

# **Post Installation**

• Post Installation Tasks Summary, on page 1

# **Post Installation Tasks Summary**

After successful cluster configuration, perform the following additional post installation tasks to ensure that the cluster is ready to serve VMs.

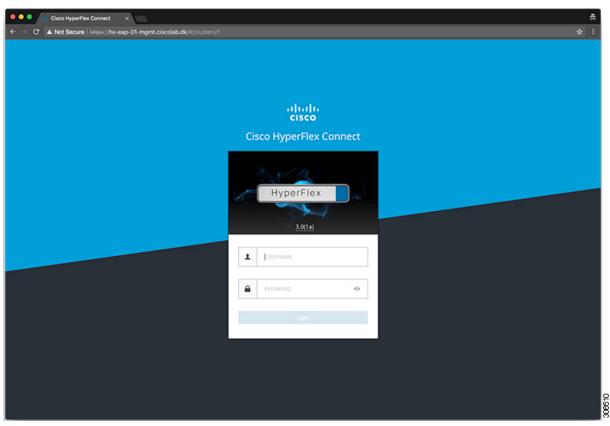
Task	Reference
Create the First Datastore	Create the First Datastore, on page 2
Assign a static IP address for Live Migration and VM Network	Configuring a Static IP Address for Live Migration and VM Network, on page 3
(Optional) Constrained Delegation	(Optional) Post Installation Constrained Delegation, on page 4
Configure Local Default Paths	Configure Local Default Paths, on page 5
Configure File Share Witness	Configuring a File Share Witness, on page 6
Checking the Windows Version on the Hyper-V Host	Checking the Windows Version on the Hyper-V Host, on page 12
Validate Failover Cluster Manager	Validate Failover Cluster Manager, on page 12
Testing Upstream Failover	Testing Upstream Failover for Storage Data Network
Deploying VMs on a Hyper-V cluster	Deploying VMs on a Hyper-V cluster, on page 14
Configuring HyperFlex Share to SCVMM	Configuring HyperFlex Share to SCVMM, on page 21
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VM Migration between standalone Hyper-V and HX Hyper-V hosts.	VM Migration between Hosts, on page 23

# **Create the First Datastore**

Before you begin using the cluster, you must create a datastore. The datastore can be created in HX Connect UI.

Step 1

Launch HX Connect UI from a browser of your choice from https://Cluster\_IP/ or https://FQDN.



- **Step 2** Log in with the following credentials:
  - Username—hxadmin
  - Password—Use the password set during cluster installation.
- **Step 3** In the Navigation pane, select **Datastores**.

Cisco HyperFlex Connect	×		ā
C A Not Secure https://ht     ids.dis     isse HyperFlex Connect	k-eap-01-mgmt.ciscolab.dk/#/clusters/1	hu ana 01	
= este Hyperviex Connect		hx-eap-01	2 O ©
Dashboard	OPERATIONAL STATUS Online		
MONITOR Events			✓ 1 Node failure can be tolerated
Activity	CAPACITY	1.1%	STORAGE Storage optimization, compression and Organization, compression and Organization ratios will be calculated once we have
ANALYZE	6.4 TB	71.7 GB Used 6.4 TB Free	OPTIMIZATION OPDIGuidation ratios will be calculated once we have sufficient information regarding cluster usage.
MANAGE System Information		Converged	
Datastores	IOPS Last 1 hour		Read Marc 0 Min:0 Avg:0     Write Marc 4.8 Min:1.4 Avg: 3.05
<ul> <li>opgrade</li> </ul>	,	~~~~~	
	Throughput (MBps) Last 1 hour		Read Marc 0 Min:0 Avg: 0     Write Marc 0.02 Min:0.01 Avg: 0.01
		~~~~~	
	Latency (msec) Last 1 hour		Read Max: 0 Min:0 Arg: 0      Vinite Max: 31.59 Min:2.03 Arg: 2.69
	20		
About			Cluster Time : 04/22/2018 12:19:02 AM PDT

**Step 4** In the Work pane, click **Create Datastore**.

**Step 5** In the **Create Datastore** dialog box, complete the following fields:

Field	Description
Datastore Name	Enter a name for the datastore.
	Cisco recommends that you use all lower case characters for the datastore name.
Size	Select the size for the datastore.
Block Size	Select the block size for the datastore.

Note Cisco recommends 8K block size and as few datastores as possible to ensure the best performance.

# **Configuring a Static IP Address for Live Migration and VM Network**

Log into each Hyper-V node and execute the following commands in Power Shell to assign a static IP address for Live Migration and VM Network.

#	Command	Purpose
1	New-NetIPAddress -ifAlias "vSwitch-hx-livemigration" -IPAddress 192.168.73.21 -PrefixLength 24	Assigns a static IP address to the Live Migration network.
2	New-NetIPAddress -ifAlias "vswitch-hx-vm-network" -IPAddress 192.168.74.21 -PrefixLength 24	Assigns a static IP address to the VM network.

# **(Optional) Post Installation Constrained Delegation**

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Attention This step must be performed only if Constrained Delegation was not configured during initial installation. It is recommended that you perform this procedure using the HX Installer and not as part of post-installation.

Constrained Delegation gives granular control over impersonation. When the remote management requests are made to the Hyper-V hosts, it needs to make those requests to the storage on behalf of the caller. This is allowed if that host is trusted for delegation for the CIFS service principal of HX Storage.

Constrained Delegation requires that the option for the security setting **User Account Control: Behavior of the elevation prompt for Administrators in Admin Approval Mode** is set to **Elevate without Prompting**. This will prevent the global AD policy from overriding policy on HX OU.

Perform the following procedure *on each Hyper-V host in the HX Cluster* to configure using **Windows Active Directory Users and Computers**.

- Step 1 Click Start, click Administrative Tools, and then click Active Directory Users and Computers.
- **Step 2** Expand domain, and then expand the Computers folder.
- **Step 3** In the right pane, right-click on the computer name (for example, HX-Properties), and then click **Properties**.
- **Step 4** Click on the **Delegation** tab.
- **Step 5** Select **Trust this computer for delegation to specified services only**.
- **Step 6** Ensure that **Use any authentication protocol** is selected.
- **Step 7** Click Add. In the Add Services dialog box, click Users or Computers, and then browse or type the name of the Service Type (such as CIFS). Click OK. The following illustration can be used as an example.

	H	IX-EAP-1 Pi	roperties		? X
Location	Managed By	Object	Security	Dial-in A	ttribute Editor
General	Operating System	Member Of	Delegatio	n Passwo	rd Replication
Delegation is a security-sensitive operation, which allows services to act on behalf of another user.					
	computer for deleg	-	vice (Kerbero:	s only)	
-	computer for deleg				
-	Kerberos only				
	any authentication p	orotocol			
	to which this acco		delegated cr	edentials:	
	e Type User or O		Port	Service N	
cifs	hx-eap-0	1.Ciscolab.dk			
cifs	HX-EAP-	1			
WSM/	N HX-EAP-	1			
<				>	
🗌 Ехра	nded		Add	Remove	]
					1
			Cancel	Annha	Uala
	(	ОК 🛛 ОК	Jancel	Apply	Help

**Step 8** Repeat these steps for all nodes.

# **Configure Local Default Paths**

Configure the default local path for the VMs to ensure that they will be on the HX cluster datastore.

Run the following commands in PowerShell:

