

Configuring VSM Backup and Recovery

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Information About VSM Backup and Recovery

You can use the VSM backup and recovery procedure to create a template from which the VSMs can be re-created in the event that both VSMs fail in a high availability (HA) environment.



Note

We recommend that you do periodic backups after the initial backup to ensure that you have the most current configuration. See the Performing a Periodic Backup section for more information.

Guidelines and Limitations

VSM backup and recovery has the following configuration guidelines and limitations:

- Backing up the VSM is a onetime task.
- Backing up the VSM requires coordination between the network administrator and the server administrator.
- These procedures are not for upgrades and downgrades.
- These procedures require that the restoration is done on the VSM with the same release as the one from which the backup was made.
- Configuration files do not have enough information to re-create a VSM.

Configuring VSM Backup and Recovery

This section includes the following topics:

- Performing a Backup of the VSM
- Performing a Periodic Backup
- · Recovering the VSM



Be aware that Cisco NX-OS commands might differ from the Cisco IOS commands.

Backing Up the VSM

This section includes the following topics:

- Performing a Backup of the VSM
- Performing a Periodic Backup

Performing a Backup of the VSM

This section describes how to create a backup of the VSM.

```
Before You Begin
```

Before beginning this procedure, you must know or do the following:

- If the VSM is on a Virtual Ethernet Module (VEM) host, you must configure the management VLAN as a system VLAN.
- Enter the copy running-config startup-config command at the VSM before beginning this procedure.

Procedure

Step 1 Open the vSphere Client.

The vSphere Client window opens as displayed in the following illustration.



E C C C C C C C C C C C C C	L3 Getting Started Sur What is a Datac	nmary Virtual Mac	thines Hosts IF	Pools Performa
🖂 📕 10.78.111.194	Power	×	Power On	Ctrl+B -
BL1-44-VSM-	Guest	•	Power Off	Ctrl+E
☐ 0-0-1 ☐ gen2-e1000- ☐ gen2-e1000-	Snapshot Open Console	•	Suspend Reset	Ctrl+Z Ctrl+T

Step 2 In the left navigation pane, right-click the standby VSM. A drop-down list is displayed.

Step 3 Choose **Power > Power Off**.

The action is displayed in the Clone to Template Window.

Figure 2: Clone to Template Window



- **Step 4** In the left navigation pane, right-click the standby VSM. A drop-down list is displayed.
- **Step 5** Choose **Template > Clone to Template**.

The Clone Virtual Machine to Template window opens.

Figure 3: Clone Virtual Machine to Template Window

Name and Location Specify the template r	name and location	
Name and Location → Host / Cluster Datastore Ready to Complete	Template Name: template-VSM Template names can contain up to 80 characters and they must be unique within each inventory folder. Template Inventory Location: Image: VC Image	-
Help	< Back Next >	Cancel

- **Step 6** In the Template Name field, enter a name.
- **Step 7** In the Template Inventory Location pane, choose a location for the template.
- Step 8 Click Next.

The Choosing the Host Window opens.

Figure 4: Host Window

Clone Virtual Mach Host / Cluster On which host or du	ine to Template ster do you want to store this template?		
Name and Location Host / Cluster Specific Host Datastore Ready to Complete	BL1 10.78.111.186 10.78.111.194		
	Conpatibility: Valdation succeaded		
Help	< Bac	k Next >	Cancel

Step 9 Choose the host on which the template will be stored.

Step 10 Click Next.

The Choosing a Datastore window opens.

