



Cisco Cyber Vision Network Sensor Installation Guide for Cisco IC3000, Release 4.4.1

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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 describes how to perform a clean installation of Cisco Cyber Vision on a Cisco IC3000 Industrial Compute Gateway.

This documentation is applicable to **system version 4.4.1**.

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

Overview

- [Overview, on page 3](#)

Overview

The Cisco IC3000 Industrial Compute Gateway is an edge computing platform which extends the cloud computing paradigm to the edge of the network. The Cisco IC3000 captures traffic in SPAN mode. It contains two RJ45 10/100/1000 BaseT connectors ports and two SFP fiber ports to connect switches in port mirroring.

To deploy the Cisco Cyber Vision sensor application in the Cisco IC3000, follow the initial configuration:

Take a moment to look at the [Cisco IC3000 front view](#) and [Connect the Cisco IC3000](#). Proceed with the [Cisco IC3000 platform initial configuration](#) if it has never been done to configure a Local Manager IP and admin account. Eventually, [Configure date and time](#).

Then, proceed with one of the installation methods available:

- [Procedure with the Sensor management extension, on page 13](#). The file is available on [cisco.com](#) (recommended).
- [Procedure with the Local Manager, on page 23](#).

To upgrade the sensor hosted in the Cisco IC3000, refer to one of the methods available:

- If the sensor management was used to deploy the sensor, [Upgrade through the Cisco Cyber Vision sensor management extension](#).
- [Upgrade through the Local Manager](#).



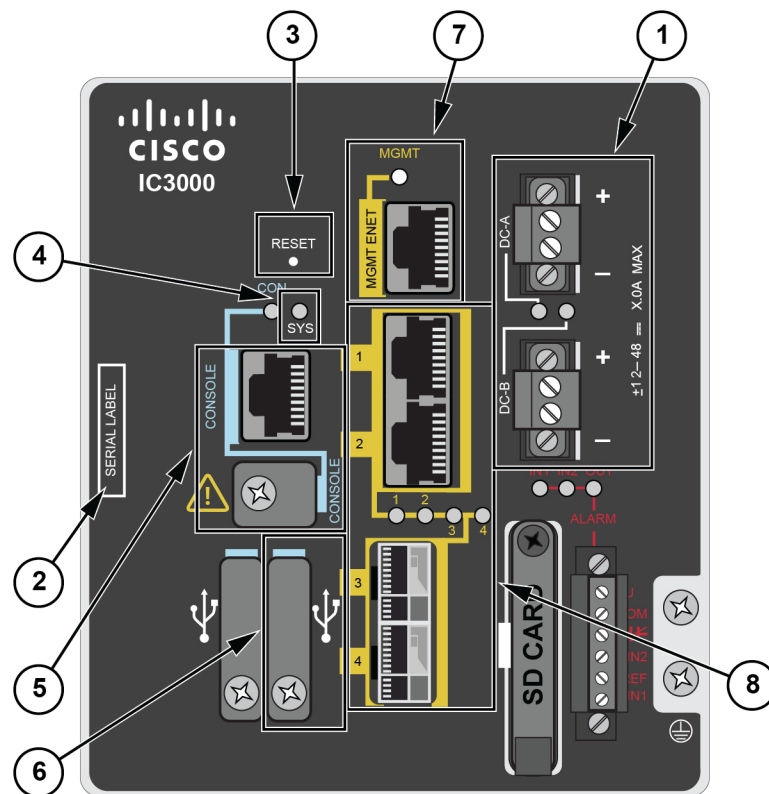
CHAPTER 3

Initial configuration

- Cisco IC3000 front view, on page 5
- Connect the Cisco IC3000, on page 6
- Connect to the Cisco IC3000 with the serial console, on page 7
- Cisco IC3000 platform initial configuration, on page 10
- Configure date and time, on page 12

Cisco IC3000 front view

Before starting, take a moment to note and unscrew the following parts you're going to use during the procedure.



- DC-in connectors (1)
- Serial number (2)
- Reset pinhole (3)
- SYS LED (4)
- Console connectors (5): RJ-45 and mini-USB
- USB port 2 (6)
- MGMT Ethernet port (7): Local Manager and Collection network interfaces
- Industrial Network Interfaces (8): 2x RJ45 10/100/1000 BaseT connectors and 2x SFP fiber ports

Connect the Cisco IC3000

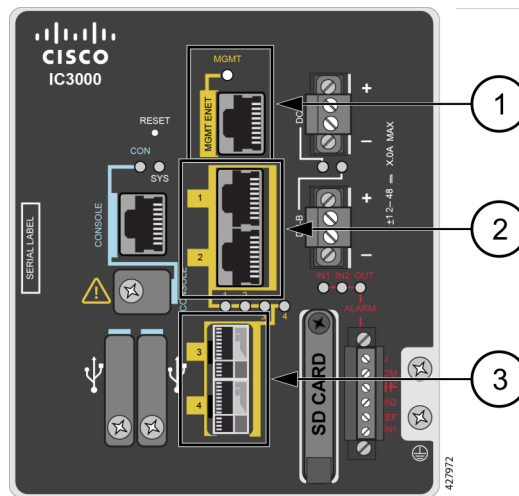
The Cisco IC3000 contains 4 independent ports which can be used to capture in SPAN mode or to do active scanning on the network. Depending on the port usage the corresponding switch port must have the right configuration (SPAN or access).

The Cisco IC3000's Industrial network interface to do the dPI is to be connected to **switches configured in port mirroring only**.

To connect the network interfaces to the Cisco IC3000:

Procedure

- Step 1** Connect the Collection network interface (IC3000 to Center) to the MGMT ENET port (1).
- Step 2** Connect the Industrial network interface (IC3000 to on-site switches) to ports 1, 2, 3, 4 (up to 4 switches configured in port mirroring or access depending on the port usage).
- Step 3**
 - Ports 1 and 2 are RJ45 10/100/1000 BaseT Connectors (2).
 - Ports 3 and 4 are SFP fiber ports (3).



Connect to the Cisco IC3000 with the serial console

This section describes how to establish a connection to the Cisco IC3000 from Windows 10 using PuTTY. It is required to perform a sensor management extension installation and to enable Active Discovery (optional) when performing a manual installation.



Note This procedure will also work for other versions of Windows.

Requirements:

- A RJ45 or mini USB console cable.
- A serial console emulator, like PuTTY.

To connect a console to the Cisco IC3000:

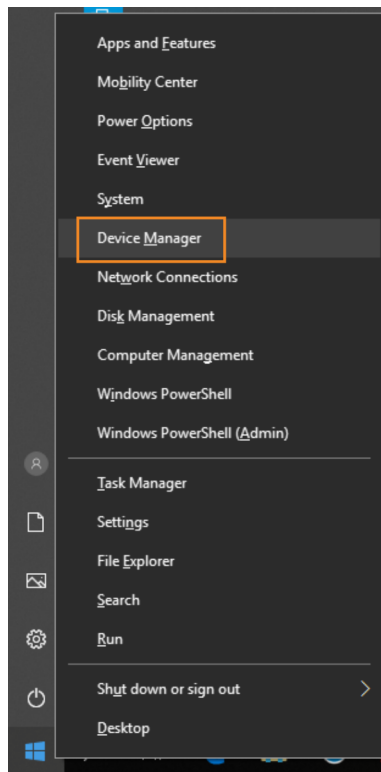
Procedure

Step 1 Download and install on your computer a serial console emulator like PuTTY. Refer to its own documentation to use it.

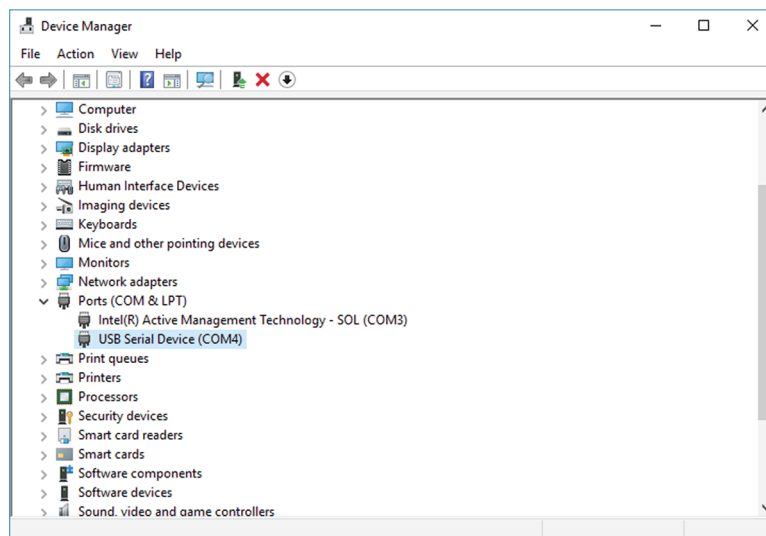
Step 2 Connect your computer to the Cisco IC3000 through its serial port using the RJ45 or mini USB console cable. If you are using **Windows**, you need to identify to which COM port the console is connected.

To identify the COM port:

Step 3 Right click on the Windows Start icon and select "Device Manager".



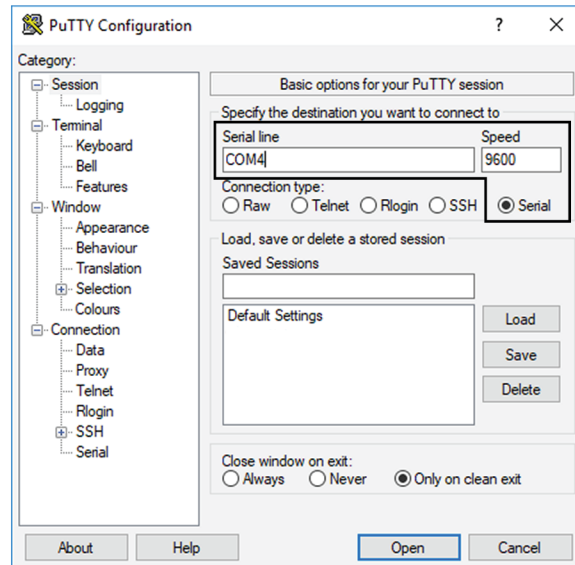
Step 4 Scroll down and click "Ports (COM & LPT)" menu. The COM number appears.



To start a connection to the Cisco IC3000:

- Step 5** Make sure there is no USB drive plugged into the Cisco IC3000.
- Step 6** Disconnect the Cisco IC3000 from the DC Current source.
- Step 7** Open PuTTY.

The following screen appears:



Step 8 Select Serial for the Connection type.

Step 9 Enter "COM<number>" into the serial line field.

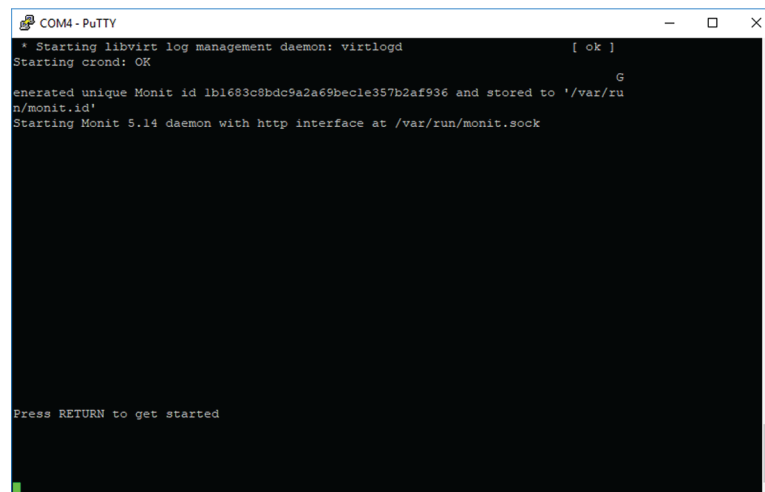
Set speed at 9600.

Step 10 Click Open to display the shell prompt for PuTTY.

Step 11 Connect the Cisco IC3000 to the DC current source.

Wait a few moments. When booting is complete, the shell prompt will ask you to press return to start.

The connection has established with success.



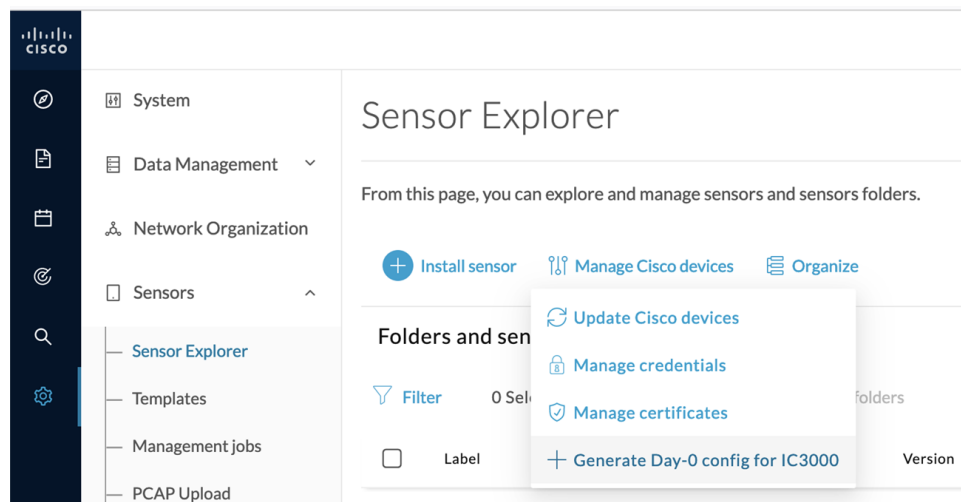
Cisco IC3000 platform initial configuration

Perform the following procedure if it's the first time the Cisco IC3000 device is installed in Cisco Cyber Vision.

Set Cisco IC3000 for Local Manager

Procedure



Step 1 Click **Manage Cisco devices**, then **Generate Day-0 config for IC3000**.



Step 2 Fill the following fields to set the Local Manager's network parameters and login:

- The Host Management's IP address, netmask and gateway. They must be set to access the Local Manager of the Cisco IC3000 device.
- The Local Manager admin user name. The login is "admin" by default. You must use the default login in case a factory reset is performed and thus to avoid starting the whole procedure again.

The user name will be asked later to log in to IOx Local Manager and in case of troubleshooting and configuration. Therefore, make sure to keep this piece of information stored.





Manual install

Generate Day-0 config for IC3000

Cisco IC3000 Local Manager

Host management IP address* <input type="text" value="192.168.49.22"/>	Host management netmask* <input type="text" value="255.255.255.0"/> <small>For example 255.255.255.0 or 255.255.0.0</small>
Host management gateway* <input type="text" value="192.168.49.254"/>	Local manager user name* <input type="text" value="admin"/>
Password* <input type="password" value="....."/>	Confirm password* <input type="password" value="....."/>

Good 

⌵
Generate

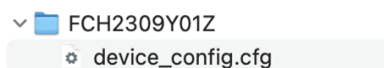
- Step 3** Click **Generate**.
The file **device_config.cfg** is downloaded.

Prepare and import the Local Manager configuration file

After generating and downloading the file **device_config.cfg** you must prepare and import it in the Cisco IC3000.

Procedure

- Step 1** Copy the file in a folder named as the serial number of the Cisco IC3000 (e.g. FCH2309Y01Z). The folder must be placed at the root directory of a USB drive formatted as FAT32.



