Configuring VSM Backup and Recovery

This chapter contains the following sections:

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

> ✎
>
> **Note**   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.
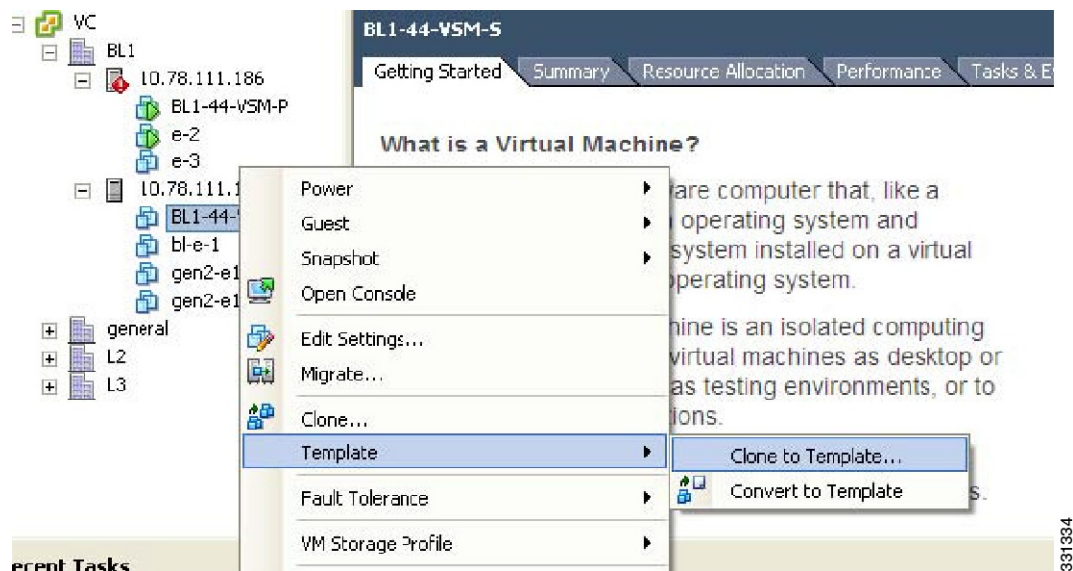
Figure 1: vSphere Client Window
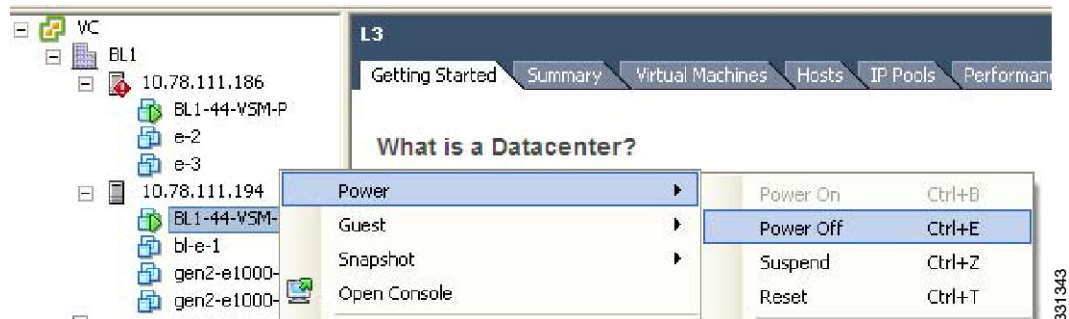
Step 2   In the left navigation pane, right-click the standby VSM. A drop-down list is displayed.

Step 3   Choose **Power > Power Off**.
The action is displayed in the Clone to Template Window.
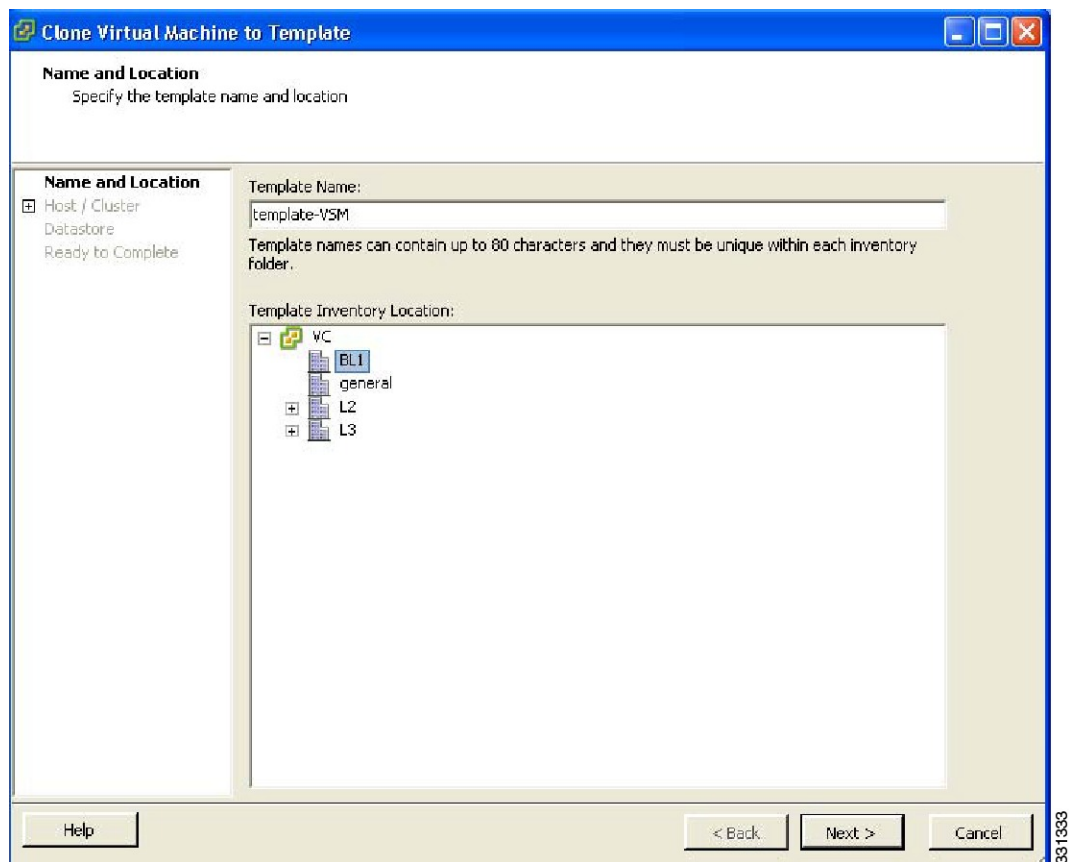
Figure 2: Clone to Template Window

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.

