



Cisco Cyber Vision Center VM Installation Guide, Release 5.6.x

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CHAPTER 1

About this documentation

- [Document purpose, on page 1](#)
- [Warnings and notices, on page 1](#)

Document purpose

This installation guide shows how to connect, configure and install Cisco Cyber Vision Center on a virtual machine running on VMware ESXi and Microsoft Hyper-V/VMware ESXi, Microsoft Hyper-V, Nutanix, and RedHat OpenShift Container Platform.

You will also find the upgrade procedures for an architecture with a Global Center and for an architecture with one Center only.

Warnings and notices

This manual contains notices you have to observe to ensure your personal safety as well as to prevent damage to property.

The notices referring to your personal safety and to your property damage are highlighted in the manual by a safety alert symbol described below. These notices are graded according to the degree of danger.



Warning

Indicates risks that involve industrial network safety or production failure that could possibly result in personal injury or severe property damage if proper precautions are not taken.



Important

Indicates risks that could involve property or equipment damage and minor personal injury if proper precautions are not taken.



Note

Indicates important information on the product described in the documentation to which attention should be paid.



CHAPTER 2

Information and characteristics

- [Information and Characteristics, on page 3](#)
- [IPv6 support for Cyber Vision administration services, on page 5](#)

Information and Characteristics

The solution can have a 2-tier or 3-tier architecture made of:

- **Edge sensors** which are installed in the industrial network. These sensors are dedicated to capture network traffic, decode protocols using the Deep Packet Inspection engine and send meaningful information to the Center.
- The **Center**, a central platform gathering data from all the Edge Sensors and acting as the monitoring, detection and management platform for the whole solution.
- Optionally, a third-tier **Global Center** to which all Centers are connected, to provide a central view of all Centers deployed within an organization for alerting, reporting and management functions.

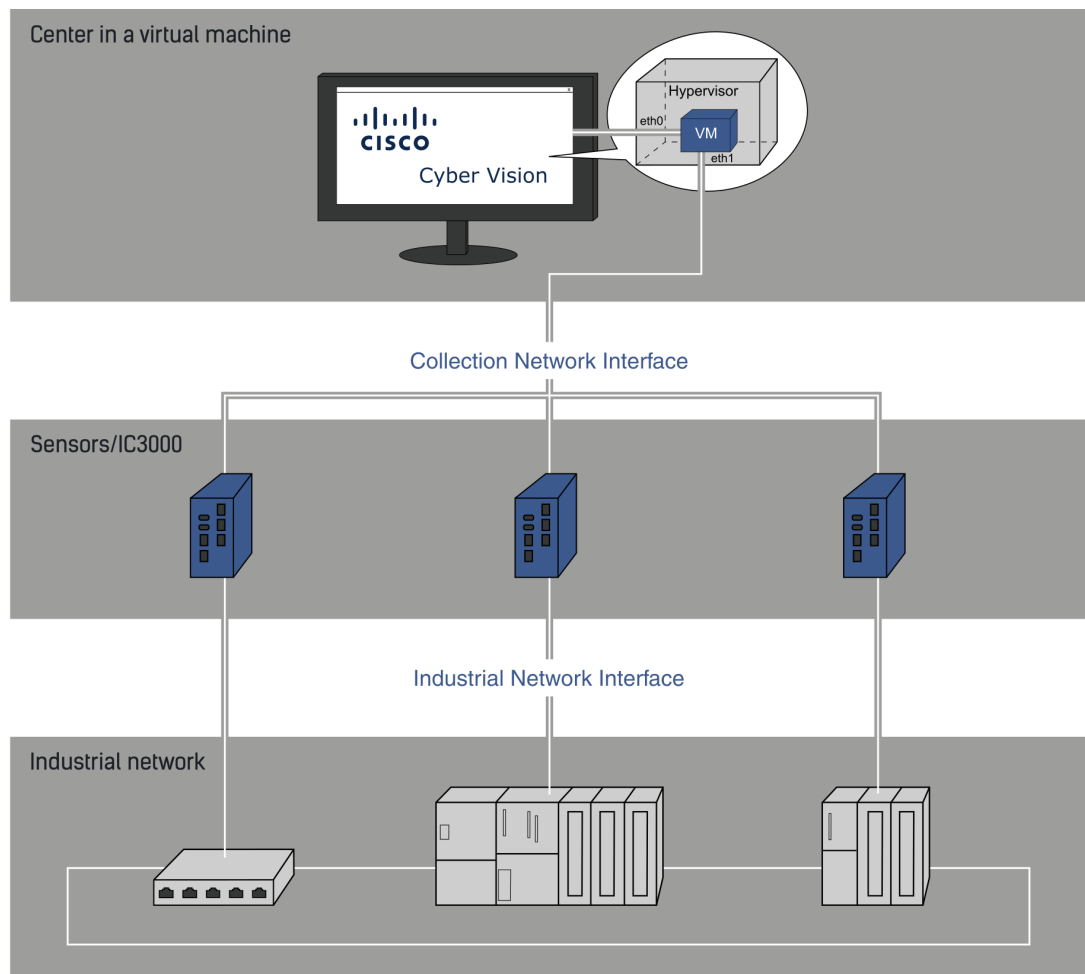
During the installation of the Center, you will have the opportunity to set up Center data synchronization to a Global Center. However, if you choose to set up a global infrastructure, you must install the Global Center first, then the Centers, and finally, the sensors.

Networks or segments involved

From perspective, three important networks will be involved with the platform:

- The **Administration network**, used to access the Center User Interface (UI) and interact with authorized external services (NTP, DNS, API, SIEM, etc.).
- The **Collection network**, used to manage all sensors. This network must be isolated from the operational traffic plant (separated VLAN/subnet).
- The **Acquisition/Industrial network**, used for all industrial plant traffic and/or external interconnection under consideration that will be analyzed by the sensors (SPAN traffic collected).

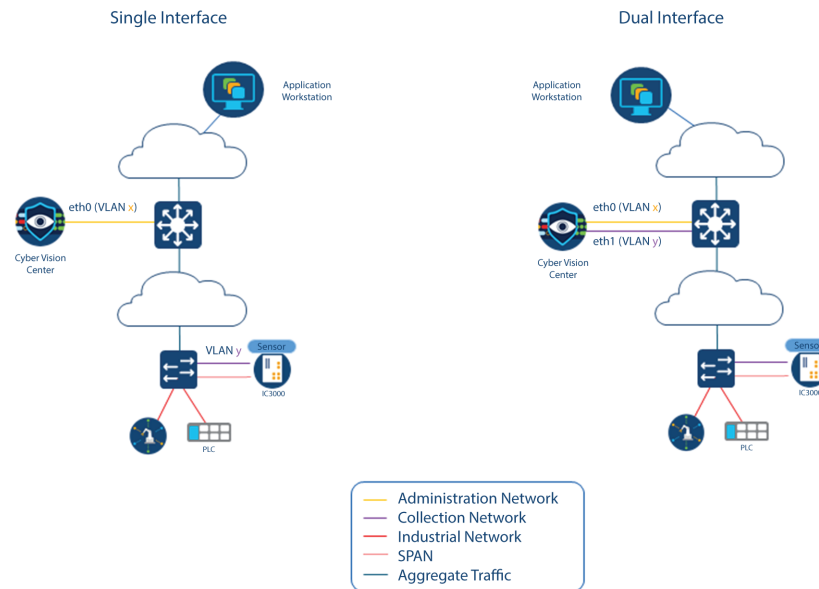
Example of a installation (without Global Center):



Configuring single or dual interface (not applicable to a Global Center)

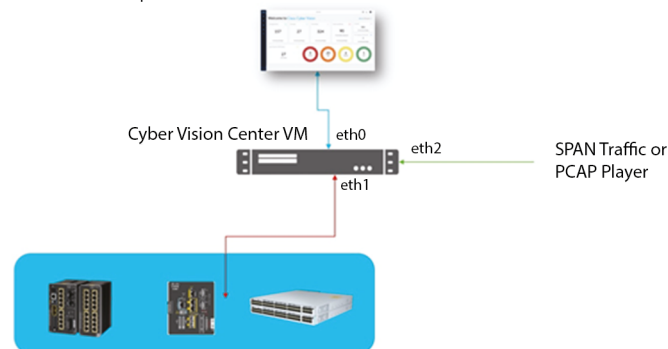
For security reasons, it is recommended to use the Center on **two separate networks**, respectively connected to the following interfaces:

- The **Administration network interface (eth0)**, which gives access to the user interface.
- The **Collection network interface (eth1)**, which connects the Center to the sensors.



- An additional interface dedicated to DPI (`eth2`) is required to deploy a Center with sensor function on ESXi.

`eth0` is the first network interface of the VM
`eth1` is the second network adapter of the VM
`eth2` is the third network adapter of the VM



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Cisco IoT

However, in case of incompatibility with the industrial network infrastructure or for limited environments, you can use a single network interface (`eth0`).

Refer to the Architecture Guide for more information about defining environment configuration.

IPv6 support for Cyber Vision administration services

You can use both IPv4 and IPv6 protocols for Cisco Cyber Vision administration services.

You can use IPv6 on Center `eth0` for administration-related access, including:

- Accessing Cisco Cyber Vision from a browser.
- Integrating with external services such as syslog and LDAP.

Consider these limitations:

- License operations work only with direct transport. Transport Gateway and HTTP/HTTPS Proxy are not supported.
- Sensor data collection uses only IPv4, whether performed on `eth0` or `eth1`.



CHAPTER 3

Requirements for installation

- [Installation Prerequisites, on page 7](#)

Installation Prerequisites

Ensure the following conditions are met before installing as a virtual machine.

Supported Hypervisors

Use one of these hypervisors.

- VMware vSphere 6.x or later
- Microsoft Hyper-V Server 2016 or later
- Nutanix Acropolis OS 6.10 or later
- RedHat OpenShift Container Platform 4.19 or later



Note The hypervisor must have permissions configured to create a new virtual machine.

Virtual Machine Sizing

Minimum (up to 500 components)

- CPU: Intel Xeon, 8 cores
- RAM: 16 GB
- Storage: 500 GB SSD

Recommended (10,000 components without Center DPI):

- CPU: Intel Xeon, 10 cores
- RAM: 32 GB
- Storage: 1 TB SSD, RAID-10

For over 10,000 components or with Center DPI:

- CPU: Intel Xeon, 16-32 cores
- RAM: 64 GB
- Storage: 1 TB SSD, RAID-10

Network Requirements

IP Addresses

- 1–2 IP addresses for the Center, based on single or dual interface configuration:
 - Single interface: One IP for web interface and SSH administration.
 - Dual interface: One IP for protocol data from sensors (Collection network) and one for web interface/SSH (Administration network).
 - One IP address per sensor, ideally on a dedicated LAN or VLAN (Industrial network interface). Not applicable for Global Center.
 - An additional interface for DPI if deploying a Center with sensor functionality on ESXi.
- NTP Server: Accessible from the Center (typically configured via a router).
- Machine Name: A unique name, configured in DNS or on each client, required for secure communication between clients (users or APIs) and the Center.



CHAPTER 4

Install the Virtual Center

To install Center, follow these steps:

1. Retrieve the installation file.
2. Create a virtual machine.
 - For VMware ESXi: Create a virtual machine and deploy the OVA file.
 - For Microsoft Hyper-V: Create a virtual machine, configure the disk size, and map the required network interfaces.
 - For Nutanix: Import the OVA file in Nutanix via PRISM Central.
 - For RedHat OpenShift Container Platform: Configure a boot volume using the **qcow2** image and deploy a virtual machine that uses the volume as its boot disk.
3. Configure the Cisco Cyber Vision Center to finalize the installation.
 - [Retrieve the installation file, on page 9](#)
 - [ESXi, on page 11](#)
 - [Hyper-V, on page 17](#)
 - [Nutanix, on page 30](#)
 - [RedHat OpenShift Container Platform, on page 32](#)

Retrieve the installation file

Before starting the VM installation, you must retrieve the virtual machine installation file.

To retrieve the virtual machine installation file:

Procedure

- | | |
|---------------|--|
| Step 1 | Access Software Download platform. |
| Step 2 | Download the latest virtual machine image files for your hypervisor. Image files with the DPI option are also available. |

To verify that the file you just downloaded is healthy, it is recommended to use the SHA512 checksum provided by .

To do so (Windows users):

Step 3 Access download page.

Step 4 Download the file.

Step 5 Open a shell prompt such as Windows Powershell and use the following command to retrieve the file checksum:

```
Get-FileHash .\CiscoCyberVision-<TYPE>-<VERSION>.<EXT> -Algorithm SHA512 | Format-List
```

```
PS C:\Users\ > Get-FileHash .\Downloads\CiscoCyberVision-center-3.2.3.ova -Algorithm SHA512 | Format-List
Algorithm : SHA512
Hash      : 13388FB1A17110AF80D751AE7B450F2B29CCB4CB54F550F38B8E684236865EC9EDF7773FD05D1055C7F1EF76E68C2B8A96CFE69AB
          : 1B622E4B0B88EBB9E94DB16
Path      : C:\Users\ \Downloads\CiscoCyberVision-center-3.2.3.ova
```

Step 6 In the download page, mouse over the file and copy the SHA512 checksum.

Software Download

The screenshot shows the Cisco Software Download page. On the left, there is a search bar and buttons for 'Expand All' and 'Collapse All'. Below these, there is a list of releases with '3.2.3' selected. On the right, a 'Details' modal is open, displaying the following information:

- Description: VMware OVA (Center) - CiscoCyberVision-Center-3.2.3.ova
- Release: 3.2.3
- Release Date: 30-Apr-2021
- FileName: CiscoCyberVision-center-3.2.3.ova
- Size: 382.92 MB (401520640 bytes)
- MD5 Checksum: ad553391b4f43128ef922e1a98e7e58c
- SHA512 Checksum: 13388fb1a17110af80d751ae7b450f2b
- Release Notes for 3.2.3 Advisories

Step 7 Compare both checksums.

- If both checksums are identical it means the file is healthy.
- If the checksums do not match try to download the file again.
- If, after downloading the file again the checksums still don't match, please contact support.

ESXi

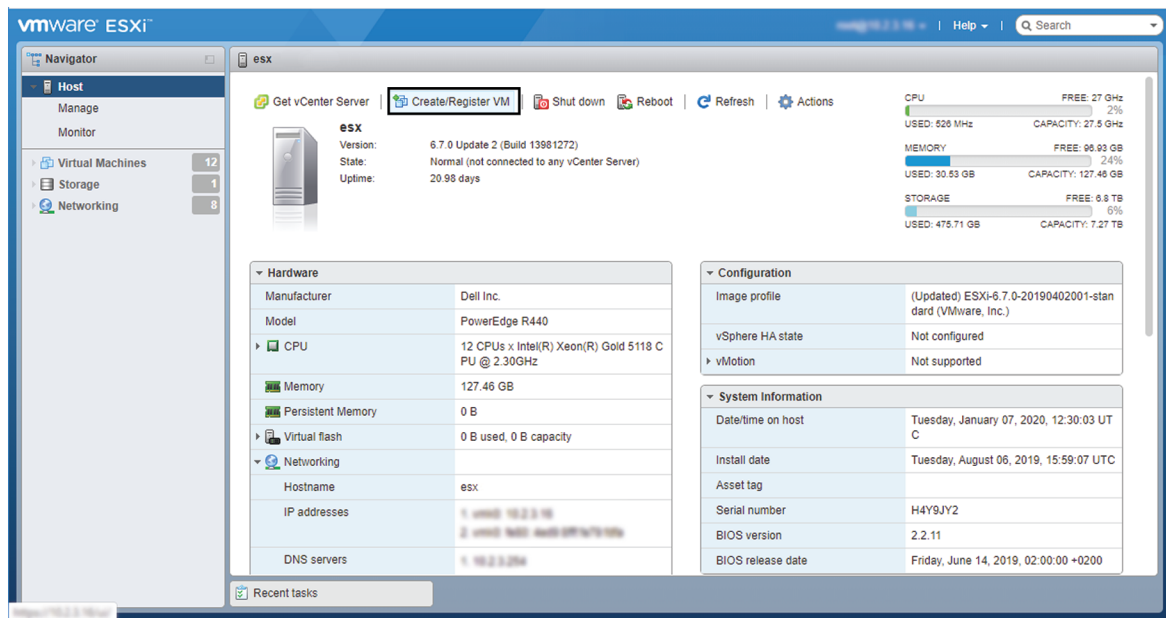
Create a Virtual Machine

Before taking the steps below to create a VM on ESXi, **you must set two network interfaces** (the Administration and the Collection network interfaces), and a third if deploying a Center with DPI (the DPI network interface), accordingly to the infrastructure of the network. To do so, refer to VMware ESXi documentation.

To create the Virtual Machine and deploy :

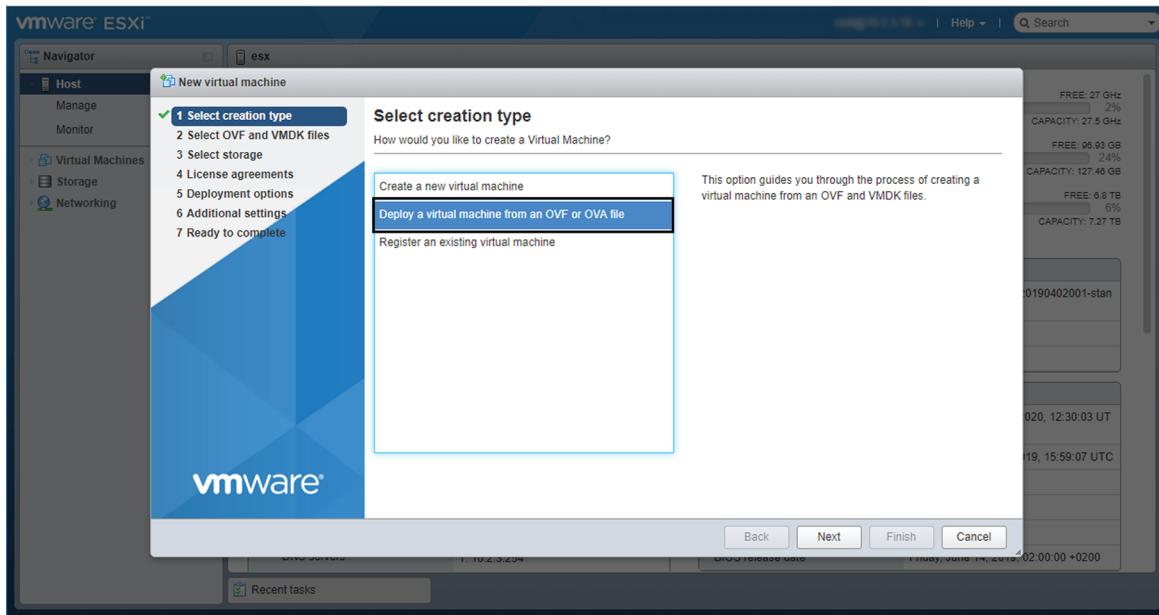
Procedure

- Step 1** Login to VMware ESXi.
- Step 2** Click Create/Register VM.

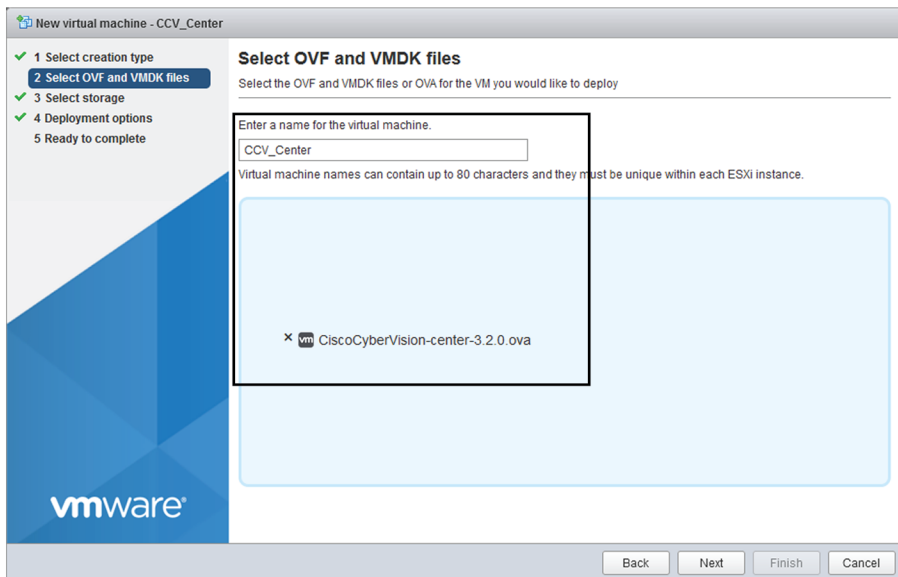


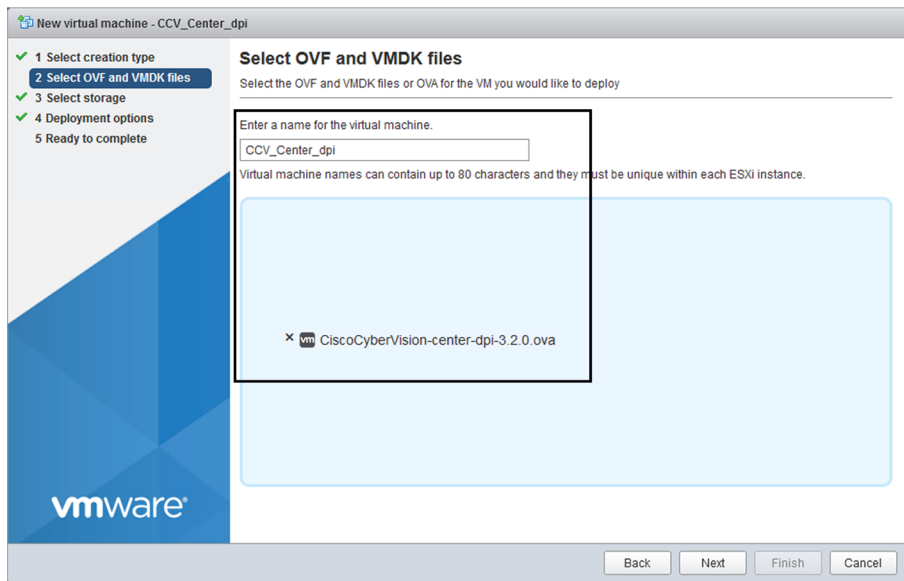
The wizard to create a new virtual machine opens.

- Step 3** Click Deploy a virtual machine from an OVF or OVA file.

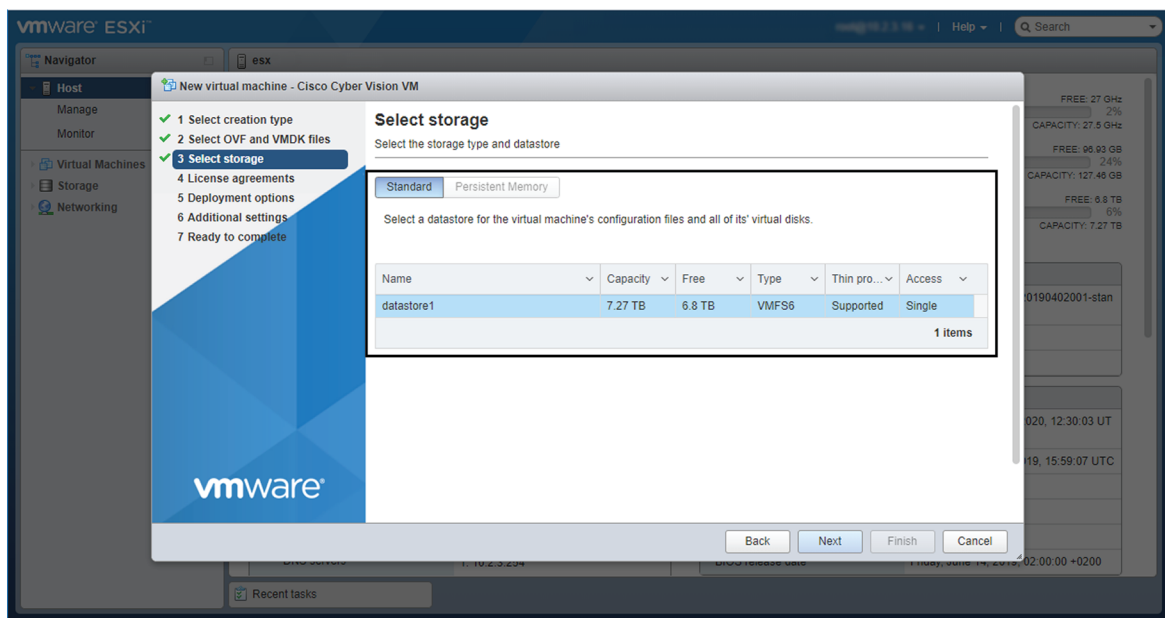


Step 4 Give a name to the virtual machine and select the OVA file. Select the DPI OVA file to enable the sensor function on the Center VM.





Step 5 Select a disk with sufficient storage. Refer to [Installation Prerequisites](#), on page 7.



Step 6 Map the network interfaces you have previously created to the VM's ports (1), as shown below:

- The Administration network interface as eth0.
- The Collection network interface as eth1.
- If deploying a Center with DPI, the DPI network interface as eth2.

Step 7 Set disk provisioning as Thin (2).

