



## **Cisco Virtual Switch Update Manager Release 1.5.x Getting Started Guide for Cisco Nexus 1000V**

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## Overview

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This chapter contains the following sections:

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- [Cisco Nexus 1000V Components, page 2](#)
- [Workflow for Installing Cisco Nexus 1000V, page 5](#)

## Information About Cisco Virtual Switch Update Manager

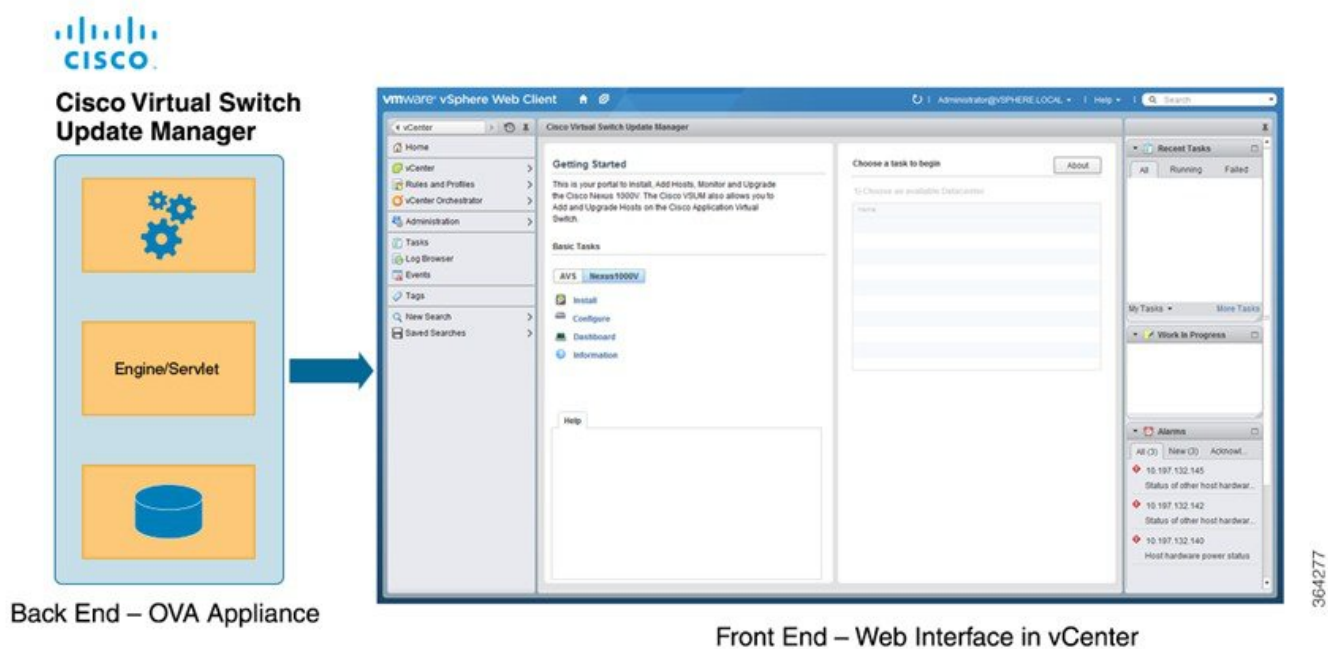
Cisco Virtual Switch Update Manager (Cisco VSUM) enables you to install, upgrade, and monitor the Cisco Nexus 1000V for VMware vSphere and also migrate hosts to the Cisco Nexus 1000V, using the VMware vSphere Web Client.

Cisco VSUM enables you to do the following:

- Install the Cisco Nexus 1000V switch.
- Migrate the VMware vSwitch and VMware vSphere Distributed Switch (VDS) to the Cisco Nexus 1000V.
- Monitor the Cisco Nexus 1000V.
- Upgrade the Cisco Nexus 1000V and added hosts from an earlier version to the latest version.
- Install the Cisco Nexus 1000V license.

- View the health of the virtual machines in your data center using the Dashboard - Cisco Nexus 1000V.

Figure 1: Cisco VSUM



## Information About Cisco Nexus 1000V

The Cisco Nexus 1000V is a distributed virtual switch solution that is fully integrated within the VMware virtual infrastructure, including VMware vCenter, for the virtualization administrator. This solution offloads the configuration of the virtual switch and port groups to the network administrator to enforce a consistent data center network policy.

The Cisco Nexus 1000V is compatible with any upstream physical access layer switch that is compliant with Ethernet standard, including the Catalyst 6500 series switch, Cisco Nexus switches, and switches from other network vendors. The Cisco Nexus 1000V is compatible with any server hardware that is listed in the VMware Hardware Compatibility List (HCL).



### Note

We recommend that you monitor and install the patch files for the VMware ESXi host software.

## Cisco Nexus 1000V Components

The Cisco Nexus 1000V switch has the following components:

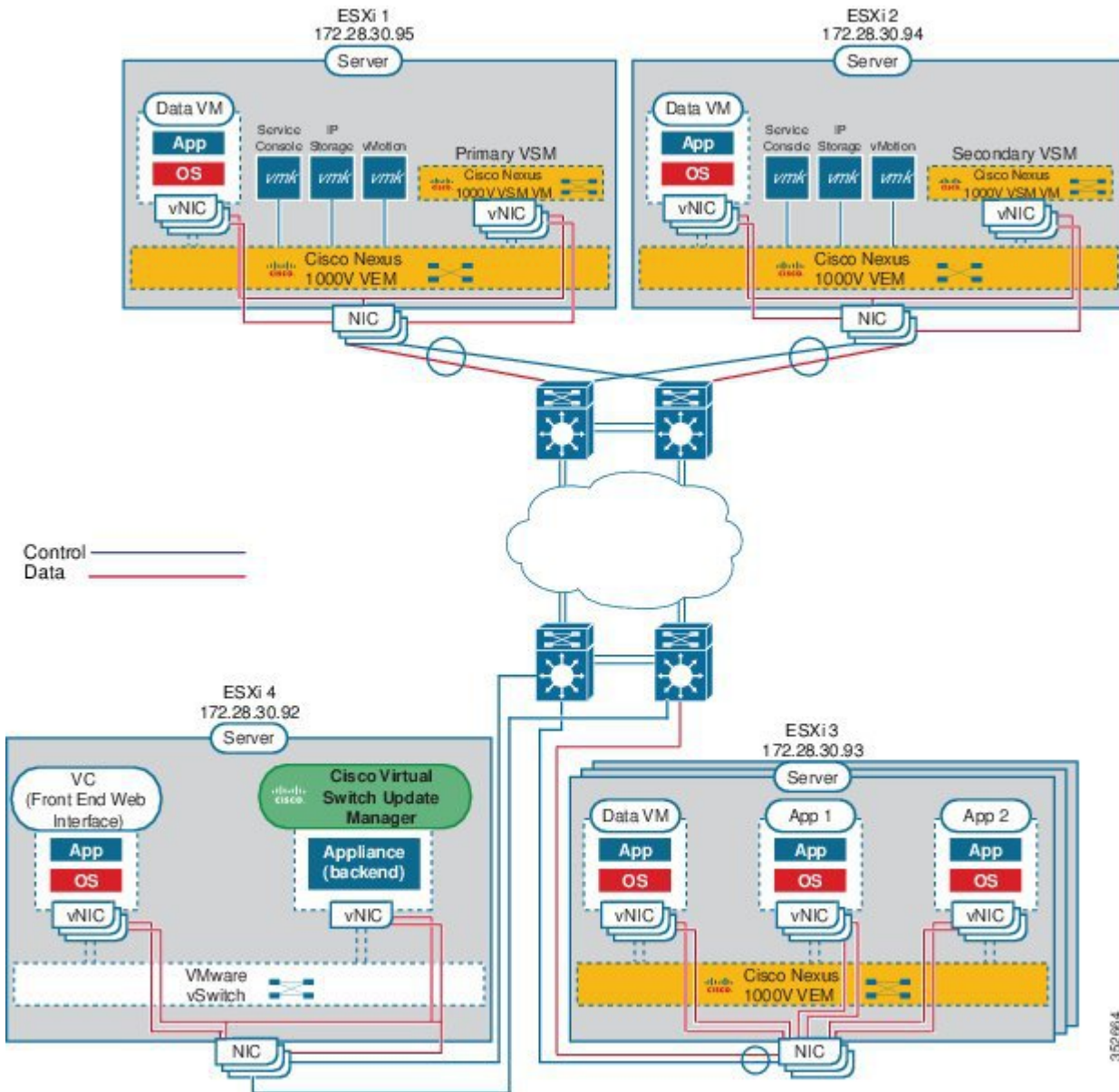
- Virtual Supervisor Module (VSM)—The control plane of the switch and a VM that runs Cisco NX-OS.

- Virtual Ethernet Module (VEM)—A virtual line card that is embedded in each VMware vSphere (ESXi) host. The VEM is partly inside the kernel of the hypervisor and partly in a user-world process, called the VEM Agent.

The following figure shows the relationship between the VSM, VEMs and other Cisco Nexus 1000V components.

Layer 3 is the preferred method of communication between the VSM and the VEMs. The following figure shows an example of a Layer 3 topology. The software for the primary VSM is installed on ESXi 1, and the software for the secondary VSM is installed on ESXi 2.

**Figure 2: Layer 3 Installation Diagram for Installing Cisco Nexus 1000V Using Cisco VSUM**



## Information About the Cisco Nexus 1000V Virtual Supervisor Module

The Virtual Supervisor Module (VSM) is the control plane of the Cisco Nexus 1000V. It is deployed as a virtual machine.

You can install the VSM in either a standalone or active/standby high-availability (HA) pair. We recommend that you install two VSMS in an active-standby configuration for high availability.

VSM and VEM collectively represent the Cisco Nexus 1000V. The switch supports the following operations:

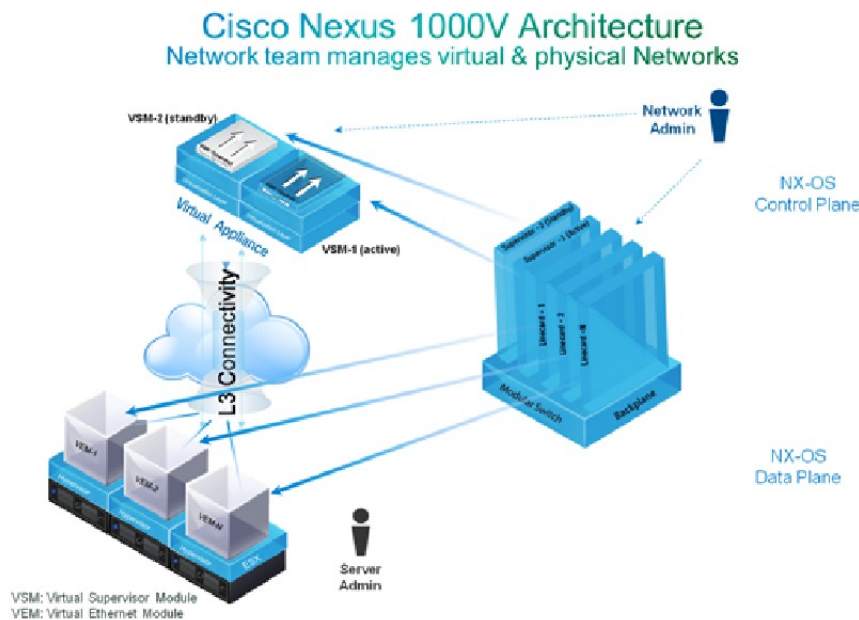
The VSM uses an external network fabric to communicate with the VEMs. The VSM runs the control plane protocols and configures the state of each VEM, but it never actually forwards packets. The physical NICs on the VEM server are the uplinks to the external fabric. VEMs switch traffic between the local virtual Ethernet ports that are connected to the VM vNICs but do not switch the traffic to other VEMs. Instead, a source VEM switches packets to the uplinks that the external fabric delivers to the target VEM.

