



Installing Cisco Nexus 1000V Using Cisco Virtual Switch Update Manager

This chapter contains the following sections:

- [Installation Workflow](#), page 1
- [System Requirements](#), page 2
- [Installing Cisco Nexus 1000V Using Cisco Virtual Switch Update Manager](#), page 3
- [Adding Hosts by Migrating them to the VSM](#), page 10

Installation Workflow

Steps to Install Cisco Nexus 1000V Using Cisco Virtual Switch Update Manager

You can install the Cisco Nexus 1000V using Cisco Virtual Switch Update Manager. Use these high-level steps and the workflow diagram in the [Process Flowchart for Installing the Cisco Nexus 1000V Using Cisco Virtual Switch Update Manager](#), on page 2 to guide you through the installation process.

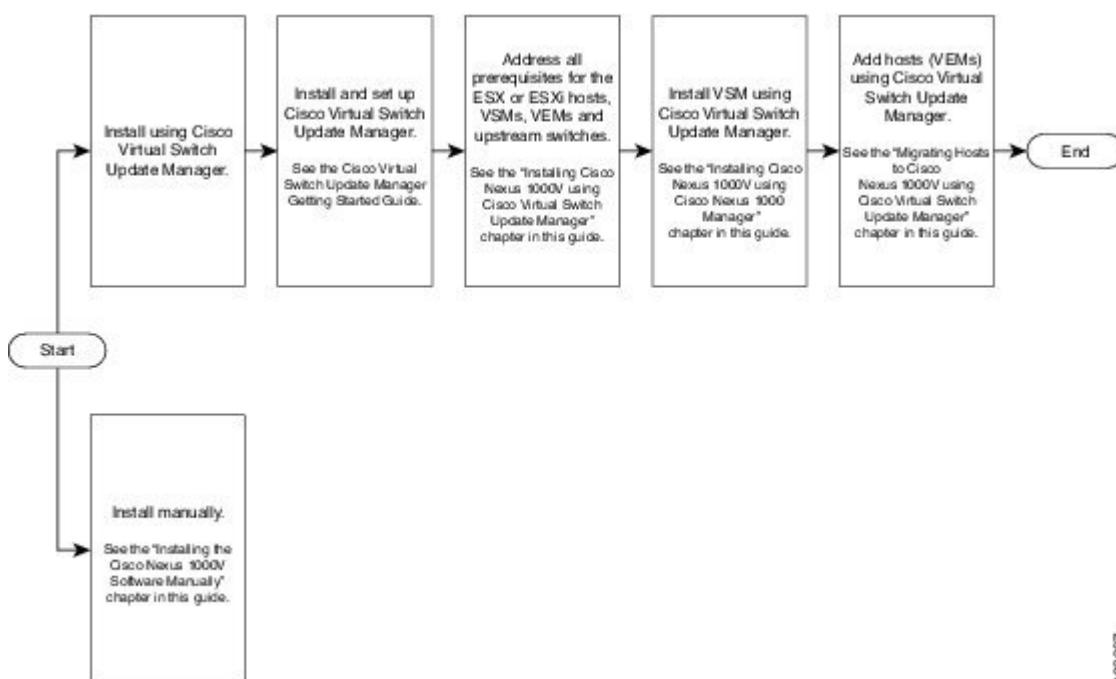
Procedure

- Step 1** Make sure that all of the Cisco Virtual Switch Update Manager requirements have been met before you install Cisco Virtual Switch Update Manager.
For details, see the *Cisco Nexus 1000V Manager Getting Started Guide*.
- Step 2** Make sure that all of the VMware software requirements have been met.
For details, see [System Requirements](#).
- Step 3** Gather the required information for the installation.
For details, see [Preparing for Installation](#).
- Step 4** Install the VSM.
For details, see [Installing Cisco Nexus 1000V Using Cisco Virtual Switch Update Manager](#), on page 1.

- Step 5** Add hosts to the Cisco Nexus 1000V distributed virtual switch (DVS), which installs the Virtual Ethernet Modules (VEMs) and migrates the hosts to the Cisco Nexus 1000V.
For details, see [Migrating Hosts to Cisco Nexus 1000V Using Cisco Virtual Switch Update Manager](#).