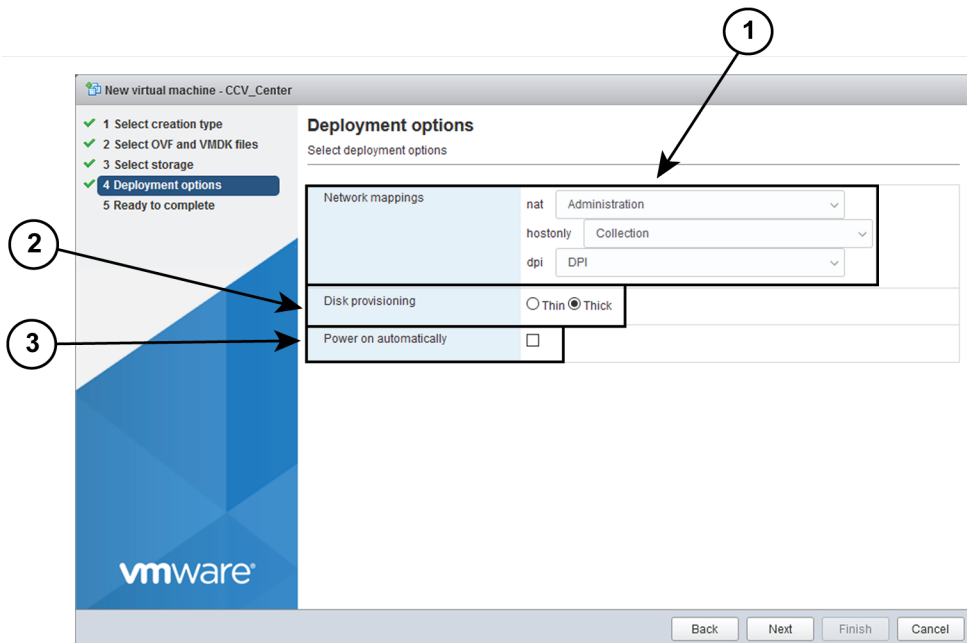
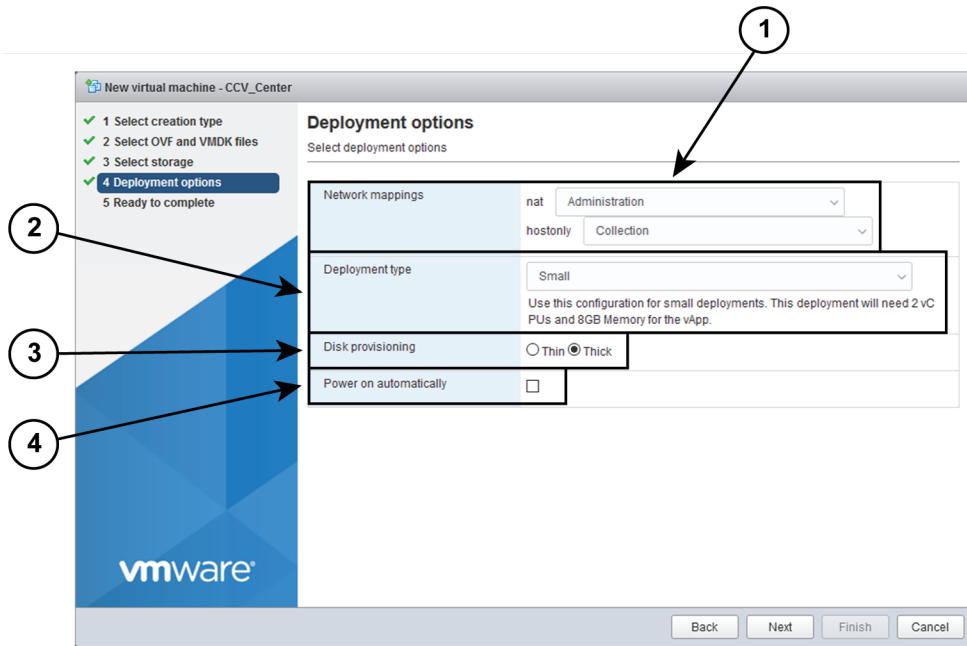
Step 8 Set the Deployment type as Small, Medium or Large **(3)**. The deployment size for an OVA DPI file is Large by default.

Small: Intel Xeon, 8 cores, 16GB RAM

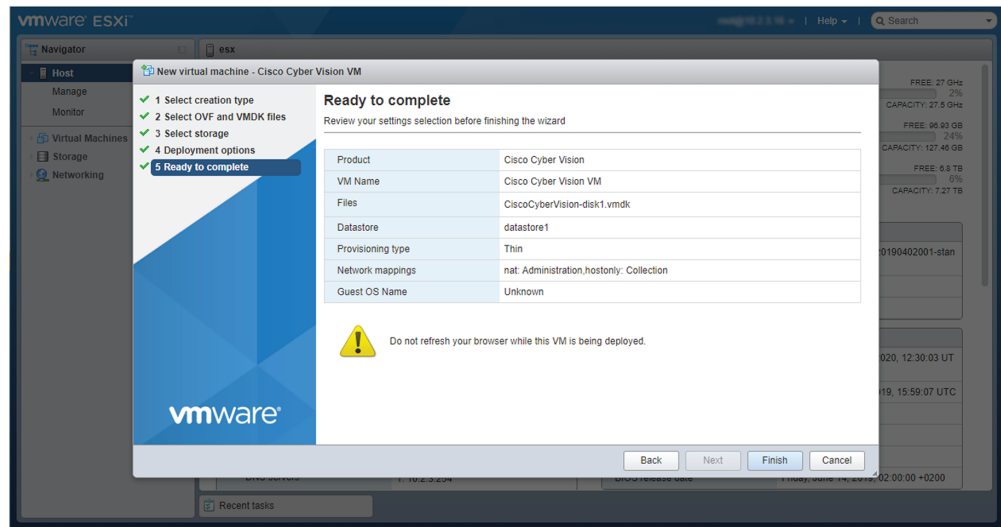
Medium: Intel Xeon, 10 cores, 32GB RAM

Large: Intel Xeon, 16-32 cores, 64GB RAM

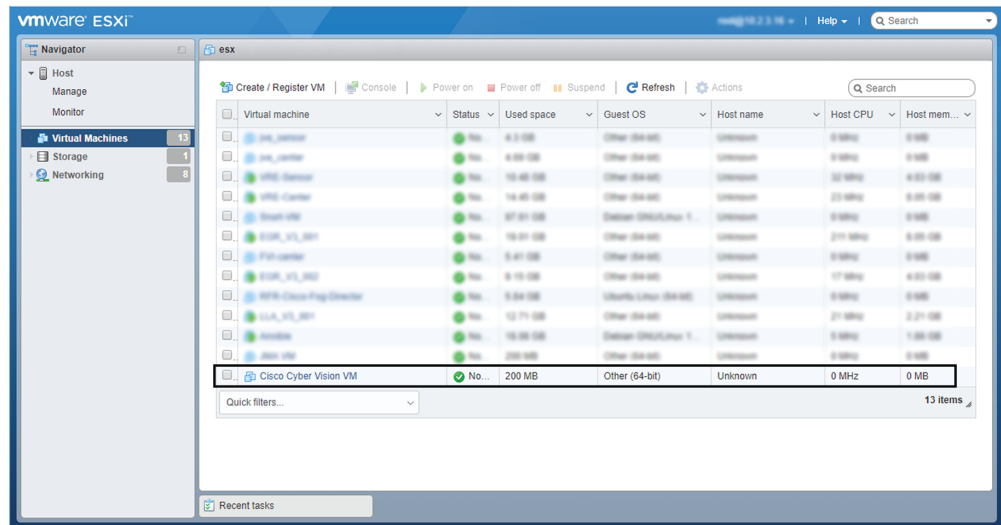
Step 9 Disable the virtual machine's automatic start **(4)**.



Step 10 Check the new VM's settings before clicking Finish.



Your new VM is displayed in the virtual machine list.

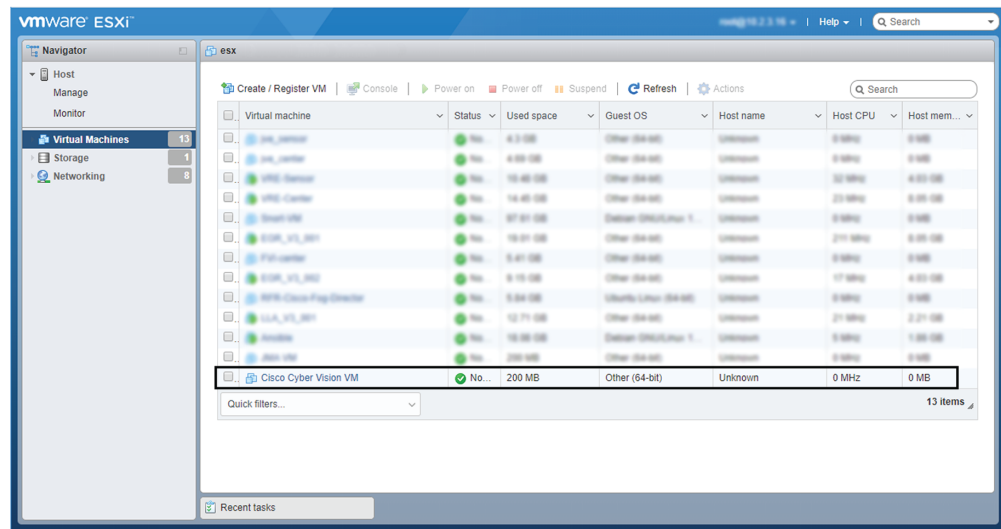


Boot the Virtual Machine

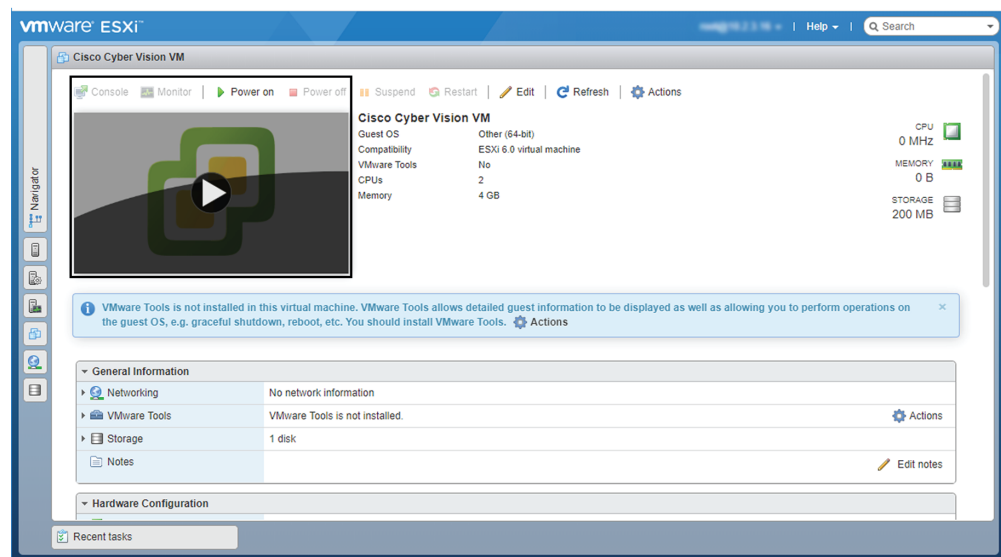
After creating the VM, you can proceed to its first boot.

1. Click the VM in the list.

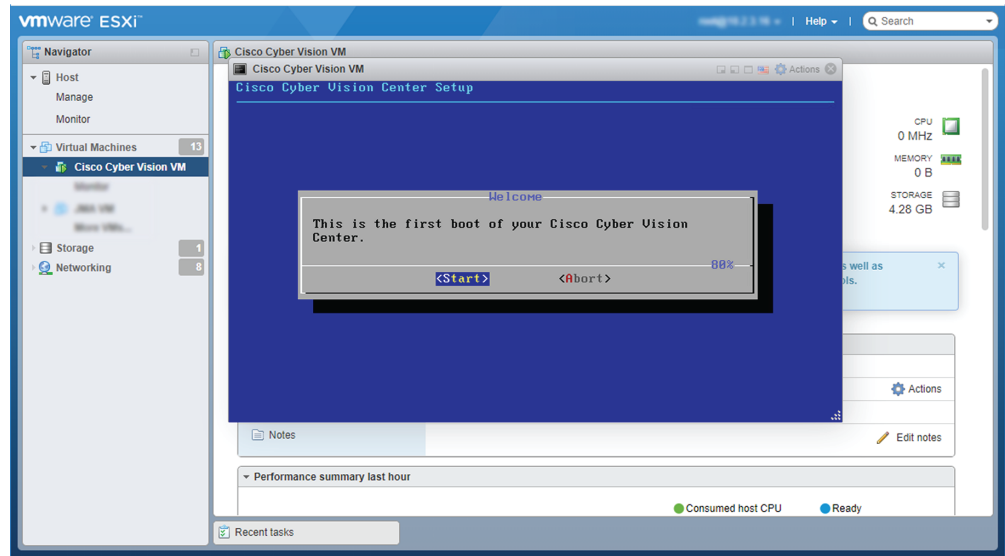
Boot the Virtual Machine



2. Power on the VM.



3. Wait a few moments for the VM initiation to complete. The following screen is displayed:



4. Press Ctrl+Alt to retrieve the control of your keyboard and mouse.
The Virtual Center is now ready for basic configuration.

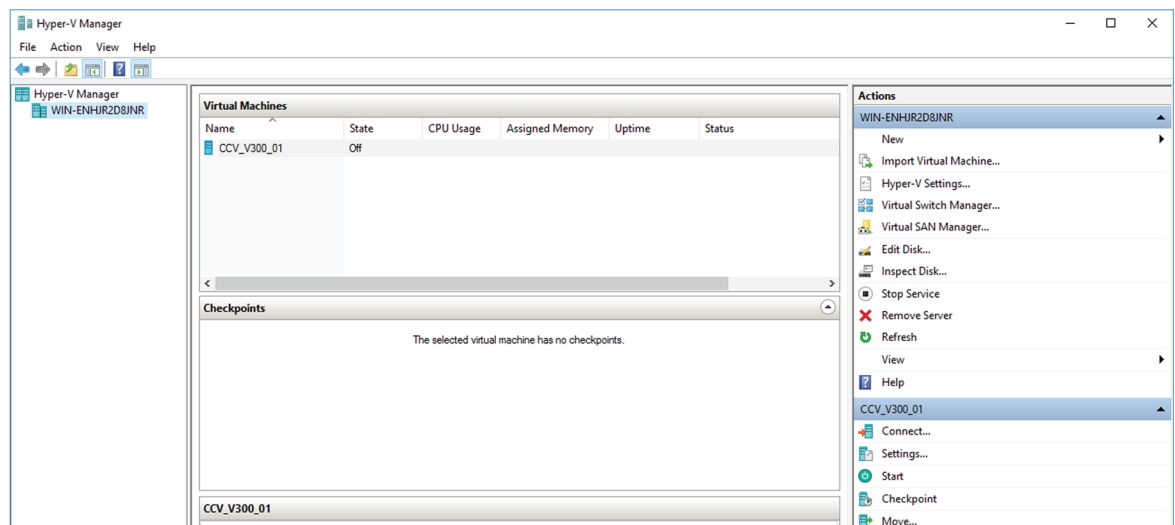
Hyper-V

Create a Virtual Machine

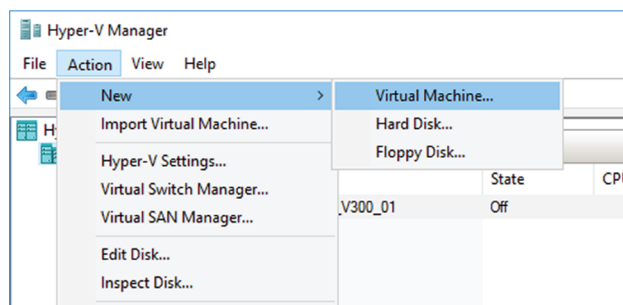
To create a new VM:

Procedure

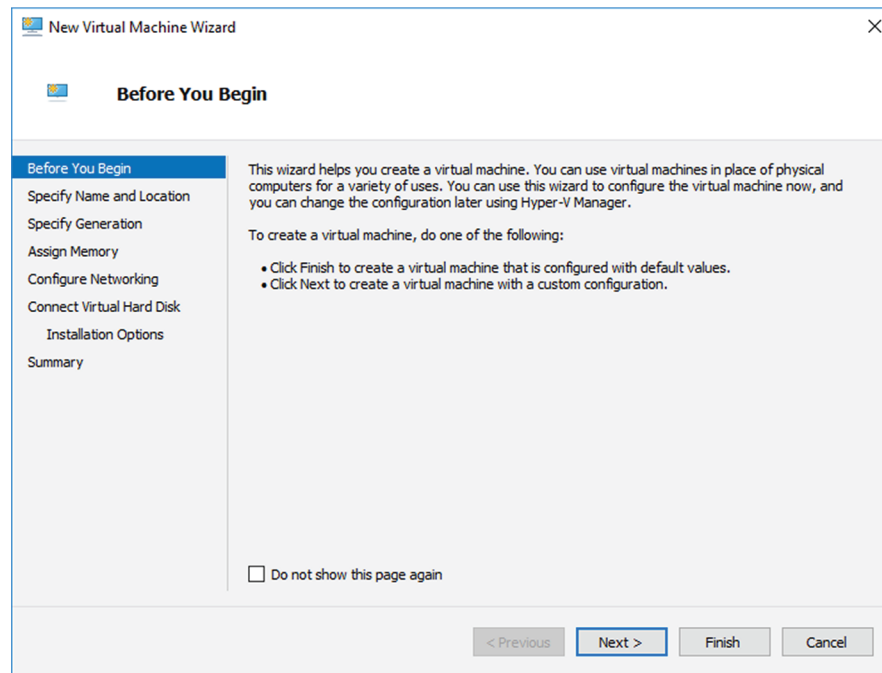
-
- Step 1** Open Hyper-V Manager.
The following home screen appears:



Step 2 Access the New Virtual Machine Wizard by clicking Action > New > Virtual Machine.



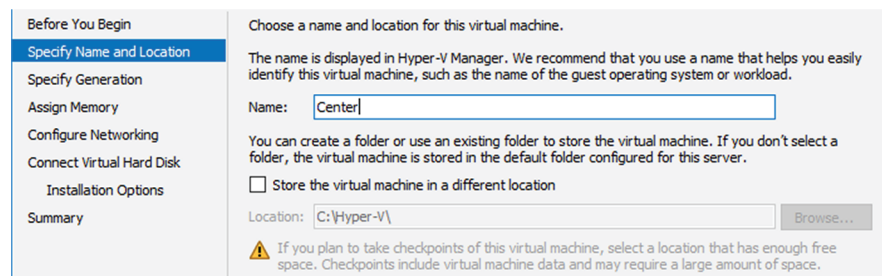
The New Virtual Machine Wizard is displayed.



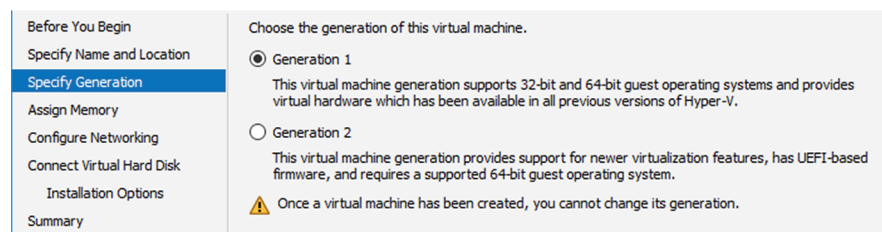
Step 3 Click Next to start.

Step 4 Give the new VM a name (e.g. 'Center').

Step 5 If necessary, give the Virtual Center a different location on the server than the one set by default. In any case, the location chosen must have enough remaining space in case you plan to create snapshots (i.e. VM backups).



Step 6 Set the VM as Generation 1.



Step 7 Assign memory to the VM.

Note

The minimum configuration required is 8192 MB.

Before You Begin	Specify the amount of memory to allocate to this virtual machine. You can specify an amount from 32 MB through 12582912 MB. To improve performance, specify more than the minimum amount recommended for the operating system. Startup memory: 8192 MB ☒ Use Dynamic Memory for this virtual machine. <i>i</i> When you decide how much memory to assign to a virtual machine, consider how you intend to use the virtual machine and the operating system that it will run.
Specify Name and Location	
Specify Generation	
Assign Memory	
Configure Networking	
Connect Virtual Hard Disk	
Installation Options	
Summary	

Step 8

Leave the network connection disconnected.

Before You Begin	Each new virtual machine includes a network adapter. You can configure the network adapter to use a virtual switch, or it can remain disconnected. Connection: Not Connected
Specify Name and Location	
Specify Generation	
Assign Memory	
Configure Networking	
Connect Virtual Hard Disk	
Installation Options	
Summary	

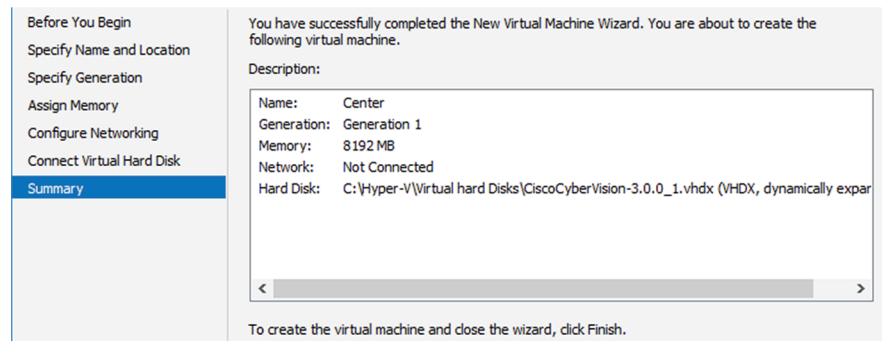
Step 9

Select 'Use an existing hard disk' and choose the VHDX file.

Before You Begin	A virtual machine requires storage so that you can install an operating system. You can specify the storage now or configure it later by modifying the virtual machine's properties. ☐ Create a virtual hard disk Use this option to create a VHDX dynamically expanding virtual hard disk. Name: Center.vhdx Location: C:\Hyper-V\Virtual hard Disks\ Browse... Size: 127 GB (Maximum: 64 TB) ☒ Use an existing virtual hard disk Use this option to attach an existing virtual hard disk, either VHD or VHDX format. Location: C:\Hyper-V\Virtual hard Disks\CiscoCyberVision-3.0.0_1.vhdx Browse... ☐ Attach a virtual hard disk later Use this option to skip this step now and attach an existing virtual hard disk later.
Specify Name and Location	
Specify Generation	
Assign Memory	
Configure Networking	
Connect Virtual Hard Disk	
Installation Options	
Summary	

Step 10

Click 'Finish' to create the VM and close the wizard.



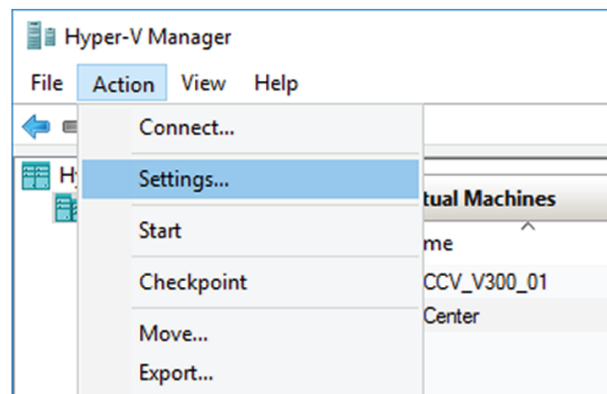
The Virtual Center created is displayed inside Hyper-V Manager home screen.

Configure the disk size

To configure the disk size:

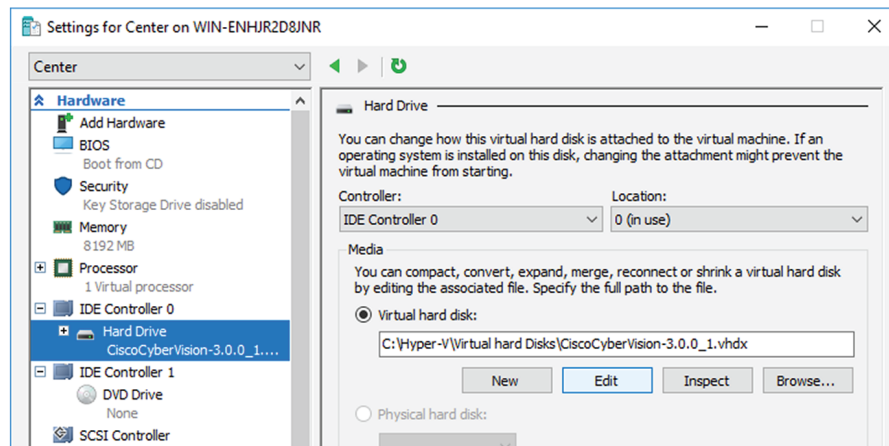
Procedure

- Step 1** In the Hyper-V Manager select the Center.
- Step 2** Click **Action** > **Settings**.



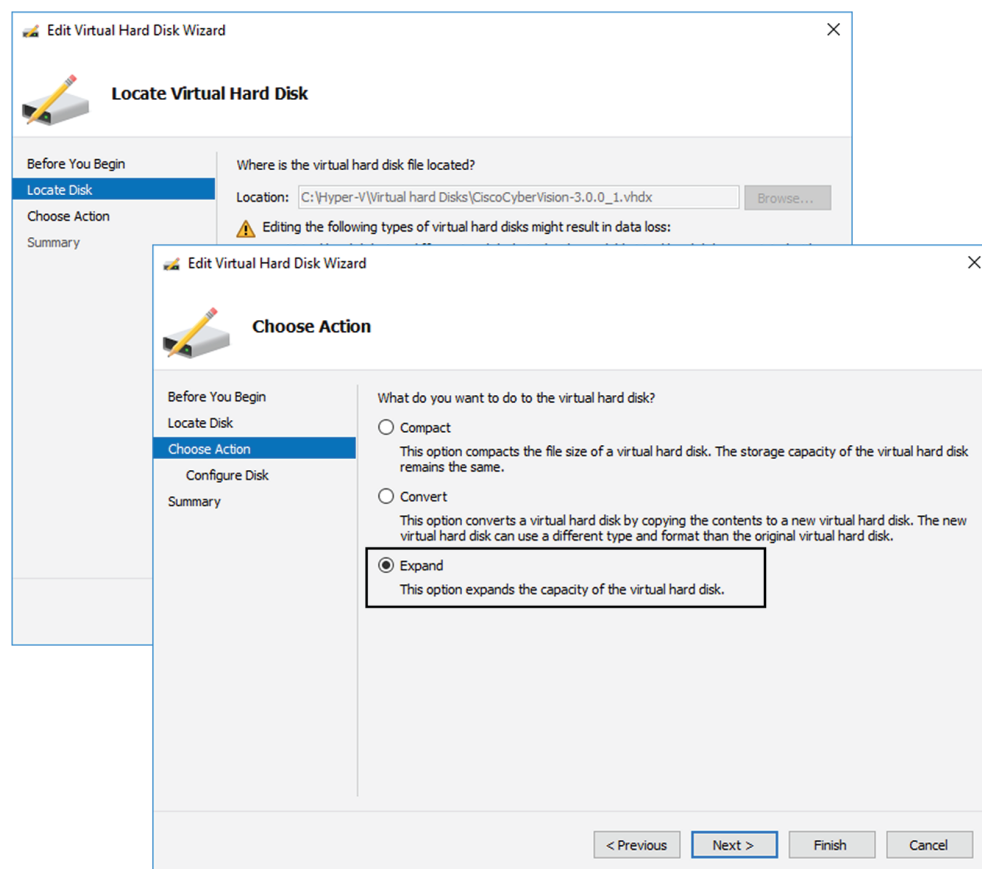
- Step 3** Click **Hard Drive**, then **Edit**.

