CHAPTER 3

Configuring the Software Using the GUI

This chapter describes how to use the GUI application to complete the Cisco Nexus 1000V configuration, and includes the following sections.

Information About the GUI Application

You can use the GUI application, after the software is installed, to complete the following Cisco Nexus 1000V configuration for a standalone, or primary and secondary VSM. The GUI application uses the options you chose during VSM installation to determine which configuration steps are required.

- Create port profiles for the Control, Management, and Packet port groups:
- Create uplink port profiles.
- Create port profiles for VMware kernel NICs.
- Specify a VLAN to be used for system login and configuration, and control and packet traffic.

Note You can use the same VLAN for control, packet, and management, but if needed for flexibility, you can use separate VLANs. If you use the same VLAN, make sure that the network segment where it resides has adequate bandwidth and latency.

- Enable Telnet and SSH and configure an SSH connection.
- Create a Cisco Nexus 1000V plug-in and register it on the vCenter server.
- Migrate each VMware port group or kernel NIC to the correct port-profile.
- Migrate each PNIC from the VMware vSwitch to the correct uplink on the DVS.
- Add the host to the DVS.

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Note If you install the Cisco Nexus 1000 in a VMware cluster with DRS enabled, all ESX hosts must be migrated to the Cisco Nexus 1000 DVS. If only some hosts are migrated it is possible that VMs could be installed or moved to hosts in which the vSwitch is missing VLANs, physical adapters, or both.

- Save the configuration to a file as a backup or for use as a template in creating subsequent VSMs.

GUI Software Configuration Process

The following section will guide you through this process. After completing each procedure, return to this section to make sure you complete all required procedures in the correct sequence.

Step 1 Set up the primary or standalone VSM virtual machine using the "Setting Up a Primary or Standalone VSM VM Using the GUI" procedure on page 3-3.

Step 2 Set up the secondary VSM virtual machine using the "Setting Up a Secondary VSM" procedure on page 3-14.

Step 3 Do one of the following:

- If you have purchased licenses, add them to the Cisco Nexus 1000V using the following document:
  - *Cisco Nexus 1000V License Configuration Guide, Release 4.2(1)SV1(4a)*
- If you are using the temporary licenses provided in the software, then continue with the next step. No action is required.

Note The software provides licenses for 16 CPU sockets for a period of 60 days. These licenses are used only if there are no permanent licenses installed on the VSM. The evaluation period of 60 days starts when you install the software.

Step 4 Set up the additional VSM virtual machines using the "Setting Up a VSM with a Copy of a Configuration File" section on page 3-18.

Step 5 You have completed this process. Return to the "Software Configuration Process" section on page 2-7 to continue setting up your VSM software.

Guidelines and Limitations

This configuration process has the following guidelines and limitations:

- To prevent a disruption in connectivity, all port profiles are created with a system VLAN. You can change this after migration if needed.
- For a complete list of port profile guidelines and limitations, see the *Cisco Nexus 1000V Port Profile Configuration Guide, Release 4.2(1)SV1(4a)*.
- The host and adapter migration process moves all PNICs used by the VSM from the vSwitches to the Cisco Nexus 1000V DVS.
- The following must be in place if you migrate the host and adapters:

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  - The host must have one or more physical NICs on each vSwitch in use.
  - The vSwitch does not have any active VMs.

    To prevent a disruption in connectivity during migration, any VMs that share a vSwitch with port groups used by the VSM must be powered off.
  - The host must use a VUM-enabled vCenter server.
  - You must also configure the VSM connection to the vCenter server datacenter where the host resides.
- The migration process supports Layer 2 and Layer 3.
- No VEMs were previously installed on the host where the VSM resides.

Caution Host management connectivity may be interrupted if VMware kernel 0, vSwitch interface 0 are migrated and the native VLAN is not correctly specified in the setup process.

- The following modification is required to the uplink port profile created by the GUI application if you are installing Cisco Nexus 1000V in an environment where the upstream switch does not support static port channels, such as UCS. The GUI application creates the uplink port profile with **channel group auto mode on** which must be changed to:

  channel group auto mode on mac-pinning

  This change is required before adding VMNICs in the DVS using this profile.

Setting Up a Primary or Standalone VSM VM Using the GUI

You can use this section and the software GUI to configure the following:

BEFORE YOU BEGIN

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

- You have the following domain information:
  - Control VLAN ID
  - Packet VLAN ID
  - Domain ID

DETAILED STEPS

Step 1 In your local browser address field, enter the VSM IP address.

The Cisco Nexus 1000V home page opens.

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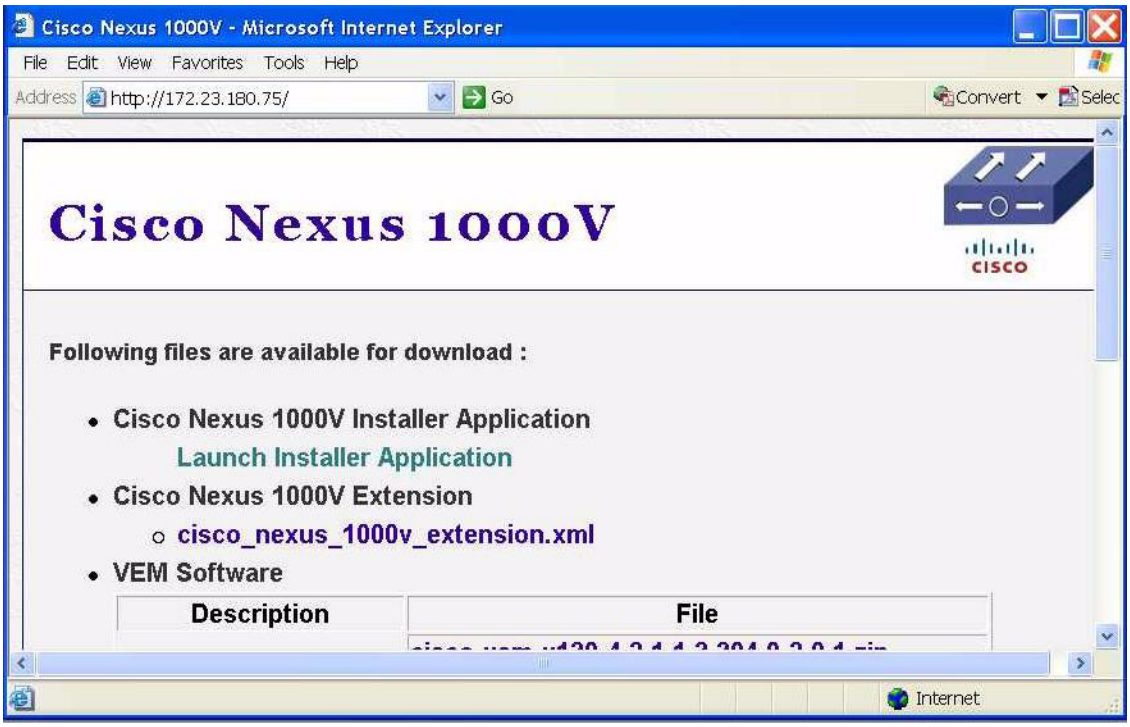

Step 2 Click **Launch Installer Application**.

The application is downloaded and a security screen opens asking if you want to run it.

Step 3 Click **Run**.

The Enter VSM Credentials screen opens.

Step 4 Enter a password for the Administrator and then click **Next**.

The vCenter Credentials screen opens.

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Step 5 Enter the following vCenter credentials.

- vCenter IP address
- Secure HTTP port

  Port 443 is configured by default, but you can change this if needed.
- vCenter User ID (for a vCenter user with administrator-level privileges)
- vCenter Password (for a vCenter user with administrator-level privileges)

Step 6 In the Use a configuration file field, choose **No** and then click **Next**.

The VSM Host screen opens.

Step 7 Choose a host or cluster where the VSM resides and click **Next**.

The VSM VM and Port Groups screen opens.

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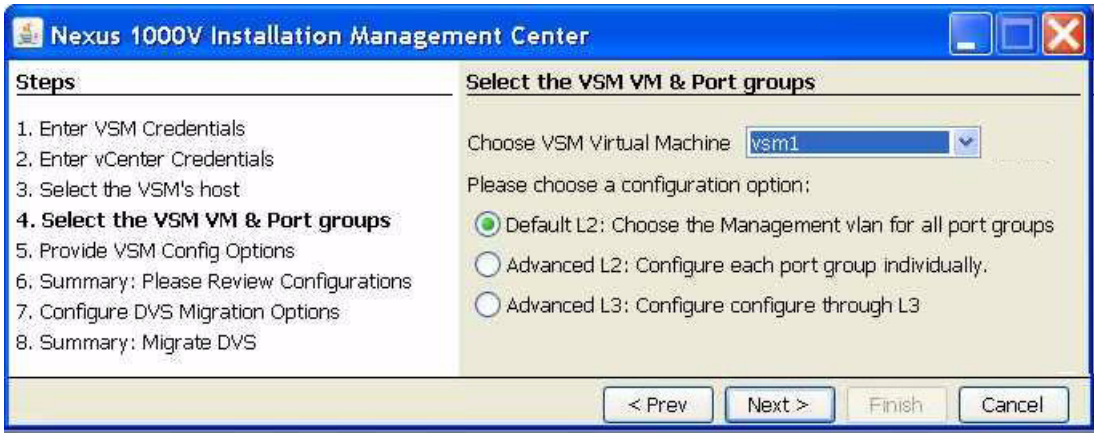

Step 8 Choose your VSM from the selection list.