Process Flowchart for Installing the Cisco Nexus 1000V Using Cisco Virtual Switch Update Manager

You can install the Cisco Nexus 1000V for VMware using Cisco Virtual Switch Update Manager, or you can install it manually. We recommend that you use Cisco Virtual Switch Update Manager as the primary method.



363907

System Requirements

Supported Servers

The servers that run the Cisco Nexus 1000V VSM and VEM must be in the [VMware Hardware Compatibility List \(HCL\)](#).

Supported Software

The Cisco Nexus 1000V supports the following VMware vSphere ESXi Hypervisor versions (including patches and updates):

- 5.5
- 5.1
- 5.0

**Note**

Release 5.2(1)SV3(1.x) does not support any earlier versions of the VMware components than those listed above.

Installing Cisco Nexus 1000V Using Cisco Virtual Switch Update Manager

Guidelines and Limitations for Installing Cisco Nexus 1000V Using Cisco Virtual Switch Update Manager

The Cisco Nexus 1000V installation using Cisco Virtual Switch Update Manager has the following guidelines and limitations:

- We recommend that you install the VSMs in a high availability mode on the Cisco Nexus 1000V. For information about high availability and redundancy, see the *Cisco Nexus 1000V High Availability and Redundancy Configuration Guide*. Cisco Virtual Switch Update Manager supports standalone mode, but we do not recommend that you use this mode in a production environment.
- Cisco Virtual Switch Update Manager always deploys with VSM HA pairs by default. We recommend that you install primary and secondary VSM VMs on separate hosts.
- Only Layer 3 mode of deployment is supported by the Cisco Virtual Switch Update Manager with ESXi host only.
- The Cisco Nexus 1000V VSM always uses the following two network interfaces in the same order as follows:
 - 1 Control Interface
 - 2 Management Interface
- The VM hardware version has no dependencies; so the VM hardware version can be upgraded if required.
- Do not deploy vCenter server and VSM in different data centers. It is not supported.
- We recommend that you monitor and install all the relevant patch applications from the VMware ESX host server.

Prerequisites for Installing the Cisco Nexus 1000V Using Cisco Virtual Switch Update Manager

The Cisco Nexus 1000V installation using Cisco Virtual Switch Update Manager has the following prerequisites:

- You have installed Cisco Virtual Switch Update Manager.
- You have installed and prepared vCenter Server for host management using the instructions from VMware.
- You have installed VMware vSphere Web Client.
- You have installed the VMware Enterprise Plus license on the hosts.
- You are familiar with the Cisco Nexus 1000V topology diagram.
- You must create port groups for the Control and Management VLANs on the Cisco Nexus 1000V.
- You must have the Distributed Switch—Create, Extension-Register, Update privilege permissions enabled on the vCenter Server.

Information Required for Installation

Cisco Virtual Switch Update Manager requires information about your Cisco Nexus 1000V for VMware deployment. Cisco Virtual Switch Update Manager uses this information to configure the VSMs and VEMs during the installation and deployment

The following information is required:

- Name of the datacenter in which the switch will be installed
- Switch deployment type (whether you are installing the switch as a high availability pair or a single standalone switch)
- Switch VSM version (the Cisco Nexus 1000V version to be installed)
- VM port group for the switch's control traffic
- VM port group for the switch's management traffic
- Host IP address
- SVS domain ID (a unique ID for the switch)
- IP address, subnet mask, and gateway IP address for switch connectivity
- IP address, subnet mask, and gateway IP address for management
- Switch name and password

Installing the Cisco Nexus 1000V Using Cisco Virtual Switch Update Manager

You can install Cisco Nexus 1000V using Cisco Virtual Switch Update Manager. You install the Cisco Nexus 1000V switch by creating a new VSM or by using an existing VSM that is on a Cisco Nexus Cloud Services

Platform (CSP). The VSM must not have been used to create a switch before you use it to install the Cisco Nexus 1000V switch.

**Note**

If you want to install a Cisco Nexus 1000V switch by using a VSM, you must first create the VSM on a CSP.

