu	um of 32 noc	les.
Network Speed	Mixing network speeds between co converged nodes is not recommend network connectivity of the conver compute-only nodes should also be	ompute-only led. For exar ged nodes is connected a	nodes and HyperFlex mple, if the existing 40 GbE, then the at 40 Gb speeds.
Determine Boot Disk Connection	Based on your topology, and the ty	pe of compu	te-only nodes that you
	Cluster Expansion for UCS M drives, or UCS M4 blade server	5 blade serv ers with Loc	ers with M.2 SATA al SAS drives
	Note HW RAID M.2 ( HX-M2-HWRAII nodes.	UCS-M2-HV D) is not supp	WRAID and ported on Compute-only
	Cluster Expansion for UCS M	4 blade serv	ers with Fibre Channel

Requirement/Task	Des	cription
Boot Disk Capacity	Ens dur you	ure that you have only ONE boot disk of size <b>greater than 240GB</b> ing Windows OS installation. After cluster expansion is complete, may choose additional disks.
Stage HyperFlex Driver Image	The on a UC dov a sh	<b>Windows ISO</b> and <b>HyperFlex Driver image</b> files must be placed a shared location (such as HX Installer) that is reachable from Cisco S Manager and the out-of-band subnet. Use the following steps to vnload and host the HyperFlex Driver Image and Windows ISO in hared location within the installer VM
	Not	Windows is configured to boot to UEFI mode starting Cisco HX Release 4.5 and later.
	Not	These steps apply to both <b>Windows Server 2016</b> and <b>Windows Server 2019</b> .
	1.	Copy the HyperFlex Driver Image. For example, run the following command:
		rsync -avzP /opt/springpath/packages/latest.img /var/www/localhost/images/install.img
	2.	Mount the HyperFlex Driver Image. For example, run the following command:
		mkdir -p /mnt/install-img && mount -o loop,rw /var/www/localhost/images/install.img /mnt/install-img
	3.	Copy the answer file specific files for your Windows Server Version and run the following command:
		Windows Server 2016
		ep /opt/springpath/padages/FactoryUnatten/XML/WindowsServer2016/Autourattendxmluefi /mnt/install-img/Autounattend.xml
		Windows Server 2019
		cp /opt/springpath/packages/FactoryUnattenDXML/WindowsServer2019/AutourattenDxmluefi /mnt/install-img/Autounattend.xml
	4.	Unmount the HyperFlex Driver Image. For example, run the following command:
		umount /mnt/install-img
	Not	You cannot install Windows Server 2019 or 2016 on SD cards.
	Not	The DiskID referenced in autounattend.xml should correctly point to the local disk on the compute node where the OS is installed.

Requirement/Task	Description
Multipathing with Fibre Channel SAN	Do NOT use multipathing with Fibre Channel SANs.
Fabric Interconnect Support	Compute-only node expansion is supported only when the compute node are on the same Fabric Interconnects.

# Cluster Expansion - M5 Blade Servers (M.2 SATA) or M4 Blade Servers (Local SAS Drives)

## **Procedure Overview**

The Hyper-V cluster expansion procedure for adding UCS M5 Blade Servers (M.2 SATA) Or M4 Blade Servers (Local SAS Drives) consists of the following sequence of tasks:

- 1. Pre-expansion Checklist, on page 1
- 2. Cisco UCS Manager Configuration, on page 4
- 3. Microsoft OS Installation, on page 10
- 4. Hypervisor Configuration, HXDP Software Installation and Cluster Expansion, on page 19
- 5. Perform the following post installation steps:
  - · Configuring a Static IP Address for Live Migration and VM Network
  - (Optional) Post Installation Constrained Delegation
  - Configure Local Default Paths
  - · Checking the Windows Version on the Hyper-V Host

## **Cisco UCS Manager Configuration**

The following procedure describes configuring Cisco UCS Manager using HX Installer.

**Step 1** Log into the HX Data Platform Installer using the following steps:

- a) In a browser, enter the URL for the VM where HX Data Platform Installer was installed.
- b) Use the credentials: username: root, password: Cisco123
  - **Important** Systems ship with a default password of Ciscol23 that must be changed during installation. You cannot continue installation unless you specify a new user supplied password.
- c) Read the EULA. Click I accept the terms and conditions. Click Login.
- Step 2 In the Select a Workflow page, select Expand Cluster > Compute Node.

sco HyperFle	ex Installer	Workflow	0	€
Select a Workflo	w			
	Cluster Creation with HyperFlex (Fi)		Expand Cluster	
			Compute Node	

Step 3 In the next screen, click Run UCS Manager Configuration and then Continue.

dialia cisco	HyperFlex Installer			0	0	۲	Ø ~
			Workflow				
Selec	t a Workflow						
		Is OS installed on the !	lode				
		8	Run UCS Manager Configuration				
		0	Run Hypervisor Configuration				
		0	Deploy HX Software				
	0	Create HX Ouster	Expand HX Cluster				
<b>⊜</b> Sh	ow me the standard workflows				I	Continu	e

**Caution** Do not choose any other workflow option at this point.

**Step 4** Click **Confirm** in the pop-up that displays.

Warning	×
You have selected a custom option that splits the installation or expansion workflow. You must complete all tasks in the workflow to ensure a workin If your nodes are data-at-rest encryption capable, custom installation is not supported. Cancel to return to the standard workflow. Confirm and Proceed to continue with a custom workflow.	ıg HX storage cluster.
Cancel	nfirm and Proceed

**Step 5** In the **Credentials** page, complete the following fields for UCS Manager.

Field	Description
UCS Manager Host Name	FQDN or the VIP address of the UCS Manager.
UCS Manager User Name and Password	Administrator user and password or a user with UCS Manager administrative privileges.

Use the following illustration as a reference for entering values in this page.

dialia HyperFlex Installer			 •				<b>0</b> ~
Credentials		Server Selection		UCSM Configu	ration		
UCS Manager Credentials UCS Manager Host Name 10.05.121.240	UCS Manager User Name admin	Password	Con	figuration Configur S	ag and drop ation files he	ere or	7
				< Back		Continue	

Click **Continue** to proceed. The installer will now try to connect to the UCS Manager and query for available servers. The configuration pane will be populated as the installer progresses. After the query finishes a screen with the available servers is displayed.

Step 6

In the Server Selection page, choose all the servers that you want to install in the cluster and click Continue.



### **Step 7** In the UCSM Configuration page, complete the following fields for VLAN Configuration.

HyperFlex needs to have at least 4 VLANs to function, each needs to be on different IP subnets and extended from the fabric interconnects to the connecting uplink switches, to ensure that traffic can flow from the Primary Fabric Interconnect (Fabric A) to the Subordinate Fabric Interconnect (Fabric B).

Name	Usage	ID
hx-inband-mgmt	Hyper-V and HyperFlex VM mgmt.	10
hx-storage-data	HyperFlex storage traffic	20
hx-livemigrate	Hyper-V Live Migration network	30
vm-network	VM guest network	100,101

Use the following illustration as a reference for entering values in this page.

VLAN for Hypervisor and Hype	erFlex management	VLAN for HyperFlex storage	traffic
VLAN Name	VLAN ID	VLAN Name	VLAN ID
hx-inband-mgmt		hx-storage-data	
VLAN for VM Live Migration		VLAN for VM Network	
VLAN Name	VLAN ID	VLAN Name	VLAN ID(s)

Note

• Do not use VLAN 1 as it is not best practice and can cause issues with disjoint layer 2.

• vm-network can be multiple VLANs added as a comma separated list.

- **Caution** Renaming the 4 core networks is not supported.
- **Step 8** Enter the remaining network configuration for MAC Pool, 'hx' IP Pool for Cisco IMC, Cisco IMC access management (Out of band or in band)

Field	Description	Value
MAC Pool		
MAC pool prefix	MAC address pool for the HX cluster, to be configured in UCSM by the installer. Ensure that the mac address pool isn't used anywhere else in your layer 2 environment.	00:25:b5:xx
'hx' IP Pool for Cisco IMC		
IP Blocks	The range of IP addresses that are used for Out-Of-Band management of the HyperFlex nodes.	10.193.211.124127
Subnet Mask	The subnet mask for the Out-Of-Band network	255.255.0.0
Gateway	The gateway address for the Out-Of-Band network	10.193.0.1
Cisco IMC access manager	ment (Out of band or In band)	
In band (recommended) Out of Band	Select the option that was used for converged-nodes cluster creation.	

Note

• The Out-Of-Band network needs to be on the same subnet as UCS Manager.

• You can add multiple blocks of addresses as a comma separated line.

MAC Pool			
MAC Pool Prefix			
00:25:85:			
'hx-ext-mgmt' IP Pool for Out-of-b	and CIMC		
'hx-ext-mgmt' IP Pool for Out-of-b IP Blocks	and CIMC Subnet Mask	Gateway	

Important If you choose to expand your Hyper-V cluster using M4 blade servers with FC SAN boot option, you must enable FC Storage. Complete the fields for FC Storage.

#### Table 1: (Optional) Applicable for M4 blade servers with FC SAN

Field	Description	Example Value
FC Storage	Checkbox that indicates if FX Storage should be enabled.	Check to enable FC Storage
WWxN Pool	A WWN pool that contains both WW node names and WW port names. For each fabric interconnect, a WWxN pool is created for WWPN and WWNN.	20:00:25:B5:C2
VSAN A Name	The name of the VSAN for the primary fabric interconnect (FI-A). By default, this is set to hx-ext-storage-fc-a.	hx-ext-storage-fc-a
VSAN A ID	The unique identifier assigned to the network for the primary fabric interconnect (FI-A).	70
VSAN B Name	The name of the VSAN for the subordinate fabric interconnect (FI-B). By default, this is set to hx-ext-storage-fc-b.	hx-ext-storage-fc-b
VSAN B ID	The unique identifier assigned to the network for the subordinate fabric interconnect (FI-B).	70

### Step 9 Advanced Section

Field	Description	Example Value
UCS Firmware Server Version	Choose the appropriate UCS Server Firmware version.	3.2(3a)
HyperFlex Cluster Name	This user defined name will be used as part of the service profile naming In UCSM for easier identification.	

