



# Installation

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This chapter describes how to identify and resolve installation problems. This chapter contains the following topics:

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## Isolating Installation Problems

### Verifying Your VMware License Version

Before you begin to troubleshoot any installation issues, you should verify that your ESX server has the VMware Enterprise Plus license that includes the Distributed Virtual Switch feature.

#### **Before you begin**

Before you begin, you must know or do the following:

- You are logged in to the vSphere client on the ESX server.
- You are logged in to the Cisco Nexus 1000V CLI in EXEC mode.
- This procedure verifies that your vSphere ESX server uses the VMware Enterprise Plus license. This license includes the Distributed Virtual Switch feature, which allows visibility to the Cisco Nexus 1000V.
- If your vSphere ESX server does not have the Enterprise Plus license, then you must upgrade your license.

## Procedure

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- Step 1** From the vSphere Client, choose the host whose Enterprise Plus license you want to check.
- Step 2** Click the Configuration tab and choose **Licensed Features**.  
The Enterprise Plus licensed features are displayed.
- Step 3** Verify that the following are included in the Licensed Features:
- Enterprise Plus license
  - Distributed Virtual Switch feature
- Step 4** Do one of the following:
- a) If your vSphere ESX server has an Enterprise Plus license, you have the correct license and visibility to Cisco Nexus 1000V.
  - b) If your vSphere ESX server does not have an Enterprise Plus license, you must upgrade your VMware License to an Enterprise Plus license to have visibility to the Cisco Nexus 1000V.
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## Host is Not Visible from the Distributed Virtual Switch

If you have added hosts and adapters with your VSM, you must also add them in the vCenter Client Add Host to Distributed Virtual Switch dialog box as shown in the following figure.

If the hosts and adapters do not appear in this dialog box, you might have the incorrect VMware license installed on your ESX server. See [Verifying Your VMware License Version, on page 1](#) to verify the license version.

## Refreshing the vCenter Server Connection

You can refresh the connection between Cisco Nexus 1000V and vCenter Server. From the Cisco Nexus 1000V Connection Configuration mode on the Virtual Supervisor Module (VSM), enter the following command sequence:

```
switch# config t
switch(config)# svs connection s1
switch(config-svs-conn)# no connect
switch(config-svs-conn)# connect
```

## Improving Performance on the ESX Host and the VM

Use the following pointers to improve performance on the ESX host and the VMs:

- Install VMware Tools on the vCenter Server VM, with Hardware Acceleration enabled.
- Use the CLI in VMs instead of the graphical interface where possible.

## Verifying the Domain Configuration

The Virtual Supervisor Module (VSM) and Virtual Ethernet Module (VEM) are separated within a Layer 2 domain. To allow VSM-VEM pairs to communicate within the same Layer 2 domain, each pair must have a unique identifier. The domain ID serves as the unique identifier that allows multiple VSM-VEM pairs to communicate inside the same Layer 2 domain.

After installing Cisco Nexus 1000V, make sure that you configure a domain ID. Without a domain ID, the VSM cannot connect to the vCenter Server. Follow these guidelines:

- The domain ID should be a value within the range of 1 to 4095.
- All the control traffic between the VSM and the VEM is carried over the configured control VLAN.
- All the data traffic between the VSM and the VEM is carried over the configured packet VLAN.
- Make sure that the control VLAN and the packet VLAN are allowed on the port in the upstream switch to which the physical NIC of the host hosting the VSM and VEM VM are connected

## Verifying the Port Group Assignments for a VSM VM Virtual Interface

To verify if the VSM VM network adapter 1, network adapter 2, and network adapter 3 are carrying the control VLAN, management VLAN, and packet VLAN, follow this procedure.

### Before you begin

You can verify that port groups are created on the ESX hosting the VSM VM through the vCenter Server. The following port groups (PG) should be created:

- Control PG (Vlan = Control VLAN)
- Packet PG (Vlan = Packet VLAN)
- Management PG (Vlan = Management VLAN)

Make sure the port groups are assigned to the three virtual interfaces of the VSM VM in the following order:

Virtual Interface Number	Port Group
Network Adapter 1	Control PG
Network Adapter 2	Management PG
Network Adapter 3	Packet PG

### Procedure

- Step 1** Enter the **show mac address-table dynamic interface vlan control-vlan** command on the upstream switch.

Expected output: the network adapter1 MAC address of the VSM VM.

- Step 2** Enter the **show mac address-table dynamic interface vlan *mgmt-vlan*** command on the upstream switch.  
Expected output: the network adapter2 MAC address of the VSM VM.
- Step 3** Enter the **show mac address-table dynamic interface vlan *packet-vlan*** command on the upstream switch.  
Expected output: the network adapter3 MAC address of the VSM VM.