- Step 2** Disconnect the Cisco IC3000 from the DC Current source. The USB drive must be plugged at the Cisco IC3000 boot.
- Step 3** Plug the USB drive on port 2 of the Cisco IC3000.
- Step 4** Connect the sensor to the DC Current source.
Wait a few moments. The Cisco IC3000 status changes to Enrolled on the Cisco Cyber Vision GUI.
- Step 5** Unplug the USB drive from port 2.

The Local Manager should become available on the IP address defined during this procedure.

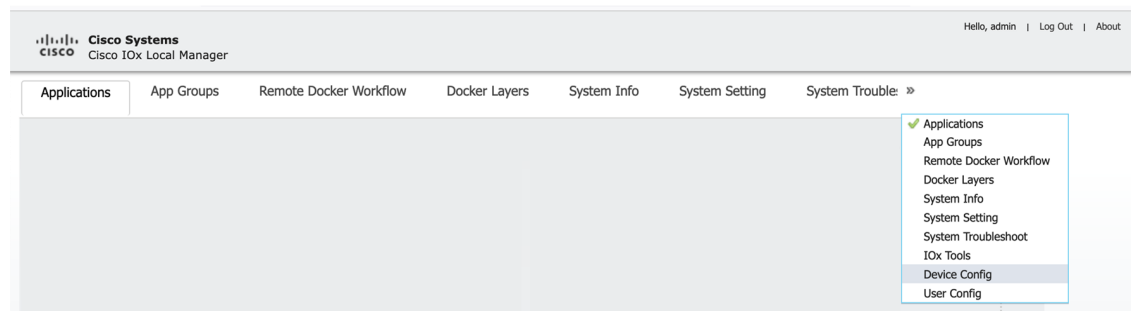
Configure date and time

Before proceeding to the installation, you must set the correct date and time and on the IC3000 through the Local Manager for its proper functioning.

Procedure

Step 1 Access the Local Manager.

Step 2 Navigate to **Device Config**.



Step 3 Slide down to Time Source and configure the date and time according to your network settings.

For more information, check the Cisco IC3000 user documentation available on cisco.com.



CHAPTER 4

Installation procedures

- [Procedure with the Sensor management extension, on page 13](#)
- [Procedure with the Local Manager, on page 23](#)

Procedure with the Sensor management extension

This section explains how to install the Cisco IC3000 thanks to the sensor management extension. You will:

1. Retrieve the sensor management extension on cisco.com.
2. Install the sensor management extension on Cisco Cyber Vision.
3. Connect to the Cisco IC3000 with the serial console and check its firmware version and management interface IP address.
4. Create a new sensor on Cisco Cyber Vision through the Cisco device deployment and proceed to its configuration.

Requirements

The hardware must have an access set to the Local Manager and to the CLI (ssh or console port).

Required material and information:

- An Admin or Product access to Cisco Cyber Vision.
- The network information of the Collection network interface (IP address, subnet mask and gateway).
- A RJ45 or mini USB console cable.
- A serial console emulator, like PuTTY.



Note To be able to use the Cisco Cyber Vision sensor management extension, an IP address reachable by the Center Collection interface must be set on the Collection VLAN.

Retrieve the sensor management extension file

1. On cisco.com, navigate to Cisco Cyber Vision's Software Download page.
2. Download Cisco Cyber Vision Sensor Management Extension for IoX sensor setup. Version of the extension must be the same as the version of the center.

The screenshot shows the Cisco Cyber Vision Software Download page for release 3.1.1. The page includes a search bar, a version list on the left, and a table of files for download. The file 'Cisco Cyber Vision Sensor Management Extension for IoX sensor setup' is highlighted with a red box.

File Information	Release Date	Size	
Cisco Cyber Vision Sensor Management Extension for IoX sensor setup CiscoCyberVision-sensor-management-3.1.1.ext	30-Jul-2020	666.87 MB	↓ 🛒 📄
VMware OVA (Center) - CiscoCyberVision-3.1.1.ova CiscoCyberVision-3.1.1.ova	28-Jul-2020	251.81 MB	↓ 🛒 📄
Hyper-V VHDX (Center) - CiscoCyberVision-3.1.1.vhdx CiscoCyberVision-3.1.1.vhdx	28-Jul-2020	312.00 MB	↓ 🛒 📄

Install the sensor management extension

1. In Cisco Cyber Vision, navigate to Admin > Extensions.
2. Click Import extension file and select CiscoCyberVision-sensor-management-<version>.ext.

Extensions

From this page, you can manage Cyber Vision Extensions. Extensions are optional add-ons to Cyber Vision Center which provide more features, such as the management of new device types, additional detection engines, or integrations with external services.

Installed extensions

Name	Version
No Data	

Install a new extension

[Import extension file](#)

The file upload takes a few minutes.

Extensions

From this page, you can manage Cyber Vision Extensions. Extensions are optional add-ons to Cyber Vision Center which provide more features, such as the management of new device types, additional detection engines, or integrations with external services.

Installation
Uploading... Please do not quit or refresh the page.

Extensions

From this page, you can manage Cyber Vision Extensions. Extensions are optional add-ons to Cyber Vision Center which provide more features, such as the management of new device types, additional detection engines, or integrations with external services.





Installation


Cyber Vision sensor management installed successfully!



Installed extensions

Name	Version	Actions
Cyber Vision sensor management	3.2.0	 

Install a new extension

 Import extension file

Check the Cisco IC3000 firmware version

To ensure a proper installation of the Cisco IC3000, you must check its firmware version.

It is recommended to use the newest firmware version available. The lowest version used should be 1.2.1 for a classic installation or 1.5.1 for an installation with Active Discovery.

Procedure

Step 1

To check the version:

Step 2

- Use the following command in the Cisco IC3000 shell prompt:

```
ic3k>show version
```

Example:

```
ic3k>show version
Version: 1.2.1
Platform ID: IC3000-2C2F-K9
Hardware ID: FCH2312Y04M
ic3k>
```

Check the MGMT interface IP address

Check that the IP address set on the MGMT network is the one you've configured on the Cisco Cyber Vision GUI.

To check the MGMT network interface:

Procedure

Step 1 Use the following command in the Cisco IC3000 shell prompt:

```
ic3k>show interfaces
```

Step 2 Search for the reference "svcbr_0" which corresponds to the MGMT interface.

The IP address you've set as Host Management on Cisco Cyber Vision GUI should follow the mention "inet addr: <IP ADDRESS>".

Example:

```
svcbr_0  Link encap:Ethernet  HWaddr d0:ec:35:ca:99:a0
         inet addr:192.168.71.22  Bcast:192.168.71.255  Mask:255.255.255.0
         inet6 addr: fe80::d2ec:35ff:feca:99a0/64  Scope:Link
         UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
         RX packets:227 errors:0 dropped:0 overruns:0 frame:0
         TX packets:16 errors:0 dropped:0 overruns:0 carrier:0
         collisions:0 txqueuelen:1000
         RX bytes:12676 (12.3 KiB)  TX bytes:1980 (1.9 KiB)
```

Step 3

Test connectivity between Cisco IC3000 and IOx Local Manager

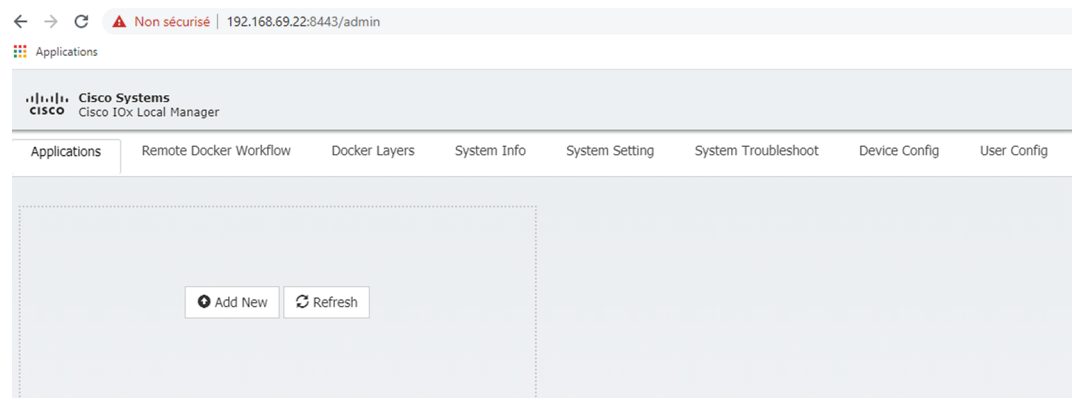
To proceed with the installation, you must first test if you have access to the Cisco IC3000's Cisco IOx Local Manager. To do so:

1. Open Chrome.
2. Access Cisco IOx Local Manager using the Cisco IC3000's MGMT IP address and the MGMT port number, which is 8443:

`https://Management_Address:8443`

ex: `https://192.168.71.22:8443`

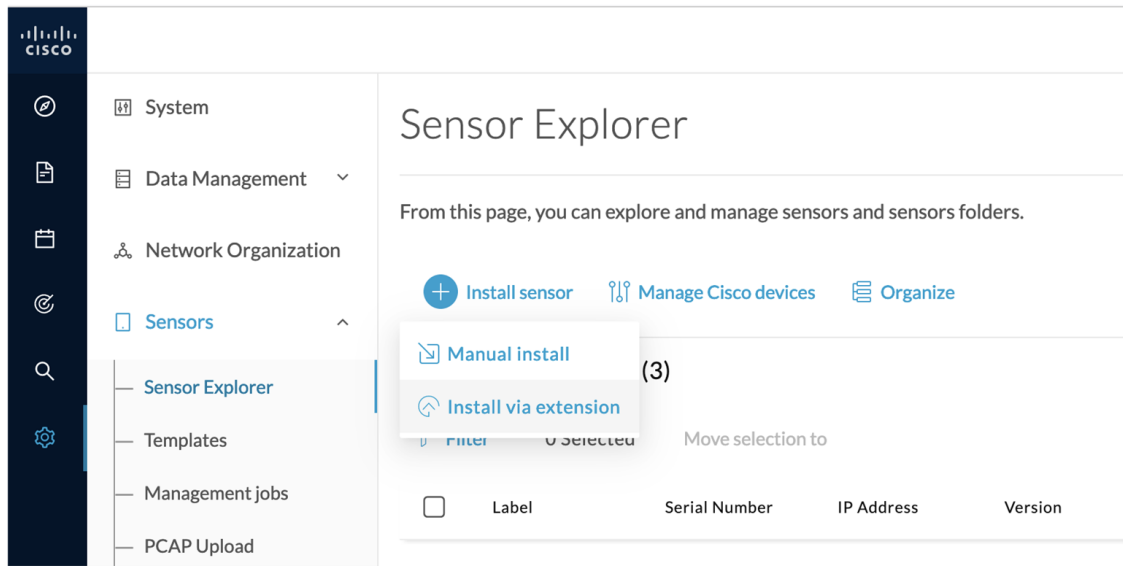
3. If you're able to see the following screen it means that the connectivity between the Cisco IC3000 and IOx Local Manager is on.



Create a sensor in Cisco Cyber Vision



Procedure

Step 1 In Cisco Cyber Vision, navigate to Admin > Sensors > Sensor Explorer and click **Install sensor**, then **Install via extension**.



Step 2 Fill in the requested fields so Cisco Cyber Vision can reach the equipment:

- IP Address: admin address of the equipment
- Port: management port (8443)

Install via extension

Reach Cisco device

Please fill in the fields below to enable Cisco Cyber Vision to reach your device.

<p>IP address*</p> <input type="text" value="192.168.49.22"/>	<p>Port*</p> <input type="text" value="8443"/> <p style="font-size: small;">For example 443 or 8443</p>
---	---

Center collection IP

leave blank to use current collection IP

Configuration Template

Template

Default ▾

Step 3 Select a configuration template if required. For more information, refer to [Configure sensor configuration template, on page 37](#).

Step 4 Select the credential mode used. For more information, refer to Cisco Cyber Vision GUI Administration Guide available on cisco.com.

Credentials

- Use global credentials (recommended)
 Use custom credentials

Capture mode

- Optimal (default): analyze the most relevant flows
 All: analyze all the flows
 Industrial only: analyze industrial flows
 Custom: set your filter using a packet filter in tcpdump-compatible syntax

xit

Connect

Step 5 Optionally, select a capture mode.

Step 6 Click **Connect**.

The Center will join the equipment and display the second parameter list. For this step to succeed, the equipment needs to be reachable by the Center on its eth0 connection for a Center with single interface or eth1 for a Center with dual interface.

Configure the sensor

Once the Center can join the equipment, you will have to configure the Cisco Cyber Vision IOx sensor app by setting the Collection interface and, if needed, Active Discovery.

While some parameters are filled automatically, you can still change them if necessary.

1. Fill the following parameters for the Collection interface:

- Collection IP address: IP address of the sensor in the sensor (must be different than the ip address of the device)
- Collection subnet mask: mask of the Collection IP address
- Collection gateway: gateway of the Collection IP address (optional)

Install via extension

Configure Cyber Vision IOx sensor app

The device requires additional parameters. Some parameters have been pre-filled. Please complete the remaining fields.

Cisco device: IC3000-2C2F-K9

Collection IP address*

Collection prefix length*

Like 24, 16 or 8

Collection gateway

 Exit

Next

2. Select the Application type (passive only or passive and Active Discovery).

3. If selecting Passive and Active Discovery, the following fields will appear to set its interface:

Install via extension

Configure Active Discovery

Please select an application type. If you want to enable Active Discovery on the application, select "Passive and Active Discovery". You will have to add some network interfaces parameters.

- Passive only
- Passive and Active Discovery

Select a physical interface

Int2

Select the port used to send packets

ETH2 NETWORK

IP address*

192.168.53.23

IP address interface used to do Active Discovery

Prefix length*

24

Like 24, 16 or 8

[Exit](#)

[Back](#)

[Deploy](#)

- Physical interface: port that will be used to send packets.

Configure Active Discovery

Please select an application type. If you want to enable Active Discovery, select the physical interface parameters.

- Passive only**
 Passive and Active Discovery

Select a physical interface

^

MGMT / Collection (enables DPI on collection interface)

Int1

Int2

Int3

Int4

- IP address of the interface dedicated to Active Discovery.
- Prefix length: subnet mask of the interface.

Select a physical interface

Int2
v

Select the port used to send packets

ETH2 NETWORK

IP address*

192.168.53.23

IP address interface used to do Active Discovery

Prefix length*

24

Like 24, 16 or 8

Back

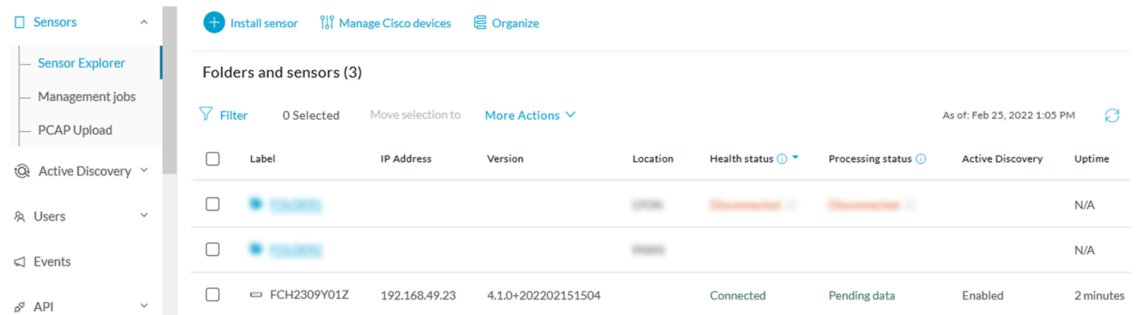
Deploy

4. Click the Deploy button.

The Center starts deploying the sensor application on the target equipment. This can take a few minutes. Once the deployment is finished, a new sensor appears in the sensors list.

