



Cisco Cyber Vision Center Appliance Installation Guide, Release 4.1.0

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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 running on Cisco Unified Computing C220.

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

This documentation is applicable to **system version 4.1.0**.

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 Cisco 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 & Characteristics

- [Information & Characteristics, on page 3](#)

Information & Characteristics

The Cisco Cyber Vision 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 Cisco Deep Packet Inspection engine and send meaningful information to the Cisco Cyber Vision Center.
- The Cisco Cyber Vision **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, for a central view of all Centers deployed within an organization for alerting, reporting and management functions.

To safeguard the data collected from the industrial network and ensure maximum reliability, the Center includes a RAID storage array. It also includes redundant internal cooling fans (x3) and dual hot-swappable power supplies.

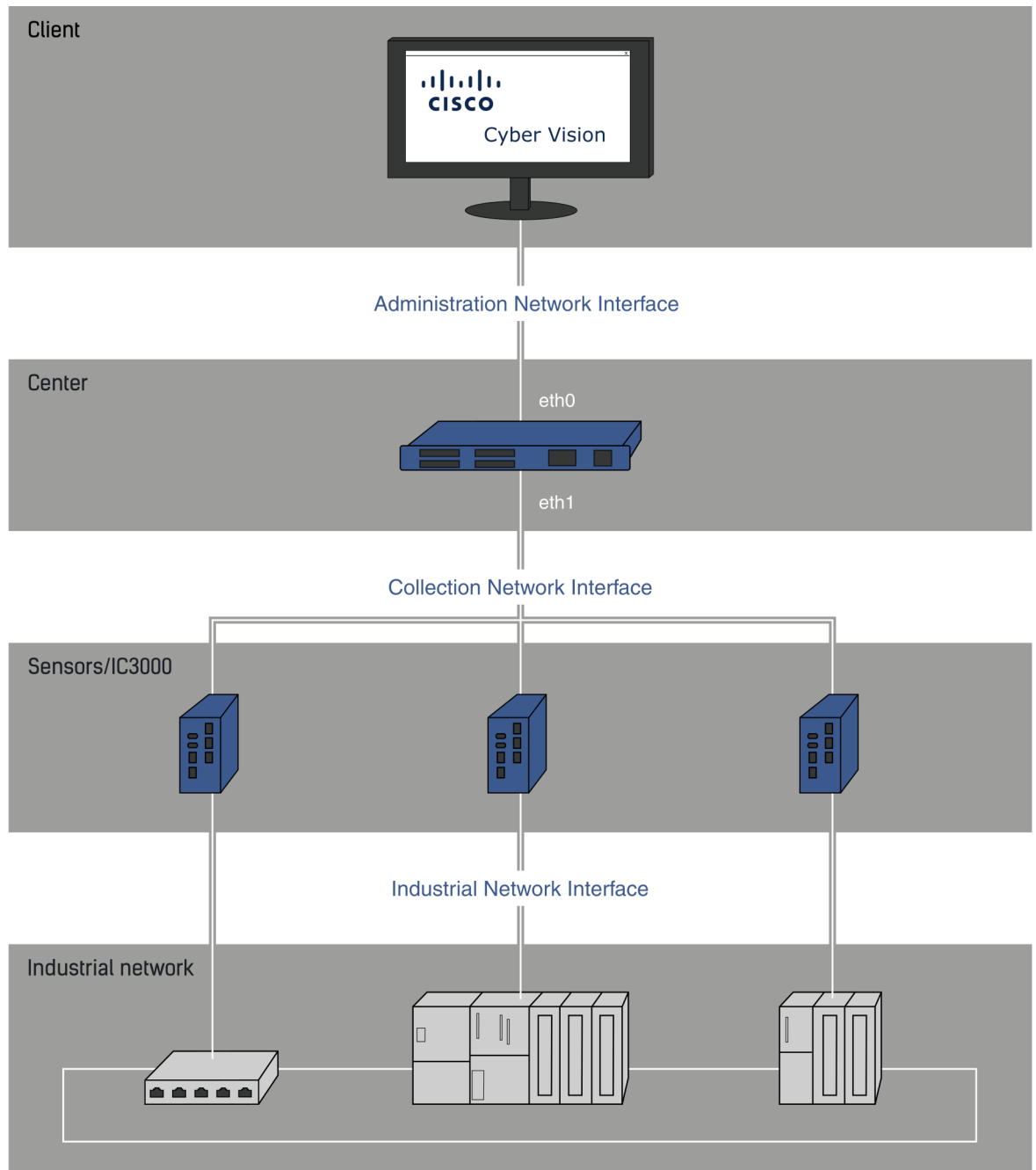
During the installation of the Center, you will have the opportunity to set up Center data synchronization to a Global Center. Although, if you choose to set up a global infrastructure, you must install the Global Center first, then the Centers, and finally, the sensors.

Networks or segments involved

From Cisco Cyber Vision 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 Cisco Cyber Vision 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).

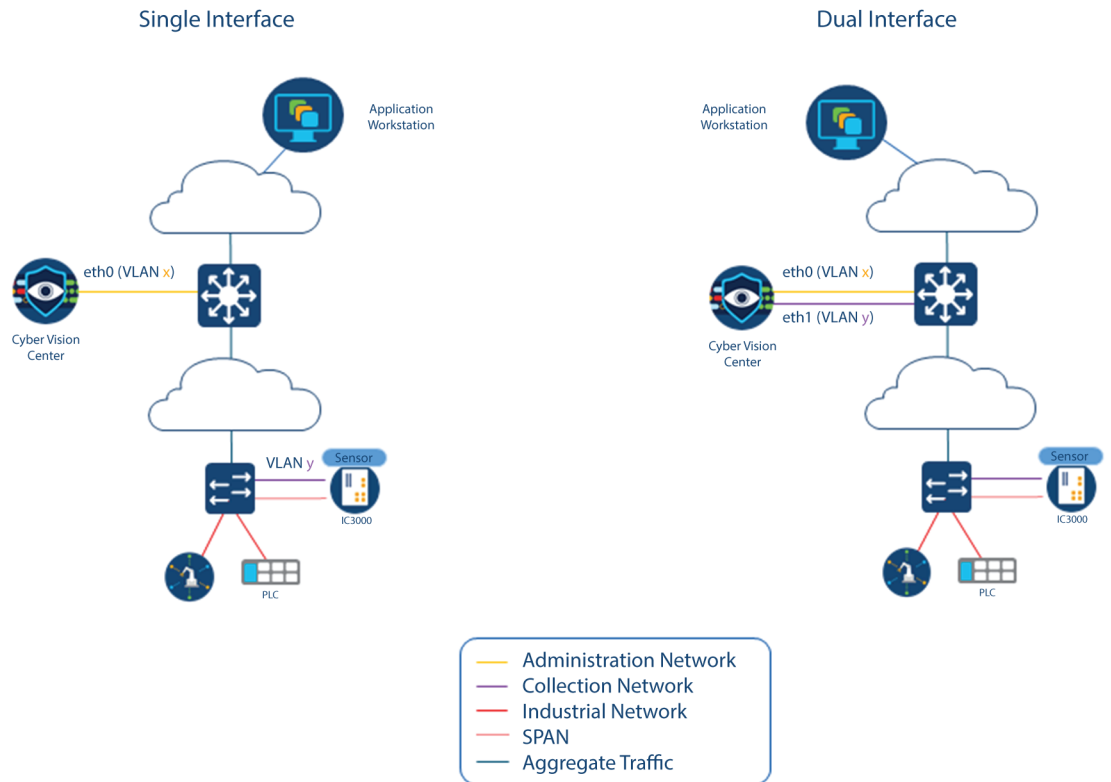
Example of a Cisco Cyber Vision installation (without Global Center):



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.



The Center provides two dedicated and separate 10 Gigabit Ethernet network ports to connect to these two networks.

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 Cisco Cyber Vision Architecture Guide for more information about defining Cisco Cyber Vision environment configuration.



CHAPTER 3

Connect the Center

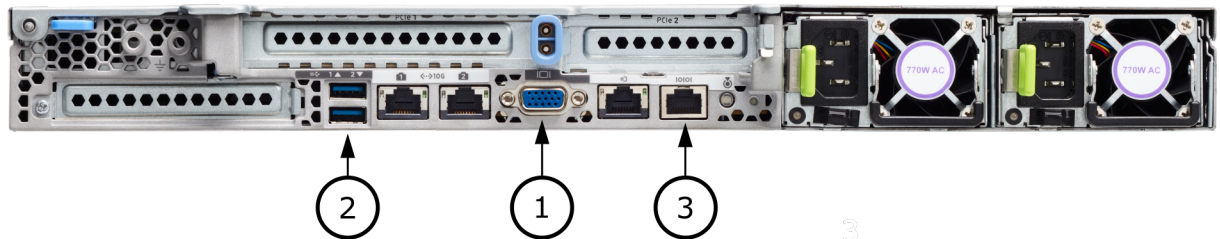
Before turning on the Center for the first time, you will need to connect the Center to a VGA display and a keyboard or a console so you can configure it, and to network interfaces to make it operational.

- [Connect an external device, on page 7](#)
- [Connect interfaces for communication, on page 7](#)
- [Power up the Center, on page 8](#)

Connect an external device

You need to connect an external device to access and configure the Center.

To do so, connect an external display to the VGA port (1) and a keyboard to any USB port (2) on the Center, or a console to the console serial port (3).



Connect interfaces for communication



Global Center:

- Connect the eth0 interface to the network **(1)**.

Center with dual interfaces (two separate networks):

- Administration interface (eth0):

Connect the administration network cable to the **Administration LAN port (1)** to connect the Center with the user interface or the Global Center.

- Collection interface (eth1):

Connect the collection network cable to the **Collection LAN port (2)** to connect the Center with its sensors.

Center with single interface:

- Connect the eth0 interface to the network **(1)**.

Administration and Collection will use the same interface.

Power up the Center

Connect the Center to the power supply and switch it ON from the Center front view.



CHAPTER 4

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 sensors passwords.
 - Synchronize the Center to the NTP server.
 - Configure the Administration and Collection interfaces (n/a to a Global Center or to a Center using a single interface).
 2. The Cisco Cyber Vision configuration, through a browser, to:
 - Create an admin account.
 - Configure the Centers data synchronization (Global Center and synchronized Centers only).
- [Basic Center configuration, on page 9](#)
 - [Cisco Cyber Vision configuration, on page 25](#)

Basic Center configuration

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

Required information:

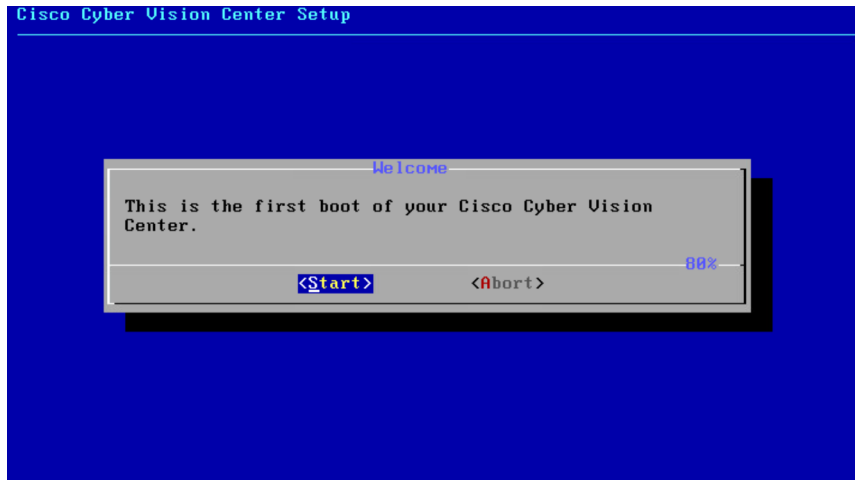
- Local NTP and DNS IP addresses.
- The Collection interface network address (n/a to a Global Center or a Center using a single interface).

In the case of manual Administration network interface configuration:

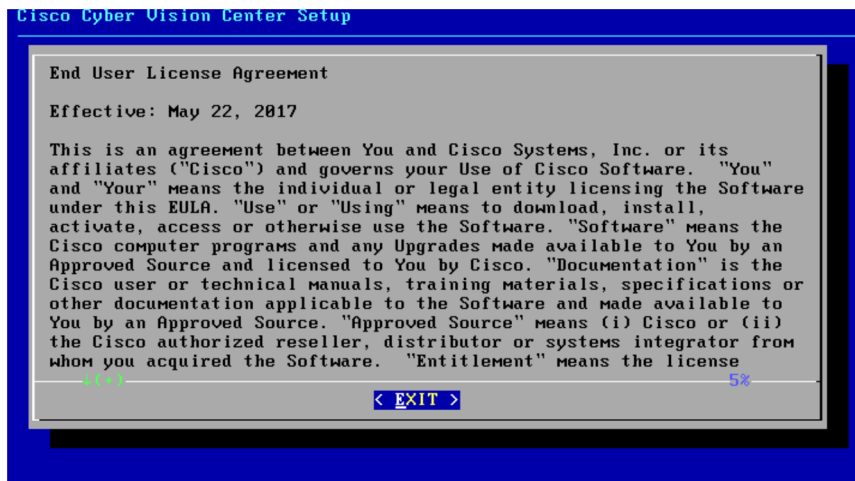
- Its IP address.
- Its netmask (in a two-number format, e.g. 192.168.1.0/24).
- Its default gateway (to reach devices located outside the local network).

