



Configuring VSM Backup and Recovery

This chapter contains the following sections:

- [Information About VSM Backup and Recovery, on page 1](#)
- [Guidelines and Limitations, on page 1](#)
- [Configuring VSM Backup and Recovery, on page 2](#)

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 VM is a onetime task.
- Backing up the VSM VM 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.
- Cloning the Virtual Machine (VM) in powered ON state is not recommended.

Configuring VSM Backup and Recovery

This section includes the following topics:

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



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

Backing Up the VSM

This section provides information and procedure to back up the VSM on ESX and Cisco Nexus Cloud Services Platform. This section includes the following topics:

- [Backing Up the VSM on ESX Server, on page 2](#)
- [Exporting a Backup VSB Configuration on Cisco Nexus Cloud Services Platform Server, on page 10](#)

Follow the section based on your platform.

Backing Up the VSM on ESX Server

This section includes the following topics:

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

Performing a Backup of the VSM VM

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

Before you begin

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

- Ensure that you are on ESX platform. If you want to perform this procedure on Cisco Nexus Cloud Services Platform refer to [Exporting a Backup VSB Configuration on Cisco Nexus Cloud Services Platform Server, on page 10](#).
- 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.
- This procedure is required when there is a Certificate change, Extension key change, after an upgrade to a new release, and installation of the license.

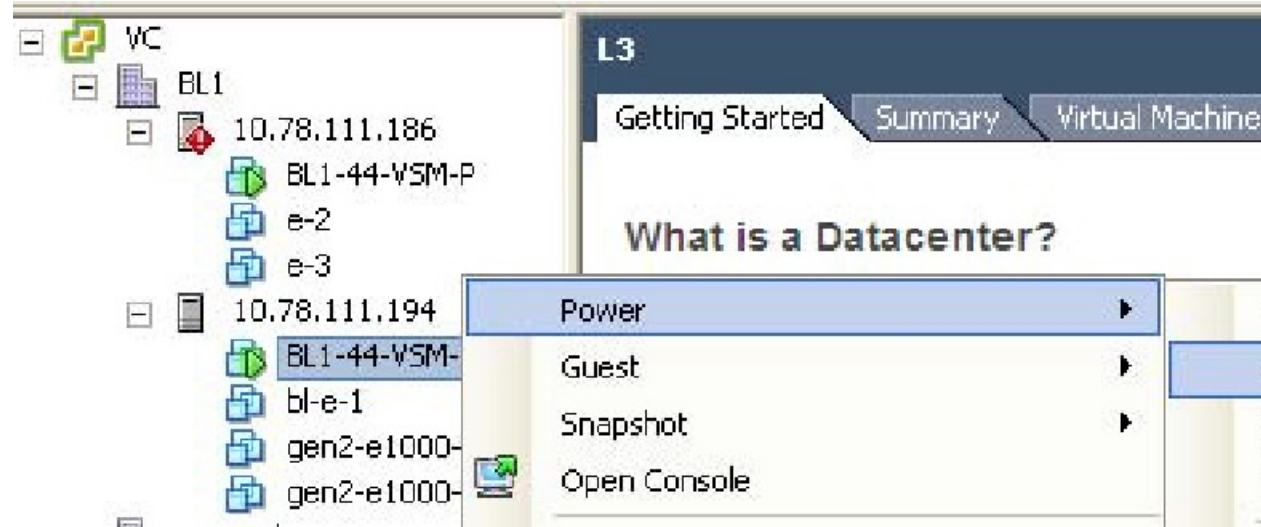
Procedure

Step 1

Open the vSphere Client.

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

Figure 1: vSphere Client Window



Step 2

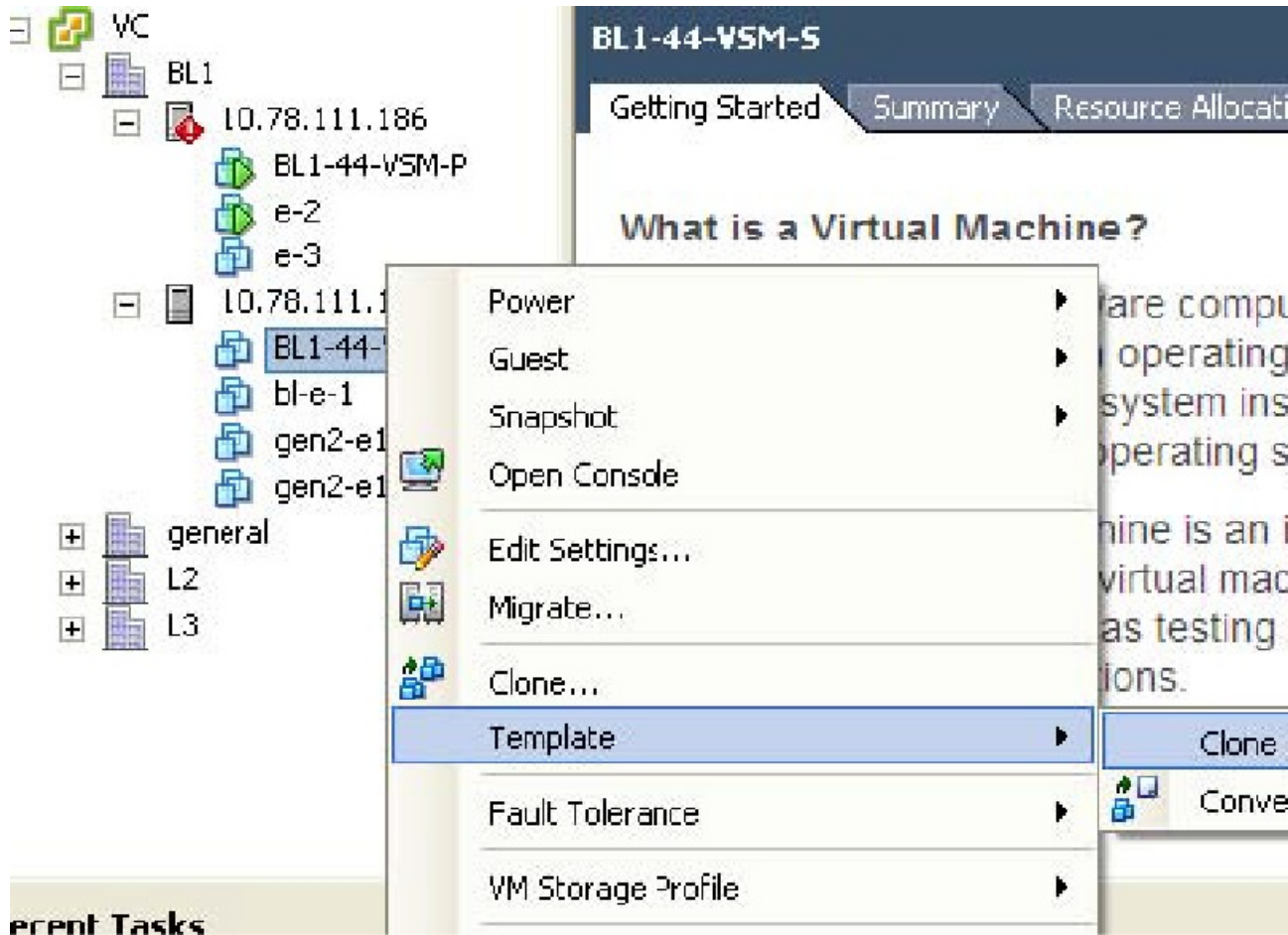
In the left navigation pane, right-click the standby VSM. A drop-down list is displayed.

Step 3

Choose **Power > Power Off**.

The action is displayed in the Clone to Template Window.

Figure 2: Clone to Template Window



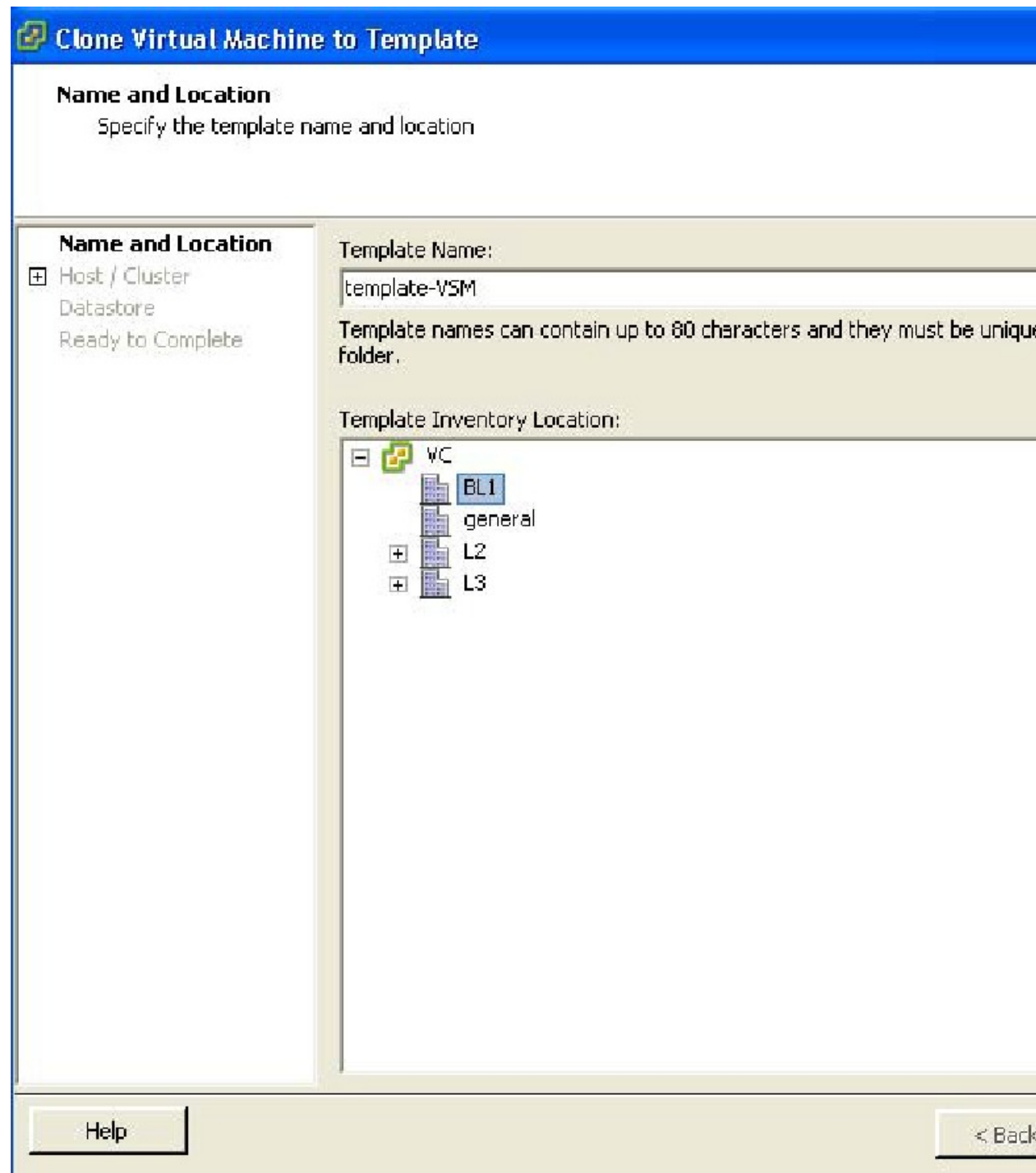
Step 4 In the left navigation pane, right-click the standby VSM.

