Installation

This chapter describes how to identify and resolve installation problems, and includes the following topics:

Isolating Installation Problems

Use this section to isolate a problem with the installation, including the following.

Verifying Your VMware License Version

Use this procedure, before beginning to troubleshoot any installation issues, to verify that your ESX server has the VMware Enterprise Plus license which includes the Distributed Virtual Switch feature.

BEFORE YOU BEGIN

Before beginning this procedure, 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.

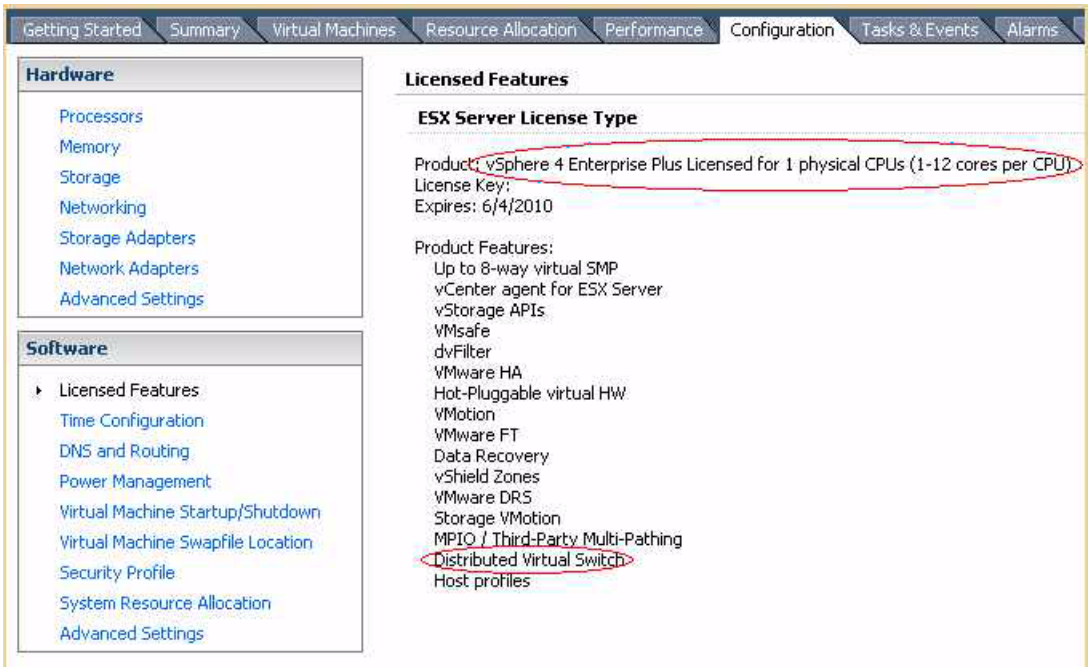
- This procedure verifies that your ESX server uses the VMware Enterprise Plus license. This license includes the feature, Distributed Virtual Switch, which allows visibility to the Cisco Nexus 1000V.
- If your vSphere ESX server does not have the Enterprise Plus license, then you must upgrade your license.

DETAILED STEPS

Step 1 From the vSphere client, select the host whose Enterprise Plus license you want to check.

Step 2 Click the **Configuration** tab and select **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

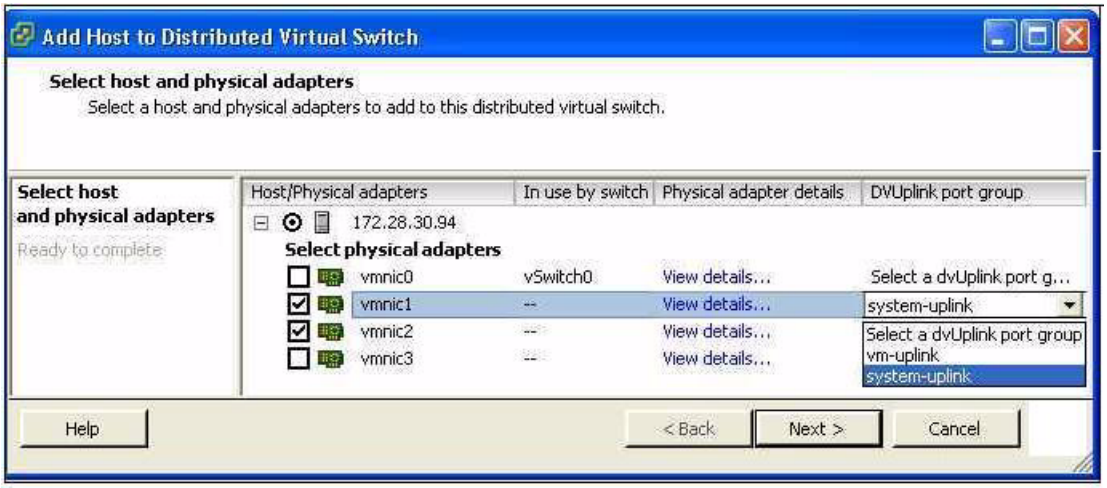
Step 4 Do one of the following:

