



Installation

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

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- [Improving Performance on the ESX and VM, page 3-4](#)
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Isolating Installation Problems

This section explains how to isolate possible 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.

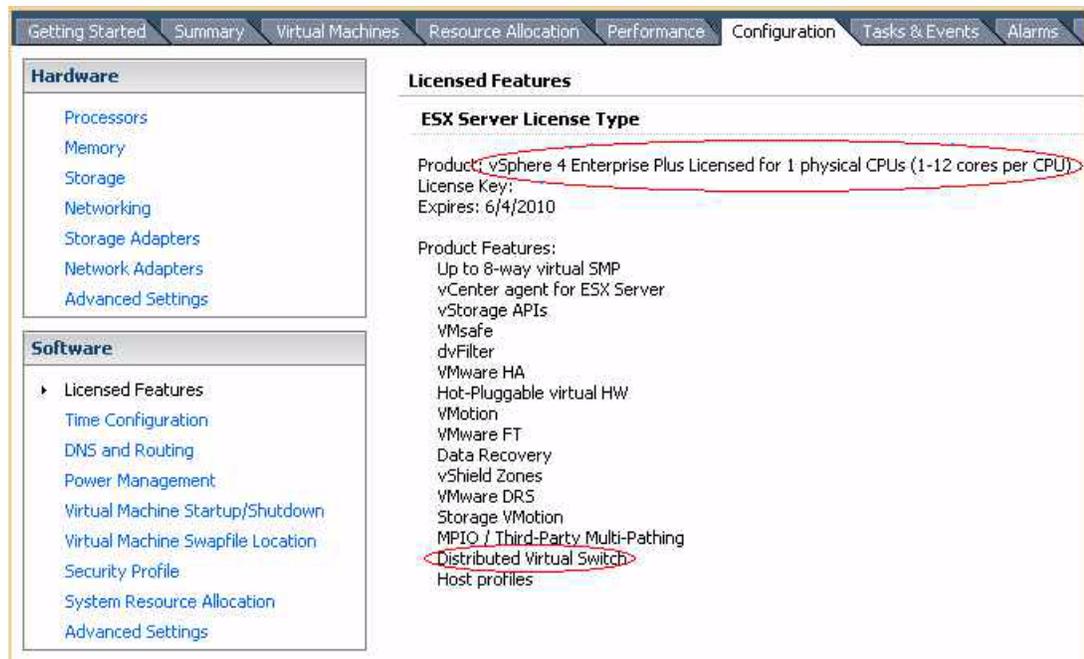
- If your vSphere ESX server does not have the Enterprise Plus license, then you must upgrade your license.

DETAILED STEPS

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:

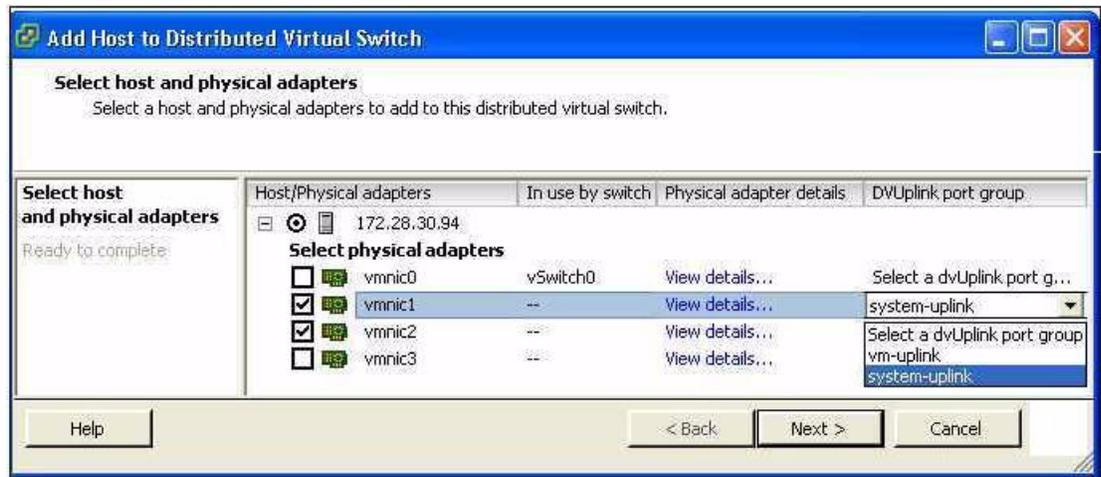
- Enterprise Plus license
- Distributed Virtual Switch feature

Step 4 Do one of the following:

- If your vSphere ESX server has an Enterprise Plus license, you have the correct license and visibility to the Cisco Nexus 1000V.
- 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.