Figure 5: Choosing a Datastore Window

Same format as source		arrest St.					
		<u> </u>					
Select a datastore in which to store the files for the template:							
VM Storage Profile:		A					
Name	Drive Type	Capacity Provisioned	Free Type	Thin Provisioning	Ac 🔥		
datastore1 (1)	Unknown	460.75 GB 6.55 GB	454.20 GB VMFS3	Supported	Sir 🗸		
< ·					>		
Name	Drive Type	Capacity Provisioned	Free Type	Thin Provisioning	Ac		
<					>		
				Advanc	ed >>		
Compatibility:							
Validation succeeded							
	Select a datastore in wh VM Storage Profile: Name datastore1 (1) Select a datastore: Name Compatibility:	Select a datastore in which to store the fi VM Storage Prcfile: Name Drive Type datastore1 (1) Unknown Disable Storage DRS for this virtual Select a datastore: Name Drive Type Compatibility:	Select a datastore in which to store the files for the template: VM Storage Prcfile: Mame Drive Type Capacity Provisioned datastore1 (1) Unknown 460.75 GB 6.55 GB In Image: Disable Storage DRS for this virtual machine Select a datastore: Name Drive Type Capacity Provisioned Image: Compatibility:	Select a datastore in which to store the files for the template: VM Storage Profile: 	Select a datastore in which to store the files for the template: VM Storage Prcfile: Mame Drive Type Capacity Provisioned Free Type Thin Provisioning If Disable Storage DRS for this virtual machine Select a datastore: Name Drive Type Capacity Provisioned Free Type Thin Provisioning Advance Compatibility: Compatibility: Compatibility: Compatibility: Compatibility: Compatibility: Compatibility: Compatibility: Capacity Provisioned Compatibility: <		

- **Step 11** In the Select a format in which to store the virtual machine's virtual disks drop-down list, choose Same format as source.
- **Step 12** Choose a datastore.
- Step 13 Click Next.

The Confirming the Settings window opens.

Figure 6: Confirming the Settings Window

Virtual Machine to C	BL1-44-VSM-S
Name:	template-VSM
Folder:	BL1
Host/Cluster	10.78.111.194
Datastore:	datastore1 (1)
Disk Storage	Same format as source
Name:	template-VSM
Folder:	BLI
Host/Cluster	10.78.111.194
Datastore:	datastore1 (1)
Disk Storage	Same format as source
Folder:	BL1
Host/Cluster	10.78.111.194
Datastore:	datastore1 (1)
Disk Storage	Same format as source
Host/Cluster	10.76.111.194
Datastore:	datastore1 (1)
Disk Storage	Same format as source
Detastore:	datastore1 (1)
Disk Storage	Same format as source
Disk Storage	Same format as source
2	 Creation of the virtiguest OS on the VP

- **Step 14** Confirm the settings for the new virtual machine and click Finish. The backup template is created and appears under the Virtual Machines tab.
- **Step 15** The Template Virtual Machine window opens. The template creation is complete.



Figure 7: Template Virtual Machine Window

Performing a Periodic Backup

This section describes how to back up the active VSM after the initial backup of the standby VSM has been performed.

Before You Begin

The following lists some instances when you should run this procedure:

- · You have performed an upgrade.
- You have made a significant change to the configuration.

Procedure

Enter the command copy running-config scp://root@10.78.19.15/tftpboot/config/ to back up the VSM.

Example:

```
switch# copy running-config scp://root@10.78.19.15/tftpboot/config/
Enter destination filename: [switch-running-config]
Enter vrf (If no input, current vrf 'default' is considered):
The authenticity of host '10.78.19.15 (10.78.19.15)' can't be established.
RSA key fingerprint is 29:bc:4c:26:e3:6f:53:91:d4:b9:fe:d8:68:4a:b4:a3.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '10.78.19.15' (RSA) to the list of known hosts.
root@10.78.19.15's password:
switch-running-config 100% 6090 6.0KB/s 00:00
switch#
```

Recovering the VSM

This section describes how to deploy a VSM by using the backup template. This section includes the following topics:

- · Deploying the Backup VSM VM
- · Erasing the Old Configuration
- · Restoring the Backup Configuration on the VSM

Deploying the Backup VSM VM

This section describes how to deploy the backup VSM VM when the primary and secondary VSMs are not present.



While deploying the VSM VM, do not power it on.

Procedure

Step 1 Open the vSphere Client.

The vSphere Client window opens as displayed in the following illustration.