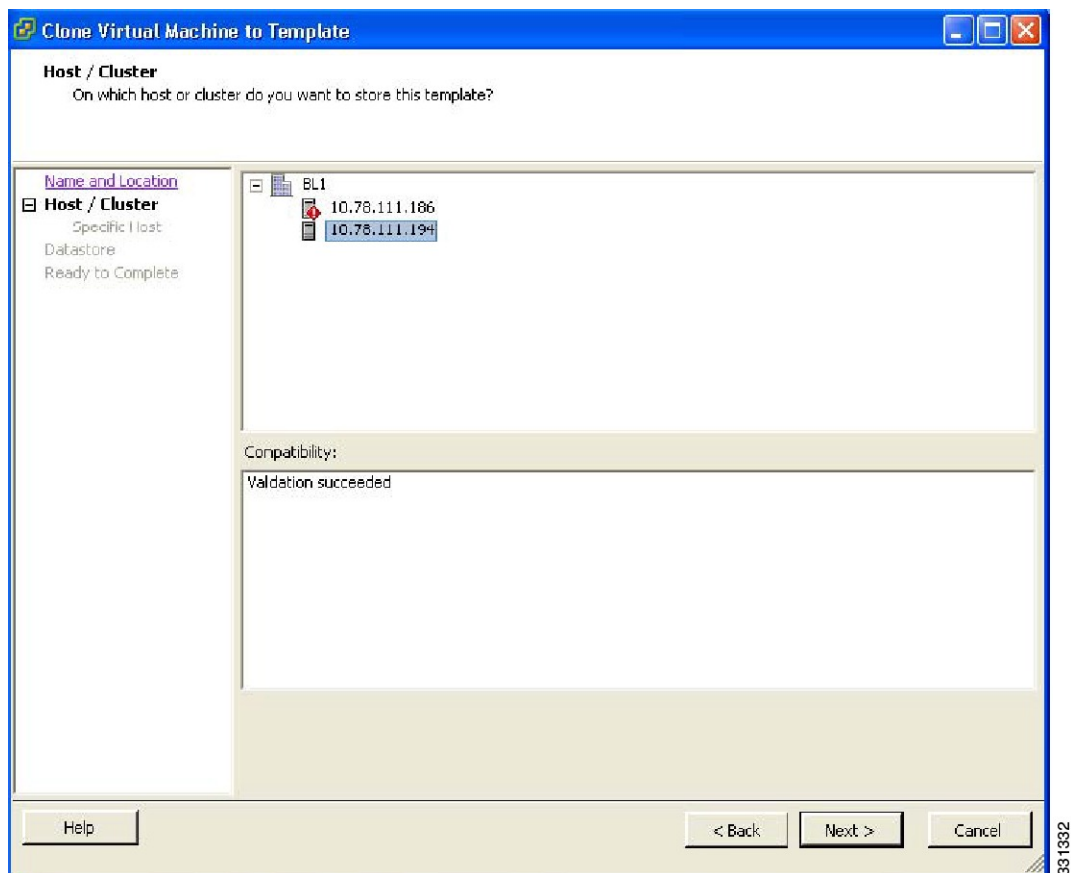*Figure 3: Clone Virtual Machine to Template Window*

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.
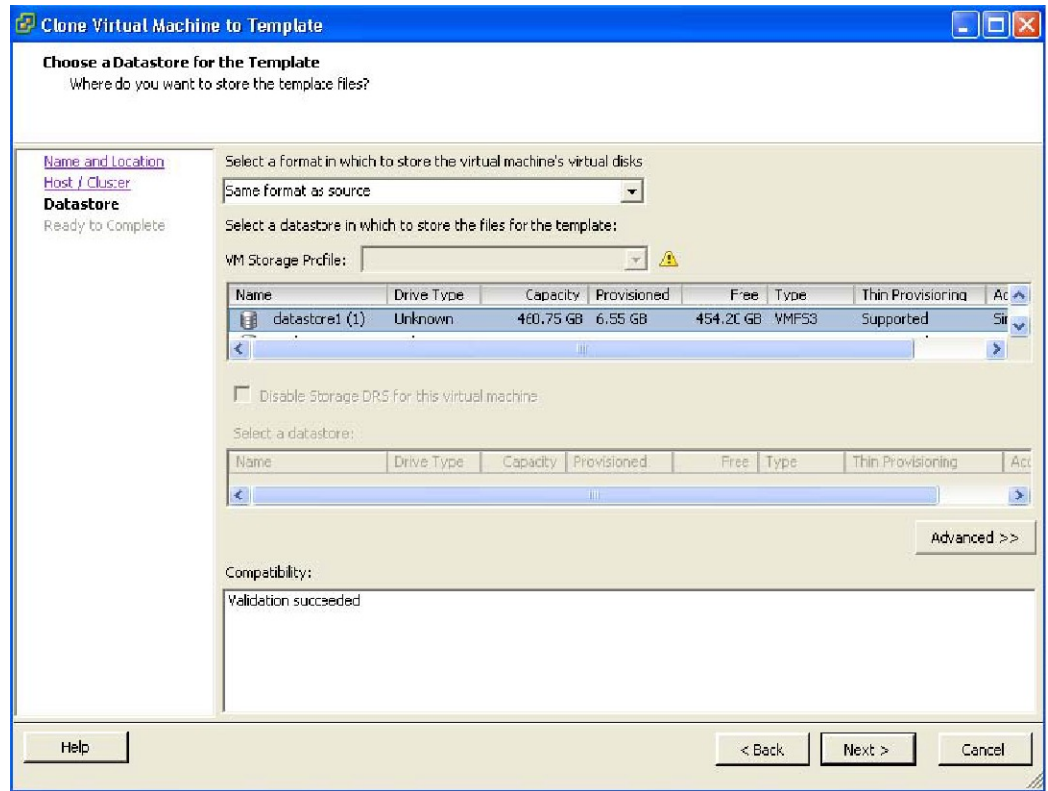
Figure 4: Host Window

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

Step 10   Click Next.