- If your ESX server has an Enterprise Plus license, then you have the correct license and visibility to the Cisco Nexus 1000V.
- If your ESX server does not have an Enterprise Plus license, then you must upgrade your VMware License to an Enterprise Plus license in order to have visibility to the Cisco Nexus 1000V.

Host is Not Visible from Distributed Virtual Switch

If you have added hosts and adapters with your VSM, then you must also add them in the vCenter Client Add Host to Distributed Virtual Switch dialog box shown in Figure 3-1.

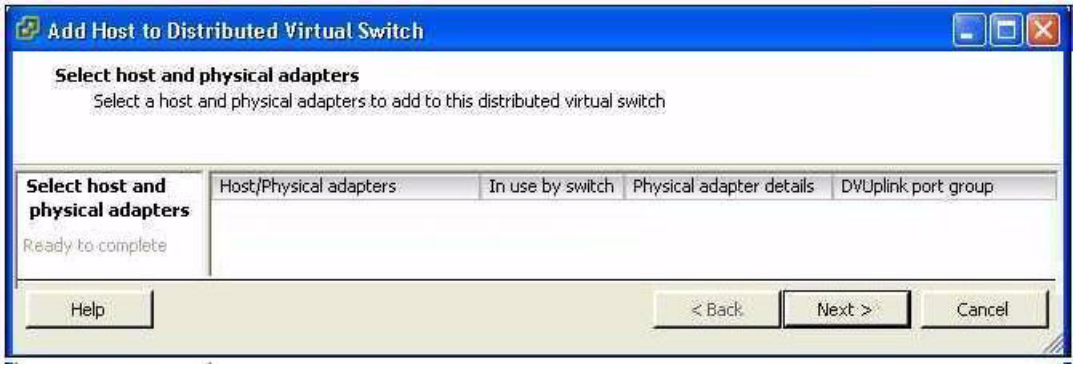
Figure 3-1 Host is Visible from the Distributed Virtual Switch



If the hosts and adapters do not appear in this dialog box, as shown in Figure 3-2, then you may have the incorrect VMware license installed on your ESX server.

Use the "Verifying Your VMware License Version" procedure on page 3-1 to confirm.

Figure 3-2 Host is Not Visible from the Distributed Virtual Switch



Refreshing the vCenter Server Connection

Use this procedure to refresh the connection between the Cisco Nexus 1000V and vCenter Server.

Step 1 From the Cisco Nexus 1000V Connection Configuration mode on the VSM, enter the following command sequence:

Example:

```
n1000v# config t
n1000v(config)# svs connection s1
n1000v(config-svs-conn)# no connect
n1000v(config-svs-conn)# connect
```

Step 2 You have completed this procedure.

Improving Performance

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 to the full.
- Use the command line interface in the 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.

Following the installation of the Cisco Nexus 1000V, make certain that you configure a domain ID. Without a domain ID, the VSM will not be able to 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 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

Use this procedure to verify that two 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	MGMT PG
Network Adapter 3	Packet PG

To verify if the VSM VM network adapter 1, network adapter 2, and network adapter 3 are carrying the control VLAN, management VLAN, and the packet VLAN, follow these steps:

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.

Verifying VSM and vCenter Server Connectivity

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

- Make sure that domain parameters are configured correctly.
- Make sure the Windows VM machine hosting the vCenter Server has the following ports open.
  - Port 80
  - Port 443
- 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 then clicking Content > Extension Manager.

Use this procedure to troubleshoot connectivity between a VSM and a vCenter Server:

Step 1 Ensure that Nexus N1000V VSM VM network adapters are configured properly.