Field	Description	Example Value
Org Name	The org. name is used for isolating the HX environment from the rest of the UCS platform to ensure consistency.	HX-Cluster1

Step 10 When you click Start, the installer validates your input and then begins configuring UCS Manager.Step 11 When the HX Data Platform Installer is finished, then you are ready to proceed to next step.

O- Start	Validations	UCSM Configuration
✓ UCSM Configuration Successf	ul	

# **Microsoft OS Installation**

For Microsoft OS installation, you will need to first configure a vMedia policy in Cisco UCS Manager to map the following two image files:

- Customer provided Windows 2016 Datacenter edition ISO or Windows Server 2019 Datacenter-Desktop Experience ISO, and
- Cisco provided Cisco HyperFlex Driver image.

Note

Ensure network connectivity exists between the fileshare and all server management IP addresses.

### Step 1 Launch Cisco UCS Manager:

- a) In your web browser, type the Cisco UCS Manager IP address.
- b) Click Launch UCS Manager.
- c) In the login screen, enter the with the username as **admin** and the password set in the beginning of the installation. Click **Log in**.
- **Step 2** Create a vMedia policy for the Windows OS and Cisco driver images:
  - a) In the Navigation pane, click Servers.
  - b) Expand Servers > Policies > root > Sub-Organizations > hx-cluster\_name > vMedia Policies
  - c) Right-click vMedia Policies and select Create vMedia Policy HyperFlex.

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€ ⇒	C A Not secure   https://10.29.14	9.205/app/3_2_3a/index.html			Q 🕁 🗄	
altalta cisco	UCS Manager		00	• •	• •	
<b>.</b>	Policies	Policies / root / vMedia Policies				
	• Policies	vMedia Policies				Ĺ
	• root	+ - Ty Advanced Filter			٥	
	<ul> <li>Adapter Policies</li> </ul>	Name Type				Ĺ
56	<ul> <li>BIOS Defaults</li> </ul>	No data available				
=	<ul> <li>BIOS Policies</li> </ul>					
	<ul> <li>Boot Policies</li> </ul>					Ĺ
Q	<ul> <li>Diagnostics Policies</li> </ul>					Ĺ
	<ul> <li>Graphics Card Policies</li> </ul>					Ĺ
	<ul> <li>Host Firmware Packages</li> </ul>					Ĺ
	<ul> <li>IPMI Access Profiles</li> </ul>					
	<ul> <li>KVM Management Policies</li> </ul>					
10	<ul> <li>Local Disk Config Policies</li> </ul>					
	Maintenance Policies					
	<ul> <li>Management Firmware Packages</li> </ul>					Ĺ
	Memory Policy					Ĺ
	<ul> <li>Power Control Policies</li> </ul>					
	<ul> <li>Power Sync Policies</li> </ul>					
	<ul> <li>Scrub Policies</li> </ul>					
	<ul> <li>Serial over LAN Policies</li> </ul>					
	<ul> <li>Server Pool Policies</li> </ul>					
	<ul> <li>Server Pool Policy Qualifications</li> </ul>					
	<ul> <li>Threshold Policies</li> </ul>					
	<ul> <li>ISCSI Authentication Profiles</li> </ul>					
	vMedia Policine     Croate uMedia Policy					¥
	<ul> <li>vNIC/vHBA Placement Poticies</li> </ul>					18

d) In the Create vMedia Policy dialog box, complete the following fields:

Field Name	Descripti	ion
Name	The name	e of the vMedia policy. For example, HX-vMedia.
	This nam use space (colon), a saved.	the can be between 1 and 16 alphanumeric characters. You cannot es or any special characters other than - (hyphen), _ (underscore), : and . (period), and you cannot change this name after the object is
Description	A descrip where an	otion of the policy. We recommend including information about d when the policy should be used. Maximum 115 characters.
Retry on Mount Failure	Designate This can	es if the vMedia will continue mounting when a mount failure occurs. be:
	• Yes	
	• No	
	Note	The default setting is <b>Yes</b> . When <b>Yes</b> is selected the remote server will continue to try to mount the vMedia mount process until it is successful, or you disable this option. If you select No, a warning message will appear indicating retry on mount failure will not work in case of mount failure.

Refer to the following screenshot as an example:

Create	e vMedia Po	olicy						? ×
Name Descriptio Retry on M vMedia M	: HX- n : Mount Failure : N Mounts	vMedia o • Yes						
+ -	Ty Advanced Filter	♠ Export	🖶 Print					٥
Name	Туре	Protocol	Authentica	Server	Filename	Remote Pa	User	Remap on
			(±) Ad	dd 🖲 Delet	e 🕚 Info			
							Olf	
							ОК	Cancel

e) On the icon bar under the vMedia Mounts pane, click + Add. In the Create vMedia Mount dialog box, complete the following fields:

Field Name	Description	Example Value
Name	Name for the mount point.	Windows-ISO
Description	Can be used for more information.	Windows Server 2016 image or Windows Server 2019 image
Device Type	Type of image that you want to mount. This can be: • CDD—Scriptable vMedia CD. • HDD—Scriptable vMedia HDD.	CDD
Protocol	The protocol used for accessing the share where the ISO files are located.	НТТР
Hostname/IP Address	IP address or FQDN of the server hosting the images.	10.101.1.92
Image Name Variable	This value is not used in HyperFlex installation.	None

Field Name	Description	Example Value
Remote File	The filename of the ISO file that you want to mount.	
Remote Path	The path on the remote server to where the file resides	
Username	If you use CIFS or NFS a username might be necessary	
Password	If you use CIFS or NFS a password might be necessary	

Refer to the screenshot below as an example:

Create vMed	ia	Mount	? ×
Name	:[	Windows-ISO	
Description	: [	Windows Server 2016 Image	
Device Type	: [		
Protocol	: [		
Hostname/IP Address	: [	10.29.149.212	
Image Name Variable	: [	None      Service Profile Name	
Remote File	: [	en_windows_server_2016_x64_dvd_9327751.iso	
Remote Path	:	/images/	
Username	: [		
Password	: [		
Remap on Eject	: 0		
		ОКС	ancel

f) Click **OK**. When you click **OK**, you will now be returned to the **vMedia Policies** screen, and you should see the information that you just submitted.

me	: HX	-vMedia						
scription ry on Me	:	No () Yes						
Aedia M	ounts							
+ -	Ty Advanced Filter	♠ Export	Print					٥
Name	Туре	Protocol	Authentica	Server	Filename	Remote Pa	User	Remap on
			(+) Ad	d 🖲 Delete	Info 0			

g) Repeat Steps 2e and 2f, however, change the type to HDD and the remote file name to the Cisco HyperFlex driver image.

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h) At the end of this step, the two vMedia mounts will be listed in the Create vMedia Policy screen as shown in the following screenshot:

reate vl	Media Po	vMedia						(2)
escription etry on Mount	: Eailure: ON	o 💿 Yes						
Media Moun	its Advanced Filter	♠ Export	🖶 Print					0
Name	Туре	Protocol	Authentica	Server	Filename	Remote Pa	User	Remap on
HX-Cis	HDD	HTTP	Default	10.29.149	HXInstall	/images/		No
Windo	CDD	HTTP	Default	10.29.149	en_windo	/images/		No
			(A)	er 🖄 Datas	() into			
			T Ad	d 🛛 Delete	10 Info			
							01	( a

**Step 3** Associate the vMedia Policy to a Service Profile:

a) In the Navigation pane, select Servers > Service Profile Templates > root > Sub-Organizations > hx-cluster\_name > Service Template compute-nodes, or compute-nodes-m5



- b) Click the vMedia Policy tab. Then, click Modify vMedia Policy
- c) Choose the vMedia Policy that you created earlier from the drop-down selection, and click OK twice.

	HyperFlex 🔻							
	Select vMedia Policy to use							
C	Create a Speci	fic vMedia F	Policy					
lame	vMedia Policies							
escription	HX-vMedia		, in the second s	stall software o	on HyperFlex ser	vers		
oury on m	HyperFlex							
vMedia M	Hypotriox							
vMedia M + -	Ty Advanced Filter	♠ Export	n Print					

d) Under the General tab, verify that the vMedia policy is added to the Service Profile.

cisco.	UCS Manager	( <u>)</u>	V 😃 🚯 4 1 1			•
æ	Service Profiles	Service Profiles / root / Sub- Organizations /	HyperFlex / Service Profil			
8	<ul> <li>Service Profiles</li> <li>root</li> </ul>	C General Storage Network i	SCSI vNICs vMedia Policy	Boot Order Virtual M	achines FC Zones	Policies Se
윦	<ul> <li>Sub-Organizations</li> <li>HyperFlex</li> </ul>	Actions Modify vMedia Policy	Global vMedia Policy Name : HX-	vMedia		
	rack-unit-1 (HXCLUS)		VMedia Policy Instance : org- Description :	root/mnt-cfg-policy-HX-vM	edia	
Q	<ul> <li>rack-unit-2 (HXCLUS)</li> <li>rack-unit-3 (HXCLUS)</li> </ul>		vMedia Mounts			
=	<ul> <li>rack-unit-4 (HXCLUS)</li> <li>Sub-Organizations</li> </ul>		+ - Ty Advanced Filter Name Type		Server Filename	Remote P
			HX-Cis HDD	HTTP None	10.29.149 HXInstall-	/images/
· .			Windo CDD	HTTP None	10.29.149 en_windo	/images/

**Step 4** Modify Boot Policy and set the boot order to have CIMC CD/DVD to the list:

- a) In the Navigation pane, click the Servers tab.
- b) Expand Servers > Policies > root > > Boot Policies > hx-compute, or hx-compute-m5