Step 9 Click one of the following configuration options:

- To use the default Layer 2 configuration, click **Next,** and go to Step 13.

  This configures one VLAN (the management VLAN) for use in the control, management, and packet port profiles.
- To configure a different vSwitch port group for each VSM network adapter, click **Advanced L2** and then continue with the next step.
- To configure Layer 3 connectivity, click **Advanced L3** and go to Step 11.

Step 10 In the Advanced Layer 2 configuration screen, do the following:

- Choose your port groups from the selection lists.
- Add VLAN IDs.
- Click **Next**, and then go to Step 13.

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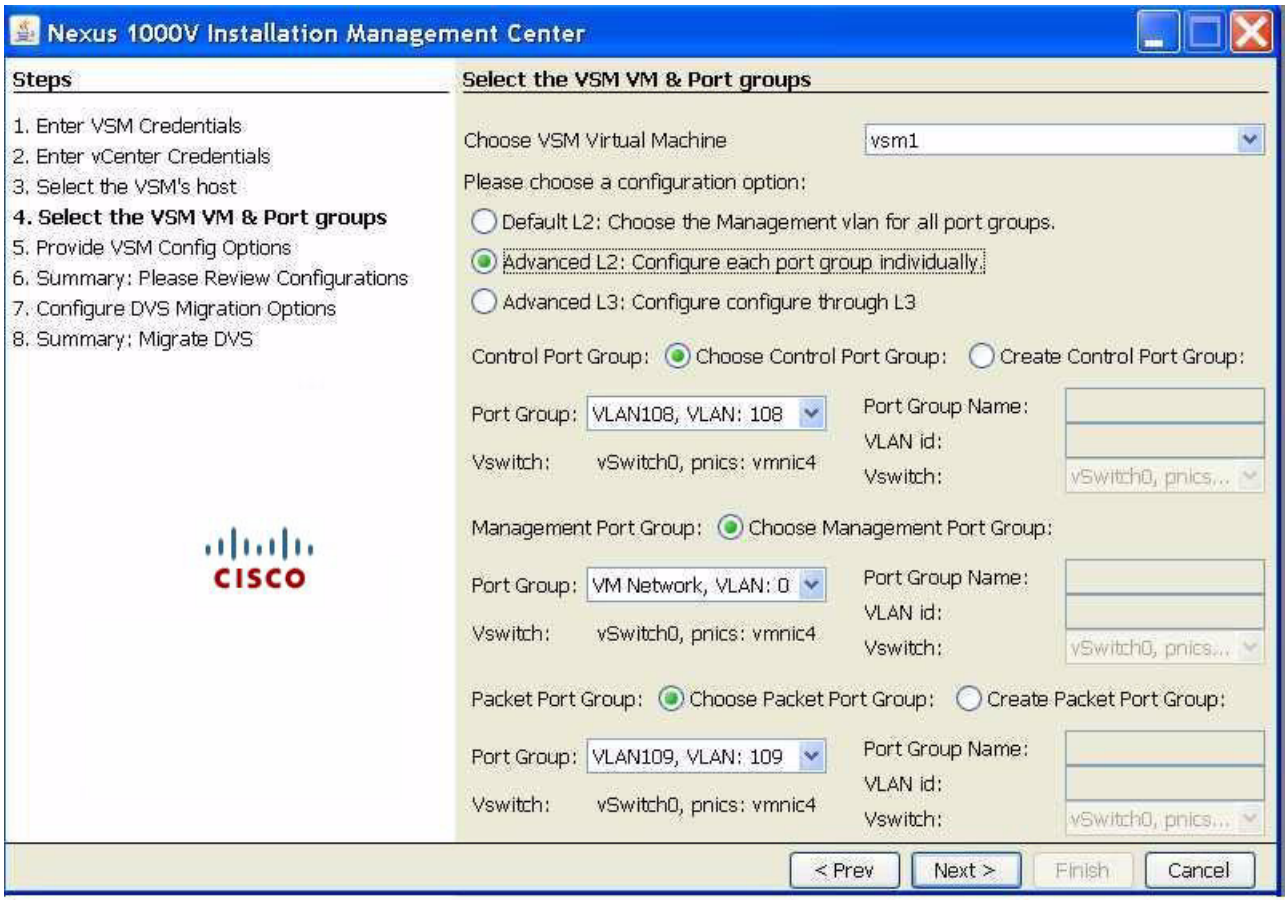

Step 11 In the Advanced Layer 3 port group configuration screen, add the following information:

- Control port group configuration.
- Management port group configuration.

Step 12 For Layer 3 connectivity, choose either mgmt0 or control0 and then do one the following:

- If you chose mgmt0, add the following information and then click **Next**.
  - Layer 3 mgmt0 interface port profile VLAN ID.

- If you chose control0, add the following information and then click **Next**.
  - Layer 3 interface control0 IP address, subnet mask, and gateway
  - Layer 3 control0 interface port profile VLAN ID

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Note Control and management IP addresses must be in different subnets. This command will fail if the control and management IP addresses are not in different subnets.

Step 13 In the VSM Configuration Options screen, add the following for your VSM and then click **Next**.

- Switch name
- Administrator user name and password
- Management IP address, subnet mask, and gateway IP address

  The VSM VM must be run on the same IP subnet as the ESX 4.0 hosts that it manages.
- System Redundancy Role
- Domain ID
- Datacenter name
- vSwitch native VLAN

Caution Host management connectivity may be interrupted if VMware kernel 0, vSwitch interface 0 are migrated and the native VLAN is not correctly specified here.

- Whether to enable Telnet

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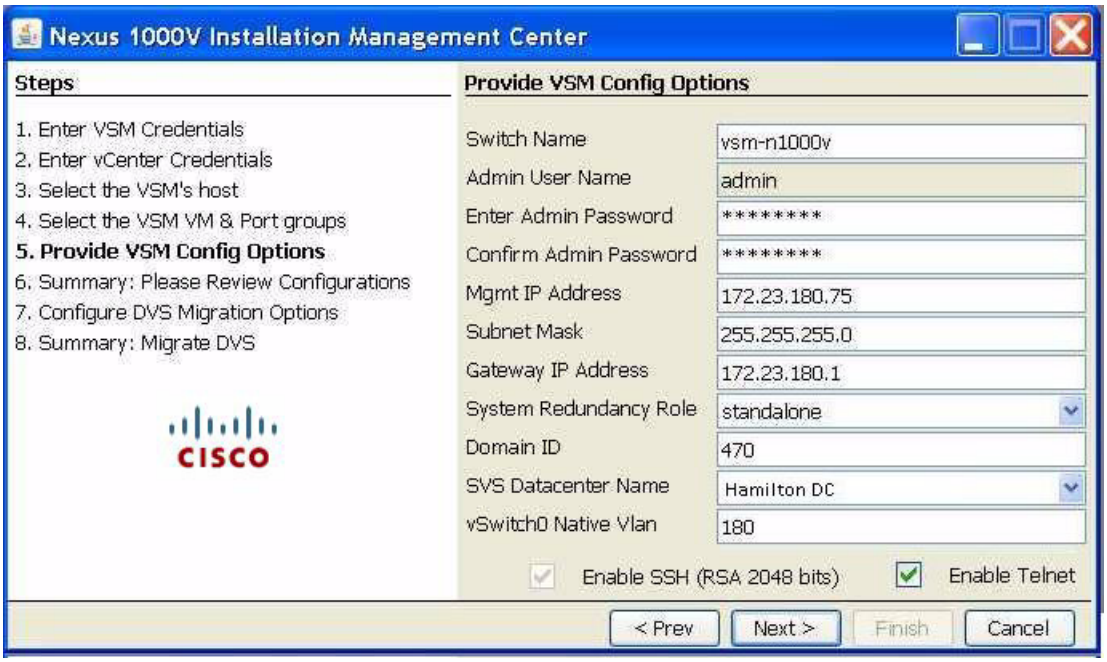
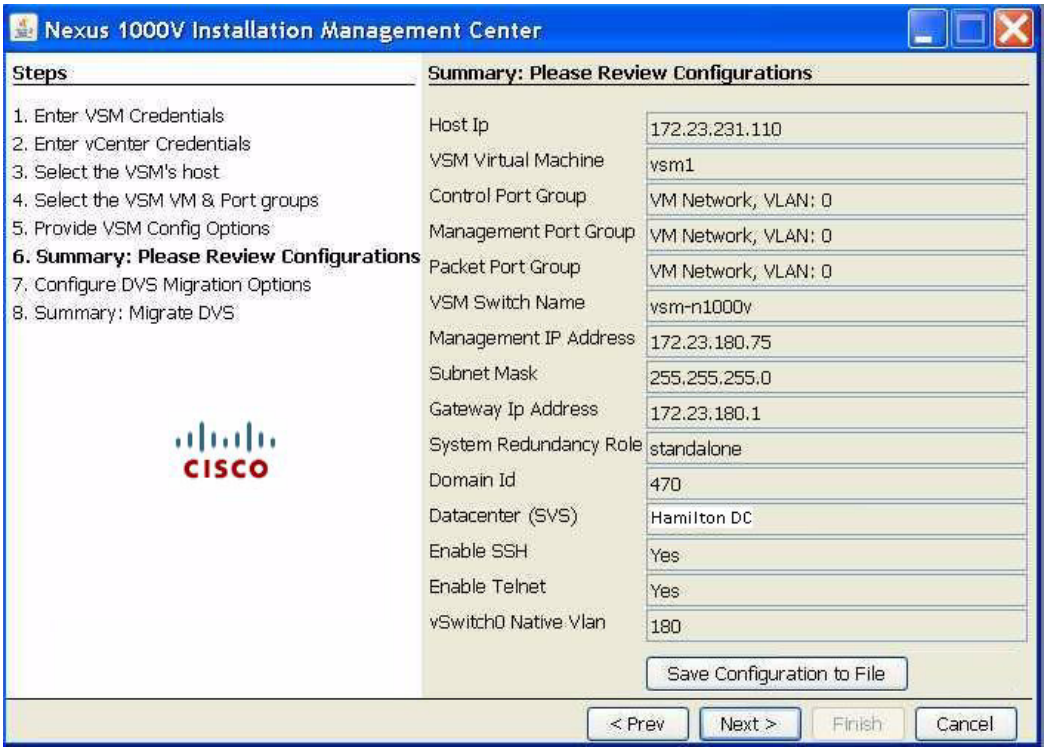