If Active Discovery has been enabled, the Active Discovery status will switch to Available and the Active Discovery button will be displayed in the right side panel as you click the sensor in the list.

The sensor status will turn to connected.



Label	IP Address	Version	Location	Health status	Processing status	Active Discovery	Uptime
							N/A
							N/A
FCH2309Y01Z	192.168.49.23	4.1.0+202202151504		Connected	Pending data	Enabled	2 minutes



Note You can change the Active Discovery configuration by clicking the Active Discovery button. However, for changes to be applied, you will have to download a new provisioning package and deploy it on the hardware.

Procedure with the Local Manager

This section explains how to install the Cisco IC3000 with the Local Manager. You will:

1. Create and configure a new sensor on Cisco Cyber Vision to retrieve its provisioning package.
2. Install and configure the virtual sensor application on the Local Manager to deploy the provisioning package on the Cisco IC3000.
3. The last step, which is optional, consists in enabling Active Discovery on the Cisco IC3000.

Requirements

The hardware must have an access set to the Local Manager and to the CLI (ssh or console port).

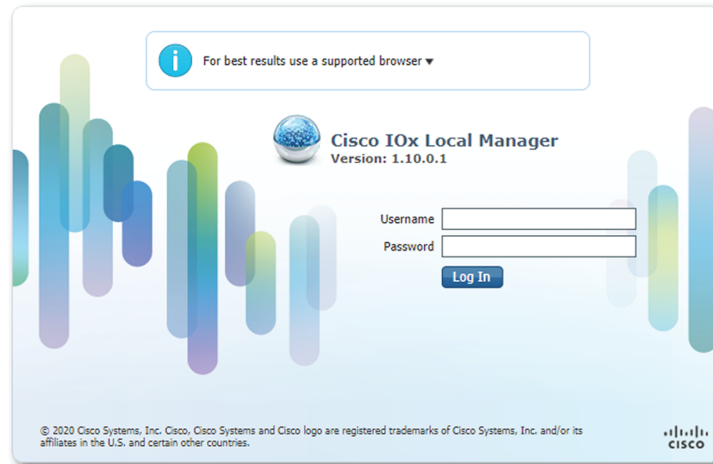
If it's the first time the Cisco IC3000 device is installed with the Local Manager you must first proceed to a [Cisco IC3000 platform initial configuration](#).

Required material and information:

- An Admin or Product access to Cisco Cyber Vision.
- A Local Manager user account and password.
- The serial number of the Cisco IC3000 to be configured (located on the hardware's front view).
- An IP addressing scheme for the Local Manager and the Collection Network Interfaces.
- The Cisco Cyber Vision Sensor application to collect from cisco.com, i.e. `CiscoCyberVision-IOx-IC3000-<version>.tar`.

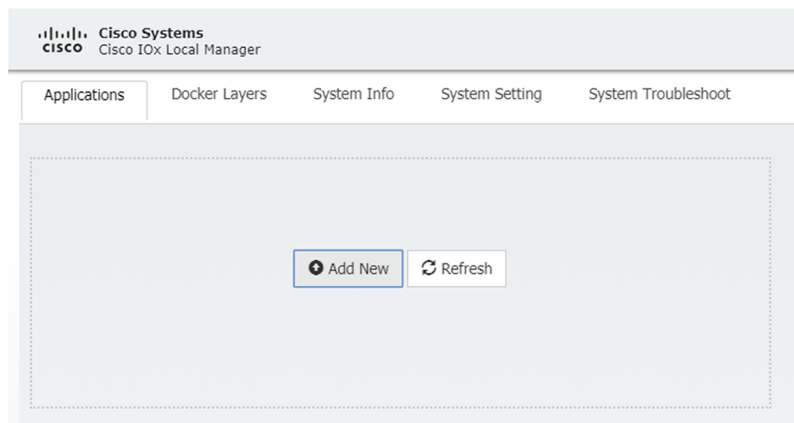
Access the Local Manager

1. Open a browser and navigate to the IP address you configured on the interface you are connected to.
2. Log in using the user account and password.



Install the sensor virtual application

Once logged in, the following menu appears:

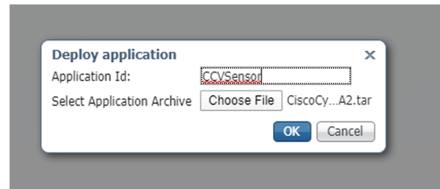


1. Click **Add New**.
2. Add an Application id name (e.g. CCVSensor).
3. Select the application archive file
(i.e. "CiscoCyberVision-IOx-IC3000-<version>.tar").

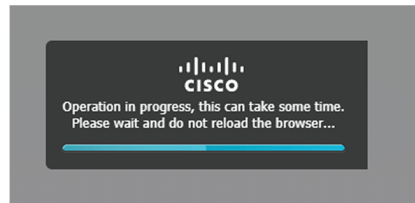


Note If you aim to install a sensor with **Active Discovery**, select the required application archive file

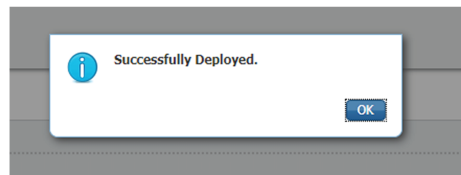
(i.e. "CiscoCyberVision-IOx-Active-Discovery-IC3000-<version>.tar").



The installation takes a few minutes.



When the application is installed, the following message is displayed and the sensor application appears:



TYPE	VERSION	PROFILE
docker	4.3.0-202311031406	exclusive

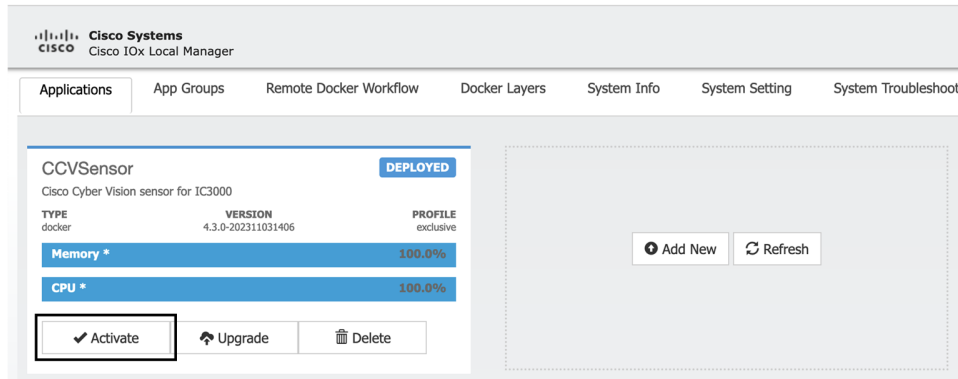
Memory *	100.0%
CPU *	100.0%

Activate
 Upgrade
 Delete

Configure the sensor virtual application

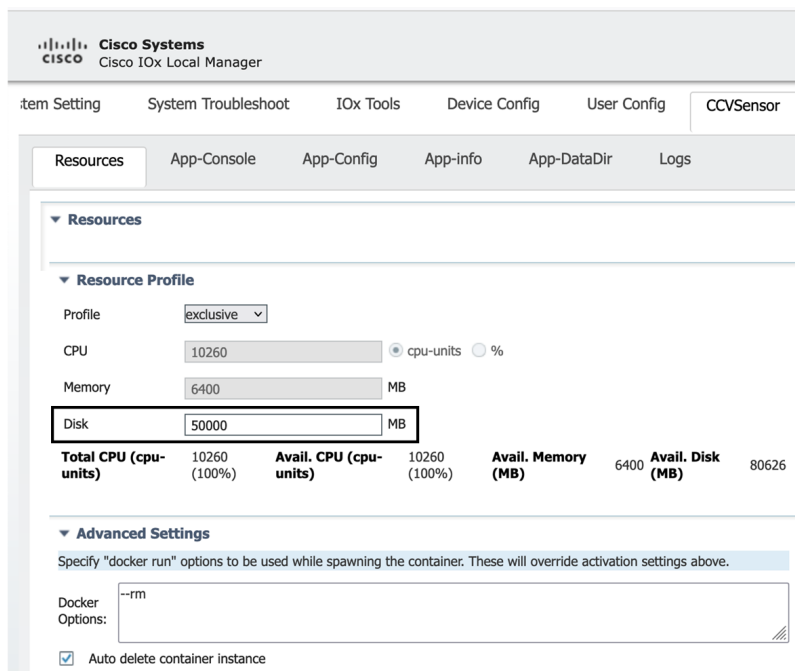
Procedure

Step 1 Click **Activate** to launch the configuration of the sensor application.



Step 2 Access Applications > Resources.

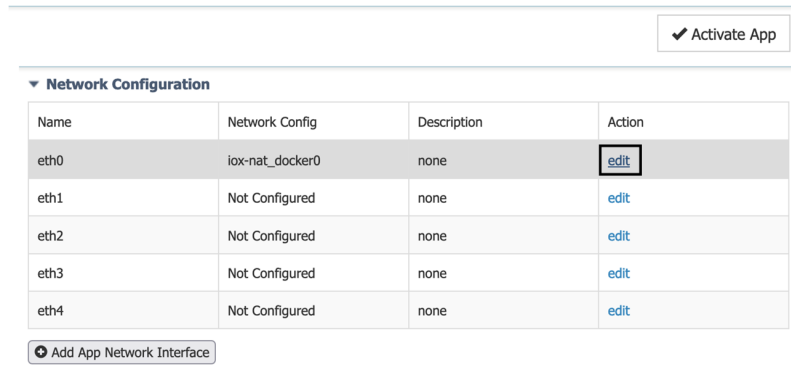
Step 3 Under Resource Profile, change the disk size to 50,000 MB.



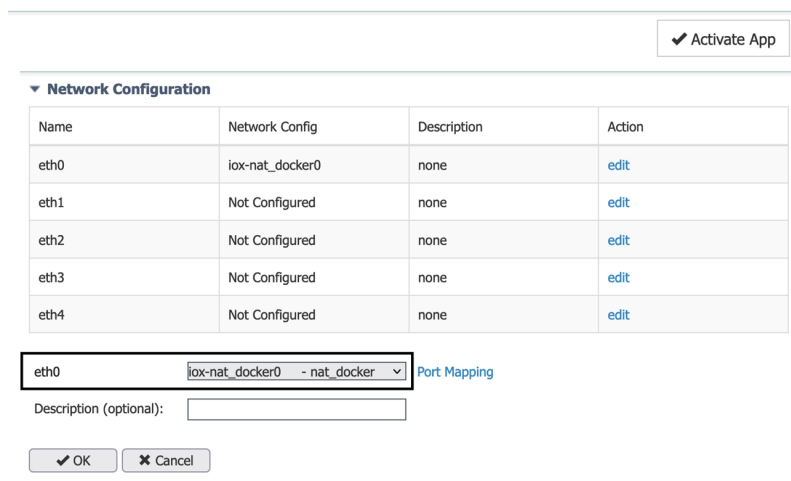
Note Disk size shouldn't be lower than 1,000 MB.

To map the Sensor network interfaces:

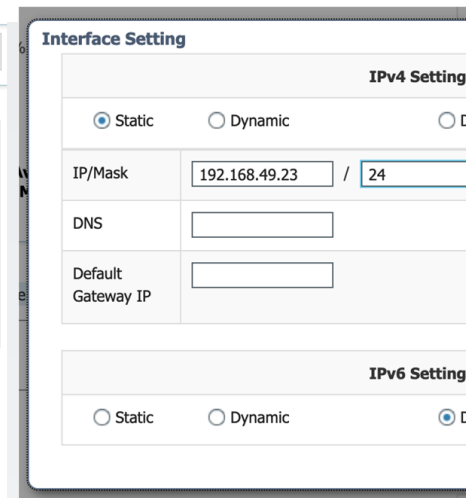
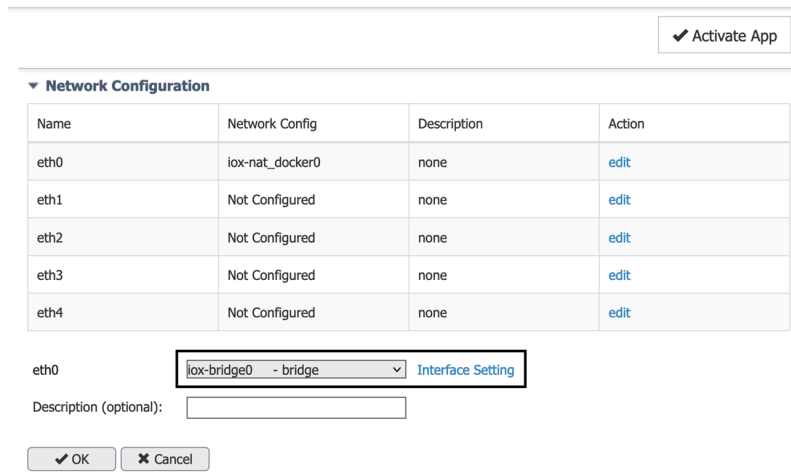
Step 4 Under Network Configuration, click **edit** in the eth0 line.



Step 5 Set eth0 to "iox-bridge0" using the dropdown menu.



Step 6 Click **Interface Setting**.



Step 7 Apply the following settings:

- Set IPV4 as **Static**.
- Set the Sensor Collection IP and mask.

- If needed set a default gateway IP.
- **Disable** IPV6.

Step 8 Click **OK** to close the Interface Setting window and **OK** again to confirm Network Configurations.

Step 9 A message saying that the network interface has been changed appears. Click **OK**.

Step 10 Set the network interfaces eth1, eth2, eth3 and eth4 by repeating the previous steps and using the table below. You must click **OK** each time you map a new interface for changes to be taken into consideration.

Each network interface must be mapped like below:

Name	Network Configuration
eth0	iox-bridge0
eth1	int1
eth2	int2
eth3	int3
eth4	int4

Name	Network Config	Description	Action
eth0	iox-bridge0	none	edit
eth1	int1	none	edit
eth2	int2	none	edit
eth3	int3	none	edit
eth4	int4	none	edit

Activate App

To set eth1, eth2, eth3 and eth4 as mirrored ports:

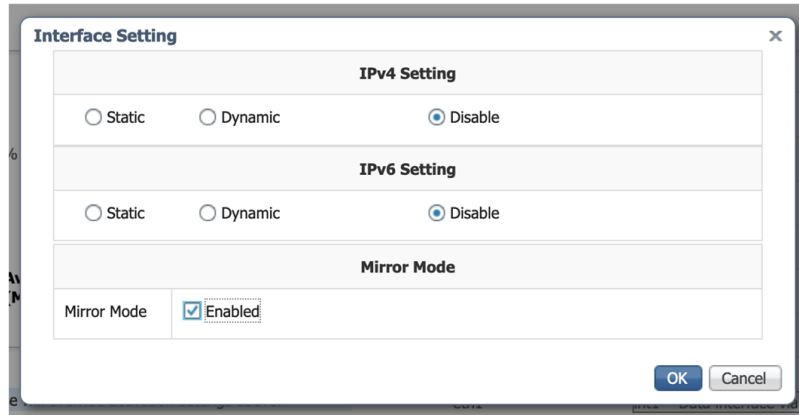
Step 11 Click **Edit** beside eth.

Step 12 Click **Interface Setting**.