A drop-down list is displayed.

Step 5 Choose **Template > Clone to Template**.

The Clone Virtual Machine to Template window opens.

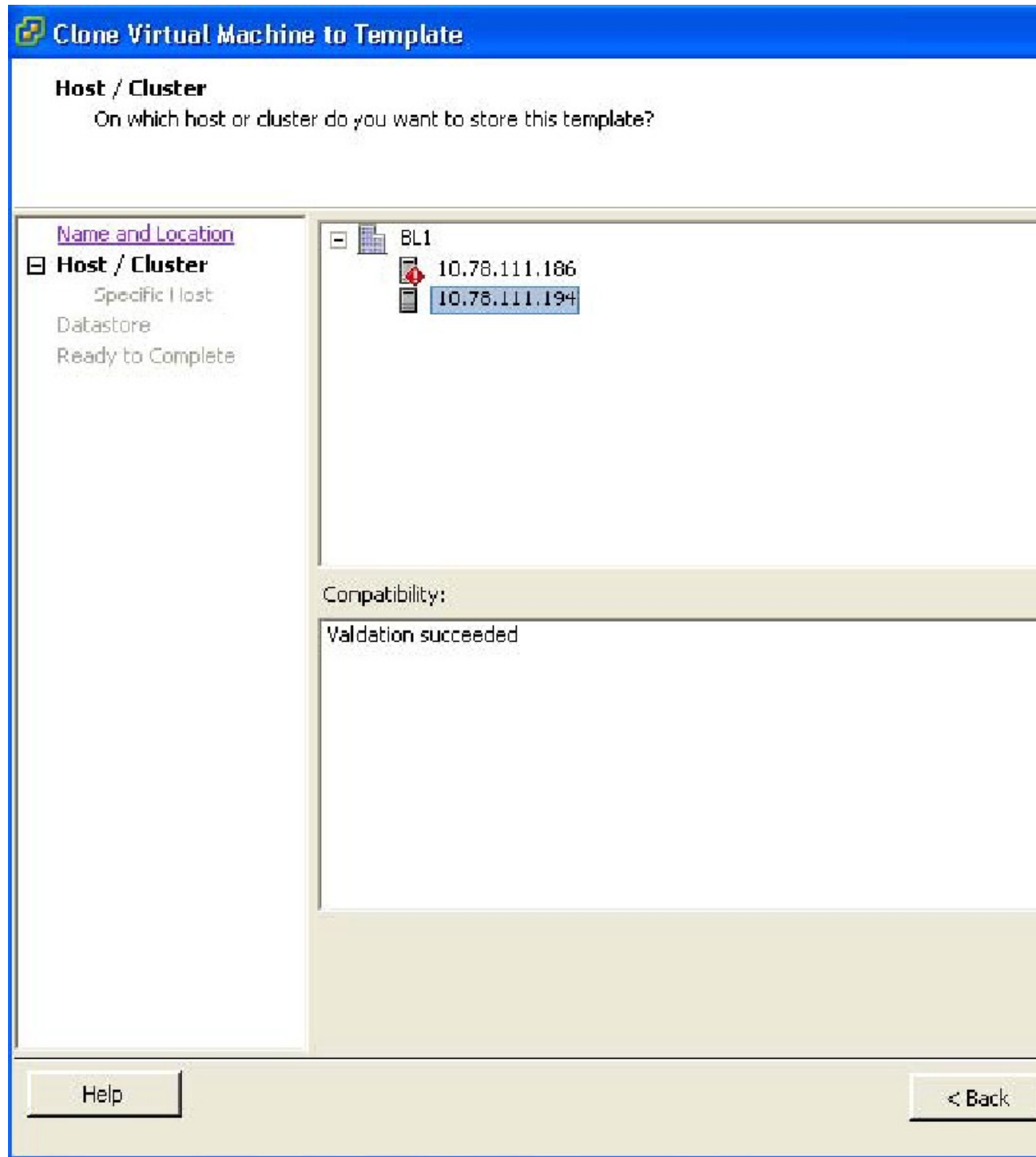
Figure 3: Clone Virtual Machine to Template Window



- 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.

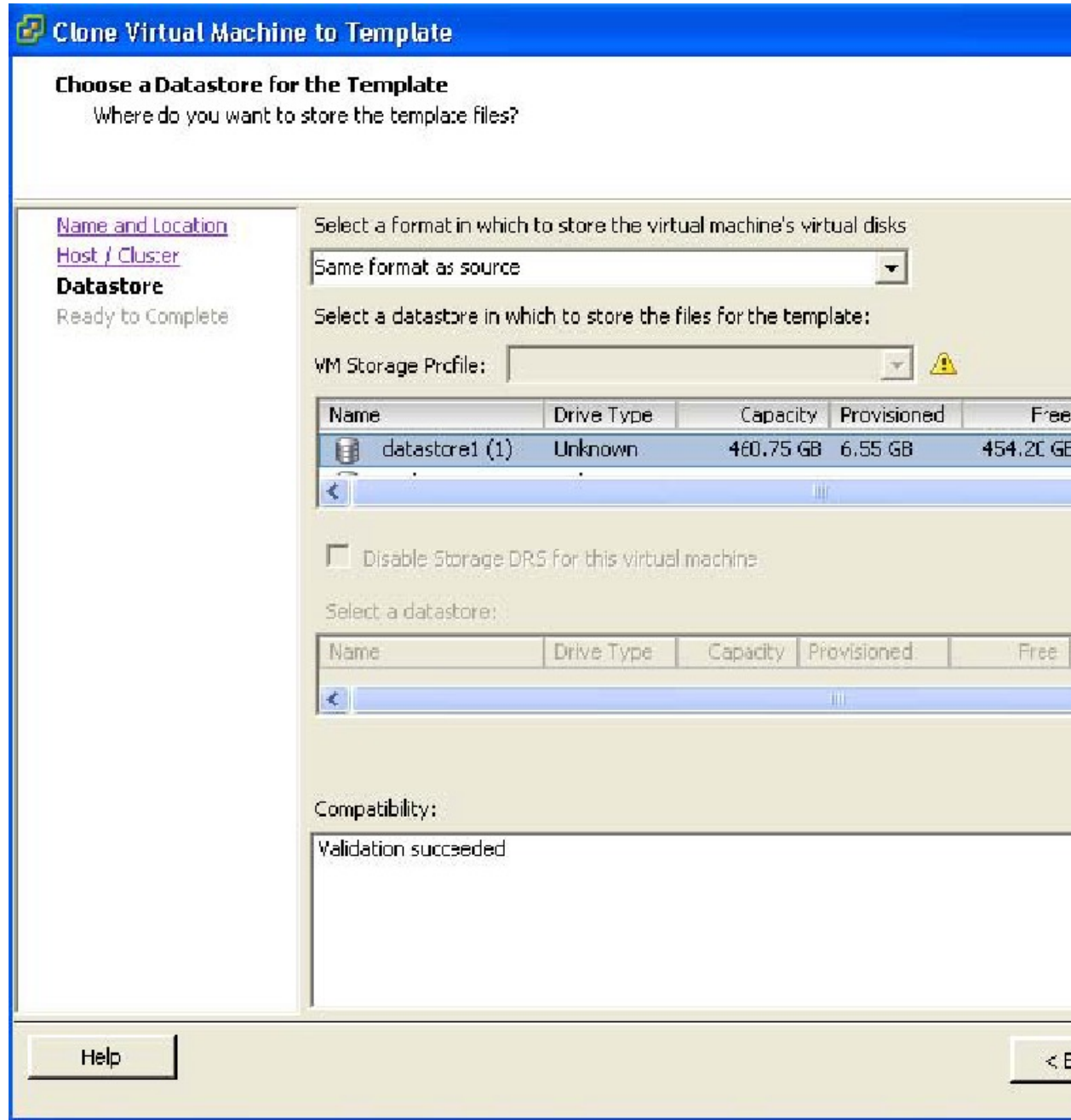
Figure 4: Host Window



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

- Step 10** Click **Next**.
- The Choosing a Datastore window opens.

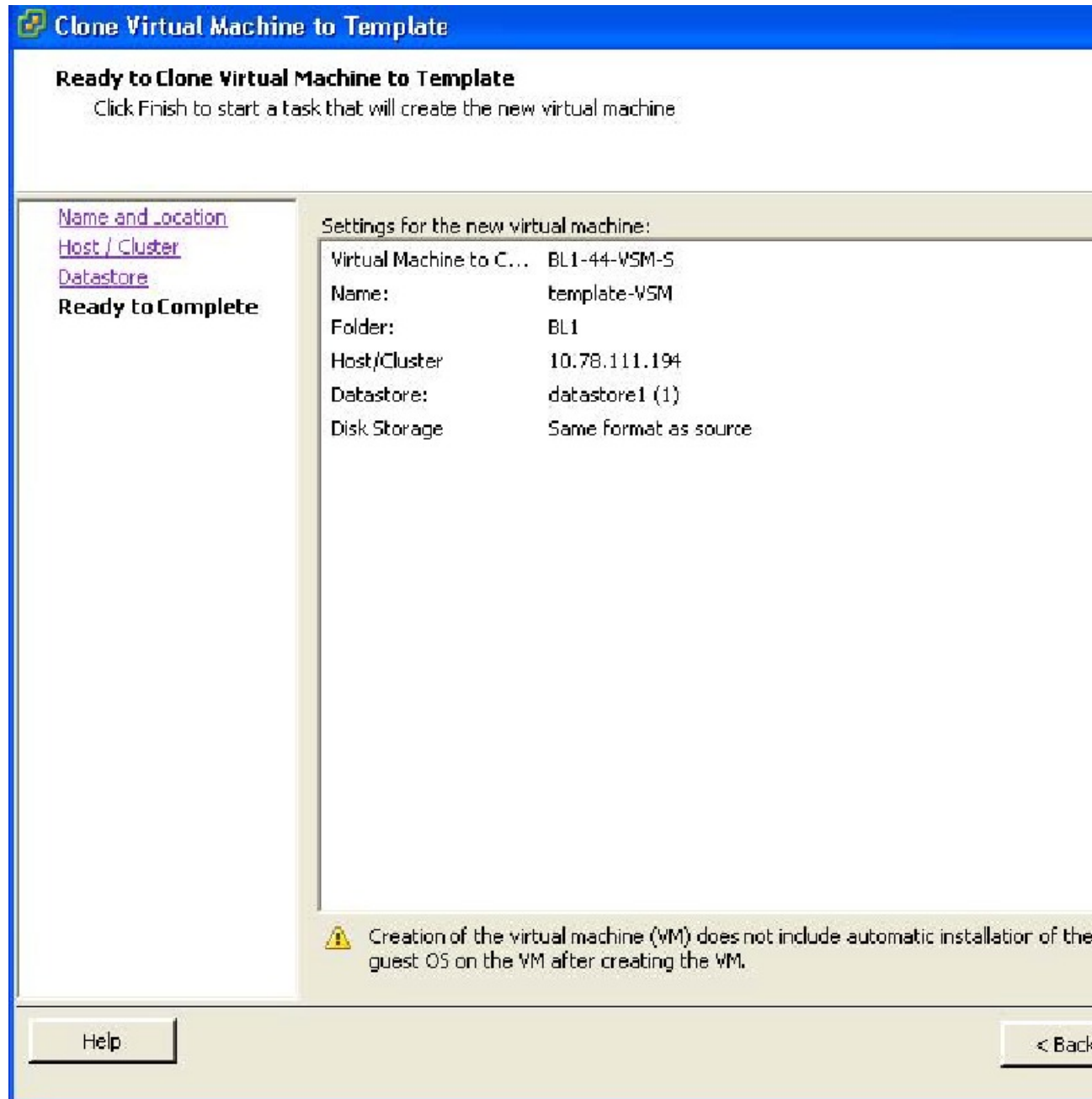
Figure 5: Choosing a Datastore Window



- 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**.