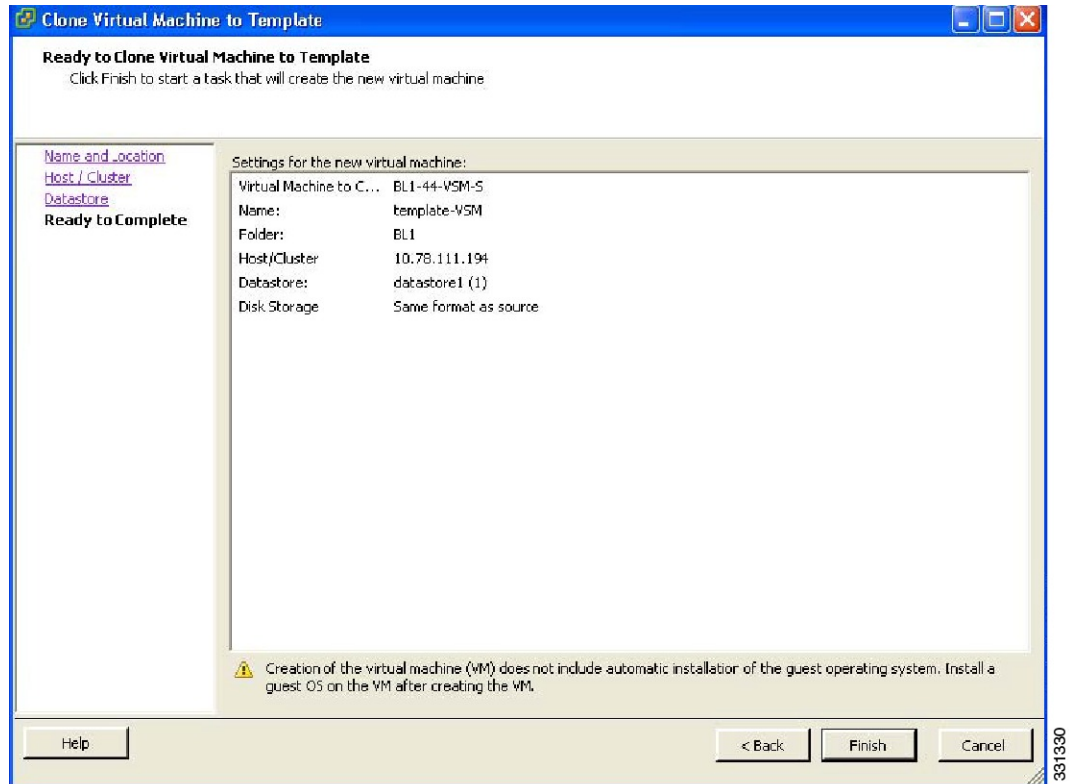The Choosing a Datastore window opens.

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
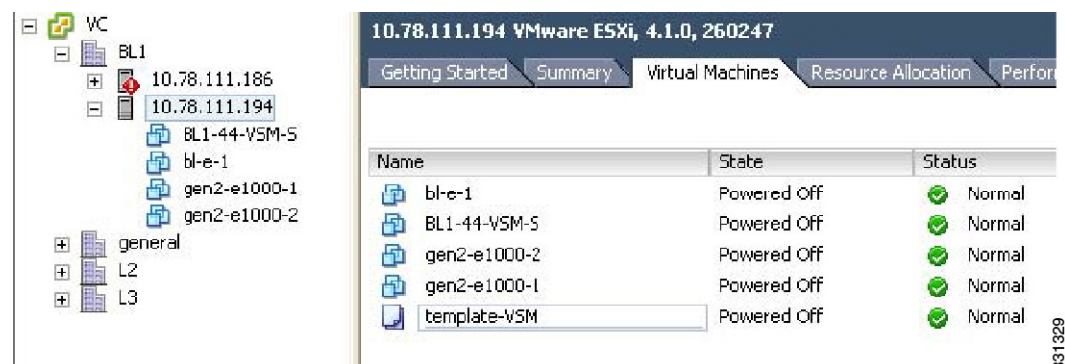
Performing a Periodic Backup

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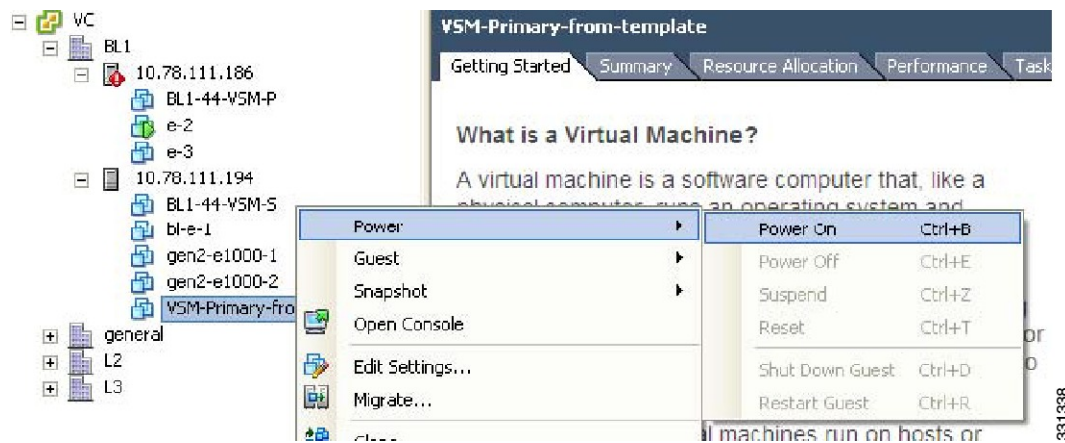
Note While deploying the VSM VM, do not power it on.