Step 13 **Disable** IPv4 and IPv6.

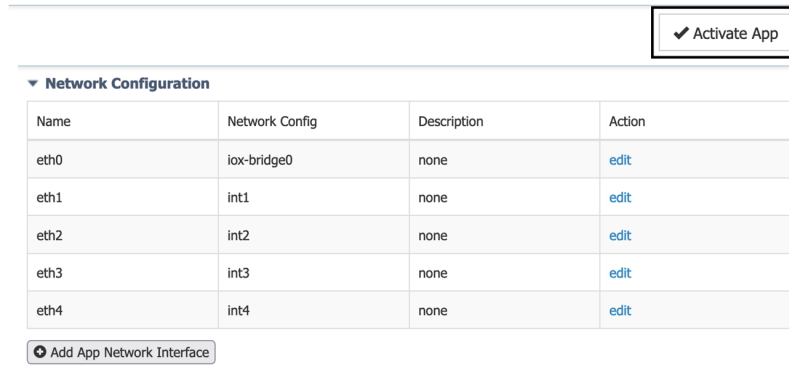
Step 14 Tick **Enabled** for Mirror Mode.

Step 15 Click **OK**.

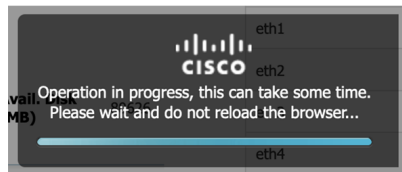


Step 16 Repeat the above steps for eth2, eth3 and eth4.

Step 17 Click **Activate App** on the page top right corner.



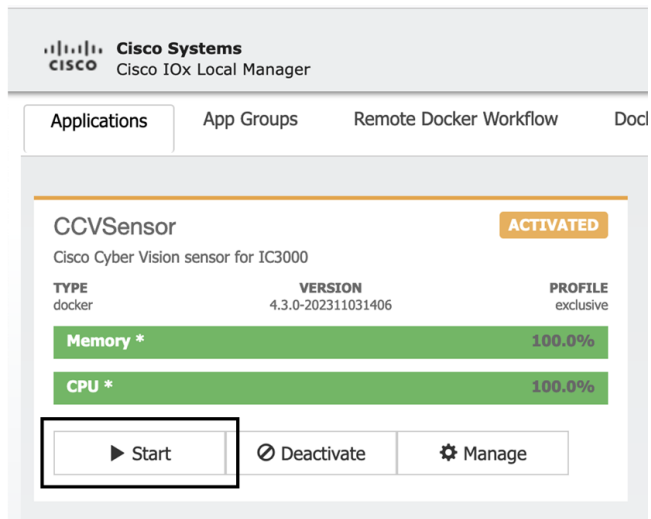
The following message appears:



To start the Sensor Application:

Step 18 Access the Applications tab again.

Step 19 Click **Start**.

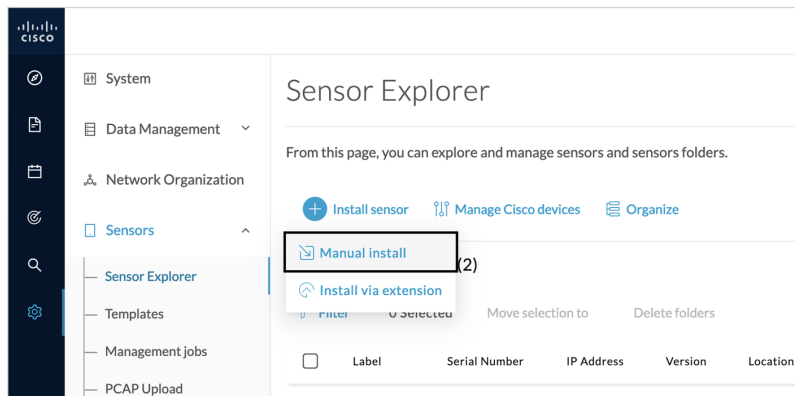


The application moves from Activated to Running state.

Create a sensor and generate the provisioning package

Procedure

Step 1 In Cisco Cyber Vision, navigate to Admin > Sensors > Sensor Explorer and click **Install sensor**, then **Manual install**.



Step 2 Fill in the fields to configure the sensor provisioning package:

- The serial number of the hardware (e.g. FCH2309Y01Z).
- Center IP: leave blank.
- Gateway: add if necessary.
- Optionally, select a capture mode.

- Leave the Monitor session type setup as it is as RSPAN is already enforced on Cisco IC3000. Changing this setup will have no effect.

Step 3Click **Create sensor**.**Step 4**Click **Download package**.

The provisioning package will be downloaded. It is a zip archive file with the following name structure: sbs-sensor-config-<serialnumber>.zip (e.g. "sbs-sensor-configFCH2309Y01Z.zip").

Step 5Click **Finish**.

A new sensor appears in the Sensor Explorer list with the Disconnected status.

Sensor Explorer

From this page, you can explore and manage sensors and sensors folders.

[+ Install sensor](#) [🔧 Manage Cisco devices](#) [📁 Organize](#)

Folders and sensors (3)

[Filter](#)

0 Selected

Move selection to

Delete folders

<input type="checkbox"/>	Label	Serial Number	IP Address	Version	Location	Health status	Processing status	Activ
<input type="checkbox"/>	FCH2309Y01Z				Site 2	Disconnected	Disconnected	
<input type="checkbox"/>	FCH2309Y01Z			4.00	Site 1	Connected	Normally processing	
<input type="checkbox"/>	FCH2309Y01Z	FCH2309Y01Z				Disconnected	Disconnected	

What to do next

The provisioning package must be imported in the Local Manager.

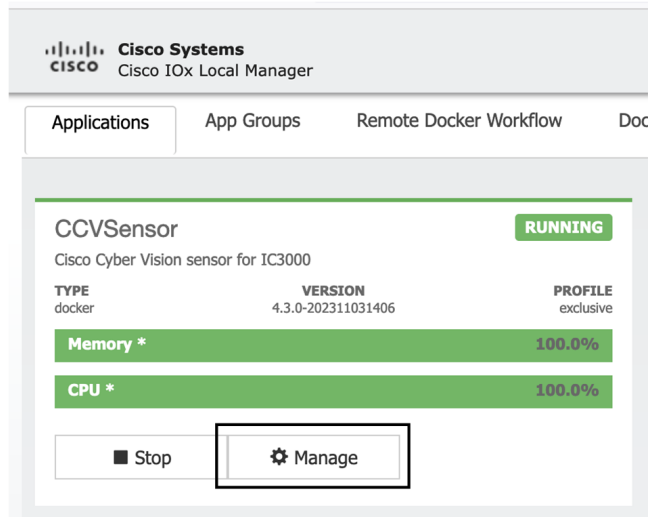
Import the provisioning package

After generating the provisioning package in Cisco Cyber Vision application, you must import it in the Local Manager so the sensor can be enrolled to Cisco Cyber Vision.

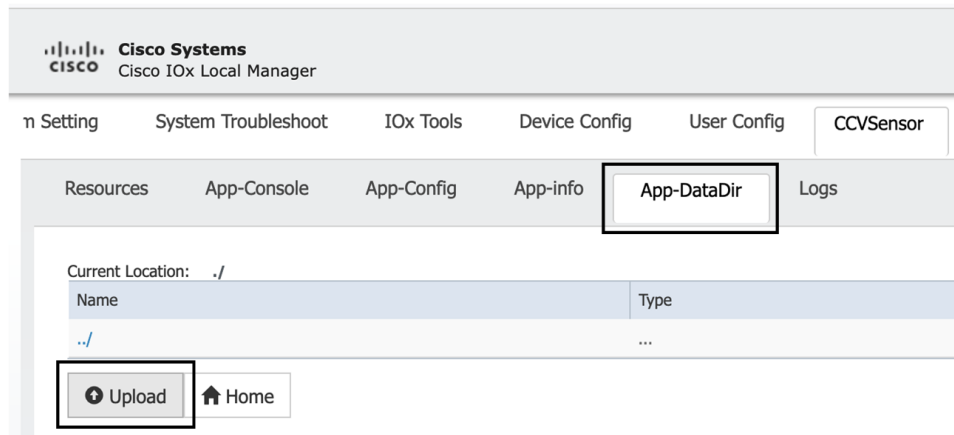
Before you begin

Procedure

Step 1 In the Local Manager, click **Manage** on the sensor application.

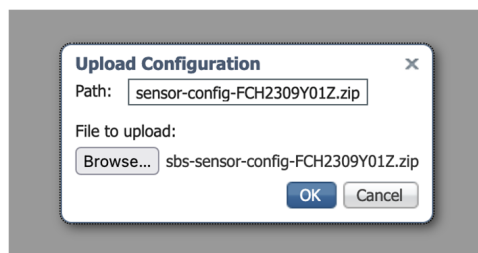


Step 2 Navigate to **App-DataDir**.



Step 3 Click **Upload**.

Step 4 Select the provisioning package (i.e. "sbs-sensor-config-<serialnumber>.zip"), and add the exact file name, extension included, in the path field (i.e. "sbs-sensor-config-<serialnumber>.zip").



Step 5 Click **OK**.

After a few seconds, a message saying that the upload went successfully will be displayed and the sensor will appear as Connected in Cisco Cyber Vision.

- System
- Data Management
- Network Organization
- Sensors
 - Sensor Explorer
 - Templates
 - Management jobs
 - PCAP Upload
- Active Discovery
- Users
- Events

Sensor Explorer

From this page, you can explore and manage sensors and sensors folders.

[+ Install sensor](#)
[Manage Cisco devices](#)
[Organize](#)

Folders and sensors (3)

Filter 0 Selected Move selection to Delete folders As of: Nov 9,

<input type="checkbox"/>	Label	Serial Number	IP Address	Version	Location	Health status	Processing status	Acti
<input type="checkbox"/>						Connected	Normally processing	
<input type="checkbox"/>	FCH2309Y01Z	FCH2309Y01Z	192.168.49.23	4.3.0+202311031406		Connected	Normally processing	



CHAPTER 5

Configuration

- [Configure Active Discovery, on page 35](#)
- [Configure sensor configuration template, on page 37](#)
- [Set a capture mode, on page 42](#)

Configure Active Discovery

Once the sensor is connected, you can change the Active Discovery's network interface so it uses the Collection network interface instead, and add several network interfaces for the sensor to perform Active Discovery on several subnetworks at the same time.

Procedure

Step 1 Click the sensor to configure and click the **Active Discovery** button on its right side panel.

Sensor Explorer

From this page, you can explore and manage sensors and sensors folders. Sensors can be remotely and securely installed. For the first time, you must authorize it so the Center can receive its data.

[+ Install sensor](#) [Manage Cisco devices](#) [Organize](#)

Folders and sensors (3)

[Filter](#) 0 Selected [Move selection to](#) [More Actions](#)

<input type="checkbox"/>	Label	IP Address	Version	Location	Health status
<input type="checkbox"/>	FCW2445P6X5	192.168.49.21	4.1.0+202202151440		Connected
<input type="checkbox"/>	FCW2445P6X5	192.168.49.21	4.1.0+202202151440		Connected
<input type="checkbox"/>	FCW2445P6X5	192.168.49.21	4.1.0+202202151440		Connected

FCW2445P6X5

Label: FCW2445P6X5
Serial Number: FCW2445P6X5
IP address: 192.168.49.21
Version: 4.1.0+202202151440
System date: Feb 24, 2022 4:13:06 PM
Deployment: Sensor Management Extension
Active Discovery: Enabled
Capture mode: All

System Health
Status: Connected
Processing status: Normally processing
Uptime: a day

[Go to statistics](#)

[Start Recording](#)

[Move to](#)

[Capture mode](#) [Redeploy](#)

[Uninstall](#) [Active Discovery](#)

The Active Discovery configuration appears with the interface currently set.

Step 2 Select **Use collection interface** for the Active Discovery to use the Collection network interface.

To add a network interface to Active Discovery for the sensor to perform active monitoring on another subnetwork:

Step 3 Add a new network interface by clicking the corresponding button.

Step 4 Fill the following parameters to set dedicated network interfaces:

- IP address
- Prefix length
- VLAN number

Step 5 Click **Add**.

You can add as many network interfaces as needed.

Step 6 When you are done, click **Configure**.

A message saying that the configuration has been applied successfully appears.

Configure sensor configuration template

Templates

This page allows you to create and set templates with protocol configurations and assign them to specific sensors.

Sensor templates contain protocol configurations which allow you:

- To enable or disable protocol DPI (Deep Packet Inspection) engines.
- To map UDP and TCP ports for each protocol's packet received by the sensor.

By enabling/disabling a protocol DPI engine you can decide which protocols will be analyzed.

Disabling a protocol DPI engine avoid false positives in Cisco Cyber Vision, that is when a protocol appears on the user interface when it's actually not the case because same UDP/TCP ports can be used by other non-standardized protocols.

Some protocols are disabled in the Default template because they are not commonly used or used in specific fields such as transportation. The Default template is applied on all compatible sensors.

As previously mentioned, UDP/TCP ports default configurations are mostly standardized, but conflicts still exist among field-specific protocols or with limited usage. Mapping UDP/TCP port numbers will allow packets to be sent to the correct DPI engine so they can be accurately analyzed and correctly represented in the user interface.

If the protocol's packet is sent to the wrong port, related information will end up in Security Insights/Flows with no tag.

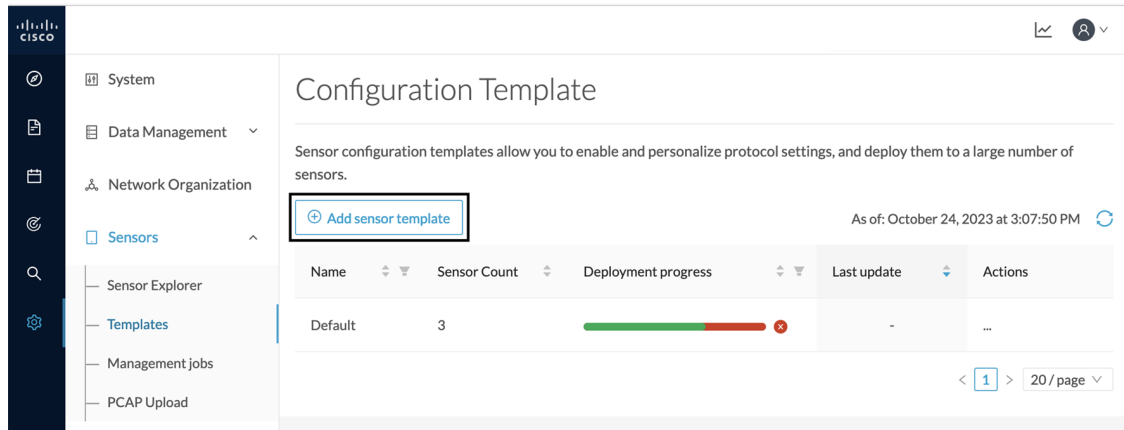
A sensor can be associated with a single template only. Deployment of the template can fail:

- if the sensor is disconnected,
- if there is connection issues,
- if the sensor version is too old.

Create templates

Procedure

- Step 1** In Cisco Cyber Vision, navigate to Admin > Sensors > Templates.
- Step 2** Click **Add sensor template**.



The Create sensor template window pops up.