Configure the disk size



The Edit Virtual Hard Disk Wizard displays.

Step 4 Click **Next** to proceed until the Choose Action tab.



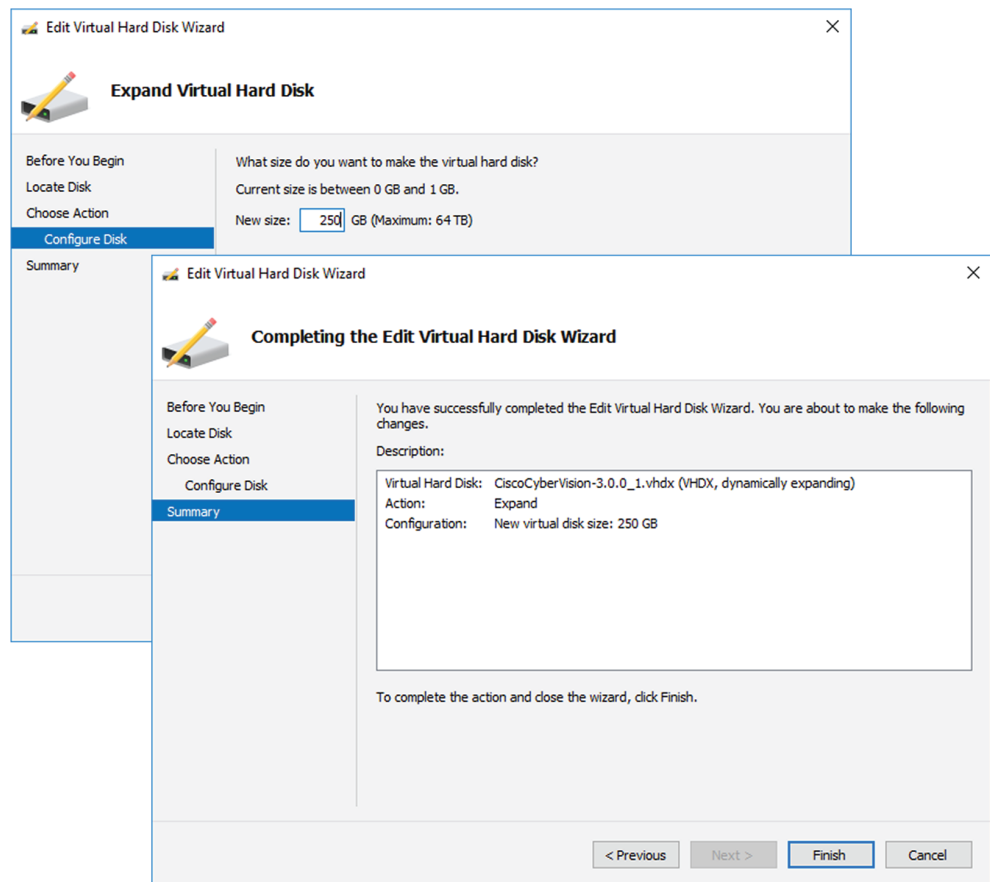
Step 5 As you are on the Choose Action tab select the **Expand** option.

Step 6 Configure a new size for the virtual hard disk.

It is recommended:

- that you set the minimum size at 100GB for a demo installation with small amounts of data.
- that you set the minimum size at 250GB for a cartography.
- that you set the minimum size at 800GB for a Center with sync or 1.5TB for a Global Center for a production environment.

The size you set here is a minimum. The virtual drive will expand as data is written on the virtual disk.



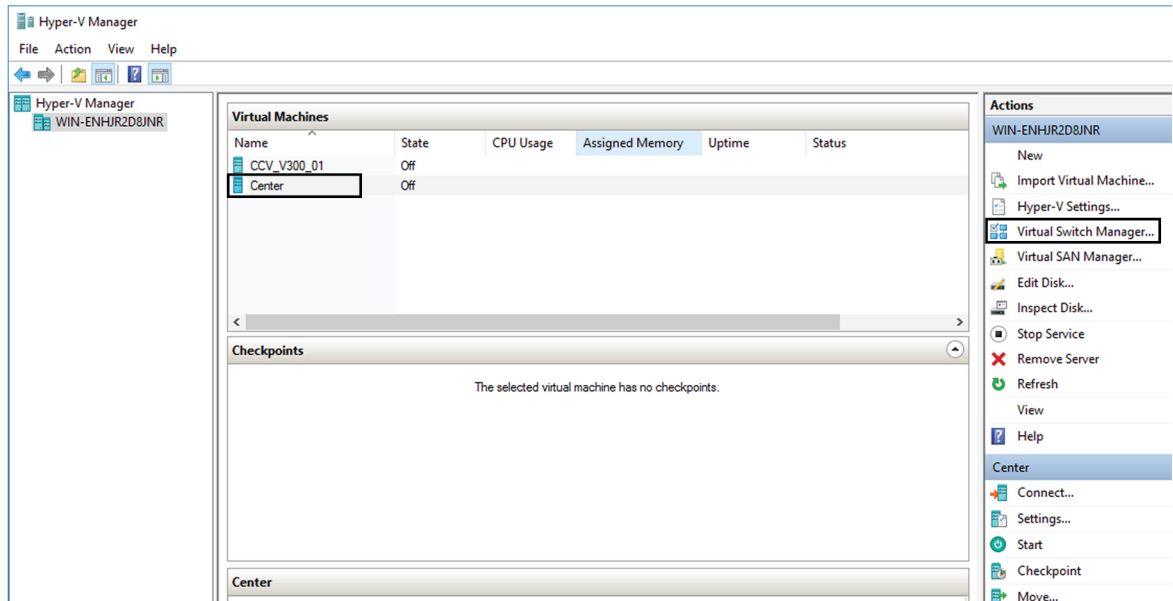
Step 7 Click **Finish**.

Create the network interfaces

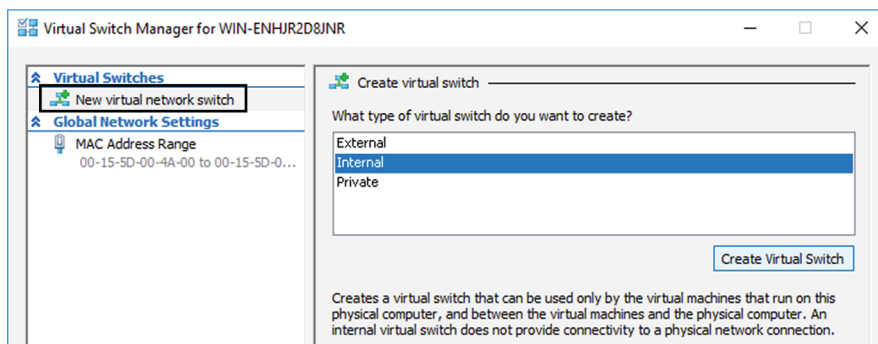
To create the Admin and Collection network interfaces:

Procedure

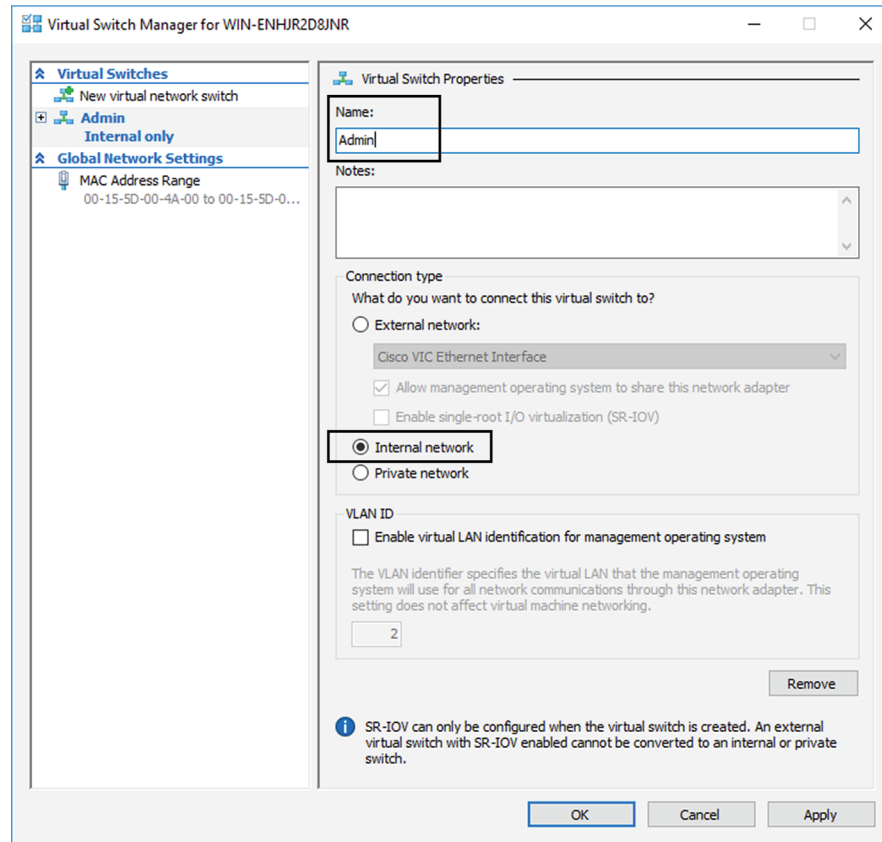
- Step 1** Select the Center.
- Step 2** On the Actions menu, open the Virtual Switch Manager.



The Virtual switch manager opens.

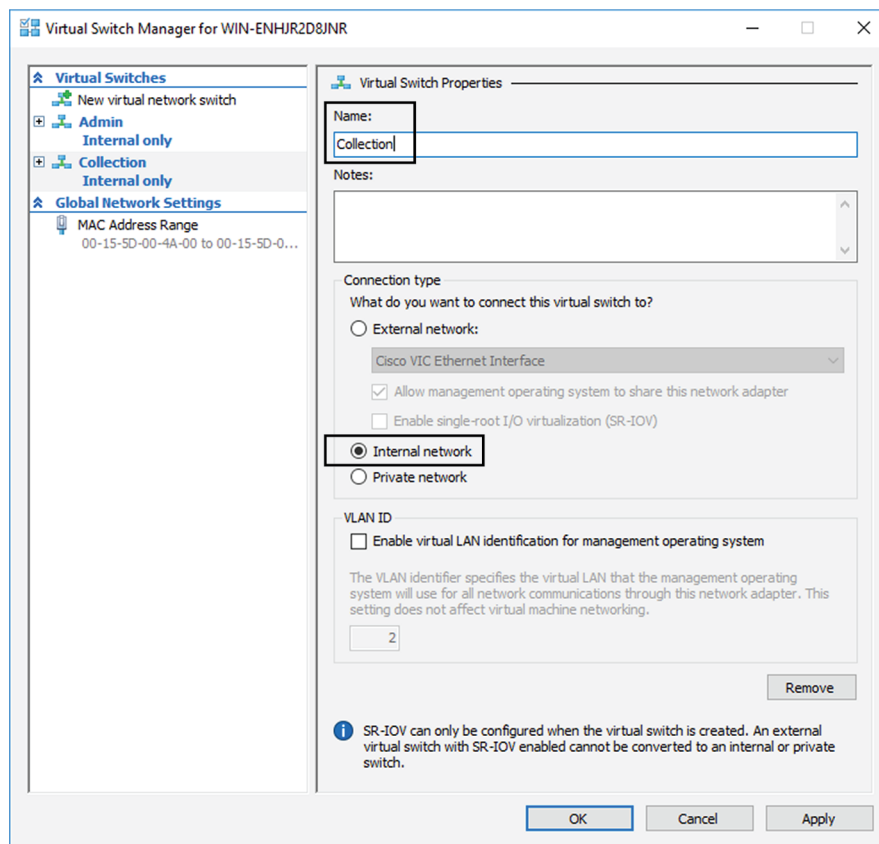


- Step 3** Click 'New virtual network switch'.
- Step 4** The new virtual switch displays.
- Step 5** Name it 'Admin'.
- Step 6** Select 'Internal network'.



Step 7 Create a second virtual switch and name it 'Collection'.

Step 8 Select 'Internal network'.



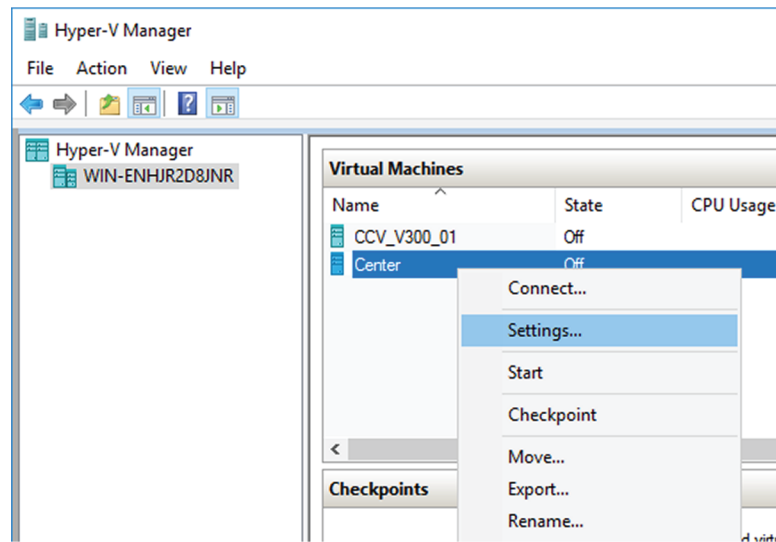
Map the network interfaces

To add a network card:

ICS CyberVision needs two network adapters (i.e. network card) to which the Admin and Collection network interfaces will be assigned. Each new VM includes a network card when created which is available within the hardware list. Therefore, you need to create another one during this step.

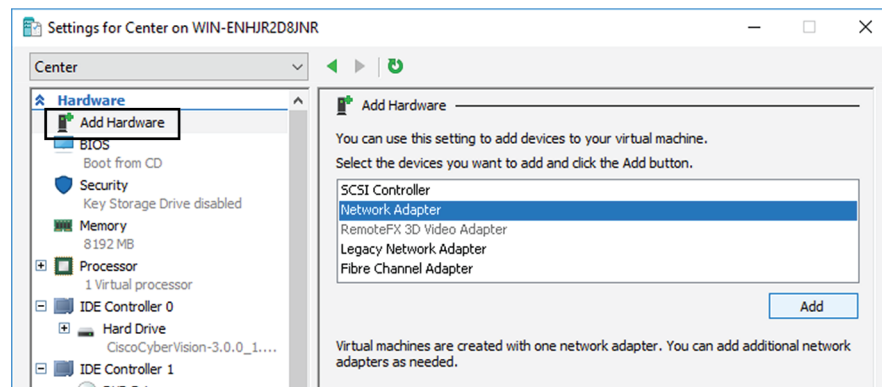
Procedure

Step 1 Right click the Center and click again 'Settings'.



The settings window for the Virtual Center is displayed.

- Step 2** Click 'Add Hardware'.
- Step 3** Select 'Network Adapter'.
- Step 4** Click 'Add'.



The second network adapter needed is created. Now you need to map each network adapter to a Virtual Switch.

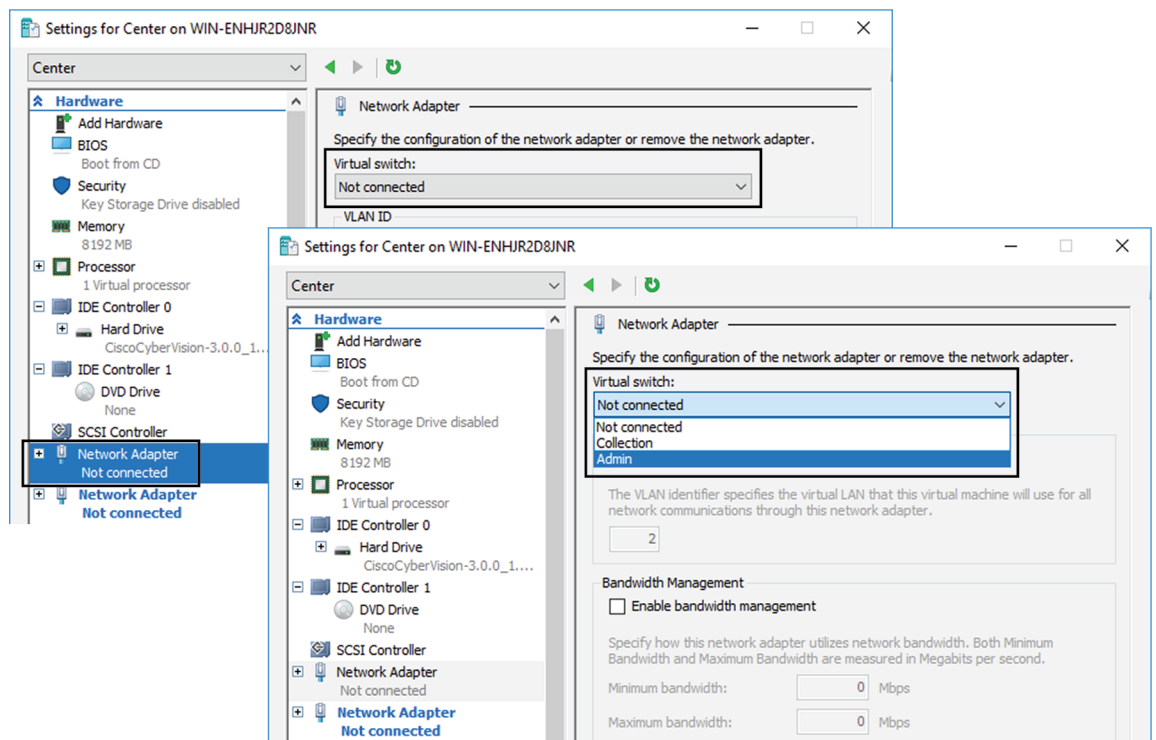
To proceed to the network mapping:

- Step 5** Select the first network adapter.
- Step 6** Select 'Admin' as Virtual Switch.

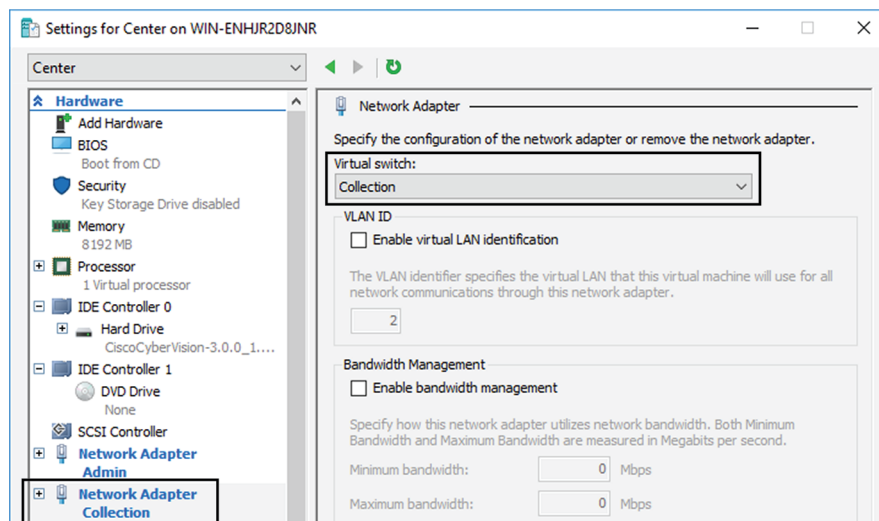
Note

You must configure network interfaces in order of appearance inside the network list to avoid confusion:

- The first network card as the Administration network interface (eth0).
- The second one as the Collection network interface (eth1).



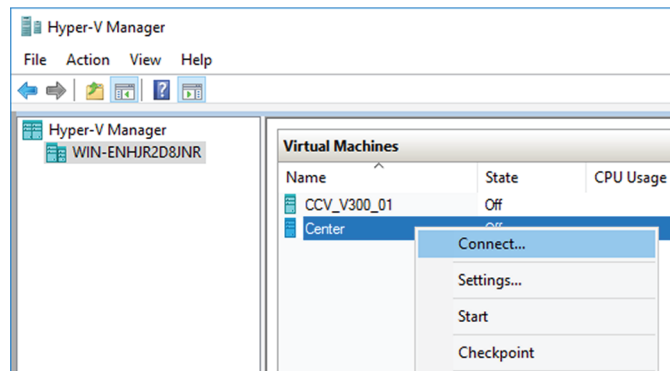
Step 7 Repeat the previous action for the second network adapter and select 'Collection' as Virtual Switch.



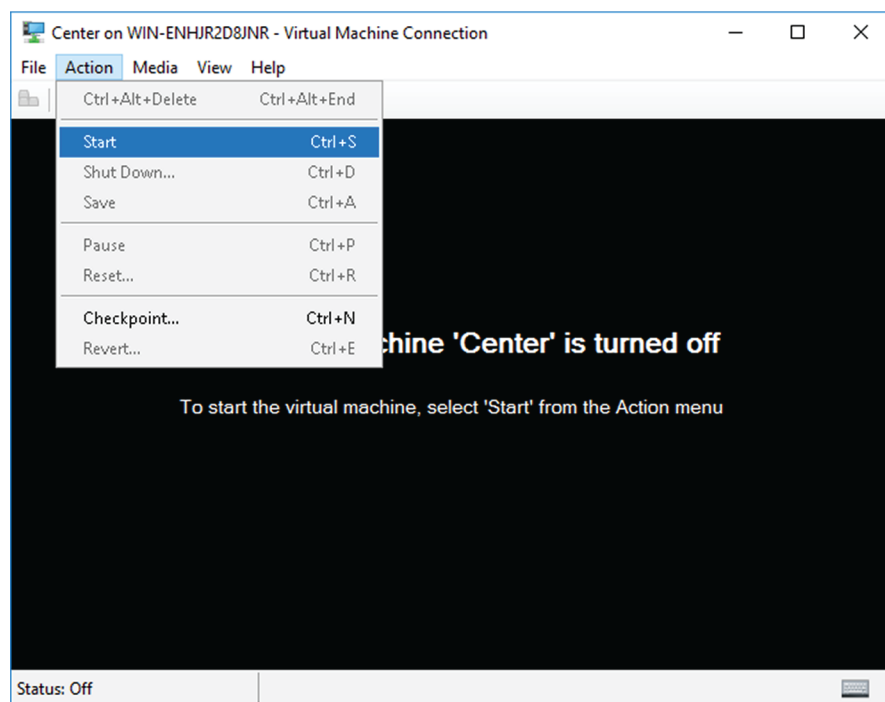
Boot the Virtual Machine

You can now proceed to the Virtual Center first boot.

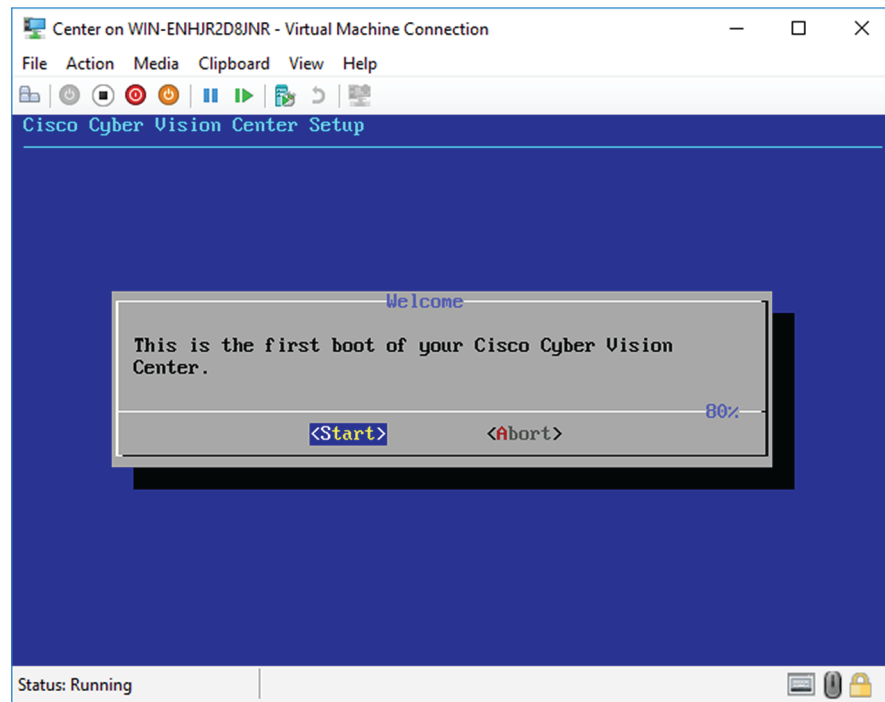
1. Click Center on Hyper-V Manager and click 'Connect'.



2. Start the Virtual Center.



Once the VM configuration completed successfully, the following screen appears:



Note To retrieve the control of your keyboard and mouse, press Ctrl+Alt.

The Virtual Center is now ready for basic configuration.



Note Keeping your Virtual environment safe and clean. Once the VM first boot has completed successfully, recommends to shut down the Virtual Center and delete the Virtual Disk from Hyper-V hardware list. Keeping interfaces to the minimum lowers possible access doors for attackers.

Nutanix

Create virtual machines

Deploy a new virtual machine (VM) using a pre-uploaded OVA file in Nutanix Prism Central.

Use this task when you need to instantiate a Center VM for your environment.

For detailed guidance on setting up the network interfaces, refer to the official Nutanix documentation.

Before you begin

- Confirm that you have administrator access to Nutanix Prism Central.

- Ensure that administration, collection, and (if needed) DPI network interfaces are configured.
- Obtain the Center VM OVA file and upload it to Prism Central if not already present.
- Review the virtual machine sizing and hardware requirements in the official documentation.