A single Cisco Nexus 1000V instance, including dual-redundant VSMS and managed VEMs, forms a switch domain. Each Cisco Nexus 1000V domain within a VMware vCenter Server must be distinguished by a unique integer called the domain identifier.

See the *Cisco Nexus 1000V Resource Availability Reference* for information about scale limits.

The Cisco Nexus 1000V architecture is shown in the following figure.

**Figure 3: Cisco Nexus 1000V Architecture**



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## Information About the Virtual Ethernet Module

Each hypervisor is embedded with one VEM which replaces the virtual switch by performing the following functions:

- Advanced networking and security
- Switching between directly attached VMs
- Uplinking to the rest of the network

**Note**

Only one version of the VEM can be installed on an ESX/ESXi host at any time.

In the Cisco Nexus 1000V, the traffic is switched between VMs locally at each VEM instance. Each VEM also interconnects the local VM with the rest of the network through the upstream access-layer network switch (blade, top-of-rack, end-of-row, and so forth). The VSM runs the control plane protocols and configures the state of each VEM accordingly, but it never forwards packets.

In the Cisco Nexus 1000V, the module slots are for the primary module 1 and secondary module 2. Either module can act as active or standby. The first server or host is automatically assigned to module 3. The network interface card (NIC) ports are 3/1 and 3/2 (vmmnic0 and vmmnic1 on the ESX/ESXi host). The ports to which the virtual NIC interfaces connect are virtual ports on the Cisco Nexus 1000V where they are assigned with a global number.

## Workflow for Installing Cisco Nexus 1000V

Installing Cisco Nexus 1000V using Cisco VSUM consists of the following steps:

**Step 1**

Installing Cisco VSUM.  
See [Installing Cisco VSUM, on page 10](#).

**Step 2**

Installing Cisco Nexus 1000V VSM.  
See [Installing the Cisco Nexus 1000V Using Cisco VSUM, on page 16](#).

**Step 3**

Migrating hosts to Cisco Nexus 1000V.  
See [Migrating Hosts to the Cisco Nexus 1000V Using Cisco VSUM, on page 27](#).





# Installing Cisco Virtual Switch Update Manager

This chapter contains the following sections:

- [Information About Cisco Virtual Switch Update Manager, page 7](#)
- [Compatibility Information for Cisco VSUM, page 7](#)
- [System Requirements Cisco VSUM, page 8](#)
- [Prerequisites, page 9](#)
- [Verifying the Authenticity of the Cisco-Signed Image \(Optional\), page 9](#)
- [Installing Cisco VSUM, page 10](#)
- [About the Cisco VSUM GUI, page 11](#)
- [Upgrading Cisco VSUM, page 13](#)
- [Replacing Cisco VSUM—Windows vCenter Server, page 13](#)
- [Replacing Cisco VSUM—Linux vCenter Appliance, page 14](#)

## Information About Cisco Virtual Switch Update Manager

Cisco VSUM is a virtual appliance that is registered as a plug-in to VMware vCenter Server. The Cisco VSUM user interface is an integral part of VMware vSphere Web Client.

The Cisco VSUM enables you to install, migrate, monitor, and upgrade the VSUMs in high availability (HA) or standalone mode and the VEMs on ESX/ESXi hosts.

The Cisco VSUM software is available on the Cisco Nexus 1000V [VSUM download page](#) on Cisco.com.

## Compatibility Information for Cisco VSUM

The following table lists the compatibility information for Cisco VSUM.

**Table 1: Version Compatibility for Cisco VSUM for Cisco Nexus 1000V**

<b>Minimum Required Cisco Nexus 1000V Release for Various Features</b>	<b>VMware vCenter Server Version (Includes Patches and Updates)</b>	<b>VMware Software Release Version (Includes Patches and Updates)</b>
<p>Cisco Virtual Switch Update Manager supports installations of the following releases:</p> <ul style="list-style-type: none"> <li>• Release 5.2(1)SV3(1.10)</li> <li>• Release 5.2(1)SV3(1.6)</li> <li>• Release 5.2(1)SV3(1.5b)</li> <li>• Release 5.2(1)SV3(1.5a)</li> <li>• Release 5.2(1)SV3(1.4)</li> <li>• Release 5.2(1)SV3(1.3)</li> <li>• Release 5.2(1)SV3(1.2)</li> <li>• Release 5.2(1)SV3(1.1)</li> <li>• Release 4.2(1)SV2(2.3)</li> <li>• Release 4.2(1)SV2(2.2)</li> <li>• Release 4.2(1)SV2(1.1a)</li> <li>• Release 4.2(1)SV1(5.2b)</li> </ul> <p>Cisco VSUM supports the migrations from Release 4.2(1)SV1(5.1) and later releases.</p> <p>Cisco VSUM supports upgrades from Release 4.2(1)SV1(4b) and later releases.</p> <p>supports the monitoring functionality from Release 4.2(1)SV2(1.1) and later releases.</p>	<p>5.1, 5.5, 6.0</p> <p><b>Note</b> If you are using Cisco VSUM 1.5.2 or an earlier release and want to upgrade vCenter to 6.0, you must upgrade to Cisco VSUM 1.5.3 or later and only then upgrade vCenter.</p>	<p>ESXi 4.1</p> <p>ESXi 5.0</p> <p>ESXi 5.1</p> <p>ESXi 5.5</p> <p>ESXi 6.0</p>

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

## System Requirements Cisco VSUM

- VMware vSphere Web Client 5.1, 5.5, or 6.0.
- All the web-based GUI client requirements as required by VMware vSphere Web Client.
- The memory requirement is 4 GB RAM.
- The CPU requirement is 2.

- The disk space requirement is 80 GB.

## Prerequisites

Cisco VSUM has the following prerequisites:

- You have installed the VMware Enterprise Plus license on the hosts.
- You have installed the vCenter Server 5.1, 5.5, or 6.0 with Web Client.
- You have administrative credentials for the vCenter Server.
- You have a username, IP address, subnet mask, and gateway IP address for deploying the VSUM OVA.
- Cisco VSUM has IP connectivity on port 443 to all ESXi hosts.
- Ports 80 and 443 are open in the vCenter to communicate with the host.
- The IP address used for deploying the OVA can communicate with the IP address of the vCenter Server. Port 8443 is open for communication between Cisco VSUM and vCenter.

## Verifying the Authenticity of the Cisco-Signed Image (Optional)

Before you install the Nexus1000v-vsum.1.5.x-pkg.zip image, you have the option to validate its authenticity. In the zip file, there is a signature.txt file that contains an SHA-512 signature and an executable script that can be used to verify the authenticity of the Nexus1000v-vsum.1.5.x-pkg.zip image.

**Note**

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Verifying the authenticity of an image is optional. You can still install the image without validating its authenticity.

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### Before You Begin

You must be running a Linux machine with the following utilities installed:

- openssl
- base64

---

**Step 1** Copy the following files to a directory on the Linux machine:

- Nexus1000v-vsum.1.5.x-pkg.zip image
- signature.txt file
- cisco\_n1k\_image\_validation\_v\_1\_5\_x script

**Step 2** Ensure that the script is executable.

```
chmod 755 cisco_n1k_image_validation_v_1_5_x
```

- Step 3** Run the script.  
`./cisco_n1k_image_validation_v_1_5_x -s signature.txt Nexus1000v-vsum.1.5.x-pkg.zip`
- Step 4** Check the output. If the validation is successful, the following message displays:  
 Authenticity of Cisco-signed image Nexus1000v-vsum.1.5.x-pkg.zip has been successfully verified!

## Installing Cisco VSUM

You can install the Cisco VSUM OVA using the following steps.

### Before You Begin

- Ensure that the Cisco VSUM OVA image is available in the file system.
- Ensure that you have the IP address, subnet mask, gateway IP address, domain name, DNS server, and vCenter IP address and credentials for deploying the OVA.



**Note** When you install Cisco VSUM, you must use the same credentials that you use for installing the thick client.

- Step 1** Log in to the VMware vSphere Web Client.
- Step 2** Choose the host on which to deploy the Cisco VSUM OVA.
- Step 3** From the **ACTIONS** menu, choose **Deploy OVF Template**.
- Step 4** In the **Deploy OVF Template** wizard, complete the information as described in the following table.

Window	Action
Source	Choose the Cisco VSUM OVA.
OVF Template Details	Review the details.
End User License Agreement	Review the agreement and click <b>Accept</b> .
Name and Location	Enter a name and choose a location for the appliance.
Host or Cluster	Choose the host or cluster to run the OVA template.
Datastore	Choose the data store for the VM.
Disk Format	Choose either <b>Thin provisioned format</b> or <b>Thick provisioned format</b> to store the VM virtual disks.  We recommend that you store the VM virtual disks in the <b>Thick provisioned format</b> .

Window	Action
Network Mapping	Choose the destination network for the VM that is reachable from the vCenter Server.
Properties	Provide the following information: <ul style="list-style-type: none"> <li>• Management IP address</li> <li>• Subnet mask</li> <li>• Gateway IP address</li> <li>• DNS server IP address</li> <li>• DNS entry to resolve the fully qualified domain name (FQDN)</li> <li>• vCenter IP or FQDN</li> <li>• vCenter username</li> <li>• vCenter password</li> <li>• HTTP cleartext port and HTTPS port</li> </ul>
Ready to Complete	Review the deployment settings.  <b>Caution</b> Any discrepancies can cause VM booting issues. Carefully review the IP address, subnet mask, gateway information, and vCenter credentials.

**Step 5** Click **Finish**.

**Step 6** After Cisco VSUM is successfully deployed, click **Close**.

**Step 7** Power on the Cisco VSUM VM.

It might take 5 minutes for Cisco VSUM to be installed and registered as a vSphere Web Client plug-in.

