



Configuring Distributed Virtual Switches in Cisco UCS

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Distributed Virtual Switches

Each VMware ESX host has its own software-based virtual switch (vSwitch) in its hypervisor that performs the switching operations between its virtual machines (VMs). The Cisco UCS distributed virtual switch (DVS) is a software-based virtual switch that runs alongside the vSwitch in the ESX hypervisor, and can be distributed across multiple ESX hosts. Unlike vSwitch, which uses its own local port configuration, a DVS associated with multiple ESX hosts uses the same port configuration across all ESX hosts.

After associating an ESX host to a DVS, you can migrate existing VMs from the vSwitch to the DVS, and you can create VMs to use the DVS instead of the vSwitch. With the hardware-based VN-Link implementation, when a VM uses the DVS, all VM traffic passes through the DVS and ASIC-based switching is performed by the fabric interconnect.

In Cisco UCS Manager, DVSES are organized in the following hierarchy:

```
vCenter
  Folder (optional)
    Datacenter
      Folder (required)
        DVS
```

At the top of the hierarchy is the vCenter, which represents a VMware vCenter instance. Each vCenter contains one or more datacenters, and optionally vCenter folders with which you can organize the datacenters. Each datacenter contains one or more required datacenter folders. Datacenter folders contain the DVSES.

Configuring a Distributed Virtual Switch

Before You Begin

You must first create a datacenter in VMware vCenter. Do not create the folder inside the datacenter or the DVS in VMware vCenter.

Procedure

- Step 1** In the **Navigation** pane, click the **VM** tab.
- Step 2** On the **VM** tab, expand the **All** node.
- Step 3** Right-click the **VMWare** node and choose **Configure vCenter**.
- Step 4** On the **Configure vCenter** page, do the following:
- Complete the following fields:

Name	Description
Name field	The user-defined name for the VMware Virtual Center (vCenter). This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters, and you cannot change this name after the object has been saved.
Description field	The user-defined description of VMware vCenter. Enter up to 256 characters. You can use any characters or spaces except ^ (carat), \ (backslash), > (greater than), < (less than), ' (single quote), " (double quote), ` (accent mark).
Hostname field	The hostname or IP address of the machine that hosts VMware vCenter. Note If you use a hostname rather than an IP address, you must configure a DNS server in Cisco UCS Manager.

- Click **Next**.

- Step 5** On the **Create Folder** page, click one of the following:

Option	Description
Next	Moves to the next page. Choose this option if the vCenter structure does not require you to include the datacenter in a high-level folder. If you choose this option, continue with Step 7.

Option	Description
Add	Opens the Create Folder dialog box, where you can add a high-level folder above the datacenter. If you choose this option, continue with Step 6.

Step 6 (Optional) In the **Create Folder** dialog box, do the following:

a) Complete the following fields:

Name	Description
Name field	The name of the vCenter folder. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters, and you cannot change this name after the object has been saved.
Description field	A user-defined description of the folder. Enter up to 256 characters. You can use any characters or spaces except ^ (carat), \ (backslash), > (greater than), < (less than), ' (single quote), " (double quote), ` (accent mark).

b) Click **Next**.

Step 7 On the **Create Datacenter** page, do the following:

a) Click **Add**.

b) In the **Create Datacenter** dialog box, complete the following fields:

Name	Description
Name field	The name of the Datacenter. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters, and you cannot change this name after the object has been saved. The datacenter name that you specify in Cisco UCS Manager must match the name of the datacenter previously created in VMware vCenter.
Description field	The user-defined description of the Datacenter. Enter up to 256 characters. You can use any characters or spaces except ^ (carat), \ (backslash), > (greater than), < (less than), ' (single quote), " (double quote), ` (accent mark).

c) Click **Next**.

Step 8 In the **Create Folder** page, do the following to create a folder in the datacenter:

a) Click **Add**.

- b) In the **Create Folder** dialog box, complete the following fields:

Name	Description
Name field	The name of the vCenter folder. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters, and you cannot change this name after the object has been saved.
Description field	A user-defined description of the folder. Enter up to 256 characters. You can use any characters or spaces except ^ (carat), \ (backslash), > (greater than), < (less than), ' (single quote), " (double quote), ` (accent mark).

- c) Click **Next**.

Step 9 On the **Create Distributed Virtual Switches** page, do the following to create a distributed virtual switch in the folder:

- a) Click **Add** to add a distributed virtual switch to the folder.
b) In the **Create Distributed Virtual Switches** dialog box, complete the following fields:

Name	Description
Name field	The name of the distributed virtual switch. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters, and you cannot change this name after the object has been saved.
Description field	The user-defined description of the distributed virtual switch. Enter up to 256 characters. You can use any characters or spaces except ^ (carat), \ (backslash), > (greater than), < (less than), ' (single quote), " (double quote), ` (accent mark).
Admin State field	This can be: <ul style="list-style-type: none"> • enabled • disabled If you disable the DVS, Cisco UCS Manager does not push any configuration changes related to the DVS to VMware vCenter.