Procedure

Step 1   Open the vSphere Client.
The vSphere Client window opens as displayed in the following illustration.
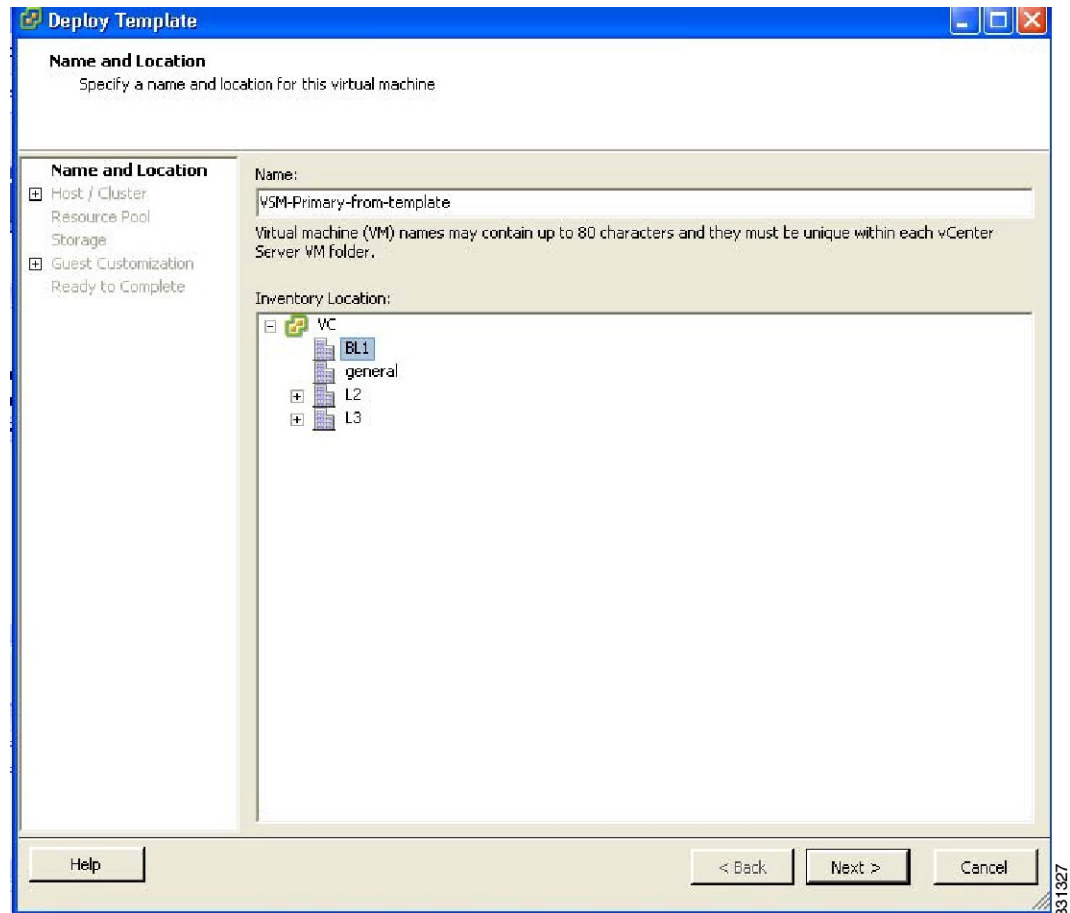
Figure 8: vSphere Client Window

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.

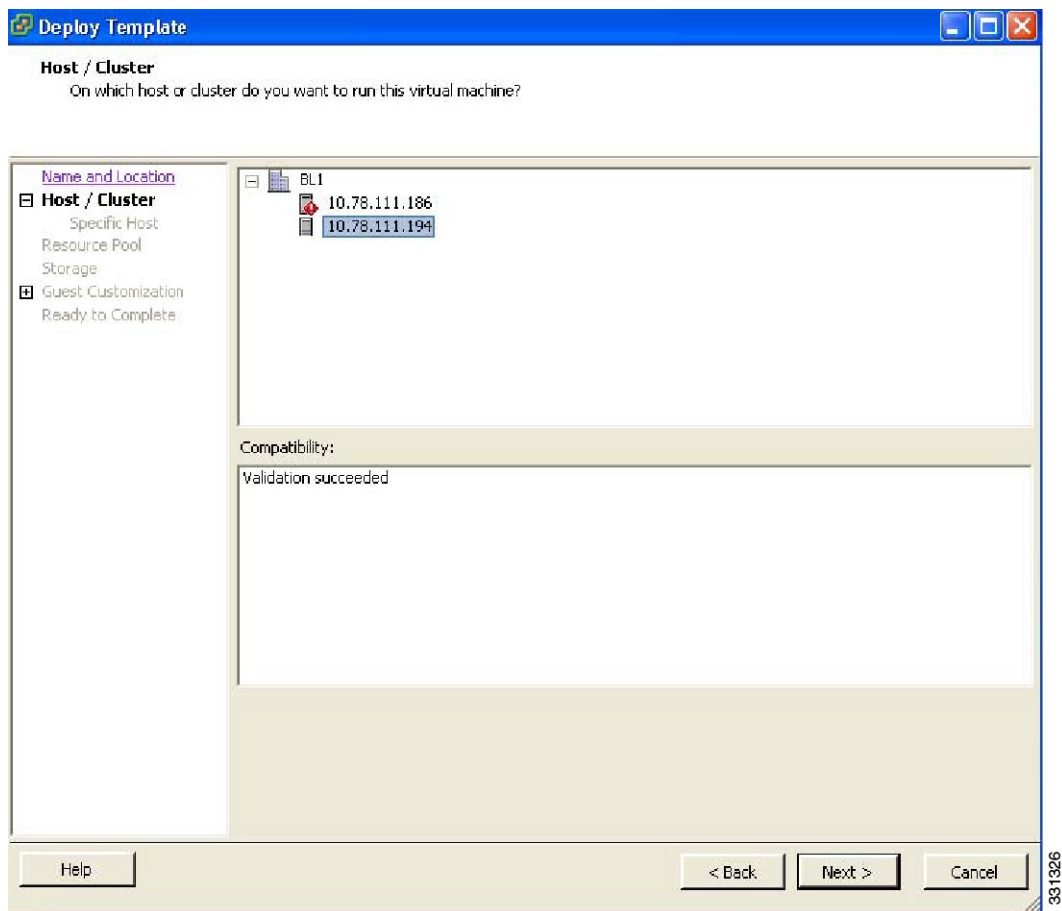The Deploy Template Wizard window opens.