```
$Creds = Get-Credential -Message "User Credentials" -UserName <<current logon username>>
$hosts = ("hostname1","hostname2","hostname3","hostname4")
Invoke-Command -ComputerName $hosts -Credential $Creds -ScriptBlock {Set-VMHost
-VirtualHardDiskPath
"\\HX-EAP-01.ciscolab.dk\DS1_8K" -VirtualMachinePath "\\HX-EAP-01.ciscolab.dk\DS1_8K"}
```

Note

The username should either be a Domain admin account or the HX service account. The local Administrator on the Hyper-V host will not work.

Note

Remember to change the variables to suit your environment.

### **Configuring a File Share Witness**

As a Microsoft best practice, ensure that you configure a Quorum witness datastore. Use the following procedure to configure a File Share Witness using **Failover Cluster Manager** (FCM). A File Share Witness ensures high availability of the failover cluster when nodes on the network fail. Specifically, a File Share Witness is needed to maintain a failover cluster quorum, which is designed to prevent split-brain scenarios that may happen when a partition in the network and subsets of nodes cannot communicate with each other. For more information, see "Understanding cluster and pool quorum".



Note

In an HX cluster, the storage is designed to be highly available and no host should lose access to the storage. In the event that one host does stop writing to the datastore, Microsoft's storage resiliency behavior kicks in. The host repeatedly retries to establish a connection with the storage for 30 mins by default. During this time, the user VMs may be paused. If it cannot connect after 30 mins, the VM moves to a 'stopped' state.

The following procedure describes how to configure a File Share Witness for Microsoft Windows 2016. If you are deploying Microsoft Windows 2019, do not use HyperFlex Share or any other file share as a witness. Microsoft has identified a defect in Windows 2019, which will be resolved in a subsequent patch release. Until such time, you must configure the Microsoft Windows 2019 Failover cluster without any witness.



 If you are using Microsoft Windows 2019 and planning to use any file share (including HX share) as a file share witness, you must install the https://support.microsoft.com/en-us/help/4497934 patch before configuring.

 If you do not want to use file share as a quorum witness, then you can use other quorum methods described by Microsoft Windows 2019.

#### Before you begin

Microsoft released a security patch on November 12, 2019 that applies to Windows 2019. If you are running Windows 2019, upgrade your Hyper-V hosts with the patch at the path level, before using the following procedure to configure a file share witness. For more information, see the Microsoft article "November 12, 2019—KB4523205 (OS Build 17763.864)".

Step 1 Launch FCM.

Step 2 In the navigation pane, select your cluster. Then, in the Actions pane, select More Actions > Configure Cluster Quorum Settings....

Railover Cluster Manager File Action View Help ← ➡ 2 □□ 2 □□		×
<ul> <li>Failover Cluster Manager</li> <li>時代CAD-CLU01.ciscolab.dk</li> <li>時代CAD-CLU01.ciscolab.dk</li> <li>時代CAD-CLU01.ciscolab.dk</li> <li>時代CAD-CLU01.ciscolab.dk</li> <li>日本のの名目の目的目的目的目的目的目的目的目的目的目的目的目的目的目的目的目的目的目</li></ul>	Cluster HX EAP.CLU01 clocolab.dk  Summary of Cluster HX-EAP-CLU01  IGCEAP CLU01 has 0 clustered roles and 4 nodes.  Name: IGCEAP CLU01 socold dk  Networks: helvenigste.helmgst.helmgst.helmgst.helmgst.  Current Hold Server: IGCEAP 2 Submets: 3 Invi and 0 Invi  Recort Quater Events: None in the last 3 hours  Storage Spaces Direct (\$20): Dashed  Winess: None  Configure	Actions     Matter       HO:-EAP-CLUD1.ciscolab.dk     .oadBr       HO:-EAP-CLUD1.ciscolab.dk     .oadBr
	Configure tiple healbabling for a specific clustered role, add one or more servers (nodes), or copy roles from a cluster noning Windows Server 2016 or supported previous versions of Windows Server. Configure tiple. Windows Duster Mark Althole Copy Outer Roles Copy Outer Roles Custor-buser Lipdatros	More Actions         Configure Cluster Quorum Settings           View         Copy Cluster Roles           @ Refresh         Shut Down Cluster           Properties         Destroy Cluster           Help         Move Core Cluster Resources           Cluster-Anare Updating         Cluster-Anare Updating
	O     Navigate             Bata           Bita            Bita            Bita            Bita            Bita           Bita           Bita           Bita           Bita          Bita          Bita          Bita           Bita          Bita          Bita          Bita          Bita          Bita          Bita          Bita          Bita          Bita          Bita          Bita          Bita          Bita          Bita          Bita          Bita          Bita          Bita          Bita          Bita          Bita            Bita          Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita           Bita	iputer
This action starts a wizard that guides you through	What Machine Quater WMI  Conne  Conne Conne  Conne Conne Conne Conne Conne Conne Conne Conne Conne Conne C	·

Step 3 The Configure Cluster Quorum wizard is launched. Click Next.

n Regional Configure Cluster Quorum Wizard		
Before Yo	bu Begin	
Before You Begin	This winned as idea you through particular the property for your fully and when The relevant shorter	