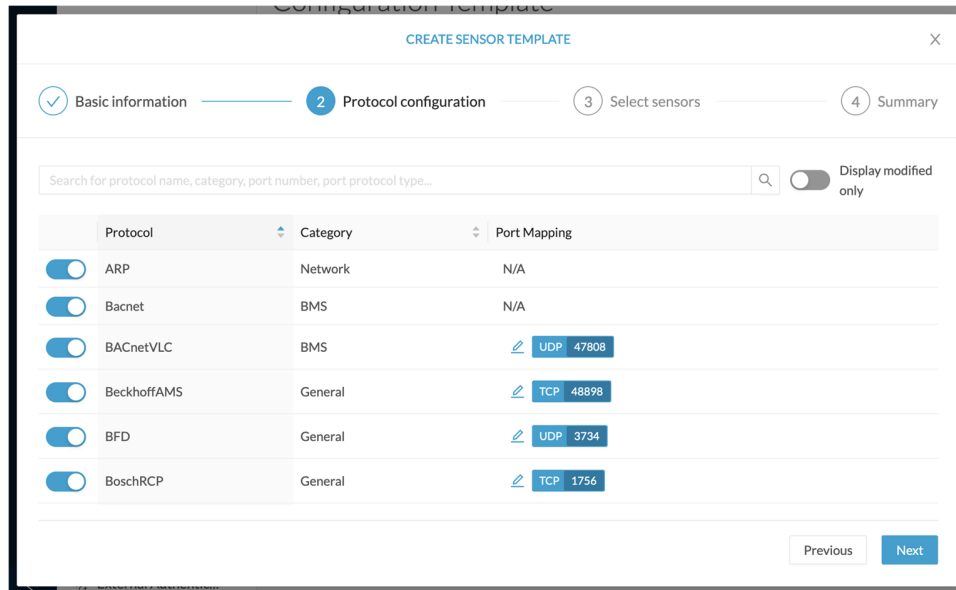
Step 3

Add a name to the template. You can also add a description.

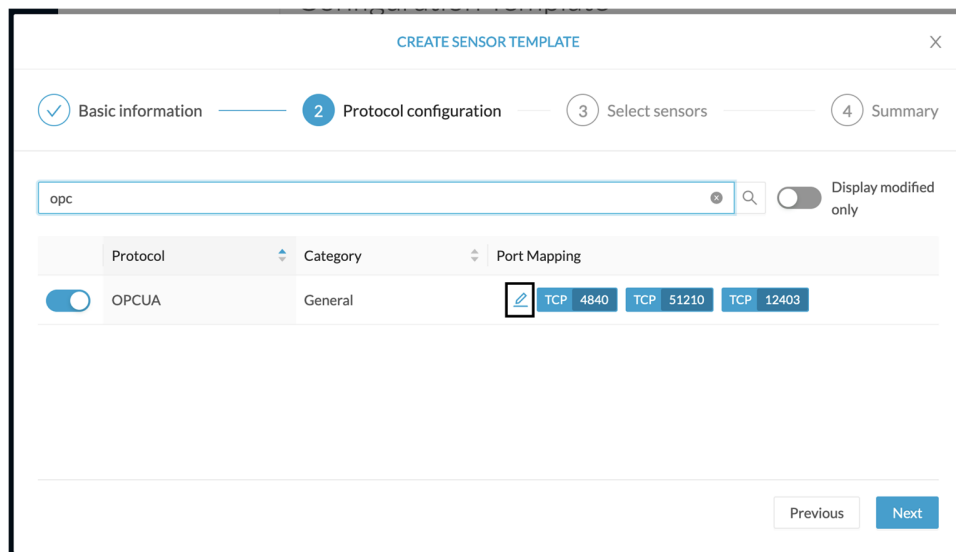
Step 4

Click **Next**.

The list of protocol DPI engines with their basic configurations appears.

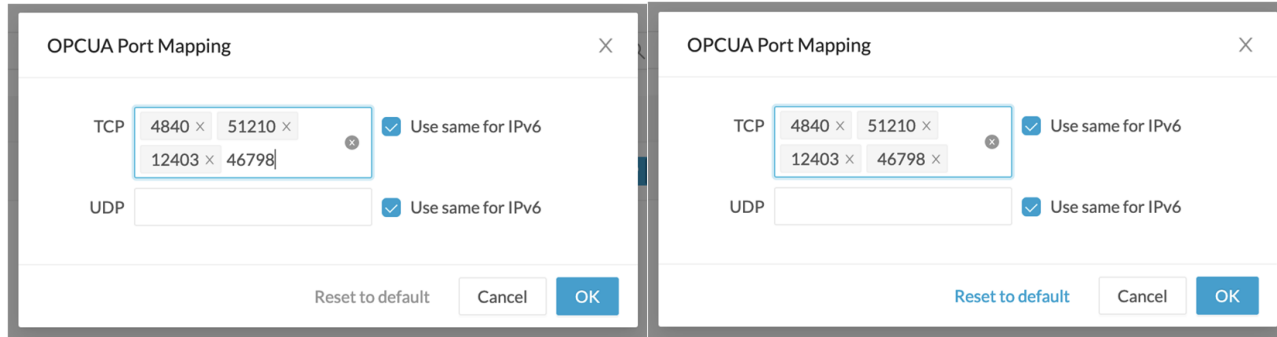


Step 5 In the search bar, type the protocol you want to configure.
 In our example, we will add a port to the OPCUA default settings.



Step 6 Under the Port Mapping column, click the **pen** button to edit its settings.
 The protocol's port mapping window pops up.

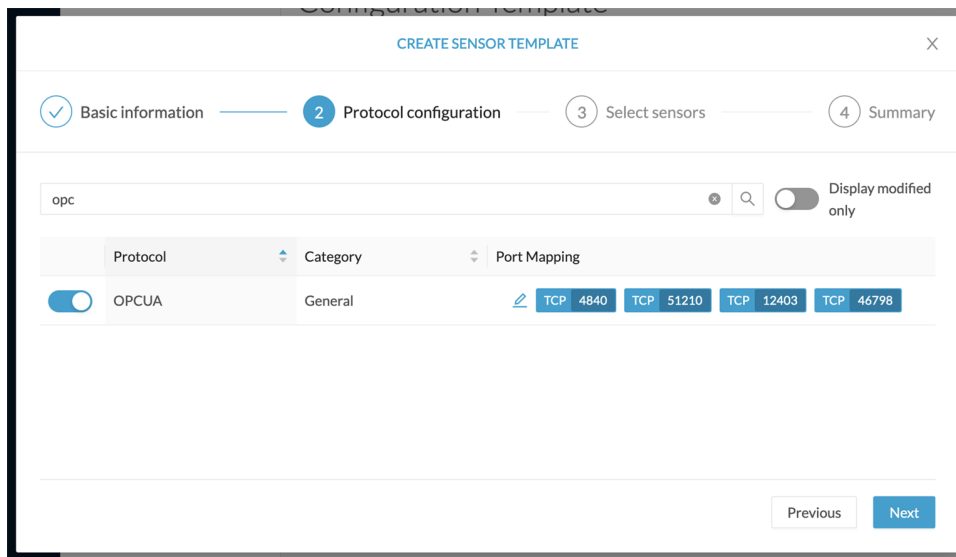
Step 7 Write down the port number you want to add and hit enter.



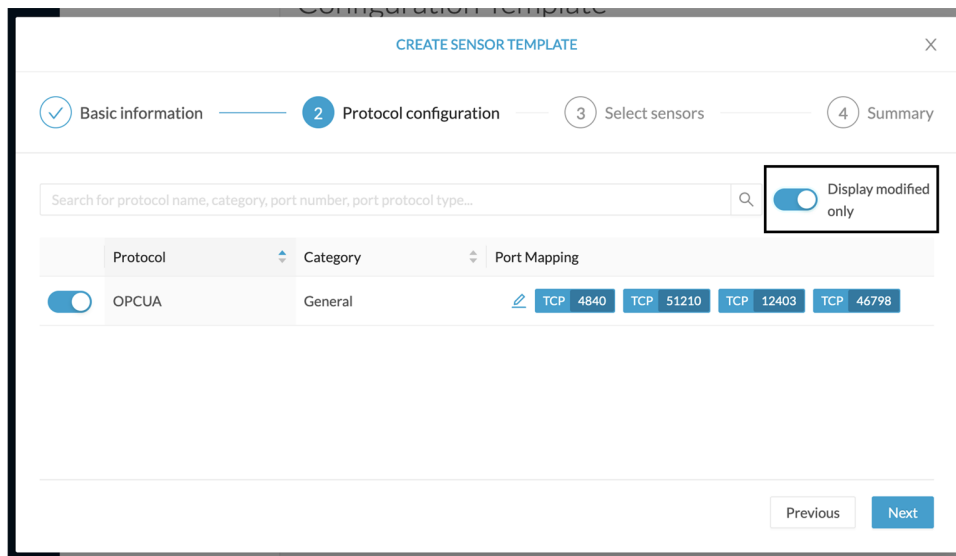
Step 8

Click **OK**.

The port number is added to the protocol's default settings.

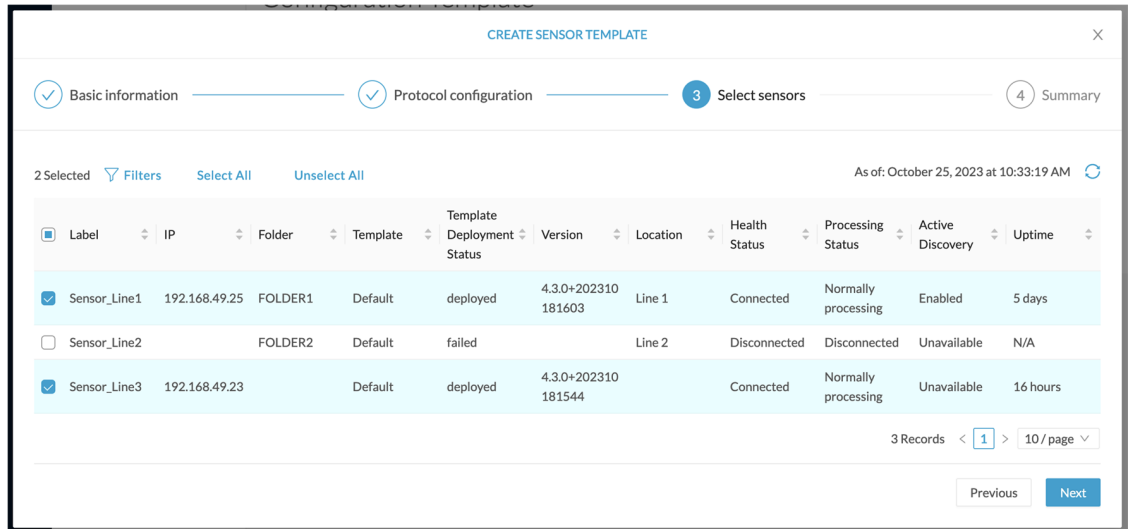


toggling ON the **Displayed modified only** button allows you to quickly find this protocol.



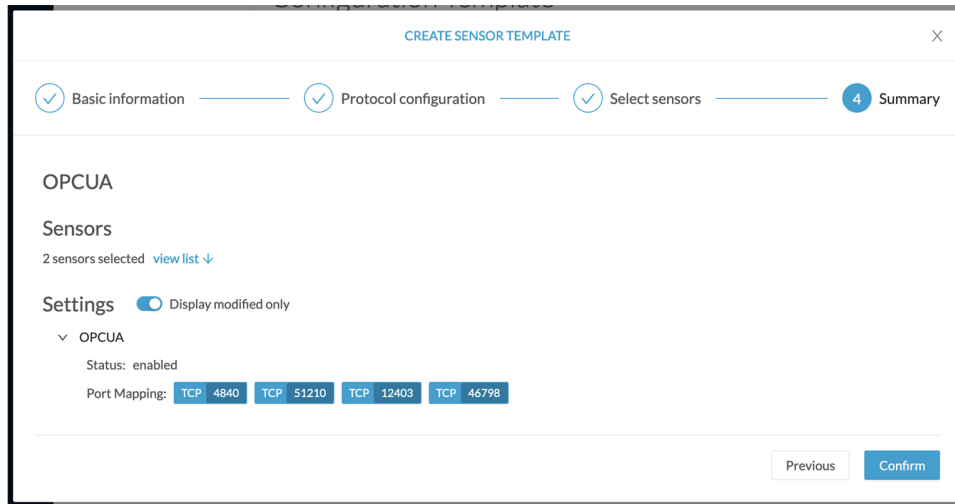
Step 9 Click **Next**.

Step 10 Select the sensor(s) you want to apply the template to.



Step 11 Click **Next**.

Step 12 Check the template configurations and **Confirm** its creation.



The configuration is sent to the sensors. Configuration deployment will take a few moments.

The OPCUA template appears in the template list with its two assigned sensors.

Configuration Template

Sensor configuration templates allow you to enable and personalize protocol settings, and deploy them to a large number of sensors.

[+ Add sensor template](#) As of: October 24, 2023 at 3:06:55 PM

Name	Sensor Count	Deployment progress	Last update	Actions
Default	1	<div style="width: 100%; height: 10px; background-color: red;"></div>	-	...
OPCUA	2	<div style="width: 100%; height: 10px; background-color: green;"></div>	Today	...

< 1 > 20 / page

Set a capture mode

The Capture mode feature lets you choose which network communications will be analyzed by the sensors. You can set it by clicking an online sensor in the sensors list of the Sensor Explorer page or during a sensor installation.

Setting the capture mode on a sensor from the right side panel:

Sensor Explorer

From this page, you can explore and manage sensors and sensors folders. Sensors can be remotely and connects for the first time, you must authorize it so the Center can receive its data.

[+ Install sensor](#) [Manage Cisco devices](#) [Organize](#)

Folders and sensors (5)

[Filter](#) 0 Selected [Move selection to](#) [More Actions](#)

<input type="checkbox"/>	Label	IP Address	Version	Location	Health status
<input type="checkbox"/>	FOLDER1			Lyon	
<input type="checkbox"/>	FOLDER2			Paris	
<input type="checkbox"/>	FCY014567	192.168.49.41			Disco
<input type="checkbox"/>	FCH2309Y01Z	192.168.49.23	4.1.0+202202151504		Conne
<input type="checkbox"/>	FCW2445P6X5	192.168.49.21	4.1.0+202202151440		Conne

FCH2309Y01Z ×

Label: FCH2309Y01Z

Serial Number: FCH2309Y01Z

IP address: 192.168.49.23

Version: 4.1.0+202202151504

System date: Mar 9, 2022 11:46:58 AM

Deployment: Sensor Management Extension

Active Discovery: Enabled

Capture mode: All

System Health

Status: Connected

Processing status: Pending data

Uptime: 20 hours

[Go to statistics](#)

[Start Recording](#)

[Move to](#)

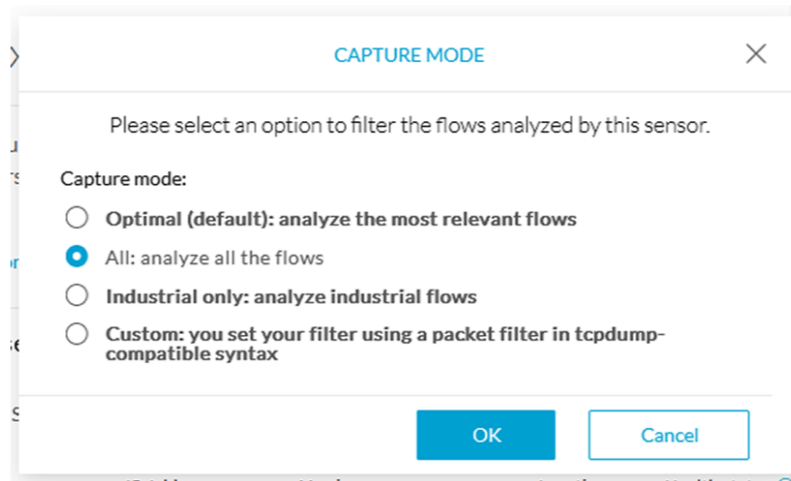
[Download package](#) **[Capture mode](#)**

[Redeploy](#) [Enable IDS](#)

[Reboot](#) [Shutdown](#)

[Uninstall](#) [Active Discovery](#)

Capture modes:



The aim is mainly to focus the monitoring on relevant traffic but also to reduce the load on the Center.