Figure 9: Deploy Template Wizard Window

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

Step 9 Choose a host.

Step 10

Example:
Click Next.

The Choosing a Datastore window opens.

Figure 11: Choosing a Datastore Window
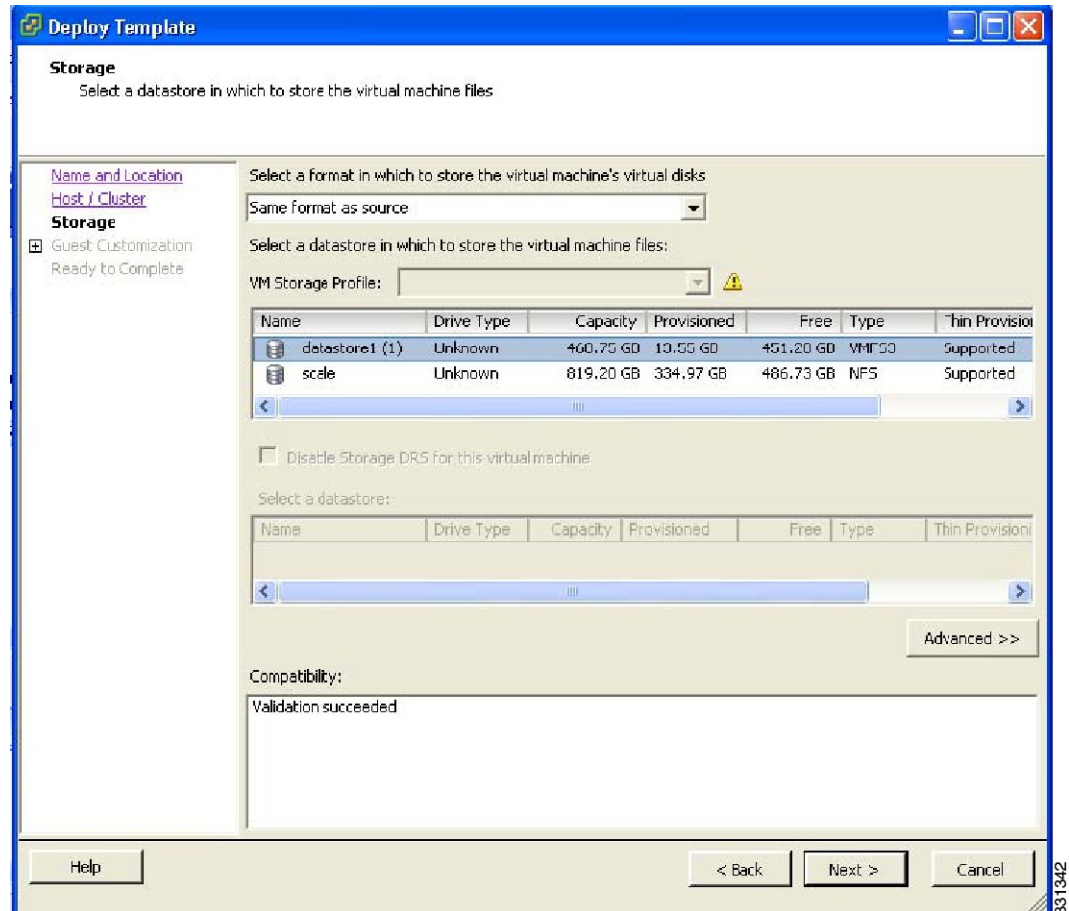
Step 11 In the Select a format in which to store the virtual machine's virtual disks drop-down list, choose Same format as source.

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 12: Guest Customization Window

Step 14 Click Next.

The Deploy Template - Ready to Complete window opens.