Select Quorum Configuration Option	This wizard guides you through configuring the quorum for your failover cluster. The relevant cluster elements are the nodes and, in some quorum configurations, a disk witness or file share witness. The quorum configuration affects the availability of your cluster. A sufficient number of cluster elements	
Select Quorum Witness	must be online, or the cluster "loses quorum" and must stop running. Note that the full function of a cluster depends not only on the quorum, but also on the capacity of each node to support the clustered roles.	
Confirmation	Important: Run this wizard only if you have determined that you need to change the quorum configuration	
Configure Cluster Quorum Settings	for your cluster. When you create a cluster, the cluster software automatically chooses a quorum configuration that will provide the highest availability for your cluster.	
Summary	To continue, click Next.	
	Fallover Cluster Quorum and Witness Configuration Options         □       Do not show this page again	
	Next > Cancel	]

Step 4 In the Select Quorum Configuration Option screen, choose Select the quorum witness. Click Next.

I

Configure Cluste	er Quorum Wizard	×
Select Q	uorum Configuration Option	
Before You Begin Select Quorum Configuration Option Select Quorum Witness Configure Cluster Quorum Settings Summary	Select a quorum configuration for your cluster.         Use default quorum configuration         The cluster determines quorum management options, including the quorum witness.         Select the quorum witness         You can add or change the quorum witness. The cluster determines the other quorum management options.         Advanced quorum configuration         You determine the quorum management options, including the quorum witness.         Tealover Cluster Quorum and Witness Configuration Options          Next >         Cancel	
Configuration Option Select Quorum Witness Confirmation Configure Cluster Quorum Settings	<ul> <li>The cluster determines quorum management options, including the quorum witness.</li> <li>Select the quorum witness You can add or change the quorum witness. The cluster determines the other quorum management options.</li> <li>Advanced quorum configuration You determine the quorum management options, including the quorum witness.</li> </ul>	

**Step 5** In the Select Quorum Witness screen, choose Configure a file share witness. Click Next.

Configure Cluste	r Quorum Wizard	×
Select Q	uorum Witness	
Before You Begin Select Quorum Configuration Option Select Quorum	Select a quorum witness option to add or change the quorum witness for your cluster configuration. As a best practice, configure a quorum witness to help achieve the highest availability of the cluster.	
Witness	Adds a quorum vote of the disk witness	
Configure File Share Witness Confirmation	<ul> <li>Configure a file share witness</li> <li>Adds a quorum vote of the file share witness</li> </ul>	
Configure Cluster Quorum Settings	O Configure a cloud witness Adds a quorum vote of the cloud witness	
Summary	O Do not configure a quorum witness	
	Failover Cluster Quorum and Witness Configuration Options	
	< Previous Next > Cancel	

**Step 6** In the **Configure File Share Witness** screen, specify the path to the File Share. Click **Next**.

🛍 Configure Cluster	Quorum Wizard	×
Configure	e File Share Witness	
Before You Begin Select Quorum Configuration Option	Please select a file share that will be used by the file share witness resource. This file share must not be hosted by this cluster. It can be made more available by hosting it on another cluster.	
Select Quorum Witness	File Share Path:	
Configure File Share Witness	\\HX-EAP-01.ciscolab.dk\DS1_8K Browse	]
Confirmation		
Configure Cluster Quorum Settings		
Summary		
	< Previous Next > Cancel	

**Step 7** In the **Confirmation** screen, click **Next**.

🐮 Configure Cluster	r Quorum Wizard	×
Configure	e Cluster Quorum Settings	
Before You Begin	Please wait while the quorum settings are configured.	
Select Quorum Configuration Option		
Select Quorum Witness		
Configure File Share Witness		
Confirmation		
Configure Cluster Quorum Settings		
Summary		
	Cancel	]

**Step 8** In the **Summary** screen, click **Finish** to close the wizard.

**Step 9** Alternatively, you can configure a file share witness using Windows PowerShell.

- a) Open a Windows PowerShell console as an administrator.
- b) Type Set-ClusterQuorum -FileShareWitness <File Share Witness Path>
- c) You should now see the File Share Witness configured for your cluster. When you navigate to your File Share Witness share you will see a folder created for your cluster.

<ul> <li>Cluster Core Resources</li> </ul>			
Name	Status	Information	^
Name: HX-EAP-CLU01	Online		
Cluster Infrastructure			
🗟 Virtual Machine Cluster WMI	Online		
File Share Witness			
🔜 File Share Witness (\\HX-EAP-01.ciscolab.dk\DS1_8K)	( Online		~
<			>

Post Installation

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### Checking the Windows Version on the Hyper-V Host

Follow the steps below to check the version of Windows installed.

- **Step 1** Log into the Hyper-V server as an administrator or HX Service Administrator account.
- **Step 2** In Powershell, run the following command:

C:\Users\adminhyperflex> Get-ItemProperty 'HKLM:\SOFTWARE\Microsoft\Windows NT\CurrentVersion'

**Step 3** Verify the installed Windows version in the result of the command output.

Following is a sample output if you have installed Windows Server 2016.