Step 2 Make sure the Windows VM machine hosting the vCenter Server has the following ports open.

- Port 80
- Port 443

Step 3 Ping the vCenter Server from the Nexus 1000V VSM.

Step 4 Ensure the VMware VirtualCenter Server service is running.

Troubleshooting Connections to a vCenter Server

Use this procedure to troubleshoot connections between a Cisco Nexus 1000V VSM and a vCenter Server:

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.** Right click an empty area and select the plugin in Step2 as the New Extension.

If these steps fail, then you may be using an out-of-date .xml file.

Use this procedure to confirm that the extension is available:

Step 1 In a web browser, enter the path: http://<vCenter-Server-IP>/mob.

Step 2 Click **Content**.

Step 3 Click **extensionManager**.

Step 4 If extensionList[Cisco_Nexus_1000v_584325821] is displayed in the value column, then 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

This section includes the following topics:

Known Extension Problems and Resolutions

Use Table 3-1 to troubleshoot and resolve known problems with plug-ins and extensions.

Table 3-1 Known Extension Problems and Resolutions

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 MOB, then the VI client screen may 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 **download and install** link for the extension. you see an error of invalid URI.	None.You do not need to click **download and install**. If you do, it has no effect on the installation or connectivity. The plug-in only needs to be registered with the vCenter.

Resolving a Plug-In Conflict

If you see the error, "The specified parameter was not correct," when Creating a Nexus 1000V Plug-In on the vCenter Server, then you have tried to register a plugin that is already registered.

Use the following procedure to resolve this problem.

Step 1 Make sure that you are using the correct cisco_nexus1000v_extension.xml file.

Step 2 Make sure that you have refreshed your browser since it caches this file and unless refreshed it might cache obsolete content with the same file name.

Step 3 Follow the steps described in the "Verifying Extension Keys" section on page 3-9 to compare the extension key installed on the VSM with the plug-in installed on the vCenter Server.

Finding the Extension Key on the Cisco Nexus 1000V

You can use this procedure to find the extension key on the Cisco Nexus 1000V.

BEFORE YOU BEGIN

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

- You are logged in to the Cisco Nexus 1000V VSM CLI in EXEC mode.
- You can use the extension key found in this procedure in the "Unregister the Extension Key in the vCenter Server" procedure on page 3-12.

DETAILED STEPS

Step 1 From the Cisco Nexus 1000V for the VSM whose extension key you want to view, enter the following command:

show vmware vc extension-key

Example:

```
n1000v# show vmware vc extension-key
Extension ID: Cisco_Nexus_1000V_1935882621
n1000v#
```

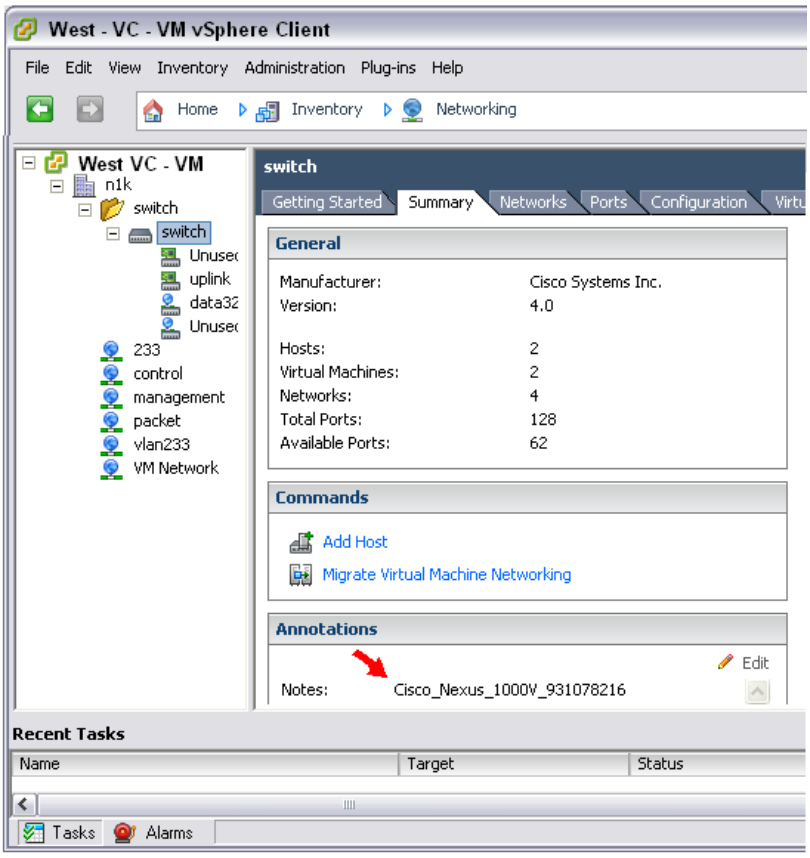
Finding the Extension Key Tied to a Specific DVS