Before You Begin

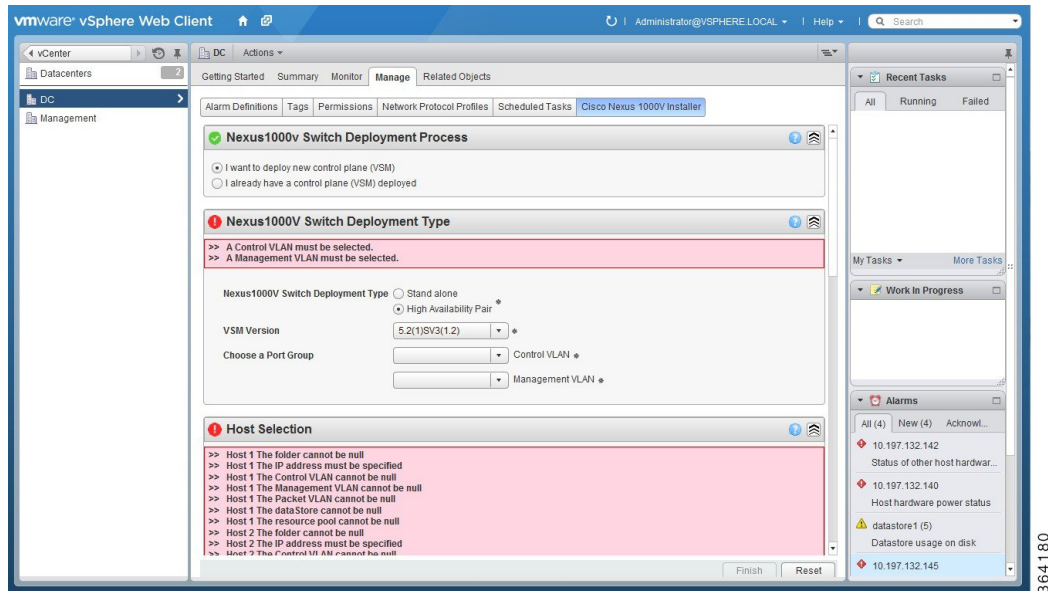
Know the following about the switch:

- VM port group for the control traffic of the switch
- VM port group for the management traffic of the switch
- IP address for management
- Subnet mask
- Gateway IP address
- Datacenter in which the switch will be installed
- Domain ID (a unique ID for the switch)
- Password (the default username is admin)

Procedure

- Step 1** Log in to VMware vSphere Web Client and choose **Home > Cisco Virtual Switch Update Manager > Nexus 1000V > Install**, and then choose the datacenter.
The installation screen appears.

Figure 1: Cisco Nexus 1000V Installer Pane



Step 2 Complete one of the following sets of steps:

| If you want to create a switch with... | Then... |
|--|---|
| An existing VSM | <ol style="list-style-type: none"> 1 In the Nexus 1000v Switch Deployment area, choose I already have a control plane deployed. 2 In the Virtual Supervisor Module (VSM) configuration area, enter an IP address of an already existing VSM in the IP address field, and enter a password in the Password field. <ul style="list-style-type: none"> Note If you check the Default Port Profile check box, the default port profile is enabled. Also, sample port profiles are created for the different features in the VSM, and the port profiles are pushed to the VSM. The sample port profiles are created as user references and include default and mandatory commands that are required to configure this feature. You can modify the port profiles based on the network configuration. 3 Click Finish. 4 Skip to the next section; you do not need to complete the remaining steps in this section because the switch is created when you complete the previous step. |

| If you want to create a switch with... | Then... |
|--|---|
| A new VSM | <ol style="list-style-type: none"> 1 In the Nexus 1000v Switch Deployment area, choose I want to deploy new control plane (VSM). 2 Complete the remaining steps in this section to create the switch. |

Step 3 In the **Cisco Nexus 1000V Switch Deployment Type** area, complete the following fields:

| Name | Description |
|--|--|
| High Availability Pair radio button | Installs the switch as a HA pair. By default, the High Availability Pair is selected. |
| Standalone radio button | Installs the switch in a standalone mode. Note We recommend that you install the Cisco Nexus 1000V in an HA pair. |
| VSM Version drop-down list | Choose the Cisco Nexus 1000V version to be installed. By default, the latest version is selected. |
| Control VLAN drop-down list | Choose the control port group for the switch. The control port group is used for the control traffic. |
| Management VLAN drop-down list | Choose the management port group for the switch. Note The Cisco Nexus 1000V VSM uses the management network to communicate with vCenter Server and ESXi. |

Step 4 Click **Suggest** to choose two hosts based on the details provided in the Cisco Nexus 1000V Switch Deployment Type area.