```
ProductName : Windows Server 2016 Datacenter
ReleaseId : 1607
SoftwareType : System
UBR : 447
```

Following is a sample output if you have installed Windows Server 2019.

```
ProductName : Windows Server 2019 Datacenter
ReleaseId : 1809
SoftwareType : System
UBR : 107
```

- **Step 4** In addition, verify the following:
  - For Windows Server 2016 Datacenter Core and Desktop Experience, the Windows 2016 ISO image should be Update Build Revision (UBR) 1884 at a minimum. If not, upgrade the HyperV servers to the latest update. Refer to the *Microsoft Knowledge Base article: KB4467691*.
  - If you are using a standalone Hyper-V manager outside HX nodes, then the Hyper-V management server should have a version UBR number greater than 1884. You must upgrade the Hyper-V management server if the version is 1884 or earlier.
  - For Windows Server 2019 Desktop Experience, the Windows 2019 ISO image should be Update Build Revision (UBR) 107 at a minimum.

## Validate Failover Cluster Manager

Step 1 Open the Failover Cluster Manager and click Validate Cluster and then click Next.

Witness: File Share Witness (\\H	PER4-SMB hx.local\chris_quor	um)	Actions		
			HY	PER4-FO.hx.local	
<ul> <li>Configure</li> </ul>			-	Configure Role	
Configure high availability for a spe 2016 or supported previous version		more servers (nodes), or copy roles from a cluster running Windows Server	-	Validate Cluster	
To Configure Role		Ealover cluster topics on the Web	27	View Validation Report	
Validate Ouster			2	Add Node	
Add Node			1	Close Connection	
Copy Cluster Roles			Ð	Reset Recent Events	
P Ouster-Aware Updating				More Actions	
				View	
<ul> <li>Navigate</li> </ul>			a	Refresh	
Boles	R Nodes	R Storage		Properties	
<ul> <li>Networks</li> </ul>	Custer Events	(C) 200.020	2	Help	

Step 2

**p 2** Select **Run all tests** (**recommended**) and then click **Next**.

💐 Validate a Config	guration Wizard	×
Testing	Options	
Before You Begin Testing Options Confirmation Validating Summary	Choose between running all tests or running selected tests. The tests examine the Cluster Configuration, Hyper-V Configuration, Inventory, Network, Storage, and System Configuration. Microsoft supports a cluster solution only if the complete configuration (servers, network, and storage) can pass all tests in this wizard. In addition, all hardware components in the cluster solution must be "Certified for Windows Server 2016." Run all tests (recommended) Run only tests I select <u>More about cluster validation tests</u>	
	< Previous Next > Cancel	

After clicking Next, the validation procedure starts running.

**Step 3** Verify that there are no validation failures. If there are any validation failures, click **View Report** and address any results that show **Failed**.

Validate a Config	uration Wizard			
Validatin	Ig			
ore You Begin ting Options	The following v amount of time	ralidation tests are running. Depending on the test select	tion, this may take a significa	ant
nfirmation	Progress	Test	Result	^
	100%	List Environment Variables	The test passed.	
lidating	100%	List Host Guardian Service client configuration	The test passed.	
mmary	100%	List Memory Information	The test passed.	
	100%	List Operating System Information	The test passed.	
	100%	List Plug and Play Devices	The test passed.	
	100%	List Running Processes	The test passed.	
	100%	List Services Information	The test passed.	
	0%	List Software Updates	Test is currently ru	nniı 🗸
	<			>

### **Deploying VMs on a Hyper-V cluster**

Deploying VMs on a Hyper-V cluster is a multi-step process as described below:

- Install Remote Server Administration Tools (RSAT) on the management station/host—You must install administrator tools such as Hyper-V Manager and Failover Cluster Manager as features Server Manager. For more information see, Install RSAT tools on the Management Station or Host, on page 14.
- Manage VMs—Connecting to all the Hyper-V nodes in the HX cluster and creating new VMs can be accomplished using either Hyper-V Manager or Failover Cluster Manager. For more information see, Creating VMs using Hyper-V Manager, on page 19.

### Install RSAT tools on the Management Station or Host

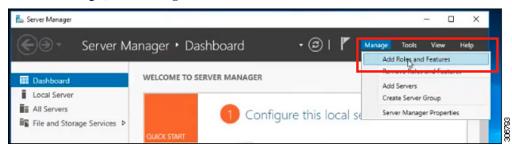
To install RSAT, complete the following steps:

#### Before you begin

RSAT tool installation requires the following:

- A server from which you can install, manage, monitor the VMs on the Hyper-V HX cluster.
- · Administrator tools such as Hyper-V Manager, FCM, PowerShell, SCVMM.

### Step 1 In Server Manager, click Manage and then select Add Roles and Features. The Add Roles and Features wizard appears.



**Step 2** In the **Before you begin** page, click **Next**.

<ul> <li>Server Ma</li> </ul>
board Server dd Roles and Features Wizard efore you begin Installation Type Server Selection Server Roles Features Continuation Results

- Step 3 In the Select installation type page, select Role-based or feature-based installation. Click Next.
- **Step 4** In the **Server Selection** page, select your server from the list. This server belongs to the same domain as the HX cluster. Click **Next**.

	anager 🖲 Dashboard 🛛 🔹 🕫 🖉 Manage Tools View
Dashboard	WELCOME TO SERVER MANAGER
ocal Server	
Add Roles and Features Wizard	- 🗆 🗙
Select destination	SELACION SERVER Honolulu MOHVDOM LOCAL
Before You Begin	Select a server or a virtual hard disk on which to install roles and features.
Installation Type	<ul> <li>Select a server from the server pool</li> </ul>
Server Selection	Select a virtual hard disk
Server Roles	Server Pool
Features	
	Filter:
	Name IP Address Operating System
	Honolulu HXHVDOM LO 10.29.149.224 Microsoft Windows Server 2016 Datacenter Evaluation
	1 Computer(s) found
	This page shows servers that are running Windows Server 2012 or a newer release of Windows Server,
	and that have been added by using the Add Servers command in Server Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown.

- **Step 5** In the **Select Roles** page, click **Next**.