## Guidelines for Verifying VSM and vCenter Server Connectivity

When troubleshooting connectivity between the VSM and vCenter Server, follow these guidelines:

- Make sure that domain parameters are correctly configured.
- Make sure that Port 80 and Port 443 are open on the Windows VM hosting the vCenter Server.
- Try reloading the VSM if after verifying the preceding steps, the connect still fails. Check if the VSM extension is created by the vCenter Server by pointing your web browser to <https://your-virtual-center/mob/>, and choosing **Content > Extension Manager**.

## Verifying VSM and vCenter Server Connectivity

### Procedure

- Step 1** Make sure that the Cisco Nexus 1000V VSM VM network adapters are configured properly.
- Step 2** Make sure that Port 80 and Port 443 are open on the Windows VM hosting the vCenter Server.
- Step 3** Ping the vCenter Server from the Cisco Nexus 1000V VSM.
- Step 4** Ensure that the VMware vCenter Server service is running.

## Troubleshooting Connections to vCenter Server

To troubleshoot connections between a Cisco Nexus 1000V VSM and a vCenter Server, follow these steps.

### Procedure

- Step 1** In a web browser, enter the path: **http://VSM-IP**.
- Step 2** Download the `cisco_nexus_1000v_extension.xml` file to your desktop.
- Step 3** From the vCenter Server menu, choose **Plugins > Manage Plugins**.
- Step 4** Right click an empty area and select the plugin from Step 2 as the New Extension.

- Step 5** (Optional) If these steps fail, you might be using an out-of-date .xml file. Confirm that the extension is available by following these steps:
- In a web browser, enter the path: **http://vCenter-Server-IP/mob**.
  - Click **Content**.
  - Click **extensionManager**.
  - If extensionList[Cisco\_Nexus\_1000v\_584325821] is displayed in the value column, proceed to connect to the VSM.
- Note** The actual value of "Cisco\_Nexus\_1000v\_584325821" will vary. It should match the extension key from the cisco\_nexus\_1000v\_extension.xml file.

## Recovering the Network Administrator Password

For information about recovering the network administrator password, see the *Cisco Nexus 1000V Password Recovery Guide*.

## Managing Extension Keys

### Known Extension Problems and Resolutions

Use the following table to troubleshoot and resolve known problems with plug-ins and extensions.

Problem	Resolution
The extension does not show up immediately in the plugin.	Close the VI client and then open the VI client again.
You cannot delete the extension from the VI client.	If you delete the extension using Manager Object Browser (MOB), the VI client screen might not refresh and indicate that the extension was deleted. In this case, close the VI client and then open the VI client again.
If you click the <b>download and install</b> link for the extension, you see an invalid URI.	None. You do not need to click the <b>download and install</b> link. If you do, it has no effect on the installation or connectivity. The plug-in only needs to be registered with vCenter.

### Resolving a Plug-In Conflict

If you see “The specified parameter was not correct,” while creating a Cisco Nexus 1000V plug-in on vCenter Server, you have tried to register a plug-in that is already registered. Use the following procedure to resolve this problem.

### Procedure

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- Step 1** Make sure that that you are using the correct `cisco_nexus1000v_extension.xml` file.
  - Step 2** Make sure that you have refreshed your browser because it caches this file and unless refreshed it might cache obsolete content with the same filename.
  - Step 3** Follow the steps described in [Verifying Extension Keys, on page 6](#) to compare the extension key installed on the VSM with the plug-in installed on the vCenter Server.
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## Finding the Extension Key on Cisco Nexus 1000V

To find the extension key on Cisco Nexus 1000V, follow these steps:

### Before you begin

Know that you can use the extension key in [Unregistering the Extension Key in vCenter Server, on page 8](#).

### Procedure

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- Step 1** Log in to the Cisco Nexus 1000V VSM CLI in EXEC mode.
- Step 2** From the Cisco Nexus 1000V for the VSM whose extension key you want to view, enter the **show vmware vc extension-key** command.

```
switch# show vmware vc extension-key
Extension ID: Cisco_Nexus_1000V_1935882621
switch#
```

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## Finding the Extension Key Tied to a Specific DVS

### Procedure

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- Step 1** From the vSphere Client, choose the DVS whose extension key you want to find.
  - Step 2** Click the **Summary** tab.  
The Summary tab opens with the extension key displayed in the Notes section of the Annotations block.
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## Verifying Extension Keys

To verify that Cisco Nexus 1000V and vCenter Server are using the same extension key, follow these steps.