For example, a common filter in a firewall can consist of removing the network management flows (SNMP). This can be done by setting a filter like "not (port 161 and host 10.10.10.10)" where "10.10.10.10" is the network management platform.

Using Capture mode Cisco Cyber Vision performance can be improved on large networks.

Capture modes operate because of filters applied on each sensor. Filters are set to define which types of incoming packets are to be analyzed by the sensors. You can set a different filter on each sensor according to your needs.

You can set the capture mode in the installation wizard when enrolling the sensors during the Center installation. This option is recommended if you already know which filter to set. Otherwise, you can change it at any time through the Sensor Explorer page in the GUI (provided that the SSH connection is allowed from the Center to the sensors).



Note You can set a capture mode to offline sensors from a file containing the filter and registered on the USB drive. This will be then plugged on the Offline USB port of the device. For more information about setting a capture mode on an offline sensor contact the support.

The different capture modes are:

- **ALL:** No filter is applied. The sensor analyzes all incoming flows and they will all be stored inside the Center database.
- **OPTIMAL (Default):** The applied filter selects the most relevant flows according to Cisco expertise. Multicast flows are not recorded. This capture mode is recommended for long term capture and monitoring.
- **INDUSTRIAL ONLY:** The filter selects industrial protocols only like modbus, S7, EtherNet/IP, etc. This means that IT flows of the monitored network won't be analyzed by the sensor and won't appear in the GUI.
- **CUSTOM (advanced users):** Use this capture mode if you want to fully customize the filter to be applied. To do so you will need to use the tcpdump syntax to define the filtering rules.



CHAPTER 6

Maintenance

- [Upgrade procedures, on page 45](#)
- [Certificate renewal, on page 60](#)

Upgrade procedures

Sensor Self Update

Cisco Cyber Vision now allows sensor updates regardless of the install method (i.e., without the extension). Release 4.4.1 provides the necessary foundation for sensor self-updates. However, the self-update feature will only be functional in future releases.

Starting with Cisco Cyber Vision release 4.4.1, you can update all sensors automatically. The required steps are:

- Select sensors to update.
- The Center adds a new job to the sensor queue.
- The sensor automatically collects and validates the update file.
- The sensor restarts with the new version.

Update Warnings


In the Cisco Cyber Vision center on the Sensor Explorer page (Admin – Sensors – Sensor Explorer), users receive an alert to update the sensor. When this happens, the version number turns red, and a blue arrow with a tooltip indicates the sensor is upgradeable.

The screenshot displays the Cisco Cyber Vision interface. On the left is a dark navigation sidebar with options: Explore, Reports, Events, Monitor, Search, and Admin. The main content area is titled "Sensor Explorer" and includes a sub-menu on the left with options: System, Data Management, Network Organization, Sensors (expanded to show Sensor Explorer, Templates, Management jobs, and PCAP Upload), Active Discovery, and Users. The main panel shows a table of "Folders and sensors (6)". The table has columns for Label, Serial Number, IP address, version, and a status icon. A tooltip is visible over the first sensor row, indicating an update is available.

Label	Serial Number	IP Address	Version	Status
	FCH2309Y02K	192.168.49.37	4.4.0	Update available
	FOC2716ZEMN	192.168.49.101	4.4.0	Up to date


On the sensor's right-side, the same blue arrow and an **Update** button is visible.

FCH2309Y02K ✕

Label: FCH2309Y02K 

Serial Number: FCH2309Y02K

IP address: 192.168.49.37


Version: 4.4.0+202405071629 

System date: Jun 5, 2024 3:32:50 PM

Deployment: Sensor Management Extension

Active Discovery: Enabled

Capture mode: All

Template: Default 


System Health


Status: Connected



Processing status: Normally processing



Uptime: 20 minutes


[Go to statistics](#)


 Start Recording

 Move to

 Capture mode  Redeploy

 Enable IDS  Uninstall

 Active Discovery

 Update

Update Procedure

Procedure

- Step 1** Use the checkboxes on the left to select multiple sensors.

Folders and sensors (6)

Filter 3 Selected Move selection to More Actions ▾

<input type="checkbox"/>	Label	Serial Number	IP Address	Version	Update status
<input checked="" type="checkbox"/>	FCH2309Y02K	FCH2309Y02K	192.168.49.37	4.4.0	
<input checked="" type="checkbox"/>	FOC2716ZEMN	FOC2716ZEMN	192.168.49.101	4.4.0	
<input type="checkbox"/>	ie3400esc00	FCW2445P6X5	192.168.49.21	4.4.0	
<input checked="" type="checkbox"/>	IE3400esc02	FCW2721Y1GC	192.168.49.25	4.4.0	
<input type="checkbox"/>	IE3400esc03	FCW2721Y1QV	192.168.49.27	4.4.0	
<input type="checkbox"/>	IE3400esc04	FCW2721Y1FK	169.254.0.2	4.4.0	

Step 2 Go to the **More Actions** and click **Update sensors**.

The sensor self-update menu appears.

Folders and sensors (6)

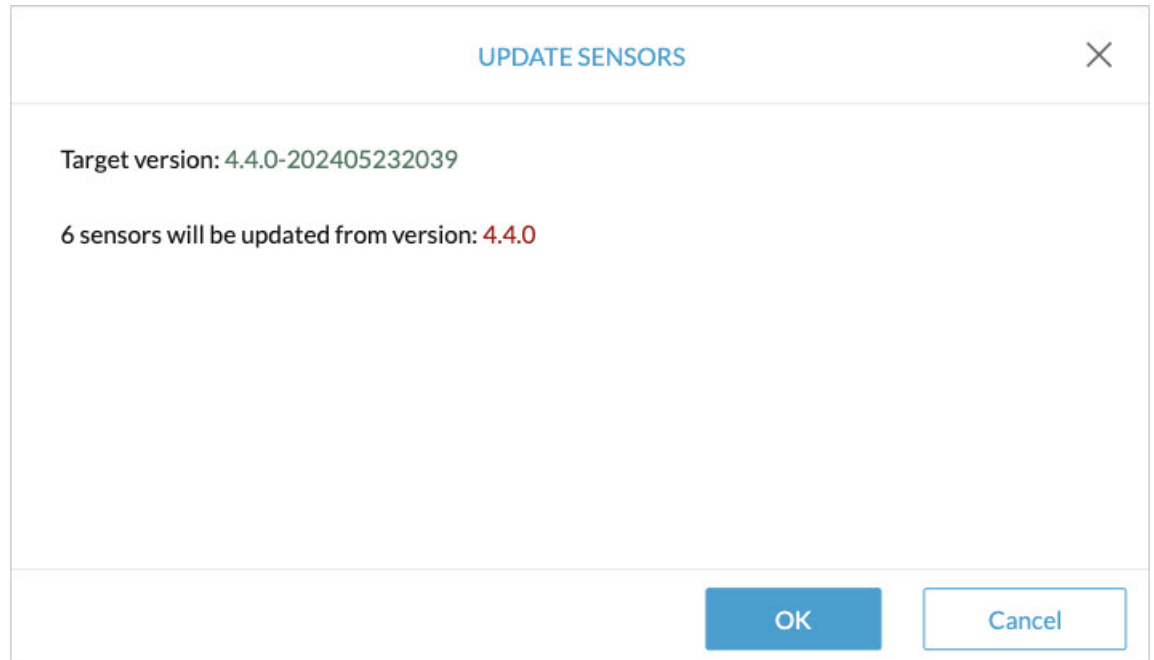
Filter 3 Selected Move selection to More Actions ^

<input type="checkbox"/>	Label	Serial Number	IP Address	Version	Update status
<input checked="" type="checkbox"/>	FCH2309Y02K	FCH2309Y02K	192.168.49.37	4.4.0	
<input checked="" type="checkbox"/>	FOC2716ZEMN	FOC2716ZEMN	192.168.49.101	4.4.0	
<input type="checkbox"/>	ie3400esc00	FCW2445P6X5	192.168.49.21	4.4.0	

More Actions ^

- Delete folders
- Update sensors

Step 3 Click **OK**.



Step 4 During the update, a blue circle appears in the **Update status** column.

Folders and sensors (6)

Filter 0 Selected Move selection to More Actions

<input type="checkbox"/>	Label	Serial Number	IP Address	Version	Update status	Location
<input type="checkbox"/>	FCH2309Y02K	FCH2309Y02K	192.168.49.37	4.4.0		
<input type="checkbox"/>	FOC2716ZEMN	FOC2716ZEMN	192.168.49.101	4.4.0		
<input type="checkbox"/>	ie3400esc00	FCW2445P6X5	192.168.49.21	4.4.0		
<input type="checkbox"/>	IE3400esc02	FCW2721Y1GC	192.168.49.25	4.4.0		
<input type="checkbox"/>	IE3400esc03	FCW2721Y1QV	192.168.49.27	4.4.0		
<input type="checkbox"/>	IE3400esc04	FCW2721Y1FK	169.254.0.2	4.4.0		

Step 5 After the update, the version number turns black, and a green symbol appears in the **Update status** column.

<input type="checkbox"/>	Label	Serial Number	IP Address	Version	Update status	Location
<input type="checkbox"/>	FCH2309Y02K	FCH2309Y02K	192.168.49.37	4.4.0		
<input type="checkbox"/>	FOC2716ZEMN	FOC2716ZEMN	192.168.49.101	4.4.0		
<input type="checkbox"/>	ie3400esc00	FCW2445P6X5	192.168.49.21	4.4.0		
<input type="checkbox"/>	IE3400esc02	FCW2721Y1GC	192.168.49.25	4.4.0		
<input type="checkbox"/>	IE3400esc03	FCW2721Y1QV	192.168.49.27	4.4.0		
<input type="checkbox"/>	IE3400esc04	FCW2721Y1FK	169.254.0.2	4.4.0		

Step 6 The **Update in progress** status is visible.

ie3400esc00 ✕

Label: ie3400esc00 ✎

Serial Number: FCW2445P6X5

IP address: 192.168.49.21

Version: 4.4.0+202405071631

System date: Jun 5, 2024 3:34:59 PM

Deployment: Manual

Active Discovery: Enabled

Capture mode: All

Template: Default ✎

System Health

Status: Connected

Processing status: Normally processing

Uptime: 1 hour

▶ Start Recording

📁 Move to

↓ Download package

🔑 Capture mode

⊖ Uninstall

🔍 Active Discovery

↻ Update

🔄 Update in progress

Update Failure

If the update is unsuccessful, the **Update status** column displays a red cross and a message that provides the details.

The screenshot shows the 'Folders and sensors (6)' section of the Cisco Cyber Vision interface. It includes a table with columns for Label, Serial Number, IP Address, Version, and Update status. A red 'x' icon in the 'Update status' column for the sensor 'FCH2309Y02K' is highlighted, with a tooltip indicating an update failure.

Label	Serial Number	IP Address	Version	Update status
FCH2309Y02K	FCH2309Y02K	192.168.49.37	4.4.0	Update unsuccessful: Marked as failed because the update remained in a transient status for too long. Last failed attempt: Jun 5, 2024
FOC2716ZEMN	FOC2716ZEMN	192.168.49.101	4.4.0	Connected normally processing

Upgrade through the Cisco Cyber Vision sensor management extension

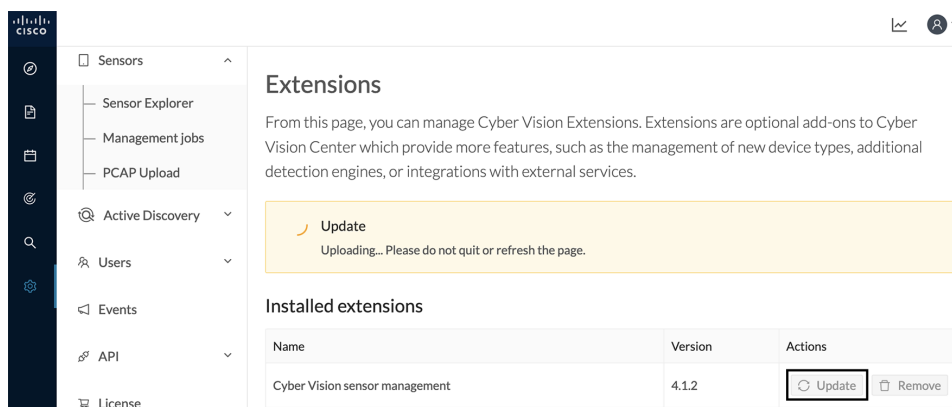
Before updating sensors, the Cisco Cyber Vision sensor management extension must be up-to-date.

Update the sensor management extension

The Cisco Cyber Vision sensor management extension must be up-to-date to update IOx sensors.

Procedure

- Step 1** Retrieve the sensor management extension file (i.e. CiscoCyberVision-sensor-management-<version>.ext) on cisco.com.
- Step 2** In Cisco Cyber Vision, navigate to Admin > Extensions.
- Step 3** Click **Update** to browse the new version of the extension file.



Update the sensors

Procedure

- Step 1** In Cisco Cyber Vision, navigate to Admin > Sensors > Sensor Explorer.

Sensors that are not up-to-date have their version displayed in red.

Step 2 Click **Install sensor**, then **Update Cisco devices**.

Sensor Explorer

From this page, you can explore and manage sensors and sensors folders. Sensors can be remotely and securely rebo time, you must authorize it so the Center can receive its data.

Install sensor Manage Cisco devices Organize

Update Cisco devices Manage credentials

Filter 0 Selected move selection to More Actions

	Label	IP Address	Version	Location	Health status
<input type="checkbox"/>	FOLDER1			Lyon	
<input type="checkbox"/>	FOLDER2			Paris	
<input type="checkbox"/>	IC3000	192.168.49.23	4.1.1+202205161124		Connected
<input type="checkbox"/>	IE3400	192.168.49.21	4.1.2+202207190948		Connected

The update Cisco devices window pops up listing all sensors that have been deployed with the sensor management extension.

UPDATE CISCO DEVICES

Only sensors deployed with the Sensor Management Extension (except IC3000) are concerned here. They appear only if there is a new version of their application available in the currently installed extension. Please select the sensors to update.

<input type="checkbox"/>	Label	IP	Version	Target
<input type="checkbox"/>	IE3400	192.168.49.21	4.1.2+202207190948	Updatable to 4.1.3+202210041846

Step 3 Select the sensors you want to update.