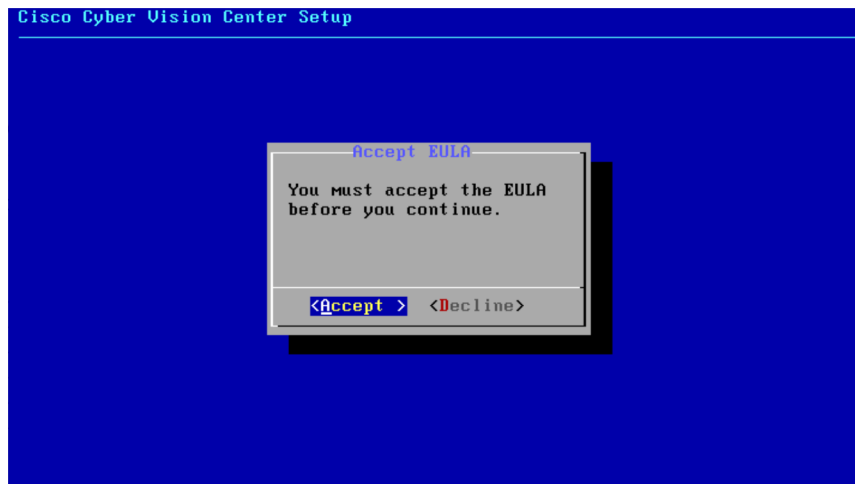
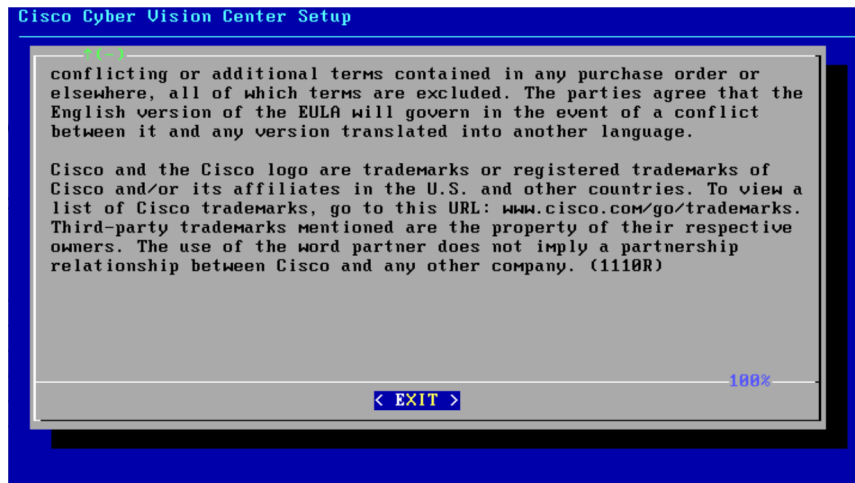
Access the basic Center configuration

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

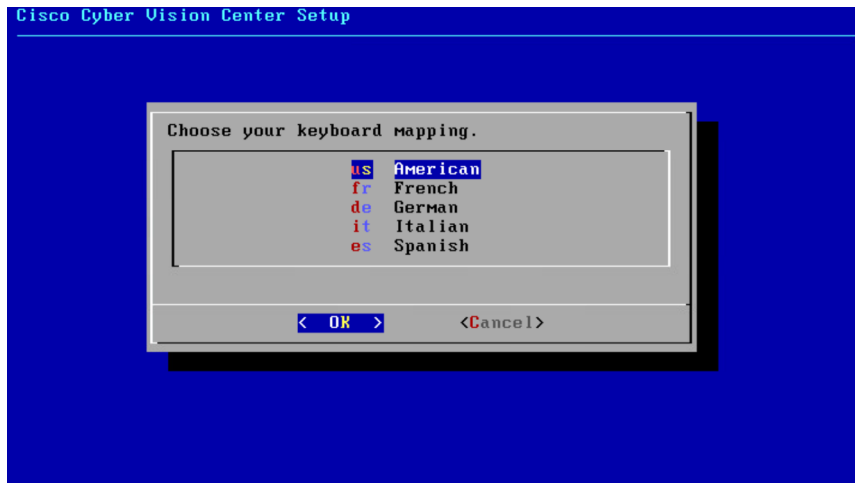




Select the language to match your keyboard



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

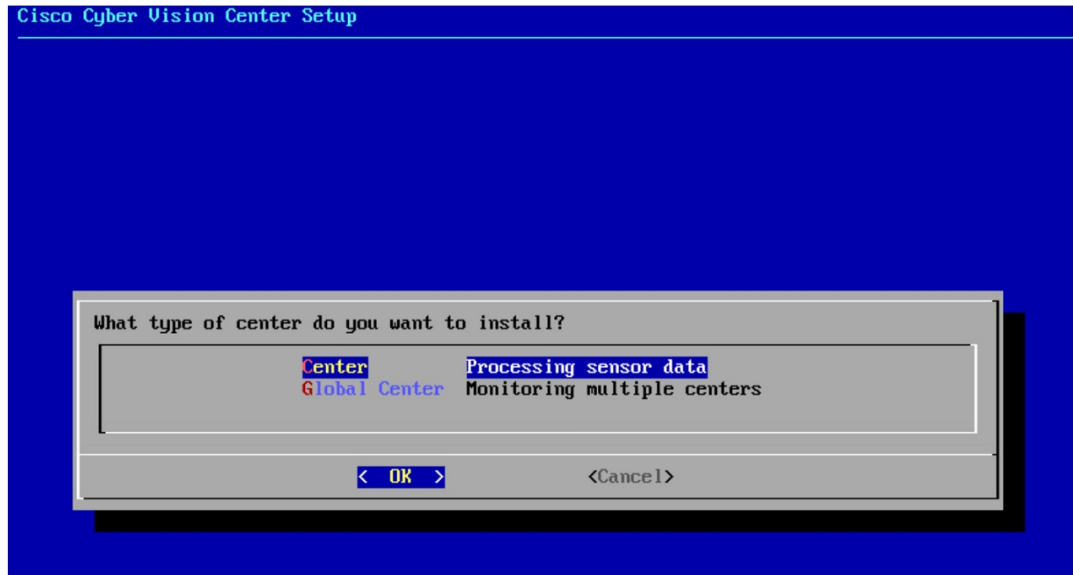


Select the Center type

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

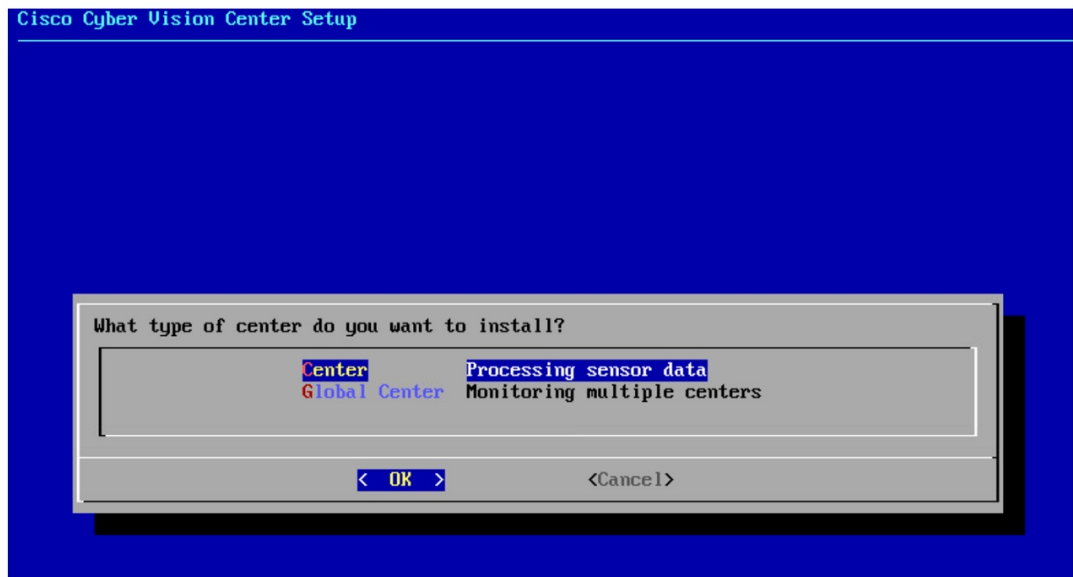
- A **Center** receives metadata from sensors and store them into an internal database (Postgresql). This Center could be standalone or with synchronization with Global Center, is similar to a (standalone) Center from a functionality point of view, except for the link to a Global Center. You must install Centers with sync **after** the Global Center. This will enable your system to start enrollment and start pushes events to it. .
- A **Global Center** introduces a centralized architecture which collects all industrial insights and events from Centers with Global Center and aggregate 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.



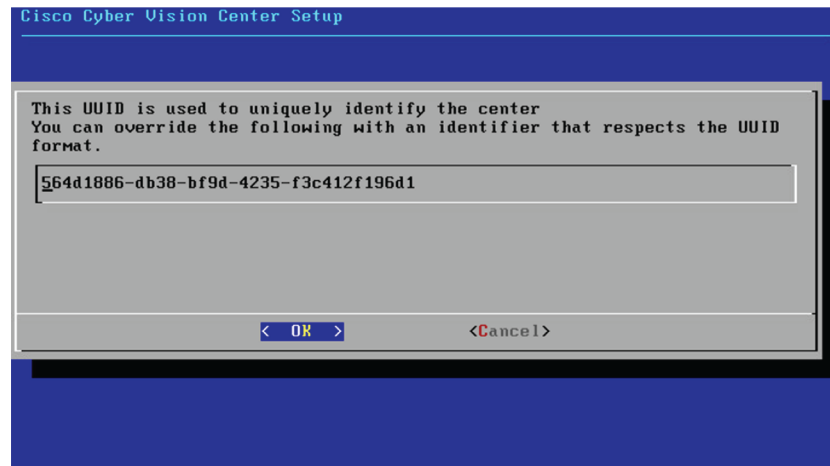
If you're reinstalling the Center and want to restore it, select Yes.