Figure 13: Guest Customization Window

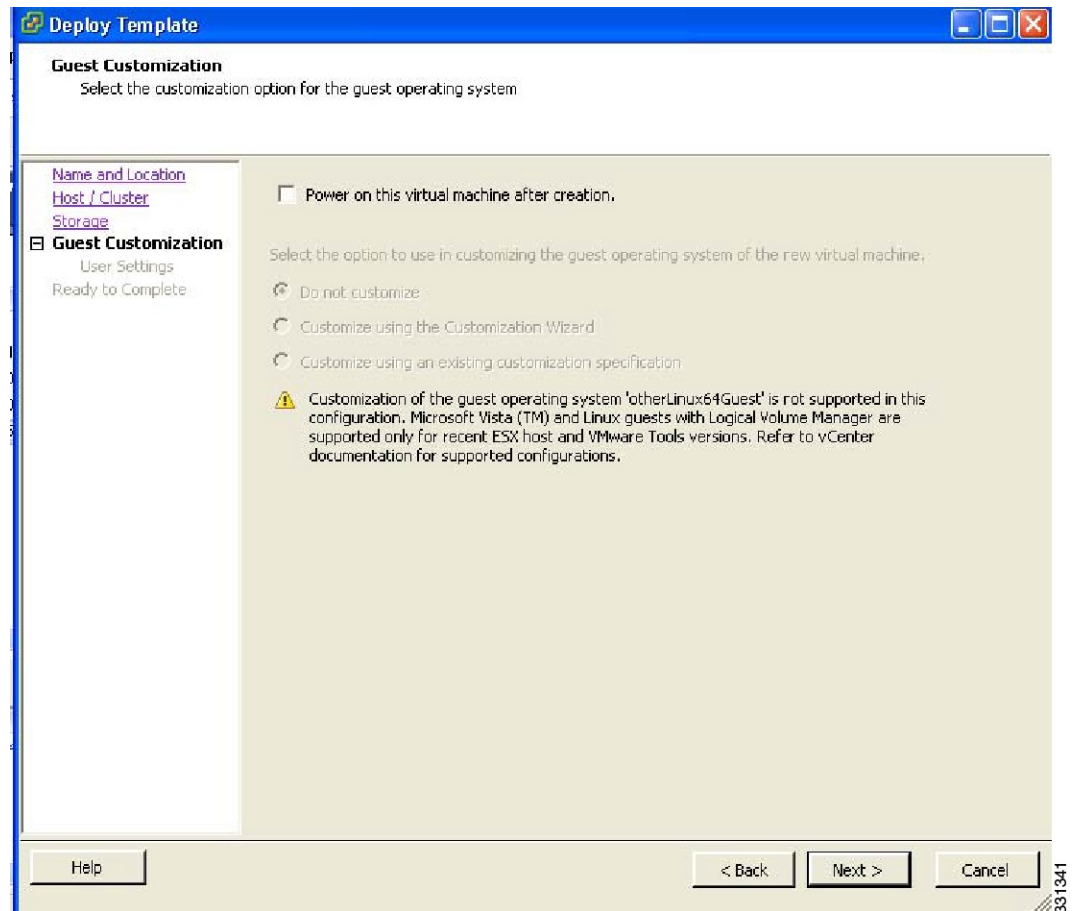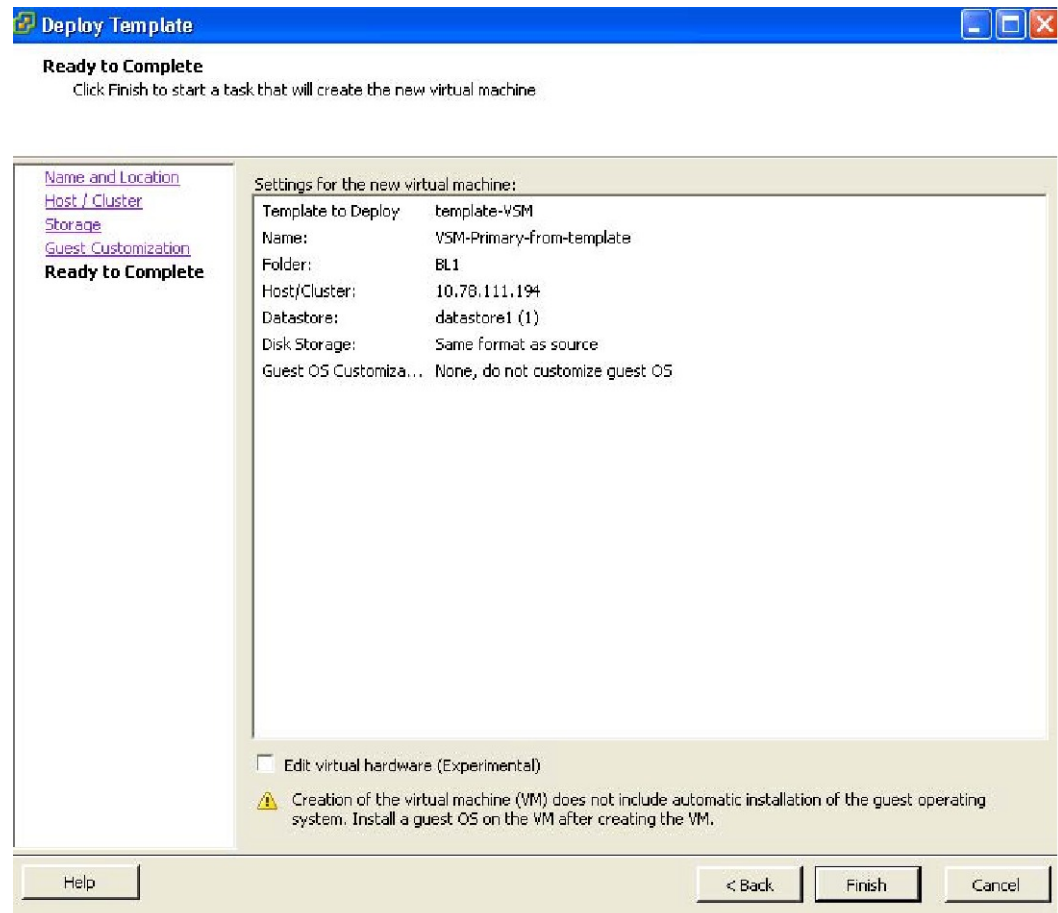

Step 15 Confirm the settings for the new virtual machine and click Finish. If the management VLAN is not available on the VEM, you must add the management interface to the vSwitch.

Step 16 Right-click the newly deployed VM.

Step 17 Choose Edit Settings.

The Virtual Machine Properties window opens.

Figure 14: Guest Customization Window
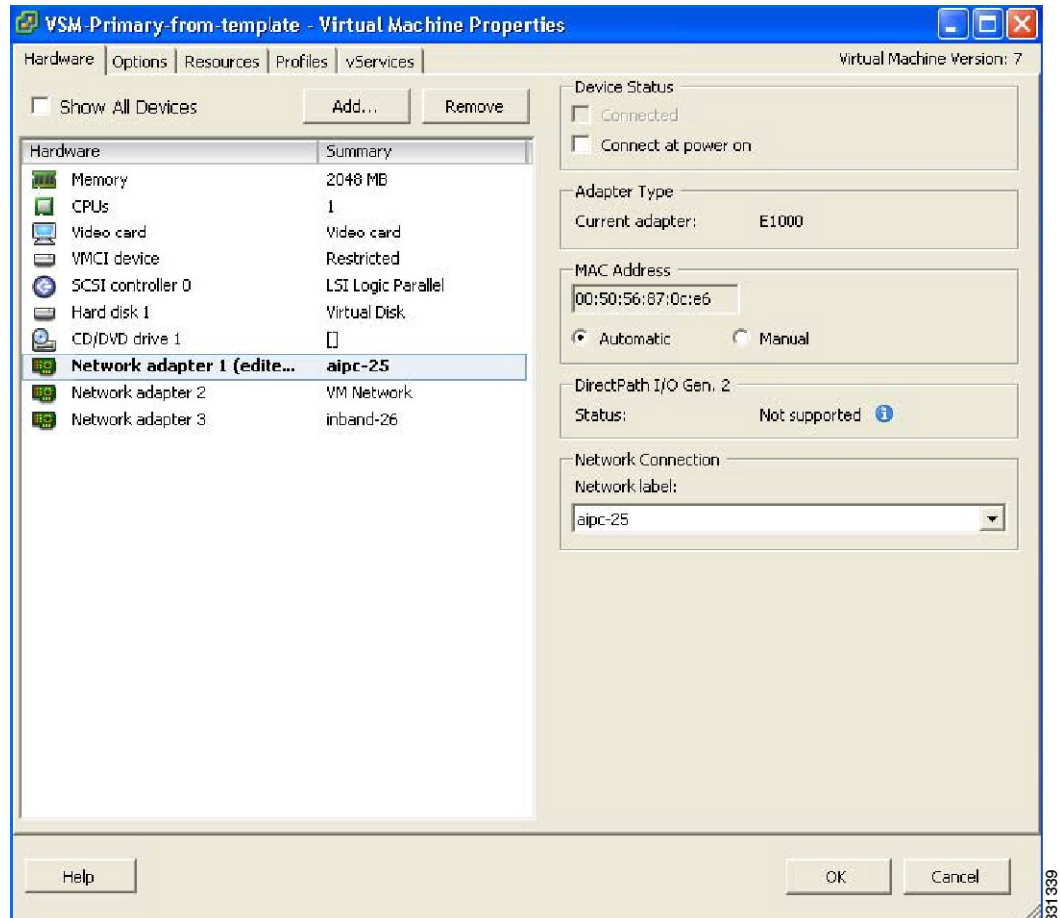
Step 18 In the Hardware / Summary pane, choose Network adapter 1.