Step 5 In the **Host Selection** area, complete the following fields:

| Name | Description |
|---------------------------------|---|
| IP Address field | The IP address of the hosts on which the switch will be deployed. The primary switch is deployed on Host 1 and the secondary switch is deployed on Host 2. You can override system choices by dragging and dropping hosts. Click Pick a host to drag and drop hosts. |
| Datastore drop-down list | Choose the system-selected datastore that you want to override. Choose a datastore for each host. |

| Name | Description |
|------------------------------|--|
| Resource Pool drop-down list | <p>Choose the resource pool for each host.</p> <p>Note If you do not choose a resource pool and the host is a cluster, the resource pool for the switch is the root resource pool of the cluster.</p> <p>If you do not choose a resource pool and the host is in a standalone mode, then the resource pool for the switch will be the root resource pool of the host.</p> |
| Folder Name drop-down list | <p>Choose the folder name for each host.</p> <p>Note If the folder name is not displayed in the drop-down list, the switch VM is created in the root VM folder of the datacenter.</p> |

Step 6 In the **Switch Configuration** area, complete the following fields:

| Name | Description |
|--------------------------------|---|
| Domain ID field | <p>The domain ID for the switch.</p> <p>The domain ID is common for both the primary and secondary switches and it should be unique for every new switch. The range for the domain is from 1 to 1023.</p> |
| Deployment Type radio button | <p>Configures the deployment type.</p> <p>By default, Management IP Address is selected.</p> <p>Note</p> <ul style="list-style-type: none"> • If you choose the Management IP address, then this IP address is used for the VSM management operations and the VSM-to-VEM communications. • If you choose the Control IP address, then this IP address is used only for the VSM to VEM communications. |
| Control:IP/Name field | The IP address for switch connectivity. |
| Control: Mask field | The subnet mask. |
| Control: Gateway IP/Name field | The gateway IP address. |

Step 7 In the **Virtual Supervisor Module (VSM) configuration** area, complete the following fields:

| Name | Description |
|---------------------------------------|---|
| Switch Name field | <p>The name of the switch. The name must have the following:</p> <ul style="list-style-type: none"> • Start with a letter (A-Z, a-z). • Contain up to 32 case-sensitive letters (A-Z, a-z), numbers (0-9), or hyphens (-). • Not contain any other special characters or spaces. <p>When a switch VM is created in vCenter, the same name is used for the primary and the secondary switch.</p> <p>For a standalone deployment, the VSM VM is the <i>switch name</i>.</p> <p>For a HA deployment, the primary VSM VM is the <i>switch name_primary</i> and the secondary switch is the <i>switch name_secondary</i>.</p> |
| IP Address field | The IP address of the switch. The IP address is used for the management of the Cisco Nexus 1000V switch. |
| Subnet Mask field | The subnet mask for the above entered IP address. |
| Gateway Address field | The gateway IP address for the above entered IP address. |
| Username field | By default, the user name is admin. This field is not editable. |
| Default Port Profiles checkbox | <p>If checked, the default port profile is enabled and this creates sample port profiles for the different features in the VSM, and pushes it to the VSM.</p> <p>The sample port profiles are created as user references and include default and mandatory commands that are required to configure this feature. You can modify the port profiles based on the network configuration.</p> |
| Password field | <p>The admin user password.</p> <p>This password is used to log in to the switch for administration.</p> |
| Confirm Password field | The admin user password that you reenter for confirmation. |

- Step 8** Click **Finish** to install the Cisco Nexus 1000V switch.
- Step 9** In the vSphere Web Client, choose **Home > vCenter > Datacenters > Select Datacenter > Monitor > Tasks** to view the status of the Cisco Nexus 1000V switch installation.
A typical installation of the switch takes about four minutes. In vCenter Web Client, you can view the tasks by the task object, user, or the task status.
-

What to Do Next

Install VEM as described in the procedure [Migrating Hosts to the Cisco Nexus 1000V Using Cisco Virtual Switch Update Manager](#), on page 11.

Adding Hosts by Migrating them to the VSM

Information About Migrating Hosts to the Cisco Nexus 1000V Switch Using Cisco Virtual Switch Update Manager

You can use the Cisco Virtual Switch Update Manager GUI to migrate hosts from the VMware vSwitch and VMware distributed virtual switch (DVS) to the Cisco Nexus 1000V switch.