- Step 6
   In the Features page, select Remote Server Administration Tools > Feature Administration Tools > Failover

   Clustering Tools, and Role Administration Tools > Hyper-V Management Tools > Failover Clustering Tools. Click Next.

	nager • Dashboard • 📀	Manage Tools View Help
Dashboard ocal Server	WELCOME TO SERVER MANAGER	
Add Roles and Features Wizard		- 🗆 X
Select features		DESTINATION SERVER Honoulu HXHVDOMLDCAL
Before You Begin Installation Type	Select one or more features to install on the selected server. Features	Description
Server Selection Server Roles Features	Quality Windows Audio Video Experience Remote Assistance Remote Assistance	Failover Clustering Tools include the Failover Cluster Manager snap-in, the Cluster-Aware Updating interface, and the Failover Cluster
Confirmation Results	Remote Differential Compression     Remote Differential Compression     Remote Server Administration Tools     SMTP Server Tools     BitLocker Drue Keryption Administration L     BITS Server Extensions Tools	module for Windows PowerShell. Additional tools are the Failover Cluster Automation Server and the Failover Cluster Command Interface.
	Latac enterter arguing LLDP 1005     Set advance (Chattering Tool)     Set advance (Chatter Management Tools     Set advance (Chatter Module for Windows Pr     Set advance Advance Couple     De Address Management (IPMM Client	
	P Address Management (pwW) Client     Rek Administration Tools     P Address Management Tools     P Proce V Management Tools     P Hyper-V GUI Management Tools     P Hyper-V Module for Windows PowerSn	

**Step 7** In the **Confirmation** page, click **Install**. Leave the **Restart the destination server if required** checkbox unchecked.

Step 8 The Installation Progress page displays installation progress. When installation completes, click Close to exit the wizard.

Server Ma	anager 🖲 Dashboard 🛛 🛛 😨 🛛 🎢 Manage Tools View He
Dashboard	WELCOME TO SERVER MANAGER
Local Server	
Add Roles and Features Wizard	X
Installation progre	ESS Bestination server
installation progra	-55 HONORILHARYDDINLUCAL
Before You Begin	View installation progress
	Feature installation
	Installation succeeded on Honolulu.HXHVDOMLOCAL
	Remote Server Administration Tools
Confirmation	Feature Administration Tools
Results	Failover Clustering Tools Failover Cluster Management Tools
	Failover Cluster Module for Windows PowerShell
	Role Administration Tools
	Hyper-V Management Tools Hyper-V Module for Windows PowerShell
	Hyper-V GUI Management Tools
	You can close this wizard without interrupting running tasks. View task progress or open this
	page again by clicking Notifications in the command bar, and then Task Details.
	Export configuration settings

### Managing VMs using Hyper-V Manager

#### **Connecting to Hyper-V Nodes**

Complete the following steps to connect to all the Hyper-V nodes in the Hyper-V HX Cluster.

- Step 1 Open the Server Manager dashboard and click Tools. Then, click Hyper-V Manager. The Hyper-V Manager console appears.
- Step 2 In the left pane, select Hyper-V Manager and click Connect to Server....
- **Step 3** In the **Select Computer** dialog box, select **Another computer** and type in the name of the Hyper-V node (for example, HXHV1) that belongs to the Hyper-V cluster. Click **OK**.
- **Step 4** Repeat all of the above steps for each node in the Hyper-V HX cluster.
  - Note For a fresh installation, the storage controller virtual machine (StCtlVM) in the only virtual machine that appears in **Virtual Machines** pane in the **Hyper-V Manager** console. Virtual machines appear in the list under this pane as they are added in each node. For more information on how to create VMs using Hyper-V Manager, see: Creating VMs using Hyper-V Manager, on page 19

### **Creating VMs using Hyper-V Manager**

Complete the following steps to create VMs using Hyper-V Manager.

Step 1	Open Hyper-V Manager.
Step 2	Select the Hyper-V server, and right click and select <b>New</b> > <b>Create a virtual machine</b> . The <b>Hyper-V Manager New Virtual Machine</b> wizard displays.
Step 3	In the Before you Begin page, click Next.
Step 4	In the <b>Specify Name and Location</b> page, enter a name for the virtual machine configuration file. The location for the virtual machine click <b>Next</b> .
Step 5	In the Specify Generation page, choose either Generation 1 or Generation 2.
Step 6	In the Assign Memory page, set the start memory value 2048 MB. Click Next.
Step 7	In the <b>Configure Networking</b> page, select a network connection for the virtual machine to use from a list of existing virtual switches.
Step 8	In the <b>Connect Virtual Hard Disk</b> page, select <b>Create a Virtual Hard Disk</b> page, and enter the name, location and size for the virtual hard disk. Click <b>Next</b> .
Step 9	In the Installation Options, you can leave the default option Install an operating system later selected. Click Next.
Step 10	In the Summary page, verify that the list of options displayed are correct. Click Finish.
Step 11	In Hyper-V Manager, right-click the virtual machine and click Connect.
Step 12	In the Virtual Machine Connection window, select Action > Start.

### **Managing VMs using Failover Cluster Manager**

### **Creating VMs using Failover Cluster Manager**

Complete the following steps to connect to the Windows Failover cluster (installed along with the Hyper-V HX cluster) and create new VMs using Failover Cluster Manager.

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**Note** By default, the Failover Cluster Manager will assign a default name for the 4 networks created. It is recommended to rename these network names.

#### What to do next

To enable redirection of datastore access requests from outside the HX cluster boundary through the management path, add the following entry to the hosts file on the (remote) machine running Hyper-V manager, Failover Cluster Manager, or SCVMM Console. For example, edit C:\Windows\System32\drivers\etc\hosts and add:

```
cluster_mgmt_ip \\smb_namespace_name\datastore_name
```

```
10.10.100 \\hxcluster.company.com\ds1
```

### **Opening Data Path Access to the SCVMM Host**

To open data path access to the SCVMM host, complete the following steps:

### Before you begin

Beginning with Cisco HX Release 4.5 the FixScymmAccess.py script must be invoked with python3.

Note FixScvmmAccess.py requires root access.

**Step 1** Launch a secure shell login session to the cluster management IP address.

**Step 2** Determine the ensemble members in the cluster by reviewing the following information:

```
root@ucs900scvm:~# cat /etc/springpath/storfs.cfg | grep crmZKEnsemble
crmZKEnsemble=10.107.48.14:2181,10.107.48.15:2181,10.107.48.16:2181
root@ucs900scvm:~#
```

- **Step 3** From the current SSH login session, launch an SSH session to any of the IP addresses displayed for the **crmZKEnsemble** parameter.
- Step 4 Run the following script without any additional parameters: python3 /opt/springpath/storfs-hyperv/FixScvmmAccess.py The script prompts you to enter the SCVMM IP address.
- **Step 5** Add the SCVMM IP address and exit the SSH session.

# **Configuring HyperFlex Share to SCVMM**

#### Before you begin

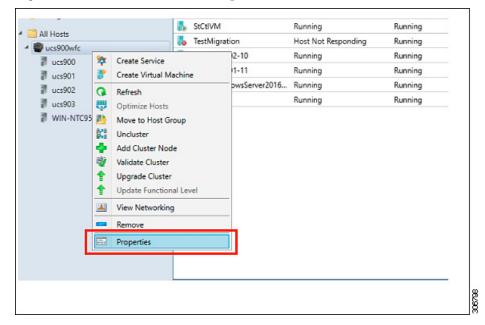
Edit the /etc/hosts file on the host running the VMM admin console to resolve the **smb** access point to the cluster management IP address of HyperFlex cluster. This IP address is typically used to launch Cisco HX Connect.