Procedure

- Step 1** Log in to the Nutanix Prism Central as an administrator.
- Step 2** On the left sidebar, select **Compute > OVAs** .
- All your uploaded OVA files are listed in the right pane. To upload a new one, click **Upload OVA** .
- Step 3** Select an OVA file by checking the box next to its name. Then, click the **Actions** menu and choose **Deploy as VM** .
- The deployment wizard guides you through these configuration stages for your VM: Configuration, Resources, Management, and Review.
- Step 4** In the **Configuration** stage:
- a. Enter a name for the VM in the **Name** field and optionally enter a description in the **Description** field.
 - b. Enter the hardware details in the **VM Properties** section, and click **Next** . For more details, see the [Installation Prerequisites, on page 7](#) .
- Step 5** In the **Resources** stage:
- a. In the **Disks** section, modify the disk size to suit your requirements. The default value is 250 GB. For more details, see the "Virtual Machine Sizing" section in [Installation Prerequisites, on page 7](#) .
 - b. In the **Networks** section, configure a VLAN for the management and collection interfaces.
- Step 6** In the **Management** stage:
- a. (Optional) Enable the default storage policy by checking **Enable Default Storage Policy** . This allows you to manage the storage configurations across all VM disks.
 - b. Select your timezone from the **Timezone** drop-down list, and click **Next** .
- Step 7** In the **Review** stage:
- a. Review the settings and modify them if required by clicking **Edit** next to the section you want to modify.
 - b. Click **Create VM** .
- The new VM is listed under **Compute > VMs** .
- Step 8** (Optional) To modify VM settings at any time, select the VM and choose **Update** from the **Action** drop-down list.

The new virtual machine is deployed and will appear in **Compute > VMs** in Nutanix Prism Central.

What to do next

- Verify the VM status and network connectivity.
- Update VM settings if adjustments are required.

Boot the Virtual Machine

You can now proceed to boot the virtual machine.

Follow these steps to complete the booting process::

1. Log in to the Nutanix Prism Central.
2. On the left sidebar, select **Compute > VMs**.
3. On the right pane, select the VM you want to boot, and choose **Power Operations > Power On** from the **Actions** menu.
4. Wait a few moments for the VM initiation to complete. A green dot appears to the left of the VM name, indicating that the VM is powered on.

RedHat OpenShift Container Platform

By deploying Cisco Cyber Vision Center on RedHat OpenShift Container Platform, you can manage both your containerized applications and the Cyber Vision Center from a single, unified platform—the OpenShift console. This simplifies operations, reduces the need for multiple management tools, and provides a consistent operational model across your entire environment.

Configure a boot volume

Configure a bootable storage volume using a `qcow2` image so that it can be attached to virtual machines within the RedHat OpenShift Container Platform.

This task is performed when you want to create a new boot volume for virtual machines (VMs) in OpenShift. A boot volume, created from a `qcow2` disk image, contains the operating system and essential files required to boot and run a VM. This step is typically necessary when deploying new virtual machines with specific OS images or custom configurations.

Before you begin

- Ensure you have access credentials for the RedHat OpenShift Container Platform web console with appropriate permissions to manage virtualization and volumes.
- Download the required `qcow2` image to your local workstation from the [Cisco Cyber Vision software download](#) site.

Follow these steps to configure a bootable volume:

Procedure

-
- Step 1** Log in to the RedHat OpenShift Container Platform web console and click **Virtualization > Bootable volumes > Add volume > With form**.
- Step 2** In the **Add volume** window:
- Click **Upload** and select the `qcow2` image from your machine.
 - Enter a unique name in the **Volume name** field.
 - From the **Preference** drop-down list, choose the operating system that matches the `qcow2` image.
 - Click **Save**.
-

The boot volume is created and available for use by virtual machines.

What to do next

After creating the bootable volume, you can use the RedHat OpenShift Container Platform web console to create or deploy a virtual machine that uses this volume as its boot disk.

Create virtual machines

Deploy a Cisco Cyber Vision virtual machine on RedHat OpenShift using a custom `qcow2` image.

Use this task to add a new VM to your OpenShift cluster. This is necessary for running Cyber Vision nodes or similar workloads that require custom images

Before you begin

- Ensure that `qcow2` image is added as a bootable volume to the OpenShift web console.
- Verify that your OpenShift cluster is running version 4.19 or later.

Procedure

-
- Step 1** Log in to the RedHat OpenShift Container Platform web console and click **Virtualization > VirtualMachines > Create > From InstanceType**.
- Step 2** On the **Create new VirtualMachine** page, under **Select volume to boot from**, choose the bootable volume (PVC/DataVolume) that contains the `qcow2` image.
- Step 3** In the **Select InstanceType** section, select a hardware profile (for example, *General Purpose*). Select a type that meets the CPU and memory requirements of your workload.
- Step 4** In the **VirtualMachine Details** section, enter a name for the VM in the **Name** field. Optionally set the disk size, storage class, and public SSH key.

Note

If you use a `qcow2` boot volume, ensure the requested disk size is compatible with the image.

- Step 5** (Optional) To override default resources or other settings, click **Customize VirtualMachine** and edit CPU, memory, or other configuration values.

Step 6 Click **Create VirtualMachine**.**Note**

By default, the VM uses the Pod network. To attach a different network or additional interfaces, open the created VM > **Configuration** > **Network** > **Add network interface** and add or edit interfaces there.

The virtual machine is listed in the **Virtualization** > **VirtualMachines** section.

What to do next

After the VM is created and powered on, configure the Cisco Cyber Vision Center on the virtual machine.



CHAPTER 5

Configure the Center

You will need to complete two steps to configure the Center:

1. The basic Center configuration through a VGA display and a keyboard or a console, to:
 - Set the Center and the sensor passwords.
 - Synchronize the Center to the NTP server.
 - Configure the Administration and Collection interfaces (n/a for a Global Center or a Center using a single interface).
 2. The configuration, through a browser, to:
 - Create an admin account.
 - Configure the Center's data synchronization (Global Center and synchronized Centers only).
- [Basic Center configuration, on page 35](#)
 - [configuration, on page 47](#)

Basic Center configuration

This step will allow you to configure the Center network settings before using it with the user interface.

Required information:

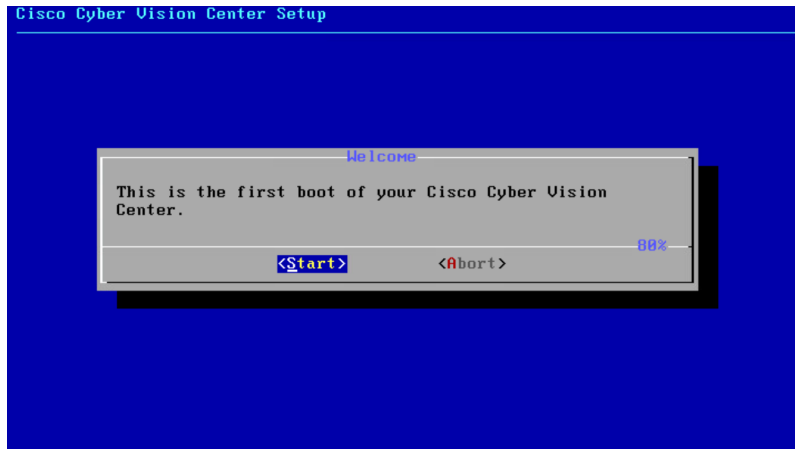
- Local NTP and DNS IP addresses.
- The Collection interface network address (n/a for a Global Center or a Center using a single interface).

In the case of manual Administration network interface configuration:

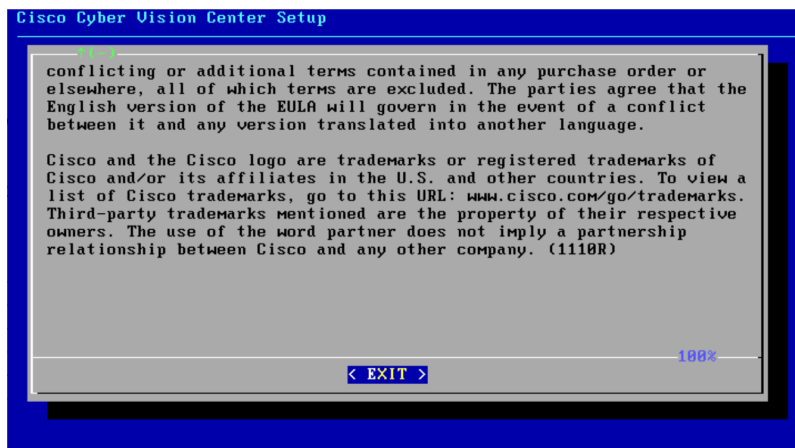
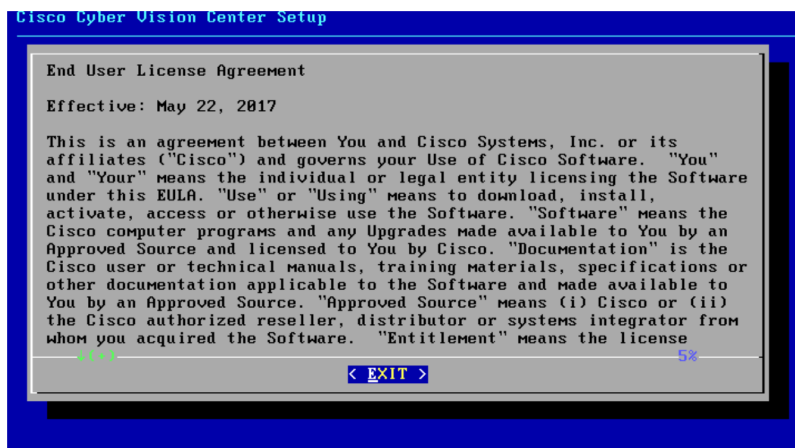
- Its IP address.
- Its netmask (in a two-number format, e.g. 192.168.1.0/24).
- Its default gateway (to reach devices located outside the local network).

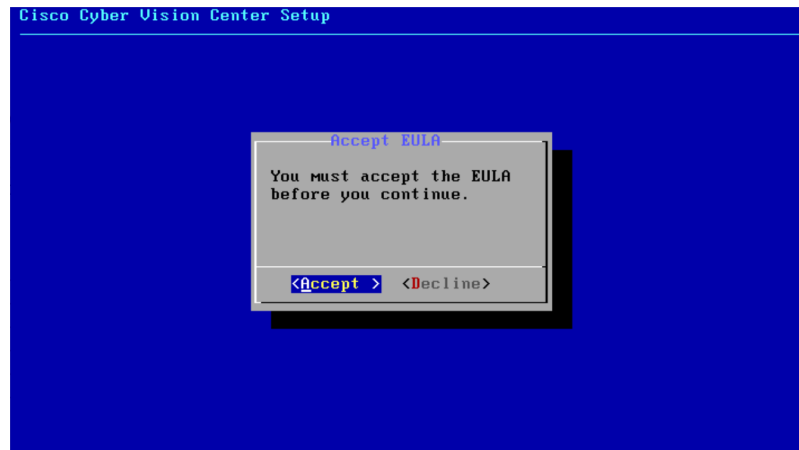
Access the basic Center configuration

The Center wizard is displayed on your screen as you power on the Center. Enter Start to start configuring the Center.



Accept the End User License Agreement

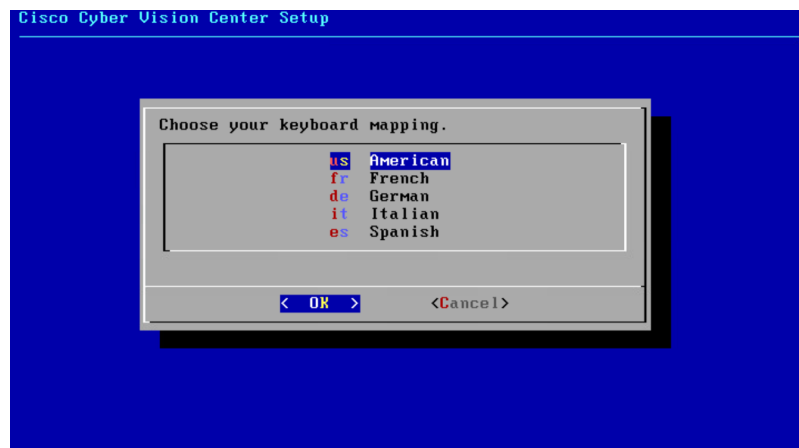




Select the language to match your keyboard



Note By default, the system is configured to work with a US QWERTY keyboard.

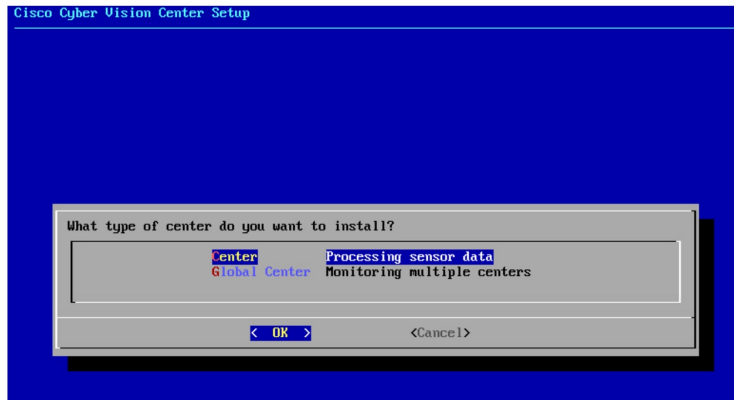


Select the Center type

During this procedure you will choose which type of Center to install. There are two types of Centers:

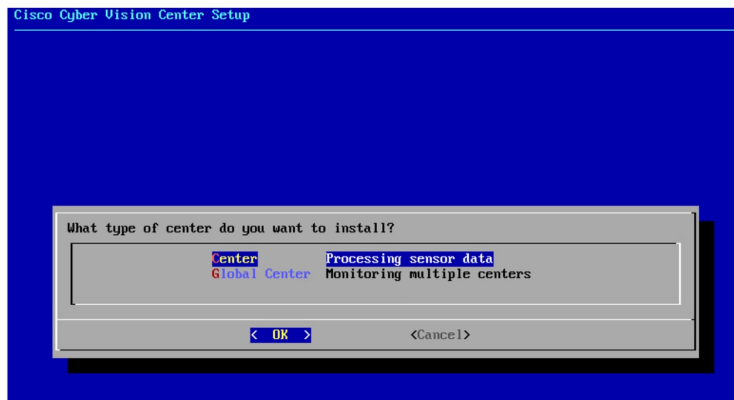
- A **Center** receives metadata from sensors and store them into an internal database (Postgresql). It can be standalone or synchronized with a Global Center. A Center with sync is similar to a standalone Center from a functionality point of view, except for the link to a Global Center. You must install Centers with sync **after** the Global Center. This will enable the system to enroll and start pushing events to the Global Center.
- A **Global Center** introduces a centralized architecture which collects all industrial insights and events from synchronized Centers and aggregates it on a single global point of view. It will also allow you to manage the knowledge database (KDB) and upgrade the whole platform.

Select the type of Center you want to install.



Center

If installing a Center, select the first option.

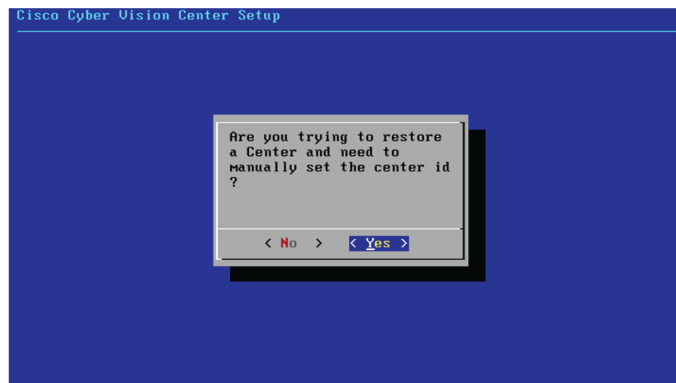


Then, you will have the opportunity to set the Center id. It can be used in case of Center restoration to reuse the same id previously set in the Global Center. Thus, some data can be retrieved.

If you're installing the Center for the first time, this id will be automatically generated. Select No. You will be directed to the next step.



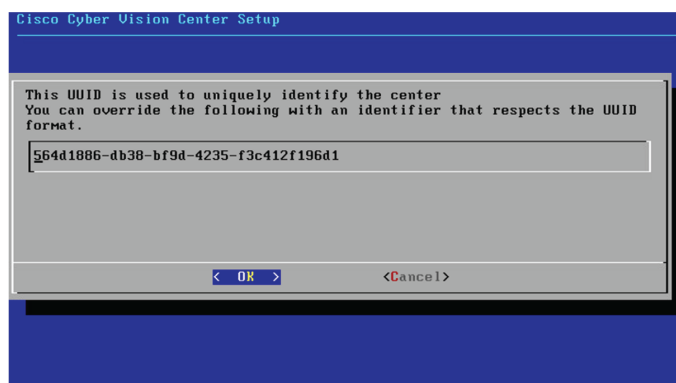
If you're reinstalling the Center and want to restore it, select Yes.



Use the following command from the Global Center's CLI to get a list of all Center's id:

```
sbs-db exec "select name, id from center"
```

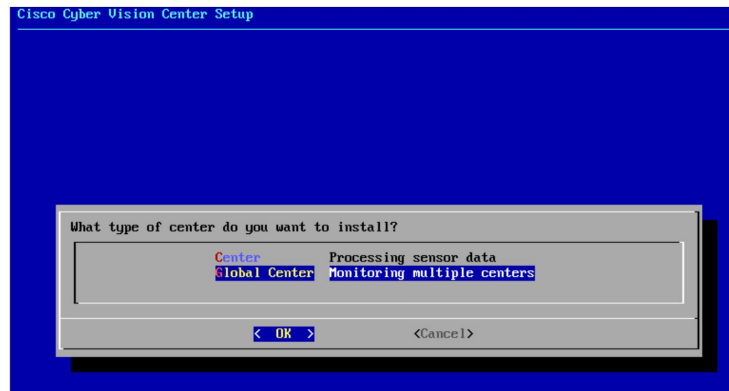
Type the id into the basic Center configuration UUID field.



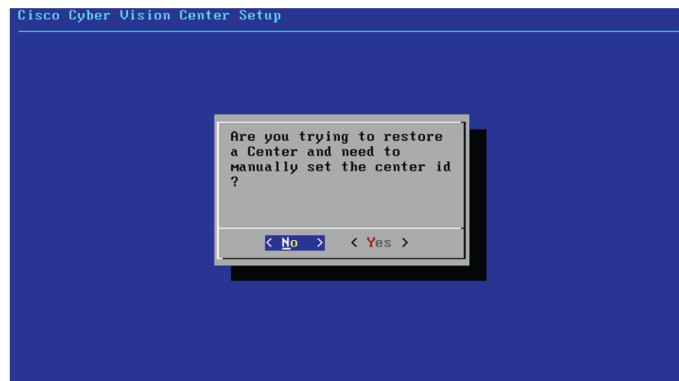
Click OK. You will be directed to the next step.

Global Center

If installing a Global Center, select the second option.



As this step does not apply to a Global Center, select No.



You will be directed to the next step.

Configure the administration network interface

Change the default administration network interface configuration to fit your environment.

The administration network interface supports IPv4 addressing or both IPv4 and IPv6 addressing. You can configure the interface using DHCP or enter the settings manually.

- IPv4: Communication with the sensors will still be done using IPv4.
- IPv6: Cyber Vision uses IPv6 only on the access interface.

Procedure

Step 1 Select either **IPv4** or **IPv4/IPv6** for the administration network interface.

Step 2 If you select **IPv4**:

- Select **DHCP** to allow the system to receive configuration from a DHCP server.
- Select **Manual** to enter the IP address, the netmask (in two-number format), and the gateway.

Step 3 If you choose **IPv4/IPv6**:

- a. First, configure **IPv4** as described earlier.
- b. Then, for **IPv6**:
 - Select **DHCP** to obtain configuration from a DHCP server.
 - Select **Manual** to enter the IP address, the prefix length, and the gateway. The system uses router advertisements.
 - Select **Manual no RA** to manually enter the IP address, the prefix length, and the gateway. This option ignores router advertisements.

The administration network interface is configured using your chosen addressing and assignment method.

Network interface deployment options

The network interface configuration defines how Cisco Cyber Vision Center connects to your network, supporting both single and dual-interface modes to address different security and deployment needs.

- Single-interface configuration combines administration and collection functions on a single interface (eth0).
- Dual-interface configuration enhances security by physically segregating administrative access (eth0) from sensor data collection (eth1).

The following table compares the dual-interface and single-interface configurations.

Table 1: Comparison of dual-interface and single-interface configurations

Attributes	Dual-Interface	Single-Interface
Number of interfaces	2 (eth0, eth1)	1 (eth0)
Traffic separation	Yes (administration and collection are isolated)	No (all traffic on single interface)
Security level	Higher	Lower
Recommended use	Standard deployments	Limited infrastructure

Set interfaces (dual or single)

This step is not applicable to a Global Center.

Regarding a Center, it is possible to:

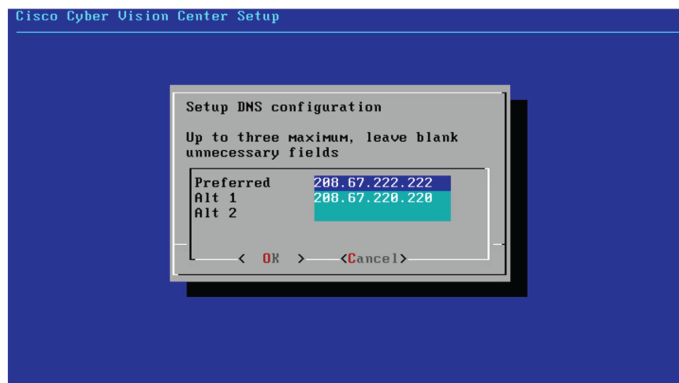
- Use a single interface. In this case, select the Single option.
- Set the Administration and Collection network interfaces on two distinct interfaces (recommended for security). In this case, select the Dual option.



If you choose the Dual option, you will later be directed to: [Configure the Center's Collection network interface, on page 45](#).

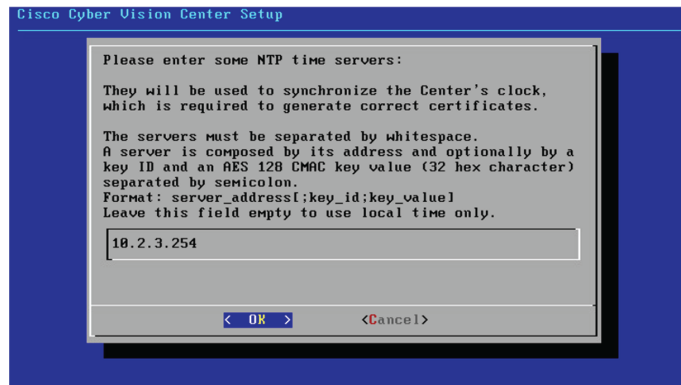
Configure the Center's DNS

Type a DNS server address and optional fallbacks.

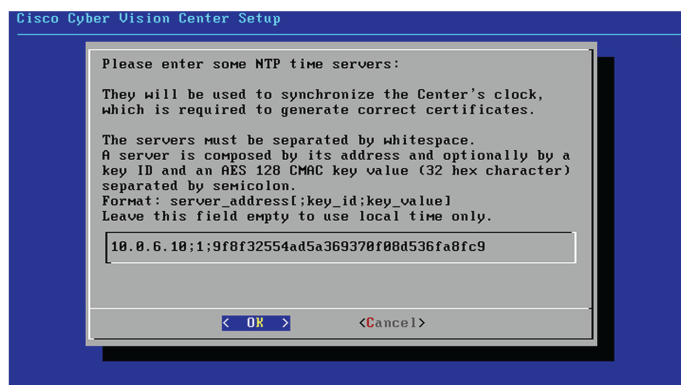


Synchronize the Center and the sensors to NTP servers

Enter IP addresses of local or remote NTP servers (gateway configuration needed) to synchronize the Center and the sensors with a clock reference. Each address must be separated by a space.



Optionally, add a key ID and an AES A28 CMAC key value separated by a semicolon with the corresponding NTP server.

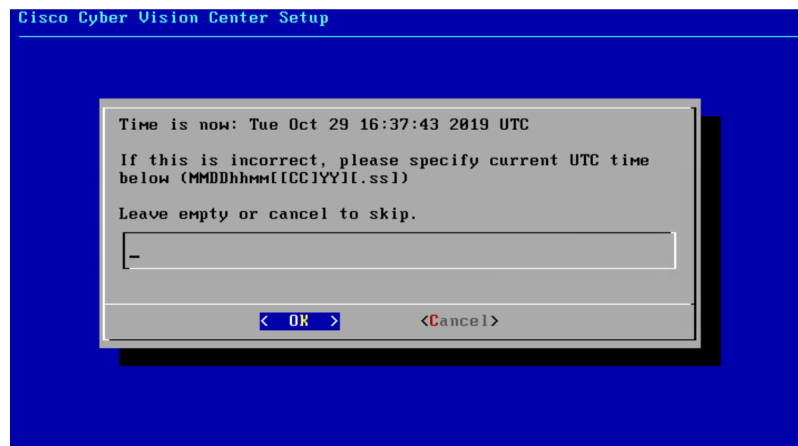


The synchronization takes a few seconds.

Check that the time is correct, or set the time manually.



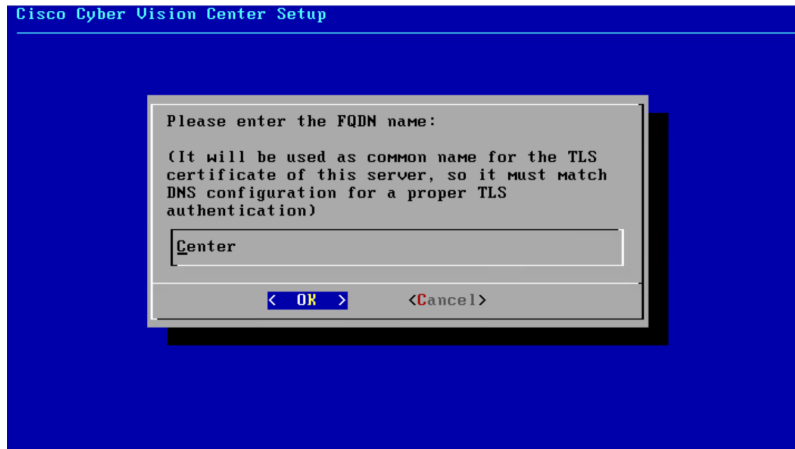
Note The time is set in UTC standard.