C A Not secure   Miljek//192.168	.99.11/app/4_0_2b/index.html							\$	006
JCS Manager		8 🖓 🔮	2) 2)				•		•••
м .	Servers / Policies / root / Sub- Organizations / so	ale-mx / Boot Policies / Boot Policy							
Server Pool Policies	former former								
Server Pool Policy Qualifications	Course Freid								
<ul> <li>Threshold Pulicies</li> </ul>	Actions	Properties							
<ul> <li>ISCSI Authentication Profiles</li> </ul>	Data	Name	hx-compute-m5						
Weda Polcies	Show Policy Usage	Description	Recommended boot policy for Hyper	Flex servers					
which the Placement Policies		Owner	Local						
<ul> <li>Sub-Organizations</li> </ul>		Reboot on Boot Order Charge	0						
<ul> <li>scale-ms</li> </ul>		Entrop wNCAMBA/SCS Name	. 8						
<ul> <li>Adaptor Policies</li> </ul>		Boot Mode	Blegery Olleh						
<ul> <li>BIOS Policies</li> </ul>									
· Boot Pulicies	maning								
<ul> <li>Boot Policies</li> <li>Boot Policy hs-compute</li> </ul>	The type (primary/secondary) does not indicate a The effective order of boot devices within the sam	boot order presence. re device class (LMV/Storage/SCSI) is determined by i	PDie bus scan order.						
Boot Policies     Boot Policy hx-compute     Boot Policy hx-compute	The type (primary/tecondary) does not indicate a The effective order of boot devices within the sam if <b>Enforce vNIC4VHEASES</b> Name is selected an if <i>e</i> is not selected, the vNIC4VHEA	boot order presence. e device class (LAVStorage/MCSI) is determined by i d the VAC/VMBA/SCSI does not exist, a config error a I thray exist, otherwise the LAC/VMBA with the lowest	Cle bus scan order. Il be reported. PDe bus scan order is used.						
Boot Policy In-compute     Boot Policy In-compute     Boot Policy In-compute     Policy In-compute-end     Policy In-compute-end	The manage of the process of the second seco	boot order presence. In device class (J.AN/Storage/SCIS) is determined by J d the vh/CL/MBA/SCIS does not exist, a config error in if they exist, otherwise the vh/CL/MBA with the lowest	YCle bus scan order. III be reported. IPCle bus scan order is used.						
Boot Policies     Boot Policy two compute     Boot Policy two compute and     Boot Policy MyporFlass     Boot Policy MyporFlass     Boot Policy MyporFlass	The many The hype (primary/secondary) does not indicate a The efficience order of boot divices within the sam if Entrace ARCANEARCES Name is selected if is an ot selected, the efficience are selected (0) Linear Divices to	boot order presence. In divice class (LAV/Strage/SCS) is determined by d the VICAHEA/SCS does not exist, a config error in d they exist, otherwise the AVC/AHEA with the lowest Boot Parties	'Cle bus scan order. Al be reported PCle bus scan order is used.						
Boot Polices     Boot Policy In-compute     Boot Policy In-compute     Boot Policy In-compute in     Boot Policy MyonRes     Boot Policy MyonRes     Boot Policy MyonRes     Boot Policy MyonRes	The type (primary/secondary) does not indicate a The effective order of boot divices within the sam if <i>effective active</i> of boot divices within the sam if <i>effective ACCNVMBMOCE</i> where is selected with a set selected, the <i>w</i> VCs/vHiMe are selected @ Local Devices	bot order presence. e device class (JAVESevaper/SCES) is determined by ly de v4VC-r44SCES does not exect, a config error is if they exact, otherwise the VAVC/r45A with the lowest Best Onder +	PCIe bus scan order. al be reported. PCIe bus scan order is used. sort de fron						
Boot Policies     Boot Policy In-compute     Boot Policy In-compute     Boot Policy In-compute - en-     Boot Policy HyperFiles     Boot Policy Sentoot     Dooprontics Pelicies	Tenning Ten specific primary hereondary) does not indicate a Ten specific primary hereondary of an use set to the and if definest addressing the shockwhile are setteded and if a not setteded, the shockwhile are setteded (*) Local Devices (*) CMC Mounted willedia	bot othe presence. e device lists (_AAC(larspan)SC(2)) is determined by 1 the vAC(value)SC(2) does not exist, a config arms a of they exist, otherware the AAC/value with the lowest Best Onder + - Ty AAstroned Titor + D have Onter	PCe bus scan order. al be reported. PCe bus scan order is used. port	U/V Name	www	Sutharder	Boot Name	Bost Part.	Omorphon
Bost Pulces Bost Pulce In-compute Bost Pulce In-compute Bost Pulce MponPlex Bost Pulce MponPlex Bost Pulce MponPlex Bost Pulce Set Pulce Cognetics Pulces Cognetics Pulces Cognets Set Pulces Cognets Cog	Terming The hop Sprany hencefully does not reduce a the efficience advert of bood secone within the same of before add/conflict/Soft Mann a second of a not velocity, the drCouhdMan are second (i) Local Devices (ii) CoNC Mounted vMedia	bot ode presno. e druce das SLAVEDoughTSSI is determined by the victorial ASS is an annual a config error at e free scale. OPANDE is an annual a config error at free scale. OPANDE is an annual annual free be the scale opanie is an annual free be have been annual free be have been annual free be	KDe bus scan ordex. al te reported PDe bus scan order is went. port ◆ Prec ▲ VACAHBAGC. Type	U/V Name	WWN	Stit Number	Boot Name	Boot Parts	O Description
Boot Palices     Boot Palicy N= compare     Boot Palicy N= compare     Boot Palicy N= compare inf     Boot Palicy Ngenfils     Boot Palicy Ngenfils     Boot Palicy Ngenfils     Doot Palicy Santoot     Doot Palicy Santoot     Cognitions Palicipes     Hord Filmeras Packages	Terming Term participant phenodany) does not existent a transference and at a toost decommender for an at a not executed to a second decommender for a for our executed to a second decommender (a) Local Devices (b) Local Devices (c) Local Devices (c) Local Devices (c) Local Devices (c) Local Devices (c) Local Devices	bot other presence. In driver plans, (ArcHosophilloSS), a devenue here hyperian of the second state here a config state or of they exact, otherwise the voltation with the bosen of the second state of the second state of t	Ce bus scan order. al le regoried PCe bus scan order is used. por ∲ her. • vNC/HEA/GC., Type	U/V Name	VEVAN	Skit Number	Boot Name	Boot Path	Description
Boot Pulses     Boot Pulses     Boot Pulses to -compute     Boot Pulses to -compute     Boot Pulses Macompute of     Boot Pulses Macompute     Boot Pulses Macompute     Boot Pulses     Boot Pulses     Oraphics Sard Pulses     Hourd Immunip Pulses     Software Access Pulses     Software Access Pulses	Terming The type (unway/secondary) does not existent a fer fore-units of the secondary of the secondary of a set of secondary of the secondary of the secondary (a) Load Devices (b) Load Devices (c) Load D	Not other preserve. to de avec the server of the determined by	Car ban start total. # Re-reported PCR- but scan order in verd. por	UUN Name	www	Suthunber	Boot Name	Boot Parts	Description
Bost Palces     Conditions     Conditions     Conditions     Palces     PalceBathan.Accesses Palcese     SubMittedBath.Accesses Palcese	Terring The say large vectoring data for relation a the say large vector masses which is an eff of an electronic the data for if it is not electrical to the data for the constraints of the data for	toot order presents. I de no 62 Contractific CSI is determined by the no 62 Contractific CSI is determined by the no 62 Contractific CSI is determined by the CSI is determined by the contractific CSI is the CSI is determined by t	Clo bus scar scalar. al te reported PCP bus scan order a unit. port $ riangle https://www.elsa.com/ • vhiConRAVEO$	WN fame	www	Sutherber	Bost Name	Boot Parts	O Description
Both Thickes     Both Thickes     Both Thick The compate     Both Thick The compate     Both Thick The compate     Both Thick Thickes     Both Thickes Memory     Both Thickes     Both	Terrangi Terrangi Jamay Associated Associate Associated Associate	tool to dia graneano. していたいます。そのないないないないないないないないないないないないないないないないないないない	Con bus start roller, al te reported FCre bus scan order is used. por	UUN Nome	www	Suthinter	Boot Name	Boot Parts	O Description
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Bort Names     B	Terring The number of the second sec	Not oblig present. The second	Chi ha saar onte: al ha monta Chi ha scattorier it went. Mi ⊕ Prin • vHCM/BARCC, 7µm	UUN Name	WWWN	Suthanber	Bost Name	Boot Perh	Description
ter hises     Bot Hales     Bot Hales     Bot Hales to compare     Bot Hales to compare     Bot Hales repeated     Bot Hales repeated     Bot Hales repeated     Bot Hales     BotH	Terring The may lower between the second data on the second data on the second data on the second data on the second data of t	Not other present. The second	Corba scar care: d to encode d to the scar from a unit. per ∲ from • vidCur6x000, Topie	UUN Nome	www.	Skit Number	Boot Name	Boot Parth	Description
Bort Names     B	Terring Terring (any Assessed and Assessed Assessed Assessed Friender Alexandrometer Assessed Assessed Assessed (a) Local Devices (b) Local Devices (c) Local Devices (c) Mounted Wedda (c) vHC4 (c) vHC4 (c) dC5 vHC5 (c) DC5 vHC5	Not della presenta. Terretta della	Chi ha suar onte: al ta egonta Chi ha sub onte in vent. port ∳ Pre: • vHCM6W600, Type	WANNAMM P Move Up & M	WWW bow Down 7 Delet	Sut Number	Boot Name	Boot Parts	Description
ter have     Se high to compare     Bot high to compare     Bot high to compare     Bot high to compare     Bot high to perform to     Bot high symbols     Bot high service     Bot high service	Terrang The negligibility of the end of the	Not date present. The observation of the second se	Con bas such order: d if a monoto Con to an order or uned. per ∲ her ▲ VACUMENCE. Type	UUN Name # Move Op & M	WWW pow Down III Date	Sut Number	BostName	Boot Parts	Omorphon
ter hiers     Baching in compare     Baching in compare     Baching in compare     Baching incompare     Baching synthese     Bach	Ternary Ternary Internet Advances Advances Advances Print Advances Advances Advances Print Advances Advances Advances (e) Local Devices (e) CRX Mounted vMedia (e) vMCA (e) vMCA (e) vMCA (e) CRX Mounted vMedia (e) vMCA (e) vMCA (e) CRX vMCS	Not obla present. The Add State of the	Ch be suit rote: at a significant Ch be subther it went: wit ↓ hit: ↓ whCM6MSC. Type	UVP Name	www	Sut Number	Boot Name	Boot Purts	Description

c) In the **Boot Order** configuration pane, click **CIMC Mounted CD/DVD**. Then, click **Add CIMC Mounted CD/DVD** to add this to the boot order. Move it to the top of the boot order using the **Move up** button.