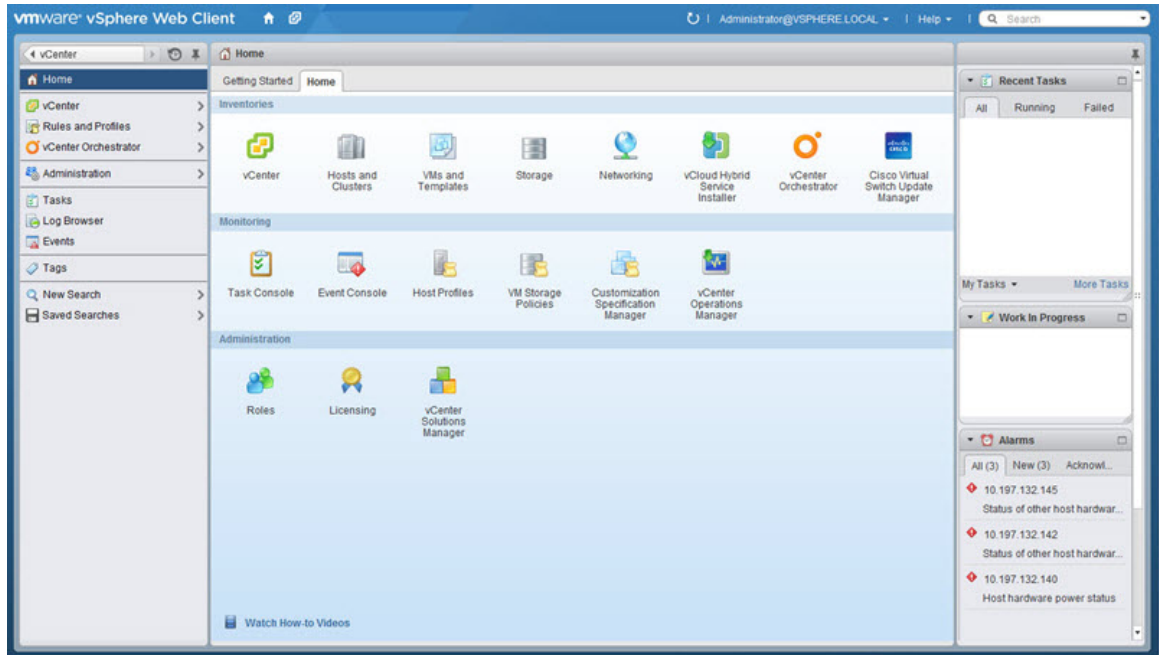
If the Web Client session was open during this installation, you must log out and log in again to view the Cisco VSUM plug-in.

## About the Cisco VSUM GUI

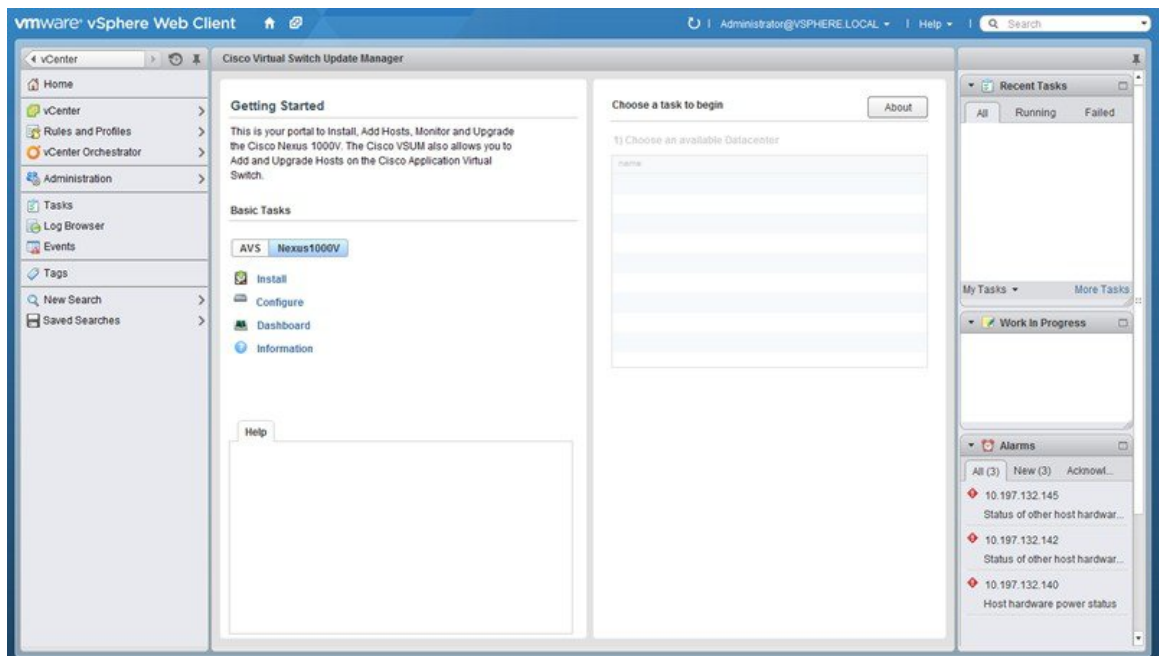
Cisco VSUM is a virtual appliance that is registered as a plug-in to the VMware vCenter Server.

The Cisco VSUM is the GUI that you use to install, migrate, monitor, and upgrade the VSUMs in high availability (HA) or standalone mode and the VEMs on ESX/ESXi hosts.

**Figure 4: VMware vSphere Web Client—Home Page**



**Figure 5: Cisco VSUM—Home Page**





# Upgrading Cisco VSUM

- 
- Step 1** Log in to Cisco VSUM as the root user.  
The default Cisco VSUM username is **root** and the default Cisco VSUM password is **cisco**.
- Step 2** Download from Cisco.com the zipped file containing the upgrade file for the version of Cisco VSUM that you want to upgrade to.  
The upgrade filename is `vsum-upgrade-bundle-1.5.x.zip`.
- Step 3** Copy the zipped file to Cisco VSUM by entering the following command: `scp://vsum-upgrade-bundle-1.5.x.zip <user_name>@<VSUM_IP>:<destination_directory>`
- Step 4** Unzip the file and display its contents.
- Step 5** Upgrade Cisco VSUM by entering the following command: `./upgrade-file-name.sh <vCenter-username> <vCenter-password>`
- Note** The credentials are for the vCenter with which Cisco VSUM is associated.
- 

## What to Do Next

Wait until the upgrade is complete. You can then log back into vCenter and use the upgraded Cisco VSUM. If the VMware vSphere Web Client session was open during the upgrade, you must log out and log in again to view the Cisco VSUM plug-in.

# Replacing Cisco VSUM—Windows vCenter Server

Use this procedure to replace an existing Cisco VSUM in the VMware vSphere Web Client.

**Before You Begin**

Power off the current Cisco VSUM before you begin this procedure.

- 
- Step 1** Power off the current active Cisco VSUM VM.
  - Step 2** Enter `https://VCIP/mob` and log in with the default credentials.
  - Step 3** In a web browser, choose **Content > Extension Manager > UnregisterExtension**.
  - Step 4** Enter `com.cisco.n1kv` and click **Invoke method**.
  - Step 5** Choose **Start > Run > services.msc**.
  - Step 6** Right-click the VMware vSphere Web Client and click **stop**.
  - Step 7** From the `C:\ProgramData\VMware\vSphere Web Client\vc-packages\vsphere-client-serenity` directory, delete the `com.cisco.n1kv` folder.
  - Step 8** Choose **Start > Run > type service.msc**.
  - Step 9** Right-click the VMware vSphere Web Client and click **Start**.
  - Step 10** Install the new version of the Cisco VSUM VM.
  - Step 11** After Cisco VSUM is successfully deployed, log in to the VMware vSphere Web Client to view the Cisco VSUM plugin.
- 

## Replacing Cisco VSUM—Linux vCenter Appliance

Use this procedure to replace an existing Cisco VSUM in the VMware vSphere Web Client.

**Before You Begin**

Power off the current Cisco VSUM before you begin this procedure.

- 
- Step 1** Power off the current active Cisco VSUM VM.
  - Step 2** Enter `https://VCIP/mob` and log in with the default credentials.
  - Step 3** In a web browser, choose **Content > Extension Manager > UnregisterExtension**.
  - Step 4** Enter `com.cisco.n1kv` and click **Invoke method**.
  - Step 5** Enter the `rm -rf /var/lib/vmware/vsphere-client/vc-packages/vsphere-client-serenity/com.cisco.n1kv-1.x/` command.
  - Step 6** Enter the `/etc/init.d/vsphere-client restart` command.
  - Step 7** Install the new version of the Cisco VSUM VM.
  - Step 8** After Cisco VSUM is successfully deployed, log in to the VMware vSphere Web Client to view the Cisco VSUM plugin.
-



## Installing Cisco Nexus 1000V Using Cisco VSUM

This chapter contains the following sections:

- [Information About Installing Cisco Nexus 1000V Using Cisco VSUM](#), page 15
- [Prerequisites for Installing the Cisco Nexus 1000V Using Cisco VSUM](#), page 15
- [Guidelines and Limitations for Installing Cisco Nexus 1000V Using Cisco VSUM](#), page 16
- [Installing the Cisco Nexus 1000V Using Cisco VSUM](#), page 16

### Information About Installing Cisco Nexus 1000V Using Cisco VSUM

The Cisco VSUM is the GUI that you use to install the VSMs in high availability (HA) or standalone mode and the VEMs on ESX/ESXi hosts. The Cisco VSUM GUI is an integral part of the VMware vSphere Web Client and can only be accessed by logging into the VMware vSphere Web Client.

Cisco VSUM enables you to install Cisco Nexus 1000V Release 4.2(1)SV2(2.3) and the later releases.

See [Migrating Hosts to Cisco Nexus 1000V Using Cisco VSUM](#), on page 25 to install VEM using Cisco VSUM.

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

See the corresponding *Cisco Nexus 1000V Installation and Upgrade Guide* to manually install the Cisco Nexus 1000V versions that are not supported by the Cisco VSUM.

### Prerequisites for Installing the Cisco Nexus 1000V Using Cisco VSUM

The Cisco Nexus 1000V installation using Cisco VSUM has the following prerequisites:

- You installed Cisco VSUM.
- You installed and prepared vCenter Server for host management using the instructions from VMware.

- You installed VMware vSphere Web Client.
- You installed the VMware Enterprise Plus license on the hosts.
- You are familiar with the Cisco Nexus 1000V topology diagram.
- You created port groups for the Control and Management VLANs on the Cisco Nexus 1000V.
- You enabled the Distributed Switch—Create, Extension-Register, Update privilege permissions on the vCenter Server.
- ESXi host is running 4.1 or later releases.

## Guidelines and Limitations for Installing Cisco Nexus 1000V Using Cisco VSUM

The Cisco Nexus 1000V installation using Cisco VSUM has the following guidelines and limitations:

- We recommend that you install the VSUMs 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 VSUM supports standalone mode, but we do not recommend that you use this mode in a production environment.
- Cisco VSUM 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 VSUM with ESXi host.
- The Cisco Nexus 1000V VSM always uses the following two network interfaces in the same order:
  - 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 ESXi host server.

## Installing the Cisco Nexus 1000V Using Cisco VSUM

You can install Cisco Nexus 1000V using Cisco VSUM. 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.