Figure 8: vSphere Client Window

☐	P VC ∃ <u>m</u> BL1 □ <u>K</u> 10.78.111.186		VSM-Primary-f	rom-template Summary Re	source Allocation Pa	erformance 🗸 Task
 ➡ BL1-44-V5M-P ➡ e-2 ➡ e-3 ➡ 10.78.111.194 ➡ BL1-44-V5M-5 			What is a V A virtual ma	irtual Machin	e? vare computer that	at, like a
🔂 bi-e-1		Power		•	Power On	Ctrl+B
 ☐ gen2-e1000-1 ☐ gen2-e1000-2 ☐ VSM-Primary-fr ★ line general 	•	Guest Snapshot Open Cor	nsole	•	Power Off Suspend Reset	Ctrl+E Ctrl+Z Ctrl+T or
	₽	Edit Settir Migrate	ngs		Shut Down Guest Restart Guest	Ctrl+D O Ctrl+R
	28	des.		al r	nachines run on l	hosts or

- **Step 2** In the left navigation pane, choose the host of the standby VSM.
- **Step 3** Click the Virtual Machines tab.
- **Step 4** Right-click the template_VSM.
- **Step 5** Choose Deploy Virtual Machine from this Template.

The Deploy Template Wizard window opens.

Figure 9: Deploy Template Wizard Window

Deploy Template	
Name and Location Specify a name and lo	cation for this virtual machine
Name and Location Host / Cluster Resource Pool Storage Guést Customization Ready to Complete	Name: VSM-Primary-from-template Virtual machine (VM) names may contain up to 80 characters and they must be unique within each vCenter Server VM folder. Inventory Location: P VC P UC P
Help	< Back Next > Cancel

- **Step 6** In the Name field, enter a name for the VSM.
- **Step 7** In the Inventory Location pane, choose a cluster.
- Step 8 Click Next.

The Choosing a Host Window opens.

Figure 10: Choosing a Host Window

🕏 Deploy Template		
Host / Cluster On which host or clus	ter do you want to run this virtual machine?	
Name and Location Host / Cluster Specific Host Resource Pool Storage Guest Customization Ready to Complete	BL1 10.78.111.186 10.78.111.194	
	Compatibility: Validation succeeded	



Step 10

Example: Click Next. The Choosing a Datastore window opens.

Figure 11: Choosing a Datastore Window

	Delect a furnación whith	to store the virtu	al machine's virt	ual disks:				
Host / Cluster Storage	Same format as source			•				
Guest Customization	Select a datastore in which to store the virtual machine files:							
Ready to Complete	VM Storage Profile:			<u> </u>				
	Name	Drive Type	Capacity	Provisioned	Free	Туре	Thin Provisi	
	datastore1 (1)	Unknown	460.75 GD	10.55 GD	451.20 GD	VMESO	Supported	
	scale	Unknown	819.20 GB	334.97 GB	486.73 GB	NES	Supported	
	<							
	Name	Drive Type	Capacity Pr	ovisioned	Free	Туре	Thin Provisio	
	<						8	
							Advanced >>	
	Compatibility:							

- **Step 11** In the Select a format in which to store the virtual machine's virtual disks drop-down list, choose Same format as source.
- **Step 12** Choose a datastore

Step 13 Click Next.

The Guest Customization window opens. Make sure that the Power on this virtual machine after creation check box is not checked.

Figure 12: Guest Customization Window

🗿 Deploy Template		
Guest Customization Select the customization	n option for the guest operating system	
Name and Location Host / Cluster Storage Guest Customization User Settings Ready to Complete	 Power on this virtual machine after creation. Select the option to use in customizing the guest operating system of the new virtual machine. Do not customize Customize using the Customization Wizerd Customize using an existing customization specification Customize using an existing customization specification Customize using on existing customization specification Customize using in existing customize the customized in this configuration. Microsoft Vista (TM) and Linux guests with Logical Volume Manager are supported only for recent ESX host and VMware Tools versions. Refer to vCenter documentation for supported configurations. 	
Help	< Back Next >	Cancel



The Deploy Template - Ready to Complete window opens.

Figure 13: Guest Customization Window

Name and Location	Settings for the new v	irtual machine:
<u>Storage</u>	Template to Deploy	template-VSM
Guest Customization	Name:	VSM-Primary-from-template
Ready to Complete	Folder:	BL1
	Host/Cluster:	10.78.111.194
	Datastore:	datastore1 (1)
	Disk Storage:	Same format as source
].	
		de la companya de la
	Edit virtual hardwa	are (Experimental)

- **Step 15** Confirm the settings for the new virtual machine and click Finish. If the management VLAN is not available on the VEM, you must add the management interface to the vSwitch.
- Step 16 Right-click the newly deployed VM.
- **Step 17** Choose Edit Settings.