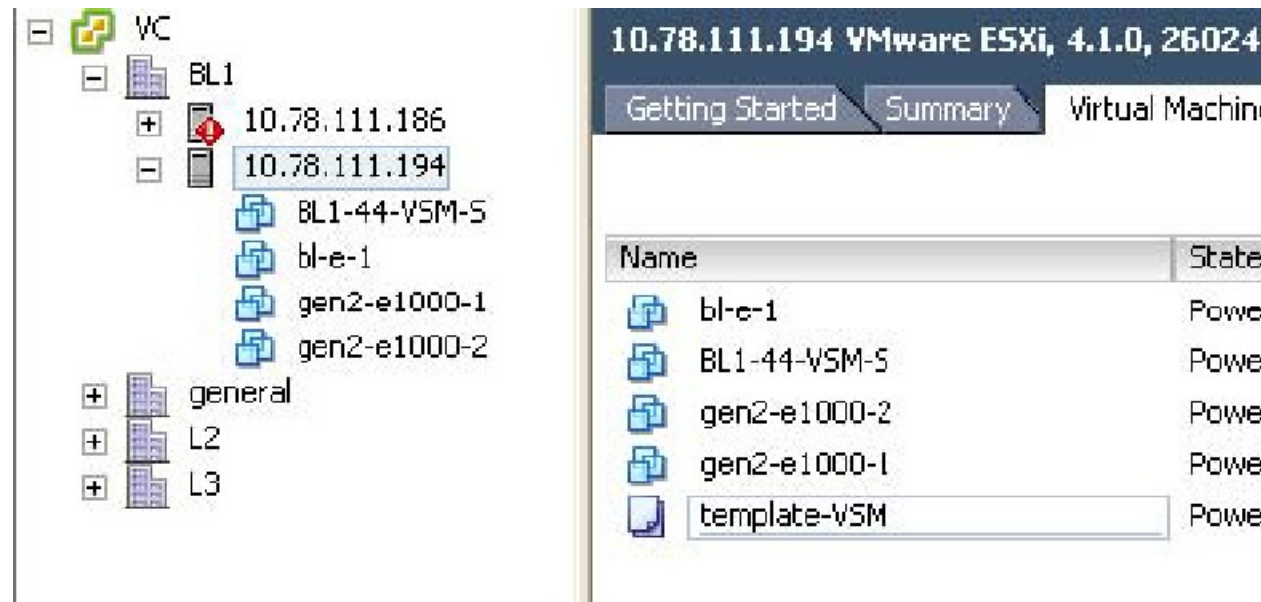
The Confirming the Settings window opens.

Figure 6: Confirming the Settings Window



- 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 are on ESX platform.
- 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#
```

Exporting a Backup VSB Configuration on Cisco Nexus Cloud Services Platform Server

You can export or import a VSB on the Cisco Nexus Cloud Services Platforms by creating a copy of the VSB backup file. You can store the backup copy remotely to use as a recovery mechanism or when you need to move a VSB between Cisco Nexus Cloud Services Platforms. Use the procedures in the following sections to export and import a VSB on the Cisco Nexus Cloud Services Platform.

- [Exporting a VSB, on page 10](#)
- [Copying the Exported VSB to an External Storage Location, on page 13](#)

Exporting a VSB

You can create a file for exporting a VSB.



Note You can create multiple files. Do not change the file suffix for numbering purposes. If you change the prefix for one file, you must change it for all files.

Before you begin

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

- Ensure that you are on Cisco Nexus Cloud Services Platform. If you want to perform this procedure on ESX platform refer to [Performing a Backup of the VSM VM, on page 2](#).
- Log in to the CLI of the Cisco Nexus Cloud Services Platform in EXEC mode.
- Know the name of the VSB for which you are creating a file to export.
- Verify that the bootflash: export-import directory is empty. If files are present in this directory, you must delete them before starting this procedure.
- Enter the **copy running-config startup-config** command at the VSB before beginning this procedure.
- Shut down the VSB that you want to back up before creating the file to export. This procedure includes a step for shutting down the VSB and then a step to restart the VSB after creating the file.

Procedure

	Command or Action	Purpose
Step 1	switch # dir bootflash:export-import	Displays the contents of the export-import directory for verification that the directory is empty. If there is anything in this directory, you must use the next step to delete it before proceeding.

	Command or Action	Purpose
Step 2	switch (config-vsbs-config) # delete bootflash:export-import <i>foldername</i>	(Optional) Deletes the VSB compressed tar file and its folder created for export.
Step 3	switch # configure terminal	Enters global configuration mode.
Step 4	switch (config) # virtual-service-blade <i>name</i>	Enters the configuration mode for the named virtual service blade.
Step 5	switch (config-vsbs-config) # shutdown [primary secondary]	Shuts down the VSB that you are exporting from. If you have a redundant pair of Cisco Nexus Cloud Services Platforms, you must specify whether to shut down the primary or secondary.
Step 6	switch (config-vsbs-config)# show virtual-service-blade summary	(Optional) Displays the virtual service blade configuration for verification.
Step 7	switch (config-vsbs-config) # export [primary secondary]	<p>Creates a directory named for the slot ID of the exported VSB that contains a compressed tar image of the VSB.</p> <p>If exporting from a redundant pair of Cisco Nexus Cloud Services Platforms, you must specify whether you are exporting from the primary or secondary.</p> <p>Note The export command does not move the configuration file off of the Cisco Nexus Cloud Services Platform. The export command creates a backup copy that you must then copy to the remote storage location.</p>
Step 8	switch (config-vsbs-config) # dir bootflash:export-import	<p>Displays the contents of the bootflash:export-import directory, including the directory name of the folder that contains the compressed tar image of the VSB, for verification.</p> <p>You need this folder name in Step 11.</p>
Step 9	switch (config-vsbs-config) # no shutdown [primary secondary]	Powers on the VSB that was powered off when creating the file for export. If you have a redundant pair of Cisco Nexus Cloud Services Platforms, you must specify primary or secondary.
Step 10	switch (config-vsbs-config)# show virtual-service-blade summary	Displays the virtual service blade configuration for verification.

	Command or Action	Purpose
Step 11	switch (config-vs-b-config) # dir bootflash:export-import /directory-name	Displays the contents of the Cisco Nexus Cloud Services Platform export folder, including the filename of the VSB compressed tar image. Note <ol style="list-style-type: none"> 1. You identified this folder name in Step 8. 2. You can create multiple files. Do not change the file suffix for numbering purposes. If you change the prefix for one file, then you must change it for all files.

Example

The following example shows how to create a VSB Backup file:

```
switch# dir bootflash:export-import
DOCS-CPPA# dir export-import
```

```
Usage for bootflash://sup-local
 496164864 bytes used
3495215104 bytes free
3991379968 bytes total
```

```
switch-1(config-vs-b-config)# delete bootflash:/export-import/1/*.*
switch-1(config-vs-b-config)# delete bootflash:/export-import/1
```

```
switch-1(config-vs-b-config)#
switch-1# configure terminal
switch-1(config)#
switch-1(config)# virtual-service-blade vsm-1
switch-1(config-vs-b-config)#
switch-1(config-vs-b-config)# shutdown secondary
switch-1(config-vs-b-config)#
```

Example:

```
switch-1(config-vs-b-config)# show virtual-service-blade summary
```

```
-----
Name                Role        State                Nexus1010-Module
-----
VSM1                 PRIMARY    VSB POWERED ON      Nexus1010-PRIMARY
VSM1                 SECONDARY  VSB POWERED OFF     Nexus1010-SECONDARY
```

Example of a successful completion of a VSB

```
switch-1(config-vs-b-config)# export secondary
Note: export started..
Note: please be patient..
Note: please be patient..
Note: please be patient..
Note: export completed...switch-1(config-vs-b-config)#
```

Example of an error condition while exporting a VSB

```
switch-1(config-vs-b-config)# export primary
ERROR: Please clean export-import directory first, then proceed.
switch-1(config-vs-b-config)#
```

Example of an error condition while exporting a secondary VSB

```
switch-1(config-vs-b-config)# export secondary
ERROR: Cannot export active virtual-service-blade, please shut and retry.
```

```
switch-1(config-vs-b-config)# dir bootflash:export-import
4096      Sep 08 19:12:52 2011 1/
```

```
Usage for bootflash://sup-local
310870016 bytes used
3680509952 bytes free
3991379968 bytes total
```

```
switch-1(config-vs-b-config)# no shutdown secondary
```

```
switch-1(config-vs-b-config)#
switch-1(config-vs-b-config)# show virtual-service-blade summary
```

```
-----
Name                Role        State                Nexus1010-Module
-----
VSM1                 PRIMARY    VSB POWERED ON      Nexus1010-PRIMARY
VSM1                 SECONDARY  VSB POWERED ON      Nexus1010-SECONDARY
```

```
switch-1(config-vs-b-config)# dir bootflash:export-import/1
279955021      Sep 08 19:13:21 2011  Vdisk1.img.tar.00
```