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"
```

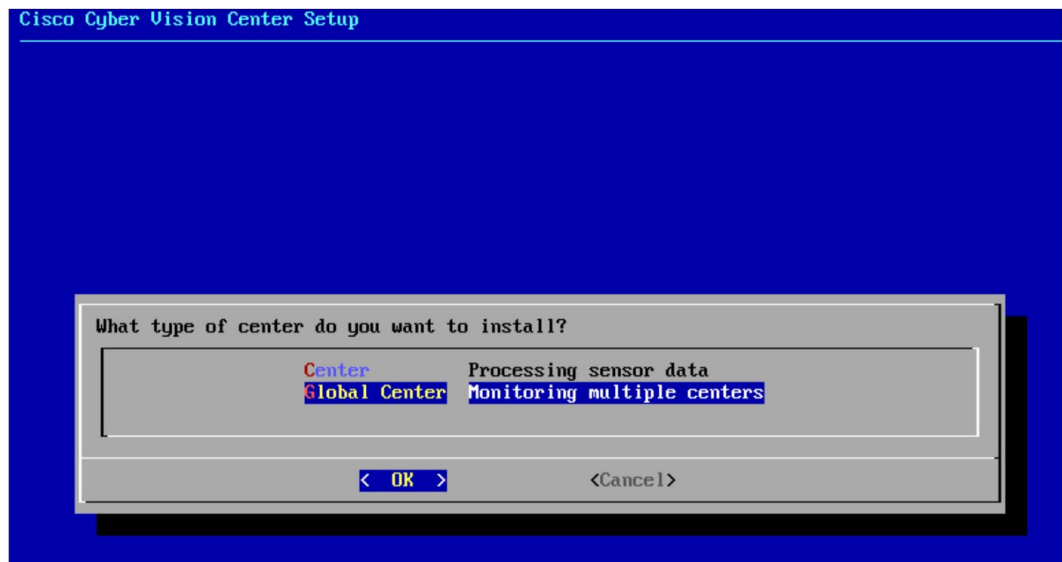
Type the id into the basic Center configuration UUID field.



Click OK. You will be direct 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.



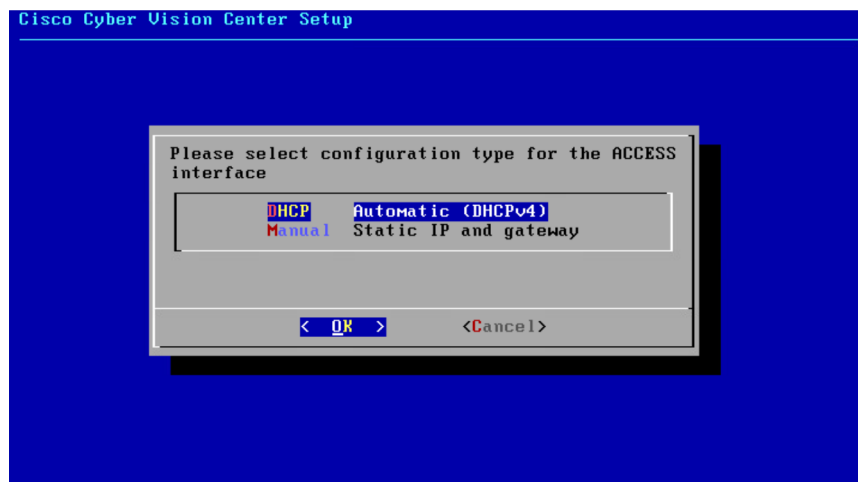
You will be directed to the next step.

Configure the Center's Administration network interface

The Center uses a dedicated sub-network on the Administration interface. It is possible to change it if the default one doesn't fit the environment on which the Center will be connected.

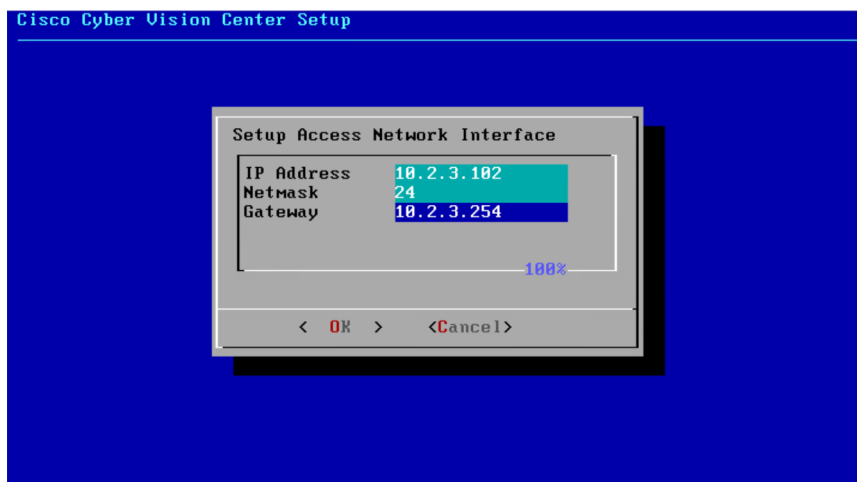
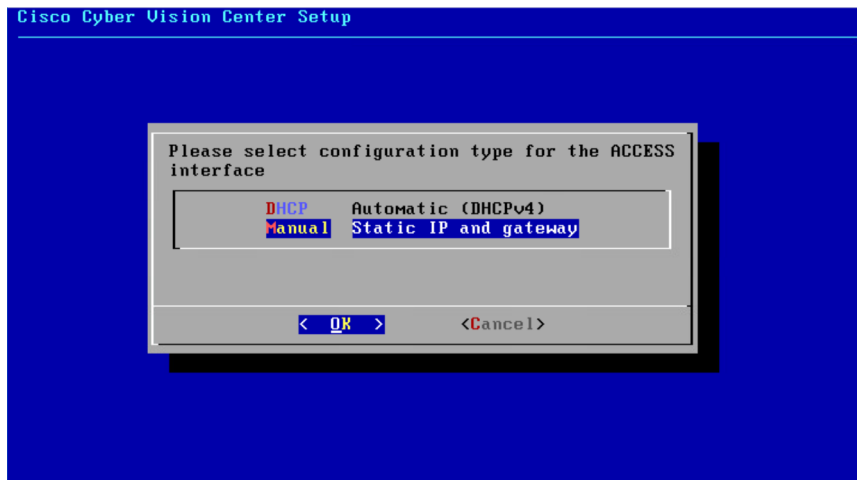
The Administration network interface configuration can be done either:

- Using a DHCP server, if there is one available on the network.



In this case, enter OK. Settings will be adjusted automatically, and you will be directed to the next step.

- Manually:



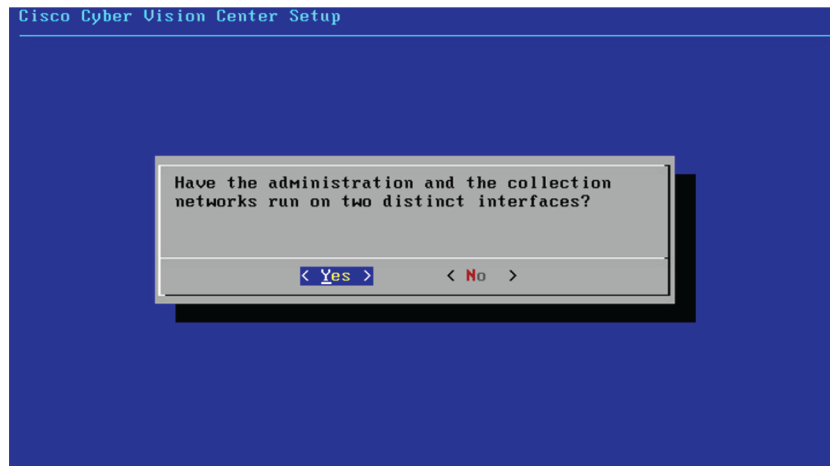
Enter the Administration network interface's IP address, netmask (in a two-number format), and gateway.

Set interfaces (dual or single)

This step is not applicable to a Global Center. Select No.

Concerning a Center, it is possible to:

- Set the Administration and Collection Network Interfaces on two distinct interfaces (recommended for security). In this case, select Yes.
- Use a single interface. In this case, select No.



If you choose to set a dual interfaces, you will be directed to the following screens in the [Configure the Center's Collection network interface, on page 21](#) subsection.

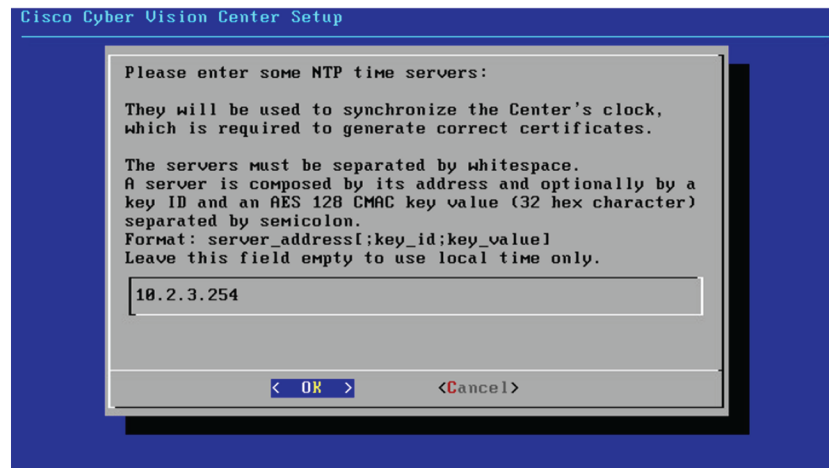
Configure the Center's DNS

Type a DNS server address and optional fallbacks.

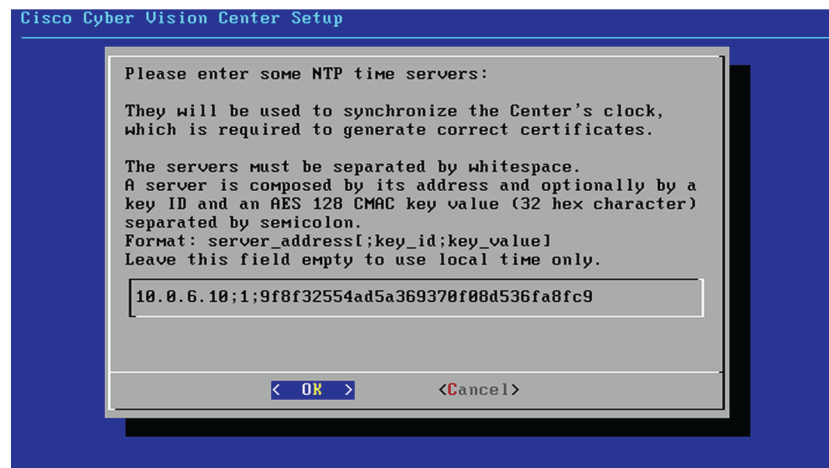


Synchronize the Center and the sensors to NTP servers

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.

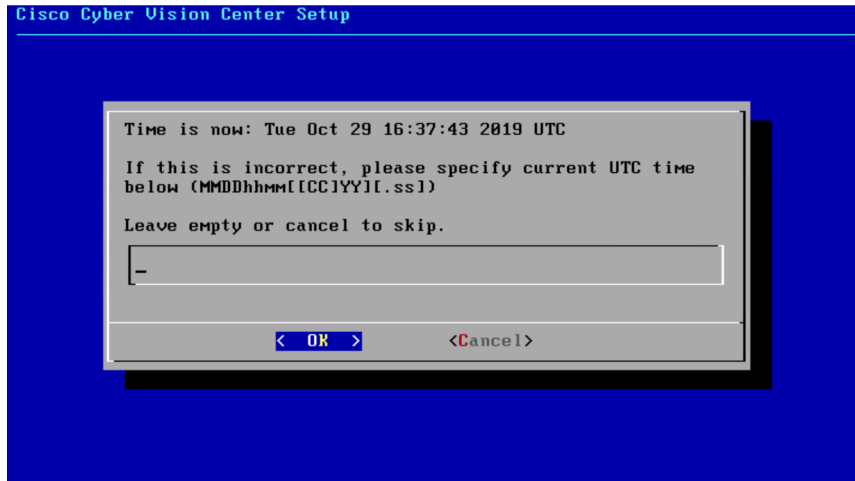


The synchronization takes a few seconds.