The Virtual Machine Properties window opens.

Figure 14: Guest Customization Window

- **Step 18** In the Hardware / Summary pane, choose Network adapter 1.
- **Step 19** Uncheck the Connect at power on check box.
- **Step 20** Choose Network adapter 2.
- **Step 21** In the Device Status area, uncheck the Connect at power on check box.
- Step 22 Click OK.

The Power On window opens.

Figure 15: Guest Customization Window



- **Step 23** Right-click the newly deployed VSM. A drop-down list appears.
- **Step 24** Choose Power > Power On. Deploying the backup VSM VM is complete.

Erasing the Old Configuration

This section describes how to erase the startup configuration of the newly deployed VSM.

Procedure

- **Step 1** Launch the virtual machine console of the newly deployed VSM.
- **Step 2** Set the redundancy role to primary by entering the following command:
- **Step 3** Copy the running configuration to the startup configuration by entering the following command:
- **Step 4** Erase the startup configuration by entering the following command:
- **Step 5** Reboot the primary and secondary VSMs by entering the following command:

This example describes how to erase the startup configuration of the newly deployed VSM

```
switch# {\bf reload} This command will reboot the system. (y/n)? [n] y
```

Restoring the Backup Configuration on the VSM

This section describes how to restore the backup configuration on the VSM.

Procedure

Step 1 When the VSM reboots, the System Admin Account Setup window opens.

Figure 16: System Admin Account Setup Window



Step 2 Enter and confirm the Administrator password.

Example:

```
---- System Admin Account Setup ----
Enter the password for "admin":
Confirm the password for "admin":
```

Step 3 Enter the domain ID.

Example:

Enter the domain id<1-4095>: 50

Step 4 Enter the HA role. If you do not specify a role, standalone is assigned by default.

Example:

Create another login account (yes/no) [n]: no

Step 7 Enter no when asked to configure a read-only SNMP community string.

Example:

Configure read-only SNMP community string (yes/no) [n]: no

Step 8 Enter no when asked to configure a read-write SNMP community string.

Example:

```
Configure read-write SNMP community string (yes/no) [n]: no
```

Step 9 Enter a name for the switch.

Example:

Enter the switch name:

Step 10 Enter yes, when asked to configure out-of-band management and then enter the mgmt0 IPv4 address and subnet mask.

Example:

```
Continue with Out-of-band (mgmt0) management configuration? [yes/no] [y]: yes
Mgmt0 IPv4 address: 172.28.15.152
Mgmt0 IPv4 netmask: 255.255.255.0
```

Step 11 Enter no when asked to configure the default gateway.

Example:

Configure the default-gateway: (yes/no) [y]: no

IPv4 address of the default gateway : 172.23.233.1

Step 12 Enter yes when asked to enable the Telnet service.

Example:

Enable the telnet service? (yes/no) [y]: yes

Step 13 Enter yes when asked to enable the SSH service, and then enter the key type and number of key bits. For more information, see the *Cisco Nexus 1000V InterCloud Security Configuration Guide*.

Example:

```
Enable the ssh service? (yes/no) [y]: yes
Type of ssh key you would like to generate (dsa/rsa) : rsa
Number of key bits <768-2048> : 1024
```

Step 14 Enter yes when asked to enable the HTTP server.

Example:

Enable the http-server? (yes/no) yes

Step 15 Enter no when asked to configure the NTP server

Example:

Configure NTP server? (yes/no) [n]: no

Step 16 Enter no when asked to configure the VEM feature level.

Example:

```
Vem feature level will be set to 4.2(1)SV1(4a).
Do you want to reconfigure? (yes/no) [n] no
The system now summarizes the complete configuration and prompts you to edit it.
```

Example:

```
The following configuration will be applied:
interface Mgmt0
ip address 172.28.15.152 255.255.255.0
no shutdown
vrf context management
ip route 0.0.0/0 10.78.111.11
no telnet server enable
ssh key rsa 1024 force
ssh server enable
feature http-server
svs-domain
svs mode L2
control vlan 1
packet vlan 1
domain id 1
```

Step 17 Enter no when asked if you would like to edit the configuration.