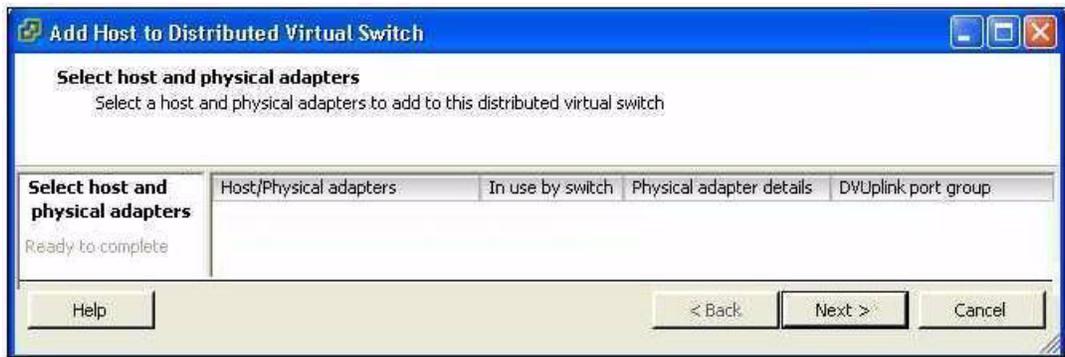
Host is Not Visible from the Distributed Virtual Switch

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 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, you might 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

You can refresh the connection between the Cisco Nexus 1000V and vCenter Server.

- Step 1** From the Cisco Nexus 1000V Connection Configuration mode on the Virtual Supervisor Module (VSM), enter the following command sequence:

Example:

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

Step 2 You have completed this procedure.

Improving Performance on the ESX and 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 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 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

You can 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 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 choosing **Content > Extension Manager**.

-
- Step 1** Ensure that the Nexus N1000V VSM VM network adapters are configured properly.
- Step 2** Make sure that 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 Cisco Nexus 1000V VSM.
- Step 4** Ensure that the VMware VirtualCenter Server service is running.
-

Troubleshooting Connections to vCenter Server

You can 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, you might be using an out-of-date.xml file.

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, 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, page 3-7](#)
- [Resolving a Plug-In Conflict, page 3-7](#)
- [Finding the Extension Key on the Cisco Nexus 1000V, page 3-7](#)
- [Finding the Extension Key Tied to a Specific DVS, page 3-8](#)
- [Verifying Extension Keys, page 3-8](#)

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 download and install link for the extension, you see an 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 vCenter.

Resolving a Plug-In Conflict

If you see “The specified parameter was not correct,” when Creating a 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.

-
- 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 because it caches this file and unless refreshed it might cache obsolete content with the same filename.
 - Step 3** Follow the steps described in the [“Verifying Extension Keys” section on page 3-8](#) 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 find the extension key on the Cisco Nexus 1000V.

BEFORE YOU BEGIN

- Log in to the Cisco Nexus 1000V VSM CLI in EXEC mode.
- Know that you can use the extension key in the [“Unregistering the Extension Key in the vCenter Server” section on page 3-11](#).

DETAILED STEPS

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- 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:

```
switch# show vmware vc extension-key
```

```
Extension ID: Cisco_Nexus_1000V_1935882621
switch#
```