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



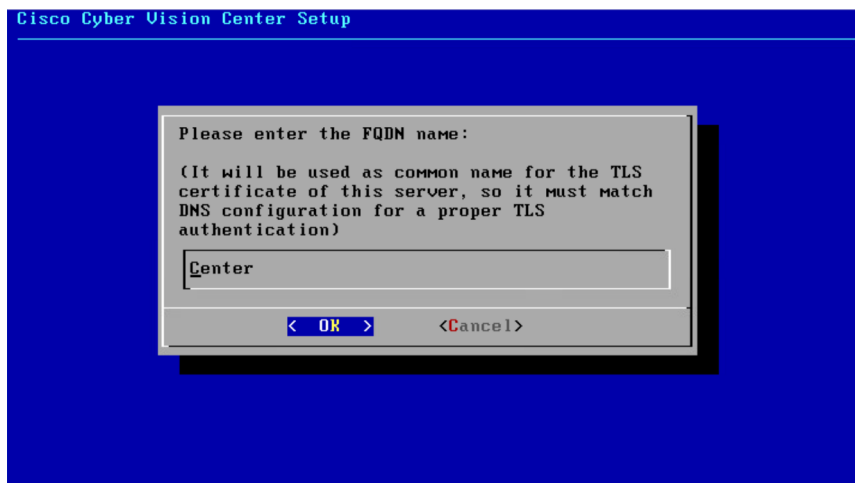
Note The time is set in the UTC standard.



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.



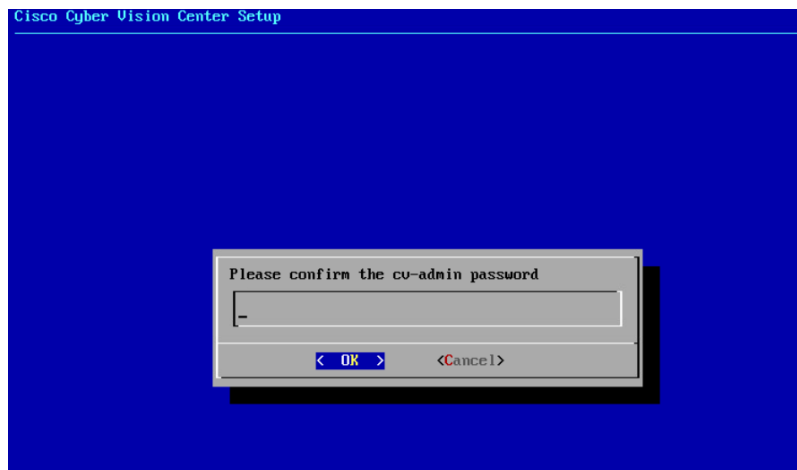
Note This name must match the DNS name you will use to access the Center through SSH or a browser.

Set the Center's password

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

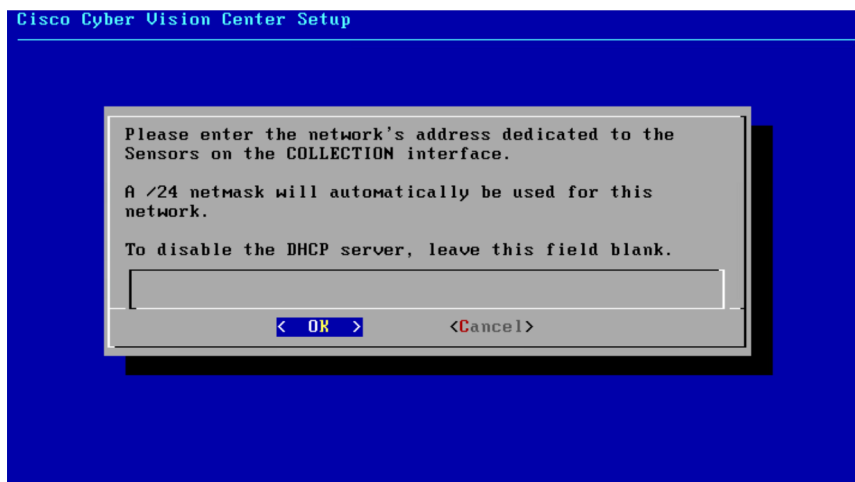
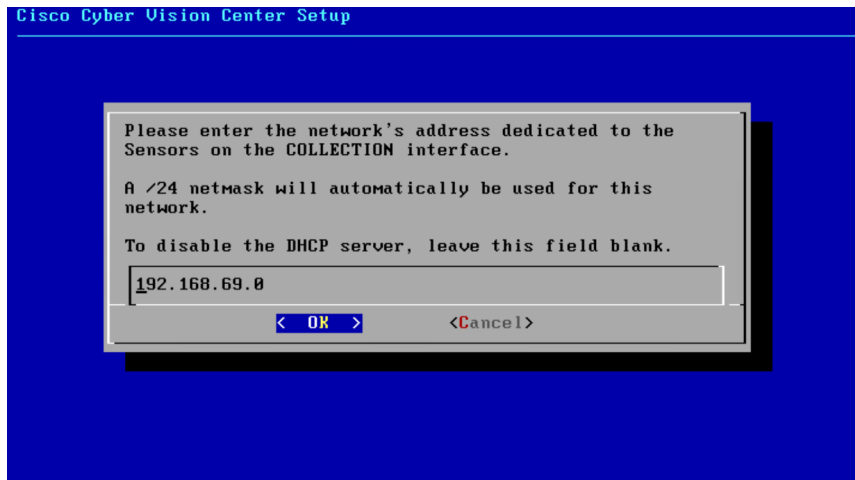


Confirm the password.

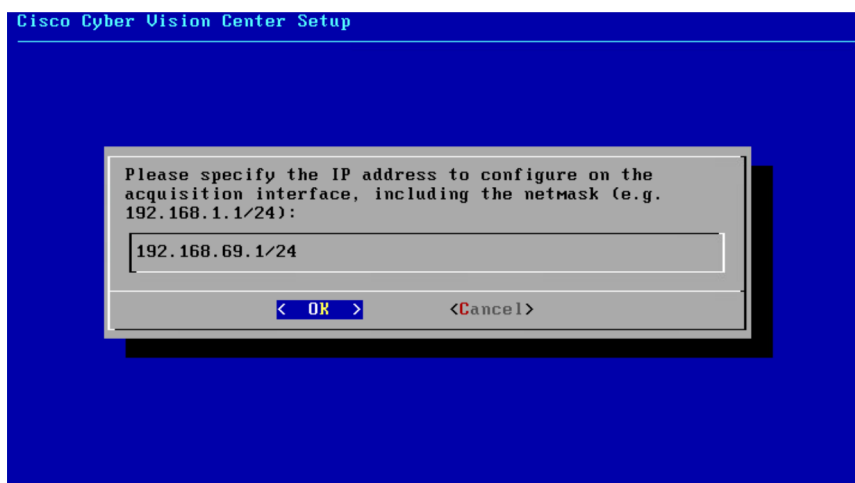


Configure the Center's Collection network interface

Erase the network address suggested into the field to disable the DHCP server and enter OK to proceed to the next step.



Type the IP address of the Industrial network interface:

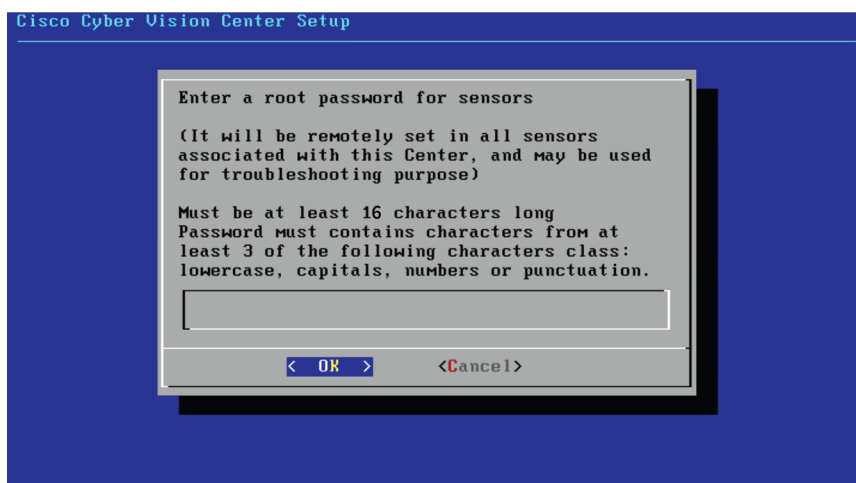


Configure the sensors' password

As this step does not apply when installing a Global Center, the following screens won't be displayed. Instead, you'll be directed to [Authorize networks](#).

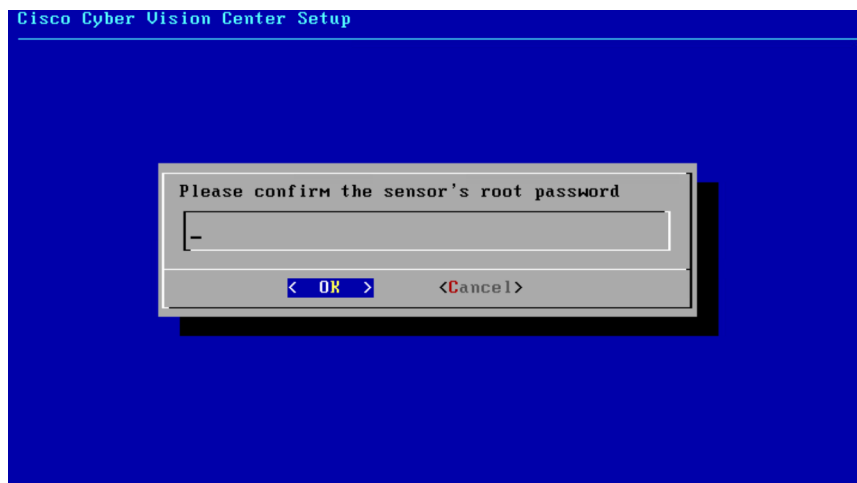
Although, if you're installing a Center, proceed as below.

The sensors' root password must be set for security reasons.



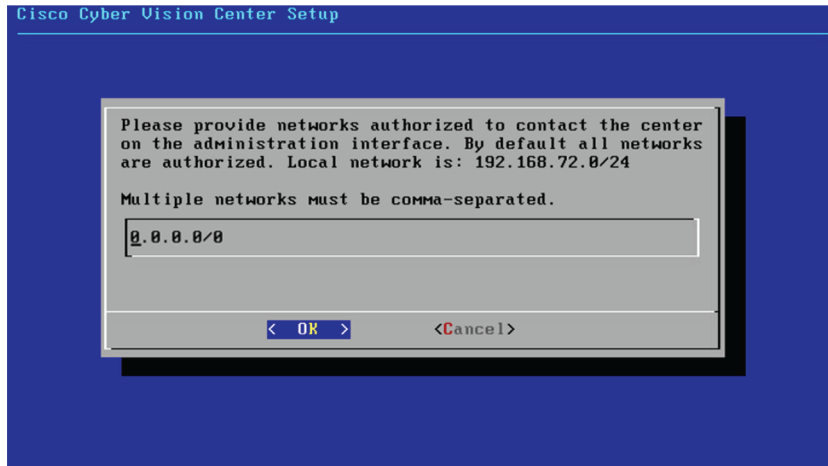
This password will be assigned once you will have enrolled the sensors on the Center. You will need this password for troubleshooting, diagnostics, and updates.

Confirm the password.



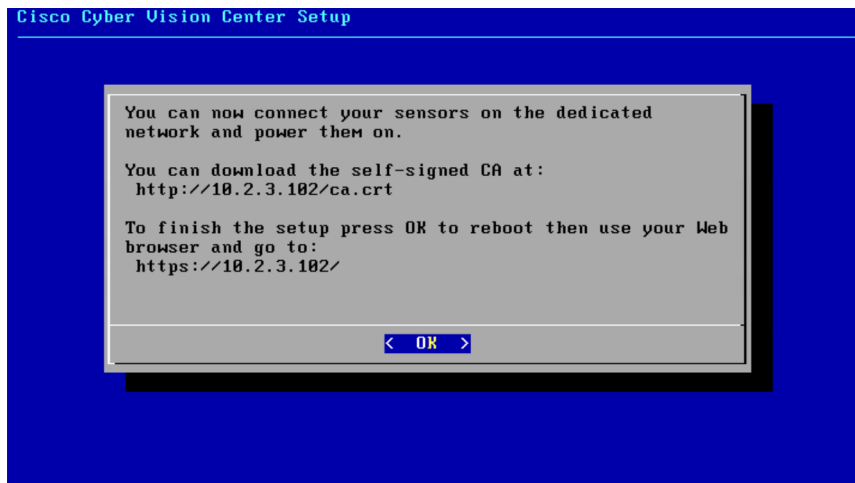
Authorize networks

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 the basic Center configuration

Next is the last screen of the basic Center configuration. It reminds you the addresses set to be used to download the CA certificate and access Cisco Cyber Vision. Save these addresses somewhere, you will need them later to access the user interface.



Enter OK to finish the basic Center configuration.