Step 14 Click **Next**.

The complete configuration for your VSM displays.

Step 15 Review the configuration.



Step 16 Do one of the following:

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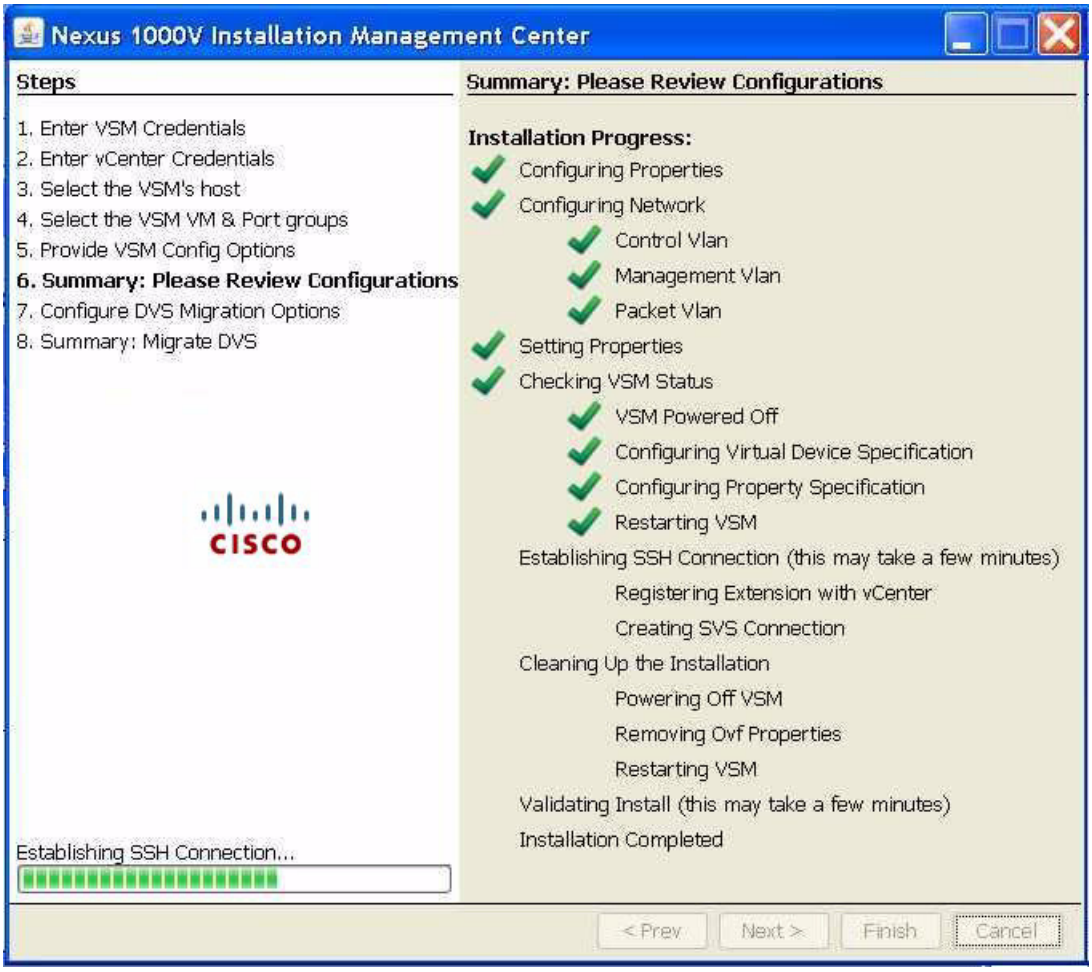
- To make corrections, click **Prev**, go back to the previous screens, and make corrections.
- If the configuration is correct, continue with the next step.

Step 17 Do one of the following:

- To save the configuration to a file as a back up (recommended) or for use in creating another VSM later, click **Save Configuration to File**, and specify a filename and location.
- If not, continue with the next step.

Step 18 Click **Next**.

As the configuration is applied to the VSM, a summary screen displays the progress.



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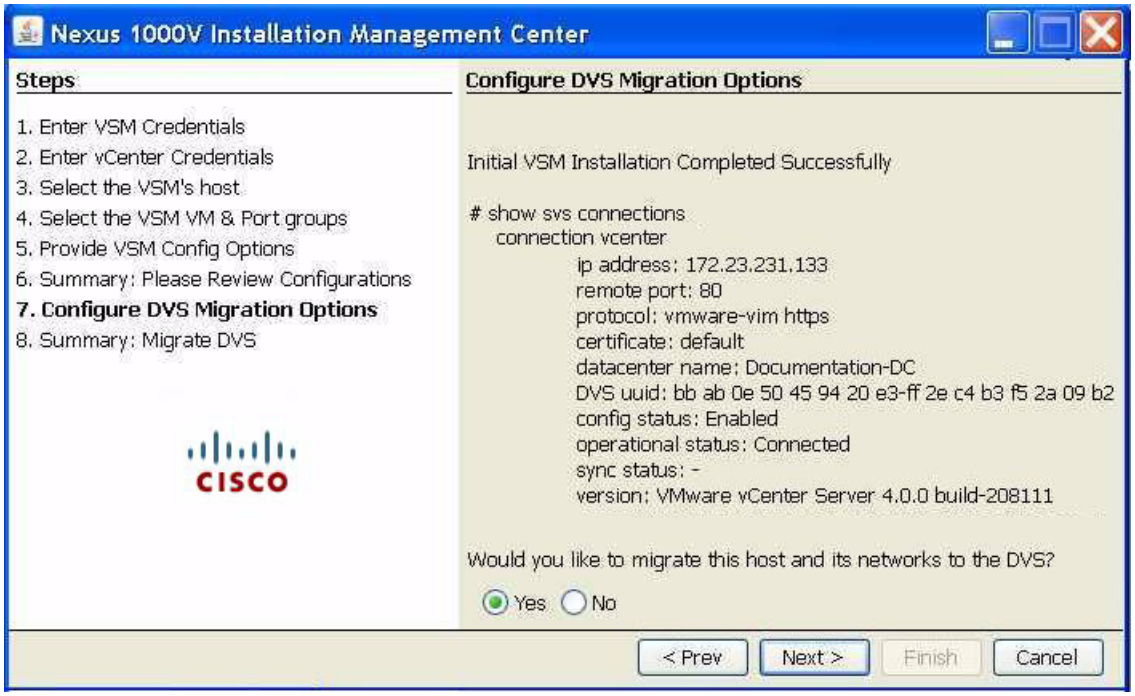
The completed VSM configuration is displayed and you are then prompted to migrate the host and networks to the new DVS.



Step 19 Do one of the following:

- To continue without migrating the host and networks, click **No**. Then click **Finish** and go to Step 22.

  If you do not migrate the host now, you can migrate it later manually.

- To have the host and networks automatically migrated to the new DVS, click **Yes** and then click **Next**.

  When you click **Yes**, one of the following is configured on the uplink port profile during migration:

Port Channel created during migration	For vSwitch Teaming policy in use:
A static port channel **channel-group auto mode on**	Route based on IP Hash or Route based on the originating virtual port ID
A vPC host mode port channel with mac-pinning **channel-group auto mode on mac-pinning**	MAC Hash

A summary screen displays the details of the proposed migration.

