Installation

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

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 web client on the ESX server.
- You are logged in to the Cisco Nexus 1000VE 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 1000VE.
- 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 web 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 1000VE.
- 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 1000VE.

Host is Not Visible from the Distributed Virtual Switch

Scenario 1

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.
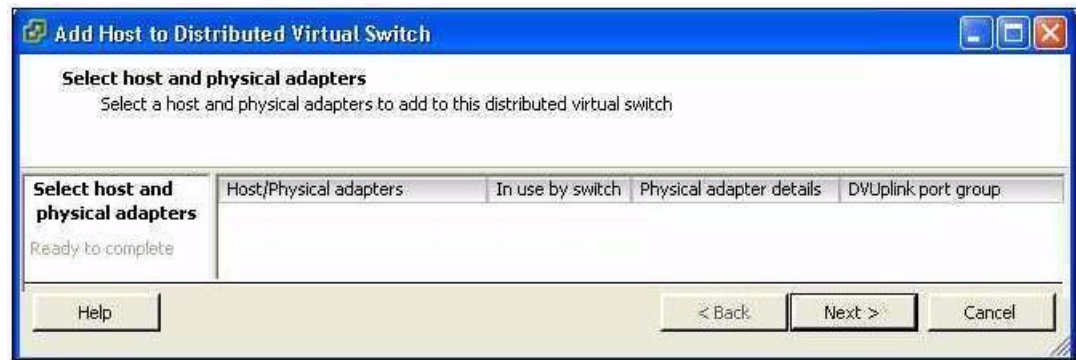
Figure 3-1   Host is Visible from the Distributed Virtual Switch
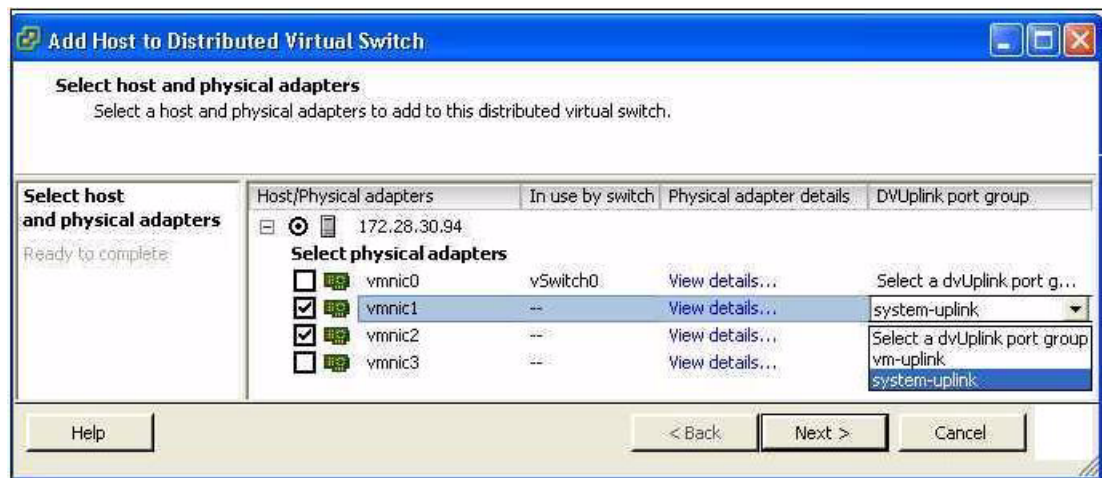
If the hosts and adapters do not appear in this dialog box, you might have the incorrect VMware license installed on your ESX server.

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*

Scenario 2

If wrong map of management port group is configured during VSE deployment, host is not visible from the distributed virtual switch. Complete the following steps to resolve this issue:

Step 1   Log into the plug-in and select the correct data center and switch.

Step 2   Select the host and pNICs.

Step 3   Enter all the parameters.

Step 4   Map to the correct `Management port group`.

Click **Install VSE** to complete VSE installation.