```

.:|:~|:~. Cisco Cyber Vision .:|:~|:~.

Log in to this Cisco Cyber Vision instance using https://192.168.72.22

VMware, Inc. VMware Virtual Platform

CPU: 4 x Intel(R) Core(TM) i7-8809G CPU @ 3.10GHz
RAM: 7.74 Gib
Single interface: no

WARNING, READ THIS BEFORE ATTEMPTING TO LOGON
Confidential Information

This system is for the use of authorized users only. Individuals using this computer without
authority, or in excess of their authority, are subject to having all of their activities on
this system monitored and recorded by system personnel. In the course of monitoring
individuals improperly using this system, or in the course of system maintenance, the
activities of authorized users may also be monitored. Anyone using this system expressly
consents to such monitoring and is advised that if such monitoring reveals possible criminal
activity, system personnel may provide the evidence of such monitoring to law enforcement
officials.

SBS 4.1.0 center tty1

center login: _

```



Note A major change regarding the Center command line (CLI) access through serial console or SSH was made in Cisco Cyber Vision version 4.1.0. The user root is no more usable to establish the connection. A new user called 'cv-admin' must be used. This user has limited rights and many CLI commands will require permission elevation:

- prefix the command with "sudo".
- or open a root shell using "sudo -i" and enter the command.

Close the Center configuration window before proceeding with the next steps of Cisco Cyber Vision configuration.

To proceed with the Cisco Cyber Vision configuration, open your browser and go to the URL previously indicated to access the user interface.



Note Each Cisco Cyber Vision Center includes its own PKI (Public Key Infrastructure), with a CA (Certification Authority), that will be used to establish the TLS connection with the sensors and to clients. The CA must be installed on each client browser (see the following chapters).

Cisco Cyber Vision 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](#) and then access the [Install Cisco Cyber Vision](#) 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 [Install Cisco Cyber Vision](#) to configure users and sensors.
 2. [Configure the user interface security](#) itself.

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

Browser requirements:

Cisco Cyber Vision supports Chrome 54, Firefox 49 and newer versions.

Install the certificate in your browser

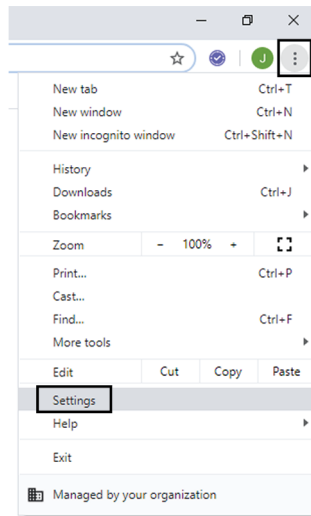
This task explains how to install a Cisco Cyber Vision self-signed certificate in your browser.

Before you begin

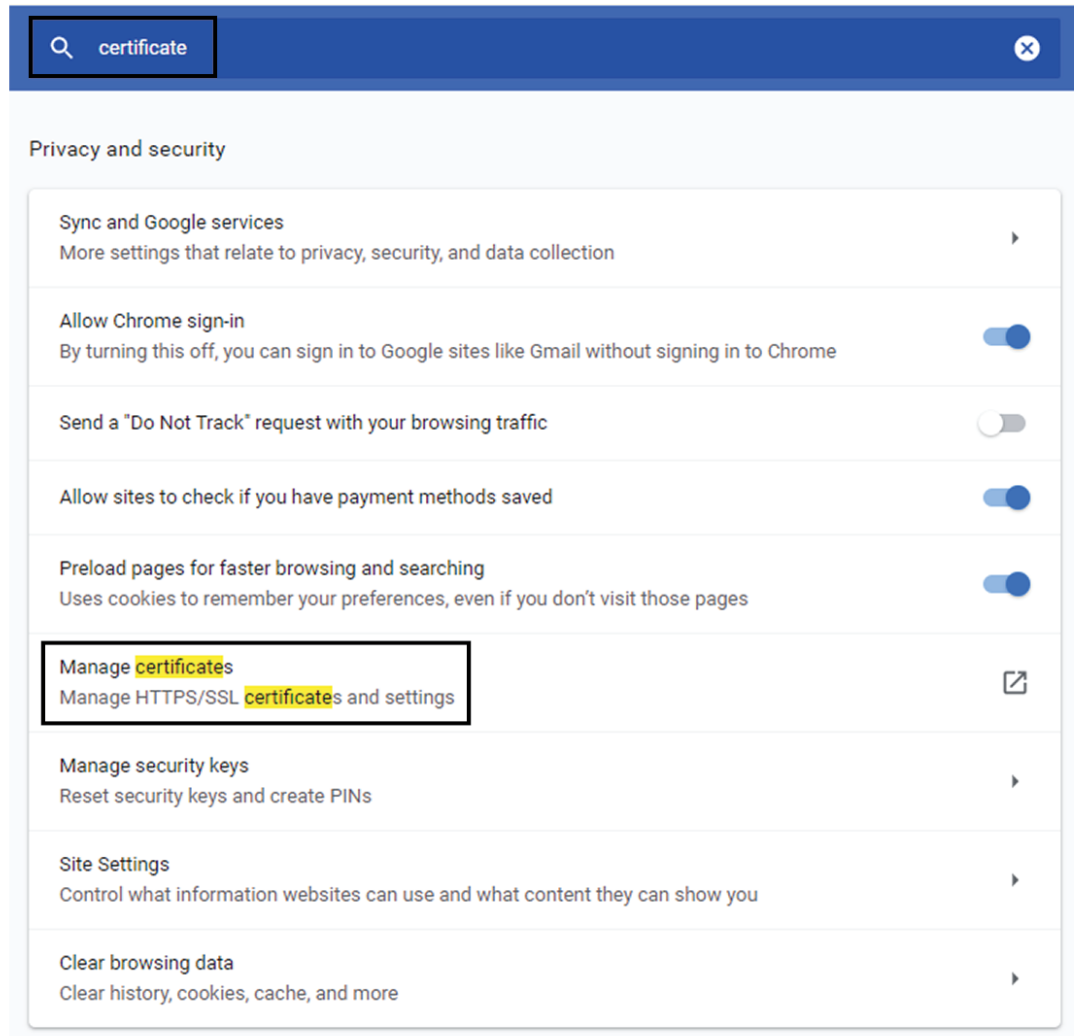
Perform this task if you aim to install a self-signed certificate. If you're planning to use an enterprise certificate, proceed directly with [Install Cisco Cyber Vision, on page 33](#).

Procedure

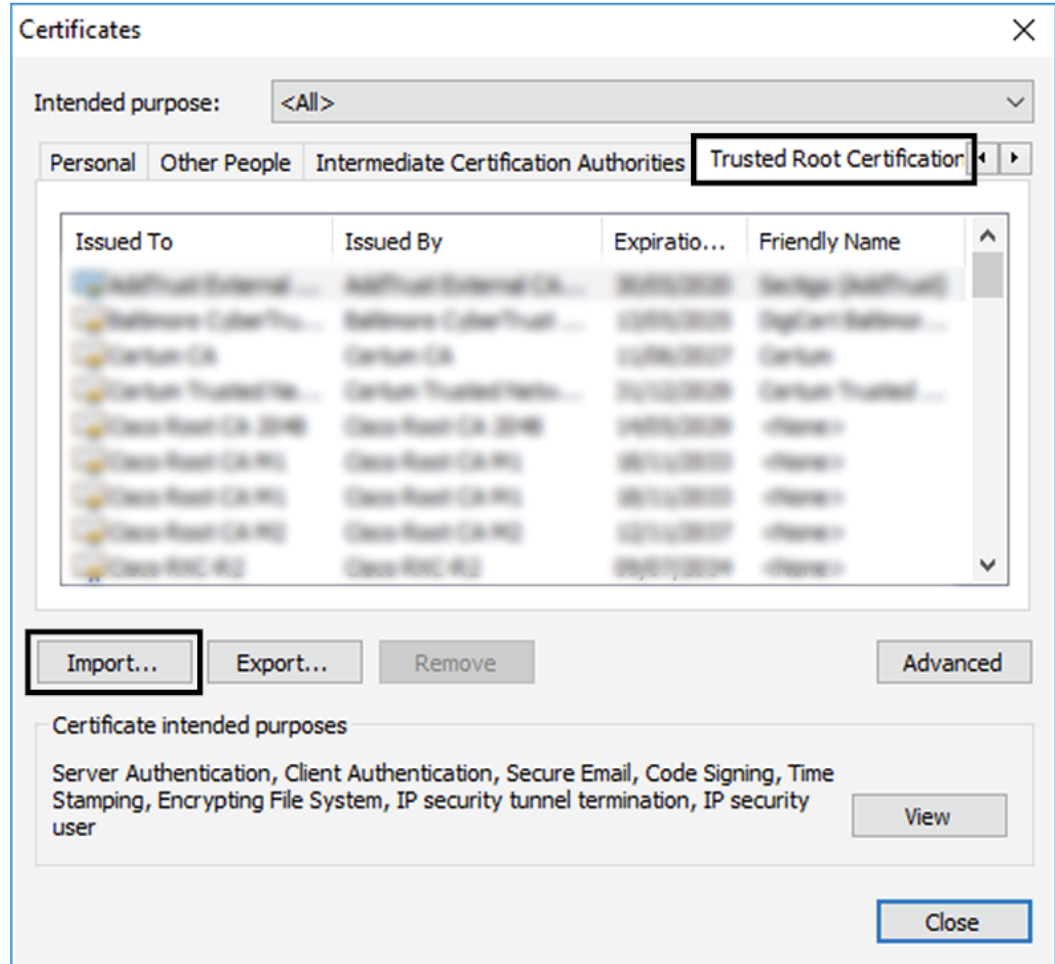
- Step 1** Open your browser.
- Step 2** Enter 'http://<CENTERIPADDRESS>/ca.crt' inside the search bar.
The certificate is downloaded.
- Step 3** Save the certificate on your computer.
- Step 4** In the browser, access the settings.
Example: Chrome



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



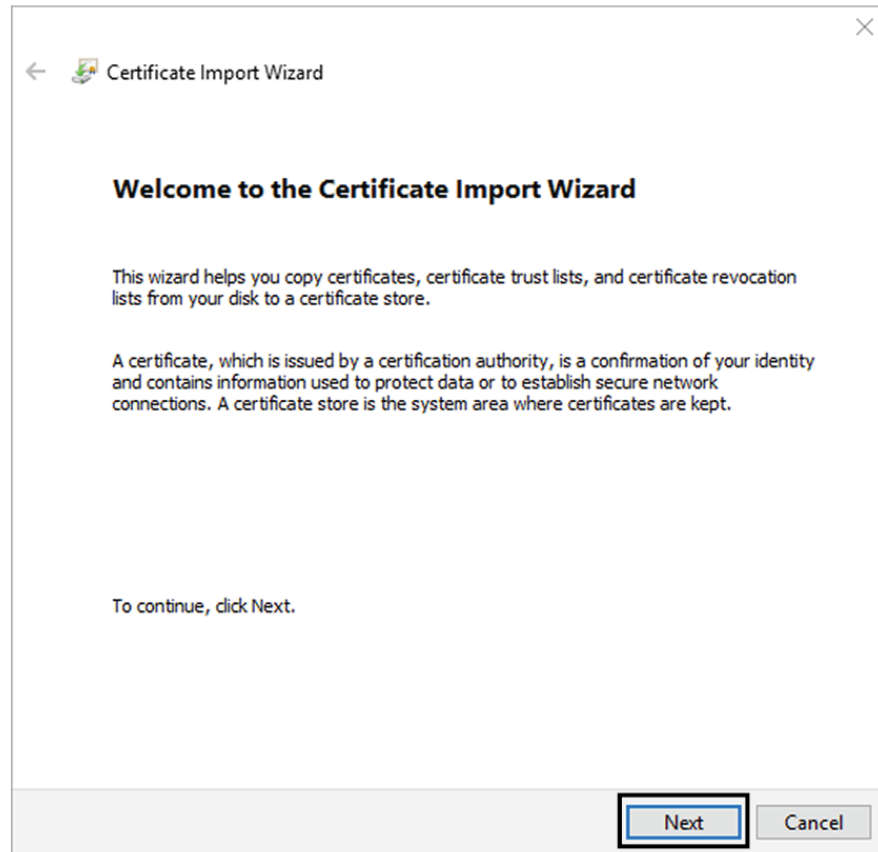
Step 6 Access the Trusted Root Certification tab and click Import.



A certificate importation wizard opens.

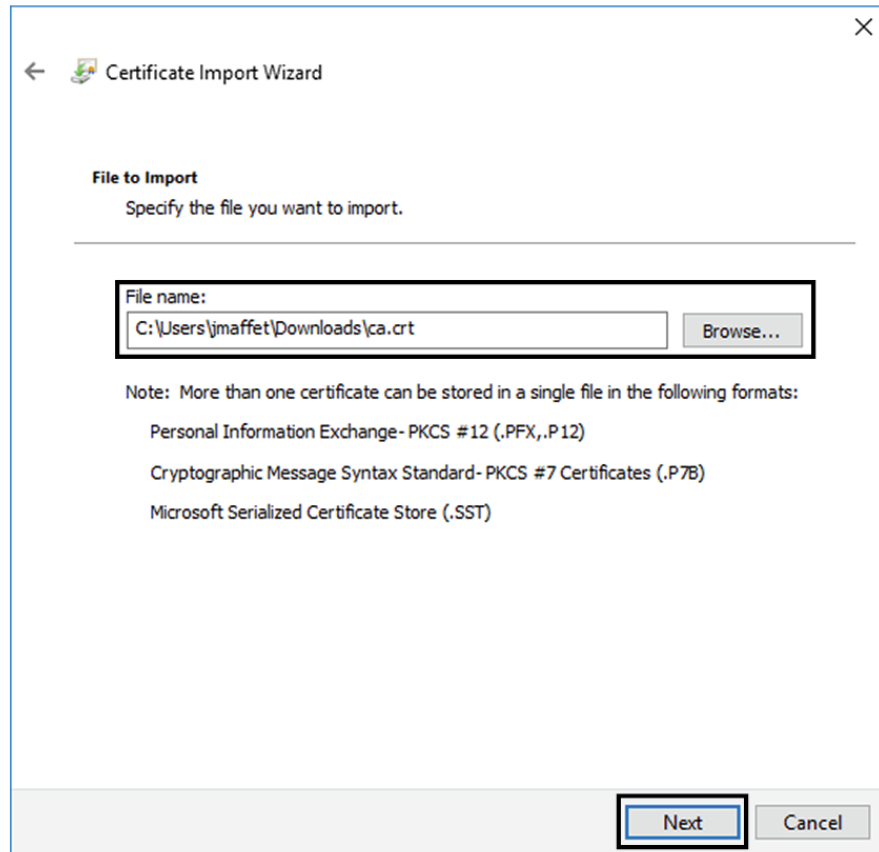
Step 7

Go to the next step.

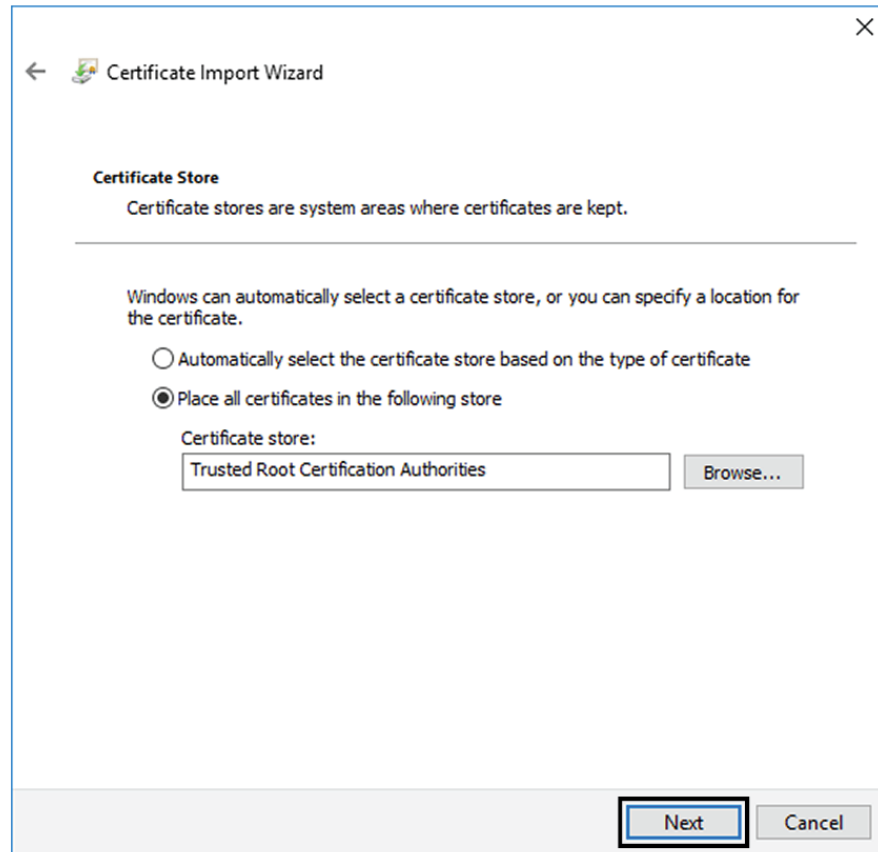


Step 8 Search for the certificate you downloaded earlier.

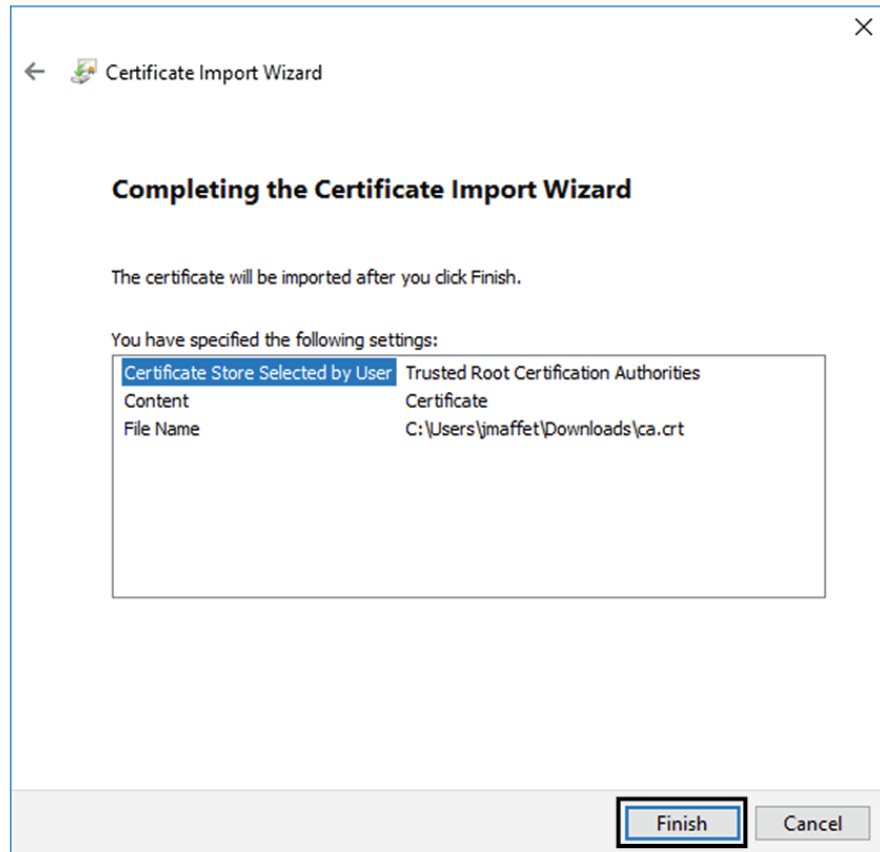
Step 9 Go to the next step.



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 Cisco Cyber Vision, on page 33](#)

Install Cisco Cyber Vision

Access the Cisco Cyber Vision 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 Cisco Cyber Vision 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:
 SkvIH2Qq*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: ~!"#\$%&'()*+,-./:;<=>?@[^_{}.

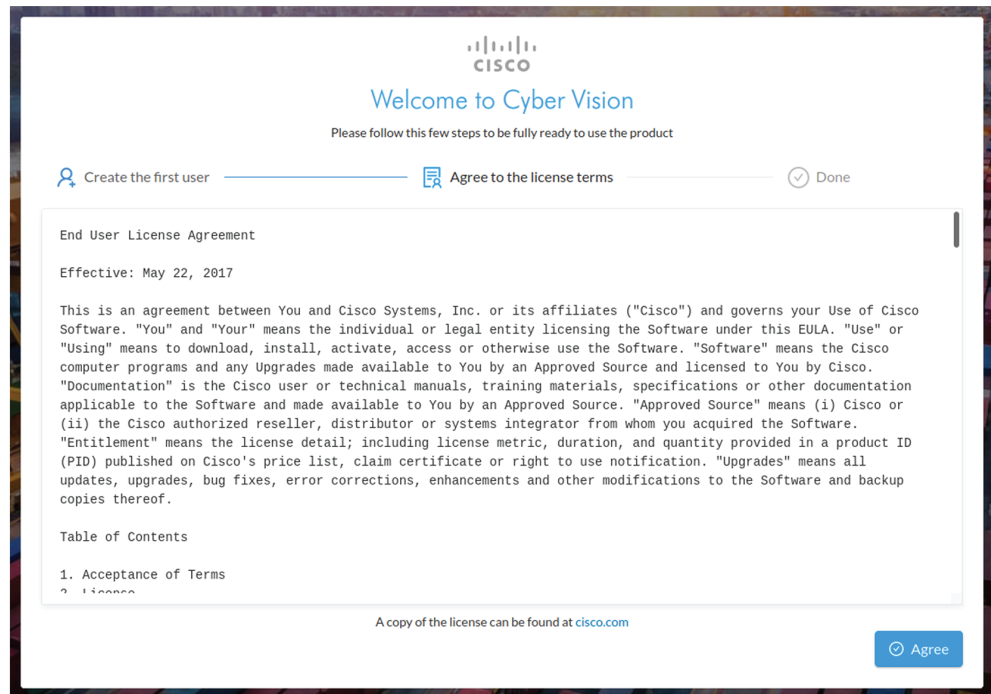
Passwords should be changed regularly to ensure the platform and the industrial network security.

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

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

Step 6

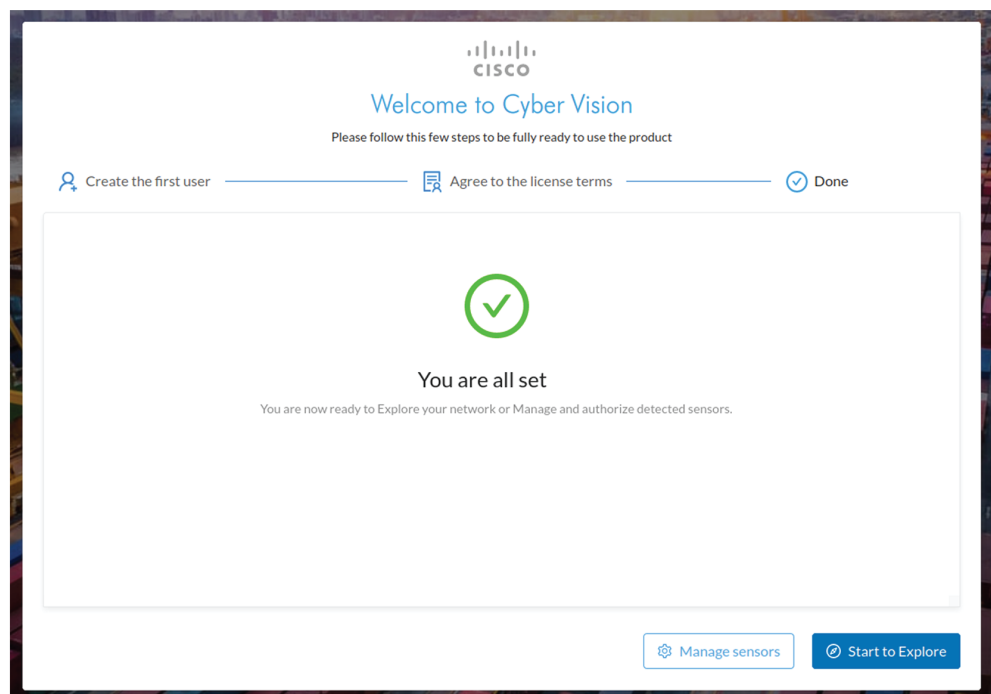
Accept the software license agreement:

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

The Center is now correctly installed and Cisco Cyber Vision is ready to operate.

Step 9

Click Start to Explore.



Cisco Cyber Vision 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 36](#).

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 41](#).

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 Cisco Cyber Vision Sensor Installation Guides.

Configure the user interface security