Cisco Virtual Switch Update Manager enables you to do the following:

- Add hosts and/or Migrate multiple hosts.
- Migrate each VMware port group or kernel NIC to the correct port profile.
- Migrate each physical NIC from the VMware vSwitch or VMware DVS to the correct uplink on the Cisco Nexus 1000V.
- Migrate VM NICs from the VMware vSwitch or VMware DVS to the corresponding uplink on the Cisco Nexus 1000V.

See the *Cisco Nexus 1000V and VMware Compatibility Information* for more information on the compatibility information for Cisco Nexus 1000V.

Guidelines and Limitations for Migrating Hosts to the Cisco Nexus 1000V Using Cisco Virtual Switch Update Manager

When you move the ESXi host that runs the Virtual Supervisor module (VSM) from the VMware vSwitch or VMware DVS to the Cisco Nexus 1000V, the connectivity between the active and standby VSM might get temporarily lost. In that situation, both active and standby VSMs assume the active role.

The reboot of the VSM is based on the following conditions:

- 1 The number of modules attached to the VSM
 - If a VSM has more modules attached than the other VSMs, and there is no virtual channel (VC) connectivity on either VSM, the VSM that has fewer modules is rebooted.

- If modules are attached to both VSMS and one VSM has VC connectivity, the VSM without connectivity is rebooted.

2 VC connectivity

**Note**

This option is invoked when the previous condition is not met.

- If both VSMS have the same number of modules or no modules, the software makes a selection that is based on the VC connectivity status.

3 Last configuration change

**Note**

This condition is invoked when the previous two conditions are not met.

- If both VSMS have the same number of modules and no VC connectivity, the VSM with the latest configuration remains active and the other VSM is rebooted.

4 Last active VSM

- If the previous three conditions are not met, the VSM that became active most recently is rebooted.

Prerequisites for Migrating Hosts to the Cisco Nexus 1000V Using Cisco Virtual Switch Update Manager

The migration of hosts to the Cisco Nexus 1000V using Cisco Virtual Switch Update Manager has the following prerequisites:

- The host must have one or more physical NICs on each VMware vSwitch/VMware DVS in use.
- You must have administrative privileges for vCenter Server.
- You must have the Distributed Switch—Create and Modify privilege permission enabled on the vCentre.

Migrating Hosts to the Cisco Nexus 1000V Using Cisco Virtual Switch Update Manager

You can install a Cisco Nexus 1000V Virtual Ethernet module (VEM) using Cisco Virtual Switch Update Manager. When the Cisco Virtual Switch Update Manager installs VEMs, it migrates all VM kernels and their corresponding VM NICs across vSwitches to the Cisco Nexus 1000V VEMs.

Before You Begin

Know the following information about the switch:

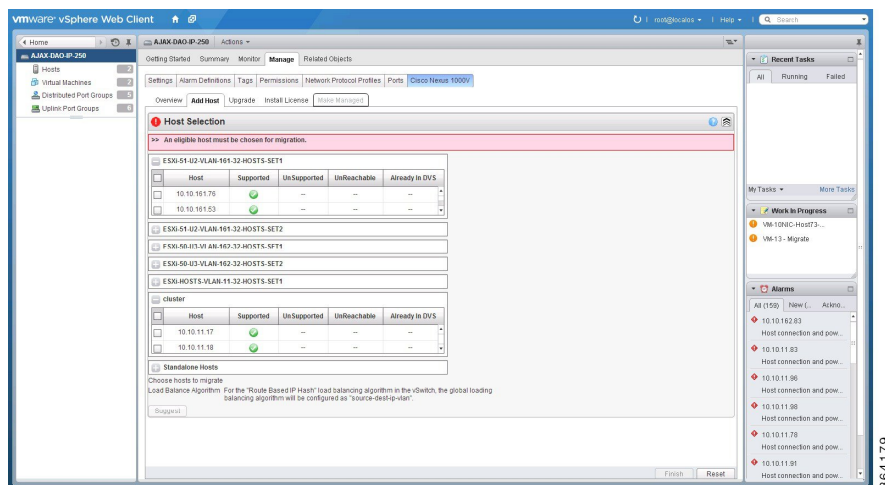
- vCenter IP address

- vCenter user ID
- vCenter password
- Cisco Nexus 1000V switch username
- Cisco Nexus 1000V switch password