You can use this procedure to find the extension key tied to a specific DVS.

Step 1 From the vSphere client, select 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.



Verifying Extension Keys

You can use this procedure to verify that the Cisco Nexus 1000V and vCenter Server are using the same extension key.

DETAILED STEPS

Step 1 Find the extension key used on the Cisco Nexus 1000V using the Finding the Extension Key on the Cisco Nexus 1000V, page 3-7.

Step 2 Find the extension key used on the vCenter Server using the Finding the Extension Key Tied to a Specific DVS, page 3-8.

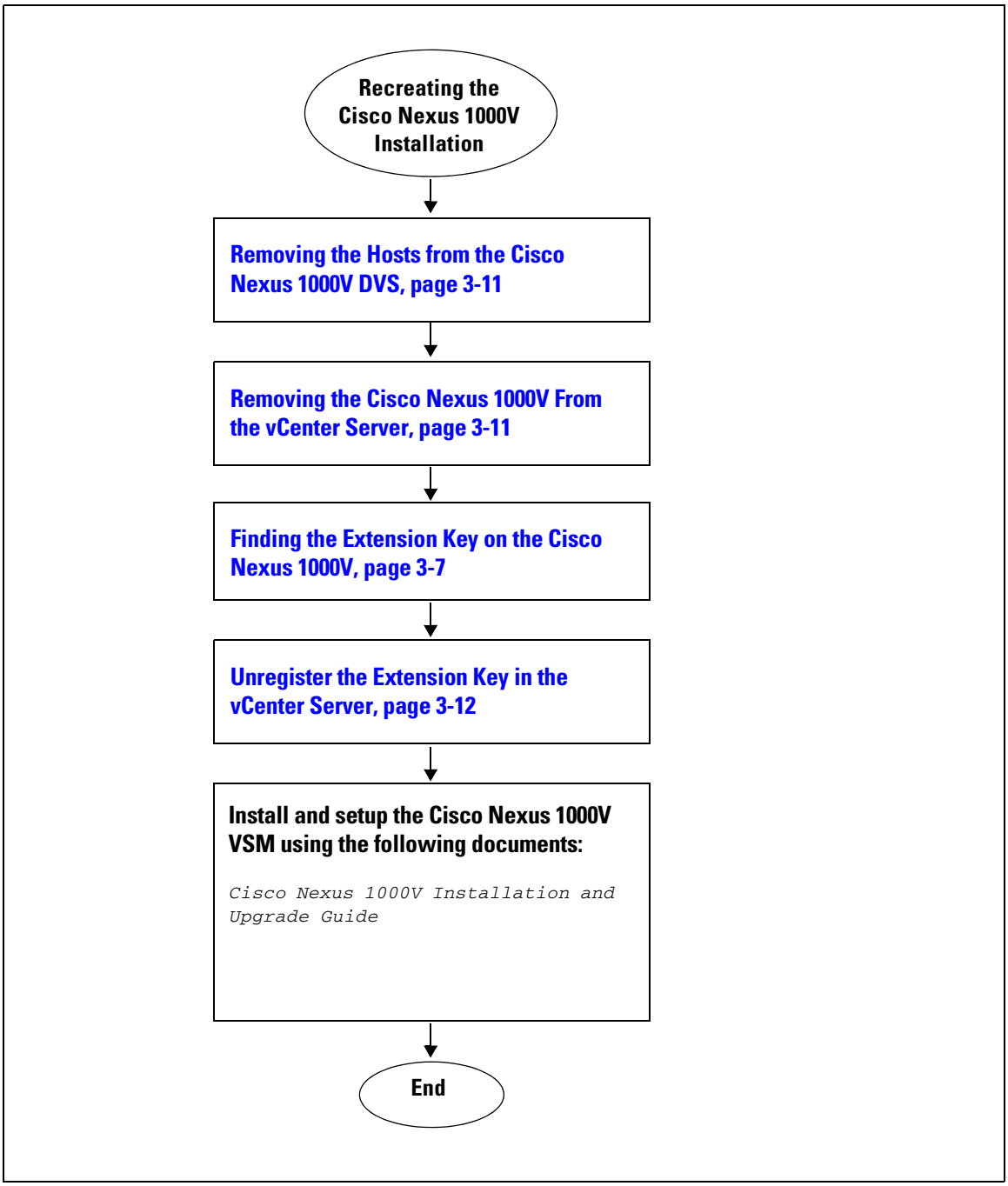
Step 3 Verify that the two extension keys (the one found in Step 1 with that in Step 2) are the same.