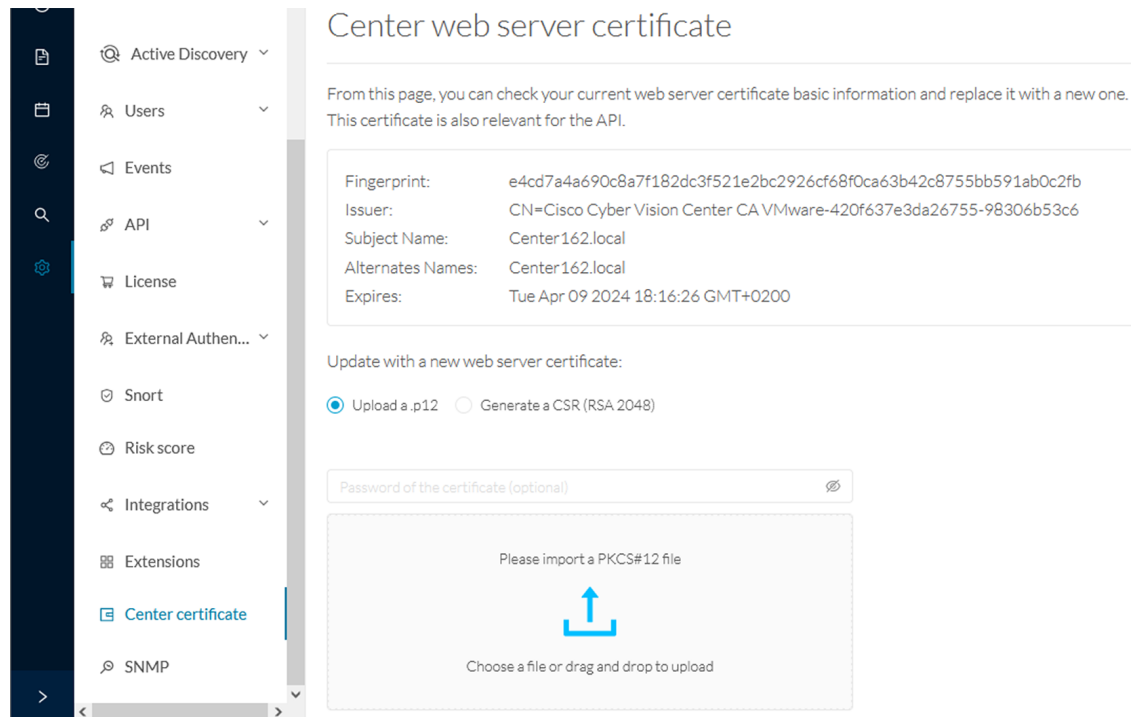
This section explains how to configure Cisco Cyber Vision user interface security with an enterprise certificate. You will have the option to upload a .p12 or to generate a CSR.

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.



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)

.....

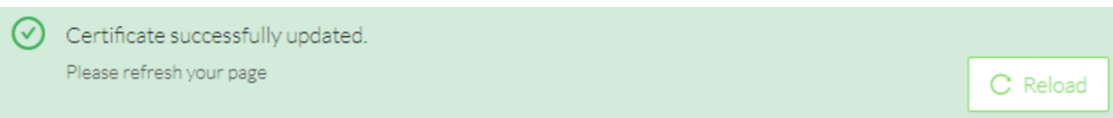


File selected: CenterAD2019.2019lab.local1.pfx

Save

Step 4 Click Save.

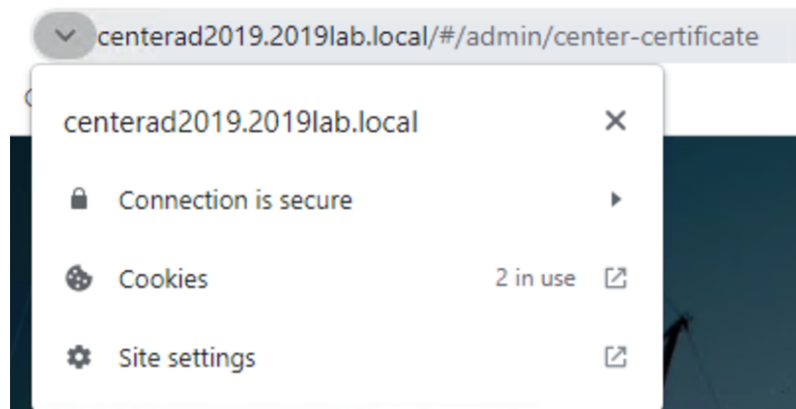
The following message appears:



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 41](#).

If you are installing a standalone Center, you can start installing the sensors. To do so, refer to the corresponding Cisco Cyber Vision 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)

i 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)

i CSR has been generated. Please import the certificate.

FQDN: CenterAD2019.2019lab.local

CSR: download

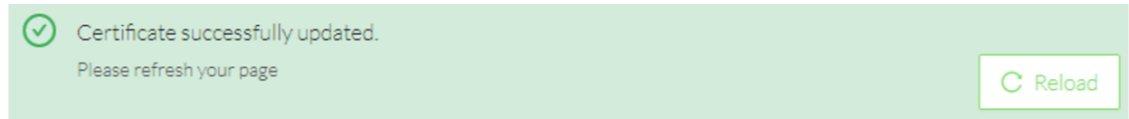


File selected: CenterAD2019.2019lab.local.crt

Discard
Save

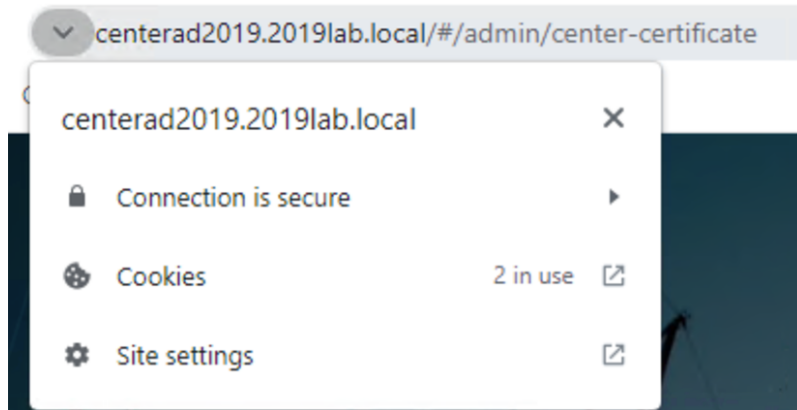
Step 7 Click Save.

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 41](#).

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

Configure Center data synchronization

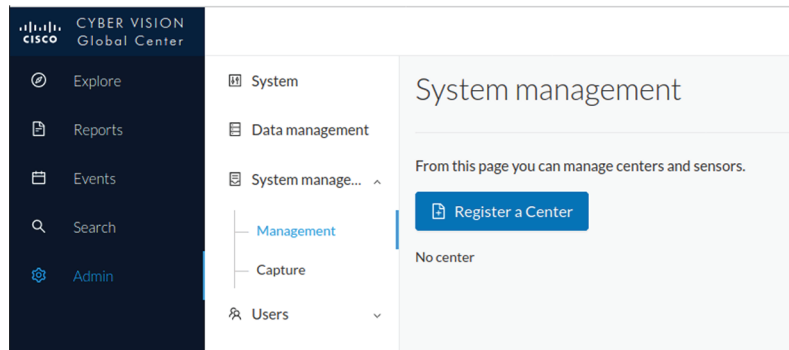
This step is applicable to the Global Center and its synchronized Centers.

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



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

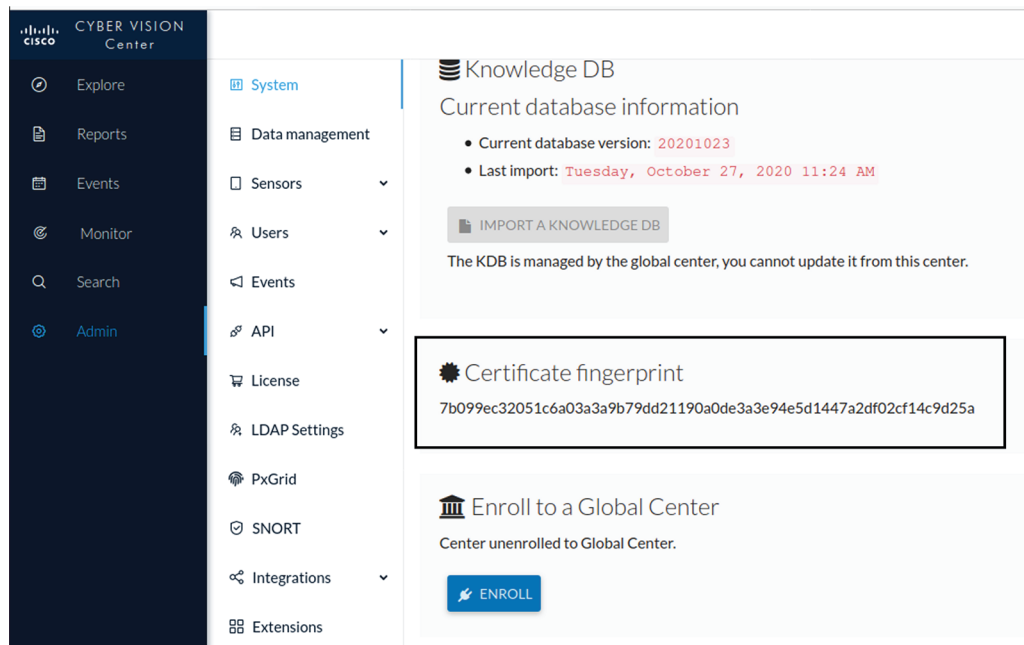
In the Global Center's Cisco Cyber Vision GUI, navigate to Admin > System Management > Management. Click the Register a Center button.



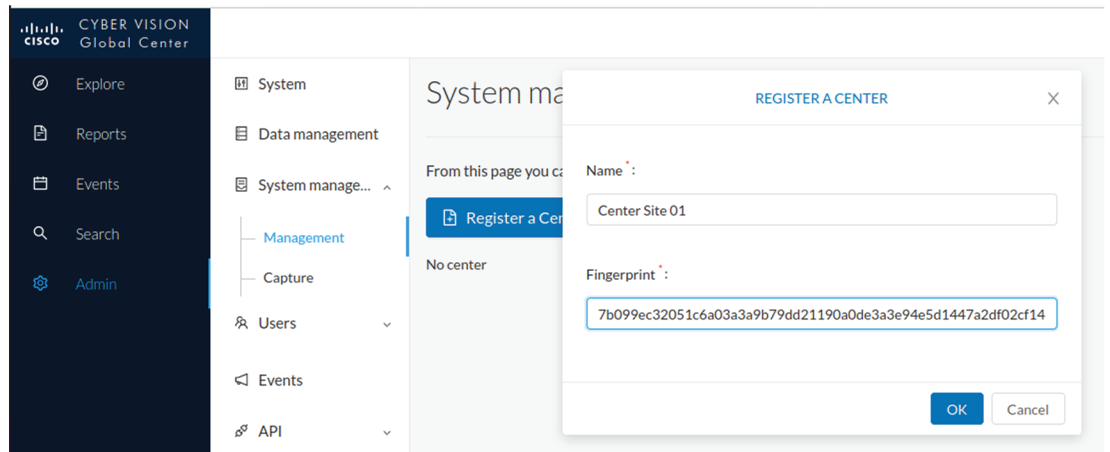
The window "Register a Center" pops up, ready to be filled. Now you must access the Center's GUI to retrieve its fingerprint.

In the Center's Cisco Cyber Vision GUI, navigate to Admin > System.

Scroll down to Certificate fingerprint and copy it.

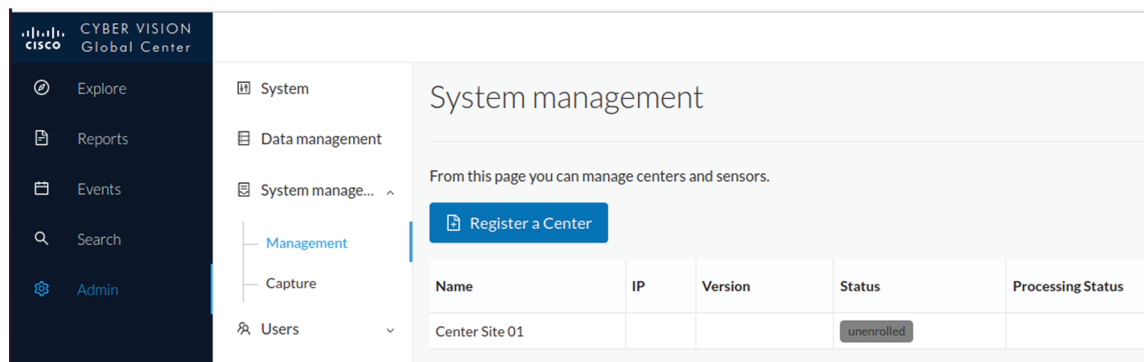


In the Global Center's GUI, give a name to the Center, and paste the Center's fingerprint into the corresponding field.



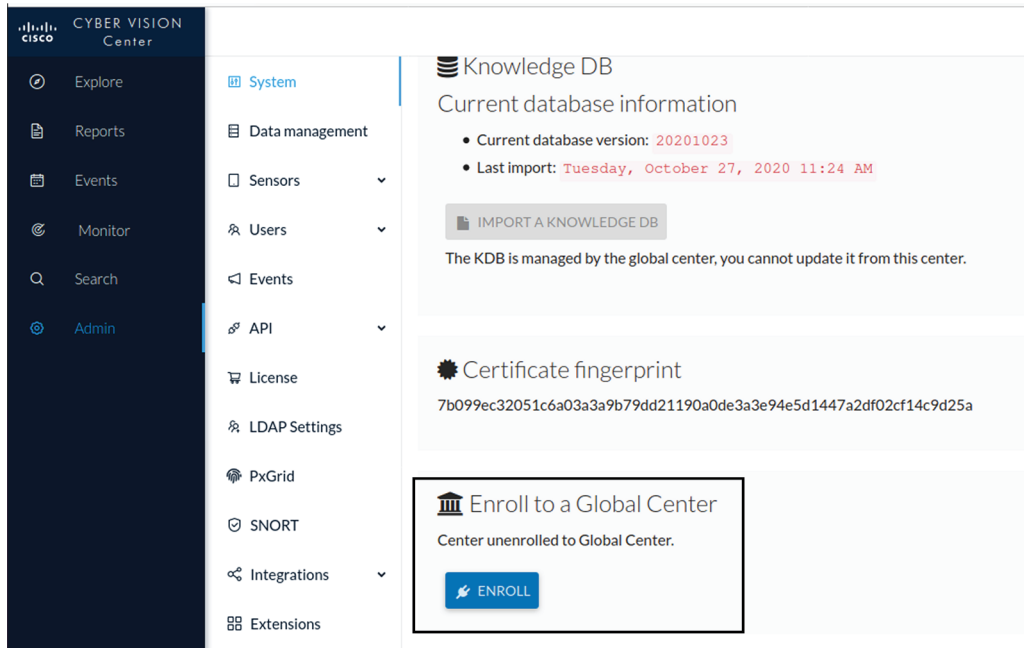
Click OK.

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.

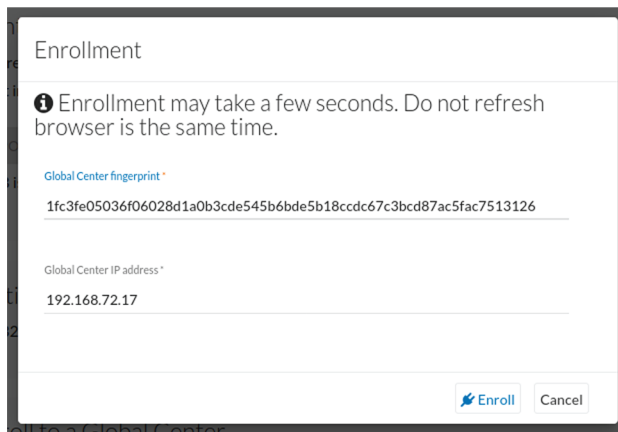
In the Center's GUI, scroll down to Enroll a Global Center and click the Enroll button.



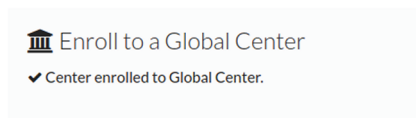
The Enrollment window pops up.

Copy the Global Center's fingerprint from its GUI's System administration page (same location as the Center's).

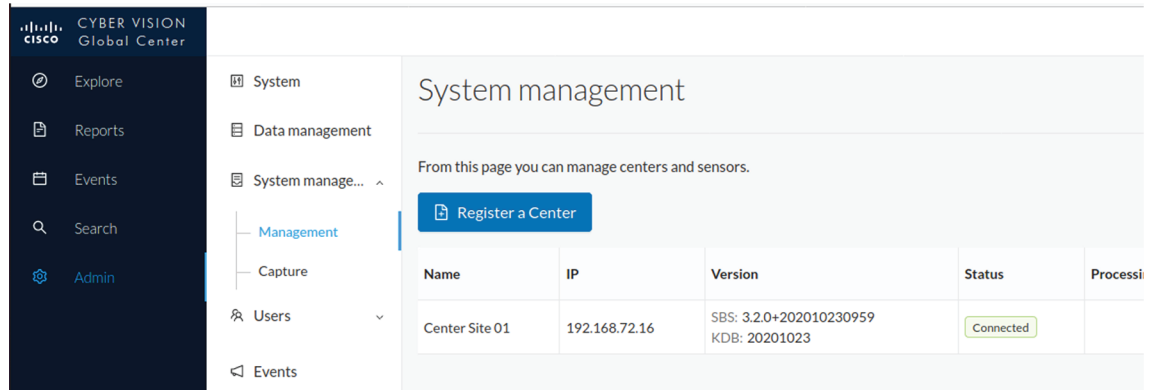
Enter the Global Center's IP address and click Enroll.



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



In the Global Center's GUI, the Center status changes to Connected.



The Global Center and the Center are successfully connected.

Repeat the previous steps as many times as necessary to connect other Centers.

The next step will be to install and enroll the sensors. To do so, refer to the corresponding Cisco Cyber Vision Sensors Installation Guides.

Once a sensor will be connected it will appear in the Global Center's GUI as below:

Name	IP	Version	Status	Processing Status	Capture Mode	UpTime
Center Site 01	192.168.72.16	SBS: 3.2.0+202010230959 KDB: 20201023	Connected			1 hr 19 mins 42 secs
Sensor IE3400-LAB1	192.168.69.210	3.2.0+202010231006	Connected	Pending data		7 mins 29 secs



CHAPTER 5

Configure a Center DPI

- [Configure a Center DPI, on page 47](#)

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:

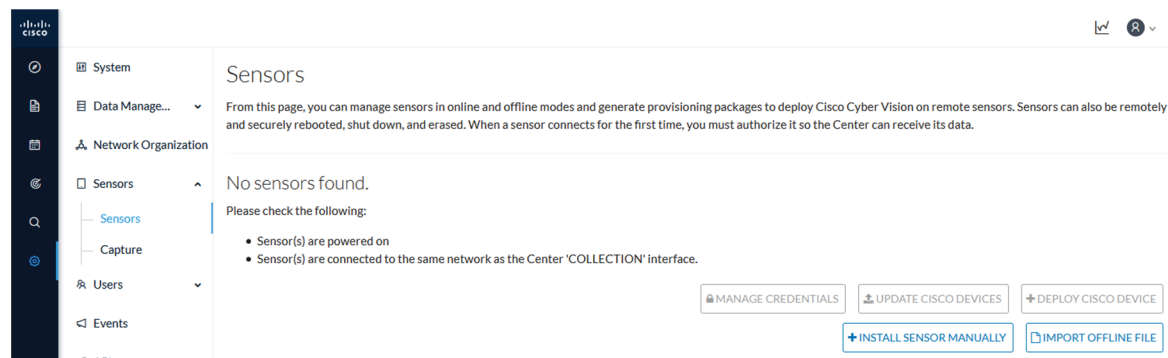
- If the server has a dual interface, that is, the Administration interface is on eth0 and the Collection interface is on eth1, then eth2 will be used for the Center DPI.
- If the server has a single interface, that is, the Administration and Collection interfaces are on the same interface, then eth1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

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

To configure a Center DPI:

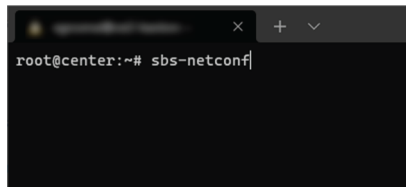
Procedure

- Step 1** Access the Cisco Cyber Vision sensors administration page.

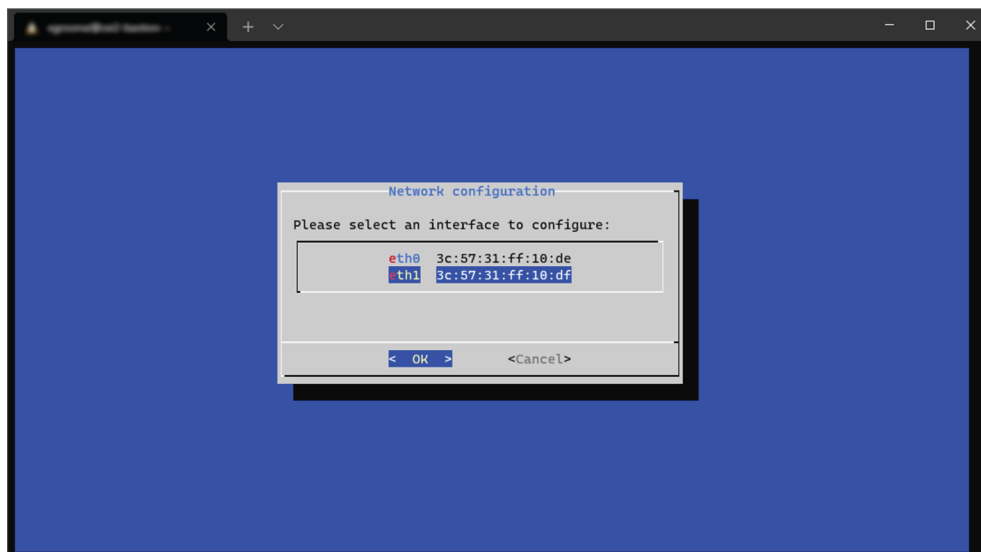


- Step 2** Open the Center shell prompt and type the following command:

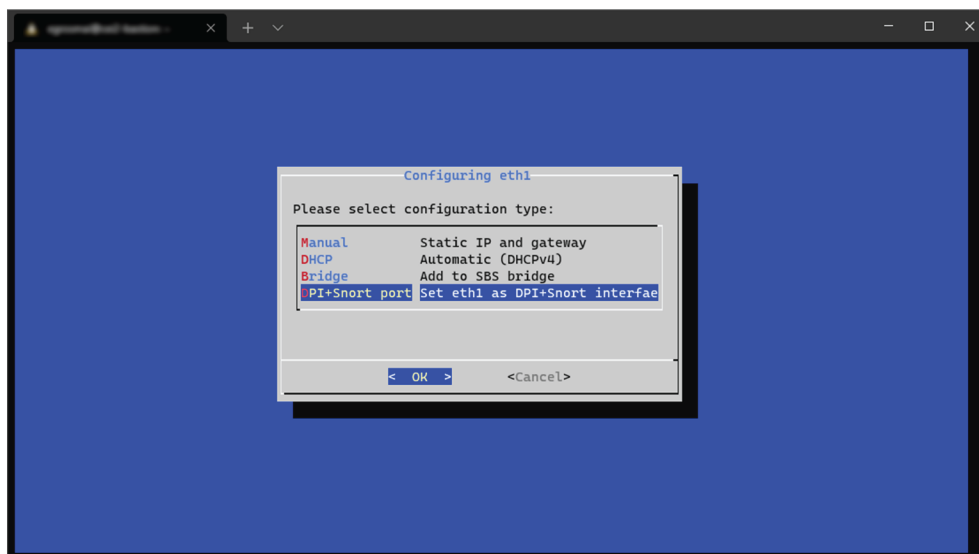
sbs-netconf



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

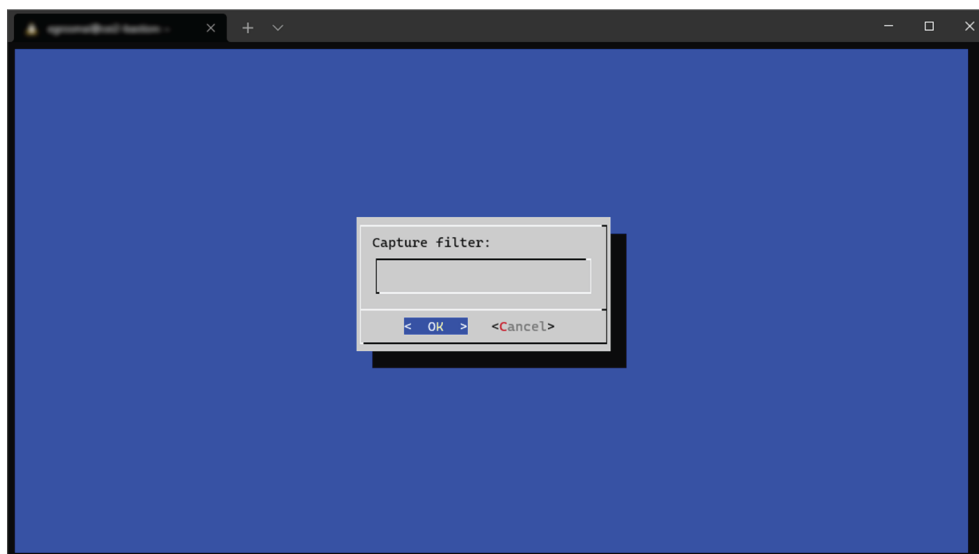


- Step 4** Select the interface as DPI+Snort port.

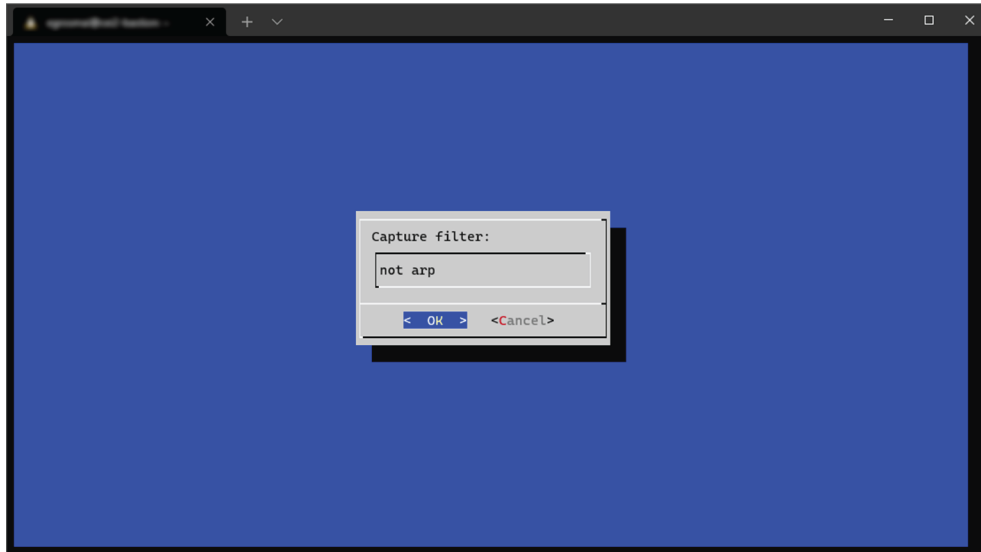


Step 5 Configure a capture filter mode. You can do that later in the Cisco Cyber Vision sensor page clicking the Capture mode button.

For more information on how to configure a capture mode filter, refer to the Cisco Cyber Vision GUI user guide.