Refreshing the vCenter Server Connection

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

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

```
Example:
switch# config t
switch(config)# svs 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 Service Engine Module (VSE) are separated within a Layer 2 domain. To allow VSM-VSE 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-VSE pairs to communicate inside the same Layer 2 domain.

Following the installation of the Cisco Nexus 1000VE, 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 1023.
- All the control traffic between the VSM and the VSE is carried over the configured control VLAN.
- All the data traffic between the VSM and the VSE 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 VSE 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.
- Verify that the provided login and password are correct, if the **remote username** CLI was used to provide credentials to login to vCenter from the VSM.
- If the **register-plugin** CLI was used to register the VSM extension key with the vCenter, 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 1000VE 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 1000VE VSM.

Step 4 Ensure that the VMware VirtualCenter Server service is running.

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 3-6
- Resolving a Plug-In Conflict, page 3-6
- Finding the Extension Key on the Cisco Nexus 1000VE, page 3-6
- Finding the Extension Key Tied to a Specific DVS, page 3-7
- Verifying Extension Keys, page 3-7

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.

Resolving a Plug-In Conflict

If you see "The specified parameter was not correct," when Creating a Nexus 1000VE 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_nexus1000ve_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 3-7 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 1000VE

You can find the extension key on the Cisco Nexus 1000VE.

BEFORE YOU BEGIN

- Log in to the Cisco Nexus 1000VE 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

Step 1   From the Cisco Nexus 1000VE 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_1000Ve_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.
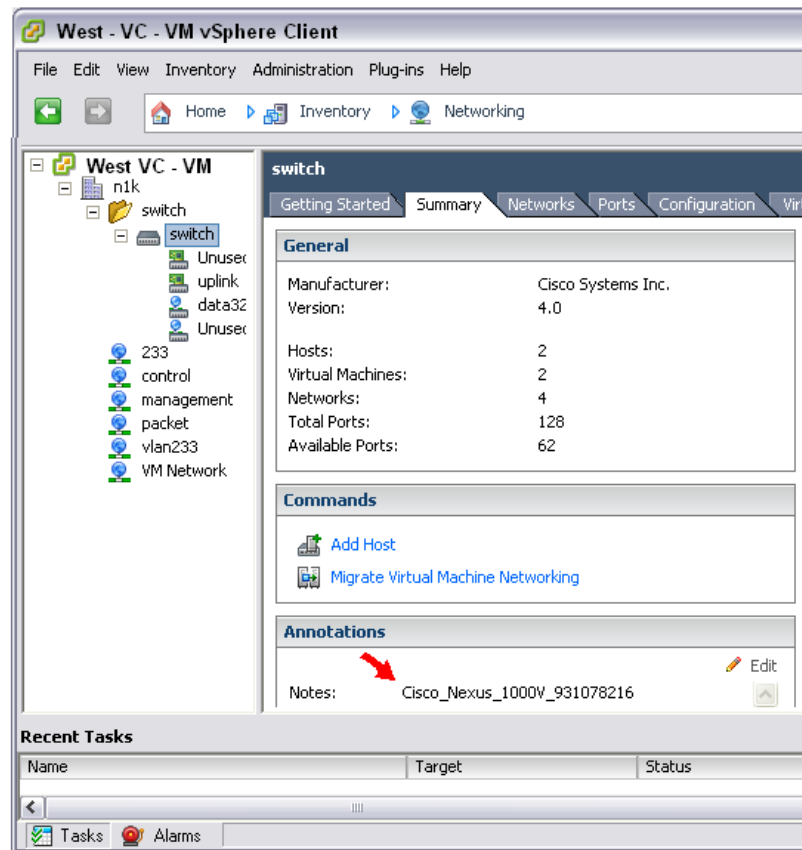
Verifying Extension Keys

You can verify that the Cisco Nexus 1000VE and vCenter Server are using the same extension key.

DETAILED STEPS

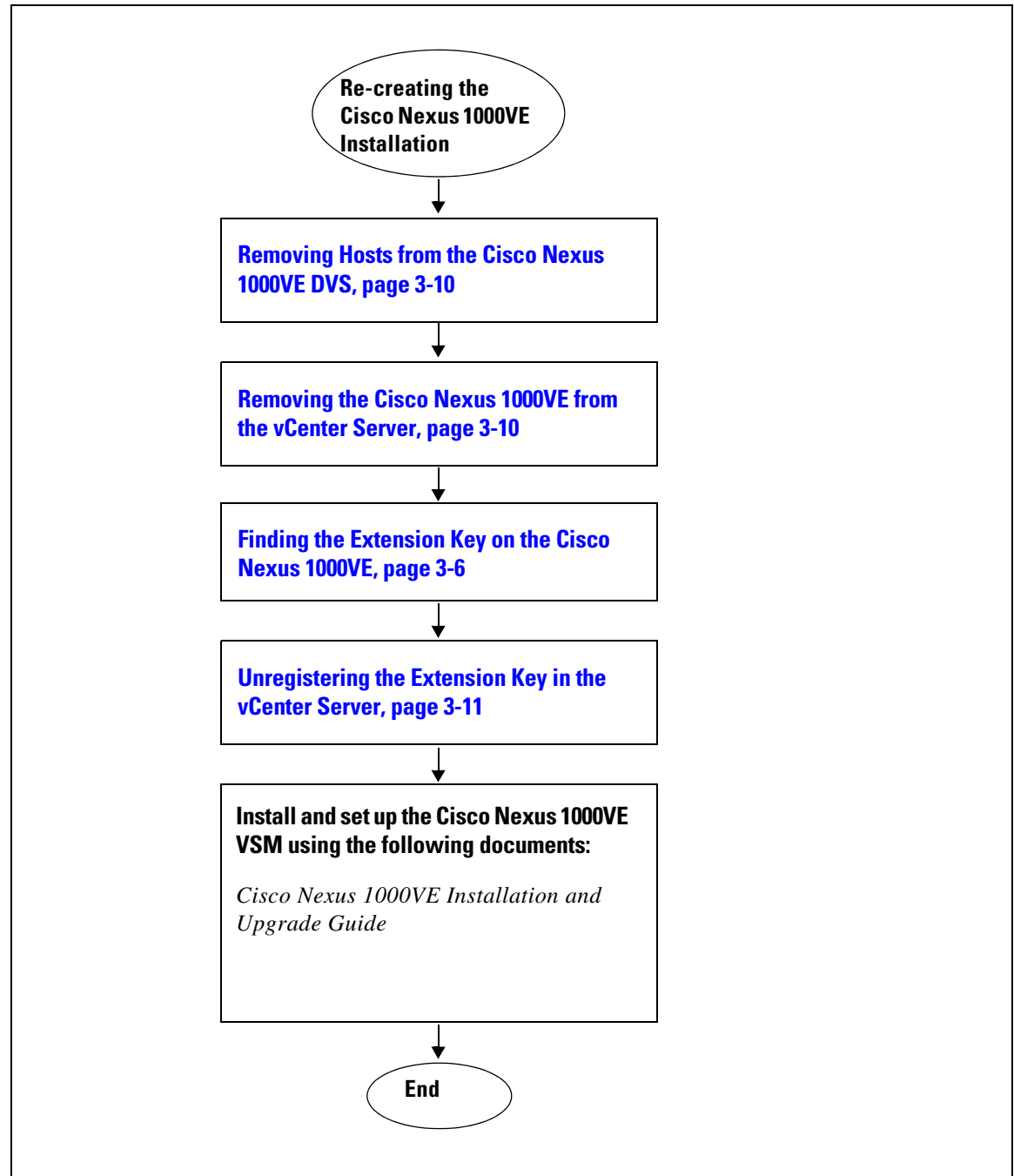Step 1   Find the extension key used on the Cisco Nexus 1000VE using the "Finding the Extension Key on the Cisco Nexus 1000VE" section on page 3-6.

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 3-7.

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

Recreating the Cisco Nexus 1000VE Installation

You can re-create the complete Cisco Nexus 1000VE configuration in the event of a persistent problem that cannot be resolved using any other workaround.

Flowchart: Re-creating the Cisco Nexus 1000VE Installation