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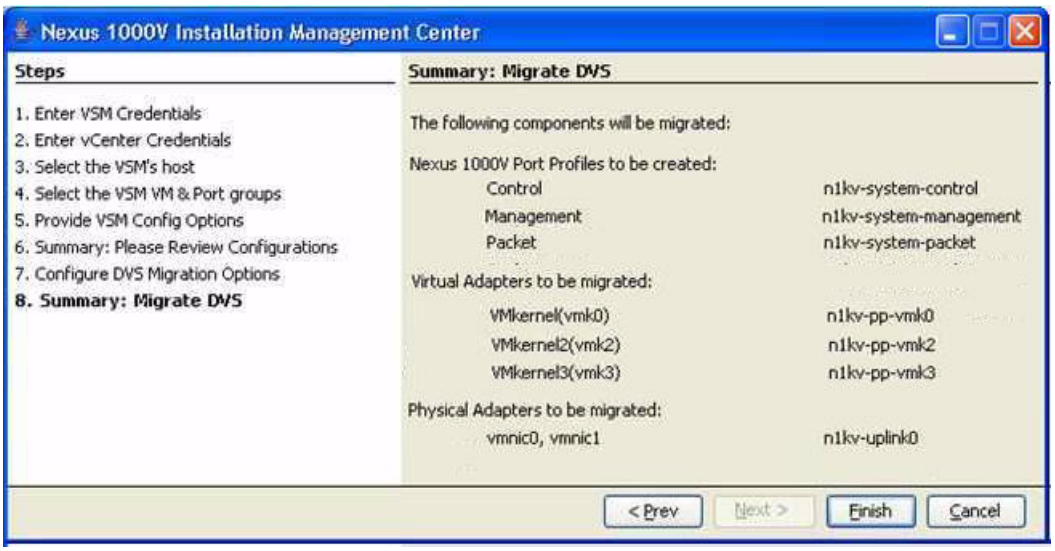
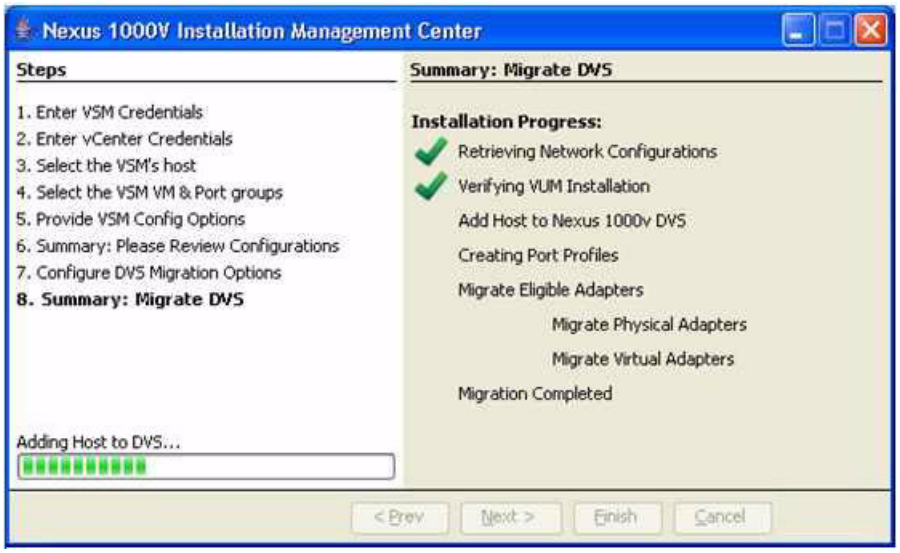


Step 20 Click **Finish**.

The migration starts and progress is displayed.



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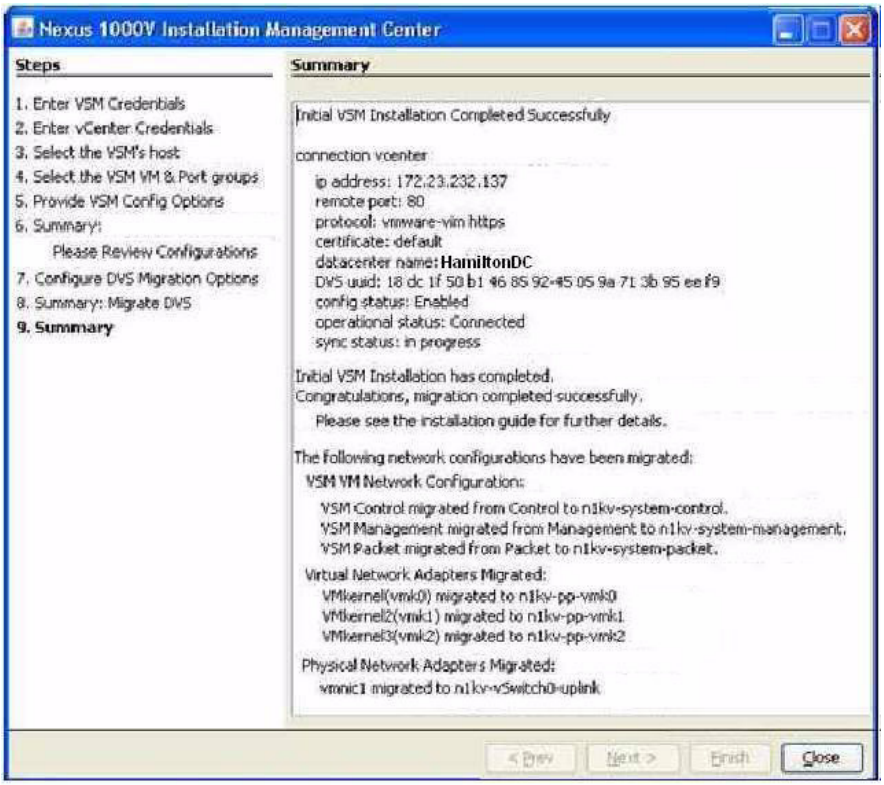
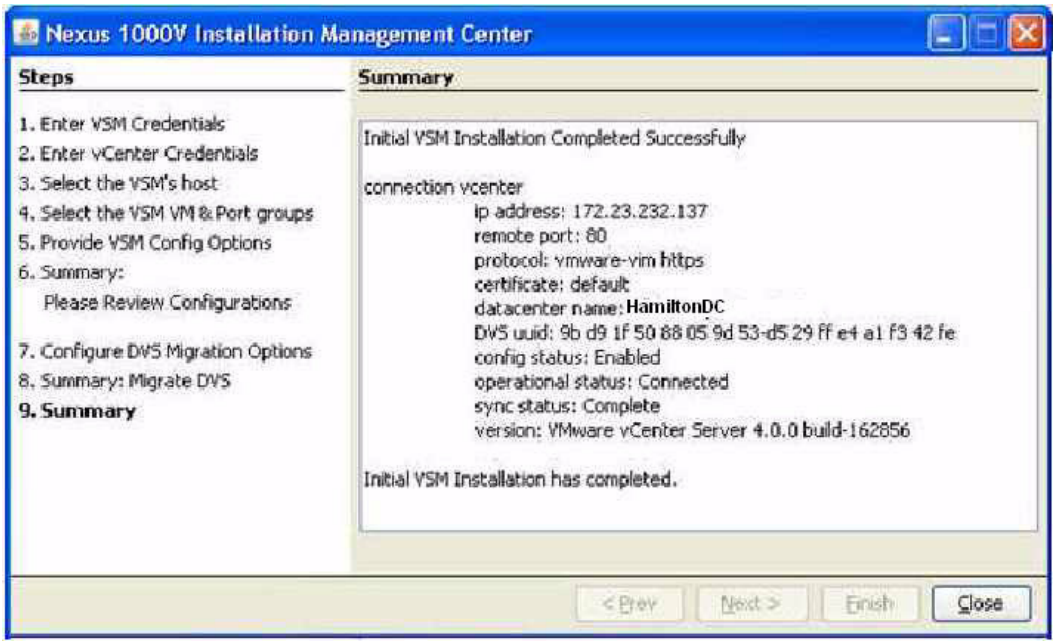
Step 21 A summary of the configuration displays with the migration details.



Step 22 A summary of the complete installed configuration displays.



Step 23 Click **Close**.

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You have completed the setup of the Cisco Nexus 1000Vsoftware.
Return to the GUI Software Configuration Process, page 3-2.

Setting Up a Secondary VSM

You can use this procedure to set up the secondary VSM in an HA pair.

BEFORE YOU BEGIN

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

- You have already created the primary VSM in the HA pair using the "Setting Up a Primary or Standalone VSM VM Using the GUI" procedure on page 3-3.
- If you have not saved a backup copy of your primary VSM configuration file, do so now, using the following command:

  copy system:running-config [*destination filesystem:*] *filename*

  Example:
  ```
  n1000v# copy system:running-config tftp://10.10.1.1/home/configs/switch3-run.cfg
  ```

- You have the following information available. This is the same information used for the primary VSM:
  - Domain ID
  - Password for the Admin user

DETAILED STEPS

Step 1 In your browser address field, enter the VSM IP address.

The Cisco Nexus 1000V home page opens.

Step 2 Click **Deployment Configuration**.