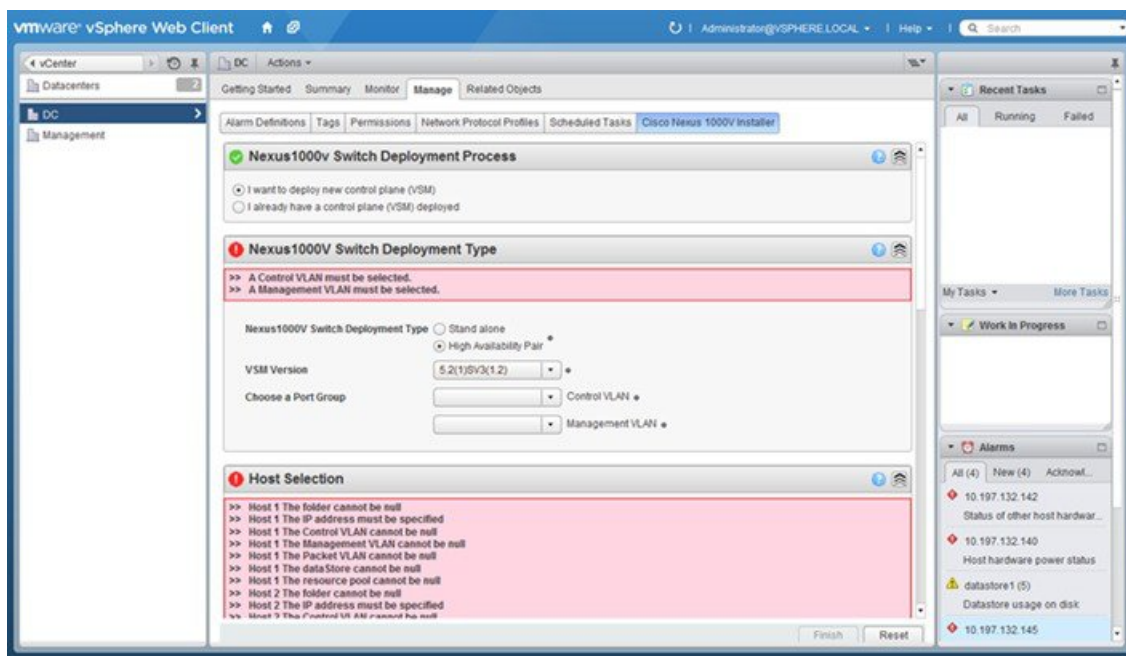
## Before You Begin

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
- Data center in which the switch will be installed
- Domain ID (a unique ID for the switch)
- Password (the default username is admin)

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

**Figure 6: 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"> <li>1 In the <b>Nexus 1000v Switch Deployment</b> area, choose <b>I already have a control plane deployed</b>.</li> <li>2 In the <b>Virtual Supervisor Module (VSM) configuration</b> area, enter an IP address of an already existing VSM in the <b>IP address</b> field, and enter a password in the <b>Password</b> field. <ul style="list-style-type: none"> <li><b>Note</b> If you check the <b>Default Port Profile</b> 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.</li> </ul> </li> <li>3 Click <b>Finish</b>.</li> <li>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.</li> </ol>
A new VSM	<ol style="list-style-type: none"> <li>1 In the <b>Nexus 1000v Switch Deployment</b> area, choose <b>I want to deploy new control plane (VSM)</b>.</li> <li>2 Complete the remaining steps in this section to create the switch.</li> </ol>

**Step 3**

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

Name	Description
<b>High Availability Pair</b>	Installs the switch as an HA pair. By default, the <b>High Availability Pair</b> is selected.
<b>Standalone</b>	Installs the switch in standalone mode.  <b>Note</b> We recommend that you install the Cisco Nexus 1000V in an HA pair.
<b>VSM Version</b>	Choose the Cisco Nexus 1000V version to be installed. By default, the latest version is selected.
<b>Control VLAN</b>	Choose the control port group for the switch.  The control port group is used for the control traffic.

Name	Description
<b>Management VLAN</b>	Choose the management port group for the switch.  <b>Note</b> 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
<b>IP Address</b>	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 <b>Pick a host</b> to drag and drop hosts.
<b>Datastore</b>	Choose the system-selected datastore that you want to override. Choose a datastore for each host.
<b>Resource Pool</b>	Choose the resource pool for each host.  <b>Note</b> 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.  If you do not choose a resource pool and the host is in standalone mode, the resource pool for the switch will be the root resource pool of the host.
<b>Folder Name</b>	Choose the folder name for each host.  <b>Note</b> If the folder name is not displayed in the drop-down list, the switch VM is created in the root VM folder of the data center.

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

Name	Description
<b>Domain ID</b>	The domain ID for the switch.  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.

Name	Description
Deployment Type	Configures the deployment type. By default, <b>Management IP Address</b> is selected. <b>Note</b> <ul style="list-style-type: none"> <li>• If you choose the Management IP address, this IP address is used for the VSM management operations and the VSM-to-VEM communications.</li> <li>• If you choose the Control IP address, this IP address is used only for the VSM-to-VEM communications.</li> </ul>
Control:IP/Name	The IP address for switch connectivity.
Control: Mask	The subnet mask.
Control: Gateway IP/Name	The gateway IP address.

**Step 7**

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

Name	Description
Switch Name	The name of the switch. The name must have the following: <ul style="list-style-type: none"> <li>• Start with a letter (A-Z, a-z).</li> <li>• Contain up to 32 case-sensitive letters (A-Z, a-z), numbers (0-9), or hyphens (-).</li> <li>• Not contain any other special characters or spaces.</li> </ul> <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 an 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	The IP address of the switch. The IP address is used for the management of the Cisco Nexus 1000V switch.
Subnet Mask	The subnet mask for the above entered IP address.
Gateway Address	The gateway IP address for the above entered IP address.
Username	By default, the user name is admin. This field is not editable.



Name	Description
<b>Default Port Profiles</b>	<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>
<b>Password</b>	<p>The admin user password.</p> <p>This password is used to log in to the switch for administration.</p>
<b>Confirm Password</b>	<p>The admin user password that you reenter for confirmation.</p>

**Step 8** Click **Finish** to install the Cisco Nexus 1000V switch.

**Step 9** Check the status of the installation by completing the following steps:

- a) Open a new tab in your browser and enter the same vCenter IP address to open the web client again.
- b) Log in to the web client and in the navigation pane, click **Tasks**.  
The **Task Console** opens in the work pane, displaying a list of tasks with the most recent task at the top.
- c) Find the task in the **Task Name** column and then view the status in the **Status** column.  
The **Status** column shows whether the task is complete or in progress. You can click the refresh icon to display new tasks and learn how much of the task is complete.

**Note** Several tasks might appear above the primary task you just performed. They might be associated with your primary task.

The Cisco Nexus 1000V installation is confirmed when the primary task `Create Nexus 1000v Switch` has the status `Completed`. A typical installation of the switch takes about 4 minutes.

### What to Do Next

Install VEM as described in the procedure [Migrating Hosts to the Cisco Nexus 1000V Using Cisco VSUM, on page 27](#).





## Managing an Existing Cisco Nexus 1000V Switch

- [About Managing an Existing Cisco Nexus 1000V Switch, page 23](#)
- [Setting Up Management for an Existing Cisco Nexus 1000V Switch, page 23](#)

### About Managing an Existing Cisco Nexus 1000V Switch

If you want to add hosts to, monitor, or upgrade a Cisco Nexus 1000V switch that was installed without Cisco VSUM, you first need to set up management in Cisco VSUM.

You can set up management when you add hosts to, monitor, or upgrade a Cisco Nexus 1000V switch, as documented later in this guide. However, you can also set up Cisco VSUM management ahead of time so you do not need to set up management when you perform these tasks.

### Setting Up Management for an Existing Cisco Nexus 1000V Switch

Perform the following steps to set up management in Cisco VSUM for a Cisco Nexus 1000V switch that was installed without using Cisco VSUM.

- 
- Step 1** Log in to the VMware vSphere Web Client.
  - Step 2** On the **Home** tab, click **Cisco Virtual Switch Update Manager > Nexus 1000v > Configure**.
  - Step 3** Click the data center, click the switch, and then click **Manage**.  
If the switch is not managed by Cisco VSUM, you see a **Switch Not Managed** dialog box telling you that you need to make the switch managed.
  - Step 4** In the **Switch Not Managed** dialog box, click **OK**.
  - Step 5** In the central pane, click the **Make Managed** tab.
  - Step 6** In the **Management Account** dialog box, complete one of the following series of steps to set up management for the switch in VSUM with Virtual Supervisor Module (VSM) credentials:

If you want to...	Then...
Use an existing administrator account to manage the switch.	<ol style="list-style-type: none"> <li data-bbox="570 344 951 373">1 Enter a username and password. You can use either a VSM local administrator account or a remote administrator (Radius/TACACS) account. Cisco VSUM always will use the username associated with the account that you choose to do all of its operations. It does not create an internal user n1kvmgr here because it uses either local administrator or remote administrator user credentials directly.</li> <li data-bbox="570 611 1446 669">2 Click the <b>Use an existing administrator account to manage the switch</b> radio button.</li> <li data-bbox="570 690 854 720">3 Click <b>Manage Switch</b>.</li> </ol>
Use existing administrator credentials to create a new user account.	<p data-bbox="570 774 1386 804"><b>Note</b> Do not use this option if TACACS/Radius is enabled on Cisco VSUM.</p> <ol style="list-style-type: none"> <li data-bbox="570 842 951 871">1 Enter a username and password.</li> <li data-bbox="570 892 1479 951">2 Click the <b>Use existing administrator credentials to create a new "N1KV" user account. (Will not work with TACACS)</b> radio button. This option is available only for VSM local network admin users and not for remote administrators. You might choose this option if you do not want Cisco VSUM to use VSM local admin user credentials. This option creates n1kvmgr user internally on Cisco VSUM, and Cisco VSUM will use this internal user for all operations.</li> <li data-bbox="570 1157 854 1186">3 Click <b>Manage Switch</b>.</li> </ol>



# Migrating Hosts to Cisco Nexus 1000V Using Cisco VSUM

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This chapter contains the following sections:

- [Information About Migrating Hosts to the Cisco Nexus 1000V Switch Using Cisco VSUM](#), page 25
- [Prerequisites for Migrating Hosts to the Cisco Nexus 1000V Using Cisco VSUM](#), page 26
- [Guidelines and Limitations for Migrating Hosts to the Cisco Nexus 1000V Using Cisco VSUM](#), page 26
- [Migrating Hosts to the Cisco Nexus 1000V Using Cisco VSUM](#), page 27

## Information About Migrating Hosts to the Cisco Nexus 1000V Switch Using Cisco VSUM

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

Cisco VSUM 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.

## Prerequisites for Migrating Hosts to the Cisco Nexus 1000V Using Cisco VSUM

The migration of hosts to the Cisco Nexus 1000V using Cisco VSUM 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 the vCenter server.
- You must have the distributed switch—Create and Modify privilege permission enabled on the vCenter server.
- You must have Cisco Nexus 1000V distributed switch in Layer 3 mode.

## Guidelines and Limitations for Migrating Hosts to the Cisco Nexus 1000V Using Cisco VSUM

When you move the ESX/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

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

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- 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

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

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- 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.

## Migrating Hosts to the Cisco Nexus 1000V Using Cisco VSUM

You can install a Cisco Nexus 1000V Virtual Ethernet module (VEM) using Cisco VSUM. When the Cisco VSUM 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

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**Step 1** Log in to the VMware vSphere Web Client.

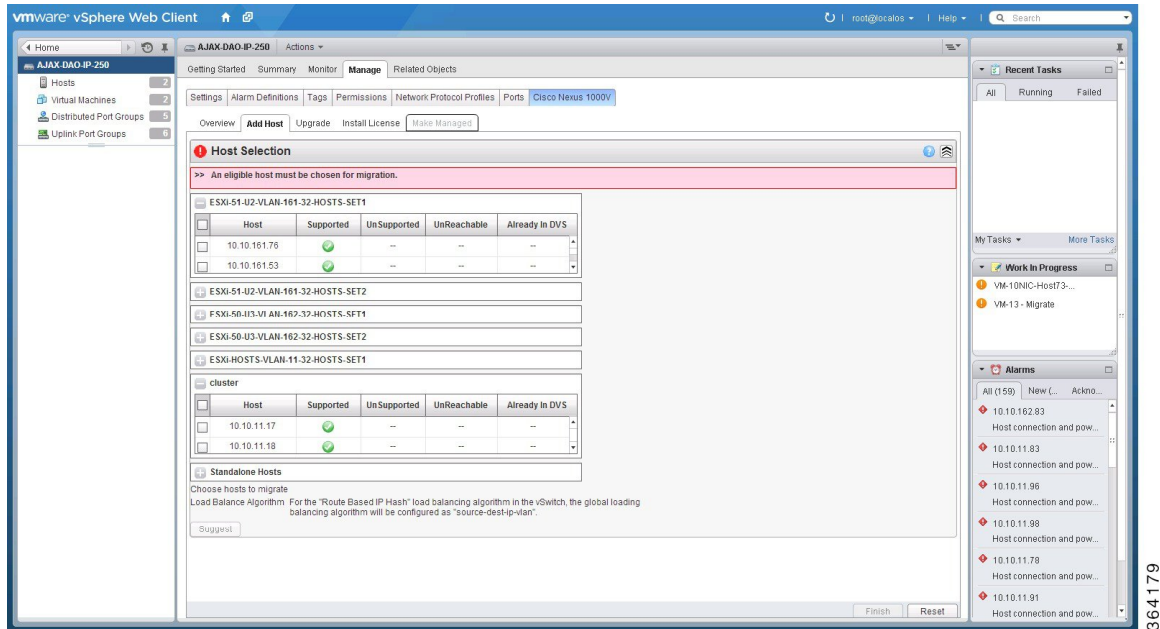
**Step 2** In the vSphere Client, choose **Home > Cisco Virtual Switch Update Manager > Nexus 1000V > Configure**.