Give the Center a name



Note This name will be used in the Center certificate.



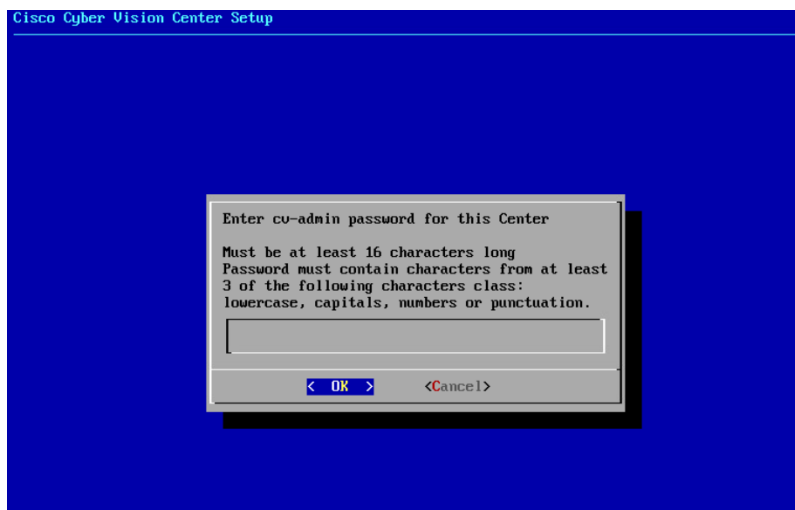
Enter the Center name provided by your administrator or type 'Default' which is a secure value.



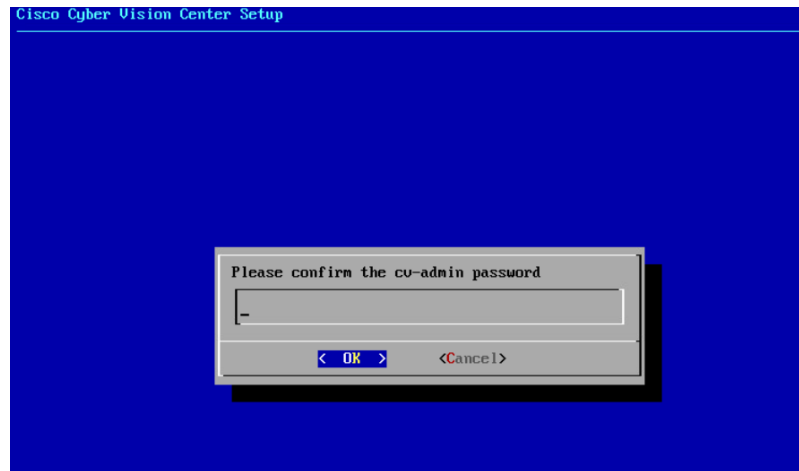
Note This name must match the DNS name you will use to access the Center through SSH or a browser.

Set the Center's password

The administrator account (i.e. cv-admin) password of the Center must be set for security reasons. It is hidden for confidentiality reasons.



Confirm the password.



Configure the Center's Collection network interface

This step is not applicable to a Global Center.

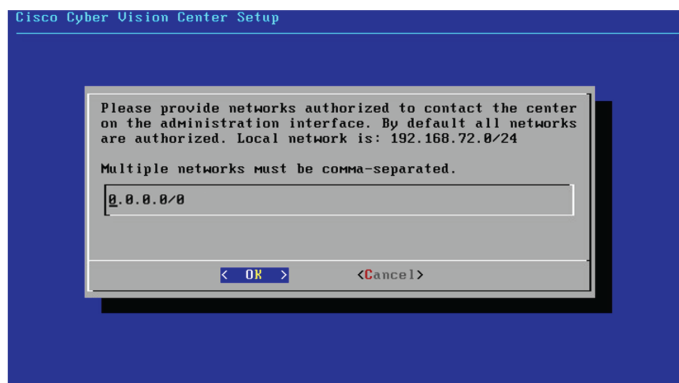
This step will only appear if the dual interface option has been selected during the [Set interfaces \(dual or single\)](#), on page 41 step.

Type the IP address of the Collection network interface:



Authorize networks

This step allows you to restrict IP addresses that can connect to the Administration interface. If no IP is entered, all networks are authorized by default.



Complete basic Cyber Vision Center configuration

Finalize the initial setup of Cyber Vision Center and secure needed addresses for future login and certificate management.

Before you begin

Ensure previous center configuration steps are complete.

Procedure

-
- | | |
|---------------|--|
| Step 1 | Record the displayed addresses for downloading the CA certificate and accessing Cyber Vision Center. If you have selected IPv4/IPv6 in the earlier step, addresses for both IP versions appear. |
| Step 2 | Select OK to complete the configuration. |
| Step 3 | Close the configuration window. |
| Step 4 | Open your browser and go to the saved address to access Cyber Vision Center. |
-

You have completed the basic configuration and recorded the essential access and CA certificate addresses.

What to do next

- To connect via CLI (serial console or SSH), use 'cv-admin' as the username and the instance ID as the password. This user has limited rights. To elevate permissions, prefix commands with "sudo" or open a root shell with "sudo -i".
- Each Cyber Vision Center includes its own PKI and CA for TLS connections. Install the CA certificate on each client browser. See the instructions in the relevant chapter for steps to install the CA certificate.

configuration

Once the Basic Center configuration is done, you must connect through a web browser to the URL displayed on the last step of the basic configuration wizard (i.e. the Center's IP address). A message saying that the URL is not secure will appear.

- If you plan to use a self-signed certificate, you must [Install the certificate in your browser, on page 47](#) and then access the [user interface installation wizard](#) to configure users and sensors.
- If you plan to use an enterprise certificate, you must ignore the security message and perform the following steps in this order:
 1. Access the [user interface installation wizard](#) to configure users and sensors.
 2. [Configure the security of the user interface](#) itself.

Then, you will configure the Centers data synchronization (Global Center and its Centers' only).

Browser requirements:

supports Chrome 54, Firefox 49 and newer versions.

Install the certificate in your browser

This task explains how to install a Cisco Cyber Vision self-signed certificate in your browser.

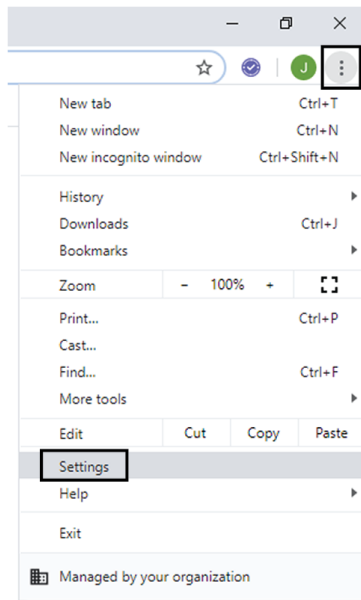
Before you begin

Perform this task if you aim to install a self-signed certificate. If you're planning to use an enterprise certificate, proceed directly with [Install , on page 52](#).

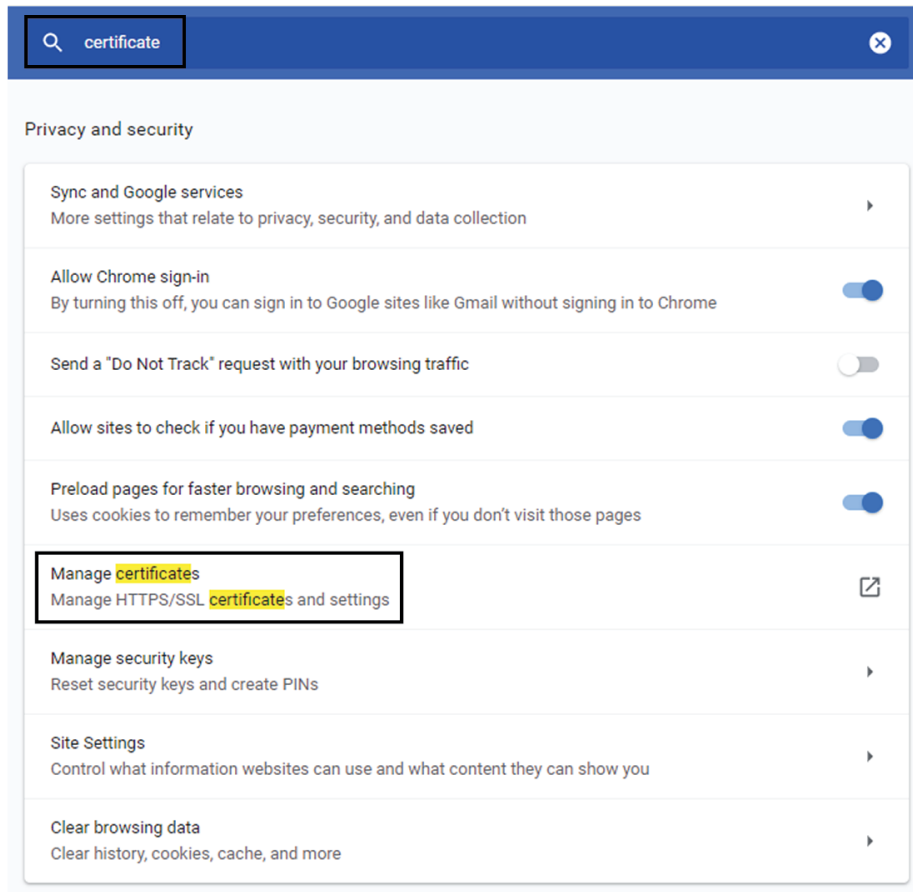
Procedure

-
- | | |
|---------------|--|
| Step 1 | Open your browser. |
| Step 2 | Enter 'http://<CENTERIPADDRESS>/ca.crt' inside the search bar.
The certificate is downloaded. |
| Step 3 | Save the certificate on your computer. |
| Step 4 | In the browser, access the settings.
Example: Chrome |

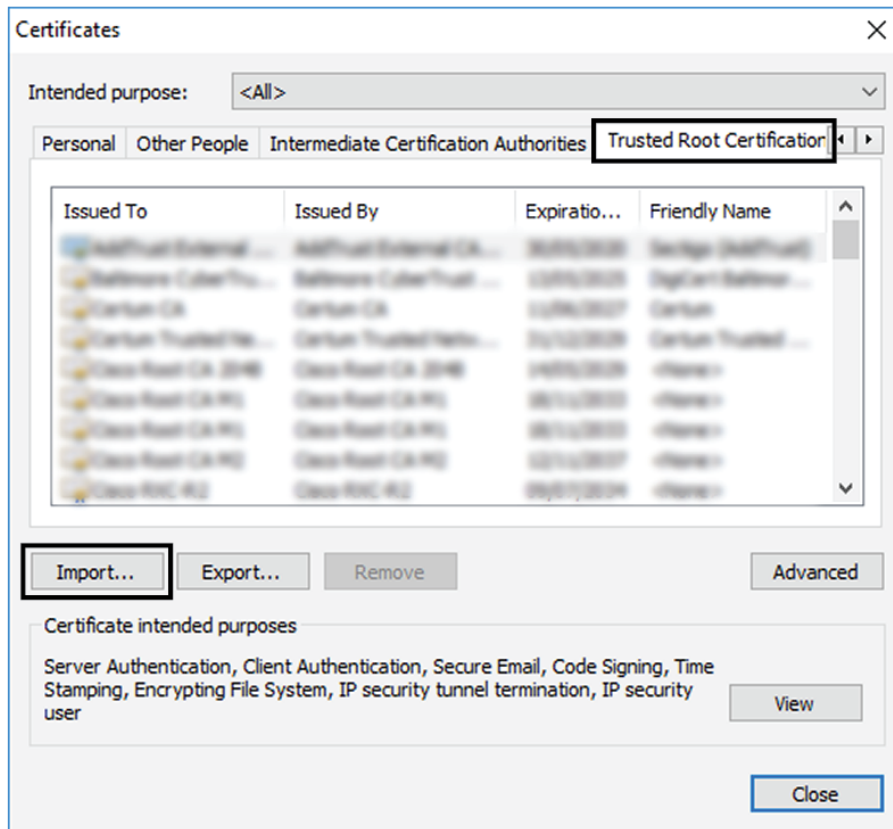
Install the certificate in your browser



Step 5 Type 'certificate' in the search bar and access the certificates management menu.

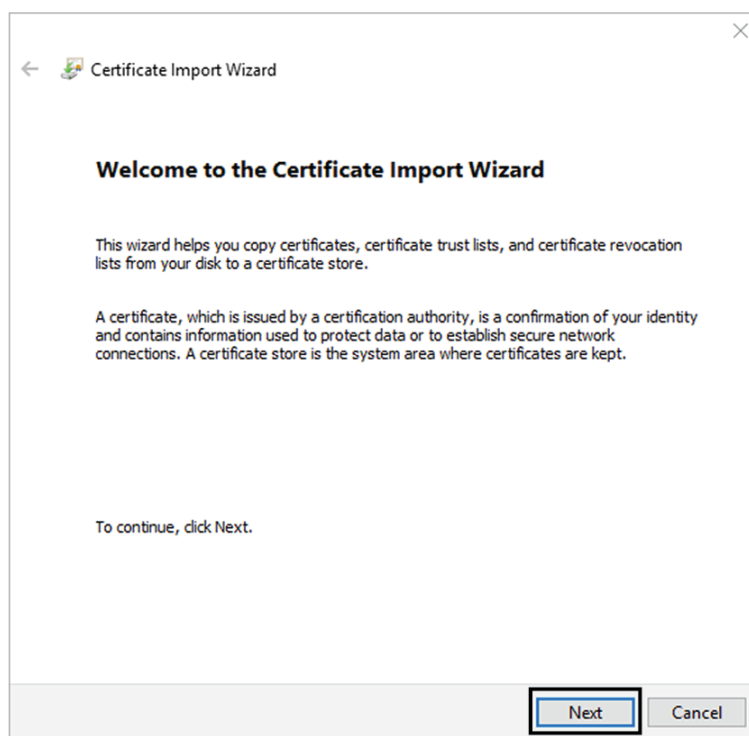


Step 6 Access the Trusted Root Certification tab and click Import.



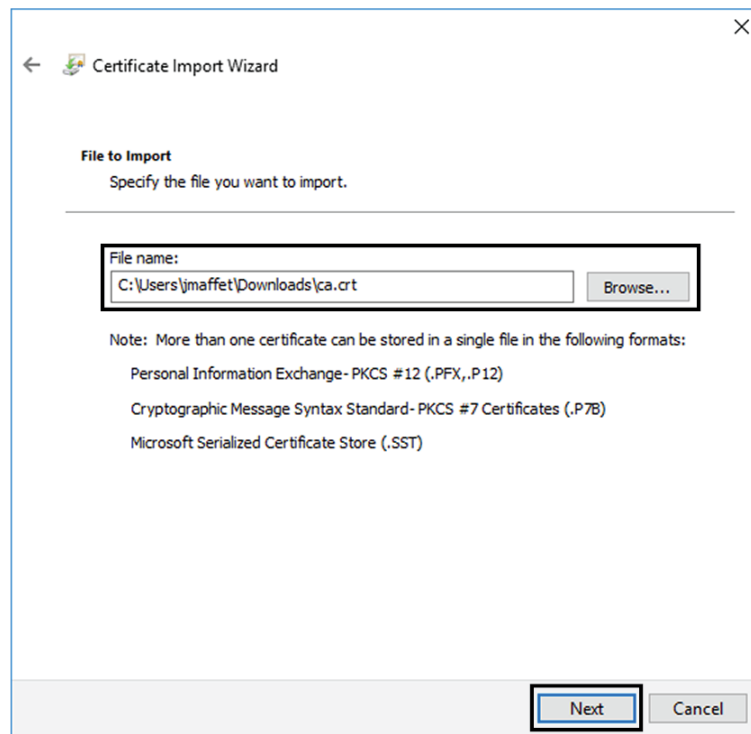
A certificate importation wizard opens.

Step 7 Go to the next step.

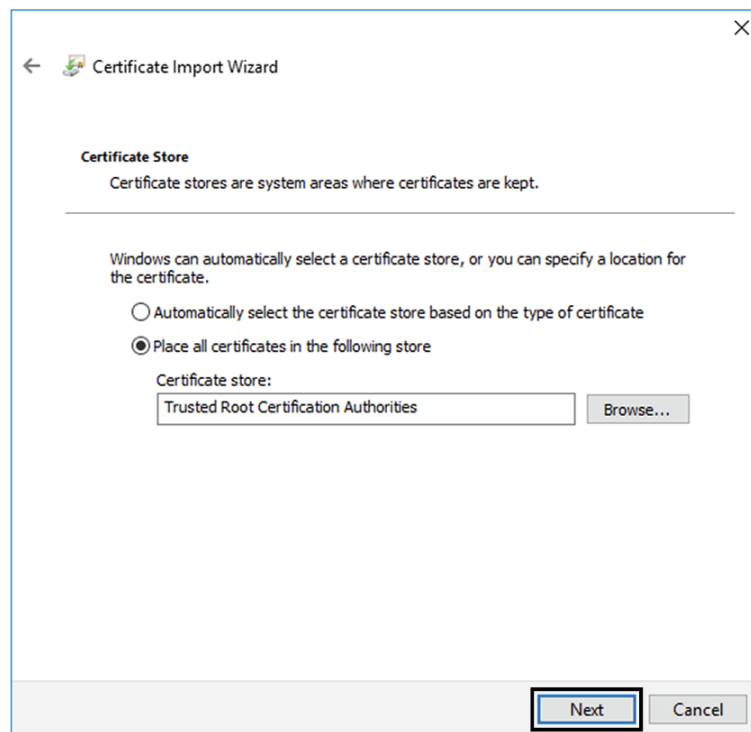


Step 8 Search for the certificate you downloaded earlier.

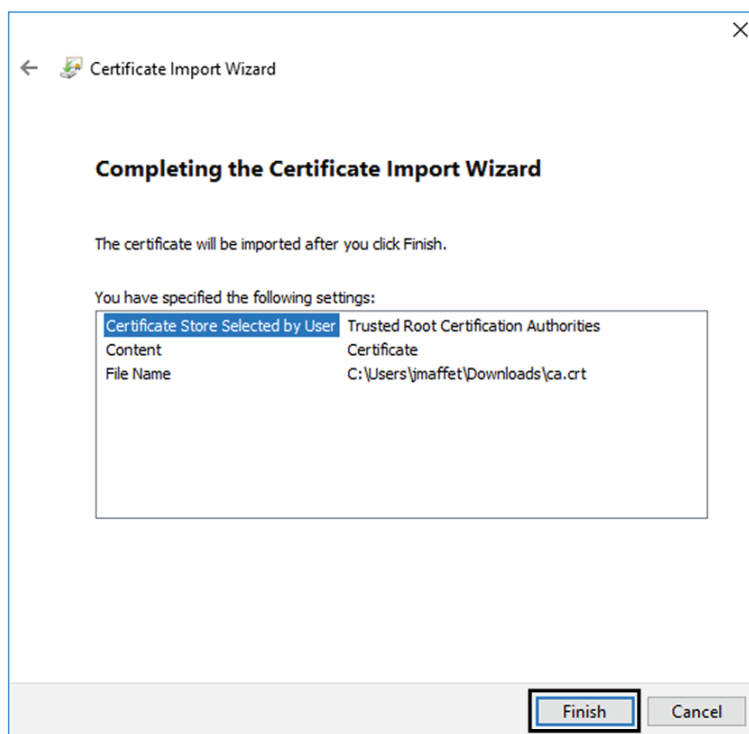
Step 9 Go to the next step.



Step 10 Accept the default values by accessing the next step.



Step 11 The certificate is now considered as trusted by the browser. It will be imported as soon as you will click Finish.



What to do next

[Install](#) , on page 52

Install

Access the installation wizard:

Procedure

Step 1 With your browser, access <https://<CENTERNAME>/>.

Note

Accessing the Center using its name enables HTTPS secure interface. Yet, this requires a DNS or local host configuration to associate the name and the IP address. The Center access through its IP address is possible but the connection is not secure.

Step 2 The setup wizard used for the first access to is displayed:

Step 3 Create an admin account:


Welcome to Cyber Vision
 Please follow this few steps to be fully ready to use the product

Create the first user Agree to the license terms Done

Firstname : Lastname :
 Email :
 Password : Confirm password :
 Suggested password:
 \$kvlH2Qq*odz90fj0E3  

Create

Step 4**Step 5**

Enter the information required.

Note

Email will be asked for login access.

Note

Passwords must contain at least 6 characters and comply with the rules below. Passwords:

- Must contain a lower case character: a-z.
- Must contain an upper case character: A-Z.
- Must contain a numeric character: 0-9.
- Cannot contain the user id.
- Must contain a special character: ~!"#\$%&'()*+,-./:;<=>?@[]^_`{|}.

Passwords should be changed regularly to ensure the integrity of the platform and the industrial network security.

Note

You can reset users using the following command in the Center's CLI:

```
sbs-db reset-users
```

Step 6

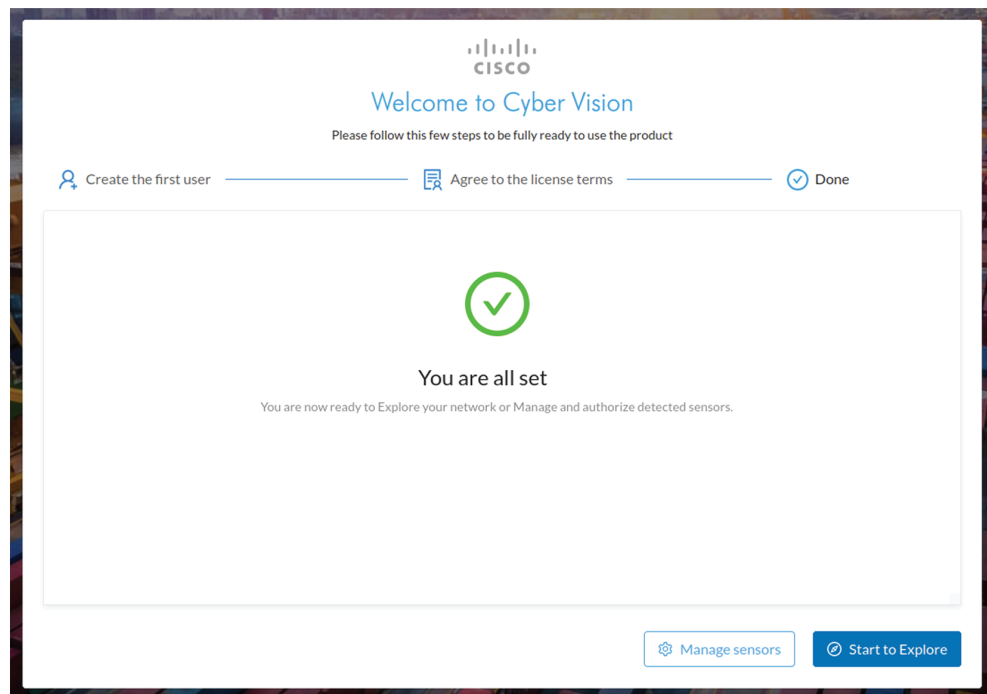
Accept the software license agreement:

**Step 7****Step 8 Finish the installation:**

The Center is now correctly installed and is ready to operate.

Step 9

Click Start to Explore.



installation is now complete.

What to do next

If you aim to use an enterprise certificate, proceed with [Configure the user interface security, on page 55](#).

If you already installed a self-signed certificate, and if you are installing a Global Center or a synchronized Center, proceed with [Configure Center data synchronization, on page 60](#).

If you already installed a self-signed certificate, and if you are installing a standalone Center, you can start installing the sensors. To do so, refer to the corresponding [Sensor Installation Guides](#).

Configure the user interface security

This section explains how to configure Cisco Cyber Vision user interface security with an enterprise certificate. You will have the option to upload a .p12 or to generate a CSR.

Before you begin

Perform this task if you're planning to use an enterprise certificate. You must [install Cisco Cyber Vision](#) beforehand.

Procedure

Step 1 To use an enterprise certificate, navigate to Admin > Center certificate.

Center web server certificate

From this page, you can check your current web server certificate basic information and replace it with a new one. This certificate is also relevant for the API.

Fingerprint:	e4cd7a4a690c8a7f182dc3f521e2bc2926cf68f0ca63b42c8755bb591ab0c2fb
Issuer:	CN=Cisco Cyber Vision Center CA VMware-420f637e3da26755-98306b53c6
Subject Name:	Center162.local
Alternates Names:	Center162.local
Expires:	Tue Apr 09 2024 18:16:26 GMT+0200

Update with a new web server certificate:

☒ Upload a .p12 ☐ Generate a CSR (RSA 2048)

Password of the certificate (optional)

Please import a PKCS#12 file

Choose a file or drag and drop to upload

Step 2 You can [upload a .p12](#) or [generate a CSR](#).

Upload a p12

Before you begin

The p12 (or Microsoft pfx) file must contain a private key, a password, and the field "X509v3 Subject Alternative Name" must contain the Center DNS name.

Procedure

Step 1 Select Upload a .p12.

Update with a new web server certificate:

☒ Upload a .p12 ☐ Generate a CSR (RSA 2048)

Password of the certificate (optional) 

Please import a PKCS#12 file



Choose a file or drag and drop to upload

 Save

Click Please import a PKCS12 file and choose you pfx or p12 file generated from your certification server.

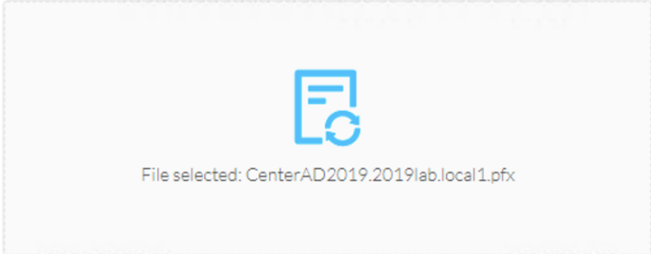
Step 2 Type the certificate password.

Step 3 Click the Import a PKCS#12 file button or drag and drop the file to import it.

Update with a new web server certificate:

☒ Upload a .p12 ☐ Generate a CSR (RSA 2048)

.....