```
Usage for bootflash://sup-local
310870016 bytes used
3680509952 bytes free
3991379968 bytes total
```

Copying the Exported VSB to an External Storage Location

- You can copy a VSB configuration file to a remote storage location and then delete the folder created for this purpose from the Cisco Nexus Cloud Services Platform.

Before you begin

- You have created a file to export using the [Exporting a VSB, on page 10](#) section and you know the name of this file and the name of the folder it resides in.



Note You can create multiple files. If so, use the first filename in this procedure. Do not change the file suffix for numbering purposes. If you change the prefix for one file, you must change it for all files.

- Log in to the CLI of the Cisco Nexus Cloud Services Platform in EXEC mode.
- Know the name of the path to a remote storage location.

- After copying the export backup file, delete the contents, including the files and folders, of the export-import directory. Do not delete the export-import folder.

Procedure

	Command or Action	Purpose
Step 1	switch # copy bootflash:export-import /folder-name /filename ftp:	Copies the VSB image from the Cisco Nexus Cloud Services Platform export-import folder to a remote storage location.
Step 2	switch # delete bootflash:export-import foldername	Deletes the VSB compressed tar file and its folder created for export.
Step 3	switch # dir	Displays the contents of the export-import directory for verification.

Example

The following example shows how to copy a VSB file to an external location:

```
switch# copy bootflash:export-import/1/Vdisk1.img.tar.00 ftp:
Enter vrf (If no input, current vrf 'default' is considered):
Enter hostname for the ftp server: 10.78.109.51
Enter username: administrator
Password:
***** Transfer of file Completed Successfully *****
switch# delete bootflash:/export-import/1/Vdisk1.img.tar.00
switch# delete bootflash:/export-import/1
switch# dir
switch#
```

Recovering the VSM

This section describes how to deploy a VSM on ESX platform by using the backup template and on Cisco Nexus Cloud Services Platform by importing a backup configuration file. This section includes the following topics:

- [Recovering the VSM on ESX Server, on page 14](#)
- [Recovering a VSM with a Backup Configuration File on Cisco Nexus Cloud Services Platform Server, on page 34](#)

Recovering the VSM on ESX Server

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.



Note This procedure is for ESX platform only. If you want to perform this procedure on Cisco Nexus Cloud Services Platform refer to [Recovering a VSM with a Backup Configuration File, on page 38](#).



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

Procedure

- Step 1** Open the vSphere Client.
The vSphere Client window opens.
- 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 8: Deploy Template Wizard Window

The screenshot shows the 'Deploy Template' wizard window. The title bar is blue with a green icon and the text 'Deploy Template'. Below the title bar, the section is titled 'Name and Location' with the instruction 'Specify a name and location for this virtual machine'. On the left, there is a tree view under 'Name and Location' with two main sections: 'Host / Cluster' (containing 'Resource Pool' and 'Storage') and 'Guest Customization' (containing 'Ready to Complete'). The 'Name' field is filled with 'VSM-Primary-from-template'. Below it, a note states: 'Virtual machine (VM) names may contain up to 80 characters and they must Server VM folder.' The 'Inventory Location' field shows a tree view starting with 'VC', which is expanded to show 'BL1', 'general', 'L2', and 'L3'. At the bottom, there are 'Help' and '< Back' buttons.

Deploy Template

Name and Location
Specify a name and location for this virtual machine

Name and Location

- Host / Cluster
 - Resource Pool
 - Storage
- Guest Customization
 - Ready to Complete

Name:
VSM-Primary-from-template

Virtual machine (VM) names may contain up to 80 characters and they must Server VM folder.

Inventory Location:

- VC
 - BL1
 - general
 - L2
 - L3

Help < Back

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 9: Choosing a Host Window



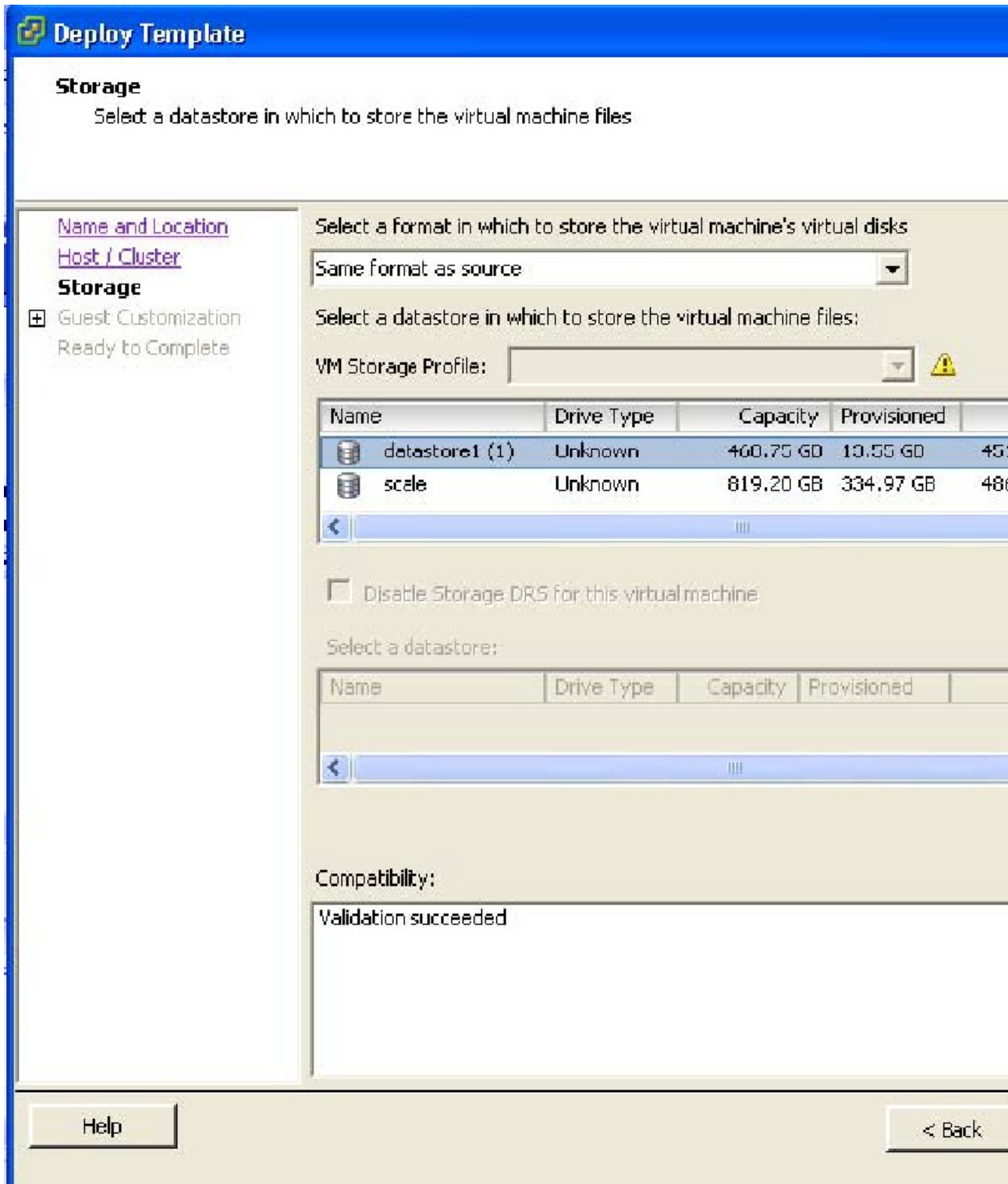
Step 9 Choose a host.

Step 10**Example:**

Click **Next**.

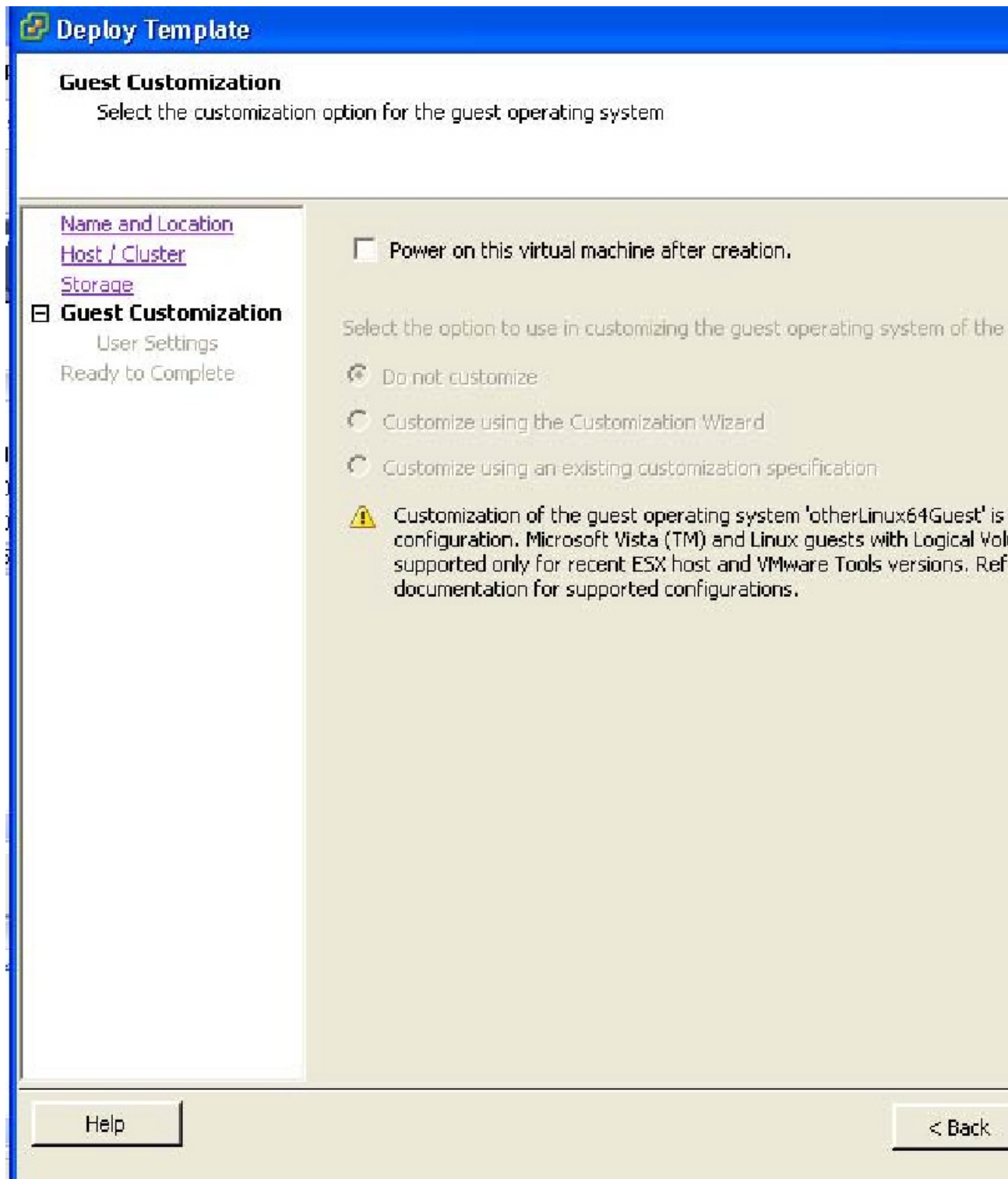
The Choosing a Datastore window opens.

Figure 10: Choosing a Datastore Window



- 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.

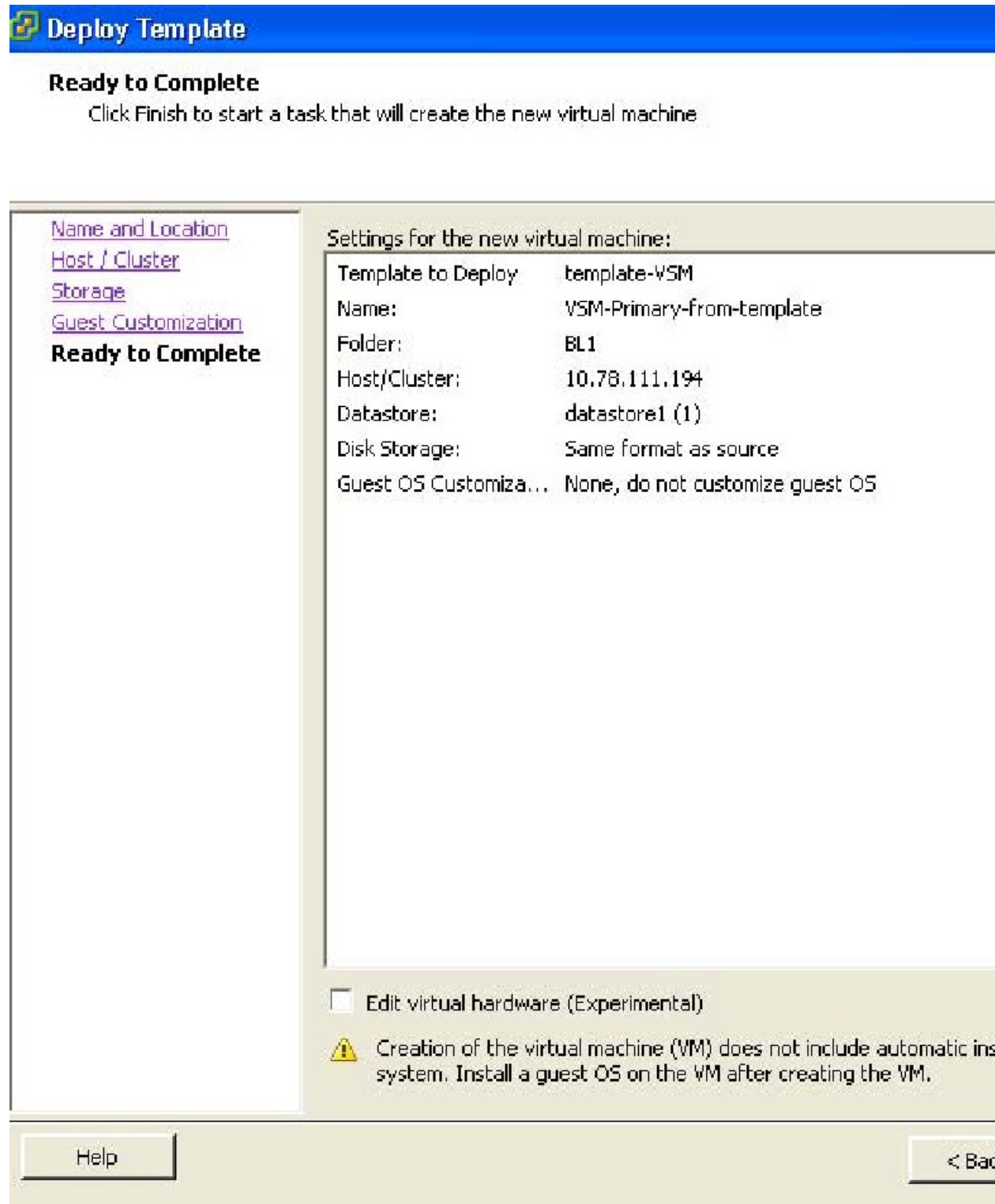
Figure 11: Guest Customization Window



Step 14 Click **Next**.

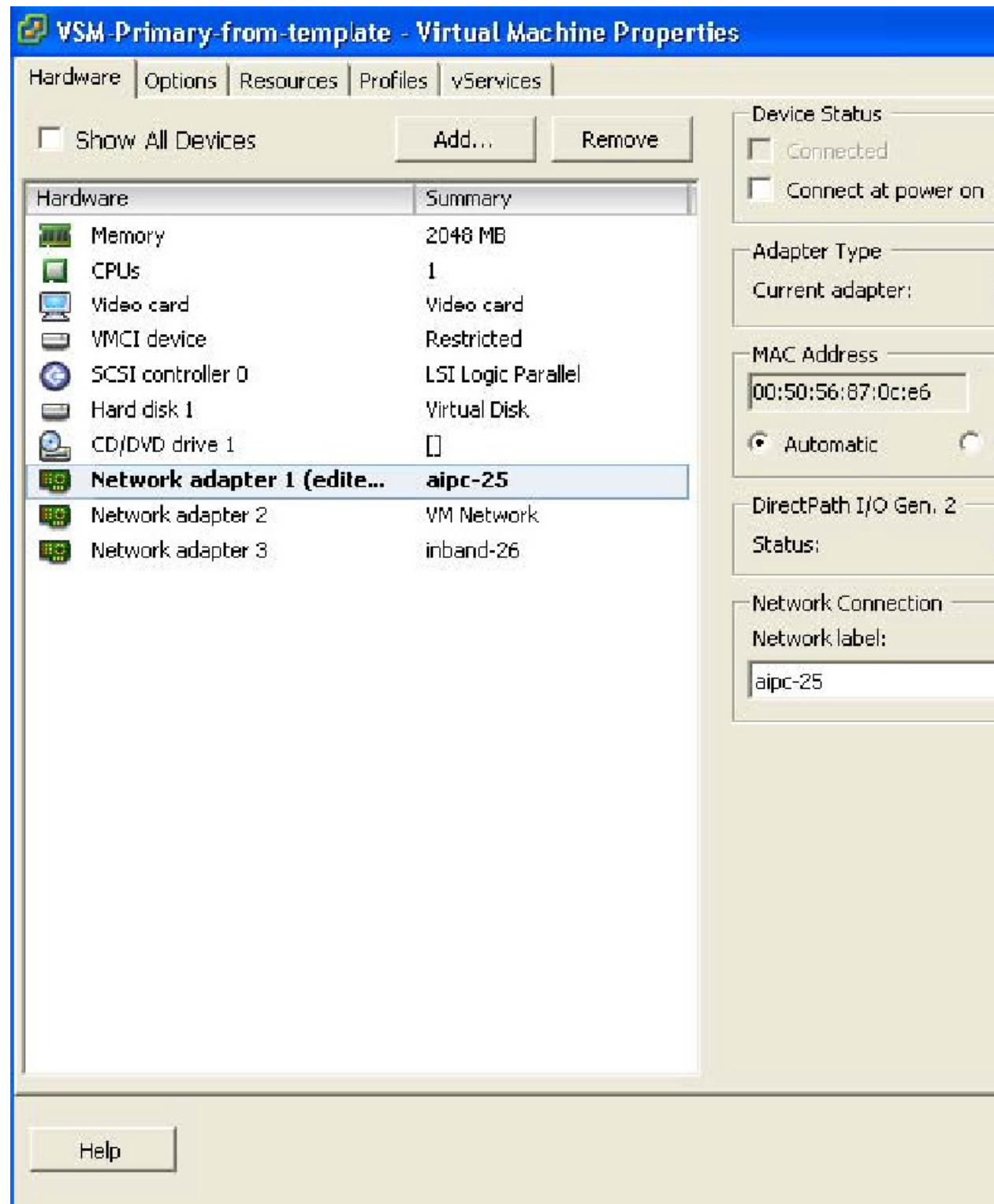
The Deploy Template - Ready to Complete window opens.

Figure 12: Guest Customization Window



- 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 13: Guest Customization Window

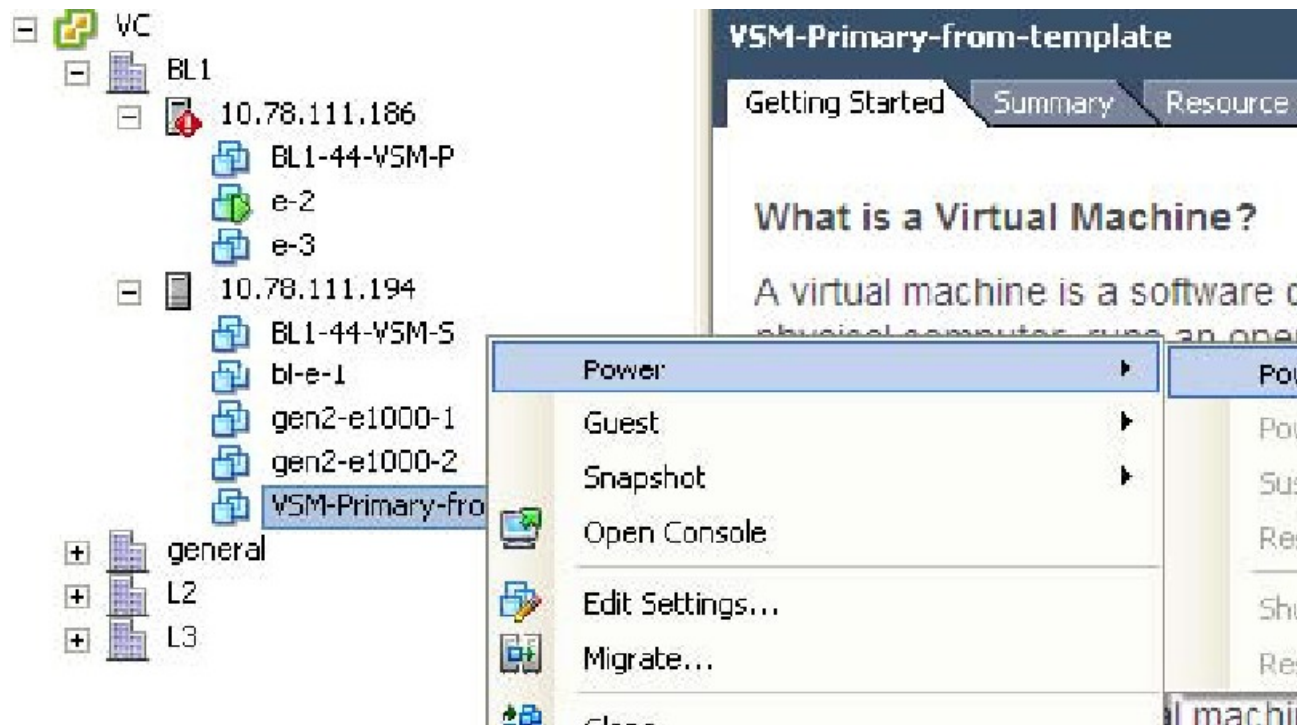


Step 18 In the Hardware / Summary pane, choose Network adapter 1.

- 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 14: 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:
-

Example

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