```
                    ┌─────────────────────┐
                    │   Re-creating the   │
                    │  Cisco Nexus 1000VE │
                    │    Installation     │
                    └─────────────────────┘
                              │
                              ▼
        ┌─────────────────────────────────────┐
        │  Removing Hosts from the Cisco Nexus│
        │  1000VE DVS, page 3-10              │
        └─────────────────────────────────────┘
                              │
                              ▼
        ┌─────────────────────────────────────┐
        │  Removing the Cisco Nexus 1000VE from│
        │  the vCenter Server, page 3-10      │
        └─────────────────────────────────────┘
                              │
                              ▼
        ┌─────────────────────────────────────┐
        │  Finding the Extension Key on the Cisco│
        │  Nexus 1000VE, page 3-6             │
        └─────────────────────────────────────┘
                              │
                              ▼
        ┌─────────────────────────────────────┐
        │  Unregistering the Extension Key in the│
        │  vCenter Server, page 3-11          │
        └─────────────────────────────────────┘
                              │
                              ▼
        ┌─────────────────────────────────────┐
        │  Install and set up the Cisco Nexus 1000VE│
        │  VSM using the following documents: │
        │                                     │
        │  Cisco Nexus 1000VE Installation and│
        │  Upgrade Guide                      │
        │                                     │
        └─────────────────────────────────────┘
                              │
                              ▼
                        ┌──────────┐
                        │   End    │
                        └──────────┘
```

Removing Hosts from the Cisco Nexus 1000VE DVS

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

BEFORE YOU BEGIN

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

You can remove the Cisco Nexus 1000VE DVS from vCenter Server.

BEFORE YOU BEGIN

- Log in to the VSM CLI in EXEC mode.

DETAILED STEPS

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

    a. **config 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 1000VE 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 .
- After unregistering the extension key in vCenter Server, you can start a new installation of the Cisco Nexus 1000VE 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.
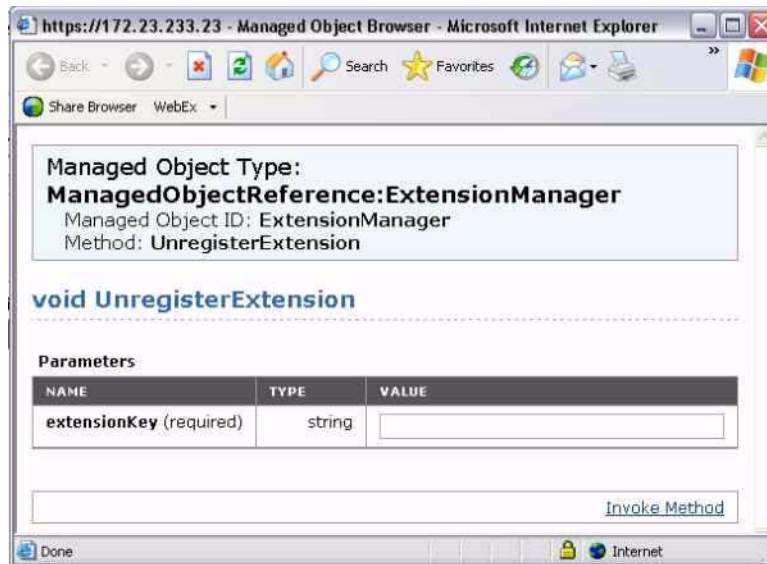
Step 3 In the value field, paste the extension key that you found in the "Finding the Extension Key on the Cisco Nexus 1000VE" section on page 3-6, and then click **Invoke Method**.

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

Step 4 You have completed this procedure.

Return to "Flowchart: Re-creating the Cisco Nexus 1000VE Installation" section on page 3-9.

Problems with the Cisco Nexus 1000VE Installation Management Center

The following are possible problems and their solutions.

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Symptom	Problem	Recommended Action
The VSE is missing on the VSM.	• The VSE installer application finishes successfully. • The host on which the VSE is deployed is added to N1KVE DVS on vCenter, but does not display when the **show module** command is entered on the VSM.	• Verify that the VSE VM is powered on and the Nexus1000v service is active on it (systemctl status Nexus1000v) • Verify the ping connectivity between VSM and VSE. • 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.

The VSE loses its management IP after reboot and gets disconnected from the VSM.	When VSE is installed using a static IP pool from vCenter with multiple DNS server addresses, after reboot VSE gets disconnected from VSM.	• Check */var/log/messages* on VSE and check if there is any error indicating invalid DNS server address <IP1>,<IP2>
		• Try following workarounds:
		  – Manually configure multiple DNS addresses in the VSE using the **nmtui** command as root.
		  – Use only a single DNS server in the IP pool in vCenter and then re-deploy the VSE.