For example, you can type "not arp".



In the Cisco Cyber Vision 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]



CHAPTER 6

Global Center Configuration

Cisco Cyber Vision Global Center feature will permit to synchronize several Centers within a single repository. The Global Center will aggregate Centers into a single application and will present a summary of several Center activities.

Once the setup of a Center and a Global Center is done, the Center synchronization could be initialized with a Global Center. This process consist of the enrollment of a Center with a Global Center. When the center is enrolled, it's data with be synchronized incrementally. Later on, if needed, the Center could be unenrolled. The Global Center will then remove all data form that particular Center. The Center will become unenrolled and will be ready for a future enrollment.

Enrollment and unenrollement will be described below.

- [Center enrollment, on page 51](#)
- [Center unenrollment, on page 54](#)
- [Force the unenrollement of a Center, on page 55](#)

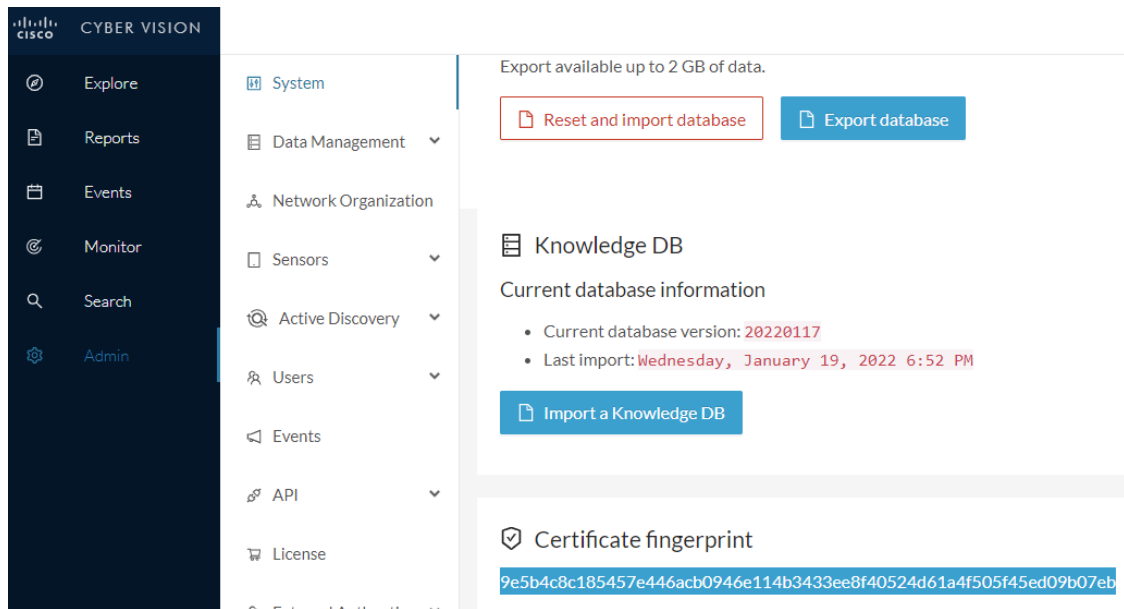
Center enrollment

Before you begin

A Global Center and its Centers need to be reachable in order to be enrolled.

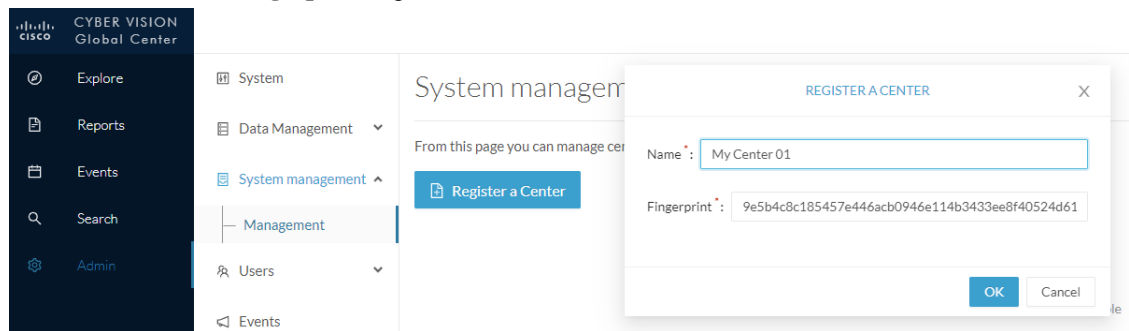
Procedure

- Step 1** Start the process in the Center to be synchronized user interface , navigate to the Admin menu, in the system page, you will find a **Certificate fingerprint**. Copy it, it will be needed.



Step 2 Move to the Global Center user interface, Admin menu, in the **System management**, navigate to the **Management** menu. Click on the button **Register a Center** and:

- Fill the **Name** field with the name you would like to have for this center
- Paste the **Certificate fingerprint** copied above



Step 3 Stay in the Global Center, on the same menu (Admin - System management - Management) and copy the **Fingerprint** of the Global Center.

System management

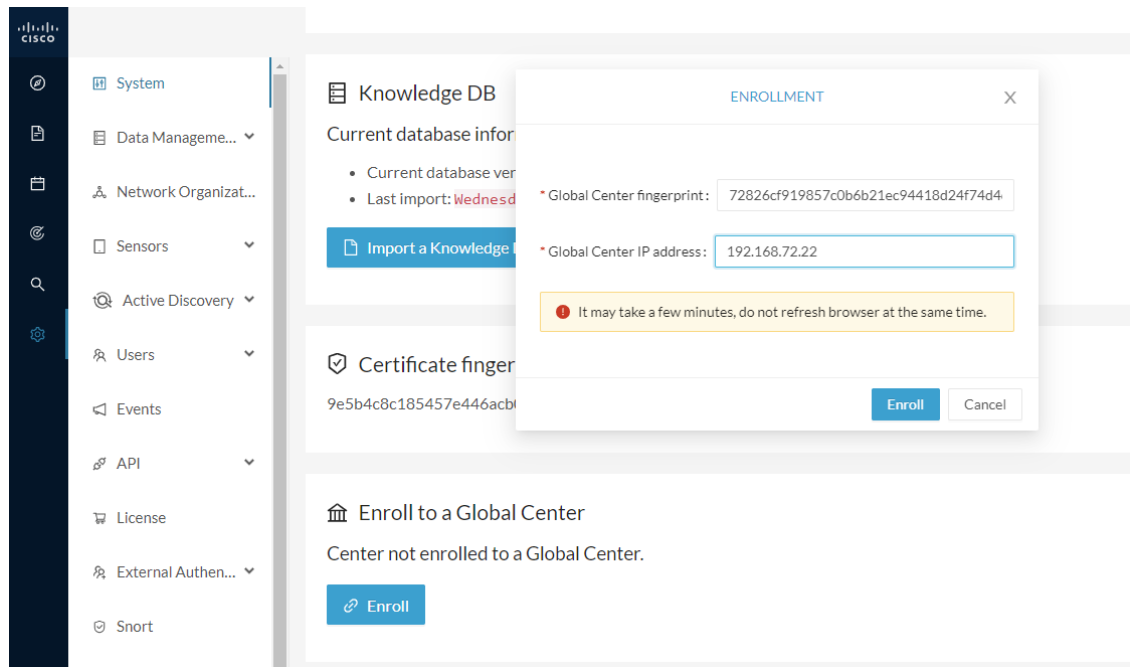
From this page you can manage centers and sensors.

[Register a Center](#) Fingerprint: `72826cf919857c0b6b21ec94418d24f74d4d2cf2bc742e768444554078abaa0c`

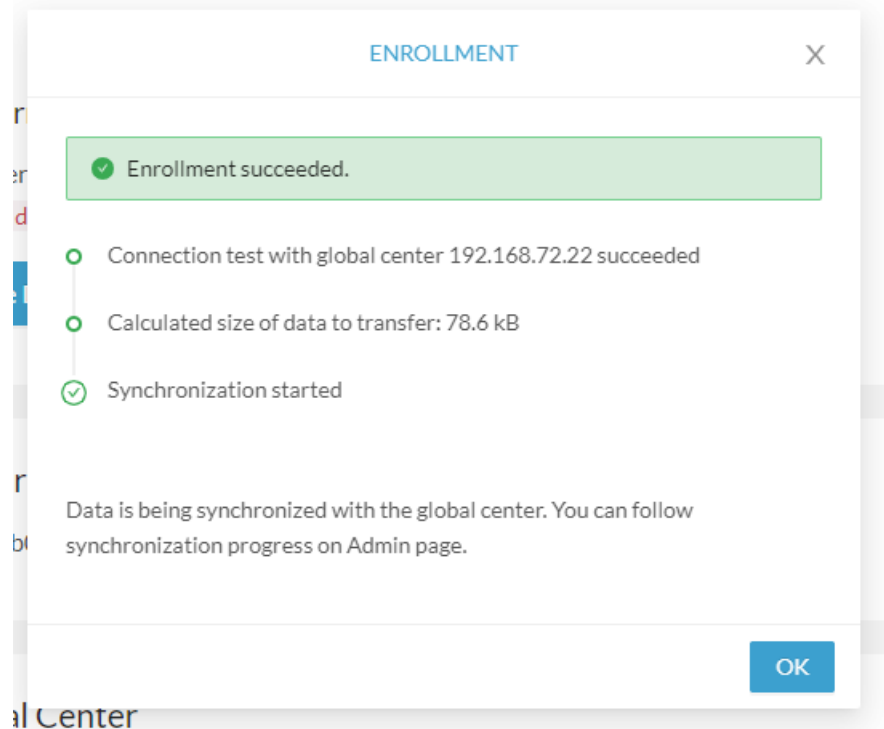
Center Name	IP	Version	Enrollment status	Up time	Connectivity Status	Action
My Center 01			Registered		Not enrolled	Unregister

Step 4 On the Center, in the Admin menu, System page, click on the button **Enroll** and:

- add the **Global Center fingerprint** (paste it with the value copied above in the Global Center)
- add the **Global Center IP address**
- press on **Enroll**



Step 5 The first synchronization will occur. The Center will send all the needed historical information. Once done, a green message is displayed: **Enrollment succeeded.**



What to do next

After the enrollment, the Center is synchronized regularly with the Global Center. In the Global Center, in the Admin menu, the System Management page gives a status of all Centers Synchronized and their Sensors.

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 52 mins 12 secs	Connected	Unenroll

Sensor Name	IP	Version	Status	Processing Status	Capture mode	Up Time
Sensor My Sensor 1	192.168.69.21	4.1.0+202201171423	Connected	Pending data	All	N/A

Center unenrollment

Before you begin

A Center can be unenrolled whenever it is needed, for example as a maintenance operation to replace the Center or the Global Center. This will delete all the Center's data in the Global Center.

Procedure

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

All Centers of the Global Center are listed.

Step 2 Click Unenroll on the Center required.

System management

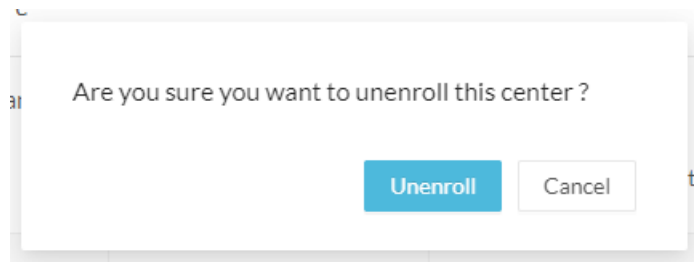
From this page you can manage centers and sensors.

[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

In case of a Global Center replacement, you need to unenroll all its synchronized Centers.

Step 3 A popup asking for confirmation appears. Click **Unenroll** to start the process.



All Center's data are deleted from the Global Center. The Center is then ready to be enrolled again in the Global Center or in another Global Center.

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

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			Registered		Not enrolled	Unregister

Force the unenrollment of a Center

When a Center with sync has been disconnected for a very long time, for example because of a hardware failure, it is possible to unenroll it from the Global Center. This will allow you to delete all Center's data and to replace it.



Important

Make sure the Center with sync is definitely lost before performing this action. As all the Center's data will be deleted from the Global Center, the Center trying to send data to the Global Center would cause important data synchronization issues.