```
switch# system redundancy role primary
Setting will be activated on next reload
switch# copy running-config startup-config
scp:          sftp:          startup-config
[#####] 100%
switch# write erase
Warning: The command will erase the startup-configurations.
Do you wish to proceed anyway? (y/n) [n] y
switch# reload
This command will reboot the system. (y/n)? [n] y
switch# reload
This command will reboot the system. (y/n)? [n] y
```

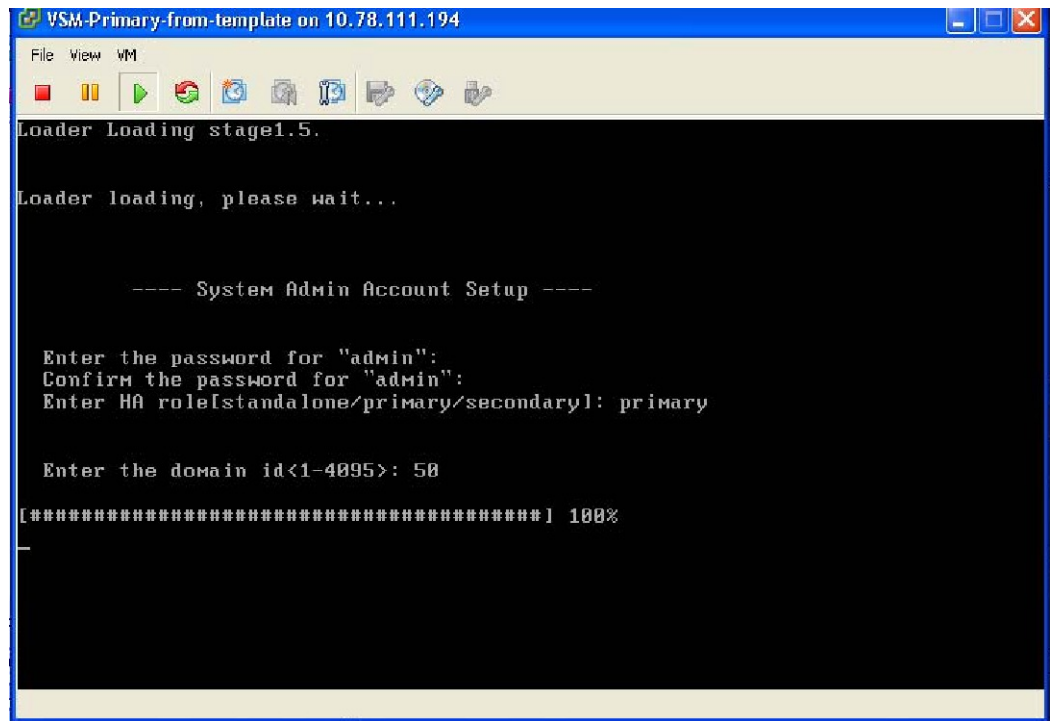
Restoring the Backup Configuration on the VSM

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 15: 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:

```
Enter HA role[standalone/primary/secondary]: primary
[#####] 100%
```

```
---- Basic System Configuration Dialog ----
```

This setup utility will guide you through the basic configuration of the system. Setup configures only enough connectivity for management of the system.

Press Enter at anytime to skip a dialog. Use ctrl-c at anytime to skip the remaining dialogs.

Step 5 Enter yes when you are prompted to enter the basic configuration dialog.

Example:

```
Would you like to enter the basic configuration dialog (yes/no): yes
```

Step 6 Enter no when asked to create another Login account.

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 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 0.0.0.0/0 10.78.111.11
 no telnet server enable
 ssh key rsa 1024 force
 ssh server enable
 feature http-server
 svcs-domain
   svcs 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:

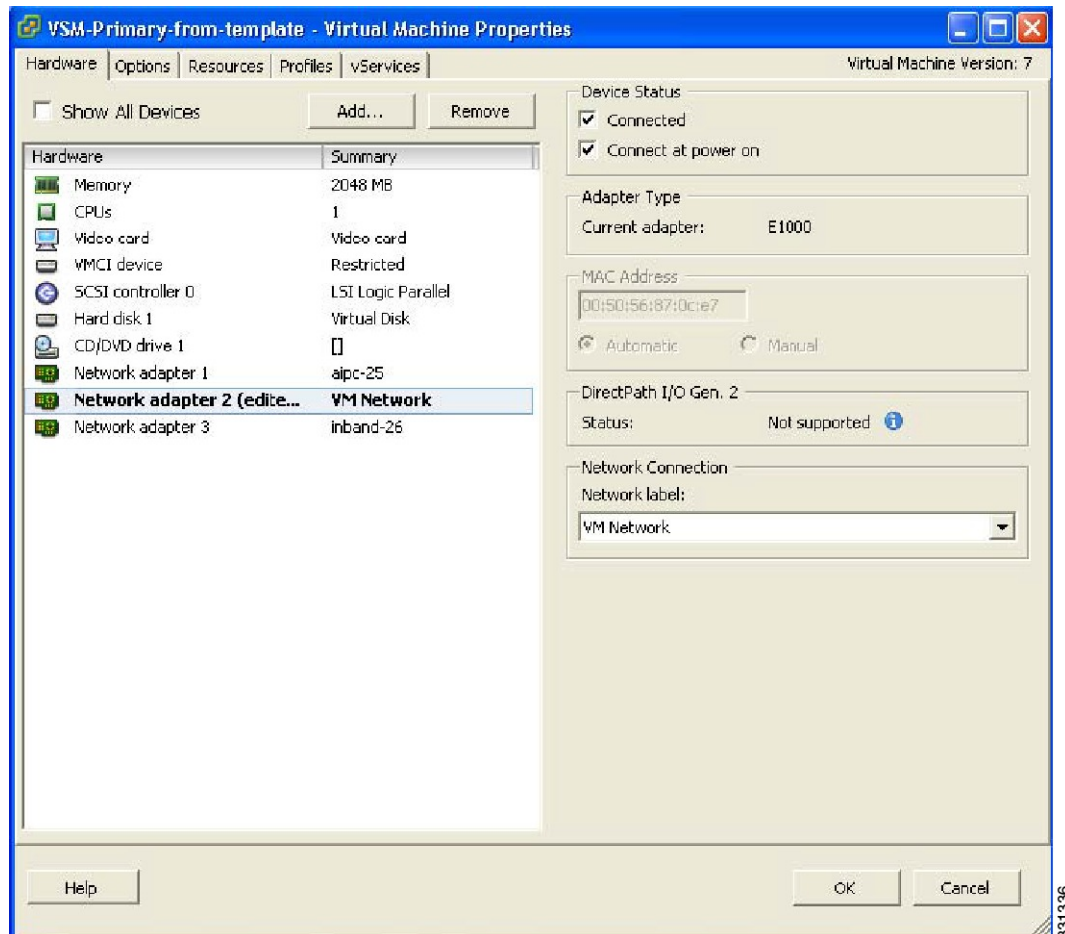
```
Use this configuration and save it? (yes/no) [y]: yes
[#####] 100%
```

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 16: 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** Copy the backup configuration to the running configuration by entering the following command:

Example:

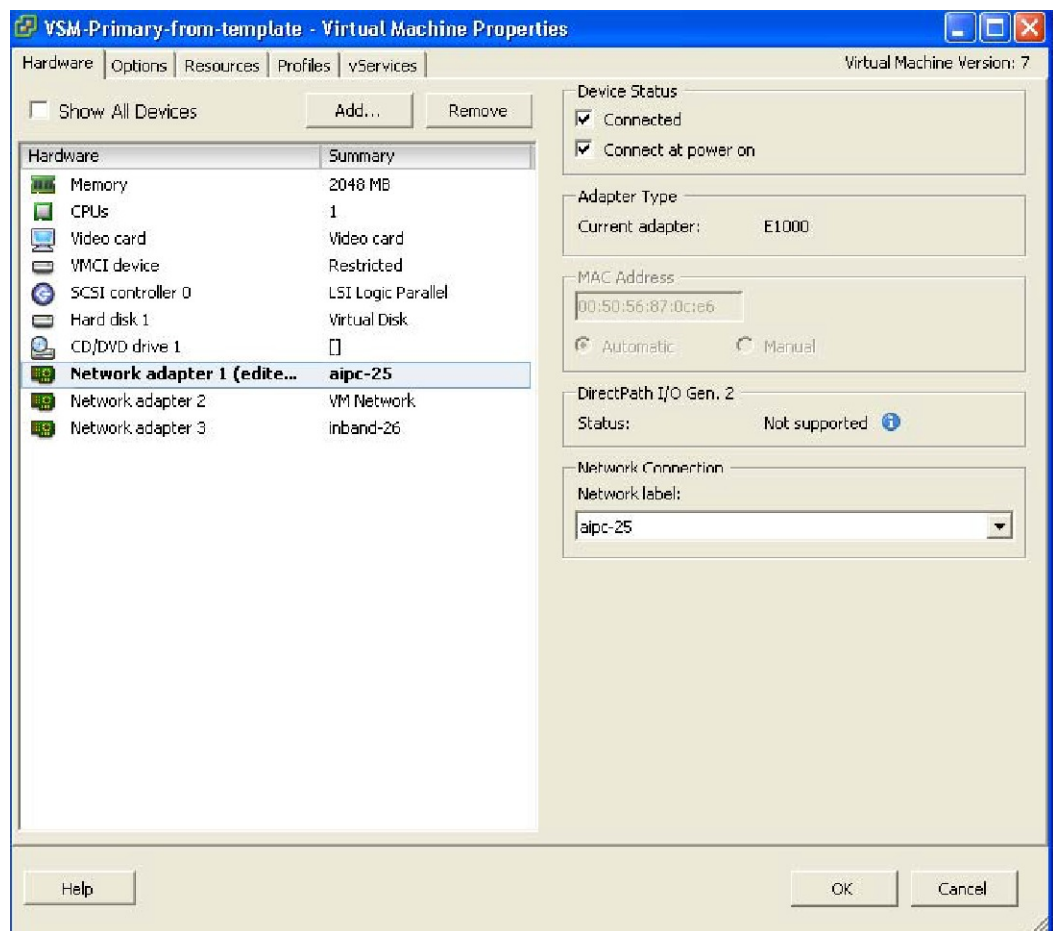
```

switch# copy bootflash:VSM-Backup-running-config running-config
Disabling ssh: as its enabled right now:
Can't disable ssh for key generation:Current user is logged in through ssh
Please do a "copy running startup" to ensure the new setting takes effect
on next reboot
LACP Offload Status can be verified using "show lacp offload status"
Change in LACP Offload Status takes effect only on the next VSM Reboot
This can potentially cause modules with LACP uplinks to flap
Syntax error while parsing 'limit-resource m4route-mem minimum 58 maximum 58'
Syntax error while parsing 'limit-resource m6route-mem minimum 8 maximum 8'
Syntax error while parsing 'interface Ethernet3/2'
Syntax error while parsing 'inherit port-profile uplink-cdp'
Warning: Config saved but not pushed to vCenter Server due to inactive connection!
Warning: Config saved but not pushed to vCenter Server due to inactive connection!
Warning: Config saved but not pushed to vCenter Server due to inactive connection!
Warning: Config saved but not pushed to vCenter Server due to inactive connection!
command failed. Invalid ip address.
Syntax error while parsing 'log-level '
Syntax error while parsing 'no ip dhcp relay'
switch

```

The Virtual Machine Properties window displays.

Figure 17: 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 following command:

Example:

```
switch# show module

Mod Ports Module-Type Model Status
-----
1 0 Virtual Supervisor Module Nexus1000V active *
3 248 Virtual Ethernet Module NA ok
Mod Sw Hw
-----
1 4.2(1)SV1(4a) 0.0
3 4.2(1)SV1(4a) VMware ESXi 4.0.0 Releasebuild-261974 (1.20)
Mod MAC-Address(es) Serial-Num
-----
1 00-19-07-6c-5a-a8 to 00-19-07-6c-62-a8 NA
3 02-00-0c-00-03-00 to 02-00-0c-00-03-80 NA
Mod Server-IP Server-UUID Server-Name
-----
1 10.78.111.20 NA NA
3 10.78.111.186 0e973f80-e804-11de-956e-4bc311a28ede VEM-186-KLU2
* this terminal session
switch#
```

Step 28 Copy the backup configuration to the running configuration by entering the following command:

Example:

```
switch# switch# copy bootflash:VSM-Backup-running-config running-config
Disabling ssh: as its enabled right now:
Can't disable ssh for key generation:Current user is logged in through ssh
2011 Apr 26 12:21:22 switch %KERN-3-SYSTEM_MSG: redun_platform_ioctl :
Entered - kernel
2011 Apr 26 12:21:22 switch %KERN-3-SYSTEM_MSG: redun_platform_ioctl : Host
name is set switch - kernel
2011 Apr 26 12:21:22 switch %KERN-3-SYSTEM_MSG: redun_platform_ioctl :
Entered - kernel
2011 Apr 26 12:21:22 switch %KERN-3-SYSTEM_MSG: redun_platform_ioctl : Host
name is set switch - kernel
ERROR: Flow Record: Record is in use. Remove from all clients before modifying.
ERROR: Flow Record: Record is in use. Remove from all clients before modifying.
ERROR: Flow Record: Record is in use. Remove from all clients before modifying.
Please do a "copy running startup" to ensure the new setting takes effect
on next reboot
LACP Offload Status can be verified using "show lacp offload status"
Change in LACP Offload Status takes effect only on the next VSM Reboot
This can potentially cause modules with LACP uplinks to flap
2011 Apr 26 12:21:23 switch %VMS-5-DVS_NAME_CHANGE: Changed dvswitch
name to 'switch' on the vCenter Server.
Syntax error while parsing 'limit-resource m4route-mem minimum 58 maximum 58'
Syntax error while parsing 'limit-resource m6route-mem minimum 8 maximum 8'
ERROR: Port-channel interface has non-zero members!
2011 Apr 26 12:21:34 switch %MSP-5-DOMAIN_CFG_SYNC_DONE: Domain config
successfully pushed to the management server.
ERROR: Cannot change connection configuration in 'Enabled' state.
ERROR: Cannot change connection configuration in 'Enabled' state.
ERROR: Cannot change the data-center name in connected state.
command failed. Invalid ip address.
Syntax error while parsing 'log-level '
Syntax error while parsing 'no ip dhcp relay'
switch# 2011 Apr 26 12:21:35 switch last message repeated 3 times
2011 Apr 26 12:21:35 switch %ETHPORT-5-SPEED: Interface port-channell,
operational speed changed to 1 Gbps
```

```

2011 Apr 26 12:21:35 switch %ETHPORT-5-IF_DUPLEX: Interface port-channel1,
operational duplex mode changed to Full
2011 Apr 26 12:21:35 switch %ETHPORT-5-IF_RX_FLOW_CONTROL: Interface portchannel1,
operational Receive Flow Control state changed to on
2011 Apr 26 12:21:35 switch %ETHPORT-5-IF_TX_FLOW_CONTROL: Interface portchannel1,
operational Transmit Flow Control state changed to on
VSM backup and Recovery Procedure EDCS-1017832Cisco Systems Pvt Ltd Internal Document
April-27-2011
2011 Apr 26 12:21:35 switch %ETH_PORT_CHANNEL-5-PORT_UP: port-channel1:
Ethernet3/2 is up
2011 Apr 26 12:21:35 switch %ETH_PORT_CHANNEL-5-FOP_CHANGED: portchannel1:
first operational port changed from none to Ethernet3/2
2011 Apr 26 12:21:35 switch %ETHPORT-5-IF_UP: Interface Ethernet3/2 is up in
mode trunk
2011 Apr 26 12:21:35 switch %ETHPORT-5-IF_UP: Interface port-channel1 is up in
mode trunk
switch#

```

This step is necessary if features are configured directly through the interface configuration mode for Ethernet interfaces and for features like ERSPAN/NFM.

Step 29 Copy the running-configuration to the startup-configuration by entering the following command:

Example:

```

switch# copy running-config startup-config
[#####] 100%
switch#

```

Step 30 Create the standby VSM by using the OVA/OVF files to form an HA pair.

See the “Installing the Software from an OVA or OVF Image” section in the *Cisco Nexus 1000V Installation and Upgrade Guide*.

- For release 4.2(1)SV1(4) and later releases, deploy the OVF template from the VMware vSphere Client and choose Nexus 1000V Secondary from the Configuration drop-down list.
- For release 4.0(4)SV1(2) through release 4.0(4)SV1(3d), choose Manual Install of Nexus 1000V from the Configuration drop-down list and assign the HA role of secondary in the System Admin Setup of the VSM.

The recovery is complete.

Recovering a VSM with a Backup Configuration File on Cisco Nexus Cloud Services Platform Server



Note This procedure is only for Cisco Nexus Cloud Services Platform. If you want to perform this procedure on ESX platform refer to [Deploying the Backup VSM VM, on page 15](#).

You can import a previously saved location backup copy of a VSB from a remote storage location to the Cisco Nexus Cloud Services Platform to recover a VSM. This section includes:

- [Importing a VSB, on page 35](#)
- [Recovering a VSM with a Backup Configuration File, on page 38](#)

Importing a VSB

Before you begin

- Log in to the CLI of the activeCisco Nexus Cloud Services Platform in EXEC mode.
- You have previously created and saved a copy of the VSB configuration in a remote storage location using the [Exporting a Backup VSB Configuration on Cisco Nexus Cloud Services Platform Server](#).



Note You can create multiple. If so, use only the first filename with the import command. Do not change the file suffix for numbering purposes. If you change the prefix for one file, then you must change it for all files.

- Know the name of the VSB and the path to the remote storage location.
- Verify that the bootflash: export-import directory is empty. If files are present in this directory, you must delete them before importing a VSB configuration file.

Procedure

	Command or Action	Purpose
Step 1	switch # dir bootflash:export-import	Displays the contents of the export-import directory for verification that the directory is empty. If there is anything in this directory, you must use the next step to delete it before proceeding.
Step 2	switch (config-vs-b-config) # (optional) delete bootflash:export-import foldername	(Optional) Deletes the VSB compressed tar file and its folder created for export.
Step 3	switch # copy ftp:filenamebootflash:export-import	Copies the exported image file from a remote storage location into the Cisco Nexus Cloud Services Platform export-import folder in the bootflash: repository. <ul style="list-style-type: none"> • The <i>filename</i> argument is the name of the export file. Multiple files may have been created. If so, copy these files into export-import directory and use only the first filename with the import command. Do not change the file suffix for numbering purposes. If you change the prefix for one file, then you must change it for all.
Step 4	switch # configure terminal	Enters the global configuration mode.
Step 5	switch (config) # virtual-service-blade name	Enters the configuration mode for the named virtual service blade.

	Command or Action	Purpose
Step 6	switch (config-vsbs-config) # import primary filename	Powers off the primary VSB, imports the specified VSB configuration file, and then removes the configuration file from the export-import folder. <ul style="list-style-type: none"> The filename argument is the name of the export file that you copied from the remote server to the bootflash: repository.
Step 7	switch (config-vsbs-config) # show virtual-service-blade summary	(Optional) Displays a summary of all VSB configurations by type name, such as VSM or NAM. Verify that the primary VSB is powered off.
Step 8	Configure the network uplinks by completing the following set of tasks. These tasks might vary based on the network topology and uplink types: <ul style="list-style-type: none"> Modifying the uplink type Migrating from static to flexible uplink Migrating from flexible to static uplink Configuring port channels Assigning uplinks to a VSB Interface 	Configures your network uplinks with the procedures listed in Configuring Network Uplink Types section.
Step 9	switch # no shutdown primary filename	Powers on the primary VSB and imports the primary VSB configuration. The filename argument is the name of the imported primary VSB
Step 10	switch (config-vsbs-config) # show virtual-service-blade name name	Displays the virtual service blade information for verification. From the command output, make a note of the control and management VSB Ethernet interfaces.
Step 11	switch (config-vsbs-config) # copy running-config startup-config	Saves the running configuration persistently through reboots and restarts by copying it to the startup configuration.

Example

The following example shows how to import a VSB backup file:

```
switch# dir bootflash export-import
DOCS-CPFA# dir export-import

Usage for bootflash://sup-local
 496164864 bytes used
3495215104 bytes free
3991379968 bytes total
switch#
switch-1(config-vsbs-config) # delete Vdisk1.img.tar.00
```



```

switch-1(config-vsbs-config)#
switch# copy ftp:Vdisk1.img.tar.00 bootflash:export-import
Enter vrf (If no input, current vrf 'default' is considered):
Enter hostname for the ftp server: 10.78.109.51
Enter username: administrator
Password:
***** Transfer of file Completed Successfully *****
switch-1# configure terminal
switch-1(configure)#
switch-1(config)# virtual-service-blade vsm-5
switch-1(config-vsbs-config)#
switch-1(config-vsbs-config)# import primary Vdisk1.img.tar.00
Note: import started..
Note: please be patient..
Note: Import cli returns check VSB status for completion
switch-1(config-vsbs-config)#
    
```

Example:

```
switch-1(config-vsbs-config)# show virtual-service-blade summary
```

```

-----
Name                Role           State          Nexus1010-Module
-----
VSM1                PRIMARY       VSB POWERED OFF  Nexus1010-PRIMARY
VSM1                SECONDARY     VSB POWERED ON   Nexus1010-SECONDARY
    