Important As shown in the screenshot below, the CIMC Mounted CD/DVD option must be highest in the boot order preceding the other options, Embedded Local Disk and CD/DVD.

Boot Order									
+ - Ty Advanced Filt	er 🛧 Exp	ort 🖷 Prir	t						0
Name	Order	vNIC/v	Туре	LUN N	WWN	Slot N	Boot N	Boot P	Descri
CIMC Mounted CD	1								
CD/DVD	2								
Local Disk	3								
		1 Mo	ve Up	Move Dow	n 🖻 De	ete			

d) Click Save Changes, and click OK in the Success dialog box. The modified boot policy is saved.

### **Step 5** Verify successful vMedia mounting:

- a) On the **Equipment** tab, select one of the servers.
- b) Click **Inventory** > **CIMC**, scroll down and ensure for mount entry #1(OS image) and mount entry #2 (Cisco HyperFlex driver image) you see status as **Mounted** and there are no failures.

cisco	UCS Manager		8 🔽 🙆 0 4 1	<b>⊘</b> 1			<b>9909</b> 6
ж	All	Equipment / Rack-Mou	ints / Servers / Server 1				
	<ul> <li>Equipment</li> <li>Chassis</li> </ul>	General Invent	Virtual Machines	Hybrid Display Installed I Memory Adapters HI	Firmware SEL Logs	CIMC Sessions VIF P	aths Power Control Monitor> >
윦	<ul> <li>Rack-Mounts</li> <li>FEX</li> </ul>			Boot-loader Version: 3.1 Running Version : 3.1(3a)	(3a)		
-	Server 1			Backup Version : 3.2(3a) Backup Version : 3.1(2d) Update Status : Ready	r.		
₽	<ul> <li>Server 2</li> <li>Server 3</li> </ul>			Startup Version : 3.1(3a) Activate Status : Ready Actual vMedia Mounts			
	Server 4      Fabric Interconnects			Actual Mount Entry 1			
Jo	<ul> <li>Fabric Interconnect A (primary)</li> <li>Fans</li> </ul>			Mapping Name Protocol	Windows-ISO HTTP	Type Server	CDD 10.29.149.212
	Fixed Module     PSUs			Port :	80 /images/	Filename : en_window User	vs_server_2016_x64_dvd_93277!
	<ul> <li>Fabric Interconnect B (subordinate)</li> <li>Fans</li> </ul>			Status : Authentication Protocol :	Mounted None	Mount Failure Reason Remap on Eject	: None : No
	Ethernet Ports			Actual Mount Entry 2	HX-Cisco-Driver	Type	: HDD
	PSUs			Protocol :	HTTP	Server	: 10.29.149.212
	<ul> <li>Policies</li> <li>Port Auto-Discovery Policy</li> </ul>						DatacenterCore-v3.0.1b- 29665.img
				Remote Path	/images/	User	
				Status : Authentication Protocol :	Mounted None	Mount Failure Reason Remap on Eject	: None : No

- c) In the menu bar, click **Servers** and choose the first HyperFlex service profile.
- d) Click the General tab and choose Actions > KVM Console>>.
  - **Note** The KVM console will try to open in a new browser. Be aware of any pop-up blockers. Allow the pop-ups and re-open the KVM

cisco	UCS Manager			٥		1	
	Service Profiles	Service Profiles	s / root	/ Sub-Organizat	tions / HyperF	lex / Service Profile	rack-un
	Service Profiles     root	General	Stora	ge Network	ISCSI VNIC	s vMedia Policy	Boot Order Virtual M
	<ul> <li>Sub-Organizations</li> </ul>	Fault Summa	ry			Properties	
	<ul> <li>HyperFlex</li> </ul>	8	V		0		
夏	<ul> <li>rack-unit-1 (HXCLUS)</li> </ul>	0	0	0	0		This service pr
Q	<ul> <li>rack-unit-2 (HXCLUS)</li> <li>rack-unit-3 (HXCLUS)</li> </ul>	Status					the sen To modify this sen
	<ul> <li>rack-unit-4 (HXCLUS)</li> </ul>	Overall Status	s: † 0	к		Name	: rack-unit-1
	Sub-Organizations	(+) Status	Details			User Label	: HXCLUS
						Description	:
		Actions	10				
<b>J</b> _0			owner St	KVM Co	nsole-Sele	ect IP Address	×
				<ul> <li>Service Profile d</li> <li>10.29.149</li> </ul>	erived: 9.191 (Outband	1)	
		Shutdown Ser	ver		Loungh Invest		Cancel
		Reset			g Launch Java		Gancel
		KVM Console	>>			Template Instance	e : org-root/org-Hyp
						Assigned S	Server or Server Pool

- e) Reboot the host, launch the KVM Console, and power on the server to monitor the progress of the Windows installation. You should see the **Loading Files** screen appear. Windows should install automatically without user intervention.
  - **Note** The option to install Windows automatically without user intervention is applicable for fresh or first-time installations only. For reinstallations, or if the node already contains a Windows partition, you will need to respond to the prompt to "Press any key to boot from CD/DVD".

You should see a blue screen and within a few moments you should see the **Setup is starting** message. The host will reboot a few times. If automated installation does not begin, double-check that both images are mounted to the server.

- f) The installation is complete when you get a clear command prompt at c:\users\administrator>. This is applicable for both Windows Core and Desktop Experience installations. It may take several minutes for the Driver Image to be copied and installed.
  - Note Ignore the prompt with the **The system cannot find the file specified** message.
  - **Important** Ensure that you have completed **Steps e and f**, on ALL servers that will be part of the HX cluster.
  - **Note** If Microsoft Windows OS is already installed on the node, you must click **any** key to continue when the node boots back up so that the fresh OS installation can happen.

If you haven't clicked **any** key to continue, and an existing node with a previous OS installed is used to expand, then the new installation is skipped causing further expansion to fail.

g) Log into each server and verify the following:

Run the powershell command: Get-ScheduledTask -TaskName HXInstallbootstraplauncherTask. Verify that the HX Install Bootstrap Launcher task is running. Sample output as follows:

TaskPath	TaskName	State
\	HXInstallbootstraplaund	cherTask Running

Validate that the log line "Done with HX PostSysPrepSetup" exists in C:\ProgramData\Cisco\HyperFlex\Install\Log\PostSysprepSetup.log.

Run powershell command: Get-Command Get-VMSwitch. Verify that the command runs successfully (no exception). Sample output as follows:

CommandType	Name	Version	Source
Cmdlet	Get-VMSwitch	2.0.0.0	Hyper-V

**Step 6** Reset the vMedia policy back to the default HyperFlex policy:

- a) Update the vMedia policy for compute nodes. Go to Servers > Service Profile Templates > root > Sub-Organizations > hx-cluster\_name > Service Template compute-nodes, or compute-nodes-m5. Then, click on Modify vMedia Policy.
- b) Under the vMedia Policy drop-down selection, choose "HyperFlex" policy.

#### **Step 7** Restore the boot order to the one before installation:

- a) In the Navigation pane, click the Servers tab.
- b) Expand Servers > Policies > root > > Boot Policies > hx-compute, or hx-compute-m5
- c) In the **Boot Order** configuration pane, use the **Move Down** button to move **CIMC Mounted CD/DVD** option to the bottom of the list.

#### **Step 8** Change the local Administrator password to match the password on the existing cluster.

- a) Log into the newly-installed compute node.
- b) Open a command prompt.
- c) Run the following command: net user Administrator <password>.

#### **Step 9** Update the password for HXInstallbootstraplauncherTask and verify that it is Running:

a) Stop the scheduled task "HXInstallbootstraplauncherTask" if it is running.

For example:

Get-ScheduledTask -TaskName "HXInstallbootstraplauncherTask" | Stop-ScheduledTask

b) Update task credentials.

#### For example:

```
Get-ScheduledTask -TaskName "HXInstallbootstraplauncherTask" | Set-ScheduledTask -User
"Administrator" -Password <password>
```

c) Start the scheduled task and verify that it is Running.

#### For example:

```
Get-ScheduledTask -TaskName "HXInstallbootstraplauncherTask" | Start-ScheduledTask
Get-ScheduledTask -TaskName "HXInstallbootstraplauncherTask"
```

## Hypervisor Configuration, HXDP Software Installation and Cluster Expansion

After the installation of Windows OS is completed, perform the following steps to configure the hypervisor, install the HX Data Platform Software and expand the cluster.

- **Step 1 Re-open** the HX Data Platform Installer and log in.
- **Step 2** You might need to "start over" because the previous workflow was finished. Click on the gear icon in the top right corner and select **Start Over**.

### Step 3 In the Select a Workflow page, select Expand Cluster > Compute Node.



Step 4In the Select a Workflow page, select Expand HX Cluster. Leave the Is OS installed on the Node, Run Hypervisor<br/>Configuration and Deploy HX Software checkboxes selected.

Select a Workflow		
*	is OS installed on the Node	
	Run UCS Manager Configuration	
	8 Run Hypervisor Configuration	
	B Deploy HX Software	
0	Create HK Cluster 🕺 Expand HK Cluster	
Show me the standard workflows	Continue	8120

### **Step 5** In the **Warning** dialog box, click **Confirm and Proceed**.

Warning	×
You have selected a custom option that splits the complete all tasks in the workflow to ensure a wo lf your nodes are data-at-rest encryption capable Cancel to return to the standard workflow.	installation or expansion workflow. You must rking HX storage cluster. , custom installation is not supported.
Confirm and Proceed to continue with a custom (	Cancel Confirm and Proceed

## **Step 6** In the **Cluster** page, complete the following fields:

Field	Description	Example Value
HX Cluster Management IP	The management IP address for the HX cluster	10.104.252.135
Cluster Admin User	Administrator username	admin
Password	Administrator password	

dialis HyperFlex Installer							0	<b>0</b> ~
Cluster	Credentials	Node Selection	Hypervisor Configuration	on		Node Cor	nfiguration	
Cluster HX Cluster Management IP 10.104.252.135	Credentials Cluster Admin User  admin	Node Selection Password	Hypervisor Configuration	Config	guration confgr	Node Cor	nfiguration	4
					Back	Select a Fil	e Continue	

**Step 7** In the **Credentials** page, complete the following fields:

### Table 2: UCS Manager Credentials

Field		
UCS Manager Host Name	FQDN or the VIP address of UCSM.	
UCS Manager User Name	Admin user or a user with UCSM admin rights.	
Password	Password for the UCS Manager User Name.	