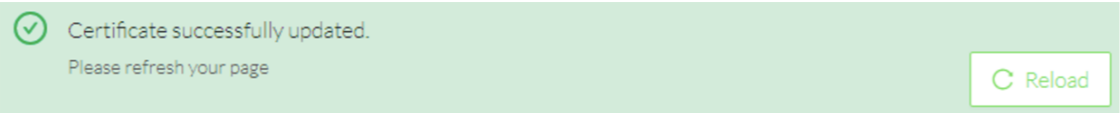


File selected: CenterAD2019.2019lab.local1.pfx

Save

Step 4 Click Save.

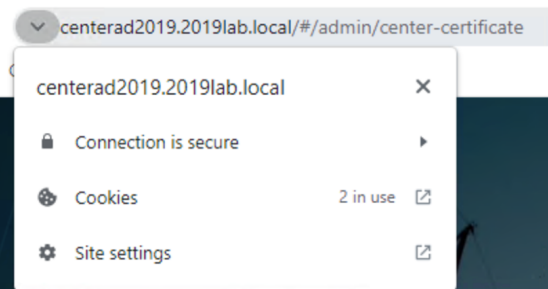
The following message appears:



Step 5 Click Reload.

Step 6 In your browser, use the DNS name to connect to your Cisco Cyber Vision instance.

The error message does not appear and the connection is secure.



What to do next

If you are installing a Global Center or a synchronized Center, proceed with [Configure Center data synchronization, on page 60](#).

If you are installing a standalone Center, you can start installing the sensors. To do so, refer to the corresponding Sensor Installation Guides.

Generate a CSR

Procedure

Step 1 Select Generate a CSR.

Update with a new web server certificate:

☐ Upload a .p12 ☒ Generate a CSR (RSA 2048)

Enter your FQDN

 Generate and download CSR

Step 2 Enter the Center FQDN as registered on your DNS server.

Step 3 Click the Generate and download CSR button.

Update with a new web server certificate:

☐ Upload a .p12 ☒ Generate a CSR (RSA 2048)

CenterAD2019.2019lab.local

 Generate and download CSR

A message indicating that the CSR has been generated is displayed.

Step 4 Click the download button (1).

Update with a new web server certificate:

☐ Upload a .p12 ☒ Generate a CSR (RSA 2048)

 CSR has been generated. Please import the certificate.

FQDN: CenterAD2019.2019lab.local

CSR: [download](#) **1**

Import a complete PEM bundle (concatenated CA, subCA, certificate) **2**



Choose a file or drag and drop to upload

[Discard](#) [Save](#)

A <FQDN>.csr file is downloaded.

Step 5 Use the <FQDN>.csr file to generate a pem certificate from your enterprise Certification Authority.

Step 6 Once the pem certificate is generated, return to Cisco Cyber Vision and click the Import a complete PEM bundle button **(2)** or drag and drop it to import it.

Update with a new web server certificate:

☐ Upload a .p12 ☒ Generate a CSR (RSA 2048)

 CSR has been generated. Please import the certificate.

FQDN: CenterAD2019.2019lab.local

CSR: [download](#)

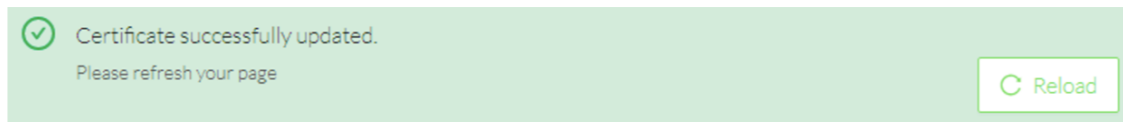


File selected: CenterAD2019.2019lab.local.crt

[Discard](#) [Save](#)

Step 7 Click Save.

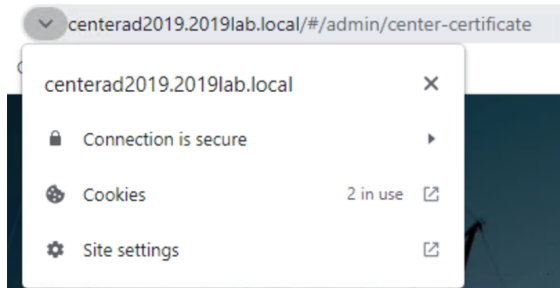
The following message appears:



Step 8 Click Reload.

Step 9 In your browser, use the DNS name to connect to your Cisco Cyber Vision instance.

The error message does not appear and the connection is secure.



What to do next

If you are installing a Global Center or a synchronized Center, proceed with [Configure Center data synchronization, on page 60](#).

If you are installing a standalone Center, you can start installing the sensors. To do so, refer to the corresponding Sensor Installation Guides.

Configure Center data synchronization

This step is applicable to the Global Center and its synchronized Centers.

Once the Global Center and its synchronized Centers are installed, proceed to data synchronization, which consists of registering the Center in the Global Center and enrolling the Center to the Global Center. To do so, you need to open each's GUI.

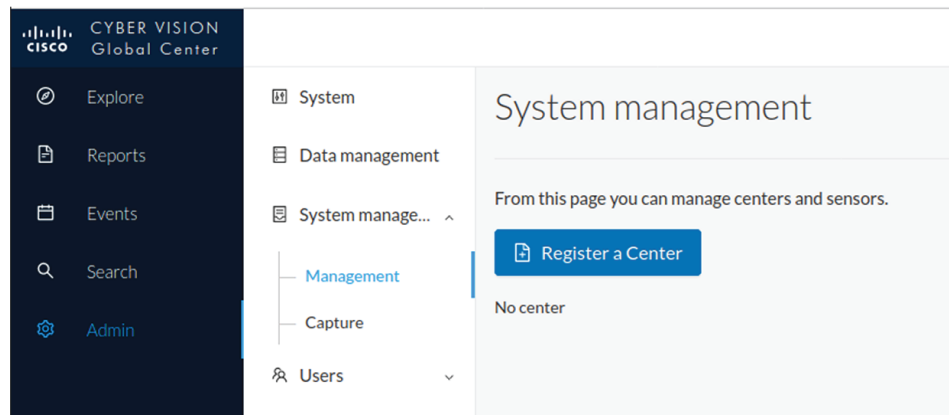


Note To differentiate each user interface, check the top left corner of's "Global Center" or "Center".

Procedure

Step 1 In the Global Center's GUI, navigate to Admin > System Management > Management.

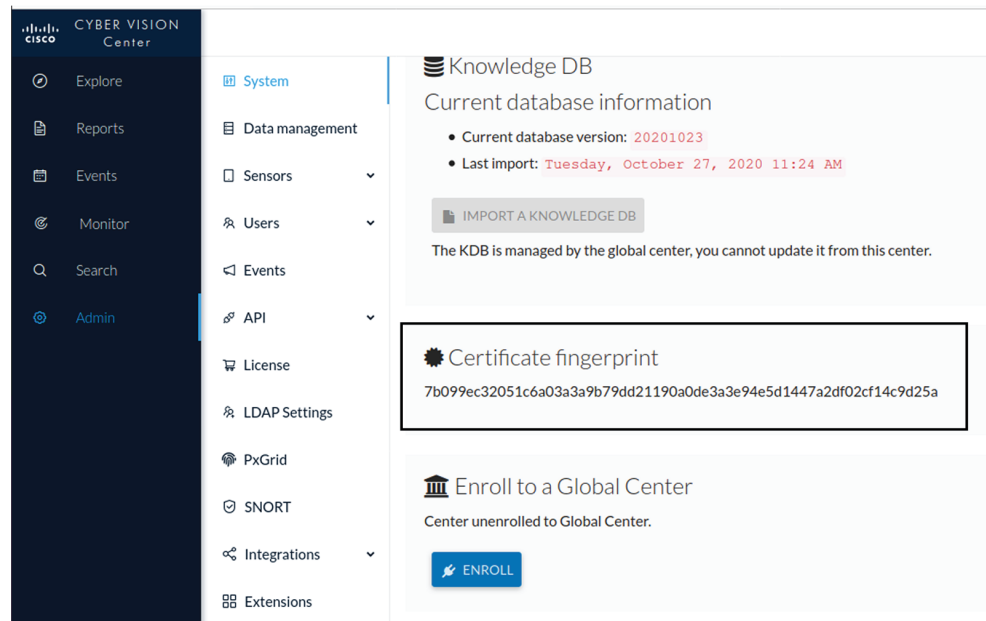
Step 2 Click the **Register a Center** button.



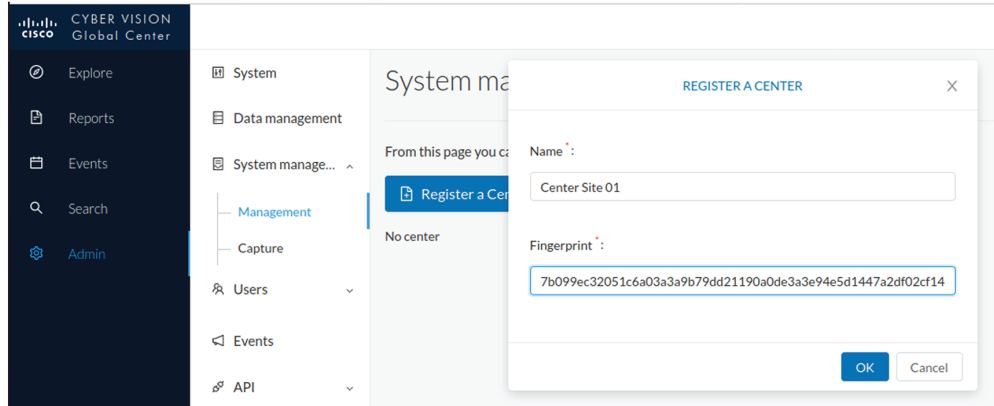
The window "Register a Center" pops up, ready to be filled. Now you must access the Center's GUI to retrieve its fingerprint.

Step 3 In the Center's GUI, navigate to Admin > System.

Step 4 Scroll down to Certificate fingerprint and copy it.



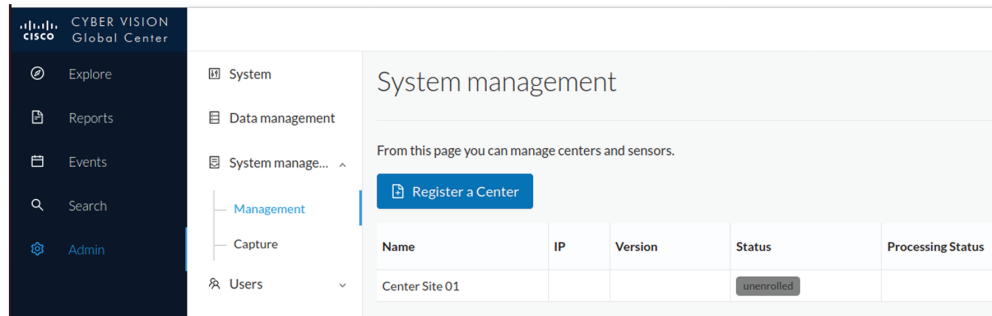
Step 5 In the Global Center's GUI, give a name to the Center, and paste the Center's fingerprint into the corresponding



field

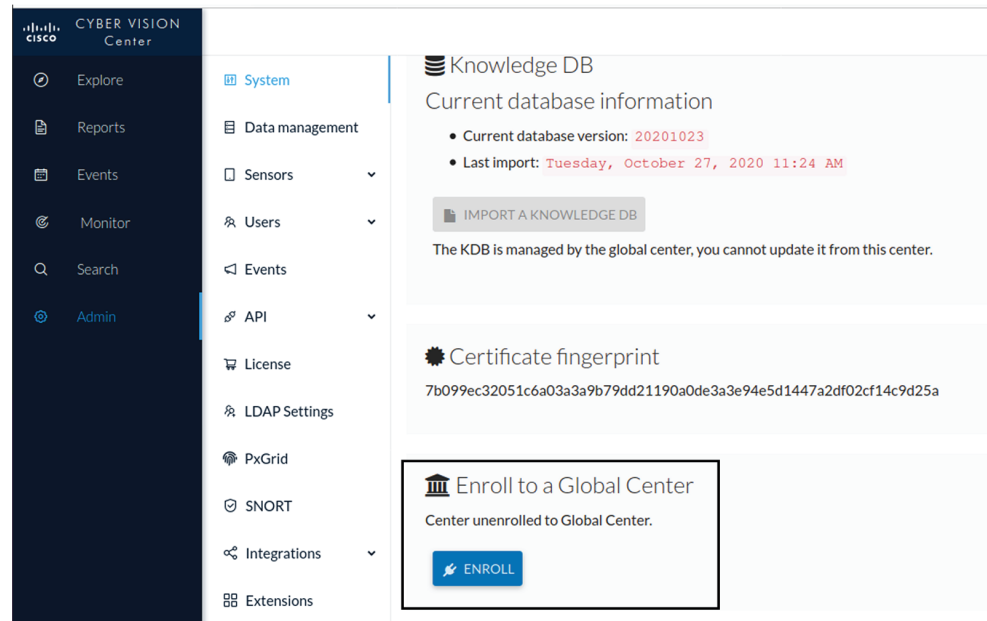
Step 6 Click **OK**.

The Center appears in the list as unenrolled.



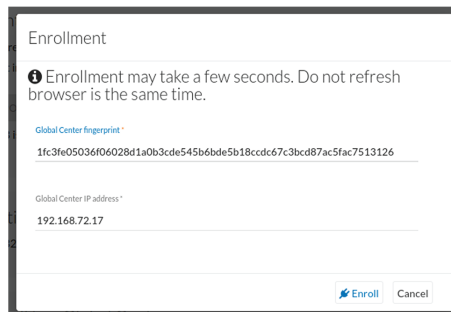
At this point you must switch to the Center's GUI and enroll it to the Global Center.

Step 7 In the Center's GUI, scroll down to Enroll a Global Center and click the **Enroll** button.



The Enrollment window pops up.

- Step 8** Copy the Global Center's fingerprint from its GUI's System administration page (same location as the Center's).
- Step 9** Enter the Global Center's IP address and click **Enroll**.



Once the synchronization is complete, it is indicated that the Center is enrolled to the Global Center.



CHAPTER 6

Configure a Center DPI

- [Configure a Center DPI, on page 65](#)
- [Center DPI, on page 68](#)

Configure a Center DPI

This section describes how to configure a Center DPI, that is, a virtual sensor in the Center.

Requirements:

Make sure an ethernet interface is available for the Center DPI traffic, depending on:

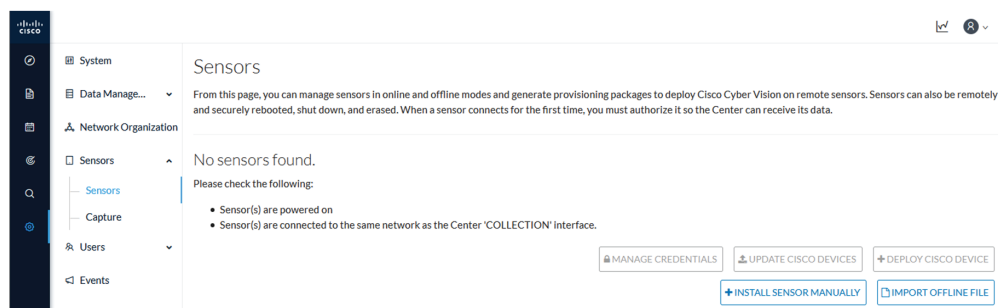
- If the server has a dual interface, that is, the Administration interface is on eth0 and the Collection interface is on eth1, then eth2 will be used for the Center DPI.
- If the server has a single interface, that is, the Administration and Collection interfaces are on the same interface, then eth1 will be used for the Center DPI.

In the example below, the server has a single interface.

To configure a Center DPI:

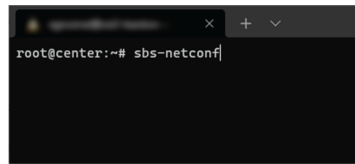
Procedure

Step 1 Access the sensors administration page.

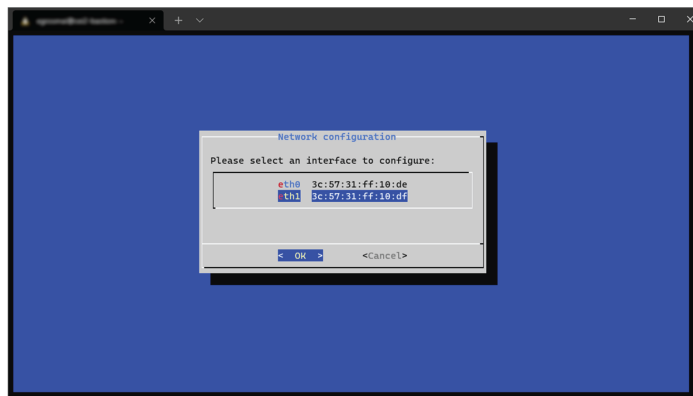


Step 2 Open the Center shell prompt and type the following command:

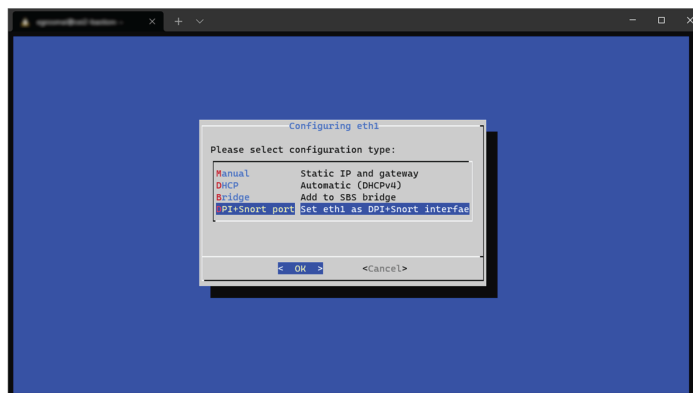
sbs-netconf



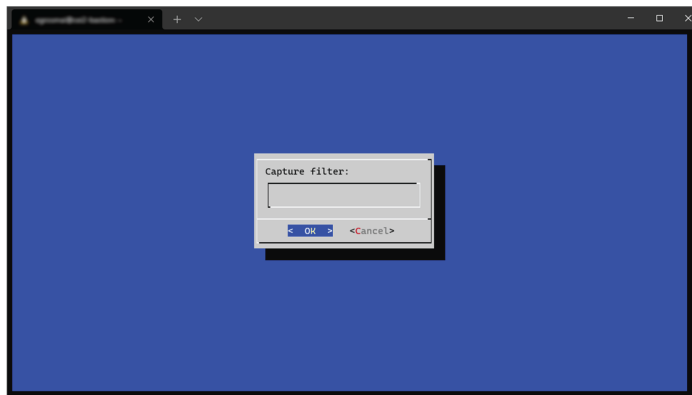
- Step 3** In the case of a single interface, select the eth1 interface.
In the case if a dual interface, select eth2.



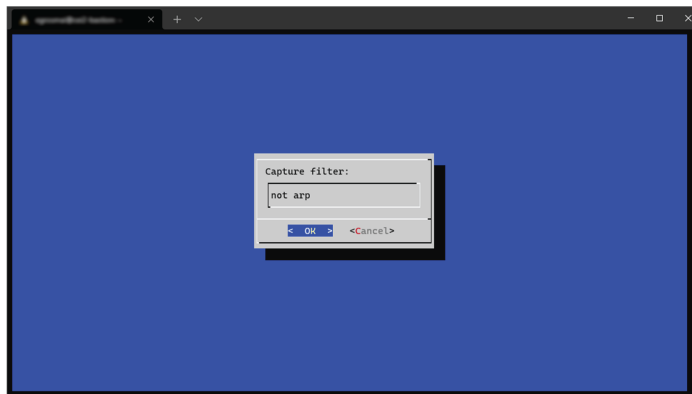
- Step 4** Select the interface as DPI+Snort port.



- Step 5** Configure a capture filter mode. You can do that later in the sensor page clicking the Capture mode button.
For more information on how to configure a capture mode filter, refer to the GUI user guide.



For example, you can type "not arp".



In the administration sensor page, the new virtual sensor appears and is ready to receive data.

Sensors

From this page, you can manage sensors in online and offline modes and generate provisioning packages to deploy Cisco Cyber Vision on remote sensors. Sensors can also be remotely and securely rebooted, shut down, and erased. When a sensor connects for the first time, you must authorize it so the Center can receive its data.

Name	IP	Version	Status	Processing status	Active Discovery status	Capture Mode [®]	Uptime
▼ CENTER-ETH1	N/A	N/A	Running	Waiting for data	Unavailable	not arp	N/A

Name: CENTER-ETH1
 Status: Running
 Processing status: Waiting for data
 Active discovery: Unavailable
 Deployment: Automatic via DHCP
 Capture mode: not arp
 ● Start recording sensor

Remove Capture Mode Disable IDS

MANAGE CREDENTIALS UPDATE CISCO DEVICES DEPLOY CISCO DEVICE
 + INSTALL SENSOR MANUALLY IMPORT OFFLINE FILE

Center DPI

Cyber Vision Center Deep Packet Inspection (DPI) is a virtual sensor that

- operates within the center environment,
- analyzes industrial network traffic at a granular level by inspecting application flows locally, and
- adds metadata to the Cyber Vision Center for centralized storage, analytics, and visualization.

Configure Center DPI

Enable Center DPI to function as a virtual sensor in Center for monitoring and analyzing network traffic.

Before you begin

Ensure you have an available Ethernet interface for Center DPI traffic:

- SPAN:
 - Single interface: eth1
 - Dual interfaces: eth2
- ERSPAN:
 - Single interface: eth0
 - Dual interfaces: eth0 and eth1
 - For optimal performance, use a dedicated interface if possible.

Procedure

-
- Step 1** Open the Center shell prompt and run the `sbs-netconf` command.
- Step 2** Select the interface to configure, based on your SPAN or ERSPAN setup.
- Step 3** Select the configuration type as **DPI+Snort port**.
- Step 4** Select an encapsulation type.
- **None** for SPAN configurations.
 - **erspan2** for ERSPAN type 2 remote SPAN.
 - **erspan3** for ERSPAN type 3 remote SPAN.
- Step 5** If you select **erspan2** or **erspan3** as the encapsulation type, enter an IPv4 address to receive traffic.
-

A new sensor is created and appears in **Admin > Sensors > Sensor Explorer**, ready to monitor network traffic based on the chosen configuration.

What to do next

- To view traffic statistics from the new sensor, navigate in the Center interface to **Explorer > All Data > Device list** and select the device for more details.
- To disable Snort on the Center DPI interface, follow these steps.
 1. From the main menu, choose **Admin > Sensors > Sensor Explorer**.
 2. Select the sensor and click **Disable IDS**.



CHAPTER 7

Configure Center synchronization with Global Center

- [Synchronizing Global Centers, on page 71](#)

Synchronizing Global Centers

Use this process to synchronize a Center with a Global Center so that data from multiple Centers can be viewed in a single application.

Summary

This process includes registering the Center, enrolling it with the Global Center, completing the initial synchronization, and monitoring synchronization status.

Workflow

These stages describe the synchronization process.

1. Register the Center in the Global Center.
2. Enroll the Center with the Global Center.
3. Allow the initial synchronization to complete.
4. Monitor the synchronization status in the Global Center.
5. Unenroll the Center when synchronization is no longer required.

Result

After enrollment succeeds, the Global Center displays synchronized data and status information for the enrolled Center.

Synchronize a Center with a Global Center

Use this procedure to establish synchronization between a Global Center and a Center.

This procedure applies to a Global Center and the Centers that synchronize with it.

To complete this procedure, open the user interface of both the Global Center and the Center.

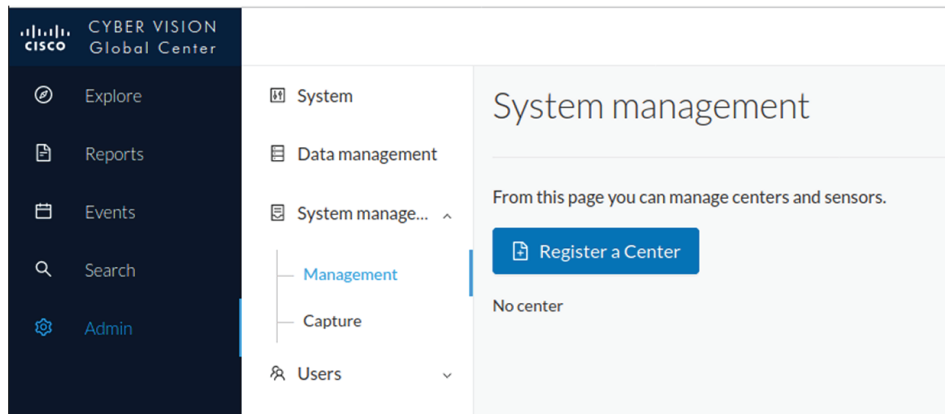
Before you begin

- Ensure that the Global Center is installed and accessible.
- Ensure that the Center is installed and accessible.
- Ensure that the required network connectivity between the Center and the Global Center is in place.
- Ensure that certificate fingerprints can be retrieved from both systems.

Procedure

Step 1 In the Global Center, navigate to **Admin > System Management > Management**.

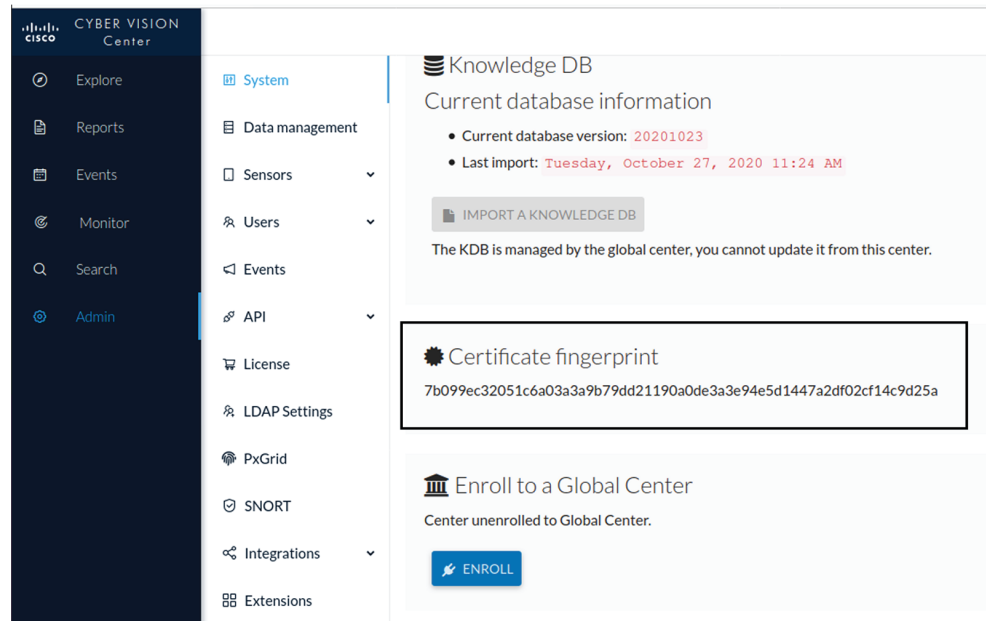
Step 2 Click the **Register a Center** button.