```

```

switch-1(config)# virtual-service-blade VSM1
switch-1(config)# no shutdown primary
switch-1(config)#
switch-1(config-vsbs-config)# show virtual-service-blade name VSM1
virtual-service-blade VSM1
  Description:
  Slot id:      1
  Host Name:
  Management IP:
  VSB Type Name : VSM-1.1
  vCPU:         1
  Ramsize:      2048
  Disksize:     3
  Heartbeat:    0
  HA Admin role: Primary
    HA Oper role: NONE
    Status:       VSB POWERED OFF
    Location:     PRIMARY
  SW version:
  VsbEthernet1/1/1: control  vlan: 1306  state: up
  VsbEthernet1/1/2: management  vlan: 1304  state: up
  VsbEthernet1/1/3: packet    vlan: 1307  state: up
  Interface:      internal  vlan: NA    state: up
  HA Admin role: Secondary
    HA Oper role: NONE
    Status:       VSB POWERED ON
    Location:     SECONDARY
  SW version:
  VSB Info:
switch-1(config-vsbs-config)# copy running-config startup-config
    
```

Recovering a VSM with a Backup Configuration File

You can recover a VSM using a backup configuration file.

Before you begin

- You have imported your backup copy of the configuration file using the instructions in [Importing a VSB, on page 35](#).
- You have a copy of the VSM running configuration in remote storage location.
- Log in to the CLI of the Cisco Nexus Cloud Services Platform in EXEC mode.
- This procedure includes a step for updating Cisco Nexus 1000V licenses. For more information, see the *Cisco Nexus 1000V License Configuration Guide*.
- This procedure requires you to shut down the VSM management and control ports to prevent communication with VEMs and vCenter during the recovery. You must know the IDs of the VSM control and management ports and the VSB serial port.
- This procedure requires you to setup the VSM software. You must have the following information available for the VSM VSB:
 - Admin password
 - Domain ID
 - HA role (must be set to the same role as that of the VSM on which it is imported)
 - Management 0 IP address
 - Management 0 netmask
 - Default gateway IP address

Procedure

-
- Step 1** From the Cisco Nexus Cloud Services Platform, shut down the control and management interfaces of the VSM VSB.
- The VSM management and control interfaces are no longer communicating with VEMs and vCenter.
- Step 2** Verify that the control and management interfaces are down.
- Step 3** Power on the VSB VSM.
- Step 4** Log in to the Cisco Nexus Cloud Services Platform serial port of the primary VSM.
- Step 5** Erase the startup configuration.
- The previous configuration is erased. You will replace it with the previously-saved backup of your running configuration in Step 11.
- Step 6** Reboot the system.
- The Cisco Nexus Cloud Services Platform boots up and the setup wizard starts.
- Step 7** Use the setup wizard to configure the VSM. Accept defaults for all except the following:

- Admin password
- Domain ID
- HA Role (must be set to the same role as that of the VSM on which it is imported)
- Management 0 IP address
- Management 0 netmask
- Default gateway IP address

The system summarizes the new setup configuration.

Step 8 Copy the running configuration to the startup configuration using the **copy running-config startup-config** command.

Step 9 Reopen the management interface of the VSM VSB.

The VSM management interface is again communicating with VEMs and vCenter.

Step 10 Verify that the management interface is up.

Step 11 Copy your saved running configuration backup to the VSM bootflash using the **copy bootflash: filename** command.

Step 12 Copy the running configuration to the startup configuration.

Step 13 Reopen the control interface of the VSM VSB.

The VSM control interface is again communicating with VEMs and vCenter.

Step 14 Verify that the control interface is up.

Step 15 Check the modules at the VSM CLI.

Step 16 Enable the HA peer.

The VSM is again operating in HA mode with a primary and secondary module.

Example

```
switch-1# configure terminal
switch-1(config)# interface vethernet1/1
switch-1(config-if)# shut
```

```
switch-1(config)# show virtual-service-blade name VSM1
virtual-service-blade VSM1
  Description:
  Slot id:      1
  Host Name:
  Management IP:
  VSB Type Name : VSM-1.1
  vCPU:         1
  Ramsize:      2048
  Disksize:     3
  Heartbeat:    0
  HA Admin role: Primary
  HA Oper role: NONE
  Status:       VSB POWERED OFF
  Location:     PRIMARY
```

```

SW version:
VsbEthernet1/1/1: control   vlan: 1306   state: down
VsbEthernet1/1/2: management vlan: 1304   state: down
VsbEthernet1/1/3: packet   vlan: 1307   state: up
Interface:         internal  vlan: NA     state: up
HA Admin role: Secondary
HA Oper role: NONE
Status:            VSB POWERED ON
Location:          SECONDARY
SW version:
VSB Info:

switch-1(config)# virtual-service-blade VSM1
switch-1(config)# no shutdown primary
switch-1(config)#

n1000v# configure terminal
n1000v(config)# write erase
Warning: This command will erase the startup-configuration.
Do you wish to proceed anyway? (y/n) [n] y

n1000v# reload
This command will reboot the system. (y/n)? [n] y
2009 Oct 30 21:51:34 s1 %$ VDC-1 %$ %PLATFORM-2-PFM_SYSTEM_RESET: Manual system restart
from Command Line Interface
n1000v#

---- System Admin Account Setup ----
Enter the password for "admin":
Confirm the password for "admin":
Enter the domain id<1-4095>: 152
Enter HA role[standalone/primary/secondary]: primary

[#####] 100%

---- Basic System Configuration Dialog ----
This setup utility will guide you through the basic configuration of
the system. Setup configures only enough connectivity for management
of the system.
*Note: setup is mainly used for configuring the system initially,
when no configuration is present. So setup always assumes system
defaults and not the current system configuration values.
Press Enter at anytime to skip a dialog. Use ctrl-c at anytime
to skip the remaining dialogs.
Would you like to enter the basic configuration dialog (yes/no): yes
Create another login account (yes/no) [n]: no
Configure read-only SNMP community string (yes/no) [n]: no
Configure read-write SNMP community string (yes/no) [n]: no
Enter the switch name: n1000v
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
Configure the default-gateway: (yes/no) [y]: yes

IPv4 address of the default gateway : 172.23.233.1
Enable the telnet service? (yes/no) [y]: no
Enable the ssh service? (yes/no) [y]: no
Enable the http-server? (yes/no) [y]: no
Configure NTP server? (yes/no) [n]: no
Configure svcs domain parameters? (yes/no) [y]: no
Vem feature level will be set to 4.2(1)SV1(4),
Do you want to reconfigure? (yes/no) [n] no

```

```

Example:
n1000v# copy running-config startup-config
[#####] 100%
n1000v#

switch-1# configure terminal
switch-1(config)# interface vethernet1/2
switch-1(config-if)# no shut

switch-1(config)# show virtual-service-blade name VSM1
virtual-service-blade VSM1
. . .
VsbEthernet1/1/1: control    vlan: 1306    state:    down
  VsbEthernet1/1/2: management  vlan: 1304    state:    up
  VsbEthernet1/1/3: packet     vlan: 1307    state:    up
  Interface:         internal   vlan: NA     state:    up
. . .
switch-1(config)#
    
```

```

Example:
switch-1(config)# copy bootflash:VSM1-periodic-startup-config.txt running-config
switch-1(config)#
    
```

```

n1000v# copy running-config startup-config
[#####] 100%
n1000v#
    
```

```

config t
interface vethernet slot/port
no shut
    
```

```

Example:
switch-1# config t
switch-1(config)# interface vethernet1/1
switch-1(config-if)# no shut

switch-1(config)# show virtual-service-blade name VSM1
virtual-service-blade VSM1
. . .
VsbEthernet1/1/1: control    vlan: 1306    state:    up
  VsbEthernet1/1/2: management  vlan: 1304    state:    up
  VsbEthernet1/1/3: packet     vlan: 1307    state:    up
  Interface:         internal   vlan: NA     state:    up
. . .
switch-1(config)#
    
```

```

Example:
n1000v(config)# show module
Mod Ports Module-Type Model Status
-----
1 0 Virtual Supervisor Module Nexus1000V active *
2 0 Virtual Supervisor Module Nexus1000V ha-standby
3 248 Virtual Ethernet Module NA ok
4 248 Virtual Ethernet Module NA ok

Mod Sw Hw
-----
1 4.2(1)SV1(4a) 0.0
2 4.2(1)SV1(4a) 0.0
3 4.2(1)SV1(4a) VMware ESXi 4.0.0 Releasebuild-208167 (1.9)
4 4.2(1)SV1(4a) VMware ESX 4.1.0 Releasebuild-260247 (2.0)

Mod MAC-Address(es) Serial-Num
-----
    
```

```

1 00-19-07-6c-5a-a8 to 00-19-07-6c-62-a8 NA
2 00-19-07-6c-5a-a8 to 00-19-07-6c-62-a8 NA
3 02-00-0c-00-03-00 to 02-00-0c-00-03-80 NA
4 02-00-0c-00-04-00 to 02-00-0c-00-04-80 NA

```

```

Mod Server-IP      Server-UUID      Server-Name
-----
1  10.78.109.44    NA               NA
2  10.78.109.44    NA               NA
3  10.78.109.72    44454c4c-4300-1046-8043-b6c04f563153 10.78.109.72
4  10.78.109.71    44454c4c-3300-1056-8057-b3c04f583153 10.78.109.71

```

* this terminal session

```
n1000v(config)#
```

```
switch-1(config)# enable secondary
```

Verifying the Export and Import of a VSB

Procedure

	Command or Action	Purpose
Step 1	dir bootflash:export-import/ folder-name	Displays the contents of the export-import directory folder.
Step 2	show virtual-service-blade summary	Displays the redundancy state (active or standby) and the redundancy role (primary or secondary) for each VSB.
Step 3	show virtual-service-blade [name name]	Displays the configuration for a specific virtual service blade.

Example

The following example shows export-import Directory:

```

switch-1(config-vsbs-config)# dir bootflash:export-import/1
279955021 Sep 08 19:13:21 2011 Vdisk1.img.tar.00
Usage for bootflash://sup-local
310870016 bytes used
3680509952 bytes free
3991379968 bytes total

```

The following example shows Virtual Service Blade Summary:

```

switch-1(config-vsbs-config)# show virtual-service-blade summary
-----
Name Role State Nexus1010-Module
-----
VSM1 PRIMARY VSB POWERED OFF Nexus1010-PRIMARY
VSM1 SECONDARY VSB POWERED ON Nexus1010-SECONDARY

switch# show virtual-service-blade name VSM1
virtual-service-blade VSM1
Description:
Slot id: 1
Host Name:
Management IP:

```

```
VSB Type Name : VSM-1.1
vCPU: 1
Ramsize: 2048
Disksize: 3
Heartbeat: 0
HA Admin role: Primary
HA Oper role: NONE
Status: VSB POWERED OFF
Location: PRIMARY
SW version:
VsbEthernet1/1/1: control vlan: 1306 state: down
VsbEthernet1/1/2: management vlan: 1304 state: down
VsbEthernet1/1/3: packet vlan: 1307 state: up
Interface: internal vlan: NA state: up
HA Admin role: Secondary
HA Oper role: NONE
Status: VSB POWERED ON
Location: SECONDARY
SW version:
VSB Info:
switch-1(config)#
```

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	4.2(1)SV1(4a)	This feature was introduced.