The Deploy OVF Template screen opens.

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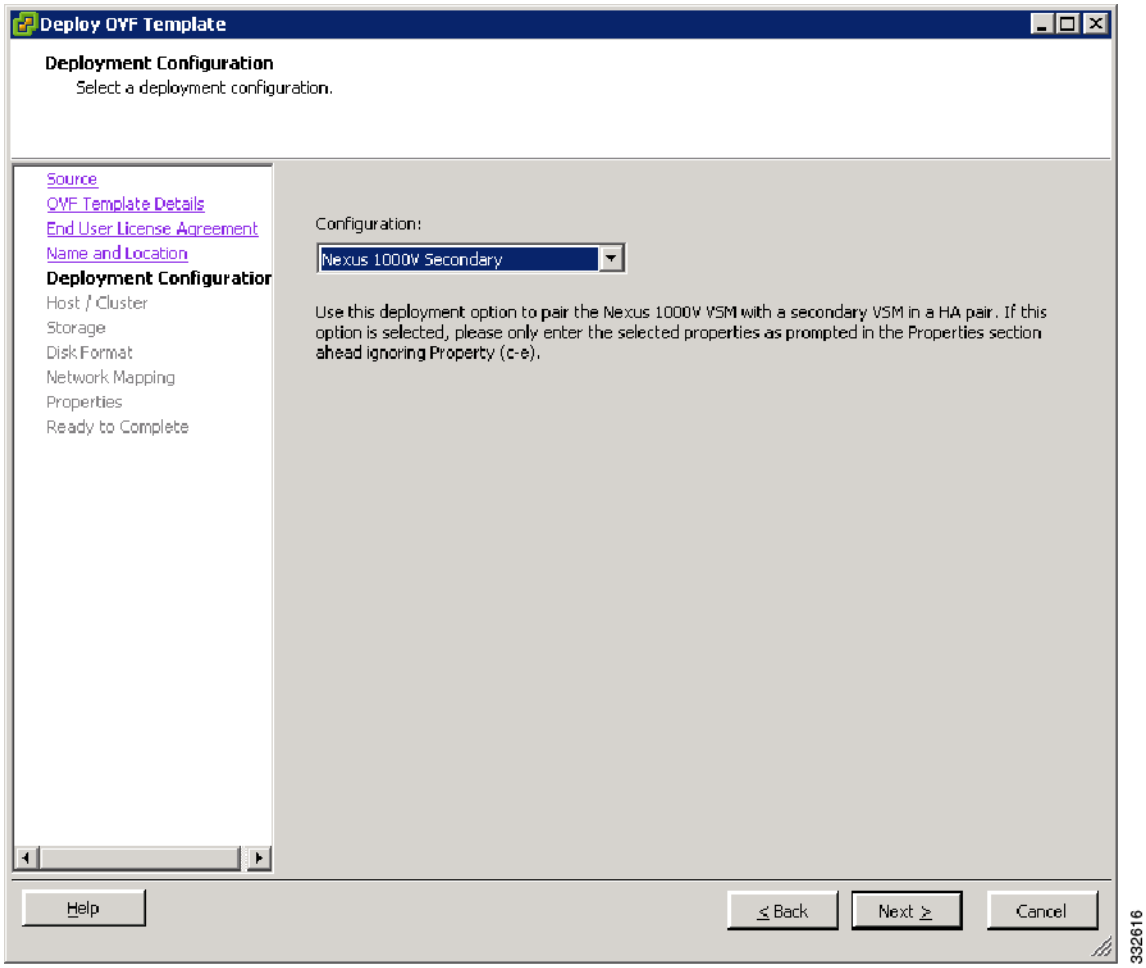

Step 3 From the Configuration drop-down list, choose **Nexus 1000V Secondary** and click **Next**.

The Host/Cluster screen opens.

Step 4 Choose a host from the host's list and click **Next**.

The Storage screen opens.

Step 5 Choose the storage on which the VSM is to be hosted and click **Next**.

The Disk Format screen opens.

Step 6 Validate the datastore chosen and if it is the correct value, click **Next**.

The Network Mapping screen opens.

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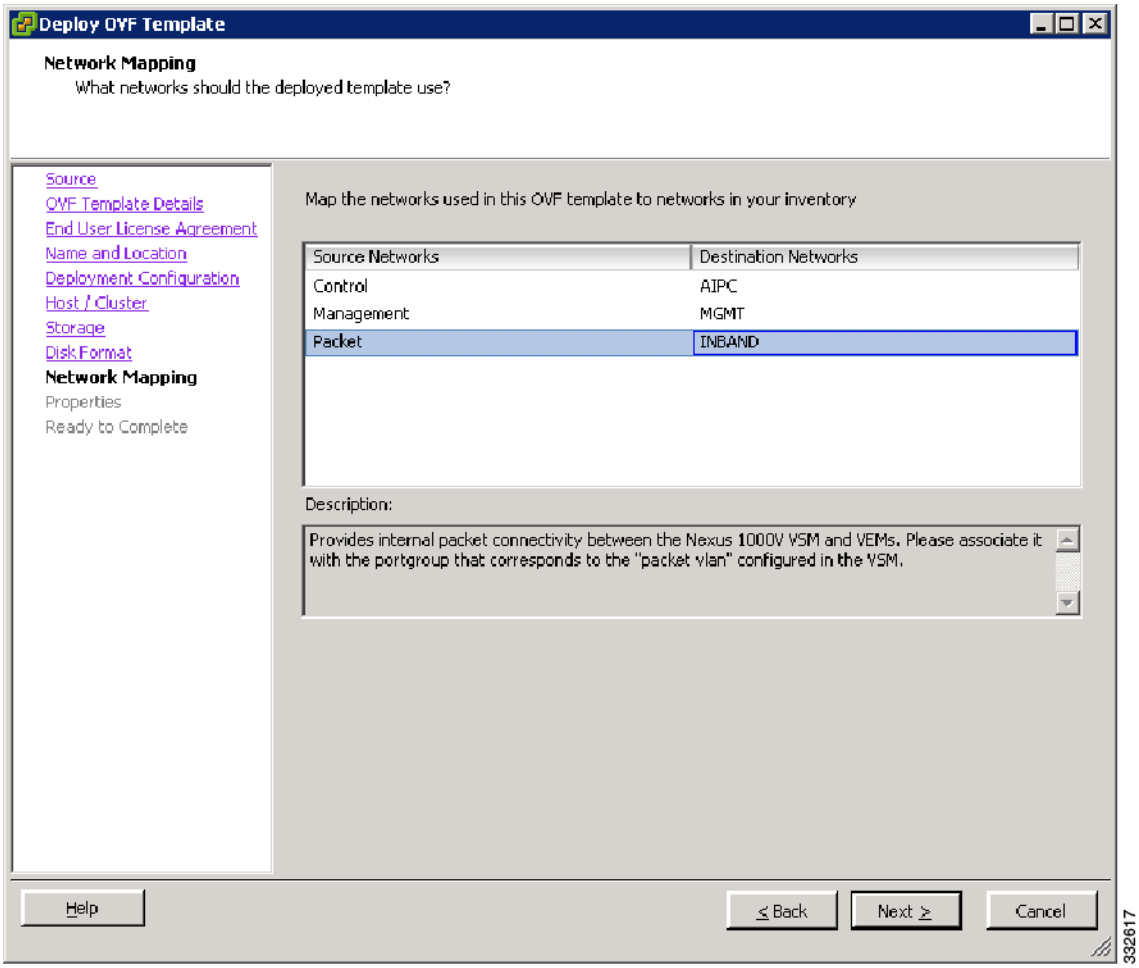

Step 7 Click **Next**.

The Secondary Properties screen opens.

