



Installing in Microsoft Hyper-V Environments

- [Microsoft Hyper-V Support Information, on page 1](#)
- [Microsoft Hyper-V Limitations, on page 1](#)
- [Installation Requirements for Microsoft Hyper-V, on page 2](#)
- [Manually Creating the Cisco Catalyst 8000V VM using the .iso File \(Microsoft Hyper-V\), on page 2](#)

Microsoft Hyper-V Support Information

Cisco Catalyst 8000V supports installation on Microsoft Hyper-V using Windows Server 2012 R2.

Cisco Catalyst 8000V installation on Microsoft Hyper-V requires the manual creation of a VM and installation using the .iso file. Deploying the OVA template into a Microsoft Hyper-V environment is not supported.

The following Microsoft Hyper-V features are supported:

- Live Migration
- Snapshot
- Move
- Export
- Hyper-V Replica

For more information about Microsoft Hyper-V, see the Microsoft Windows Server 2012 R2 documentation.

Microsoft Hyper-V Limitations

This section describes the limitations when specifying VLANs on a VM interface, using the Hyper-V Manager.

You can only add one VLAN for a VM interface using the Virtual Switch Manager of the Hyper-V Manager.

```
Set-VMNetworkAdapterVlan -VMName dr-vm-6-1 -Trunk -AllowedVlanIdList 1-300 -NativeVlanId 0
```



Note The **Set-VMNetworkAdapterVlan** command must be re-entered every time you load a Cisco Catalyst 8000V instance. Cisco recommends that you limit the number of VLANs to 300 or below by using the **AllowedVlanIdList** parameter.

For more information on the **Set-VMNetworkAdapterVlan** powershell command, see <https://technet.microsoft.com/itpro/powershell/windows/hyper-v/set-vmnetworkadapervlan>.

See also [Configure virtual local area networks for Hyper-V](#).

Installation Requirements for Microsoft Hyper-V

The Microsoft Hyper-V requirements for Cisco Catalyst 8000V using Cisco IOS XE 17.4 and later releases are as follows:

- The following Microsoft Hyper-V versions are supported:
 - Windows Server 2016 is recommended - tested and meets the performance benchmarks.
- vCPUs. The following vCPU configurations are supported:
 - 1 vCPU: requires minimum 4 GB RAM allocation
 - 2 vCPUs: requires minimum 4 GB RAM allocation
 - 4 vCPUs: requires minimum 4 GB RAM allocation
- Virtual CPU cores—1 vCPU is required
- Virtual hard disk size—8 GB minimum
- Supported vNICs—NetVSC (pmap)
- Maximum number of vNICs supported per VM instance—8
- Virtual CD/DVD drive installed—required

Manually Creating the Cisco Catalyst 8000V VM using the .iso File (Microsoft Hyper-V)

Prerequisites

Prerequisite for Manually Creating the Cisco Catalyst 8000V VM using the .iso File

While the following procedure provides a general guideline for how to manually create the VM for Cisco Catalyst 8000V, the exact steps that you need to perform may vary depending on the characteristics of your Microsoft Hyper-V environment and setup. For more information, see Microsoft Windows Server 2012 R2 documentation.



Note Cisco Catalyst 8000V does not support deploying the OVA file in Microsoft Hyper-V environments.

Before installing Cisco Catalyst 8000V on a Microsoft Hyper-V VM, install the following on the host:

- Hyper-V Manager
- Failover Cluster Manager
- Virtual Switch

Although not required, it is recommended that you create the Virtual Switch prior to creating the VM for Cisco Catalyst 8000V.

Configuring the Server Manager Settings

Perform the following steps on the Server Manager on the host before creating the Cisco Catalyst 8000V VM.

-
- Step 1** On the Server Manager, select **Dashboard** to configure the local server.
- Step 2** From the top-right, select **Manager**, and then select **Add Roles and Features** from the drop-down menu. The system displays the Add Roles and Features Wizard.
- Step 3** Click **Next**.
- Step 4** Select **Server > Roles**. From the Roles list, select the following options by selecting the checkbox:
- File and Storage Services
 - Hyper-V
- Step 5** Select **Features**. In the Features list, select the **Failover Clustering** option by selecting the checkbox: Failover clustering is a mandatory option. This option is not automatically installed, and you must ensure you select this option.
- Step 6** Click **Next**.
-

Creating the VM

To create the VM, perform the following steps:

-
- Step 1** In the Hyper-V Manager, click on the host.
- Step 2** Select **New > Virtual Machine**.
- Step 3** Click **Specify Name and Location**.
- Enter the name of the VM.
 - (Optional) Click the checkbox to store the VM in a different location.