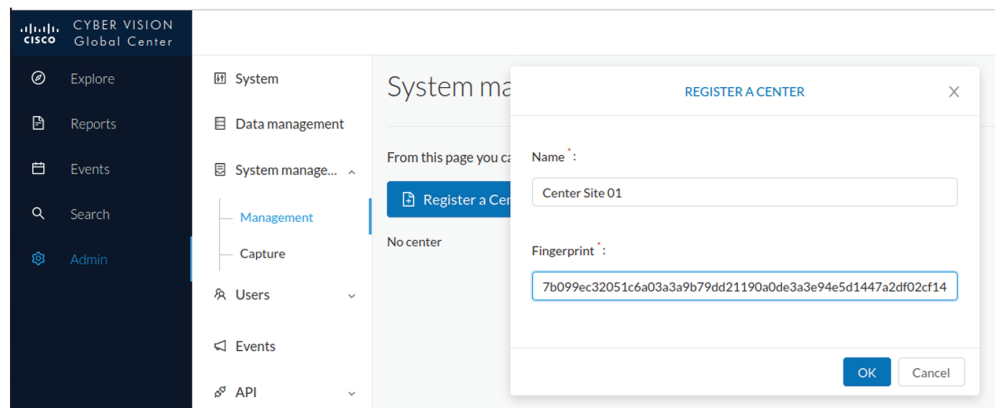
The Register a Center window opens. Leave it open while you retrieve the Center fingerprint.

Step 3 In the Center, navigate to **Admin > System**.

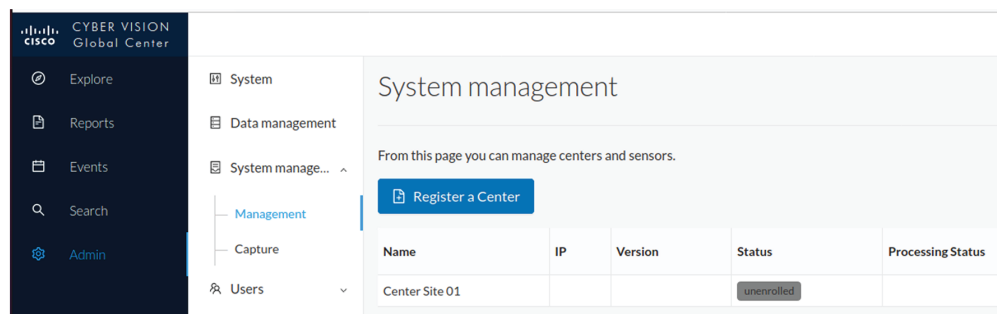
Step 4 Scroll down to Certificate fingerprint and copy it.



Step 5 In the Global Center, enter a name for the Center and paste the Center fingerprint into the corresponding field.

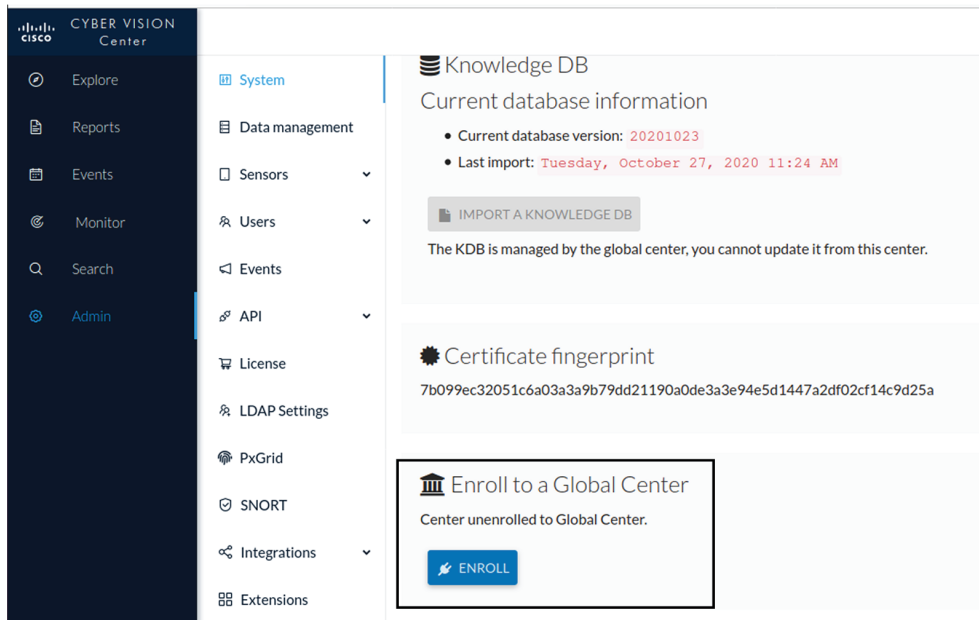


Step 6 Click **OK**.
The Center appears in the list as unenrolled.



Switch to the Center and enroll it with the Global Center.

Step 7 In the Center, scroll down to **Enroll a Global Center** and click the **Enroll** button.



Step 8 In the Global Center, copy the Global Center fingerprint from the System administration page.

Step 9 Enter the Global Center fingerprint and IP address, and click **Enroll**.

The Center is shown as enrolled with the Global Center after synchronization is complete.

The Center is enrolled with the Global Center, synchronization begins, and the Center status changes to connected in the Global Center.

What to do next

If additional Centers must be synchronized, repeat this procedure for each one.

Unenroll the Center

Use this procedure to remove a synchronized Center from a Global Center.

Use this procedure when a Center must be removed from synchronization, for example during maintenance or replacement of the Center or the Global Center.

Before you begin

You can unenroll a Center when you need to replace, move, or remove it from a Global Center. Unenrollment deletes the Center data from the Global Center.

Procedure

Step 1 In Cisco Cyber Vision, navigate to **Admin > System Management > Management**.

All Centers associated with the Global Center are listed.

Step 2 Click **Unenroll** for the required Center.

System management

From this page you can manage centers and sensors.

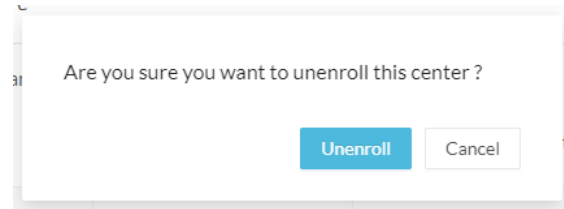
[Register a Center](#)

Fingerprint: 72826cf919857c0b6b21ec94418d24f74d4d2cf2bc742e768444554078abaa0c

	Center Name	IP	Version	Enrollment status	Up time	Connectivity Status	Action
+	My Center 01	192.168.72.21	SBS: 4.1.0+202201171404 KDB: 20220117	Enrolled	5 days 16 hrs 53 mins 12 secs	Connected	Unenroll

If you are replacing a Global Center, unenroll all its synchronized Centers.

Step 3 In the confirmation dialog box, click **Unenroll** to start the process.

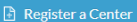


All Center data is deleted from the Global Center. The Center is ready to be enrolled again in the same Global Center or in another Global Center.

Step 4 If the Center is later enrolled in another Global Center, it remains listed in its former Global Center as **Not enrolled**. You can use the **Unregister** button to remove it from the list.

Force unenrollment of a Center

From this page you can manage centers and sensors.

		Fingerprint: 72826cf919857c0b6b21ec94418d24f74d4d2cf2bc742e768444554078abaa0c 					
Center Name	IP	Version	Enrollment status	Up time	Connectivity Status	Action	
My Center 01			Registered		Not enrolled	Unregister	

The Center is unenrolled from the Global Center and can be enrolled again in the same Global Center or in another Global Center later.

What to do next

If you are replacing a Global Center, repeat this procedure for each synchronized Center before decommissioning the original Global Center.

Force unenrollment of a Center

When a synchronized Center has been disconnected for a long time, for example because of a hardware failure, you can force its unenrollment from the Global Center. This deletes all data for that Center from the Global Center and allows the Center to be replaced.



Important

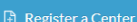
Make sure that the disconnected Center is permanently unavailable before performing this action. Because all data for the Center is deleted from the Global Center, a Center that later attempts to send data again can cause significant data synchronization issues.

1. In Cisco Cyber Vision, navigate to **Admin > System Management > Management**.
All Centers associated with the Global Center are listed.
2. For the disconnected Center, click **Force unenrollment** in the **Action** column.

All data for that Center is deleted from the Global Center, and the Center is removed from the list.

System management

From this page you can manage centers and sensors.

		Fingerprint: 72826cf919857c0b6b21ec94418d24f74d4d2cf2bc742e768444554078abaa0c 					
Center Name	IP	Version	Enrollment status	Up time	Connectivity Status	Action	
 My Center 01	192.168.72.21	SBS: 4.1.0+202201171404 KDB: 20220117	Enrolled	5 days 18 hrs 41 mins 40 secs	Disconnected	Force unenrollment	



CHAPTER 8

Upgrade procedures

- [Architecture with a Global Center, on page 77](#)
- [Architecture with a single Center, on page 80](#)

Architecture with a Global Center

Check the Global Center and Centers' health

It is highly recommended that you check the health of the Centers connected to the Global Center and of the Global Center itself before proceeding to the update. To do so:

Procedure

Step 1 Connect to the Center in SSH.

Step 2 Type the following command:

```
systemctl --failed
```

The number of listed sbs-* units should be 0, otherwise the failure must be fixed before proceeding with the update.

```
root@Center21:~# systemctl --failed
0 loaded units listed.
root@Center21:~#
```

If one or several sbs services are in failed state like below, it has to be fixed before proceeding to the update.

```
root@Center21:~# systemctl --failed
UNIT                                LOAD    ACTIVE SUB    DESCRIPTION
● sbs-marmotd.service loaded failed failed marmotd persistence service

LOAD    = Reflects whether the unit definition was properly loaded.
ACTIVE  = The high-level unit activation state, i.e. generalization of SUB.
SUB     = The low-level unit activation state, values depend on unit type.

1 loaded units listed.
root@Center21:~#
```

Usually, a reboot of the Center is enough to solve the issue. If not, contact the product support.

Step 3 Repeat the previous steps for the other Centers and the Global Center.

Update the Global Center

In the case of a distributed architecture, **you must first update the Global Center, then its Centers.**

You can do so through the corresponding Center's application or using its Command Line Interface.

To update the Global Center:

- Through the application:

1. Go to cisco.com and retrieve the following file:

File name: CiscoCyberVision-update-combined-<VERSION>.dat

2. Navigate to Admin > System.

3. Click **System Update**.

4. Browse to select the update file.

- Through the Command Line Interface (CLI):

1. Go to cisco.com and retrieve the following file:

File name: CiscoCyberVision-update-center-<VERSION>.dat

2. Launch the update using the following command:

```
sbs-update install /data/tmp/CiscoCyberVision-update-center-<VERSION>.dat
```

To update the Centers:

Connect to each Center's application or CLI and repeat the same procedure used to update the Global Center.

Update the sensors

The update of the sensors is done from their corresponding Center (not from the Global Center). You must repeat the following procedures from each of your Centers to cover all sensors of your industrial network. Procedures differ between hardware sensors and IOx sensors.

Table 2: Feature History

Feature	Release Information	Feature Description
Sensor Management extension removal	Release 5.6.0	The Sensor Management extension is no longer available in the classic UI for deploying sensor applications. Sensors migrated from the classic UI Sensor Management extension are fully integrated into the sensor-host model available in the new UI Sensor Management page. However, manual sensor deployment, Docker sensor deployment, and Sensor VM deployment remain available in classic UI Sensor Explorer page.

Update hardware sensors

To update hardware sensors:

If you used the combined file to update the Center which owned the sensor, the hardware sensors (IC3000 and Sentryo Sensors) were updated at the same time.

If not, the update needs to be done from the Command Line Interface (CLI):

Procedure

-
- Step 1** Go to cisco.com and retrieve the following file:
- File name: CiscoCyberVision-update-sensor-<VERSION>.dat
- Step 2** Launch the update using the following command:
- ```
sbs-update install /data/tmp/CiscoCyberVision-update-sensor-<VERSION>.dat
```
- 

## Update IOx sensors

Sensor updates are carried out from the centers to which a sensor is connected, not the global center. You can update multiple sensors simultaneously using the Sensor Management new UI interface.



**Note** Starting with release 5.6.0, the Sensor Management extension is no longer available for sensor deployment. To deploy, manage, and monitor sensors, use the **Sensor Management** page in the new UI. The Classic UI continues to support manual sensor deployment, Docker-based sensor deployment, and Sensor VM deployment.

---

## Procedure

- 
- Step 1** From the new UI main menu, choose **Configuration > Sensor Management**.
- Step 2** Click the **Sensors** tab.
- Step 3** Select the sensors you want to update by clicking the check boxes next to them. To select all the sensors, click the check box at the top of the list of sensors.
- Step 4** From the **More Actions** drop-down list, select **Update**.

The center adds a new job to the sensor queue, which the sensor automatically collects.

The sensor automatically restarts with the new version, and the **Version** column on the **Sensor Management** page shows the latest version of the sensor.

If you have not installed one or several sensors using the new UI sensor-host model, you can upgrade them with the sensor package from the platform's local manager or from the platform's Command Line Interface. This procedure is detailed in the corresponding sensor installation guide.

- Cisco IE3x00 and Cisco IR1101 file names: CiscoCyberVision-IOx-aarch64-<VERSION>.tar or CiscoCyberVision-IOx-Active-Discovery-aarch64-<VERSION>.tar
  - Catalyst 9300 and Catalyst 9400 file names: CiscoCyberVision-IOx-x86-64-<VERSION>.tar or CiscoCyberVision-IOx-Active-Discovery-x86-64-<VERSION>.tar
- 

# Architecture with a single Center

## Update the Center

You can update the Center through its application or using its Command Line Interface.

- Through the application:
  1. Go to cisco.com and retrieve the following file:  
File name: CiscoCyberVision-update-combined-<VERSION>.dat
  2. Navigate to Admin > System.
  3. Click **System Update**.
  4. Browse to select the update file.
- Through the Command Line Interface (CLI):
  1. Go to cisco.com and retrieve the following file:  
File name: CiscoCyberVision-update-center-<VERSION>.dat
  2. Launch the update using the following command:  

```
sbs-update install /data/tmp/CiscoCyberVision-update-center-<VERSION>.dat
```

## Update the sensors

Sensor upgrade is done from the Center. Update procedures differ between hardware sensors and IOx sensors.

*Table 3: Feature History*

| Feature                                    | Release Information | Feature Description                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Sensor Management extension removal</b> | Release 5.6.0       | <p>The Sensor Management extension is no longer available in the classic UI for deploying sensor applications. Sensors migrated from the classic UI Sensor Management extension are fully integrated into the sensor-host model available in the new UI Sensor Management page.</p> <p>However, manual sensor deployment, Docker sensor deployment, and Sensor VM deployment remain available in classic UI Sensor Explorer page.</p> |

## Update hardware sensors

To update hardware sensors:

If you used the combined file to update the Center which owned the sensor, the hardware sensors (IC3000 and Sentryo Sensors) were updated at the same time.

If not, the update needs to be done from the Command Line Interface (CLI):

### Procedure

- 
- Step 1** Go to [cisco.com](https://cisco.com) and retrieve the following file:  
File name: CiscoCyberVision-update-sensor-<VERSION>.dat
- Step 2** Launch the update using the following command:
- ```
sbs-update install /data/tmp/CiscoCyberVision-update-sensor-<VERSION>.dat
```
-

Update IOx sensors

Sensor updates are carried out from the centers to which a sensor is connected, not the global center. You can update multiple sensors simultaneously using the Sensor Management new UI interface.



Note Starting with release 5.6.0, the Sensor Management extension is no longer available for sensor deployment. To deploy, manage, and monitor sensors, use the **Sensor Management** page in the new UI. The Classic UI continues to support manual sensor deployment, Docker-based sensor deployment, and Sensor VM deployment.

Procedure

-
- Step 1** From the new UI main menu, choose **Configuration > Sensor Management**.
- Step 2** Click the **Sensors** tab.
- Step 3** Select the sensors you want to update by clicking the check boxes next to them. To select all the sensors, click the check box at the top of the list of sensors.
- Step 4** From the **More Actions** drop-down list, select **Update**.

The center adds a new job to the sensor queue, which the sensor automatically collects.

The sensor automatically restarts with the new version, and the **Version** column on the **Sensor Management** page shows the latest version of the sensor.

If you have not installed one or several sensors using the new UI sensor-host model, you can upgrade them with the sensor package from the platform's local manager or from the platform's Command Line Interface. This procedure is detailed in the corresponding sensor installation guide.

- Cisco IE3x00 and Cisco IR1101 file names: CiscoCyberVision-IOx-aarch64-<VERSION>.tar or CiscoCyberVision-IOx-Active-Discovery-aarch64-<VERSION>.tar
 - Catalyst 9300 and Catalyst 9400 file names: CiscoCyberVision-IOx-x86-64-<VERSION>.tar or CiscoCyberVision-IOx-Active-Discovery-x86-64-<VERSION>.tar
-



CHAPTER 9

Certificate renewal

The certificates generated by have a validity of two years.

Certificates renewal should be automatic. However, manual procedures to renew the Global Center certificate and Centers with sync exist in case automatic ones are not possible.

- [Renew the certificate of a Center, on page 83](#)

Renew the certificate of a Center

This procedure applies to Centers, Global Centers and Centers with sync. Extra steps are required to update fingerprints in the case of an architecture with a Global Center.

Procedure

Step 1 In , navigate to Admin > System.

Step 2 Slide down to Center fingerprint.

A message indicates that the certificate has expired.

- Step 3** Click **Renew certificate**.
A warning page will be displayed at next login.
- Step 4** Click **Advanced**, then **Accept the Risk and Continue**.

What to do next

In the case you're performing a certificate renewal within a Global Center architecture, you must follow the procedures below to update fingerprints according to the Center type.

Update the Global Center fingerprint

Before you begin

You need access to the Global Center and to all its Centers with sync.

Procedure

- Step 1** Access the **Global Center**.
This warning page indicates that the certificate has been renewed.



Warning: Potential Security Risk Ahead

Firefox detected a potential security threat and did not continue to **10.2.2.206**. If you visit this site, attackers could try to steal information like your passwords, emails, or credit card details.

What can you do about it?

The issue is most likely with the website, and there is nothing you can do to resolve it.

If you are on a corporate network or using antivirus software, you can reach out to the support teams for assistance. You can also notify the website's administrator about the problem.

[Learn more...](#)

[Go Back \(Recommended\)](#)

[Advanced...](#)

Someone could be trying to impersonate the site and you should not continue.

Websites prove their identity via certificates. Firefox does not trust 10.2.2.206 because its certificate issuer is unknown, the certificate is self-signed, or the server is not sending the correct intermediate certificates.

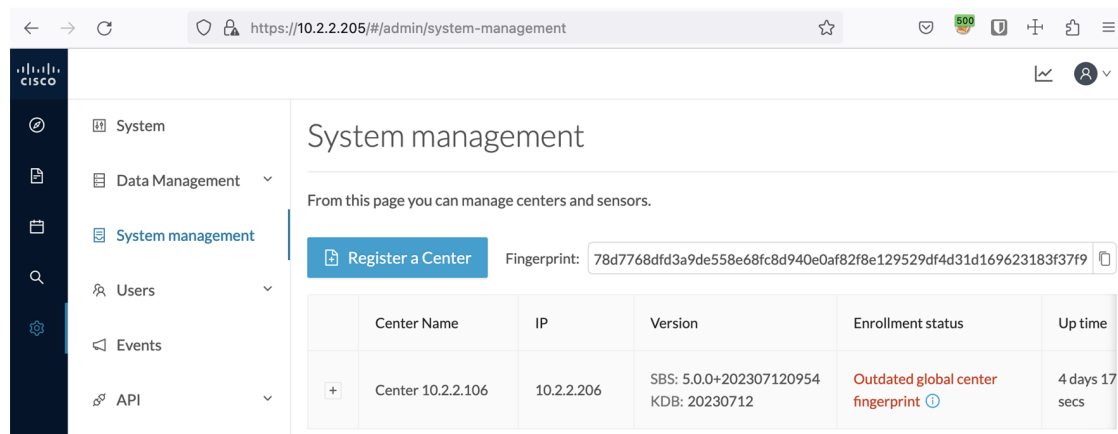
Error code: [SEC_ERROR_UNKNOWN_ISSUER](#)

[View Certificate](#)

[Go Back \(Recommended\)](#)

[Accept the Risk and Continue](#)

- Step 2** Click **Advanced**, then **Accept the Risk and Continue**.
- Step 3** Login to the Global Center.
- Step 4** Navigate to the System management page.



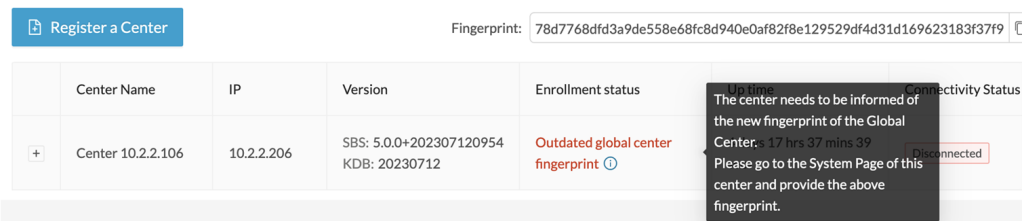
In the Center list, you can see the Center with sync which must be updated with the Global Center's fingerprint.

Step 5

Copy the Global Center fingerprint.

System management

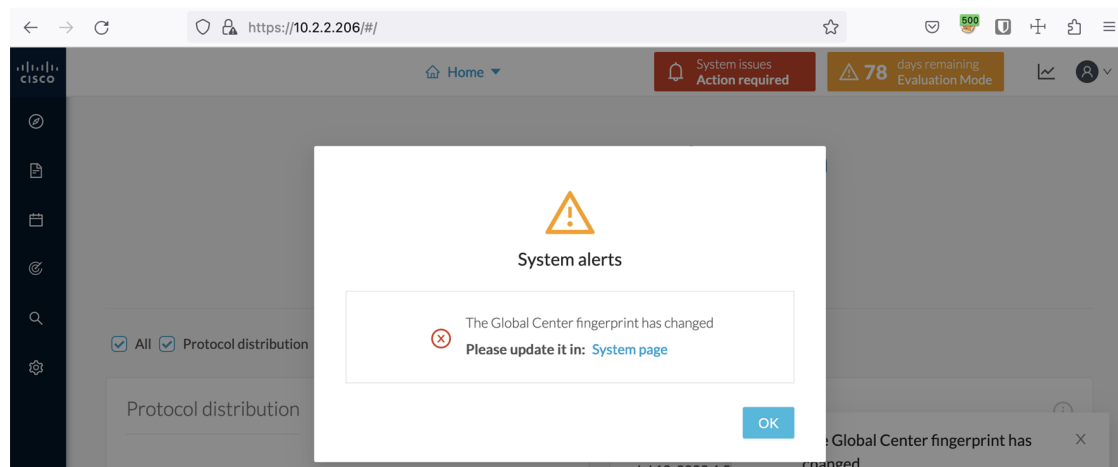
From this page you can manage centers and sensors.



Step 6

Login to the **Center with sync**.

The following system alert pops up, indicating that the Global Center fingerprint has changed with a link to the administration system page to update it.

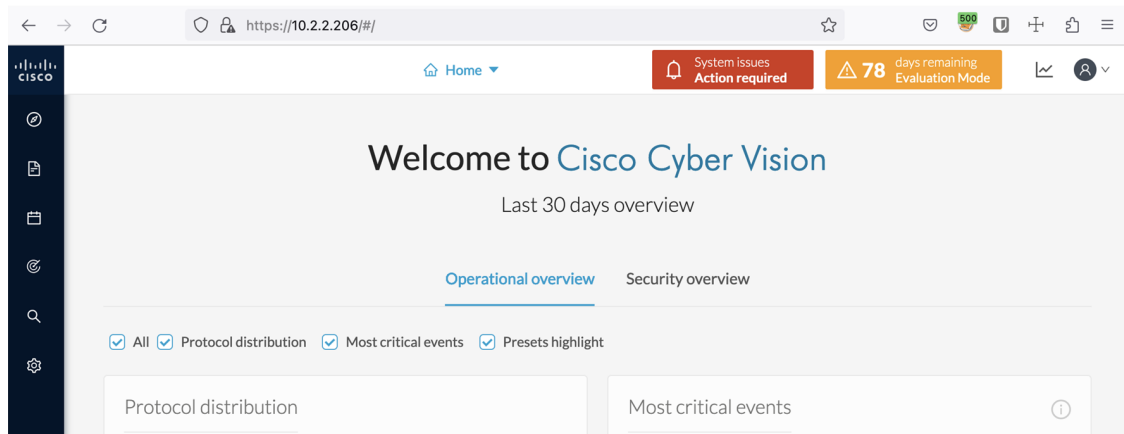


Step 7

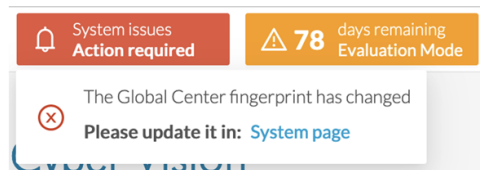
Click **OK**.

A red banner is displayed at the top of's user interface.

Update the Global Center fingerprint



If you click the red banner, you will see the same message that appeared in the previous popup, with a link to the System page to update the Global Center fingerprint.