**Step 3** Choose a data center and a distributed virtual switch, and then click **Manage**.

**Note** If the switch is not managed by Cisco VSUM, you are prompted to enter the switch credentials in the **Make Managed** window. For more information, see the chapter [Managing an Existing Cisco Nexus 1000V Switch](#).

- Step 4** In the switch pane, 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 Cisco VSUM in the vSphere Client by navigating to **vCenter > Distributed Switches**.
- Step 7** (Optional) In the switch pane, click **Manage > Cisco Nexus 1000V > Add Host**.

**Figure 7: Cisco VSUM—Migrating Hosts**



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

Name	Description
<b>Cluster</b>	Lists all the hosts that are in an HA pair. Check the check box next to the hosts to be migrated.
<b>Standalone Hosts</b>	Lists the standalone hosts. Check the check box next to the hosts to be migrated.
<b>Supported</b>	If checked, the host can be migrated to the current version of the Cisco Nexus 1000V.
<b>UnSupported</b>	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: <a href="http://www.cisco.com/c/en/us/support/switches/nexus-1000v-switch-vmware-vsphere/products-device-support-tables-list.html">http://www.cisco.com/c/en/us/support/switches/nexus-1000v-switch-vmware-vsphere/products-device-support-tables-list.html</a> .
<b>UnReachable</b>	If checked, the host is in an unreachable state.



Name	Description
Already in DVS	If checked, the host is already migrated to the Cisco Nexus 1000V.

**Step 9** Click **Suggest**.

Cisco VSUM displays the list of existing and proposed port profiles and suggests appropriate port profiles for each VMKNIC, VM NIC, and physical NIC.

**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 VSUM. 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
<b>Port Profile Editor</b>	The list of existing port profiles or new port profiles to be created is displayed. Choose the port profile. <ul style="list-style-type: none"> <li>• 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.</li> <li>• Valid—Displays true when all the port profile fields are completed. Displays false when one or more of the port profile fields is incomplete.</li> <li>• Editable—Displays true if the port profile is editable. Displays false if the port profile is not editable.</li> <li>• Profile Name—Displays the name of the port profile.</li> </ul>
<b>Uplink</b>	If checked, displays the uplink associated with the port profile.
<b>Trunk</b>	If checked, displays the trunk associated with the port profile.
<b>L3 Capable</b>	If checked, the L3 capability is associated with the port profile.
<b>ISCSI Multipath</b>	If checked, the ISCSI Multipath is associated with the port profile.
<b>Neither L3 nor ISCSI</b>	If checked, then neither the L3 or the ISCSI is associated with the port profile.
<b>Channel-group auto mode on</b>	If checked, the channel group auto mode is associated with the port profile.
<b>Mac-pinning</b>	If checked, the channel group auto mode on MAC pinning is associated with the port profile.
<b>Name</b>	The name of the port profile.

Name	Description
VLANs	Choose the VLAN.
Native VLAN	The native VLAN associated with the port profile.
Duplicate	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	Review the physical NIC that has been automatically selected by the Cisco Virtual Switch Update Manager. Check/uncheck to select/deselect the VM NICs for the migration. You must ensure that at least one physical NIC is selected for the migration.
Profile	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	The vSwitch or VDS port group that the PNIC is currently assigned to.
Select All	Migrates all the physical NICs associated with the host.
Select None	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	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 that will carry the L3 traffic. <b>Note</b> Do not uncheck any of the VMkernel NIC check boxes, unless the required VMkernel NIC is associated with the Layer3 port profile.

Name	Description
<b>L3 Capable</b>	<p>Displays whether the VMkernel NIC is Layer-3 capable. Only one VMkernel NIC is Layer-3 capable. By default, the VMK0 is selected as the Layer 3 control.</p> <p><b>Note</b> To change the VMkernel to Layer 3 port profile, do the following:</p> <ul style="list-style-type: none"> <li>• From the <b>Port Profile</b> drop-down list, choose the non Layer 3 port profile for VMk0. In absence of non Layer3 veth profile, you can create non Layer 3 port profiles as follows:                             <ul style="list-style-type: none"> <li>◦ Select the Layer 3 port profile and click <b>Duplicate</b>.</li> <li>◦ Check the <b>Neither L3 nor ISCSI</b> radio button and click <b>OK</b>. You can edit the list of supported VLANs.</li> </ul> </li> <li>• Select the Layer-3 enabled port profile to use for Layer 3 control traffic.</li> </ul>
<b>Profile</b>	Choose the port profile associated with the VMkernel NIC.
<b>Source Profile</b>	Displays the vSwitch or VDS port group that the VMkernel NIC is currently assigned to.
<b>Select None</b>	Deselects all the selected VMkernel NICs associated with the host.
<b>New</b>	<p>Adds a new VMkernel NIC for Layer 3 control. Enter the IP address and net mask for the new VMkernel NIC and click <b>OK</b>.</p> <p>After you create a new VMKernel NIC, complete the following steps:</p> <ol style="list-style-type: none"> <li>1 Select the row for the original VMkernel NIC.</li> <li>2 Uncheck the original VMkernel NIC check box.</li> <li>3 Select the row for the new VMkernel NIC.</li> <li>4 Check the new VMkernel NIC check box.</li> <li>5 Choose a port profile from the drop-down menu in the row for the new VMkernel NIC.</li> </ol> <p><b>Note</b> Ensure that the host is selected before you create the new VMkernel NIC.</p>
<b>Edit</b>	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
<b>Virtual Machine NICs</b>	If checked, displays the VSMS and the network adapters associated with the VM.

Area	Action
Profile	Choose the port profile associated with the virtual NIC.
Source Profile	The source associated with the port profile.
Select None	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** Check the status of adding the host by completing the following steps:

- a) In the **Recent Tasks** pane to the right of the work pane, click **More Tasks**.  
The **Task Console** appears in the work pane, displaying a list of tasks with the most recent task at the top.
- b) Find the task in the **Task Name** column and then view the status in the **Status** column.  
The **Status** column shows whether the task is complete or in progress. You can click the refresh icon to display new tasks and learn how much of the task is complete.

**Note** Several tasks might appear above the primary task you just performed. They might be associated with your primary task.

The host addition is confirmed when the primary task `Add hosts to Cisco DVS` has the status `Completed`.

If you close the browser and want to view the history of the task, log in to the web client, and click **Tasks** in the navigation pane to display the lists of tasks in the work pane.

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## Upgrading Cisco Nexus 1000V Using Cisco VSUM

This chapter contains the following sections:

- [Information About Upgrading the Cisco Nexus 1000V Using Cisco VSUM](#), page 33
- [Prerequisites for Upgrading Cisco Nexus 1000V Using Cisco VSUM](#), page 34
- [Guidelines and Limitations for Upgrading the Cisco Nexus 1000V Using Cisco VSUM](#), page 39
- [Upgrading the Cisco Nexus 1000V Using Cisco VSUM](#), page 40

### Information About Upgrading the Cisco Nexus 1000V Using Cisco VSUM

Cisco VSUM is the GUI that you can use to upgrade the Virtual Supervisor modules (VSMs) and the VEMs on ESX/ESXi hosts.

An [interactive upgrade tool](#) has been provided to assist you in determining the correct upgrade steps based on your current environment and the one to which you want to upgrade.

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

You can obtain your upgrade-related software for the current release of the Cisco Nexus 1000V software from Cisco.com.

With Cisco VSUM, you can upgrade the Cisco Nexus 1000V version only with the vSphere version intact.

See the *Cisco Nexus 1000V Installation and Upgrade Guide* for information about how to upgrade both vSphere and Cisco Nexus 1000V versions together and how to upgrade the vSphere version only, with the Cisco Nexus 1000V version intact.

**Supported Upgrade Paths:** With Cisco VSUM, you can upgrade Cisco Nexus 1000V from Release 4.2(1)SV1(4b) and later releases.

**Unsupported Upgrade Paths:**

Using Cisco VSUM, you cannot upgrade the following releases of Cisco Nexus 1000V to the current release:

- Release 4.2(1)SV1(4)

- Release 4.2(1)SV1(4a)
- Release 4.2(1)SV1(3x) series

See the *Cisco Nexus 1000V Installation and Upgrade Guide* to upgrade the Cisco Nexus 1000V to the current version using the CLI.

**Note**

Upgrades from Release 4.0(4)SV1(1), 4.0(4)SV1(2), and 4.0(4)SV1(3x) are no longer supported. VMware 4.0 and 4.1 are also not supported with this Cisco Nexus 1000V release.

Using Cisco VSUM, you cannot upgrade to following releases of Cisco Nexus 1000V:

- 4.2(1)SV1(5.2)
- 4.2(1)SV2(1.1)

## Prerequisites for Upgrading Cisco Nexus 1000V Using Cisco VSUM

Upgrading the Cisco Nexus 1000V with Cisco VSUM has the following prerequisites:

- Close any active configuration sessions before upgrading the Cisco Nexus 1000V software.
- Save all changes in the running configuration to the startup configuration.
- Save a backup copy of the running configuration in the external storage.
- Perform a VSM backup. For more information, see the “Configuring VSM Backup and Recovery” chapter in the *Cisco Nexus 1000V System Management Configuration Guide*.
- Use the VSM management IP address to log in to VSM and perform management tasks.

**Important**

If you connect to a VSM using the VSA serial port or the connect host from the Cisco Integrated Management Control (CIMC), do not initiate commands that are CPU intensive, such as copying images from the TFTP server to bootflash or generating a lot of screen output or updates. Use the VSA serial connections, including CIMC, only for operations such as debugging or basic configuration of the VSA.

- If you are upgrading Cisco Nexus 1000V from a previous release to Release 5.2(1)SV3(1.x) and you have a VSM 2-GB hard disk drive (HDD), you must upgrade VSM to a 3-GB HDD before you upgrade Cisco Nexus 1000V. See the section [Upgrading VSM to a 3-GB HDD Before Upgrading Cisco Nexus 1000V](#) for instructions.
- If you need to migrate a vSphere host from ESX to ESXi, do it before the Cisco Nexus 1000V upgrade.
- You have placed the VEM software file in `/tmp` on the vSphere host. Placing it in the root (`/`) directory might interfere with the upgrade. Make sure that the root RAM disk has at least 12 MB of free space by entering the `vdv` command.
- On your upstream switches, you must have the following configuration.

