



Installation Overview

This chapter provides the high-level information on how to install Cisco Catalyst 8000V. Usually, Cisco hardware routers are shipped with the Cisco IOS XE software pre-installed. However, since Cisco Catalyst 8000V is not a hardware-based router, you must download the Cisco IOS XE software from Cisco.com and install the virtual router directly onto the virtual machine. Before you proceed to the installation, first provision the attributes of the VM so that the Cisco Catalyst 8000V software can install and boot.

See the following sections to know about the various installation files and the installation options that are dependent on the hypervisor you have chosen.

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Installation Files

The following table specifies the software images that are available for installing Cisco Catalyst 8000V on the supported hypervisors:

Image Type	Hypervisor	Mode	Secure Boot	Sample Filename
bin	ESXi, KVM, AWS, Microsoft Azure, GCP	Upgrade (bundle mode) Upgrade (install mode)	No	c8000v-universalk9.17.04.01a.SPA.bin
iso - Used for installing the software image on the VM	ESXi, KVM	New installation	No	c8000v-universalk9.17.04.01a.iso

Image Type	Hypervisor	Mode	Secure Boot	Sample Filename
ova - used for deploying the OVA template on the VM (in TAR format)	ESXi	New installation	Yes	c8000v-universalk9.17.04.01a.ova
qcow2 - Used for installing the software image in KVM environments.	KVM	New installation	No	c8000v-universalk9.17.04.01a.qcow2
serial.qcow2	KVM	New installation	No	c8000v-universalk9.17.04.01a.efi.qcow2
efi.qcow2	KVM	New installation	Yes	c8000v-universalk9.17.04.01a.efi.qcow2
serial.efi.qcow2	KVM	New installation	Yes	c8000v-universalk9.17.04.01a-serial.efi.qcow2
tar.gz	NFVIS	New installation	Yes	c8000v-universalk9.17.04.01a-tar.gz



Note Although secure boot is supported for certain image types, this functionality is not enabled by default. See [VNF Secure Boot](#) to know how to enable secure boot for your hypervisor.

Supported Hypervisors

A hypervisor enables multiple operating systems to share a single hardware host machine. While each operating system could have a dedicated use of the host's processor, memory, and other resources, the hypervisor controls and allocates only the required resources to each operating system. This ensures that the operating systems (VMs) do not disrupt each other.

The following are the supported hypervisors for Cisco Catalyst 8000V:

- **VMware ESXi:** Cisco Catalyst 8000V runs on the VMware ESXi hypervisor, which runs on a x86 hardware containing virtualization extension. To see the VMware requirements and to learn how to install Cisco Catalyst 8000V in the ESXi environment, see [Installing in VMware ESXi Environment](#).
- **Red Hat KVM:** Cisco Catalyst 8000V also runs on the Red Hat Enterprise Linux (RHEL).
- **Public Clouds:** Apart from the above-mentioned hypervisors, you can also deploy and use Cisco Catalyst 8000V in Amazon Web Services, Microsoft Azure, Google Cloud Platform, and Alibaba Cloud. See the respective public cloud deployment guides for detailed information.

Virtual Machine Processing Resources

The Cisco Catalyst 8000V is a low-latency application and might not function properly when the processing resources on the host side are over subscribed. By default, most hypervisors support overcommitting the

processing resources. However, for Cisco Catalyst 8000V, if you oversubscribe and do not schedule the virtual CPUs (vCPUs) reliably, you could experience packet processing drops, error messages, or system outages.

The Cisco Catalyst 8000V vCPUs must be scheduled by the host hypervisor to run on real physical cores. Each hypervisor has various controls that influence the scheduling of the vCPUs to the physical cores. As a best practice, Cisco recommends that you to use a ratio of 1:1 for the vCPUs to real physical cores.

For detailed information on virtual machine processing resources, see the respective hypervisor tuning guides provided by the hypervisor. Additionally, you can refer to the appropriate hypervisor sections in this guide that describe the possible settings to increase the performance and improve the overall system determinism.

Download the Installation Files

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- Step 1** Go to the [Cisco Software Download](#) page.
- Step 2** From the **Select a Product** field at the bottom of the page, search for Cisco Catalyst 8000V.
- Step 3** Click the Cisco Catalyst 8000V link and go to the Download page.
- Step 4** From the left pane, select the appropriate release. For example, *Bengaluru 17.4.1*.
- Step 5** From the list of available images, click **Download** or **Add to Cart**. Follow the instructions for downloading the software.
- Note** To know which installation file you want to download, see [Installation Files, on page 1](#).
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Guidelines and Limitations

The following list specifies the general guidelines and restrictions before installing a Cisco Catalyst 8000V router in your network:

- Cisco Catalyst 8000V within a nested VM has not been tested and is not recommended for this reason.
- If the hypervisor does not support vNIC Hot Add/Remove, do not make any changes to the VM hardware (memory, CPUs, hard drive size, and so on) while the VM is powered on.
- Gigabit Ethernet0 interface is no longer available. You can designate any interface as the management interface.
- You can access the Cisco IOS XE CLI either through the virtual VGA console or the console on the virtual serial port. Select the console from the GRUB mode during the first-time installation or change the console using the Cisco IOS XE **platform console** command after the router boots. For more information, see [Booting the Cisco Catalyst 8000V as the VM](#).
- If you are running a virtual function on an I350 device, redundancy protocols like HSRP/VRRP are not supported.
- For .qcow2 files, the image that you choose during installation plays a role in the type of console you can select.
- vNICs do not support duplex settings in an interface.
- vNICs do not support auto-negotiations.

- From Cisco IOS XE 17.9.1, the **show license udi** command is no longer supported in Cisco Catalyst 8000V.
- Cisco Catalyst 8000V does not support L2TP functionality including L2TP client and L2TP Network Server (LNS).
- We recommend that you use Cisco Catalyst 8000V with 8GB memory in the controller mode as the SDWAN configurations are tight in Cisco Catalyst 8000V deployments with lesser memory. Hence, Cisco Catalyst 8000V might experience high memory utilization.



Note Some hypervisors might not support serial console access. Verify support using your hypervisor documentation.

Where to Go Next

Now that you have downloaded the installation file, you can proceed to the deployment. Based on the hypervisor that you have chosen, the deployment procedures vary.

See the following chapters in this guide to know how to deploy Cisco Catalyst 8000V in the appropriate hypervisor environment:

- [Installing in VMware ESXi Environment](#)
- [Installing in Kernel Virtual Machine Support \(KVM\) Environments](#)

Deployment in Public Clouds

- For information about deploying Cisco Catalyst 8000V in an Amazon Web Services environment, see [Deploying Cisco Catalyst 8000V Edge Software on Amazon Web Services](#).
- For information about deploying Cisco Catalyst 8000V in the Microsoft Azure environment, see [Deploying Cisco Catalyst 8000V on Microsoft Azure](#).
- For information about deploying Cisco Catalyst 8000V in Google Cloud Platform, see [Deploying Cisco Catalyst 8000V on Google Cloud Platform](#).
- For more information about deploying Cisco Catalyst 8000V in Alibaba Cloud, see [Deploying Cisco Catalyst 8000V on Alibaba Cloud](#).



Note Refer the following chapters before you proceed with the installation:

- [Day 0 Configuration](#)
 - [VNF Secure Boot](#)
 - [Configuring Console Access](#)
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