```
The complete path is : C:\Windows\System32\drivers\etc
Open the "hosts" file in the above directory in Notepad or any other text editor and add
the following entry in the bottom :
<CMIP> <smb_share_namespace>
CMIP will be the Cluster Management IP which is usually used to open HX connect UI.
For example,
10.10.10.1 hxhvsmb.example.com
```



**Note** For SCVMM Run As account, it is recommended to use **hxadmin** (or any other Domain Admin account which has **FULL** permissions) for the corresponding HyperFlex Organization Unit (OU) in the Active Directory (AD).

- Step 1 Add the cluster to System Center Virtual Machine Manager (VMM).
- **Step 2** In the VMM console, go to **Fabric** > **Servers** > **All Hosts**.
- **Step 3** Right-click on the cluster and select **Properties**.



**Step 4** In the **Properties** window, right-click **File Share Storage** > **Add File Storage**.

Status Available Storage file Share Storage Shared Volumes Virtual Switches	The following file File Share Path Add File Share Specify a valid deployment		-	locations for VM Classification		pace	tes in this cluster: Total Capacity
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/irtual Switches			bath to use it				
	File share path:	\\hyperv-team.	w-ad1.local\ds1		۷		
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				Rep	air	Add	Remove

**Step 5** When mapping completes, the share is added as shown in the screenshot below.

ucs900wfc.HV-AD1.local Pr	roperties					×
General	File Share Storage					
Status	The following file shares will be available	ilable as storage	locations for VMs	deployed to no	des in this cluster:	
	File Share Path	Access Status	Classification	Free Space	Total Capacity	
Available Storage	\\hyperv-team.hv-ad1.local\ds1	0	Remote Storage	897.12 GB	1,024.00 GB	
File Share Storage						٦
Shared Volu File Share Storage	1					
Virtual Switches						
Custom Properties						
			Repai	r Add	Remove	
View Script				OK	Cancel	

**Step 6** Click **OK** and exit VMM. The HyperFlex Share is now mapped and VMs can be created on this share using SCVMM.

### **Re-enabling Windows Defender**

Run the following commands to re-enable Windows Defender.

#### Install Defender from PowerShell

Install-WindowsFeature -Name Windows-Defender

#### (Optional) Install Defender GUI from PowerShell

Install-WindowsFeature -Name Windows-Defender-GUI

### VM Migration between Hosts

#### Before you begin

Follow the steps below to perform VM migration between a standalone host and an HX Hyper-V host. Prior to performing this procedure, make sure that your environment meets the following prerequisites:

- The source and destination computers either belong to the same Active Directory domain or belong to domains that trust each other.
- In Failover Cluster Manager, configure Live Migration settings on both the source and destination Hyper-V hosts.
- Step 1 Open Hyper-V Manager.
- **Step 2** In the navigation pane, select, **HXHVINFRA2**.
- **Step 3** In the Action pane, click **Hyper-V Settings** > Live Migrations.
- **Step 4** In the Live Migrations pane, check Enable incoming and outgoing live migrations.
- **Step 5** Under **Incoming live migrations**, select **Use the IP addresses for live migration**. Click **Add**, and then click **OK**. This opens the Move Wizard.
- **Step 6** Use the wizard pages to choose the type of move, destination server, and options.
- Step 7 On the Summary page, review your choices and then click Finish.

# **Testing Upstream Failover for Storage Data Network**

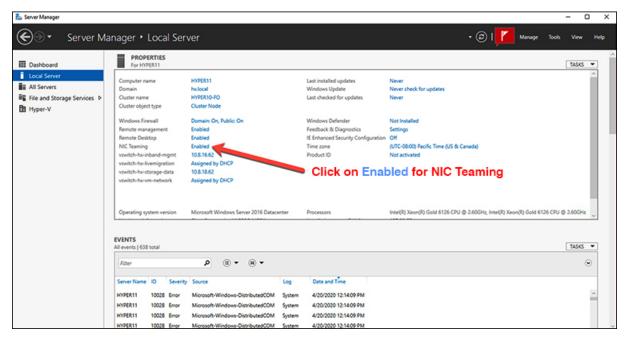
Configure upstream (top-of-rack (ToR)) so storage data network jumbo frames communicate between FI-A and FI-B.



**Note** In some cases 1500 based frames are used because you are not able to configure ToR for jumbo frames as the cluster was previously configured to use 1500 sized frames. The ping test enables you to test basic 1500 frame connectivity across the ToR.

Step 1 Log into a single Hyper-V Host as HX Service account.