- c) Click **OK**.

Step 10 Click **Finish** if you have finished adding all datacenters, folders, and DVSEs to the vCenter. You may need to click **Finish** more than once to exit the wizard. You can stop at any page to add another datacenter, folder, or DVS.

Managing Distributed Virtual Switches

Adding a Folder to a vCenter

You can add a folder inside a vCenter and place your datacenters inside the folder. However, this folder is optional.

Procedure

- Step 1** In the **Navigation** pane, click the **VM** tab.
- Step 2** On the **VM** tab, expand the **VMWare** node.
- Step 3** Right-click the vCenter to which you want to add a datacenter and choose **Create Folder**.
- Step 4** (Optional) In the **Create Folder** dialog box, do the following:
- Complete the following fields:

Name	Description
Name field	The name of the vCenter folder. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters, and you cannot change this name after the object has been saved.
Description field	A user-defined description of the folder. Enter up to 256 characters. You can use any characters or spaces except ^ (carat), \ (backslash), > (greater than), < (less than), ' (single quote), " (double quote), ` (accent mark).

- Click **Next**.

- Step 5** On the **Create Datacenter** page, do the following:
- Click **Add**.
 - In the **Create Datacenter** dialog box, complete the following fields:

Name	Description
Name field	The name of the Datacenter. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters, and you cannot change this name after the object has been saved. The datacenter name that you specify in Cisco UCS Manager must match the name of the datacenter previously created in VMware vCenter.

Name	Description
Description field	The user-defined description of the Datacenter. Enter up to 256 characters. You can use any characters or spaces except ^ (carat), \ (backslash), > (greater than), < (less than), ' (single quote), " (double quote), ` (accent mark).

c) Click **Next**.

Step 6 In the **Create Folder** page, do the following to create a folder in the datacenter:

a) Click **Add**.

b) In the **Create Folder** dialog box, complete the following fields:

Name	Description
Name field	The name of the vCenter folder. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters, and you cannot change this name after the object has been saved.
Description field	A user-defined description of the folder. Enter up to 256 characters. You can use any characters or spaces except ^ (carat), \ (backslash), > (greater than), < (less than), ' (single quote), " (double quote), ` (accent mark).

c) Click **Next**.

Step 7 On the **Create Distributed Virtual Switches** page, do the following to create a distributed virtual switch in the folder:

a) Click **Add** to add a distributed virtual switch to the folder.

b) In the **Create Distributed Virtual Switches** dialog box, complete the following fields:

Name	Description
Name field	The name of the distributed virtual switch. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters, and you cannot change this name after the object has been saved.
Description field	The user-defined description of the distributed virtual switch. Enter up to 256 characters. You can use any characters or spaces except ^ (carat), \ (backslash), > (greater than), < (less than), ' (single quote), " (double quote), ` (accent mark).

Name	Description
Admin State field	<p>This can be:</p> <ul style="list-style-type: none"> • enabled • disabled <p>If you disable the DVS, Cisco UCS Manager does not push any configuration changes related to the DVS to VMware vCenter.</p>

c) Click **OK**

- Step 8** Click **Finish** if you have finished adding all datacenters, folders, and DVSES to the folder. You may need to click **Finish** more than once to exit the wizard. You can stop at any page to add another datacenter, folder, or DVS.

Adding a Datacenter to a vCenter

Before You Begin

You must first create a datacenter in VMware vCenter. Do not create the folder inside the datacenter or the DVS in VMware vCenter.

Procedure

- Step 1** In the **Navigation** pane, click the **VM** tab.
- Step 2** On the **VM** tab, expand the **VMWare** node.
- Step 3** Right-click the vCenter to which you want to add a datacenter and choose **Create Datacenter**.
- Step 4** On the **Create Datacenter** page, do the following:
- Click **Add**.
 - In the **Create Datacenter** dialog box, complete the following fields:

Name	Description
Name field	<p>The name of the Datacenter.</p> <p>This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters, and you cannot change this name after the object has been saved.</p> <p>The datacenter name that you specify in Cisco UCS Manager must match the name of the datacenter previously created in VMware vCenter.</p>

Name	Description
Description field	The user-defined description of the Datacenter. Enter up to 256 characters. You can use any characters or spaces except ^ (carat), \ (backslash), > (greater than), < (less than), ' (single quote), " (double quote), ` (accent mark).

c) Click **Next**.

Step 5 In the **Create Folder** page, do the following to create a folder in the datacenter:

a) Click **Add**.

b) In the **Create Folder** dialog box, complete the following fields:

Name	Description
Name field	The name of the vCenter folder. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters, and you cannot change this name after the object has been saved.
Description field	A user-defined description of the folder. Enter up to 256 characters. You can use any characters or spaces except ^ (carat), \ (backslash), > (greater than), < (less than), ' (single quote), " (double quote), ` (accent mark).

c) Click **Next**.