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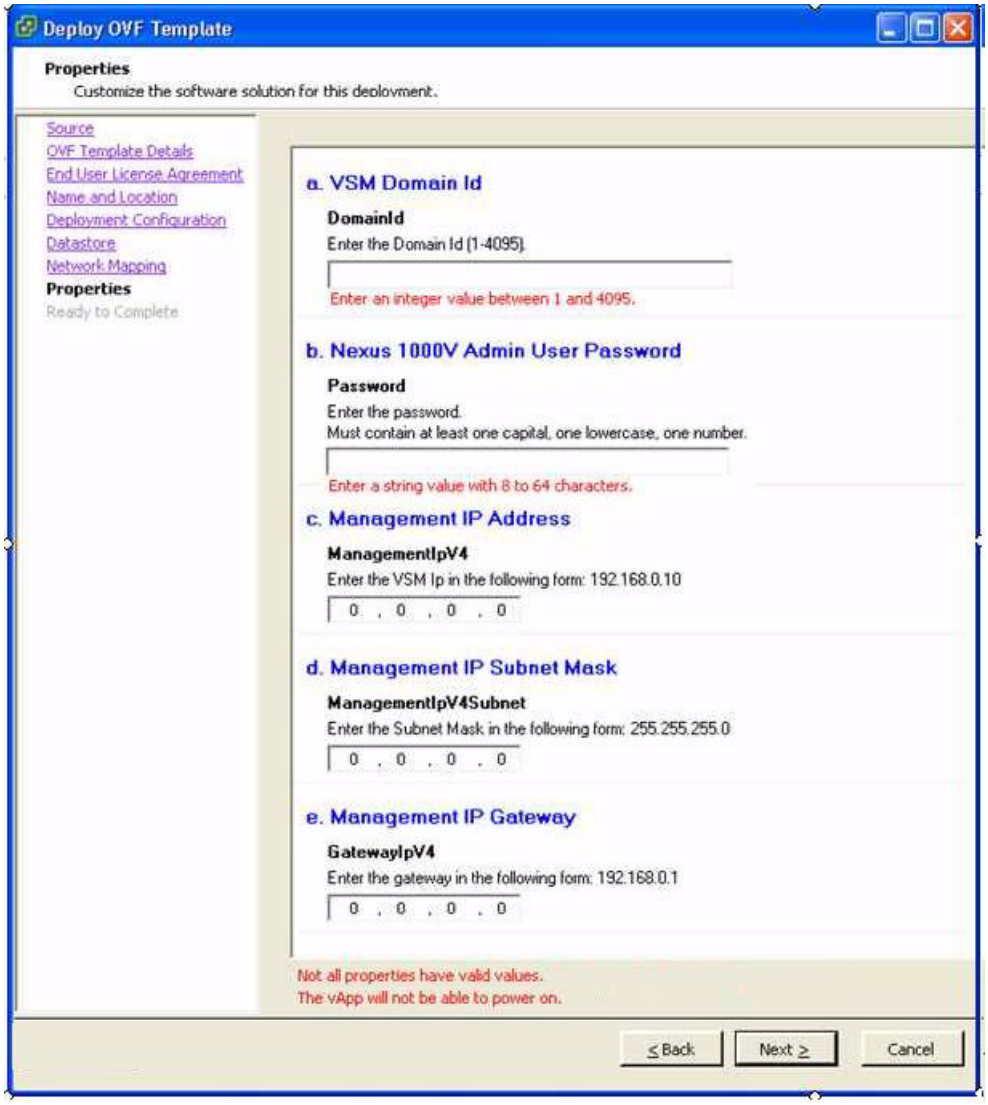

Step 8 Add the following information for the secondary VSM. Use the same values used for the primary VSM.

- Domain ID
- Password for the Admin user

Note If you add information in other fields, it will be ignored.

Step 9 Click **Next**.

The secondary VSM synchronizes with the primary VSM and the dual supervisors form an HA pair.

Step 10 You have completed the setup of the secondary VSM.
Return to the GUI Software Configuration Process, page 3-2.

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Setting Up a VSM with a Copy of a Configuration File

You can use this section and a configuration file to set up a VSM.This section includes the following procedures:

- "Preparing a Configuration File" procedure on page 3-18
- "Example Configuration File" section on page 3-20
- "Applying the Configuration File" procedure on page 3-21

Preparing a Configuration File

You can use this procedure to create a new VSM by editing a copy of the configuration file exported while creating another VSM.

BEFORE YOU BEGIN

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

- You have saved a previous VSM configuration to file and you know the location of this file.
- You have the following information about the new VSM you are creating:
  - Datacenter name
  - Virtual Machine name
  - Virtual switch port group name(s)

    You can use the same port group for management, control, and packet; or you can specify separate port groups.

    Note Port group names must match those in the vSwitch of the ESX host where the VSM is installed.

  - Layer 3 interface and VLAN ID

    This information is only needed if you are configuring Layer 3 connectivity.
  - Host name
  - Management IP, subnet mask, gateway IP
  - Domain ID
  - SVS connection datacenter name
  - HA role
  - Native VLAN ID

    This is the upstream switch native VLAN for the physical NIC which will be added to the DVS. The native VLAN is used only if you are migrating your configuration.

DETAILED STEPS

Step 1 In a text editor, open the configuration file you intend to use as a template.

This will be a file you exported from a previous VSM configuration. You will edit this file using the following steps.

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Step 2 Add the name of the datacenter where your VSM resides.

```
Example:
# The datacenter name
Datacenter=AutomationDC
```

Step 3 Add the name of the VM for your VSM.

```
Example:
# The virtual machine name
VirtualMachine=upgrade1
```

Step 4 Do one of the following:

- Go to Step 5 to configure one VLAN (the management VLAN) for use in the control, management, and packet port profiles.
- Go to Step 6 to configure a VLAN for each port profile separately.
- Go to Step 7 to configure Layer 3 connectivity.

Step 5 Specify that you are using the basic configuration.

In this case, you are configuring the management VLAN for use in the control, management, and packet vSwitch port groups.

```
Example:
# Basic: All on preconfigured Management Port Group. No other config necessary
NetConf=Basic
```

The port group assigned to the VSM mgmt interface is now also assigned for control and packet and the VSM VM is reconfigured to use the same port group for mgmt, control, and packet.

Go to Step 9.

Step 6 Specify that you are configuring a VLAN for each port profile separately; and then add the VLAN IDs for this VSM.

```
Example:
# Advanced: Must specify Control/Management/Packet
NetConf=Advanced

# Port group names (names must match the name in the VC)
Control=control-portgroup
Management=management-portgroup
Packet=packet-portgroup
```

Go to Step 9.

Step 7 Specify that you are configuring Layer 3 connectivity.

```
Example:
# L3: Must specify L3Interface/Control/Management
NetConf=L3
```

Step 8 Do one of the following:

- Specify VSM to VEM communication over the VSM control interface and control port group. Then add the port groups and IP addresses.

Note Control and management IP addresses must be in different subnets. This command will fail if the control and management IP addresses are not in different subnets.

Example:

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```
# L3Interface (2 options): control0/mgmt0
L3Interface=control0
Control=control-portgroup
Management=management-portgroup
L3Vlan=233
ControlIpV4=192.168.0.100
ControlIpV4Subnet=255.255.255.0
ControlIpV4Gateway=192.168.0.1
```

- Specify VSM to VEM communication over the management interface. The control portgroup will still be used for VSM HA. Then add the port groups and VLAN ID.

  Example:

```
# L3Interface (2 options): control0/mgmt0
L3Interface=mgmt0
Control=control-portgroup
Management=management-portgroup
L3Vlan=233
```

Step 9 Add the following information for this VSM:

- Host name
- Management IP, subnet mask, Gateway IP
- Domain ID
- SVS connection datacenter name
- Whether to enable Telnet.

Example:

```
################
#  VSM Config  #
################
HostName=configSwitch
ManagementIpV4=172.23.233.64
ManagementIpV4Subnet=255.255.255.0
GatewayIpV4=172.23.233.1
DomainId=470
SvsDatacenter=AutomationDC
#EnableTelnet: True/False
EnableTelnet=True
```

Step 10 Add the HA role (standalone or primary) for this VSM.

Example:

```
#HARole: standalone/primary
HARole=standalone
```

Step 11 Add the native VLAN for this VSM.

Example:

```
#NativeVlan: native vlan ID
NativeVlan=233
```

Step 12 Save the configuration file.

You have completed this procedure.

Example Configuration File

The following example shows a configuration file for a VSM with the following options:

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- Datacenter is named AutomationDC
- Virtual Machine is named upgrade1.
- One VLAN (the management VLAN) is used for control, management, and packet port profiles.
- This VSM has the primary HA role.