Example:

Would you like to edit the configuration? (yes/no) [n]: no

Enter SVS Control mode (L2 / L3) : L2 Enter control vlan <1-3967, 4048-4093> : 100 Enter packet vlan <1-3967, 4048-4093> : 101

Step 18 Enter yes when asked to use and save this configuration.

Example:

If you do not save the configuration now, then none of your changes are part of the configuration the next time the switch is rebooted. Enter yes to save the new configuration. This ensures that the kickstart and system images are also automatically configured.

Step 19 In the vSphere Client, right-click the VSM and choose Edit Settings.

The VSM Virtual Machine Properties window opens.

Figure 17: VSM Virtual Machine Properties Window

- **Step 20** In the Hardware/Summary pane, choose Network adapter 2.
- **Step 21** Check the Connect at power on check box.
- **Step 22** Log in to the VSM.
- **Step 23** Copy the backup configuration to the VSM bootflash by entering the following command:

Example:

```
switch# copy scp://root@10.78.19.15/tftpboot/backup/VSM-Backup-running-config
bootflash:
Enter vrf (If no input, current vrf 'default' is considered):
The authenticity of host '10.78.19.15 (10.78.19.15)' can't be established.
RSA key fingerprint is 29:bc:4c:26:e3:6f:53:91:d4:b9:fe:d8:68:4a:b4:a3.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '10.78.19.15' (RSA) to the list of known hosts.
root@10.78.19.15's password:
switch-running-config 100%
```

```
6090 6.0KB/s 00:00
switch#
```

Step 24 The Virtual Machine Properties window displays.

🕑 VSM-Primary-from-template -	Virtual Machine Propert	ies 🔲 🗖 🛛
Hardware Options Resources Profi	es vServices	Virtual Machine Version: 7
	Add Remove	Device Status
Hardware	Summary	Connect at power on
 Memory CPUs Video card VMCI device SCSI controller 0 Hard disk 1 CD/DVD drive 1 Network adapter 1 (edite Network adapter 2 Network adapter 3 	2048 MB 1 Video card Restricted LSI Logic Parallel Virtual Disk [] aipc-25 VM Network inband-26	Adapter Type Current adapter: E1000 MAC Address 00:50:56:87:0c:e6 Autometic Manual DirectPath I/O Gen. 2 Status: Not supported Network Connection Network label: ajpc-25
Help		OK Cancel

Figure 18: Virtual Machine Properties Window

- **Step 25** In the Hardware / Summary pane, choose Network adapter 1.
- **Step 26** In the Device Status area, check the Connect at power on check box.
- Step 27 Confirm that the VEMs are attached to the VSM by entering the command show module
- Step 28 Copy the backup configuration to the running configuration by entering the command copy bootflash:VSM-Backup-running-config running-config This step is necessary for features like ERSPAN/NFM.
- Step 29 Register the Cisco Nexus 1000V InterCloud VSM with Cisco Prime Network Services Controller. On the Cisco Nexus 1000V InterCloud VSM CLI, enter the following commands: switch# configure terminal

```
switch(config)# nsc-policy-agent
switch(config-nsc-policy-agent)# no policy-agent-image
switch(config-nsc-policy-agent)# no shared-secret
switch(config-nsc-policy-agent)# shared-secret Example_Secret123
```

switch(config)# policy-agent-image bootflash:///vsmcpa.3.0.1c.bin
switch(config)# exit

Step 30 Copy the running-configuration to the startup-configuration by entering the following command:

Step 31 Confirm that the VEMs are attached to the VSM by entering the command show module

Step 32 Create the standby VSM by using the OVA/OVF files to form an HA pair.

Feature History for VSM Backup and Recovery

This section provides the VSM backup and Recovery feature release history.

Feature Name	Releases	Feature Information
VSM Backup and Recovery	Release 5.2(1)IC1(1.1)	This feature was introduced.