Procedure

- Step 1** Log in to the VMware vSphere Web Client.
- Step 2** In the vSphere Client, choose **Home > Cisco Virtual Switch Update Manager > Nexus 1000V**.
- Step 3** Choose a datacenter and a distributed virtual switch, and then click **Manage**.
Note If the switch is not managed by Cisco Virtual Switch Update Manager, you are prompted to enter the switch credentials in the **Make Managed** window.
- Step 4** In the switch page, click **Add Host**.
- Step 5** (Optional) In case of multiple vCenter Servers, choose **Home > Cisco Virtual Switch Update Manager > vCenter Server > Configure**.
- Step 6** (Optional) You can also access the Cisco Virtual Switch Update Manager in the vSphere Client by navigating to **vCenter > Distributed Switches**.
- Step 7** (Optional) In the switch page, click **Manage > Cisco Nexus 1000V > Add Host**

Figure 2: Cisco Virtual Switch Update Manager—Migrating Hosts



- Step 8** In the **Host Selection** area, review the following fields.

| Name | Description |
|------------------------------|--|
| Cluster area | Lists all the hosts that are in an HA pair. Check the checkbox next to the hosts to be migrated. |
| Standalone Hosts area | Lists the standalone hosts. Check the checkbox next to the hosts to be migrated. |

| Name | Description |
|------------------------------|--|
| Supported column | If checked, the host can be migrated to the current version of the Cisco Nexus 1000V. |
| UnSupported column | If checked, the host cannot be migrated to the current version of the Cisco Nexus 1000V. For information on the list of hosts that are not supported, see the Cisco Nexus 1000V and VMware Compatibility Documentation, at: http://www.cisco.com/c/en/us/support/switches/nexus-1000v-switch-vmware-vsphere/products-device-support-tables-list.html . |
| UnReachable column | If checked, the host is in an unreachable state. |
| Already in DVS column | If checked, the host is already migrated to the Cisco Nexus 1000V. |

Step 9 Click **Suggest**.

Cisco Virtual Switch Update Manager displays the list of existing and proposed port profiles and suggests appropriate port profiles for each VMKNIC, VM NIC, and physical NICs.

Step 10 Review the port profile populated in the **Port Profile Editor** area. You can edit the fields based on your requirements. To edit the fields, you must use the **Port Profile Editor**.

The port profiles that are already available on the VSM are not editable. You can edit only those port profiles that are suggested by the Cisco Virtual Switch Update Manager. Click the **Duplicate** button to create a new port profile from an existing or from a suggested port profile.

Step 11 In the **Port Profile Editor** area, complete the following fields.

| Name | Description |
|---|---|
| Port Profile Editor drop-down list | The list of existing port profiles or new port profiles to be created are displayed. Choose the port profile. <ul style="list-style-type: none"> • In Use—Displays true, when the port profile is in use on the current Add Host screen. Displays False when the port profile is not in use on the current Add Host screen. • Valid—Displays true when all the port profile fields are completed. Displays false when one or more of the port profile fields is incomplete. • Editable—Displays true if the port profile is editable. Displays false if the port profile is not editable. • Profile Name—Displays the name of the port profile. |

| Name | Description |
|---|--|
| Uplink check box | If checked, displays the uplink associated with the port profile. |
| Trunk check box | If checked, displays the trunk associated with the port profile. |
| L3 Capable check box | If checked, the L3 capability is associated with the port profile. |
| ISCSI Multipath check box | If checked, the ISCSI Multipath is associated with the port profile. |
| Neither L3 nor ISCSI check box | If checked, then neither the L3 or the ISCSI is associated with the port profile. |
| Channel-group auto mode on check box | If checked, the channel group auto mode is associated with the port profile. |
| Mac-pinning check box | If checked, the channel group auto mode on mac-pining is associated with the port profile. |
| Name field | The name of the port profile. |
| VLANs field | Choose the VLAN. |
| Native VLAN field | The native VLAN associated with the port profile. |
| Duplicate button | Clones an existing port profile configuration to create a new port profile . |

Step 12 Scroll down to view the host profile populated in the **Physical NIC Migration** area.