Resolving Extension Key Conflicts

Recreating the Cisco Nexus 1000V Installation

Use this section to recreate the complete Cisco Nexus 1000V configuration in the event of a persistent problem that cannot be resolved using any other workaround.

FlowChart: Recreating the Cisco Nexus 1000V Installation



Removing the Hosts from the Cisco Nexus 1000V DVS

Use this procedure to remove the hosts from the Cisco Nexus 1000V DVS.

BEFORE YOU BEGIN

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

- You are logged in to the vSphere Client.
- You know the name of the Cisco Nexus 1000V DVS to remove from vCenter Server.

DETAILED STEPS

Step 1 From the vSphere Client, choose **Inventory > Networking**.

Step 2 Select the DVS for the 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.

Removing the Cisco Nexus 1000V From the vCenter Server

You can use this procedure to remove the Cisco Nexus 1000V DVS from vCenter Server.

BEFORE YOU BEGIN

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

- You are logged in to the VSM CLI in EXEC mode.

DETAILED STEPS

Step 1 From the Cisco Nexus 1000V VSM, use the following commands to remove the DVS from the vCenter Server.

config t
svs connection vc
no vmware dvs

Example:

```
n1000v# conf t
n1000v(config)# svs connection vc
n1000v(config-svs-conn)# no vmware dvs
n1000v(config-svs-conn)#
```

The DVS is removed from the vCenter Server.

Step 2 You have completed this procedure.
Return to FlowChart: Recreating the Cisco Nexus 1000V Installation, page 3-10.

Unregister the Extension Key in the vCenter Server

You can use this procedure to unregister the Cisco Nexus 1000V extension key in vCenter Server.

BEFORE YOU BEGIN

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

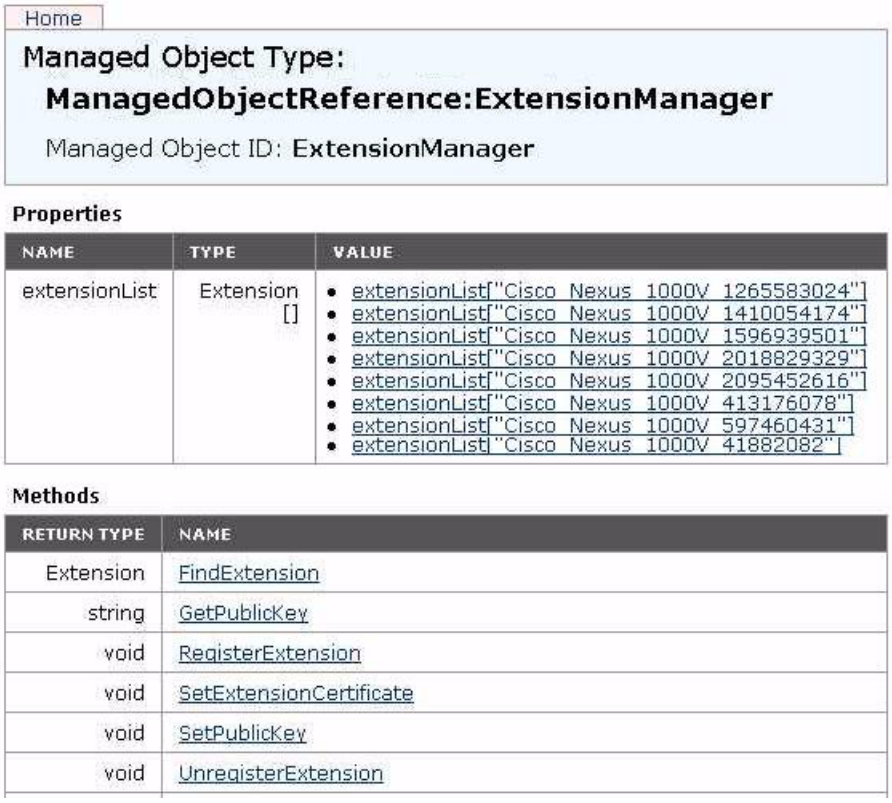
- You have a browser window open.
- This procedure requires you to paste the extension key name into the vCenter Server MOB. You should already have the extension key found in the "Finding the Extension Key on the Cisco Nexus 1000V" procedure on page 3-7.
- After using this procedure to unregister the extension key in vCenter Server, you can start a fresh installation of the Cisco Nexus 1000V VSM software.