In Cisco Cyber Vision, navigate to Admin > System management > Management. All Centers of the Global Center are listed.

Whenever a Center has been disconnected for a long time, the red button **Force unenrollment** appears in the Action column. Use this button to delete all the Center's data from the Global Center. The Center will be removed from the list.

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 18 hrs 41 mins 40 secs	Disconnected	Force unenrollment



CHAPTER 7

Upgrade procedures

- [Architecture with a Global Center, on page 57](#)
- [Architecture with a single Center, on page 58](#)

Architecture with a Global Center

Update the Global Center

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

Procedure

Step 1 You can do so through the corresponding Center's Cisco Cyber Vision application or using its Command Line Interface.

Step 2 To update the Global Center:

Step 3 Through the Cisco Cyber Vision application:

- File= CiscoCyberVision-update-combined-<VERSION>.dat
- Navigate to Admin > System, click the System Update button, and browse to select the update file.

Step 4 Through the Command Line Interface (CLI):

- File= CiscoCyberVision-update-center-<VERSION>.dat

- Launch the update using the following command:

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

Step 5 To update the Centers:

Step 6 Connect to the Centers Cisco Cyber Vision 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.

Procedure

Step 1 To update hardware sensors:

Step 2 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.

Step 3 If not, the update needs to be done from the Command Line Interface (CLI):

- File= CiscoCyberVision-update-sensor-<VERSION>.dat

- Launch the update using the following command:

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

Step 4 To update IOx sensors:

Step 5 If you have installed the sensor with the sensor management extension, the upgrade of the extension will also update all sensors reachable by the Center.

- File = CiscoCyberVision-sensor-management-<VERSION>.ext

- Navigate to Admin > Extensions. In the Actions column, click the Update button, and browse to select the update file.

Step 6 If one or several sensors were not updated by the extension update, navigate to Admin > Sensors > Sensors and click the UPDATE CISCO DEVICES button to update the remaining IOx sensors connected to the Center.

Step 7 If you have not installed one or several sensors with the sensor management extension, 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.

- Step 8**
- Cisco IE3x00 and Cisco IR11101 files = CiscoCyberVision-IOx-aarch64-<VERSION>.tar or CiscoCyberVision-IOx-Active-Discovery-aarch64-<VERSION>.tar
 - Catalyst 9300 and Catalyst 9400 files = 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 Cisco Cyber Vision application or using its Command Line Interface.

Through the Cisco Cyber Vision application:

- File= CiscoCyberVision-update-combined-<VERSION>.dat

- Navigate to Admin > System, click the System Update button, and browse to select the update file.

Through the Command Line Interface (CLI):

- File= CiscoCyberVision-update-center-<VERSION>.dat
- 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.

Procedure

- Step 1** To update hardware sensors:
- Step 2** If you used the combined file to update the Center, the hardware sensors (IC3000 and Sentryo Sensors) were updated at the same time.
- Step 3** If not, the update needs to be done from the Command Line Interface (CLI):
- File= CiscoCyberVision-update-sensor-<VERSION>.dat
 - Launch the update using the following command:
sbs-update install /data/tmp/CiscoCyberVision-update-sensor-<VERSION>.dat
- Step 4** To update IOx sensors:
- Step 5** If you have installed the sensor with the sensor management extension, the upgrade of the extension will also update all sensors reachable by the Center.
- File = CiscoCyberVision-sensor-management-<VERSION>.ext
 - Navigate to Admin > Extensions. In the Actions column, click the Update button, and browse to select the update file.
- Step 6** If one or several sensors were not updated by the extension update, navigate to Admin > Sensors > Sensors and click the UPDATE CISCO DEVICES button to update the remaining IOx sensors connected to the Center.
- Step 7** If you have not installed one or several sensors with the sensor management extension, 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.
- Step 8**
- Cisco IE3x00 and Cisco IR11101 files = CiscoCyberVision-IOx-aarch64-<VERSION>.tar or CiscoCyberVision-IOx-Active-Discovery-aarch64-<VERSION>.tar
 - Catalyst 9300 and Catalyst 9400 files = CiscoCyberVision-IOx-x86-64-<VERSION>.tar or CiscoCyberVision-IOx-Active-Discovery-x86-64-<VERSION>.tar.
-