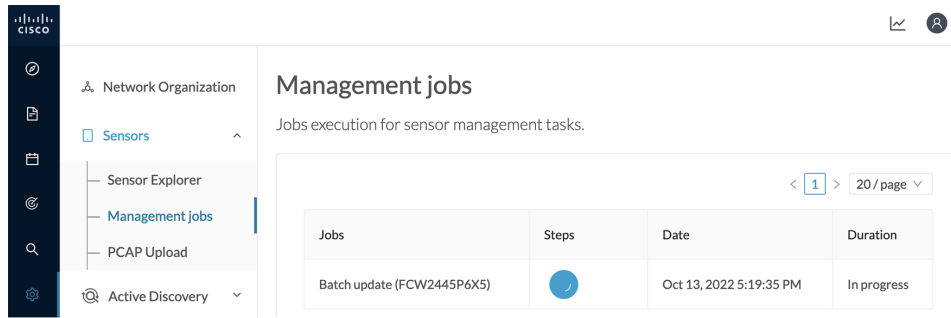
UPDATE CISCO DEVICES

Only sensors deployed with the Sensor Management Extension (except IC3000) are concerned here. They appear only if there is a new version of their application available in the currently installed extension. Please select the sensors to update.

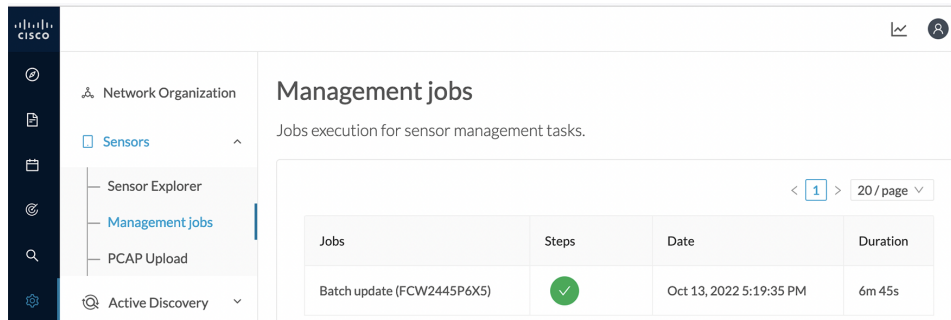
<input checked="" type="checkbox"/>	Label	IP	Version	Target
<input checked="" type="checkbox"/>	IE3400	192.168.49.21	4.1.2+202207190948	Updatable to 4.1.3+202210041846

Step 4 Click **Update**.

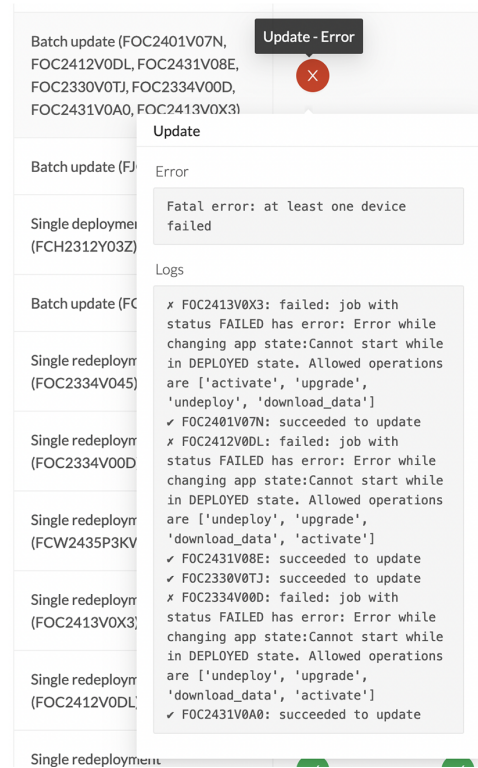
The sensors' update status appear in the Management jobs page in batches per sensor type and of maximum ten sensors per batch.



Herebelow the management jobs indicate that the batch of sensors updated successfully.



If the batch update fails, click the red update error icon to see logs.



Upgrade through the Local Manager

The following section explains how to upgrade the sensor through the Local Manager.

In the Cisco Cyber Vision sensor administration page, the sensor is in 3.2.2. In the example below, we will upgrade the sensor to Cisco Cyber Vision version 3.2.3.

The screenshot shows the 'Sensors' page in the Cisco Cyber Vision administration interface. The left sidebar contains navigation options: System, Data management, Sensors (selected), Capture, Users, Events, API, License, LDAP Settings, Short, Integrations, and Extensions. The main content area displays a table of sensors:

Name	IP	Version	Status	Processing status	Active Discovery status	Capture Mode	Uptime
FOC2334V00H	192.168.69.20	3.2.3+202104292032	Connected	Pending data	Unavailable	All	4d 1h 57m 2s
FCH2312Y047	192.168.70.20	3.2.2+202103181753	Connected	Pending data	Unavailable	All	27m 37s

Below the table, the details for sensor FCH2312Y047 are shown:

- S/N: FCH2312Y047
- Name: FCH2312Y047
- IP address: 192.168.70.20
- Version: 3.2.2+202103181753
- System date (UTC): Friday, Apr 11 30, 2021 9:42 AM
- Status: Connected
- Processing status: Pending data
- Active discovery: Unavailable
- Deployment: Manual
- Uptime: 27m 37s
- Capture mode: All
- Start recording sensor
- Go to statistics

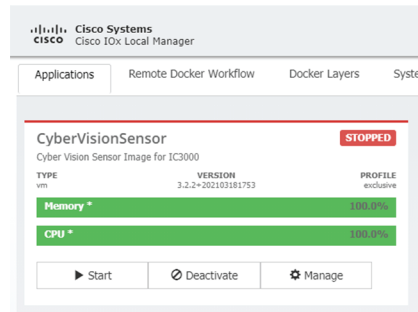
At the bottom of the details panel, there are several action buttons: Remove, Erase, Get Provision..., Capture Mode, Enable IDS, Shutdown, and Reboot. At the bottom of the main content area, there are four buttons: UPDATE CISCO DEVICES, DEPLOY CISCO DEVICE, INSTALL SENSOR MANUALLY, and IMPORT OFFLINE FILE.

1. Access the Local Manager.
2. Stop the application.

The screenshot shows the Cisco Systems Local Manager interface. The top navigation bar includes Applications, Remote Docker Workflow, Docker Layers, System Info, and System Setting. The main content area displays the status of the 'CyberVisionSensor' application, which is currently 'RUNNING'. The application is identified as 'Cyber Vision Sensor Image for IC3000'. Below the status bar, there are two progress indicators: 'Memory *' at 100.0% and 'CPU *' at 100.0%. At the bottom of the application card, there are two buttons: 'Stop' and 'Manage'.

The operation takes a few moments.

The application status switches to STOPPED.



In Cisco Cyber Vision, the sensor status moves to Disconnected.

Name	IP	Version	Status	Processing status	Active Discovery status	Capture Mode [®]	Uptime	
▶ FOC2334V00H	192.168.69.20	3.2.3+202104292032	Connected	Pending data	Unavailable	All	4d 1h 5m 12s	
▼ FCH2312Y047	192.168.70.20	3.2.2+202103181753	Disconnected	SSH	Disconnected	Unavailable	All	N/A

S/N: FCH2312Y047
 Name: FCH2312Y047
 IP address: 192.168.70.20
 Version: 3.2.2+202103181753
 System date (UTC): Friday, April 30, 2021 9:42 AM
 Status: Disconnected
 Processing status: Disconnected
 Active discovery: Unavailable
 Deployment: Manual
 Capture mode: All
[Go to statistics](#)

Remove

Erase

Get Provisioni...

Capture Mode

Enable IDS

Shutdown

Reboot

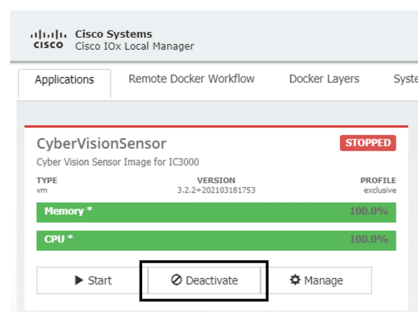
+ UPDATE CISCO DEVICES

+ DEPLOY CISCO DEVICE

+ INSTALL SENSOR MANUALLY

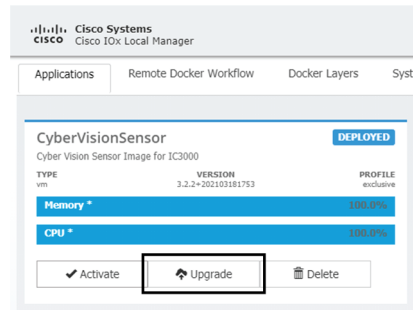
IMPORT OFFLINE FILE

- In the Local Manager, click the Deactivate button.

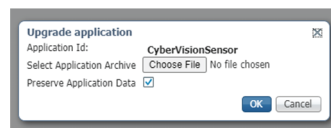


The application status moves to "DEPLOYED".

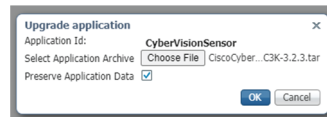
- Click Upgrade.



The pop up Upgrade application appears.

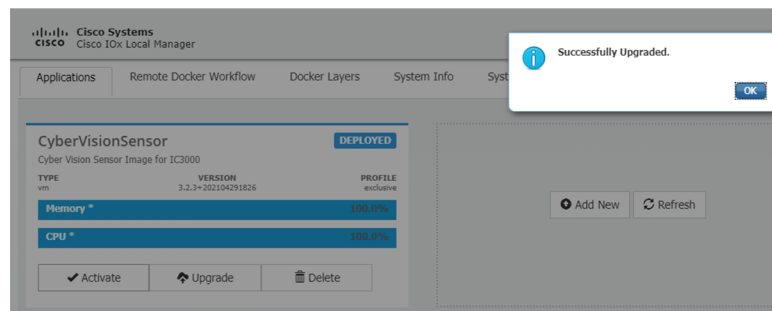


5. Select the option Preserve Application Data.
6. Select the new version of the application archive file.
e.g. Cisco-Cyber-Vision-IOx-IC3K-3.2.3.tar



The operation takes a few moments.

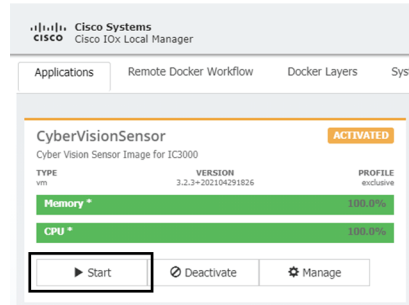
A message indicating that the sensor has been successfully upgraded is displayed.



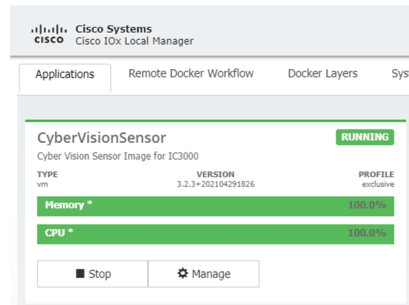
7. Check the number of the new version.
8. Click Activate.
9. Check configurations.

It can happen that network configurations are lost during the upgrade. If they are, refer to [Configure the sensor virtual application, on page 26](#) and do as explained.

10. Click the Activate App button.
The application status moves to ACTIVATED.
11. Click the Start button.



The application status changes to RUNNING.



In Cisco Cyber Vision, the sensor is upgraded from version 3.2.2 to 3.2.3 and its status moves to Connected.

Name	IP	Version	Status	Processing status	Active Discovery status	Capture Mode [®]	Uptime
▶ FOC2334V00H	192.168.69.20	3.2.3+202104292032	Connected	Pending data	Unavailable	All	4d 2h 17m 23s
▼ FCH2312Y047	192.168.70.20	3.2.3+202104291826	Connected	Pending data	Unavailable	All	1m 22s

S/N: FCH2312Y047
 Name: FCH2312Y047
 IP address: 192.168.70.20
 Version: 3.2.3+202104291826
 System date (UTC): Friday, Apr 11 30, 2021 10:02 AM
 Status: Connected
 Processing status: Pending data
 Active discovery: Unavailable
 Deployment: Manual
 Uptime: 1m 22s
 Capture mode: All
 ● Start recording sensor
 📊 Go to statistics

Remove
Erase
Get Provision...
Capture Mode
Enable IDS
Shutdown
Reboot

UPDATE CISCO DEVICES
DEPLOY CISCO DEVICE
INSTALL SENSOR MANUALLY
IMPORT OFFLINE FILE

Certificate renewal

The certificates generated by Cisco Cyber Vision have a validity of two years.

Sensor certificates must be renewed manually. The procedure used differs whether the certificate is already expired or not and whether the sensor has been deployed using the sensor management extension.

- If the certificate is still valid, refer to [Sensor certificate renewal, on page 60](#).
- If the sensor was deployed with the sensor management extension, refer to [Sensor certificate renewal, on page 60](#).
- If the certificate is outdated, and was deployed manually, refer to [Sensor certificate renewal through the Local Manager, on page 63](#).

Sensor certificate renewal

The following procedure applies to:

- Sensors deployed with the sensor management extension, whether the certificate expiration date is exceeded or not (i.e. the deployment method is indicated in the sensor's right side panel).

The screenshot shows the 'Sensor Explorer' interface. At the top right, there is a red notification banner that says 'System issues Actions required'. Below this, the main content area is split into two panels. The left panel, titled 'Sensor Explorer', contains a yellow warning banner with a triangle icon and the text '2 sensor certificates expired'. Below the banner are three buttons: 'Install sensor', 'Manage Cisco devices', and 'Organize'. Underneath is a section titled 'Folders and sensors (3)' with a filter icon and '0 Selected'. A table lists three sensors with columns for 'Label', 'IP Address', and 'Version'. The right panel shows details for the selected sensor 'FOC2330V0T0'. It includes fields for Label, Serial Number, IP address, Version, and System date. The 'Deployment' field is highlighted with a red box and contains the text 'Sensor Management Extension'. Other fields include 'Active Discovery: Unavailable', 'Capture mode: All', 'System Health: Connected', 'Processing status: Normally processing', and 'Uptime: 18 hours'. At the bottom of the details panel are several action buttons: 'Go to statistics', 'Start Recording', 'Move to', 'Capture mode', 'Redeploy', and 'Uninstall'.

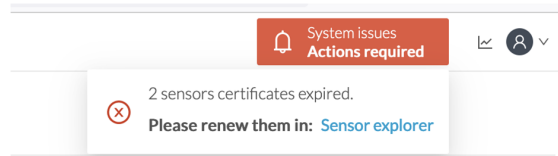
	Label	IP Address	Version
<input type="checkbox"/>	FCH2309Y01Z	192.168.49.23	4.2.2+202306261711
<input type="checkbox"/>	FCW2445P6X5	192.168.49.21	4.2.2+202306261519
<input type="checkbox"/>	FOC2330V0T0	192.168.49.41	4.2.2+202306261519

- In the case of sensors deployed manually, it only applies if the sensors certificate have not expired yet (i.e. the sensor certificate status is Expire Soon).

If sensors have been deployed manually and the certificate expiration date is exceeded, refer to [Sensor certificate renewal through the Local Manager, on page 63](#).

Procedure

Step 1 In Cisco Cyber Vision, navigate to Admin > Sensors > Sensor Explorer or click the top banner alert to access the Sensor Explorer page directly.



Another alert is displayed.

Sensor Explorer

From this page, you can explore and manage sensors and sensors folders. Sensors can 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.