### Table 3: Domain Information

Field		
HX Service Account	The HX service account that was created in the preinstallation phase.	hxadmin
Password	Password for the HX service account.	
Configure Constrained Delegation now (recommended) Constrained Delegation later	Select one of the checkboxes. Constrained Delegation is required for VM Live Migration.	

Use the following illustration as a reference for entering values in this screen.

• HyperFlex	Installer								0	ø
Cluster		Credencials	No	de Selection	Hypervisor Config	uration		Node Confi	guration	
						Con	figuration			*
Connected to: State: Health: Size:	10.104.252.135 ONLINE HEALTHY 4					Clust	gement Cluster	1	10.104.25	52.135
JCS Manager Cred CS Manager Host Name 10.85.121.240	lentials	UCS Manager User Name admin		Password	0					
Oomain Informatic	on	Password								
huadmin			٥							
Configure Constra	ined Delegation now	(recommended)	Configure	Constrained Delegation I	ater					
							< Back	G	ontinue	

Step 8 In the Node Selection page, choose all the servers that you want to install in the cluster and click Continue.

L

Cutser     Credencials     Node Server Anna     Hyperifor Configuration     Node Configuration       Server Selection     Configure Server Ports     Refresh            • KK for Hyper-V only runs on MS servers. The list below is restricted to MS servers.      Refresh            • Lossociated (1)         • Associated (2)         • Configure Server Ports         • Configure Server	.1 1.1 1. cisco	H	HyperF	lex Insta	ller						0	0	0	0	0
Server Selection       Configure Server Ports       Refresh <ul> <li>It Kfor hyper-V only runs on MS servers. The list below is restricted to MS servers.</li> <li>It manoclated (1)</li> <li>Associated (2)</li> <li>Server S ok</li> <li>UCBH2800-</li> <li>VC2582001</li> <li>VC2582001-</li> <li>PCH21218[BKY</li> <li>associated</li> <li>Organization Link</li> <li>VC144188</li> <li>Associated</li> <li>Organization Link</li> <li>VC458200-</li> <li>VC121218[KY</li> <li>VC121218[</li></ul>			Cluster			Creden	tials	N	ode Selection	Hypervisor Configurati	ion		Node Cor	figuration	
Unassociated (1)       Associated (2)         Image: metric control of the state o	Se	rver S HX for	Selectio	n / only runs o	n M5 serve	rs. The list below	v is restricted to M	5 servers.	Configure Server Ports	Refresh	Conf	iguration	1		*
Ø       Server Name       Nodel       Serial       Associace       Service Profile       Actions         Ø       O       Server S       ok       UCSB-B200- MS       WZP2208119W       associaced       org/rocol/org-Hype/Fie/Ms       Actions       Cedentials         Ø       O       Server 1/1       ok       UCSB-B200- MS       PCH2141/JBKY       associaced       org/rocol/org-Hype/Fie/Ms       Actions       V         Ø       O       Server 1/1       ok       UCSB-B200- MS       PCH2141/JBKY       associaced       org/rocol/org-Hype/Fie/Ms       Actions       V         Ø       O       Server 1/1       ok       UCSB-B200- MS       PCH2141/JBKY       associaced       org/rocol/org-Hype/Fie/Ms       Actions       V         Ø       O       Server 1/1       ok       UCSB-B200- MS       PCH2141/JBKY       associaced       org/rocol/org-Hype/Fie/Ms       Actions       V         Ø       O       Server 200       PCH2141/JBKY       associaced       org/rocol/org-Hype/Fie/Ms       Actions       V       V       V////////////////////////////////////		Unasso	ociated (1	) Asso	ciated (2)						Cluste	f		10.104	163 136
Image: Server S       ok       UCSB-B200- MS       v2p2200115W       essociated       org-rocolorg-hyper/Revits- chassis-1_blade-1       Actions >         Image: Marker Marker Marker Marker MS       ok       UCSB-B200- MS       RCH2141jBKY       essociated       org-rocolorg-hyper/Revits- chassis-1_blade-1       Actions >	8	0 0	> Se	rver Name	<ul> <li>Status</li> </ul>	Model	Serial	Assoc State	Service Profile	Actions	Crede	otials	F	10.104.2	194.199
Imp     rack-units       Imp     rack-units       Imp     rack-units       Imp     uCSS-B200- MS     RCH2141(BKY     associated     org-rocol/org-hyper/Rev/Is- chassis-1_Diade-1       Imp     UCSS-B200- MS     RCH2141(BKY     associated     org-rocol/org-hyper/Rev/Is- chassis-1_Diade-1     Actions ∨       Imp     UCSS-B200- MS     RCH2141(BKY     associated     org-rocol/org-hyper/Rev/Is- Chassis-1_Diade-1     Actions ∨       Imp     UCSS-B200- MS     RCH2141(BKY     associated     chassis-1_Diade-1     Actions ∨       Imp     UCSS-B200- MS     RCH2141(BKY     associated     chassis-1_Diade-1       Imp     Imp     Imp     Imp     Imp       Imp     Imp     Imp     Imp	6		D Se	rver 5	ok	UCSB-B200-	WZP2208115W	associated	org-root/org-HyperFlex/Is-	Actions ~	UCS M	anager Host	Name	10.65.1	121.240
Ø     O     Server 1/1     ok     UCS8-8200- MS     FCH2141jBKY     associated     org/roco0rg/hyper/Revis- chassis-1_blade-1     Actions ∨       MS     Service Accounts     Madmin     Constrained Delegation     true       Time Zone     Pacific Standard Time       Organization Unit:     0UHyper/RevDPthuhdom1, DCHiscal       DCall Administrator Accounts     Administrator						mo			rack-unit-b		UCS M	anager User	Name		admin
Constrained Delegation true Time Zone Pacific Standard Time Organization Line: OUHtyperFlex.DChbhidom1; DChiscel Local Administrator Account Administrator	8	0	D Se	rver 1/1	ok	UCSB-8200- M5	FCH2141JBKY	associated	org-root/org-HyperFlex/Is- chassis-1_blade-1	Actions $\vee$	HX Sen	vice Account		h	xadmin
Time Zone Pacific Standard Time Organization Unit: ULMPyperResD(*hthmdom), DC*load Local Administrator Account: Administrator											Constra	ained Delega	tion		true
Organization Unit: OUHAyperResOCHandbard, Docilioari Local Administrator Account: Administrator											Time Z	one	Pa	cific Standar	rd Time
Local Administrator Account Administrator											Organi	zation Unit	OU+HyperF	flex,DC=hxhv D	vdom1, C=local
											Local A	dministrator	Account	Admin	istrator

# **Step 9** In the **Hypervisor Configuration** page, complete the following fields for **VLAN Configuration**, **Hypervisor Settings**, and **Hypervisor Credentials**.

**VLAN Configuration**—HyperFlex needs to have at least 4 VLANs, each needs to be on different IP subnets and extended from the fabric interconnects to the connecting uplink switches, to ensure that traffic can flow from the Primary Fabric Interconnect (Fabric A) to the Subordinate Fabric Interconnect (Fabric B).

Use the following illustration as a reference for entering values in this screen.

VLAN for Hypervisor and Hype	erFlex management	VLAN for HyperFlex storage	e traffic
VLAN Name	VLAN ID	VLAN Name	VLAN ID
hx-inband-mgmt		hx-storage-data	
VLAN for VM Live Migration		VLAN for VM Network	
VLAN Name	VLAN ID	VLAN Name	VLAN ID(s)

**Hypervisor Settings**—If you leave the checkbox Make IP Addresses and Hostnames Sequential as checked then the installer will automatically fill the rest of the servers sequential from the first.

Hypervisor Credentials— Enter the Local administrator username on the Hyper-V hosts. Click Continue.

Step 10	In the <b>Node Configuration</b> page,	complete the fields for	Hypervisor Set	ttings and IP Addresses.
---------	--	-------------------------	----------------	--------------------------

Field	Description	Example Value
Subnet Mask	Subnet mask for the hypervisor hosts management network	255.255.255.0
Gateway	Default gateway for the hypervisor hosts management network	10.101.251.1
DNS Servers	Comma separated list for the DNS Servers in the AD that the hypervisor hosts are going to be member.	10.101.251.1

Use the following illustration as reference for entering values in this screen.