```
# The datacenter name
Datacenter=AutomationDC
# The virtual machine name
VirtualMachine=upgrade1
# Basic: All on preconfigured Management Port Group. No other config necessary
NetConf=Basic
################
#  VSM Config  #
################
HostName=configSwitch
ManagementIpV4=172.23.233.64
ManagementIpV4Subnet=255.255.255.0
GatewayIpV4=172.23.233.1
DomainId=470
SvsDatacenter=AutomationDC
#EnableTelnet: True/False
EnableTelnet=True
#HARole: standalone/primary
HARole=primary
#NativeVlan: native vlan ID
NativeVlan=233
```

Applying the Configuration File

You can use this procedure to create a VSM using a prepared configuration file and the GUI application.

BEFORE YOU BEGIN

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

- You have prepared the configuration file and you know its location.

  To prepare a configuration file, see the "Preparing a Configuration File" procedure on page 3-18.

DETAILED STEPS

Step 1 In your local browser address field, enter the VSM IP address.

The Cisco Nexus 1000V home page opens.

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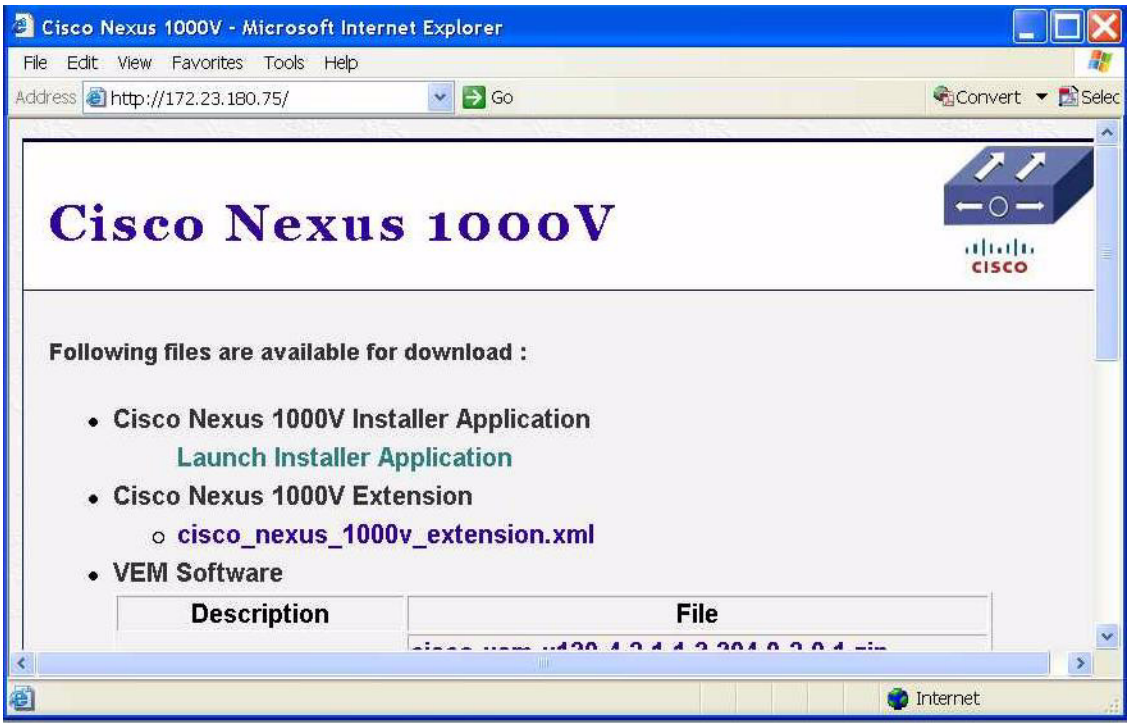

Step 2 Click **Launch Application**.

The application is downloaded and a security screen opens asking if you want to run it.

Step 3 Click **Run**.

The Enter VSM Credentials screen opens.

Step 4 Enter a password for the Administrator and then click **Next**.

The vCenter Credentials screen opens.

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Step 5 In the Use Configuration file field, click **Yes** and then click **Next**.

The Choose Configuration File screen opens.

Step 6 Click **Open**, browse to the configuration file you want to use as a template, and click **Next**.

The configuration is loaded from your configuration file.

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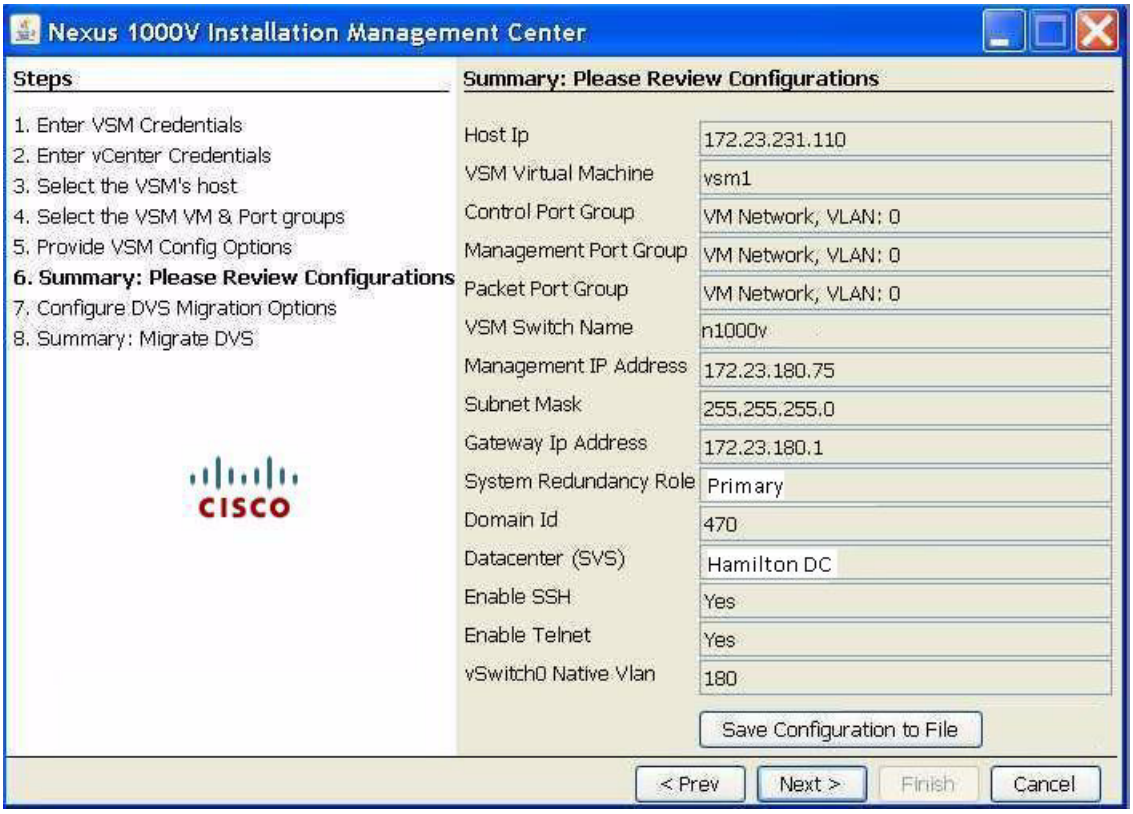