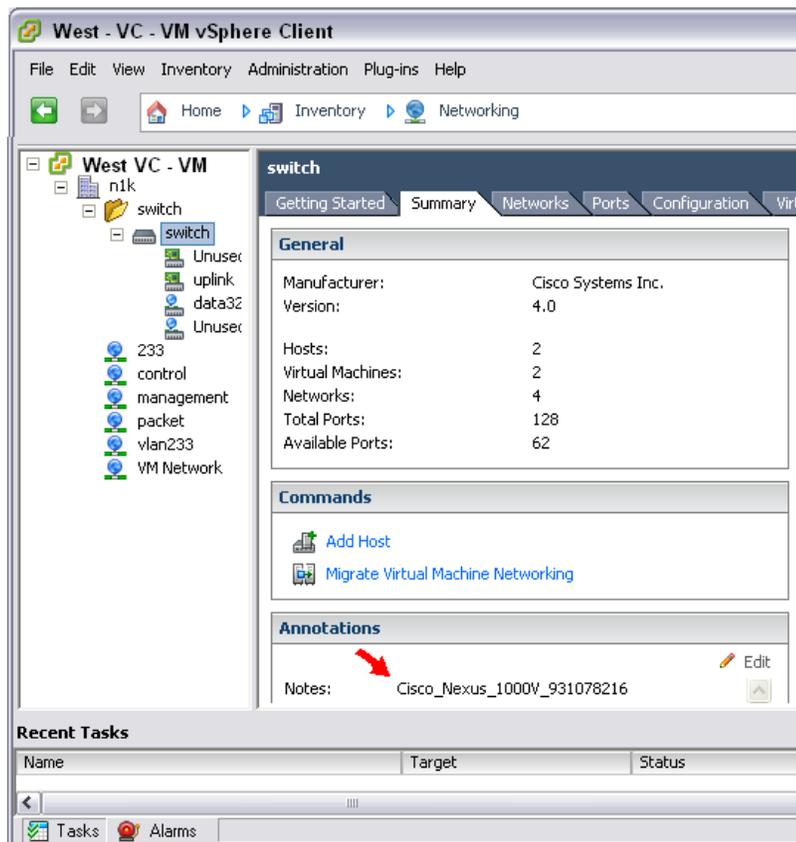
Finding the Extension Key Tied to a Specific DVS

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

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.



Verifying Extension Keys

You can 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](#)” section on 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](#)” section on 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.
-

Re-registering a new Cisco Nexus 1000V VSM with an old DVS Instance

You can create the complete Cisco Nexus 1000V configuration in case the existing VSM does not bootup to normal mode, or was deleted. In that case, you may take the backup of the old running configuration and restore by deploying a new VSM and attach it to the same DVS.

Steps to re-register a new VSM with an old DVS instance:

DETAILED STEPS

-
- Step 1** Note down the N1000V Extension key from the DVS summary on the vCenter. Ex: Cisco_Nexus_1000V_17750897.
 - Step 2** Deploy a new VSM of the same version and with the same name as DVS.
Example:

```
switch(config)# switchname vsm_36
```
 - Step 3** Copy all the previous running configuration (except svcs connection) to the new VSM.
 - Step 4** Unregister the old extension key from vCenter MOB. Ex: [https://\(ip_address\)/mob](https://(ip_address)/mob). Go to **Content > Extension Manager > UnregisterExtension** and provide the old extension key and click **Invoke Method**. It must result in void.
 - Step 5** Change the extension key in the new VSM to the old value.
Example:

```
vsm_36(config)# vmware vc extension-key Cisco_Nexus_1000V_17750897
vsm_36(config)# end
vsm_36# show vmware vc extension-key
Extension ID: Cisco_Nexus_1000V_17750897
```
 - Step 6** Retrieve the old DVS uuid from vCenter MOB. Go to **rootFolder(group-d1) > childEntity > networkFolder > childEntity(old DVS obj) > childEntity(DVS obj) > uuid**. Note down the uuid string. Ex: 50 06 00 94 4f d0 e4 0d-4b 31 c6 4a 5a 40 70 9a
 - Step 7** Configure a new svcs connection as shown in the example below.
Example:

```
vsm_36(config)# svcs connection vc
vsm_36(config-svs-conn)# remote ip address ip_address
vsm_36(config-svs-conn)# protocol vmware-vim
vsm_36(config-svs-conn)# register-plugin remote username administrator@vsphere.local
password Secret@123
```

```
vsm_36(config-svs-conn)# vmware dvs uuid "50 06 00 94 4f d0 e4 0d-4b 31 c6 4a 5a 40 70 9a"
datacenter-name D
vsm_36(config-svs-conn)# connect
vsm_36(config-svs-conn)# end
```

Now, it should connect to vCenter with the old DVS.

Step 8 Check using the **show svcs connection** command.

```
Example:
vsm_36# show svcs connections
connection vc:
hostname: -
ip address: (as specified in step 4)
ipv6 address: -
remote port: 80
transport type: ipv4
protocol: vmware-vim https
certificate: default
datacenter name: D
admin:
max-ports: 12000
DVS uuid: 50 06 00 94 4f d0 e4 0d-4b 31 c6 4a 5a 40 70 9a
dvs version: 5.0.0
config status: Enabled
operational status: Connected
sync status: in progress
version: VMware vCenter Server 6.5.0 build-5973321
vc-uuid: 27230ef3-dfb0-4aa5-9af5-37ddef9418b4
ssl-cert: self-signed or not authenticated
```

Removing Hosts from the Cisco Nexus 1000V DVS

You can remove hosts from the Cisco Nexus 1000V DVS.