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

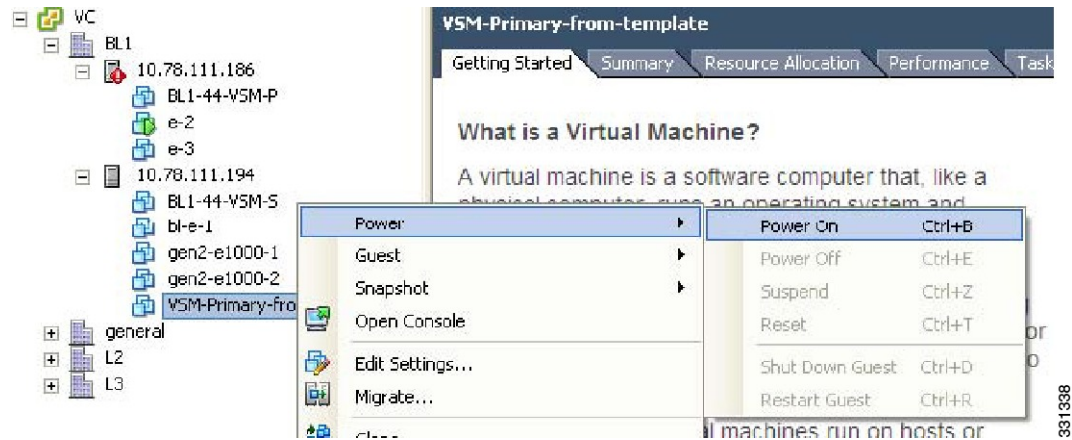This section describes how to erase the startup configuration of the newly deployed VSM.

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# 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 16: System Admin Account Setup Window
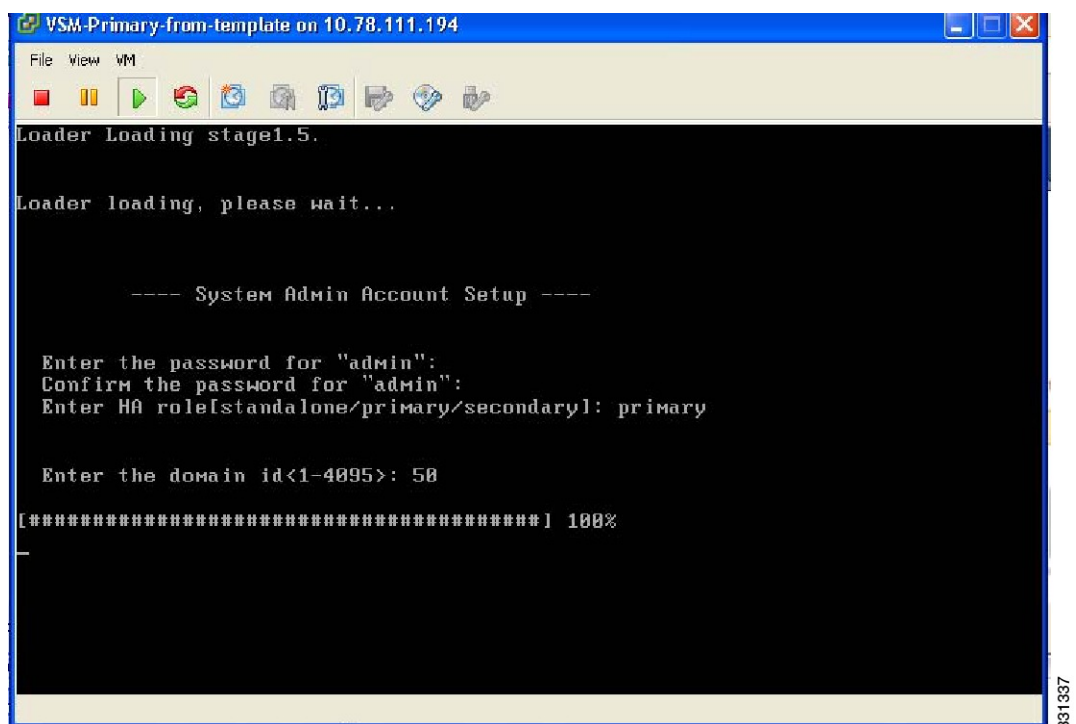
Step 2   Enter and confirm the Administrator password.