Step 13 In the **Physical NIC Migration** area, review the following fields.

| Name | Description |
|-------------------------------|---|
| Physical NIC check box | Review the physical NIC that has been automatically selected by the Cisco Virtual Switch Update Manager. Check/uncheck to select/deselect the VMNICs for the migration. You must ensure that at least one physical NIC is selected for the migration. |

| Name | Description |
|------------------------|--|
| Profile drop-down list | Review the port profile associated with the physical NICs. Alternatively, you can choose the required port profile from the profile drop-down list, to associate it with the physical NIC. You must ensure that all the necessary VLANs are allowed in the selected port profile. |
| Source column | The vSwitch or VDS port group that the PNIC is currently assigned to. |
| Select All button | Migrates all the physical NICs associated with the host. |
| Select None button | Deselects all the selected values for the physical NICs associated with the host. |

Step 14 Scroll down to view the host profile populated in the **VM Kernel NIC Setup** area.

Step 15 In the **VM Kernel NIC Setup** area, complete the following fields.

| Name | Description |
|-------------------------|--|
| VM Kernel NIC check box | If checked, displays the port profile configuration that will be created on Cisco Nexus 1000V and associated with the VMkernel NIC. Review the selected VMkernel NICs. You can also uncheck the VMkernel NIC check boxes if you do not want the VMKs to be migrated to the Cisco Nexus 1000V. You must ensure that at least one VMkernel NIC is selected to migrate to the Cisco Nexus 1000V which will carry the L3 traffic. Note Do not uncheck any of the VMkernel NIC checkboxes, unless and until the required VMkernel NIC is associated with the Layer3 port profile. |

| Name | Description |
|-------------------------------|--|
| L3 Capable column | <p>Displays whether the VMkernel NIC is Layer 3 capable. Only one VMkernel NIC is Layer3 capable. By default, the VMK0 is selected as the Layer3 control.</p> <p>Note To change the VMkernel to Layer3 port profile, do the following:</p> <ul style="list-style-type: none"> • From the Port Profile drop-down list, choose the non Layer3 port profile for VMk0. In absence of non Layer3 veth profile, you can create non Layer3 port profiles as follows: <ul style="list-style-type: none"> ◦ Select the Layer3 port profile and click Duplicate. ◦ Check the Neither L3 nor ISCSI radio button and click OK. You can edit the list of the supported VLANs. • Select the L3 enabled PP for any one VMkernel NICs, which you want to use for the L3 control traffic. |
| Profile drop-down list | Choose the port profile associated with the VMkernel NIC. |
| Source Profile column | Displays the vSwitch or VDS port group that the VMkernel NIC is currently assigned to. |
| Select None button | Deselects all the selected VMkernel NICs associated with the host. |
| New button | <p>Adds a new VMkernel NIC for Layer 3 control. Enter the IP address and net mask for the new VMkernel NIC and click OK.</p> <p>After the VMKernel NIC is created, select the appropriate port profile for the VMKernel NIC from the port profile drop-down list.</p> <p>Note Ensure that the host is selected before you create the new VMkernel NIC.</p> |
| Edit button | Edits the IP address and subnet mask for a newly created VMkernel NIC. |

Step 16 Scroll down to view the host profile populated in the **VM Migration** area.

Step 17 In the **VM Migration** area, review the following fields.

| Area | Action |
|--------------------------------|--|
| Virtual Machine NICs check box | If checked, displays the VSMs and the network adapters associated with the VM. |
| Profile drop-down list | Choose the port profile associated with the Virtual NIC. |
| Source Profile column | The source associated with the port profile. |
| Select None button | Deselects all the VMs associated with the host. |

Step 18 Click **Finish** to migrate the host from the VMware vSwitch to the Cisco Nexus 1000V switch.

Step 19 In the vSphere Client, choose **vCenter > Datacenter > Switch > Monitor > Tasks** to view the status of the migration. You can also view the tasks in the vSphere Web client by navigating to **Cisco Virtual Switch Update Manager > Select vCenter Host > Manage DVS > Select Datacenter > Select Switch > Monitor > Tasks**.

A typical migration of the host takes about 2 minutes. In the vCenter Client, you can view the tasks by the task object, user, or task status.