DETAILED STEPS

Step 1 Point your browser to the following url:

https://<vc-ip>/mob/?moid=ExtensionManager

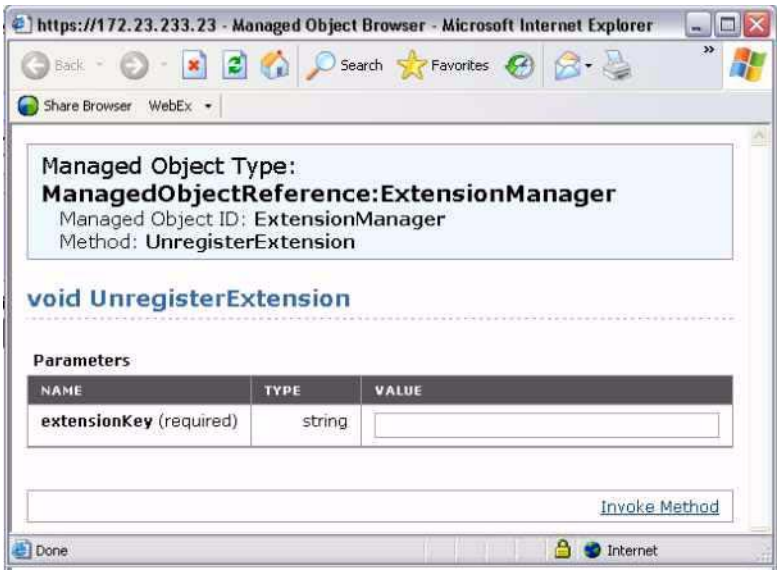
The Extension Manager opens in your Manager Object Browser (MOB).



Step 2 Click **Unregister Extension**.

https://<vc-ip>/mob/?moid=ExtensionManager&method=unregisterExtension

A dialog box opens to unregister the extension.



Step 3 In the value field, paste the extension key you found in the "Finding the Extension Key on the Cisco Nexus 1000V" procedure on page 3-7, 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.

Step 4 You have completed this procedure.

Return to FlowChart: Recreating the Cisco Nexus 1000V Installation, page 3-10.

Problems with the Nexus 1000V Installation Management Center

The following are possible problems and their solutions.

Symptom	Problem	Recommended Action
Port migration fails.	VSM to VEM migration fails in Layer 2 / Layer 3 mode installation.	• Check if there is any VM running on the vSwitch. You need to power off all such VMs before migration. • Check if the vCenter is VUM enabled. Before migration, the host is added to the DVS by using VUM. • Verify that the native VLAN in the upstream switch configuration is correct. • Ensure that the VUM repositories are up to date and accurate.
The VEM is missing on the VSM after the migration.	• The installer application finishes successfully with port migration in Layer 3 mode. • The VEM is added to the vCenter but does not display when the **show module** command is entered on the VSM.	• Verify that the Layer 3 control profile VLAN is configured as a system VLAN. • Verify that the uplink profile is allowing the Layer 3 control vmknic VLAN and that it is a system VLAN. • From the ESX host (VEM), issue a vmkping to the mgmt0/control0 IP address. It should be successful. If not, check the intermediate switches for proper routes between the subnets. • The vmknic should be pingable from the VSM. • Check the vCenter mob for opaque data propagation.
Configuration file issue.	After loading the previously saved configuration file, the installation application does not complete.	• Check the configuration file for appropriate contents. **Note** You might need to change a few of the fields before reusing the previously saved files. • 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.