BEFORE YOU BEGIN

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

DETAILED STEPS

-
- Step 1** From vSphere Client, choose **Inventory > Networking**.
- Step 2** Choose 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 remove the Cisco Nexus 1000V DVS from vCenter Server.

BEFORE YOU BEGIN

- Log 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.

- a. `conf t`
- b. `svs connection vc`
- c. `no vmware dvs`

Example:

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

The DVS is removed from vCenter Server.

Step 2 You have completed this procedure.

Unregistering the Extension Key in the vCenter Server

You can unregister the Cisco Nexus 1000V extension key in vCenter Server.

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 MOB. You should already have the extension key found in the [“Finding the Extension Key on the Cisco Nexus 1000V”](#) section on page 3-7.
- After unregistering the extension key in vCenter Server, you can start a new 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).

Home

Managed Object Type:
ManagedObjectReference:ExtensionManager
 Managed Object ID: ExtensionManager

Properties

NAME	TYPE	VALUE
extensionList	Extension []	<ul style="list-style-type: none"> extensionList["Cisco Nexus 1000V 1265583024"] extensionList["Cisco Nexus 1000V 1410054174"] extensionList["Cisco Nexus 1000V 1596939501"] extensionList["Cisco Nexus 1000V 2018829329"] extensionList["Cisco Nexus 1000V 2095452616"] extensionList["Cisco Nexus 1000V 413176078"] extensionList["Cisco Nexus 1000V 597460431"] extensionList["Cisco Nexus 1000V 41882082"]

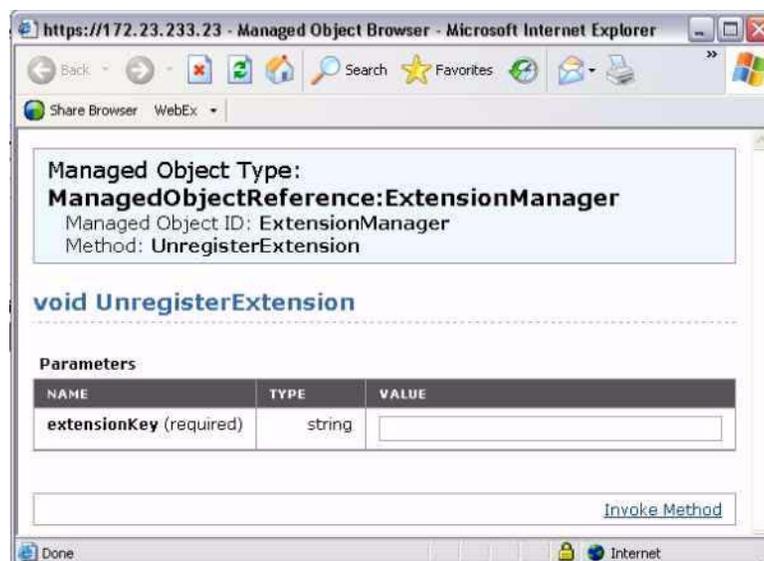
Methods

RETURN TYPE	NAME
Extension	FindExtension
string	GetPublicKey
void	RegisterExtension
void	SetExtensionCertificate
void	SetPublicKey
void	UnregisterExtension

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 that you found in the “Finding the Extension Key on the Cisco Nexus 1000V” section 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.

Problems with the Cisco Nexus 1000V Installation Management Center

The following are possible problems and their solutions.

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"> Check if there is any VM running on the vSwitch. You need to power off all VMs running on the vSwitch before migration. Check if the vCenter is Virtual Update Manager (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.	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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 VTEP VLAN and that it is a system VLAN. From the ESX host (VEM), enter 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 VTEP 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.	<ul style="list-style-type: none"> Check the configuration file for appropriate contents. <p>Note You might need to change a few of the fields before reusing the previously saved files.</p> <ul style="list-style-type: none"> Check if a VM with the same name already exists in the DC. <p>This can be identified by reviewing the Virtual Machine field in the configuration file.</p>