Step 7 Review the configuration and do one of the following:

- If the configuration is correct, continue with the next step.
- If not, click **Previous** to revise the contents.

Step 8 Do one of the following:

- To save the new configuration to a file, click **Save Configuration to File**. This saves the configuration you have just created to a file.
- Otherwise, continue with the next step.

Step 9 Click **Next**.

The configuration is applied to the VSM.

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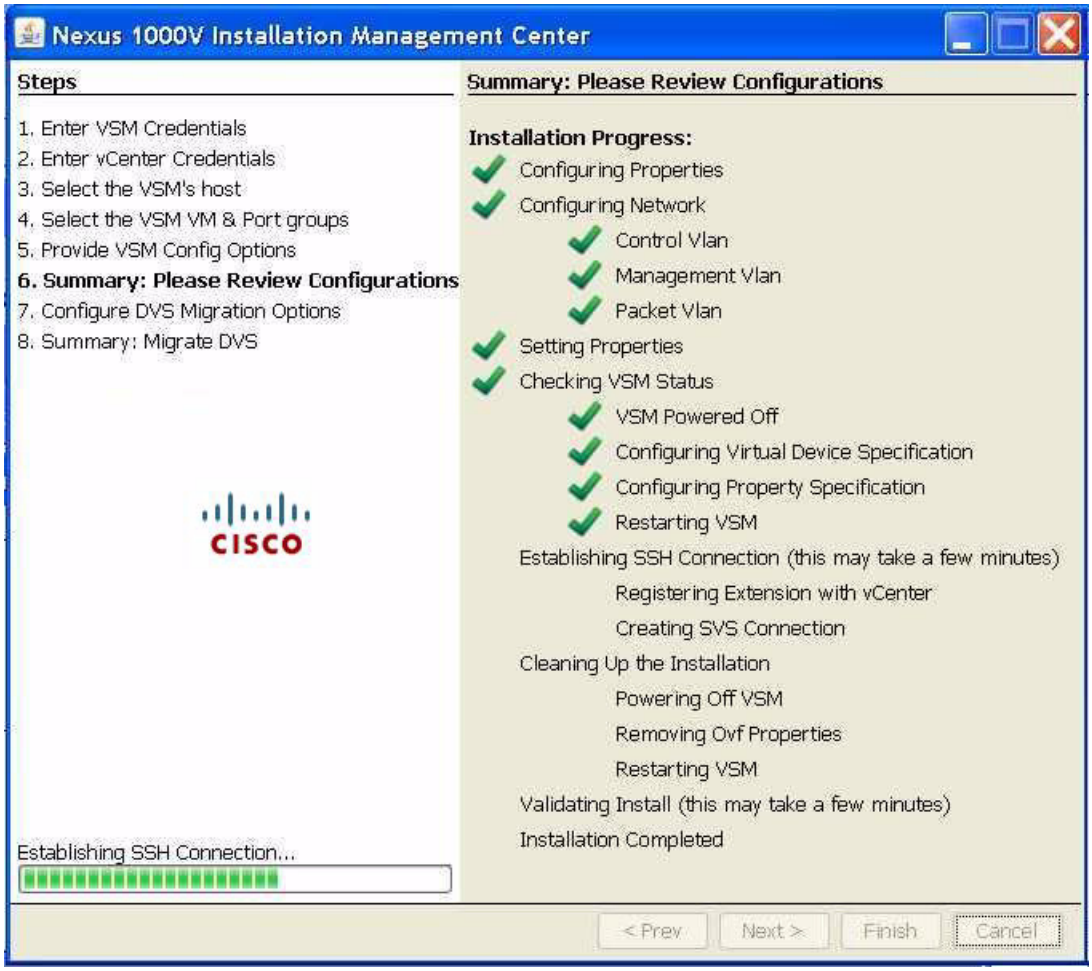
A summary screen displays the progress as the VSM configuration completes.



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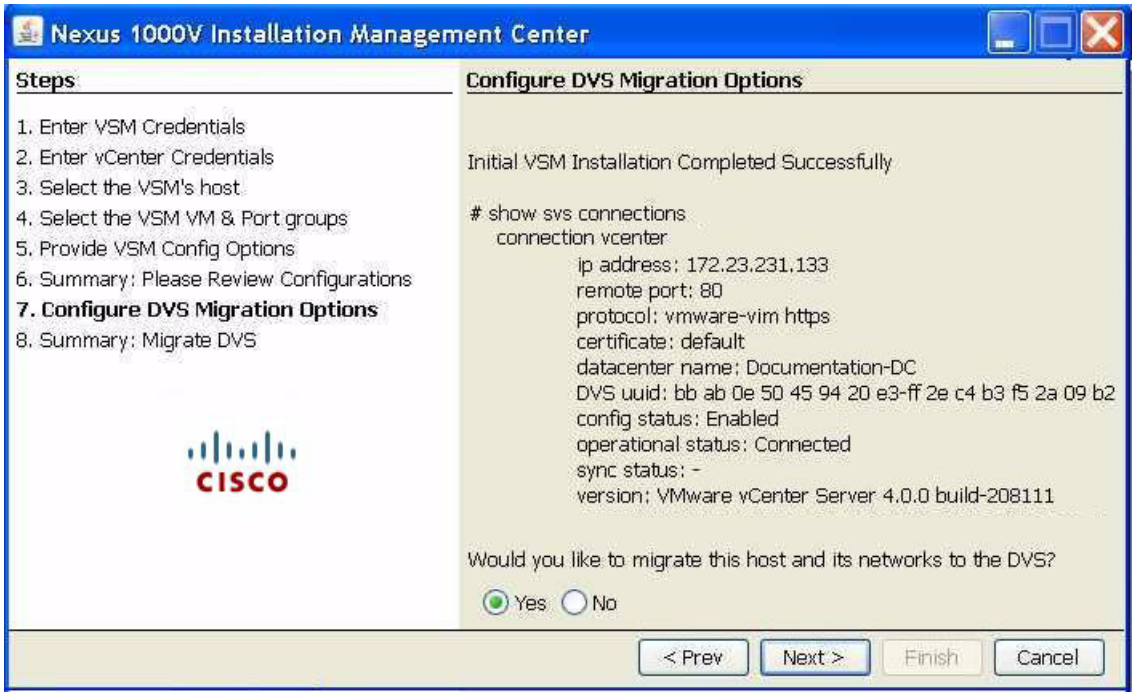
The completed VSM configuration is displayed and you are prompted to migrate the host and networks to the new DVS.

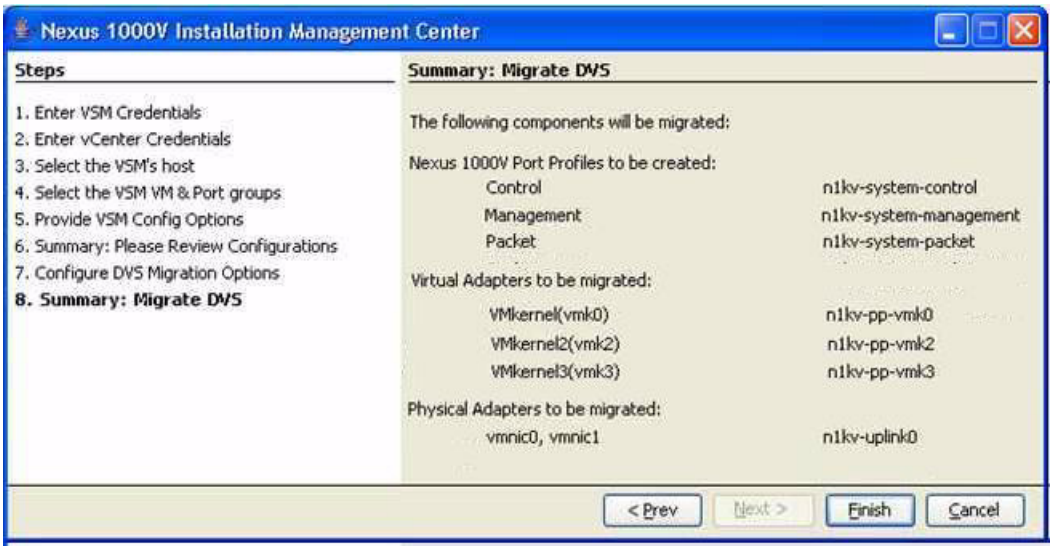


Step 10 Do one of the following:

- To continue without migrating the host and networks, click **No**. Then click **Finish** and go to Step 12.

  If you do not migrate the host now, you can migrate it later manually.
- To have the host automatically migrated to the new DVS, click **Yes** and then click **Next**.

  A summary screen displays the details of the proposed migration.



Step 11 Click **Finish**.

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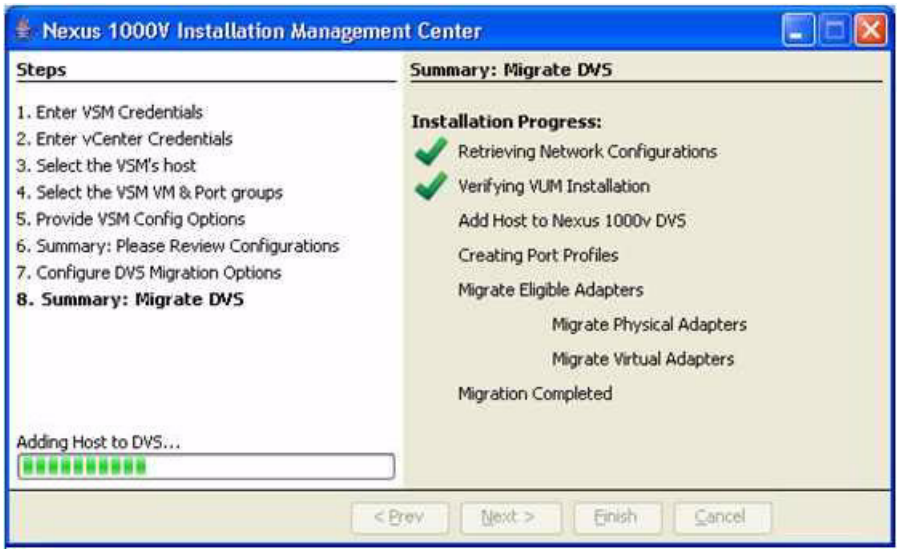
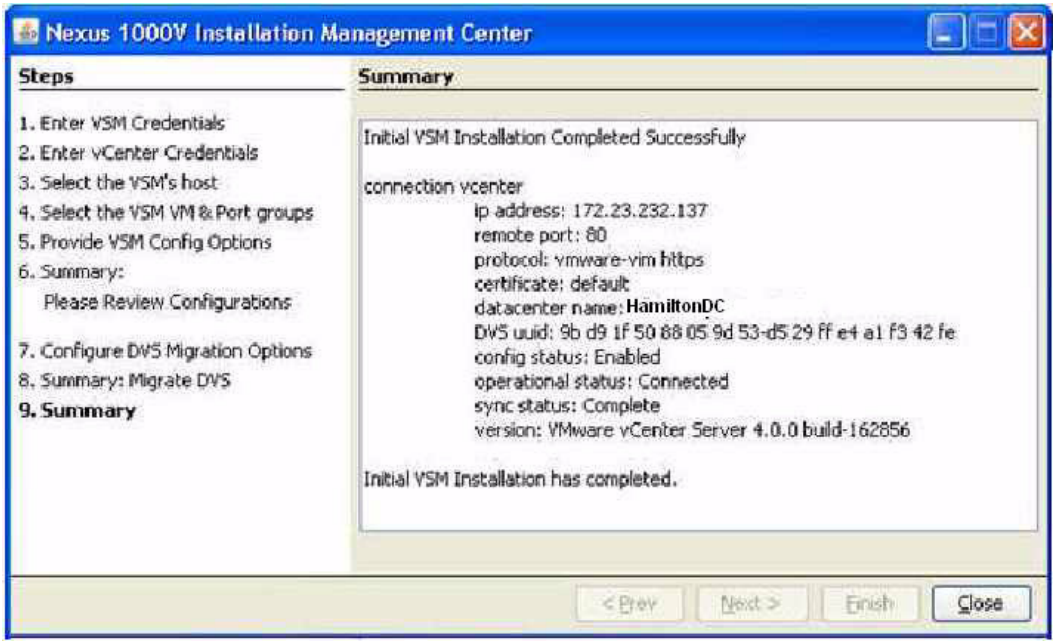
The migration starts and progress is displayed, followed by a summary of the configuration.



Step 12 A summary of the configuration displays.



Step 13 Click **Close**.

You have completed the setup of the Cisco Nexus 1000Vsoftware.
Return to the GUI Software Configuration Process, page 3-2.

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