- On Catalyst 6500 Series switches with Cisco IOS software, enter the **portfast trunk** command or the **portfast edge trunk** command.
- On Cisco Nexus 5000 Series switches with the Cisco NX-OS software, enter the **spanning-tree port type edge trunk** command.
- On your upstream switches, we highly recommend that you globally enable the following:
  - Global BPDU Filtering
  - Global BPDU Guard
- On your upstream switches where you cannot globally enable BPDU Filtering and BPDU Guard, we highly recommend that you enter the following commands:
  - **spanning-tree bpdu filter**
  - **spanning-tree bpdu guard**
- You must have the Distributed Switch—Create and Modify privilege permission enabled on the vCenter.
- For more information about configuring spanning tree, BPDU, or PortFast, see the documentation for your upstream switch.

## Upgrading VSM to a 3-GB HDD Before Upgrading Cisco Nexus 1000V

If you are upgrading Cisco Nexus 1000V from a previous release to Release 5.2(1)SV3(1.x) and you have a VSM 2-GB HDD, you must upgrade VSM to a 3-GB HDD before you upgrade Cisco Nexus 1000V. Follow one of the following sets of instructions to upgrade VSM.

### Upgrading Hard Disk Drive Space from 2 GB to 3 GB on a VSM as a VM

We recommend that you upgrade the HDD space from 2 GB to 3 GB on a VSM VM before upgrading VSM to Release 5.2(1)SV3(1.1) or later.

#### Before You Begin

Make sure that the Cisco Nexus 1000V VSMs are running Release 4.2(1)SV2(1.1) or 4.2(1)SV2(2.1).

Make sure that the existing Cisco Nexus 1000V VSMs are an HA pair with 2 GB HDD.

- 
- Step 1** Remove the existing standby VSM.
- a) Right-click the VSM VM and power off the VM.
  - b) Remove it from the Virtual Center inventory.
- Step 2** Bring up the new standby VSM VM (with 3-GB HDD) with the same release as the active VSM using ISO. For example, if the active VSM is running Release 4.2(1)SV2(1.1), bring up the new standby VSM with Release 4.2(1)SV2(1.1).
- a) Confirm that the same port profiles are used as the primary VSM for 3 network interfaces.

- b) Provision a 3-GB HDD with a minimum of 2 GB of RAM reserved and allocated, and a minimum CPU speed of 1600 MHz.

See the section "[Installing the Software from the ISO Image](#)" in the *Cisco Nexus 1000V Installation and Upgrade Guide*.

- Step 3** Power on the standby VSM.
- a) Confirm the HA role is set as Secondary.
  - b) Confirm the Domain ID is the same as the Primary VSM.
- Step 4** After the HA pair is formed, perform a system switchover to make the standby VSM become the active VSM.
- Step 5** Remove the current standby VSM.
- a) Right-click the VSM VM and power off the VM.
  - b) Remove it from the Virtual Center inventory.
- Step 6** Change the Active VSM system redundancy role to the Primary system by entering **system redundancy role primary**.
- Step 7** Copy the config to start up and perform a reload.
- Step 8** Verify the current role by entering **show system redundancy status**. The role should be set as Primary.
- Step 9** Bring up the new standby VSM VM (with 3-GB HDD) using ISO following Step 2 and Step 3.
- Step 10** After the HA pair is formed, verify it by entering **show system internal flash**. It should reflect the VSM with 3-GB HDD.

### What to Do Next

Perform an in-service software upgrade (ISSU) to Release 5.2(1)SV3(1.1) or later.

## Upgrading Hard Disk Drive Space from 2 GB to 3 GB on a VSM on a VSB

We recommend that you upgrade the VSM that is deployed on a CSP from a 2-GB HDD to a 3-GB HDD.

- Step 1** Identify the standby VSM by entering the **show virtual-service-blade summary** command.

```
N1110# show virtual-service-blade summary
```

Name	HA-Role	HA-Status	Status	Location
switch	PRIMARY	ACTIVE	VSB POWERED ON	PRIMARY
switch	SECONDARY	STANDBY	VSB POWERED ON	SECONDARY

```
N1110#
```

The output shows that the standby VSM is running on the secondary Cisco Nexus 1010 Virtual Service Blade (VSB).

- Step 2** Shut down and delete the standby VSM on the secondary VSB.

- a) N1110# **configure terminal**
- b) N1110#(config)**virtual-service-blade** name switch
- c) N1110#(config-vsbs-config)**shutdown secondary**
- d) N1110#(config-vsbs-config)**no enable secondary**

- Step 3** Bring up the new secondary VSB with Release 4.2(1)SV2(1.1) using ISO.



See the [Cisco Nexus 1100 Series Virtual Services Appliances Deployment Guide White Paper](#) for more information.

**Step 4** Change the disk size to 3 GB or more.

```
N1110(config-vsbs-config)# disksize 4
```

**Step 5** Enable the standby VSM on the secondary VSB.

See the [Cisco Nexus 1100 Series Virtual Services Appliances Deployment Guide White Paper](#) for more information.

```
N1110# sh virtual-service-blade summary
```

```
-----
Name                HA-Role    HA-Status  Status                Location
-----
switch              PRIMARY    ACTIVE     VSB POWERED ON       PRIMARY
switch              SECONDARY  NONE       VSB NOT PRESENT      SECONDARY
switch1             PRIMARY    NONE       VSB NOT PRESENT      PRIMARY
switch1             SECONDARY  STANDBY    VSB POWERED ON       SECONDARY
-----
```

```
N1110#
```

**Step 6** Perform a system switchover to make the active VSM on the primary VSB become the standby VSM. To do this, enter the **system switchover** command on the active VSM.

```
N1110# system switchover
```

```
N1110(config-vsbs-config)# show virtual-service-blade summary
```

```
-----
Name                HA-Role    HA-Status  Status                Location
-----
switch              PRIMARY    STANDBY    VSB POWERED ON       PRIMARY
switch              SECONDARY  NONE       VSB NOT PRESENT      SECONDARY
switch1             PRIMARY    NONE       VSB NOT PRESENT      PRIMARY
switch1             SECONDARY  ACTIVE     VSB POWERED ON       SECONDARY
-----
```

```
N1110(config-vsbs-config)#
```

**Step 7** After the HA pair is formed, shut down and delete the standby VSM on the primary VSB.

```
N1110(config)# virtual-service-blade switch
```

```
N1110(config-vsbs-config)# shutdown primary
```

```
N1110(config-vsbs-config)# no enable primary
```

```
N1110(config-vsbs-config)# show virtual-service-blade summary
```

```
-----
Name                HA-Role    HA-Status  Status                Location
-----
switch              PRIMARY    NONE       VSB NOT PRESENT      PRIMARY
switch              SECONDARY  NONE       VSB NOT PRESENT      SECONDARY
switch1             PRIMARY    NONE       VSB NOT PRESENT      PRIMARY
switch1             SECONDARY  ACTIVE     VSB POWERED ON       SECONDARY
-----
```

```
N1110(config-vsbs-config)#
```

**Step 8** Bring up the new VSB with Release 4.2(2)SV2(1.1) using ISO.

See the [Cisco Nexus 1100 Series Virtual Services Appliances Deployment Guide White Paper](#) for more information.

**Step 9** Enable the primary VSM.

See the [Cisco Nexus 1100 Series Virtual Services Appliances Deployment Guide White Paper](#) for more information.

N1110 (config) # **show virtual-service-blade summary**

```

-----
Name                HA-Role    HA-Status  Status                Location
-----
switch              PRIMARY    NONE       VSB NOT PRESENT      PRIMARY
switch              SECONDARY  NONE       VSB NOT PRESENT      SECONDARY
switch1             PRIMARY    STANDBY   VSB POWERED ON       PRIMARY
switch1             SECONDARY  ACTIVE    VSB POWERED ON       SECONDARY

```

N1110 (config-vsbs-config) #

**Step 10** Verify that the HDD size has changed. The following example shows that the HDD size is 4 GB.

N1110 (config) # **show system internal flash**

Mount-on	1K-blocks	Used	Available	Use%	Filesystem
/		307200	87628	219572	29 /dev/root
/proc		0	0	0	0 proc
/isan	614400	243076	371324	40	none
/var/sysmgr	512000	18896	493104	4	none
/var/sysmgr/ftp	204800	40	204760	1	none
/dev/shm	358400	30268	328132	9	none
/volatile	20480	0	20480	0	none
/debug	2048	8	2040	1	none
/dev/mqueue	0	0	0	0	none
/mnt/cfg/0	326681	8360	301455	3	/dev/hda5
/mnt/cfg/1	326681	8359	301456	3	/dev/hda6
/var/sysmgr/startup-cfg	409600	1168	408432	1	none
/dev/pts	0	0	0	0	devpts
/mnt/pss	326671	8625	301178	3	/dev/hda3
/bootflash	3122988	151756	2812592	6	/dev/hda4
/bootflash_sup-remote	3122992	151760	2812592	6	127.1.1.1:/mnt/bootflash/

### What to Do Next

Perform an in-service software upgrade (ISSU) to Release 5.2(1)SV3(1.1) or later.

## Verifying that the VSM Has 3 GB of Hard Disk Drive Storage

You can display the system internal flash to verify that have at least 3 GB of HDD space.

**Step 1** Display the system internal flash.

switch# **show system internal flash**

Mount-on	1K-blocks	Used	Available	Use%	Filesystem
/	307200	77808	229392	26	/dev/root
/mnt/pss	248895	8164	227879	4	/dev/sda3

/proc	0	0	0	0	proc
/isan	614400	372236	242164	61	none
/var/sysmgr	1048576	488704	559872	47	none
/var/sysmgr/ftp	204800	52	204748	1	none
/nxos/tmp	20480	0	20480	0	none
/dev/shm	358400	89660	268740	26	none
/volatile	20480	0	20480	0	none
/debug	2048	128	1920	7	none
/dev/mqueue	0	0	0	0	none
/mnt/cfg/0	248895	4494	231551	2	/dev/sda5
/mnt/cfg/1	241116	4493	224175	2	/dev/sda6
/var/sysmgr/startup-cfg	409600	5892	403708	2	none
/dev/pts	0	0	0	0	devpts
/mnt/pss	248895	8164	227879	4	/dev/sda3
/bootflash	2332296	1918624	295196	87	/dev/sda4
/sys	0	0	0	0	sysfs

**Step 2** Make sure that the number of blocks allocated to the /mnt/cfg/0, /mnt/cfg/1, /mnt/pss, and /bootflash partitions equals at least 3 GB.

## Guidelines and Limitations for Upgrading the Cisco Nexus 1000V Using Cisco VSUM



### Caution

During the upgrade process, the Cisco Nexus 1000V does not support any new additions such as modules, virtual NICs (vNICs), or VM NICs and does not support any configuration changes. VM NIC and vNIC port-profile changes might render VM NICs and vNICs in an unusable state.



### Note

We recommend that you use vSphere 5.0 Update 1 or later instead of vSphere 5.0.

Upgrading the Cisco Nexus 1000V with Cisco VSUM has the following guidelines and limitations:

- You are upgrading the Cisco Nexus 1000V software to the current release.
- Schedule the upgrade when your network is stable and steady. Ensure that everyone who has access to the switch or the network is not configuring the switch or the network during this time. You cannot configure a switch during an upgrade.
- Avoid power interruptions to the hosts that run the VSM VMs during any installation procedure.