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:
```
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 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 0.0.0.0/0 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:
```
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 17: VSM Virtual Machine Properties Window
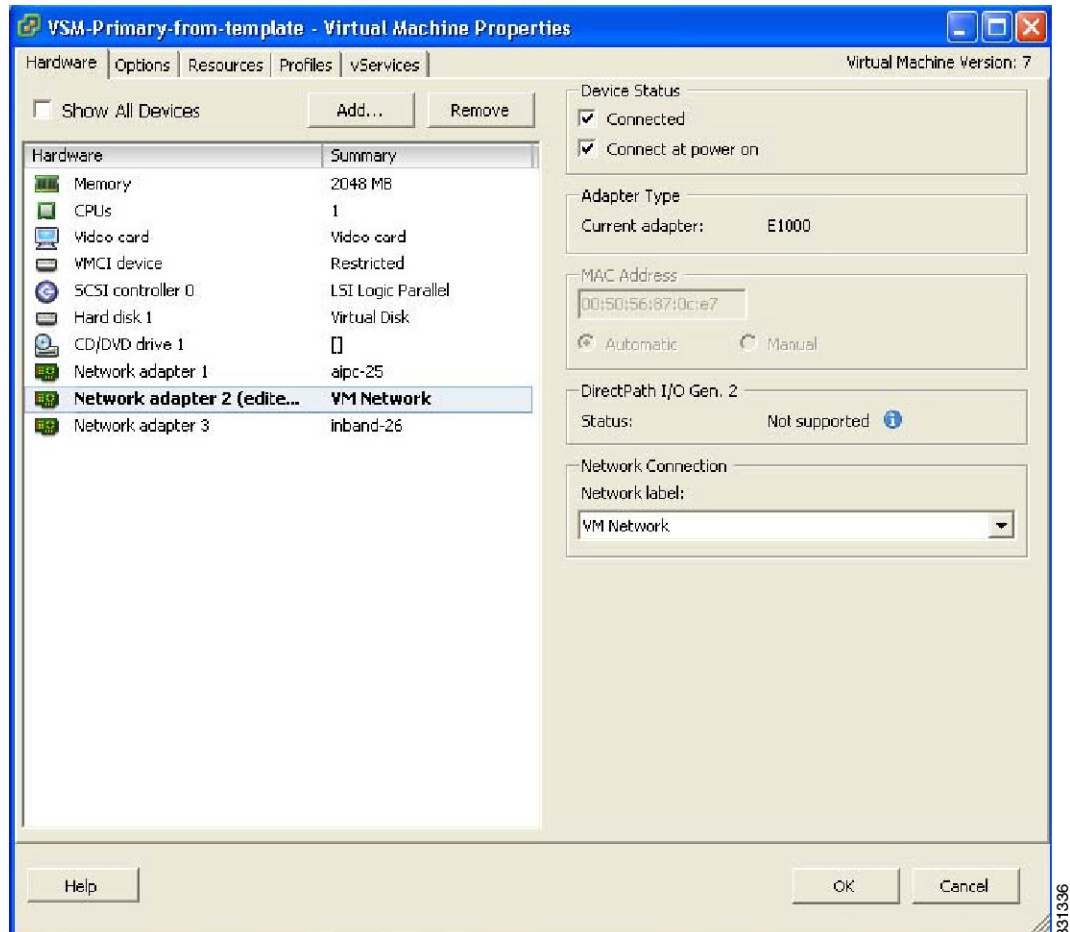
Step 20 In the Hardware/Summary pane, choose Network adapter 2.

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.

Figure 18: Virtual Machine Properties Window
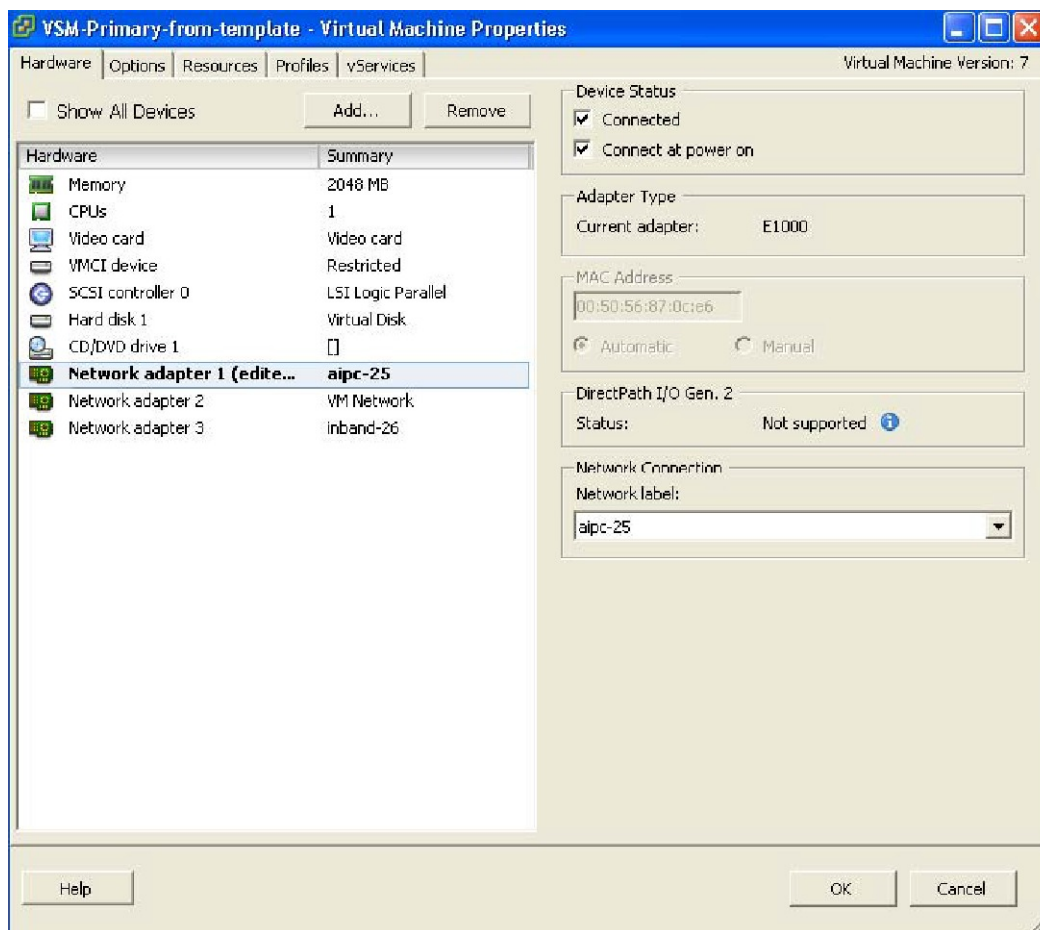
Step 25   In the Hardware / Summary pane, choose Network adapter 1.

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:

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

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.