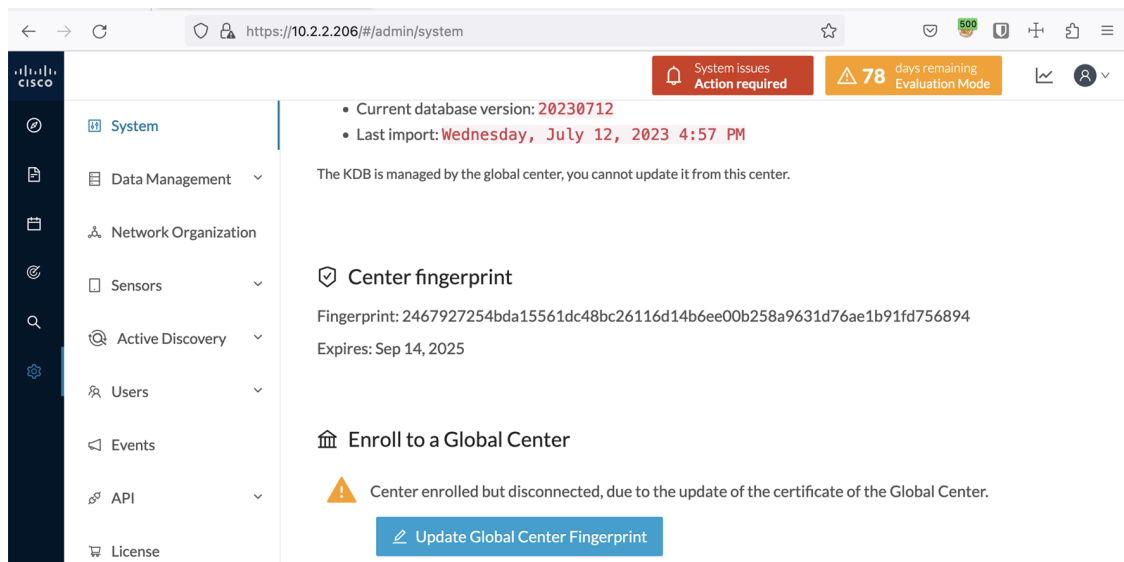
**Step 8**

In the System page, slide down to Enroll to a Global Center.

It is indicated that the Center is enrolled but disconnected.

Step 9

Click **Update Global Center Fingerprint**.



The Update Global Center fingerprint window pops up.

• Current database version: 20230712

UPDATE GLOBAL CENTER FINGERPRINT

* Global Center fingerprint:

Update Cancel

Step 10 Paste the Global Center fingerprint and click **Update**.

• Current database version: 20230712

UPDATE GLOBAL CENTER FINGERPRINT

* Global Center fingerprint: e0af82f8e129529df4d31d169623183f37f9

Update Cancel

A message indicating that the Global Center fingerprint successfully updated appears and the Global Center enrollment status switches to enrolled.

← → ↻ 🔒 https://10.2.2.206/#/admin/system

78 days remaining Evaluation Mode

System

- Data Management
- Network Organization
- Sensors
- Active Discovery
- Users
- Events
- API
- License
- External Authentication
- Snort
- Backup

Current database information

- Current database version: 20230712
- Last import: Wednesday, July 12, 2023 4:57 PM

The KDB is managed by the global center, you cannot update it from this center.

Center fingerprint

Fingerprint: 2467927254bda15561dc48bc26116d14b6ee00b258a9631d76ae1b91fd756894

Expires: Sep 14, 2025

Enroll to a Global Center

✓ Center enrolled to a Global Center.

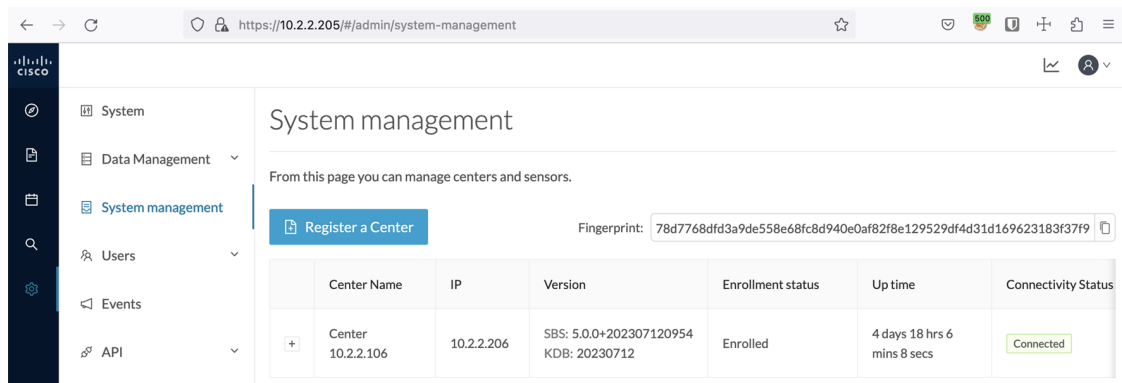
Reset

Unroll the center on the Global Center Administration page

✓ Global Center fingerprint successfully updated.

In the Global Center System management page the Center appears as Connected.

Update a Center with sync fingerprint



What to do next

Repeat the previous steps for each Center with sync.

Update a Center with sync fingerprint

Before you begin

You need access to the Center with sync and its Global Center.

Procedure

Step 1 Access the Center with sync.

This warning page indicates that the certificate has been renewed.



Warning: Potential Security Risk Ahead

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What can you do about it?

The issue is most likely with the website, and there is nothing you can do to resolve it.

If you are on a corporate network or using antivirus software, you can reach out to the support teams for assistance. You can also notify the website's administrator about the problem.

[Learn more...](#)

[Go Back \(Recommended\)](#)

[Advanced...](#)

Someone could be trying to impersonate the site and you should not continue.

Websites prove their identity via certificates. Firefox does not trust 10.2.2.206 because its certificate issuer is unknown, the certificate is self-signed, or the server is not sending the correct intermediate certificates.

Error code: [SEC_ERROR_UNKNOWN_ISSUER](#)

[View Certificate](#)

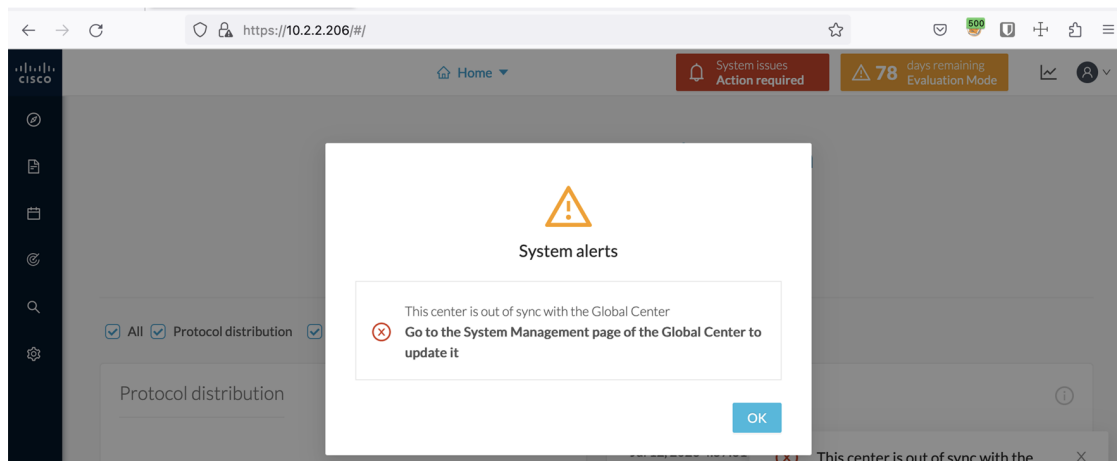
[Go Back \(Recommended\)](#)

[Accept the Risk and Continue](#)

Step 2 Click **Advanced**, then **Accept the Risk and Continue**.

Step 3 Login to the Center.

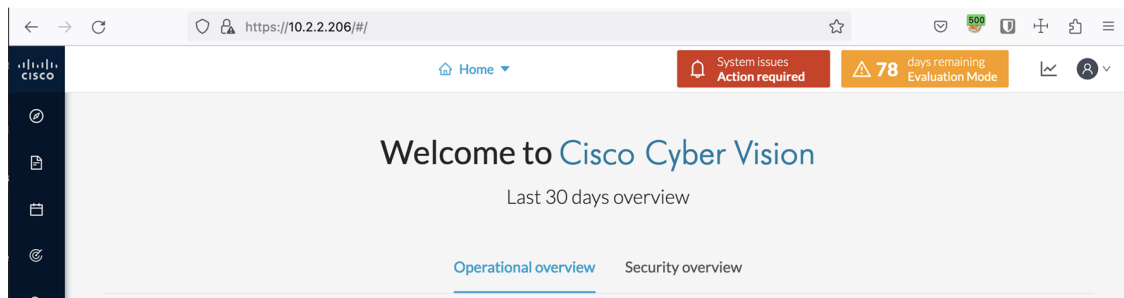
An alert appears indicating that the Center is out of sync with the Global Center and the actions to take on the Global Center.



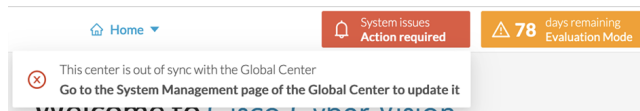
Step 4 Click **OK**.

A red banner is displayed at the top of 's user interface.

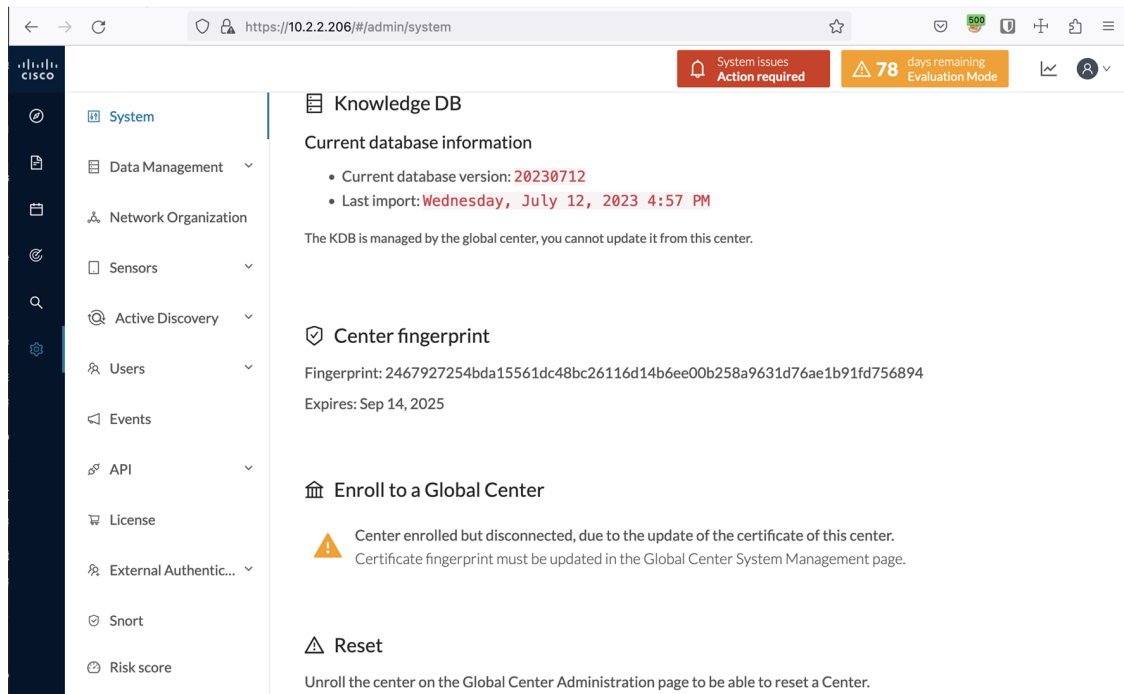
Update a Center with sync fingerprint



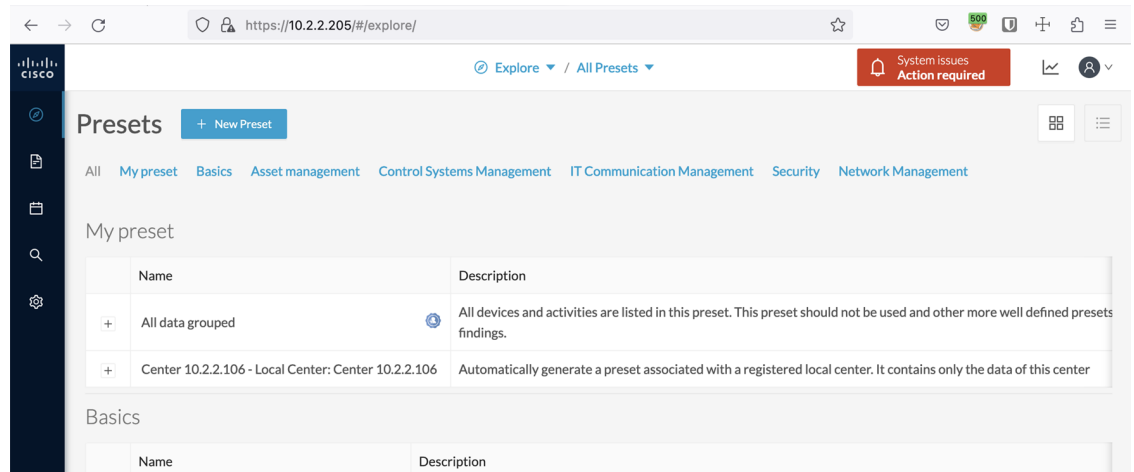
If you click the red banner, you will see the same message that appeared in the previous popup.



In the Center's administration system page, the Enroll to a Global Center state indicates that the Center is enrolled but disconnected.

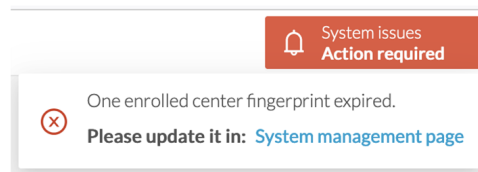


Step 5 Access the **Global Center**.

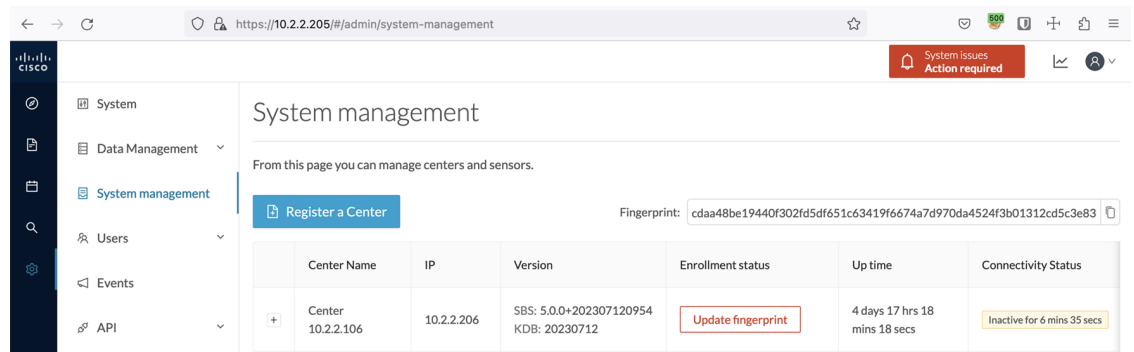


Step 6 Click the red banner.

A message indicating that a Center fingerprint is expired is displayed with a shortlink to access the administration system management page.

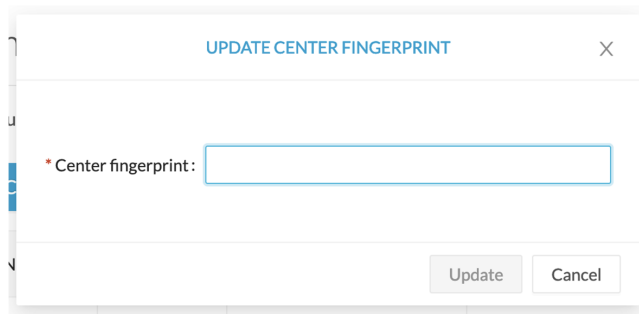


In the System management page you can see the Center with its enrollment status as Update fingerprint and Connectivity status as Inactive.



Step 7 Click the **Update fingerprint** status button.

An Update Center fingerprint window pops up.

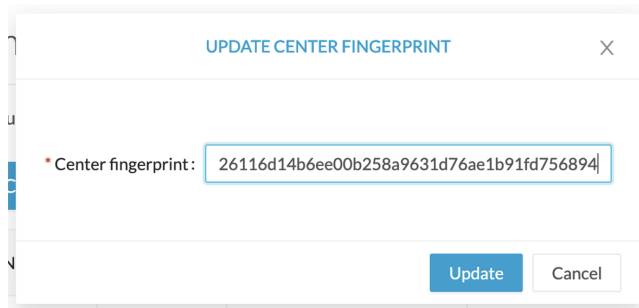


UPDATE CENTER FINGERPRINT

* Center fingerprint:

Update Cancel

Step 8 Paste the Center fingerprint.



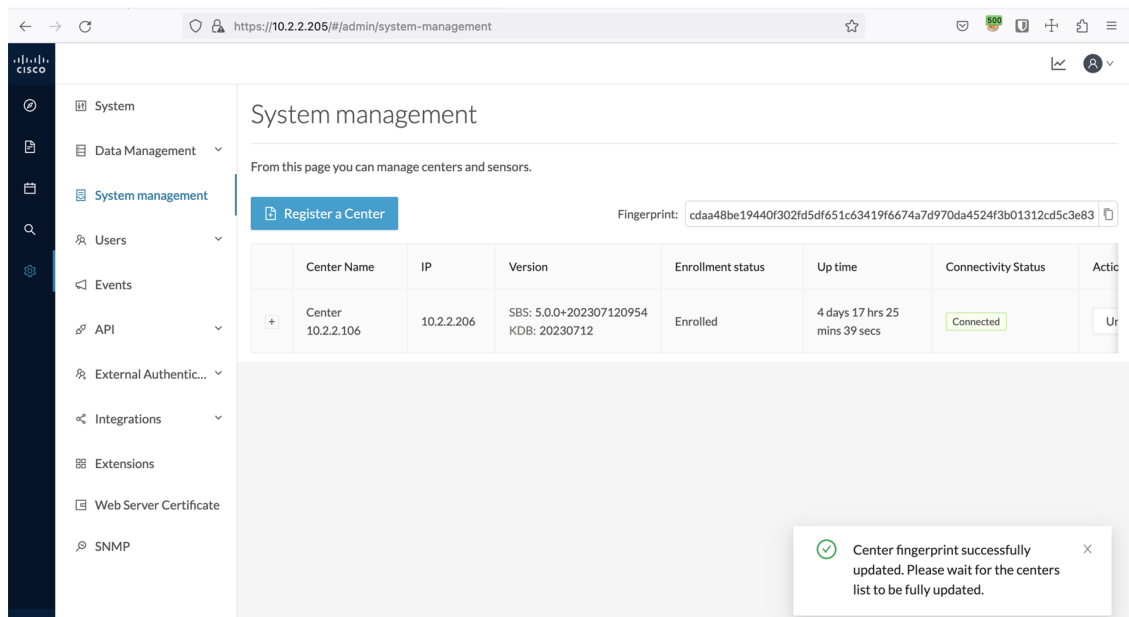
UPDATE CENTER FINGERPRINT

* Center fingerprint: 26116d14b6ee00b258a9631d76ae1b91fd756894

Update Cancel

A message indicating that the Center fingerprint successfully updated appears.

Wait a few moments for the Center enrollment status to switch to Enrolled and the connectivity status to Connected.



System management

From this page you can manage centers and sensors.

Register a Center

Fingerprint: cdaa48be19440f302fd5df651c63419f6674a7d970da4524f3b01312cd5c3e83

	Center Name	IP	Version	Enrollment status	Up time	Connectivity Status	Action
+	Center 10.2.2.106	10.2.2.206	SBS: 5.0.0+202307120954 KDB: 20230712	Enrolled	4 days 17 hrs 25 mins 39 secs	Connected	Unregister

Center fingerprint successfully updated. Please wait for the centers list to be fully updated.

In the **Global Center**'s administration system page the Center state is indicated as enrolled.

The screenshot shows the Cisco Cyber Vision Center VM Administration interface. The browser address bar displays `https://10.2.2.206/#/admin/system`. The interface includes a left-hand navigation menu with the following items: System, Data Management, Network Organization, Sensors, Active Discovery, Users, Events, API, License, External Authentication, Snort, and Risk score. The main content area is titled "Knowledge DB" and contains the following sections:

- Current database information**
 - Current database version: **20230712**
 - Last import: **Wednesday, July 12, 2023 4:57 PM**
- The KDB is managed by the global center, you cannot update it from this center.
- Center fingerprint**
 - Fingerprint: 2467927254bda15561dc48bc26116d14b6ee00b258a9631d76ae1b91fd756894
 - Expires: Sep 14, 2025
- Enroll to a Global Center**
 - Center enrolled to a Global Center.
- Reset**
 - Unroll the center on the Global Center Administration page to be able to reset a Center.

In the top right corner, there is a notification banner indicating "78 days remaining Evaluation Mode".



CHAPTER 10

Center Backup and Restore

The Cisco Cyber Vision Center command-line interface (CLI) provides commands to back up and restore a Center. Use these commands to migrate a Center from one appliance or VM to another, such as from a cloud VM to a UCS appliance.

The backup archive includes the following information:

- Operating system settings, such as IP addresses, names, and certificates.
- Cisco Cyber Vision settings.
- Cisco Cyber Vision data.

After the restore is complete, the restored Center uses the network identity and data from the backed-up Center.

- [Backup and restore requirements and limitations, on page 95](#)
- [Back up the Cisco Cyber Vision Center, on page 96](#)
- [Restore the Cisco Cyber Vision Center, on page 96](#)
- [Automate Cisco Cyber Vision Center backups, on page 97](#)
- [Automate backup export and transfer with a Bash script, on page 98](#)
- [Schedule the backup script with cron, on page 98](#)

Backup and restore requirements and limitations

Before restoring a backup archive, make sure that the target Center meets the following requirements:

- The target appliance or VM has the same number of network interfaces as the backed-up Center.
- The target Center has the required base network configuration before the archive is transferred. At minimum, configure the `eth0` IP address.
- The target Center interface mode, such as single-interface or dual-interface mode, matches the backed-up Center.

Observe the following limitations when restoring a backup archive:

- If the restored Center reuses the network identity of the original Center, power off the original appliance before bringing the restored Center online.
- The Cisco Cyber Vision license is not included in the backup archive. Return the license from the original Center to the Smart Account server if required, and install a license on the restored Center.

- Report extension packages are not restored automatically. Install the report extension on the restored Center if your deployment requires it.

Back up the Cisco Cyber Vision Center

Use this procedure to create a backup archive of the Cisco Cyber Vision Center before migration, appliance replacement, or recovery operations.

Use this procedure to create a backup archive from an existing Cisco Cyber Vision Center. The backup is generated locally on the Center and can then be copied to another appliance for restore or to another storage location for safekeeping.

Before you begin

- Ensure that the Cisco Cyber Vision Center is running and accessible.
- Ensure that you have CLI access to the Center through SSH or console access.
- Verify that sufficient free space is available on the Center to generate the backup archive.
- If you plan to copy the backup file off the Center, ensure that a secure transfer method and target location are available.

Procedure

Step 1 Connect to the Center through SSH.

Step 2 Run the following command:

```
sbs-backup export
```

A backup file is generated in the `/data/tmp/ccv-center-backup/` directory.

In the following example, the generated file is named

```
ccv-center-backup-Center224433labautomccvlocal-5.4.0-20240405112443.tar.gz .
```

Step 3 Copy the backup file to the target appliance or to a secure storage location for restore.

A backup archive of the Cisco Cyber Vision Center is available in `/data/tmp/ccv-center-backup/` and is ready to be transferred or used during a restore procedure.

What to do next

Use the backup archive during the restore procedure or transfer it to a secure storage location for retention according to your operational policy.

Restore the Cisco Cyber Vision Center

Use this procedure to restore Cisco Cyber Vision Center configuration and data from an existing backup archive.

Before you start the restore procedure, copy the Center backup archive to the new Center in the `/data/tmp/` directory.

Before you begin

- Ensure that the backup archive is already copied to the `/data/tmp/` directory on the target Center.
- Ensure that you have CLI access to the Center through SSH or console access.
- If the restored Center will reuse the previous Center network identity, ensure that the old appliance is powered off.

Procedure

-
- | | |
|---------------|--|
| Step 1 | Connect to the Center through SSH. |
| Step 2 | Run the following command:

<pre>sudo -i sbs-backup import <path to the center backup></pre> |
| Step 3 | Type <code>reboot</code> to restart the Center. |
| Step 4 | Install the report management extension if your deployment requires it. |
| Step 5 | Install a license on the restored Center. |
-

The Cisco Cyber Vision Center is restored from the backup archive and is ready for any required post-restore tasks, such as report extension installation and licensing.

Automate Cisco Cyber Vision Center backups

You can use file-transfer tools to automate Cisco Cyber Vision Center backup export and transfer.

`rclone` is a command-line program for managing files across local and remote storage systems. You can use it to move or synchronize Center backup files with a remote location.

Procedure

-
- | | |
|---------------|--|
| Step 1 | Configure <code>rclone</code> for the remote storage system.

<pre>sudo -i
rclone config</pre>
For configuration options, see rclone documentation . |
| Step 2 | Use the <code>rclone</code> command to move the backup directory to the remote location.

Syntax:

<pre>rclone [options] subcommand <parameters> <parameters...></pre>
For example:

<pre>rclone move /data/tmp/ccv-center-backup/ lab_sftp:/srv/pub/</pre> |

In this example, `rclone` moves the backup files stored in `/data/tmp/ccv-center-backup/` to the remote location `lab_sftp:/srv/pub/`.

Automate backup export and transfer with a Bash script

This reference provides a Bash script example to automate the generation of a backup archive and its transfer to a remote location.

The script performs the following operations:

- Generate the backup archive.
- Transfer the backup archive to a remote location.

```
#!/bin/bash
sbs-backup export
rclone move /data/tmp/ccv-center-backup/ lab_sftp:/srv/pub/
```

Schedule the backup script with cron

You can schedule a Bash script with `cron` to back up Cisco Cyber Vision data and send the backup file to a remote location.

Procedure

Step 1 Edit the crontab file:

Example:

```
crontab -e
```

Step 2 Add the cron entry.

The following example runs `/data/tmp/backup.sh` every Saturday at 1:00 a.m.:

Example:

```
00 01 * * 6 bash /data/tmp/backup.sh
```