### Procedure

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- Step 1** Find the extension key used on Cisco Nexus 1000V using [Finding the Extension Key on Cisco Nexus 1000V, on page 6](#).
- Step 2** Find the extension key used on the vCenter Server using [Finding the Extension Key Tied to a Specific DVS, on page 6](#).
- Step 3** Verify that the two extension keys (found in Step 1 and Step 2) are the same.
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## Recreating the Cisco Nexus 1000V Installation

You can recreate the complete Cisco Nexus 1000V configuration in the event of a persistent problem that cannot be resolved using any other workaround. Follow these steps:

1. Remove host from Cisco Nexus 1000V DVS as described in the [Removing Hosts from Cisco Nexus 1000V DVS, on page 7](#) section.
2. Remove Cisco Nexus 1000V from the vCenter server as described in the [Removing Cisco Nexus 1000V DVS from vCenter Server, on page 8](#) section.
3. Find the extension key as described in the [Finding the Extension Key on Cisco Nexus 1000V, on page 6](#) section.
4. Unregister the extension key as described in the [Unregistering the Extension Key in vCenter Server, on page 8](#) section.
5. Install and setup Cisco Nexus 1000V as described in the [Cisco Nexus 1000V Installation and Upgrade Guide](#).

## Removing Hosts from Cisco Nexus 1000V DVS

To remove hosts from Cisco Nexus 1000V DVS, follow these steps.

### Before you begin

- Log in to vSphere Client.
- Know the name of the Cisco Nexus 1000V DVS to remove from vCenter Server.

### Procedure

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- Step 1** From vSphere Client, choose **Inventory > Networking**.
- Step 2** Choose the DVS for Cisco Nexus 1000V and click the **Hosts** tab.  
The Host tab opens.
- Step 3** Right-click each host, and choose **Remove from Distributed Virtual Switch**.

The hosts are now removed from the DVS.

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## Removing Cisco Nexus 1000V DVS from vCenter Server

To remove Cisco Nexus 1000V DVS from vCenter Server, follow these steps:

### Procedure

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**Step 1** Log in to the Cisco Nexus 1000V VSM CLI in EXEC mode.

**Step 2** Run the following commands:

```
switch# conf t
switch(config)# svs connection vc
switch(config-svs-conn)# no vmware dvs
```

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## Unregistering the Extension Key in vCenter Server

To unregister the Cisco Nexus 1000V extension key in vCenter Server, follow these steps:

### Before you begin

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

- Open a browser window.
- Paste the extension key name into the vCenter Server Manager Object Browser (MOB). You should already have the extension key found in [Finding the Extension Key on Cisco Nexus 1000V, on page 6](#).
- After unregistering the extension key in vCenter Server, you can start a new installation of the Cisco Nexus 1000V VSM software

### Procedure

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**Step 1** Go to the following URL: **<https://vc-ip/mob/?moid=ExtensionManager>**.

The Extension Manager opens in your MOB.

**Step 2** Click **Unregister Extension**.

A dialog box opens to unregister the extension.

**Step 3** In the **Value** field, paste the extension key that you found in [Finding the Extension Key on Cisco Nexus 1000V, on page 6](#), and then click **Invoke Method**.



The extension key is unregistered in vCenter Server so that you can start a new installation of the Cisco Nexus 1000V VSM software.

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## Problems with the Cisco Nexus 1000V Installation Management Center

The following are possible problems and their solutions related to the Cisco Nexus 1000V Installation Management Center.

Symptom	Problem	Recommended Action
Port migration fails	The VSM to VEM migration fails in Layer 2 / Layer 3 mode installation.	<ul style="list-style-type: none"><li>• Check if there is any VM running on the vSwitch. You need to power off all VMs running on the vSwitch before migration.</li><li>• Check if the vCenter is Virtual Update Manager (VUM) enabled. Before migration, the host is added to the DVS by using VUM.</li><li>• Verify that the native VLAN in the upstream switch configuration is correct.</li><li>• Ensure that the VUM repositories are up-to-date and accurate.</li></ul>

Symptom	Problem	Recommended Action
VEM is missing on the VSM after migration	<ul style="list-style-type: none"> <li>The installer application finishes successfully with port migration in Layer 3 mode.</li> <li>The VEM is added to the vCenter but does not display when the <b>show module</b> command is entered on the VSM.</li> </ul>	<ul style="list-style-type: none"> <li>Verify that the Layer 3 control profile VLAN is configured as a system VLAN.</li> <li>Verify that the uplink profile is allowing the Layer 3 control VTEP VLAN and that it is a system VLAN.</li> <li>From the ESX host (VEM), enter a <b>vmkping</b> to the mgmt0/control0 IP address. It should be successful. If not, check the intermediate switches for proper routes between the subnets.</li> <li>The VTEP should be pingable from the VSM.</li> <li>Check the vCenter MOB for opaque data propagation.</li> </ul>
Configuration file issue	After loading the previously saved configuration file, the installation application does not complete.	<ul style="list-style-type: none"> <li>Check the configuration file for appropriate contents. <ul style="list-style-type: none"> <li><b>Note</b> You might need to change few fields before reusing the previously-saved files.</li> </ul> </li> <li>Check if a VM with the same name already exists in the DC. This can be identified by reviewing the Virtual Machine field in the configuration file.</li> </ul>