Cluster	Credentials	Node Selection H	lypervisor Configuration Node Configuration
ypervisor Settings			Configuration
bnet Mask	Gateway	DNS Server(s)	Cluster
55 255 255 0	10.104.252.1	10.104.252.44	Management Cluster 10.104.252.135
over Cluster Name 💿			Credentials
ohwwfe			UCS Manager Host Name 10.65.121.240
			UCS Manager User Name admin
		· · · · · · · · · · · · · · · · · · ·	HX Service Account hxadmin
Addresses		Add Comput	Constrained Delegation true
Make Hypervisor Name and IP Add	dress Sequencial		Time Zone Pacific Standard Time
nary DNS Suffix ①	Additional DNS Suffixes		Organization Unit OU=HyperFlex,DC=huhvdo m1,DC=local
XHVDOM1 LOCAL			
			Local Administrator Account Administrator
		(1) 0	Local Administrator Account Administrator Node Selection
	Management - VLAN (HXHVDOM1.LOCA	613 Data - VLAN 3172 L) (Hostname or IP Address)	Local Administrator Account Administrator Node Selection Server 1/1 FCH2141JBKY / UCS8-8200-M5
	Management - VLAN (HDHVDOM1.LOCA	613 Data - VLAN 3172 L) (Hostname or IP Address)	Local Administrator Account Administrator Node Selection Server 1/1 PCH2141JBKY / UCSB-8200-MS Server 5 WZP220811SW / UCSC-220-MSSK
<ul> <li>Namen Hyperv</li> </ul>	Management - VLAN (HORVDOM1.LOCA isor © Storage Controller	613 Data - VLAN 3172 L) (Hostname or IP Address) © Hypenvisor © Storage Controller	Local Administrator Account: Administrator Node Selection     Server 1/1 FCH2141JBKY / UCSB-B200-MS     Server 5 WZP2208115W / UCSB-C220-MS5K     Hypervisor Configuration
Namen Hyperv     Server 1/1	Management - VLAN (ROHYDOMLLOCA isor () Storage Controller	613 Data - VLAN 3172 L) (Hostname or IP Address) D Hypervisor ① Storage Controller	Local Administrator Account Administrator Node Selection     Server 1/1 FCH2141JBKY / UCSB-8200-MS     Server 5 WZP2208115W / UCSC-6220-MS5K     Hypervisor Configuration     VLAN Name hwinband-mgmt
Namen Hyperv     Server 1/1 toth	Management - VLAN (REONYDOMI.LOCA isor () Storage Controller		Local Administrator Account Administrator Node Selection     Server 1/1 FCH2141JBKY / UCSB-8200-MS     Server 5 WZP2208115W / UCSC-6220-MS5K     Hypervisor Configuration     VLAN Name hexinband-mgmc     VLAN ID 613
Namen Hyperv     Server 1/1 http://	Management - VLAN (ROHYDOMLLOCA isor () Storage Controller	613 Data - VLAN 3172 L) (Hostname or IP Address) D Hypervisor ① Storage Controller 192.108.11.87	Local Administrator Account Administrator Node Selection     Server 1/1 FCH2141JBKY / UCSB-8200-MS     Server 5 WZP2208115W / UCSC-6220-MS5K     Hypervisor Configuration     VLAN Name hxeinband-mgmc     VLAN ID 613     VLAN Name hxeisorage-data
Namen Hyperv     Server 1/1 http:     Compute http:     Server 5 http:	Management - VLAN (ROHYDOMI.LOCA isor () Storage Controller	613         Data - VLAN 3172 (Hostname or IP Address)           ①         Hypervisor         ①         Storage Controller           192.168.11.87         192.168.11.88	Local Administrator Account Administrator Node Selection     Server 1/1 FCH2141JBKY / UCSB-8200-MS     Server 5 WZP2208115W / UCSC-6220-MS5K     Hypervisor Configuration     VLAN Name hoxinban6-mgmt     VLAN ID 613     VLAN ID 613     VLAN ID 3172
Namen Hyperv     Server 1/1 http:     Compute http:     Server 5 http:	Management - VLAN (ROHYDOMLACCA isor ① Storage Controller boo2	613         Data - VLAN 3172 (Hostname or IP Address)           ①         Hypervisor         ①         Storage Controller           192.108.11.87         192.108.11.88	Local Administrator Account Administrator     Node Selection     Server 1/1 FCH2141JBKY / UCSB-8200-MS     Server 5 WZP2208115W / UCSB-620-MSK     Hypervisor Configuration     VLAN Name hovinband-mgmt     VLAN ID 613     VLAN ID 613     VLAN ID 3172     VLAN ID 3172     VLAN Name hovikemigrate
Namen Hyperv     Server 1/1     compute http:	Management - VLAN (FEOHYDOMI.LOCA isor ① Storage Controller	613         Data - VLAN 3172 (Hostname or IP Address)           ①         Hypervisor         ①           192.168.11.87         102.168.11.88	Local Administrator Account Administrator     Node Selection     Server 1/1 FCH2141JBKY / UCSB-8200-MS     Server 5 WZP2208115W / UCSC-6220-MS5K     Hypervisor Configuration     VLAN Name hovinband-mgmt     VLAN ID 613     VLAN ID 613     VLAN ID 3172     VLAN Name hovikemigrate     VLAN ID 3173
Namen Hyperv     Server 1/1     compute http:	Management - VLAN (FEOHYDOMI.LOCA isor ① Storage Controller	613 Data - VLAN 3172 (Hostname or IP Address) Hypervisor      Storage Controller 192.168.11.87 192.168.11.88	Local Administrator Account Administrator     Node Selection     Server 1/1 FCH2141JBKY / UCSB-8200-MS     Server 5 WZP2208115W / UCSC-6220-MS5K     Hypervisor Configuration     VUAN Name hxvinband-mgmt     VUAN ID 613     VUAN ID 613     VUAN ID 3172     VUAN ID 3173     VUAN ID 3173     VUAN ID 3173     VUAN ID 3173
Namen Hyperv     Server 1/1 Pathy     Server 5 Pathy	Management - VLAN (FEOHYDOMI.LOCA isor ① Storage Controller boo2	613         Data - VLAN 3172 (Hostname or IP Address)           ①         Hypervisor         ①         Storage Controller           192.168.11.87         192.168.11.88         192.168.11.88	Local Administrator Account Administrator     Node Selection     Server 1/1 FCH2141JBKY / UCSB-8200-MS     Server 5 WZP2208115W / UCSC-6220-MS5K     Hypervisor Configuration     VUAN Name hxvinband-mgmt     VUAN ID 613     VUAN ID 613     VUAN ID 3172     VUAN ID 3173     VUAN ID 3173     VUAN ID 3173     VUAN ID 3173

Click Start to begin the Hypervisor Configuration. The installation now continues and configures the Hypervisor hosts.

**Step 11** In the **Warning** dialog box, click **Confirm and Proceed**.



**Step 12** The **Progress** screen displays the status of the hypervisor configuration and cluster expansion.

		Proj	ress				
o <u> </u> ⊘	0				Configuratio	n	
itart Config Hy Installer Cont	pervisor Dep figuration Valid	ploy Deploy lation	Expansion Validation	Cluster Expansion	Cluster		
					Management Clust	er 1	0.104.252.1
					Credentials		
Hypervisor Configuration in Pro	ogress				UCS Manager Hos	Name	10.65.121.2
					UCS Manager User	Name	adn
					HX Service Account	t	hxadm
		Нуре	ervisor Configuration	-	Constrained Deleg	ation	57
Hypervisor Configuration - Overall	<ul> <li>Login to UC</li> </ul>	S API			Time Zone	Pacific	Standard Tir
In Progress	<ul> <li>Quering vM</li> </ul>	edia mount status	Organization Unit	OU=HyperFi	ex,DC=hxhv m1,DC=lo		
	<ul> <li>Inventorying</li> </ul>	g org of specified servers	Local Administrato	r Account	Administra		
	<ul> <li>Inventorying</li> </ul>	g physical servers			Node Selection		
	<ul> <li>Logout from</li> </ul>	n UCS API			Server 1/1 FC	H2141JBKY / U	JCS8-8200-1
	CONFIGURA	TION COMPLETED SUCCESSFUL	TA.		Server 5 WZP22	0811SW / UC	SC-C220-M5
	<ul> <li>Waiting for a</li> </ul>	all servers to acquire IP address.	-		Hypervisor Conf	guration	
					VLAN Name	hx	-inband-mg
blade-1	<ul> <li>Waiting for:</li> </ul>	server to acquire IP address			VLAN ID		6
arrights					VLAN Name	h	x-storage-da
rack-unit-5	Waiting for	server to acquire IP address			VLAN ID		31
In Progress					VLAN Name		hx-livemigra
					VLAN ID		31
					VLAN Name		2176.00
					Subaat Mark		31/0,31
					Gabeway		10 104 25

Step 13 When the process finishes successfully, the Summary page displays the completion status.

iliailia cisco	HyperFlex	Installer							8				٥
		P	rogress					Summ	wy				
Clus	iter Name <b>hxh</b>	vsmb ONUNE	HEALTHY										
Versi	ion			3.5.2a-31586		Domain Nar	me				ю	HVDOM1.L	OCAL
Clust	ter Management I	P Address	hohveip.H0HV	DOM1.LOCAL		Failover clus	ster Name					hod	hvwfe
Clust	ter Data IP Addres:	5	1	92.168.11.135		DNS Server(	(5)					10.104.2	52,44
Repli	ication Factor			Three copies		NTP Server(	s)					10.104.2	52.44
Avail	lable Capacity			10.7 TB									
Serv Mo	vers Idel	Serial Number	Management Hypervisor	Managemen	t Storage Con	troller	Data Ne	twork Hypervisor	Da	ta Networ	'k Storage (	Controller	
HOU	AF240C-M55X	WZP22020L9E	10.104.252.127	10.104.252.1	31		192.168	.11.127	19	2.168.11.1	31		
UC	SC-C220-M55X	WZP2208115W	10.104.252.87				192.168	.11.86					
HOU	AF240C-M5SX	WZP22020L96	10.104.252.129	10.104.252.1	33		192.168	.11.129	19	2.168.11.1	33		
ю	AF240C-M55X	WZP220216WY	10.104.252.128	10.104.252.1	32		192.168	.11.128	19	2.168.11.1	32		
UC	S8-8200-M5	FCH2141JBKY	10.104.252.86				192.168	.11.87					
HO	AF240C-M5SX	WZP22020L98	10.104.252.130	10.104.252.1	34		192.168	.11.130	19	2.168.11.1	34		
								Back to Workflow S	election	L	unch Hype	rFlex Conn	ect

To log into HX Connect, click **Launch HX Connect**. The HX Connect **Dashboard** page displays cluster health, operational status and information for the newly added compute-only nodes in the cluster.