2 sensor certificates expired and 1 will expire soon [Manage certificates](#) ×

[+ Install sensor](#) [Manage Cisco devices](#) [Organize](#)

Folders and sensors (3)

[Filter](#) 0 Selected Move selection to [More Actions](#) As of: Jul 6, 2023 11:25 AM [Refresh](#)

<input type="checkbox"/>	Label	IP Address	Version	Location	Health status	Processing status
<input type="checkbox"/>	FCH2309Y01Z	192.168.49.23	4.2.2+202306261711		Connected	Normally pro
<input type="checkbox"/>	FCW2445P6X5	192.168.49.21	4.2.2+202306261519		Connected	Normally pro
<input type="checkbox"/>	FOC2330V0T0	192.168.49.41	4.2.2+202306261519		Connected	Normally pro

Step 2 Click **Manage certificates** in the alert or **Manage Cisco devices** > **Manage certificates**.

System issues
Actions required

Sensor Explorer

From this page, you can explore and manage sensors and sensors folders. Sensors can 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.

2 sensor certificates expired and 1 will expire soon [Manage certificates](#)

[+ Install sensor](#)
[Manage Cisco devices](#)
[Organize](#)

[Update Cisco devices](#)
[Manage credentials](#)
[Manage certificates](#)

Folders and sensors: 0 Selected

Filter: 0 Selected

More Actions

As of: Jul 6, 2023 11:26 AM

<input type="checkbox"/>	Label	IP Address	Version	Location	Health status	Processing status
--------------------------	-------	------------	---------	----------	---------------	-------------------

The **Manage sensors certificates** window opens.

MANAGE SENSORS CERTIFICATES

Select a sensor to renew its certificate.
If a sensor cannot be selected, it means that its certificate cannot be renewed automatically.

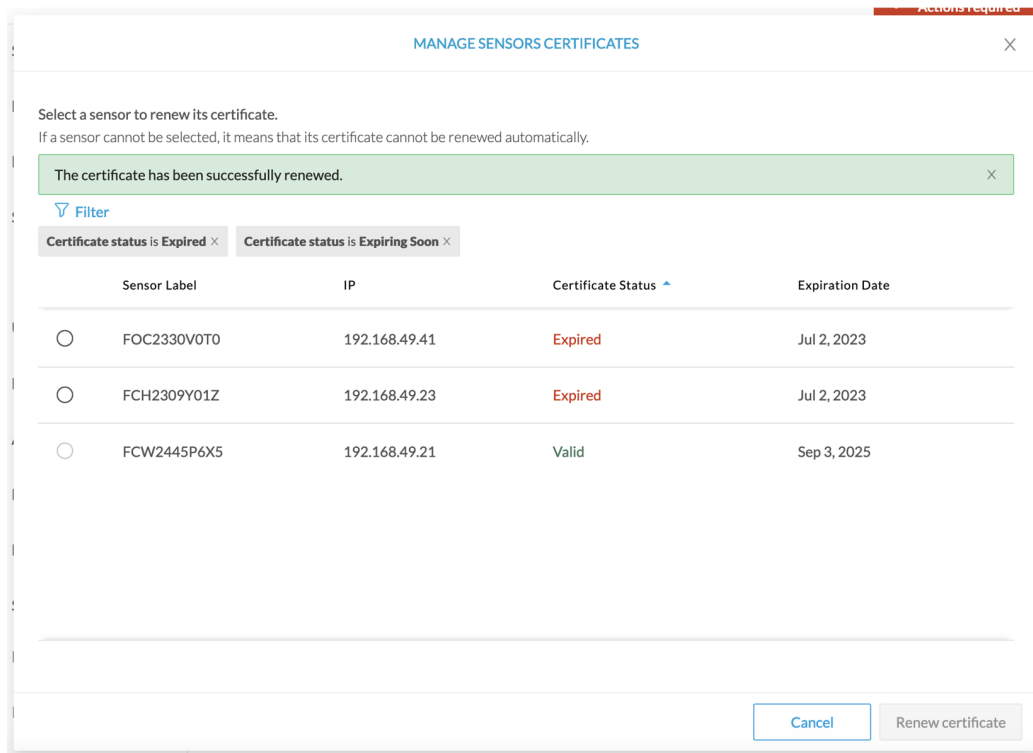
Filter

Certificate status is Expired x Certificate status is Expiring Soon x

<input type="radio"/>	Sensor Label	IP	Certificate Status	Expiration Date
<input type="radio"/>	FCH2309Y01Z	192.168.49.23	Expired	Jul 2, 2023
<input type="radio"/>	FOC2330V0T0	192.168.49.41	Expired	Jul 2, 2023
<input checked="" type="radio"/>	FCW2445P6X5	192.168.49.21	Expiring Soon	Jul 14, 2023

Step 3 Select the sensor with the status Expiring Soon.

Step 4 Click **Renew certificate**.



The certificate is renewed and automatically sent to the sensor. Its status switches to Valid and the new expiration date appears.

Sensor certificate renewal through the Local Manager

In case of certificate expiration, communication with the sensor is no longer possible if it was deployed manually (i.e. without the sensor management extension). In this case, the certificate is renewed by sending it to the sensor manually. As the certificate is part of the provisioning package, the action consists in generating the provisioning package and sending it to the sensor application through the Local Manager.

The screenshot shows the Cisco Sensor Explorer interface. At the top right, there is a notification for 'System issues Action required'. The main heading is 'Sensor Explorer'. Below it, a message states: 'From this page, you can explore and manage sensors and sensors folders. Sensor erased. When a sensor connects for the first time, you must authorize it so the C...'. A yellow warning box indicates '1 sensor certificate expired'. Below this are buttons for 'Install sensor', 'Manage Cisco devices', and 'Organize'. A section titled 'Folders and sensors (3)' contains a table with columns for Label, IP Address, and Version. The table lists three sensors: FCH2309Y01Z, FCW2445P6X5, and FOC2330V0T0. The right-hand panel shows details for the selected sensor 'FCH2309Y01Z', including its label, serial number, IP address, version, system date, deployment method (Manual), active discovery status (Disabled), capture mode (All), system health (Connected), and processing status (Normally processing). Action buttons at the bottom include 'Go to statistics', 'Start Recording', 'Move to', 'Download package', 'Capture mode', 'Enable IDS', 'Reboot', 'Shutdown', and 'Uninstall'.

Procedure

Step 1

In Cisco Cyber Vision, navigate to Admin > Sensors > Sensor Explorer.

Step 2

Click **Manage Certificates**.

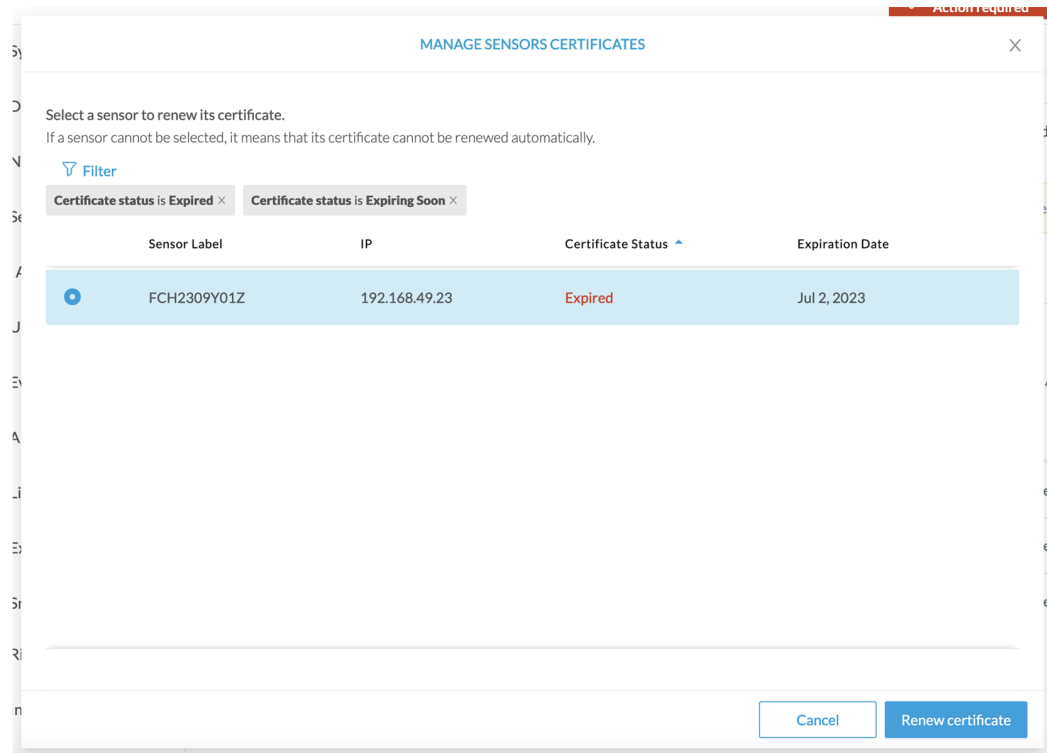
The Manage sensors certificates window appears.

The screenshot shows the 'MANAGE SENSORS CERTIFICATES' window. It contains a message: 'Select a sensor to renew its certificate. If a sensor cannot be selected, it means that its certificate cannot be renewed automatically.' Below this is a filter section with two active filters: 'Certificate status is Expired' and 'Certificate status is Expiring Soon'. A table lists the sensors with columns for Sensor Label, IP, Certificate Status, and Expiration Date. The table shows one sensor with an expired certificate.

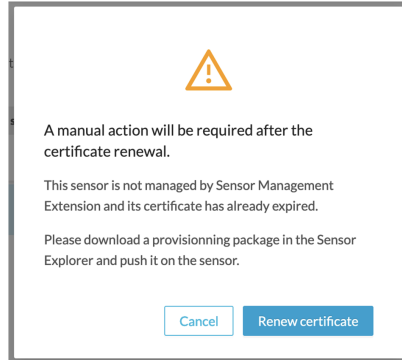
Sensor Label	IP	Certificate Status	Expiration Date
FCH2309Y01Z	192.168.49.23	Expired	Jul 2, 2023

Step 3

Select the sensor and click **Renew Certificate**.



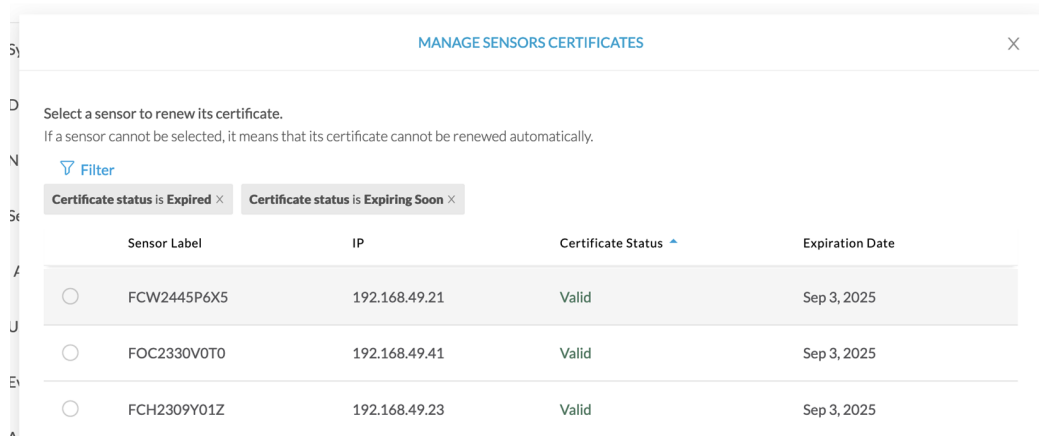
A message is displayed.



Step 4

Click **Renew certificate** again.

The sensor certificate status appears as valid.



Step 5 Close the Manage sensors certificates window.

The sensor's health and processing status appear as Disconnected.

Sensor Explorer

From this page, you can explore and manage sensors and sensors folders. Sensors can 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.

[+ Install sensor](#) [? Manage Cisco devices](#) [📁 Organize](#)

Folders and sensors (3)

[Filter](#) 0 Selected Move selection to [More Actions](#) As of: Jul 6, 2023 11:41 AM [Refresh](#)

<input type="checkbox"/>	Label	IP Address	Version	Location	Health status	Processing status	Active Di
<input type="checkbox"/>	⇒ FCH2309Y01Z	192.168.49.23	4.2.2+202306261711		Disconnected	Disconnected	Disa
<input type="checkbox"/>	⇒ FCW2445P6X5	192.168.49.21	4.2.2+202306261519		Connected	Normally processing	Una
<input type="checkbox"/>	⇒ FOC2330V0T0	192.168.49.41	4.2.2+202306261519		Connected	Normally processing	Una

Step 6 Click the sensor in the list.

Its right side panel opens.

Step 7 Click the **Download package** button.

The screenshot shows the 'Sensor Explorer' interface. On the left, there's a list of sensors under 'Folders and sensors (3)'. The table below shows the details for three sensors:

Label	IP Address	Version	Location
FCH2309Y01Z	192.168.49.23	4.2.2+202306261711	
FCW2445P6X5	192.168.49.21	4.2.2+202306261519	
FOC2330V0T0	192.168.49.41	4.2.2+202306261519	

On the right, the detailed view for sensor 'FCH2309Y01Z' is shown. It includes the following information:

- Label: FCH2309Y01Z
- Serial Number: FCH2309Y01Z
- IP address: 192.168.49.23
- Version: 4.2.2+202306261711
- System date: Jul 6, 2023 11:36:49 AM
- Deployment: Manual
- Active Discovery: Disabled
- Capture mode: All
- System Health: Status: **Disconnected**, Processing status: **Disconnected**, Uptime: N/A

Below the details, there are several action buttons: 'Move to', 'Download package' (highlighted with a red box), 'Enable IDS', 'Reboot', 'Shutdown', and 'Uninstall'.

- Step 8** Type the Local Manager's password or set it if not already done. Make sure to keep this piece of information stored as it will be asked to access IOx Local Manager and for further troubleshooting and configuration purposes.

The 'DOWNLOAD PACKAGE' dialog box contains the following text: "The provisioning package should be placed in the root directory of USB mass storage, and plugged in the IC3000 / Sensor before powering it up or added in the right location of your IOx Application." Below this text are two password input fields labeled 'Password*' and 'Confirm password*', both containing masked characters. A progress bar below the fields shows a green bar and the text 'Good'. At the bottom right, there is a 'Download package' button.

- Step 9** Click **Download package**.
- Step 10** Import the provisioning package in the Local Manager. To do so, refer to [Import the provisioning package, on page 32](#).
- Step 11** In the sensor's CLI, type the following command to enroll the sensor:
- ```
sbs-sensor-enroll-offline -fp /data/iox/appdata/cybervision-sensor-config.zip
```
- Step 12** The sensor's health status switches to Connected and its processing status to Normally processing.










## Sensor Explorer

From this page, you can explore and manage sensors and sensors folders. Sensors can 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.

 Install sensor
  Manage Cisco devices
  Organize

### Folders and sensors (3)

 Filter
 0 Selected
Move selection to
[More Actions](#) 
As of: Jul 6, 2023 11:56 AM 

| <input type="checkbox"/> | Label                                                                                         | IP Address    | Version            | Location | Health status  | Processing status   | Active Di: |
|--------------------------|-----------------------------------------------------------------------------------------------|---------------|--------------------|----------|---------------------------------------------------------------------------------------------------|---------------------|------------|
| <input type="checkbox"/> |  FCH2309Y01Z | 192.168.49.23 | 4.2.2+202306261711 |          | Connected                                                                                         | Normally processing | Disal      |
| <input type="checkbox"/> |  FCW2445P6X5 | 192.168.49.21 | 4.2.2+202306261519 |          | Connected                                                                                         | Normally processing | Unav       |
| <input type="checkbox"/> |  FOC2330V0T0 | 192.168.49.41 | 4.2.2+202306261519 |          | Connected                                                                                         | Normally processing | Unav       |