Before you upgrade the VEMs, note these guidelines and limitations:

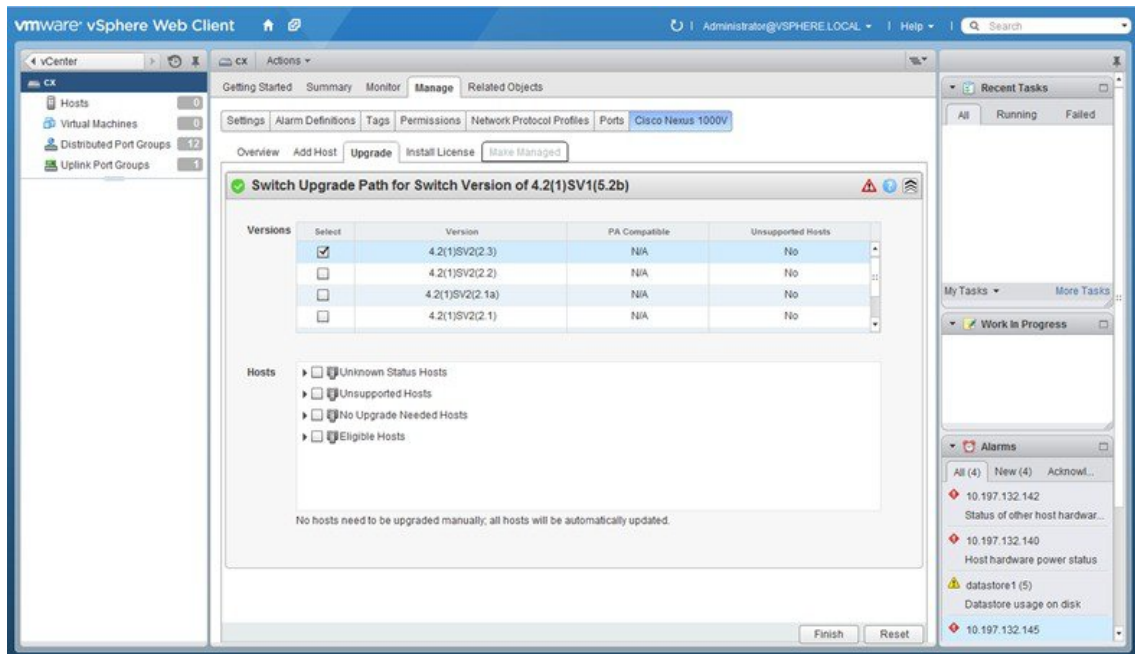
- During the VEM upgrade process, VEMs reattach to the VSM.
- Connectivity to the VSM can be lost during a VEM upgrade when the interfaces of a VSM VM connect to its own distributed virtual switch (DVS).

# Upgrading the Cisco Nexus 1000V Using Cisco VSUM

You can upgrade the Cisco Nexus 1000V using Cisco VSUM.

- Step 1** Log in to the VMware vSphere Web Client.
- Step 2** In the vSphere Client, choose **Cisco Virtual Switch Update Manager > Nexus 1000V > Configure**, choose the data center, choose the distributed virtual switch, and then click **Manage**.
- Note** If the switch is not managed by Cisco VSUM, you are prompted to enter the switch credentials in the **Make Managed** window. For more information, see [Managing an Existing Cisco Nexus 1000V Switch](#).
- Step 3** In the switch pane, click the **Upgrade** tab.
- Step 4** If the policy agent (PA) has been installed on the Virtual Supervisor Module (VSM), complete the following steps in the **Select PNSC and VSG versions** dialog box:
- 1 From the **Select PNSC version** drop-down list, choose the version compatible with the version of Cisco Nexus 1000V that you are upgrading to.
  - 2 From the **Select VSG version** drop-down list, choose the version compatible with the version of Cisco Nexus 1000V that you are upgrading to.
  - 3 Click **OK**. The upgrade path displays the selected Cisco Prime Network Services Controller (PNSC) version and PA Compatible option as **Yes**.
- Step 5** Note the following elements of the **Switch Upgrade Path** window, which appears under the **Upgrade** tab:

**Figure 8: Cisco VSUM—Upgrading Cisco Nexus 1000V**



In the **Versions** area, note the following columns:

Name	Description
<b>Version</b>	Displays the version number of the Cisco Nexus 1000V switch suggested for upgrade. By default, the most recent version is selected.
<b>PA Compatible</b>	Displays if the Cisco PNSC version is compatible with the Cisco Nexus 1000V switch version suggested for upgrade.
<b>Unsupported Hosts</b>	Displays if the ESXi host has to be upgraded manually.

In the **Hosts** area, note the hosts that are associated with the Cisco Nexus 1000V version suggested for upgrade. The hosts are represented in the following four categories:

- **Unknown Status Hosts**—The status of the host is in nonresponding state.
- **Unsupported Hosts**—The ESX/ESXi version of the host is not compatible with the ESX/ESXi version of the host that is associated with the Cisco Nexus 1000V version suggested for upgrade. The unsupported hosts should be upgraded manually to the ESX/ESXi versions supported by the Cisco Nexus 1000V. See the *Cisco Nexus 1000V and VMware Compatibility Information* for more information about supported ESX/ESXi versions.
- **No Upgrade Needed Hosts**—The hosts already have the correct VEM version installed.
- **Eligible Hosts**—The ESX/ESXi version of the host is compatible with the ESX version of the host that is associated with the Cisco Nexus 1000V version suggested for upgrade. During the upgrade process, Cisco Virtual Switch Update Manager upgrades the VEM version installed on the hosts to the specified version.

**Step 6** In the **Versions** area, accept the default version or choose another available version by clicking the check box next to it.

**Step 7** In the **Hosts** area, from the **Eligible Hosts** drop-down list, click the check box next to the host or hosts that you want to upgrade.

**Step 8** Click **Finish**.  
This upgrades the VSMs along with the PA and the VEM.

**Step 9** Check the upgrade status by completing the following steps:

- In the **Recent Tasks** pane to the right of the work pane, click **More Tasks**.  
The **Task Console** appears in the work pane, displaying a list of tasks with the most recent task at the top.
- Find the task in the **Task Name** column and then view the status in the **Status** column.  
The **Status** column shows whether the task is complete or in progress. You can click the refresh icon to display new tasks and learn how much of the task is complete.

**Note** Several tasks might appear above the primary task you just performed. They might be associated with your primary task.

The upgrade is confirmed when the primary task Upgrade Cisco DVS has the status Completed.

If you close the browser and later want to view the task's history, log in to the web client and click **Tasks** in the navigation pane to display the lists of tasks in the work pane.

**Step 10** Verify the upgrade by completing the following steps:

- Log in to the Cisco Nexus 1000V over an SSH connection.

- b) At the prompt, enter the command **show module**.  
The output displays information about the VSMS and VEMs that are part of the Cisco Nexus 1000V.
  - c) In the top section of the output, verify the state of the modules.  
One VSM should be active, and one should be a standby. The VEMs that are part of the DVS are listed below the VSMS. Their status should be OK.
  - d) In the center section of the output, verify that modules show the number of the release that you upgraded to.
  - e) At the prompt, enter the command **show version**.
  - f) In the software section of the output, verify that the kickstart version and the system version have the number of the release that you upgraded to.
-



# Monitoring Cisco Nexus 1000V Using Cisco VSUM

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This chapter contains the following sections:

- [Information about Monitoring](#), page 43
- [Monitoring the Cisco Nexus 1000V Using Cisco VSUM](#), page 44

## Information about Monitoring

Cisco VSUM provides server administrators with a view of the virtual network and visibility into the networking aspects of the Cisco Nexus 1000V.

It allows administrators to view the configuration aspects of the VSM, export networking details from vCenter server, investigate the root cause of and prevent networking issues, and deploy the virtual machines with policies. Administrators can monitor and manage resources with the network details that are provided in the Cisco VSUM.

Cisco VSUM displays the following switch information:

- **Dashboard tab**—Displays the summary of the system, network statistics, and license information.
- **Switch tab**—Displays hosts, VMs, port groups, and VNIC and PNIC information at the switch level.
- **Hosts/VEM tab**—Displays hosts, VMs, port groups, and VNIC and PNIC information at the host level.



**Note**

---

TACACS users cannot monitor the Cisco Nexus 1000V switch on the Cisco VSUM.

---

# Monitoring the Cisco Nexus 1000V Using Cisco VSUM

You can view the Virtual Supervisor module (VSM) and Virtual Ethernet module (VEM) details of the Cisco Nexus 1000V switch.

- Step 1** Log in to the VMware vSphere Web Client.
- Step 2** In the vSphere Client, choose **Home > Cisco Virtual Switch Update Manager > Nexus1000V > Configure**.
- Step 3** Choose a data center and a distributed virtual switch, and then click **Monitor**.
- Note** You are prompted to enter your credentials if the switch is not managed by Cisco VSUM. For more information, see [Managing an Existing Cisco Nexus 1000V Switch](#).
- Note** If you register Cisco VSUM with vCenter when the vCenter plug-in is already installed, you might not see the **Cisco Nexus 1000V** tab under Monitor. If you do not see this tab, reboot the VMware vSphere Web Client.
- Step 4** (Optional) You can also access the **Cisco Nexus 1000V Monitor** pane in the vSphere Client by choosing **vCenter > Distributed Switches**.
- Step 5** (Optional) In the switch pane, choose **Monitor > Cisco Nexus 1000V**.
- Step 6** Click **Dashboard**.  
The **Dashboard** pane displays the following summary of the Cisco Nexus 1000V:

Name	Description
<b>System</b>	
<b>Switch Name</b>	The name of the switch.
<b>NX-OS Version</b>	The Cisco NX-OS version and the build that the switch is using.
<b>VSM IP</b>	The IP address of the Virtual Supervisor Module (VSM).
<b>DC Name</b>	The name of the data center.
<b>Connectivity Mode</b>	The mode of connectivity between the VSMS and the VEMs.
<b>VC Connectivity</b>	The status of vCenter connectivity.
<b>VSM HA</b>	The Virtual Supervisor Module (VSM) high availability mode.
<b>Network Statistics</b>	
<b>VNICs vs Max</b>	The maximum number of virtual network interface cards (VNICs) that are supported and their current usage.
<b>Hosts vs Max</b>	The maximum number of server hosts that are supported and their current usage.



Name	Description
Port-Groups vs Max	The maximum number of port groups that are supported and their current usage.
Veths/Host Max	The maximum number of vEthernet ports per host that are supported and their current usage.
VLAN vs Max	The maximum number of VLANs that are supported and their current usage.
VXLAN vs Max	The maximum number of VXLANs that are supported and their current usage.
Licenses	The information of the license installed.
License Type	The type of the license.
Licenses Available	The licenses that are available to use.
Licenses Used	The licenses that are actually used.
Earliest Expiration	The earliest expiration time of the license.
Status	The status of the license.

**Step 7** Click **Switch**.

**Step 8** Click **Host/VEM**.

The **Host/VEM** pane displays the following details of the host.

Name	Description
Host Name field	The name of the host.
NX-OS Version field	The Cisco NX-OS version and the build that the host is using.
Host IP field	The IP address of the host.
License field	The license details of the host.
Host/Module field	The number of modules per host.
VMs/Host field	The number of VMs per host.
VNICs / Host field	The number of VNICs per host.

- Step 9** Click **VM Info**.  
The **VM Info** pane displays the following details.

Name	Description
VMs	The name of the VM.
vNICs	The name of the vNIC associated to the VM.
Adapter	The name of the adapter.
Status	The status of the VM.
Port Group	The port group associated with the VM.
VLANs	The VLAN associated with the VM.
Host ID	The module number of the host at VSM.