≡ <sup>-diadia</sup> HyperFlex	Connect	hxhvsmb	© © 2
Oashboard		OPERATIONAL STATUS Online	
MONITOR		Healthy ⊙	✓ 1 Node failure can be tolerated
ANALYZE		CAPACITY 1.1% 10.7 TB 119.5 GB Used 10	Storage optimization, compression and deduplication retiss will be optimized normation regarding duster usage.
MANAGE	n	NODES 4 HXAF240C- MSSX 6 Converged	2 NODES Compute
T Upgrade		IOPS Last 1 hour	Read Mac: 0 Min:0 Aug: 0     Verse Mac: 3.4 Min:1.3 Aug: 1.0
		Throughput (MBps) Last 1 hour	Read Marc 0 Mint0 Arg: 0     Write Marc 0.01 Mint0 Arg: 0.01
		Latency (msec) Last 1 hour	Reed Max: 0 Min:0 Arg:0     Write Max: 1.69 Min:1.15 Arg:1.27
About			Cluster Time : 12/13/2018 11:17:42 AM PST

# **Cluster Expansion - M4 Blade Servers (Fibre Chanel SAN)**

## **Overview**

The Hyper-V cluster expansion procedure for UCS B200 M4 blade servers with Fibre Channel storage boot option consists of the following sequence of tasks:

- 1. Pre-expansion Checklist, on page 1
- 2. Cisco UCS Manager Configuration
- 3. Microsoft Windows OS Installation, on page 27
- 4. Hypervisor Configuration, HXDP Software Installation and Cluster Expansion
- 5. Perform the following post installation steps:
  - · Configuring a Static IP Address for Live Migration and VM Network
  - (Optional) Post Installation Constrained Delegation
  - Configure Local Default Paths
  - · Checking the Windows Version on the Hyper-V Host

## **Microsoft Windows OS Installation**

This procedure is when you wish to expand your Hyper-V cluster by adding UCS B200 M4 Blade servers (compute-only nodes) and enable Fibre Channel SAN boot option.

Step 1	Launch UCS Manager and log in.
Step 2	Perform the following steps to clone a Service Profile template:
	a) In the Navigation pane, click <b>Servers</b> .
	b) Expand the node for the organization where you want to clone and select Create a Clone
	c) In the <b>Create Clone from Service Profile</b> dialog box, enter a name you to use for the new profile in the <b>Clone</b> <b>Name</b> field (Example: hx-compute. Click <b>OK</b> .
Step 3	Perform the following steps to enable FC Zoning:
	a) In the Navigation pane, go to SAN > VSAN.
	b) Ensure that the <b>Enabled</b> radio-button is selected under <b>FC Zoning</b> .
Step 4	Unbind your blade server from the current Service Profile template, and bind it to the newly created template in Step 2.
Step 5	Perform the following steps to mount the HyperFlex Driver Image file and modify the autounattend.xml file:
	<ul> <li>Connect to your HX Installer VM and navigate to the shared folder that contains the Windows ISO and HyperFlex Driver Image files.</li> </ul>
	b) Run the following commands to mount the HyperFlex image:

```
mkdir /mnt/hx-img
mount /var/www/localhost/images/latest.img /mnt/hx-img
```

- c) Open the autounattend.xml file, search for DiskID and change the value from 0 to the value in Windows PE (WinPE).
- **Step 6** Perform the following steps to configure a SAN boot policy:
  - a) Select the newly created Service Profile Template from Step 2 and go to the **Boot Order** tab. Click **Modify Boot Policy**. In the **Modify Boot Policy** page, click **Create Boot Policy**.
  - b) Expand vHBAs, select Add SAN Boot, and in the name field, type the name of the vHBA(Example: hx-ext-fc-a).
  - c) Select **Primary** and click **OK**.
  - d) In the Add SAN Boot Target, leave the Boot Target LUN set to 0. In the Boot Target WWPN field, type the WWPN from your storage array. Verify Type is set to Primary and click OK.

### **Step 7** Create a vMedia policy for the Windows OS and Cisco driver images:

- a) In the Navigation pane, click Servers.
- b) Expand Servers > Policies > root > Sub-Organizations > hx-cluster\_name > vMedia Policies
- c) Right-click vMedia Policies and select Create vMedia Policy HyperFlex.



d) In the Create vMedia Policy dialog box, complete the following fields:

Field Name	Description	1
Name	The name of	of the vMedia policy. For example, <i>HX-vMedia</i> .
	This name use spaces : (colon), a is saved.	can be between 1 and 16 alphanumeric characters. You cannot or any special characters other than - (hyphen), _ (underscore), nd . (period), and you cannot change this name after the object
Description	A descripti where and	on of the policy. We recommend including information about when the policy should be used. Maximum 115 characters.
Retry on Mount Failure	Designates occurs. Thi	if the vMedia will continue mounting when a mount failure s can be:
	• Yes	
	• No	
	Note	The default setting is <b>Yes</b> . When <b>Yes</b> is selected the remote server will continue to try to mount the vMedia mount process until it is successful or you disable this option. If you select No, a warning message will appear indicating retry on mount failure will not work in case of mount failure.

Refer to the following screenshot as an example:

Create vMedia Policy			? ×
Name : HX-vMedia Description : Retry on Mount Failure : O No • Yes vMedia Mounts			
+ - Ty Advanced Filter 🛧 Expor	🖶 Print		٥
Name Type Protoco	Authentica Server F	ilename Remote Pa	User Remap on
		Info	
			OK Cancel

Field Name	Description	Example Value
Name	Name for the mount point.	Windows-ISO
Description	Can be used for more information.	Windows Server 2016 image
Device Type	Type of image that you want to mount. This can be:	CDD
	• CDD—Scriptable vMedia CD.	
	• <b>HDD</b> —Scriptable vMedia HDD.	
Protocol	The protocol used for accessing the share where the ISO files are located.	НТТР
Hostname/IP Address	IP address or FQDN of the server hosting the images.	10.101.1.92
Image Name Variable	This value is not used in HyperFlex installation.	None
Remote File	The filename of the ISO file that you want to mount.	
Remote Path	The path on the remote server to where the file resides	
Username	If you use CIFS or NFS a username might be necessary	
Password	If you use CIFS or NFS a password might be necessary	

e) On the icon bar under the vMedia Mounts pane, click + Add. In the Create vMedia Mount dialog box, complete the following fields:

Refer to the screenshot below as an example:

Create vMed	a Mount	? ×
Name	: Windows-ISO	
Description	: Windows Server 2016 Image	
Device Type		
Protocol		
Hostname/IP Address	: 10.29.149.212	
Image Name Variable	:  None  Service Profile Name	
Remote File	en_windows_server_2016_x64_dvd_9327751.iso	
Remote Path	: /images/	
Username	:	
Password	:	
Remap on Eject	:	
	ОК С	ancel

f) Click **OK**. When you click **OK**, you will now be returned to the **vMedia Policies** screen, and you should see the information that you just submitted.

Create vl	Media Po	olicy						• ×
Name Description Retry on Mount vMedia Moun	: HX- : : Failure :N	vMedia						
+ - 5/	Advanced Filter	♠ Export	🖶 Print					٥
Name	Туре	Protocol	Authentica	Server	Filename	Remote Pa	User	Remap on
			(+) Ac	d 🖲 Delete	Info Info			
							ок	Cancel

- g) Repeat Steps 2e and 2f, however, change the type to HDD and the remote file name to the Cisco HyperFlex driver image.
- h) At the end of this step, the two vMedia mounts will be listed in the Create vMedia Policy screen as shown in the following screenshot:

Create v <b>i</b>	Media F	Policy					? ×
Name Description Retry on Mount vMedia Mount	: H) : Failure : O ts	K-vMedia					
+ - 7/4	Advanced Filte	r 🕈 Export	🖶 Print				٥
Name	Туре	Protocol	Authentica	Server	Filename	Remote Pa User	Remap on
HX-Cis	HDD	HTTP	Default	10.29.149	HXInstall	/images/	No
Windo	CDD	HTTP	Default	10.29.149	en_windo	/images/	No
			(+) A	dd 🛈 Delete	1 Info		
							OK Cancel

**Step 8** Associate the vMedia Policy to a Service Profile:

a) In the Navigation pane, select Servers > Service Profile Templates > root > Sub-Organizations > hx-cluster\_name > Service Template compute-nodes, or compute-nodes-m5

₽	I-6332-A - Unified Comp ×	
← →	C A Not secure   https://10.29.14	49.205/app/3_2_3a/index.html
ahaha cisco	UCS Manager	
æ	Service Profile Templates	Service Profi / root / Sub- Organizations / HyperFlex / Service Tem
	<ul> <li>Service Profile Templates</li> </ul>	General Storage Network iSCSI vNICs vMedia Policy Boot Order Policies
	▼ root	Actions
윪	<ul> <li>Sub-Organizations</li> </ul>	Modify vMedia Policy
	<ul> <li>HyperFlex</li> </ul>	Global vMedla Policy
	<ul> <li>Service Template compute-nodes</li> </ul>	Name : UrunarElay
	<ul> <li>Service Template compute-nodes-</li> </ul>	vMedia Policy Instance : org-root/org-HyperFlex/mnt-cfg-policy-HyperFlex
모	<ul> <li>Service Template hx-nodes</li> </ul>	Description : vMedia policy to install or re-install software on HyperFlex servers
-	Service Template hx-nodes-m5	Retry on Mount Failure : Yes vMedia Mounts
	<ul> <li>Sub-Organizations</li> </ul>	
		+ - 🏷 Advanced Filter 🛧 Export 🖶 Print
		Name Type Protocol Authentic Server Filename Remote P
20		No data available

- b) Click the vMedia Policy tab. Then, click Modify vMedia Policy
- c) Choose the vMedia Policy that you created earlier from the drop-down selection, and click OK twice.