- Step 2 Open Server Manager > Local Server.
- Step 3 Click on Enabled for NIC Teaming.



**Step 4** Right mouse click on storage-data-a and select **Disable**.

ADAPTERS AND	INTERFACE	S	TASKS
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hv-livemigrate-b	40 Gb	ops 💽	Standby
▲ team-hx-sto	orage-data (	2)	
storage-data-a	40 Gb	ops 🛈	Add to New Team
storage-data-b	40 Gb	ops 🛈	
Name 🔷	Sent	Received	Disable
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Packets:	7,709	8,259	9
Packets discarded:	0	c	0
Bytes/Second:	181,740	175,152	2
Packets/Second:	455	478	8 Activa

This forces the storage-data-b interface on FI-B to become the active path for data.

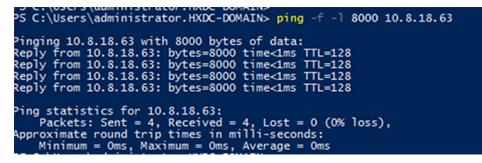
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ADAPTERS AND IN	ITERFACES	TASKS
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storage-data-a	Disabled	8 Faulted Not found
storage-data-b	40 Gbps	Active Active storage data path

Test jumbo pings from local powershell window to remote host storage data ip addresses. For example:

Step 5

# ping -f -l 8000 <data ip address of other hosts>



**Step 6** Reset the storage-data-a team interface to Active by right mouse-clicking and selecting **Enable**.

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storage-data-a	Properties			
storage-data-b	40 Gbps	<li>Stand</li>	lby	~

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hv-livemigrate-b	40 Gbps	<li>Standby</li>		Original Co	onfiguration	
▲ team-hx-stora	ge-data (2)			onginal oo	guianon	
storage-data-a	40 Gbps	<li>Active</li>				
storage-data-b	40 Gbps	<li>Standby</li>	у			~

# **Adding VLANs after Installation**

To add a VLAN to your cluster after installation is complete, perform the following:

Step 1 In Cisco UCS Manager, navigate to LAN > LAN Cloud > VLANs:

	- LAN / LAN	Cloud / VLAN									
= LAN = LAN Cloud		ced Filter + D	oot en	et							
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<ul> <li>LAN Pin Groups</li> </ul>	VLAU	he-inband-cim.	. 570		Lan	Ether	No	None		HyperFex	
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**Step 2** To add a new VLAN, click on the **Add** sign at the bottom of the VLAN table:

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VLAN ucs1110-tw-liverrigrate (540)	Name			• 10	Type	Transport	Native.	VLAN Sharing	Primary VLAN Name	Multicast Policy Name	
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VLAN ucs1110-um-network440 (440)	VLAN ucs1	118-to-live	migrate (540	540	Lan	Ether	No	None		HyperFiex	
VLAN ucs1110-um-network441 (441)	VLAN ucs1	118-tx-stor	age-data (3	80 340	Lan	Ether	No	None		HyperFlex	
VLAN ucs1118-tw-inbend-cimc (\$70)	VLAN uss1	118-ba-who	ntion (540)	540	Lan	Ether	No	None		HyperFlex	
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Step 3 Enter the VLAN Name/Prefix and VLAN IDs:

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VLAN vie-restand-101/101         0         0         0         0         Name VLAN         Yes         Factor D         Deal           VLAN vie-restand-101/101         Name VLAN         Name VLAN         Yes         Figure         Water           VLAN vie-restand-101/101         Acctions         Figure         VLan         Figure         Water           VLAN vie-restand-101/101         Acctions         -         -         -         -         -           VLAN vie-restand-101/101         Acctions         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         -         - <td< th=""><th></th><th></th><th>8 0 0 0</th><th>Name : 4</th><th>iefault .</th><th>VLA</th><th>N 10 : 1</th><th></th><th></th><th></th></td<>			8 0 0 0	Name : 4	iefault .	VLA	N 10 : 1			
V.AV ver-resource 42 (ARI) V.AV ver-resource 42 (ARI)			0 0 0 0	Native VLAN		Fatz	Dual			
VLAV vr. vestovačKJ (2019) Autore VLAV vr. vestovačKJ (2019) VLAV vr. vestovačKJ (2019)					-					
KAN on respect (2)			Actiona			2				
Aparta (Sectore) (Sectore)										
		Apparces								

**Step 4** Tag the new VLAN on the required Hyper-V VMs.

• There is no additional Hyper-V networking configuration needed.