Click **Next**.

Step 4 On the Assign Memory screen, enter the **Startup Memory** value.

Cisco Catalyst 8000V requires 4096 MB for the startup memory.

Click **Next**.

Step 5 On the Configure Networking screen, select a network connection to the virtual switch that was previously created.

The network adapter selected in this step becomes the first interface for Cisco Catalyst 8000V once the VM is launched and the router boots. The other vNICs for the VM are created in the next procedure.

Note Changing the MAC address of the first interface and rebooting a licensed Cisco Catalyst 8000V will de-activate the license.

Click **Next**.

Step 6 On the Connect Virtual Hard Disk screen, select the **Attach a Virtual Hard Disk Later** option.

Note The New Virtual Machine Wizard only supports creating a virtual hard disk using the .vhdx format. Cisco Catalyst 8000V requires that the hard disk use the .vhd format. Note that you can create the virtual hard disk after the VM has been created.

Click **Next**.

Step 7 Review the VM settings, and if you'd like to proceed, click **Finish**.

The new VM is created.

Configuring the VM Settings

To configure the VM settings before launching the VM, perform the following steps:

Step 1 In the Hyper-V Manager, select the host, and then right-click the VM that you created in the previous steps.

Step 2 Select **Settings**.

Step 3 Specify the number of virtual processors, also known as virtual CPU's (vCPU's) for the VM.

See the *Installation Requirements for Microsoft Hyper-V* table, for the supported configurations.

Step 4 From **IDE Controller 0**, select **Hard Drive**. Select the **Virtual Hard Disk** checkbox, and click **New** to create a new, virtual hard disk.

Step 5 The system displays the New Virtual Hard Disk Wizard. Click **Next**.

a) On the Choose Disk Format screen, select the **VHD** checkbox to create the virtual hard disk using the .vhd format. Click **Next**.

Note Cisco Catalyst 8000V does not support the VHDX format.

b) On the Choose Disk Type screen, click the **Fixed Size** option, and click **Next**.

Cisco Catalyst 8000V does not support the other disk type options.

c) Specify the **Name** and the **Location** for the virtual hard disk, and click **Next**.

- d) On the Configure Disk screen, click the option to create a new blank virtual hard disk. For the size, specify **8 GB**.
- e) Click **Next** to view the Summary of the virtual hard disk settings.
- f) Click **Finish** to create the new virtual hard disk.

After the new hard disk is created, continue configuring the VM settings.

Step 6 From the **IDE Controller1** field, select **DVD Drive**.

Step 7 For the **Media** setting, click the **Image File** checkbox, and browse to the Cisco C8000V .iso file that you downloaded from Cisco.com. Click **OK**.

Step 8 Select **Network Adapter** to verify that the network connection to the virtual switch is configured.

Step 9 Select **Com 1** to configure the serial port.

This port provides access to the Cisco Catalyst 8000V console.

Note Telnet access to the Cisco Catalyst 8000V console is not supported for Microsoft Hyper-V. You must use a Putty session to access the console.

Step 10 Select **Hardware**> **Add Hardware** to add the network interfaces (vNICs) to the VM.

- a) Select **Network Adapter** and click **Add**.

Microsoft Hyper-V adds the network adapter and highlights that hardware with the status **Virtual Switch Not Connected**.

- b) Select a virtual switch from the drop-down menu to place the network adapter onto it.

Repeat these steps for each vNIC that you want to add. Cisco Catalyst 8000V supports only the HV NETVSC vNIC type. The maximum number of vNICs supported is 8.

Note The hot-add of vNICs is not supported with Microsoft Hyper-V. You must add the network interfaces before launching the VM.

After the Cisco Catalyst 8000V instance boots, you can verify the vNICs and how they are mapped to the interfaces using the **show platform software vnic-if interface-mapping** command. See Mapping the *Cisco Catalyst 8000V Network Interfaces to the VM Network Interfaces* section.

Step 11 Click **BIOS** to verify the boot sequence for the VM. The VM should be set to boot from the CD.

Launching the VM to Boot the Cisco Catalyst 8000V

To launch the VM, perform the following steps:

Step 1 Select the virtual switch.

Step 2 Select the VM and click **Start**.

The Hyper-V Manager connects to the VM and starts the launch process. Once the VM is launched, Cisco Catalyst 8000V starts the boot process. For more information on the booting process, see *Installing the Cisco Catalyst 8000V in Microsoft Hyper-V Environments*.