Modify v	Media Po	licy					
vMedia Policy:	HyperFlex	Doliou to ur	~	1			
C	Create a Speci	ific vMedia	Policy				
Description Retry on M	vMedia Policies HX-vMedia			nstall software o	n HyperFlex ser	vers	
vMedia M	HyperFlex	A Export	- Print	J			
Name	Туре	Protocol	Authen	ticat Server	Filename	Remote Path	User
				No data avail	able		

d) Under the General tab, verify that the vMedia policy is added to the Service Profile.

altalta cisco	UCS Manager	8	<b>7</b> 🙆 🚯 4 1 1		•
黒	Service Profiles +	Service Profiles / root / Sub- Organizations /	HyperFlex / Service Profil		
2	<ul> <li>Service Profiles</li> <li>root</li> </ul>	C General Storage Network iS	CSI vNICs vMedia Policy Boot C	Order Virtual Machines	FC Zones Policies Se
꾦	<ul> <li>Sub-Organizations</li> <li>HyperFlex</li> </ul>	Actions Modify vMedia Policy	Global vMedia Policy Name : HX-vMedia		
1	rack-unit-1 (HXCLUS)		vMedia Policy Instance : org-root/mnt- Description :	-cfg-policy-HX-vMedia	
Q	<ul> <li>rack-unit-2 (HXCLUS)</li> <li>rack-unit-3 (HXCLUS)</li> </ul>		Retry on Mount Failure : Yes vMedia Mounts		
=	<ul> <li>rack-unit-4 (HXCLUS)</li> <li>Sub-Organizations</li> </ul>		+ - Ty Advanced Filter + Expo Name Type Protocol	art 🏾 e Print I Authentic Server	Filename Remote P
			HX-Cis HDD HTTP Windo CDD HTTP	None 10.29.149. None 10.29.149.	H0(Install /images/ en_windo /images/

### **Step 9** Modify Boot Policy and set the boot order to have CIMC CD/DVD to the list:

- a) In the Navigation pane, click the Servers tab.
- b) Expand Servers > Policies > root > > Boot Policies > hx-compute, or hx-compute-m5

	ico HyperFlex Connect X as https://w	scipizhypercom/hyper1 X 🔺 UT-R1-United Comp	weeks +							- 0 ^
÷ -	C A Not secure   https://192.168.9	A11/app/4_0_2h/index.html							\$	0000
duala. C1600	UCS Manager		8 🛛	0 0 14 20				(		000C
	Alt    Sarver Pop Policies  Sarver Pop Policy Qualifications  Pravahol Policies  OCC/ Anterestication Policies  OCC/ Anterestication Policies  Sarver Policies  Sarver Policies  Adapter Policies  Box Policies  Box Policies  Dox Policies Dox Policie	Sensen / Policies / rost / Sobr Organizations / inco Concer Actions Onion Show Policy Dage Une Cond Warning The type (immerybecondury) does not induce a to	de-ma / Boot Palcies / Boot Policy  Properties Nome Description Owner Inforce vPCL-replaceSci in Botor VPCL-replaceSci in Botor Worker Entors vPCL-replaceSci in Botor Mode cort order preserve.	: N=-compute=m5 : Recommended boot policy for Hype : Excel op : D : Eugrey Out	Pac 14/19/3					
<b>J</b> 0	Boot Policy hx-compute-ind Boot Policy hx-compute-ind Boot Policy Hunorflax	The effective order of boot devices within the same if Enforce vNICAVBANSCRI Name is selected and if it is not selected, the vNICa/MBRs are selected if	I device class (LAVSIccageIIOCS) a determined the VVC/VHBA/SCSI does not exist, a config er if they exist, otherwise the VVC/VHBA with the to	I by POle bus scan order. for will be reported, west POle bus scan order is used.						
*0	Boot Policy In-compute Root Policy In-compute-in Boot Policy MypeRites Boot Policy MypeRites -in5-	The effective order of boot devices within the same if Enforce VMCAVEMARKON Name is setticted and if it is not selected, the vMCA/MBAs are selected if (A) I occil Devices.	I divise class (UAVStorage/SCS) is determined for VVC/VHSASCS does not exit, a config or if they exist, otherwise the VVC/VHSA with the lo Boot Onder	I by PCIe bus scan order. no will be regorded. west PCie bus scan order is used.						
<b>J</b> 0	Boot Policy In-compute Boot Policy In-compute-in Boot Policy HyperFiles Boot Policy HyperFiles-info Boot Policy HyperFiles-info Boot Policy surfacet	The effective order of boot devoces within the same if Enforce ARC/HIBARSCE Remain a selected and if it an not selected, the ARCs/MBAe are selected if Local Devices	I drive class (JAN/Stocga/ACCS) is determined the VAC/HEAXSCS does not wask, a config an if they exist, otherwise the VAC/HEA with the lo Boot Order + T_Advanced Filter	Toy PCIe bue scan order. nor will be reported. erest PCIe bue scan order is vend. Φ Sount - Φ Print						0
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c) (For M5 Servers only) In the Boot Order configuration pane, click CIMC Mounted CD/DVD. Then, click Add CIMC Mounted CD/DVD to add this to the boot order. Move it to the top of the boot order using the Move up button.

Important The CIMC Mounted CD/DVD option must be highest in the boot order preceding the other options, Embedded Local Disk and CD/DVD.

(For M4 Servers with Local SAS Drivers) In the Boot Order configuration pane, click vHBAs. Then, click Add SAN Boot to add this to the boot order.

d) Click **Save Changes**, and click **OK** in the **Success** dialog box. The modified boot policy is saved.

### **Step 10** Verify successful vMedia mounting:

- a) On the **Equipment** tab, select one of the servers.
- b) Click Inventory > CIMC, scroll down and ensure for mount entry #1(OS image) and mount entry #2 (Cisco HyperFlex driver image) you see status as Mounted and there are no failures.

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<i>.</i> #.	All	Equipment / Rad	ck-Mounts /	Servers /	Server 1				
	<ul> <li>Equipment</li> </ul>	General	Inventory	Virtual N	<b>Aachines</b>	Hybrid Display Installed F	Firmware SEL Logs CI	MC Sessions VIF P	aths Power Control Monitor> >
	Chassis	Motherboard	CIMC	CPUs	GPUs	Memory Adapters HE	As NICs ISCSI VNICs	Storage	
暴	<ul> <li>Rack-Mounts</li> </ul>					Boot-loader Version: 3.1	(3a)		
	FEX					Running Version : 3.1(3a)			
	<ul> <li>Servers</li> </ul>					Backup Version : 3.1(2d)			
_	Server 1					Update Status : Ready			
모	Server 2					Startup Version : 3.1(3a)			
-	<ul> <li>Server 3</li> </ul>					Astronauto Status - Ready			
-	<ul> <li>Server 4 O</li> </ul>					Actual VMedia Mounts			
	<ul> <li>Fabric Interconnects</li> </ul>					Actual Mount Entry 1			
	<ul> <li>Fabric Interconnect A (primary) 😳</li> </ul>					Mapping Name :	Windows-ISO	Туре	CDD
<b>J</b> 0	<ul> <li>Fars</li> </ul>					Protocol :	HTTP	Server	10.29.149.212
	<ul> <li>Fixed Module</li> </ul>					Port :	80	Filename: en_window	s_server_2016_x64_dvd_93277!
	<ul> <li>PSUs</li> </ul>					Remote Path :	/images/	User	
	<ul> <li>Fabric Interconnect B (subordinate) 😳</li> </ul>					Status	Mounted	Mount Failure Reason	None
	<ul> <li>Fars</li> </ul>					Authentication Protocol :	None	Remap on Elect	No
	<ul> <li>Fixed Module</li> </ul>					Actual Mount Entry 2			
	<ul> <li>Ethernet Ports</li> </ul>					Petitian mount entry 2			
	FC Ports					Mapping Name :	HX-Cisco-Driver	Туре	HDD
	<ul> <li>PSUs</li> </ul>					Protocol :	HTTP	Server	10.29.149.212
	<ul> <li>Policies</li> </ul>					Port :	80	Filename	HXInstall-HyperV-
	Port Auto-Discovery Policy								DatacenterCore-v3.0.1b- 29665.img
						Remote Path	fimages/	User	
						Status	Mounted	Mount Failure Reason	None
						Authentication Protocol :	None	Reman on Flect	No
								and the second second	

- c) In the menu bar, click Servers and choose the first HyperFlex service profile.
- d) Click the General tab and choose Actions > KVM Console>>.
  - **Note** The KVM console will try to open in a new browser. Be aware of any pop-up blockers. Allow the pop-ups and re-open the KVM



- e) Reboot the host, launch the KVM Console, and power on the server to monitor the progress of the Windows installation. You should see the Loading Files screen appear. Windows should install automatically without user intervention. You should see a blue screen and within a few moments you should see the Setup is starting message. If automated installation does not begin, double-check that both images are mounted to the server.
- f) Once Windows installation completes, a command prompt will show up. Wait for the installation to complete. The host will then reboot a few times. The installation is complete when you get a clear command prompt at c:\users\administrator>. It may take several minutes and reboot operations for the Driver Image to be copied and installed.
  - **Note** Ignore the prompt with the **The system cannot find the file specified** message.

**Important** Ensure that you have completed **Steps e and f**, on ALL servers that will be part of the HX cluster.

g) Log into each server, enter the command C>Users>Administrator>Get-ScheduledTask and verify that the HX Install Bootstrap Launcher task is running.

### **Step 11** Remove the vMedia policy from the service profile:

- a) To un-map the vMedia policy from the service profile, go to Servers > Service Profile Templates > root > Sub-Organizations > hx-cluster\_name > Service Template compute-nodes, or compute-nodes-m5. Then, click on Modify vMedia Policy.
- b) Under the vMedia Policy drop-down selection, deselect the vMedia policy (*HX-vMedia*) previously used to map the two images.
- **Step 12** Restore the boot order to the one before installation:
  - a) In the Navigation pane, click the Servers tab.
  - b) Expand Servers > Policies > root > > Boot Policies > hx-compute, or hx-compute-m5
  - c) In the **Boot Order** configuration pane, use the **Move Down** button to move **CIMC Mounted CD/DVD** option to the bottom of the list.

Refer to the screenshot below for the boot order after it is restored in this step:

Boot Order							
+ - Y Advanced Filte	er 🔶 Export 🚔 Print						۵
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<b>⊸</b> San	2						
SAN Primary	hx-ext-fc-a	Primary					
SAN Target Pr		Primary	0 20:7C:00:A0:98:53:05:56				
SAN Secondary	hx-ext-fc-b	Secondary					~
	🕇 Mo	ove Up 🕴 Move Down 📋 Dele	te				
Set Usfi Boot Pananet	ters						

### What to do next

At the end of this procedure, Windows OS is successfully installed. Then, continue to "Hypervisor Configuration, HXDP Software Installation and Cluster Expansion" to complete the remaining steps in the cluster expansion workflow.