- Step 10** Click **Port Groups**.  
The **Port Groups** pane displays the following details.

Name	Description
Port Group	The name of the port profile.
Type	The type of port profile.
VLANs	The VLANs associated with the port profile.
System VLANs	The system VLANs associated with the port profile.
Port Max	The maximum number of ports available.
Port Min	The minimum number of ports available.
Port Used	The total number of the ports used.

- Step 11** Click **vNICS**.  
The **vNICS** pane displays the following details.

Name	Description
vNICs	The name of the vNIC.
VM	The name of the VM.
Adapter	The name of the adapter.

Name	Description
Status	The status of the vNIC.
Port Group	The port group associated with the vNICs.
VLANs	The VLANs associated with the vNICs.
Host ID	The module number of the host at the VSM.

- Step 12** Click **Uplinks**.  
The **Uplinks** pane displays the following details.

Name	Description
Switch Interface	The name of the port.
Status	The status of the uplink.
Port Channel	The port channel associated with the uplink.
Host ID	The module number of the host at the VSM.
Port Group	The port group associated with the uplink.
VLANs	The VLANs associated with the uplink.
CDP Uplinks	The CDP uplink information.

- Step 13** Click **Hosts/VEM**.  
The **Systems** area in the **Host/VEM** pane displays the host details.

Name	Description
Host Name	The name of the host.
NX-OS Version	The Cisco NX-OS version and the build that the host is using.
Host IP	The IP address of the host.
License	The license details of the host.
Host/Module	The number of modules per host.
VMs/Host	The number of VMs per host.

Name	Description
VNIC/Host	The number of VNICs per host.

**Step 14**

Click **VM Info**.

The **VM Info** area provides the following host details.

Name	Description
VMs field	The name of VMs per host.
VNICs field	The name of the vNICs per host.
Adapter field	The name of the adapter.
Status field	The status of the host.
Port Group field	The port group associated with the VM of the host.
VLANs field	The VLANs associated with the VMs of the host.
Host ID field	The module number of the host at the VSM.

**Step 15**

Click **Port Groups**.

The **Port Groups** area provides the following host details.

Name	Description
Port Group	The name of the port group.
Type	The type of the port group.
VLAN	The VLANs associated with the host.
System VLAN	The system VLAN associated with the host.
Ports Max	The maximum number of port per host.
Ports Min	The minimum number of ports per host.
Ports Used	The total number of ports used.

**Step 16**

Click **vNICs**.

The **vNICs** area provides the following host details.

Name	Description
VNICs	The name of the VNICs associated to the host.
VMs	The name of the VM associated to the host.
Adapter	The name of the adapter.
Status	The status of the vNIC associated to the host.
Ports Group	The name of the port group associated to the host.
VLANs	The VLANs associated with the host.
Host ID	The module number of the host at the VSM.

- Step 17** Click **Uplinks**.  
The **Uplinks** area provides the following host details.

Name	Description
Switch Interface	The name of the port.
Status	The status of the uplink interface.
Port Channel	The port channel associated with the uplink.
Host ID	The module number of the host at the VSM.
Ports Group	The name of the port group per host.
VLANs	The VLANs associated with the host.
CDP Uplink	The CDP uplink information.





## Installing a License Using Cisco VSUM

This chapter contains the following sections:

- [Information About Using Cisco VSUM to Install Licenses, page 51](#)
- [Using Cisco VSUM to Install a License, page 51](#)

### Information About Using Cisco VSUM to Install Licenses

Cisco VSUM is a GUI that you can use to install and upload a license on the Virtual Supervisor Module (VSM) to mark the VSM as licensed. The Cisco VSUM GUI is an integral part of the VMware vSphere Web Client and it can only be accessed by logging into VMware vSphere Web Client.

The license file is shared by both Virtual Supervisor Modules (VSMs) in an HA pair. A license file contains the number of licenses ordered for your VSM. One license is required for each CPU socket on each VEM, but you do not need a license for the VSM itself. A VSM can have more than one license file depending on the number of CPU sockets on each VEM.

If the license checkout fails, the module is marked as unlicensed and the virtual Ethernet (vEth) interfaces that are attached to that module are not allowed to come up. For software upgrades, if the switch is still in the default licensing period, it is extended for another 60 days from the software upgrade date.

See the *Cisco Nexus 1000V Platform Multi-Hypervisor Licensing Guide* for more information about the Cisco Nexus 1000V licensing model.

### Using Cisco VSUM to Install a License

You can install and upload Cisco Nexus 1000V licenses using Cisco VSUM.

#### Before You Begin

- You have installed Cisco VSUM.
- You have the license file accessible to Cisco VSUM.

- You have the Distributed Switch - Create and Modify privilege enabled on the VMware vSphere Distributed Switch (VDS).

- 
- Step 1** Log in to the VMware vSphere Web Client.
- Step 2** Choose **Home > Cisco Virtual Switch Update Manager > Nexus1000V > Configure**.
- Step 3** Choose the data center and the switch that is associated in the data center and click **Manage**.
- Step 4** In the switch pane, click **Cisco Nexus 1000V > Install License**. The Cisco Nexus 1000V License pane appears.  
**Note** If the switch is not managed by Cisco VSUM, you are prompted to enter the switch credentials in the **Make Managed** window. For more information, see [Managing an Existing Cisco Nexus 1000V Switch](#).
- Step 5** (Optional) You can also access the Cisco Nexus 1000V License by choosing **vCenter > Distributed Switches**.
- Step 6** (Optional) In the switch pane, click **Manage > Cisco Nexus 1000V > Install License**.
- Step 7** Click **Copy** to copy the VSM license host ID.
- Step 8** Browse to the desired location to install the license file.
- Step 9** Click **Install the License** to upload the license to the VSM.  
After the license is installed, you can verify the count and expiry date of the license using the Monitor functionality of the Cisco VSUM. See [Monitoring the Cisco Nexus 1000V Using Cisco VSUM](#), on page 44.
-





## CHAPTER 9

# Dashboard-Cisco Nexus 1000V

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This chapter contains the following sections:

- [Information About the Dashboard–Cisco Nexus 1000V, page 53](#)
- [Using the Dashboard–Cisco Nexus 1000V, page 54](#)

## Information About the Dashboard–Cisco Nexus 1000V

The dashboard in Cisco VSUM displays the health of the Cisco Nexus 1000V switch and the hosts and the virtual machines that it. The dashboard enables you to detect errors and warnings and fix any potential issues in your data center.

Cisco VSUM supports the dashboard functionality from Release 4.2(1)SV2(1.1a) and later releases.

In the Dashboard–Cisco Nexus 1000V, the following conditions are classified as warnings:

- When the Cisco Nexus 1000V switch reaches 90 percent of its Virtual Ethernet module (VEM) limit.
- When the Cisco Nexus 1000V switch reaches 90 percent of its VNIC limit.
- When the secondary Virtual Supervisor module (VSM) is not operational.
- If the number of Cisco Nexus 1000V licenses available is less than 5.
- When 90 percent of the VNIC limit is used in the host.
- If the license is going to expire in 10 days.

In the Dashboard–Cisco Nexus 1000V, the following conditions are classified as errors:

- When the Cisco Nexus 1000V reaches its VEM limit.
- When the Cisco Nexus 1000V reaches its module limit.
- If the switch is not managed by Cisco VSUM.
- If the version of the switch is not supported.
- If the switch is not connected to vCenter Server.
- If the switch is not reachable.

- If the number of licenses available is zero.
- If the licenses have expired.
- If the host is not connected as a module to the VSM.
- If the VNIC limit is used on the host.
- If one or more uplinks are not connected on the host.
- If the VM kernel NICs are not connected on the host.
- If the VNICs are not connected on the host.

## Using the Dashboard–Cisco Nexus 1000V

The **Dashboard–Cisco Nexus 1000V** pane enables you to view the inventory of the components in your data center, the status of your data center, and a detailed summary of errors, and warnings.

### Before You Begin

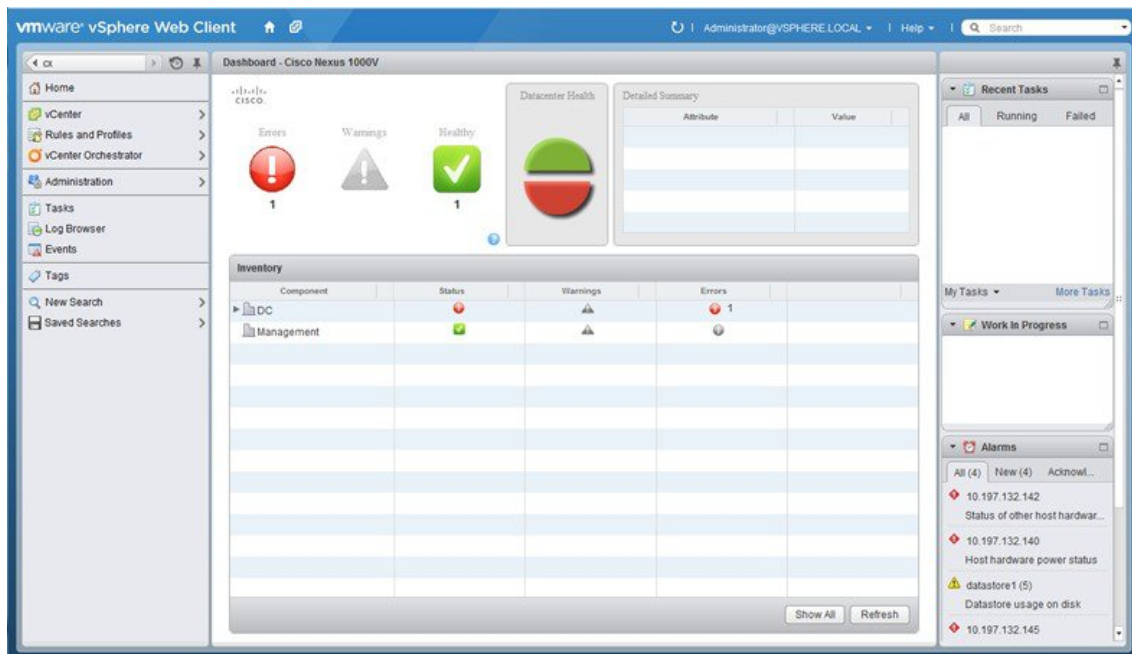
- You have already installed the Cisco VSUM.
- The Cisco Nexus 1000V switch is managed by Cisco VSUM.

---

**Step 1** Log in to the VMware vSphere Web Client.

**Step 2** Choose **Home > Cisco Virtual Switch Update Manager > Dashboard – Cisco Nexus 1000V**.  
The Dashboard–Cisco Nexus 1000V pane appears.

Figure 9: Dashboard-Cisco Nexus 1000V



**Step 3** From the **Component** column, in the **Inventory** table, choose the data center. You can view the following status in the **Status** column:

- A green icon indicates that the data center is healthy.
- A yellow icon indicates that there are errors associated with the components in the data center.
- A red icon indicates that there are warnings associated with the components in the data center.

See [Information About the Dashboard-Cisco Nexus 1000V](#), on page 53 for information about the conditions that are classified as errors or warnings.

**Step 4** From the **Component** drop-down list, choose the component in your data center. The **Detailed Summary** window shows the component type, state, and any errors or warnings associated with the component.

**Step 5** Click **Refresh** to refresh the data.