Step 6 On the **Create Distributed Virtual Switches** page, do the following to create a distributed virtual switch in the folder:

a) Click **Add** to add a distributed virtual switch to the folder.

b) In the **Create Distributed Virtual Switches** dialog box, complete the following fields:

Name	Description
Name field	The name of the distributed virtual switch. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters, and you cannot change this name after the object has been saved.
Description field	The user-defined description of the distributed virtual switch. Enter up to 256 characters. You can use any characters or spaces except ^ (carat), \ (backslash), > (greater than), < (less than), ' (single quote), " (double quote), ` (accent mark).

Name	Description
Admin State field	<p>This can be:</p> <ul style="list-style-type: none"> • enabled • disabled <p>If you disable the DVS, Cisco UCS Manager does not push any configuration changes related to the DVS to VMware vCenter.</p>

c) Click **OK**

Step 7 Click **Finish** if you have finished adding all folders and distributed virtual switches to the Datacenter. You may need to click **Finish** more than once to exit the wizard. You can stop at any page to add another folder or DVS to the datacenter.

Adding a Folder to a Datacenter

Procedure

- Step 1** In the **Navigation** pane, click the **VM** tab.
- Step 2** On the **VM** tab, expand the **VMWare** node.
- Step 3** Expand the vCenter that includes the datacenter to which you want to add a folder.
- Step 4** Right-click the datacenter to which you want to add a folder and choose **Create Folder**.
- Step 5** On the **Create Folder** page, do the following to add a folder to the datacenter:
- a) Complete the following fields:

Name	Description
Name field	<p>The name of the vCenter folder.</p> <p>This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters, and you cannot change this name after the object has been saved.</p>
Description field	<p>A user-defined description of the folder.</p> <p>Enter up to 256 characters. You can use any characters or spaces except ^ (carat), \ (backslash), > (greater than), < (less than), ' (single quote), " (double quote), ` (accent mark).</p>

- b)
- Click **Next** and continue with Step 6 to create a DVS in the folder.
 - Continue with Step 7 if you do not want to create a DVS in the folder.

Step 6 On the **Create Distributed Virtual Switches** page, do the following to create a distributed virtual switch in the folder:

- a) Click **Add** to add a distributed virtual switch to the folder.
- b) In the **Create Distributed Virtual Switches** dialog box, complete the following fields:

Name	Description
Name field	The name of the distributed virtual switch. This name can be between 1 and 16 alphanumeric characters. You cannot use spaces or any special characters, and you cannot change this name after the object has been saved.
Description field	The user-defined description of the distributed virtual switch. Enter up to 256 characters. You can use any characters or spaces except ^ (carat), \ (backslash), > (greater than), < (less than), ' (single quote), " (double quote), ` (accent mark).
Admin State field	This can be: <ul style="list-style-type: none"> • enabled • disabled If you disable the DVS, Cisco UCS Manager does not push any configuration changes related to the DVS to VMware vCenter.

- c) Click **OK**

Step 7 Click **Finish** if you have finished adding all folders and DVSEs to the datacenter. You may need to click **Finish** more than once to exit the wizard. You can stop at any page to add another folder or DVS.

Deleting a Folder from a vCenter

If the folder contains a datacenter, Cisco UCS Manager also deletes that datacenter and any folders and DVSEs it contains.

Procedure

- Step 1** In the **Navigation** pane, click the **VM** tab.
- Step 2** On the **VM** tab, expand **All > VMWare**.
- Step 3** Expand the node for the vcenter that contains the folder you want to delete.
- Step 4** Right-click the folder and choose **Delete**.
- Step 5** If Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.

Deleting a Datacenter

If the datacenter contains a folder, Cisco UCS Manager also deletes that folder and any DVS it contains.

Procedure

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- Step 1** In the **Navigation** pane, click the **VM** tab.
 - Step 2** On the **VM** tab, expand **All > VMWare**.
 - Step 3** If the datacenter that you want to delete is contained in a higher level folder, expand the node for that folder.
 - Step 4** Right-click the datacenter and choose **Delete**.
 - Step 5** If Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.
-

Deleting a Folder from a Datacenter

If the folder contains a DVS, Cisco UCS Manager also deletes that DVS.

Procedure

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- Step 1** In the **Navigation** pane, click the **VM** tab.
 - Step 2** On the **VM** tab, expand **All > VMWare**.
 - Step 3** If the datacenter that you want to modify is contained in a higher level folder, expand the node for that folder.
 - Step 4** Expand the node for the datacenter which contains the folder you want to delete.
 - Step 5** Right-click the folder and choose **Delete**.
 - Step 6** If Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.
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Deleting a Distributed Virtual Switch from a Folder

Procedure

- Step 1** In the **Navigation** pane, click the **VM** tab.
 - Step 2** On the **VM** tab, expand **All > VMWare**.
 - Step 3** If the datacenter that you want to modify is contained in a higher level folder, expand the node for that folder.
 - Step 4** Expand the node for the datacenter and the folder which contains the DVS you want to delete.
 - Step 5** Right-click the DVS and choose **Delete**.
 - Step 6** If Cisco UCS Manager GUI displays a confirmation dialog box, click **Yes**.
-