Cisco Cyber Vision GUI Administration Guide, Release 4.3.0

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About this documentation

Document purpose

This user guide describes how to administrate and configure Cisco Cyber Vision.

It takes into consideration the GUI with the highest license level (Advantage) and involves the Admin and Product user roles.

This manual is applicable to **system version 4.3.0**.

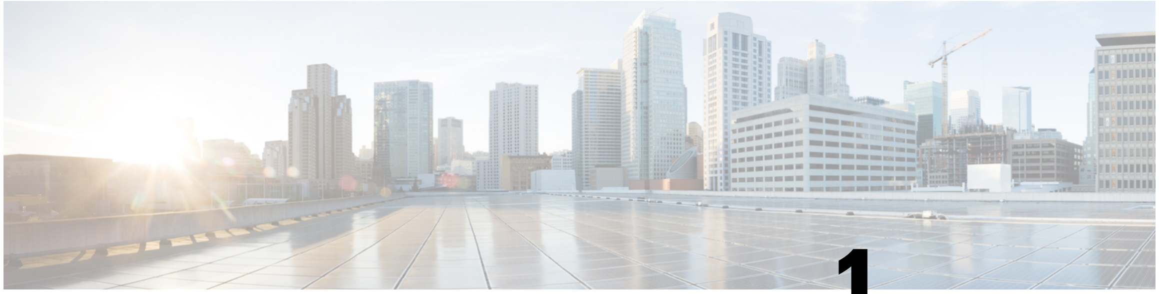
Warnings and notices

To ensure your personal safety and to prevent damage to property, observe the following: Warnings and notices and Safety Alert symbols. 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.

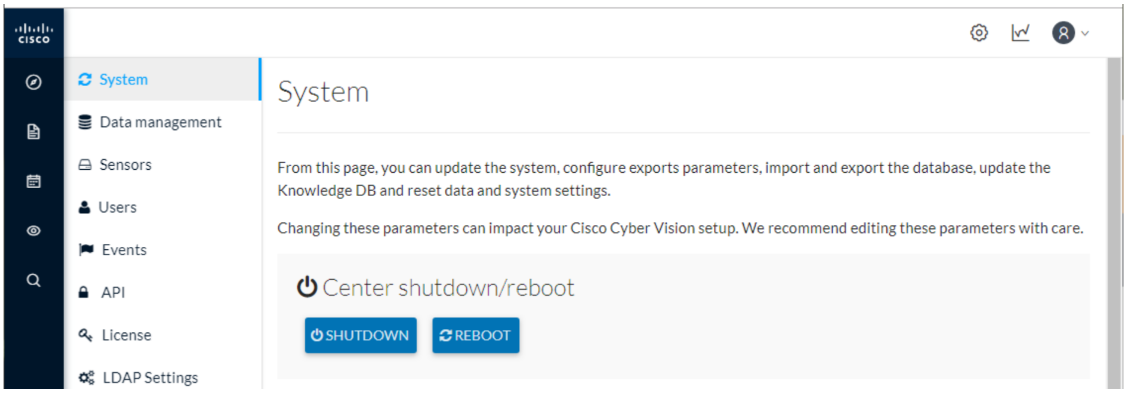
Note Indicates important information on the product described in the documentation to which attention should be paid.



CHAPTER 1

System

Center shutdown/reboot



System

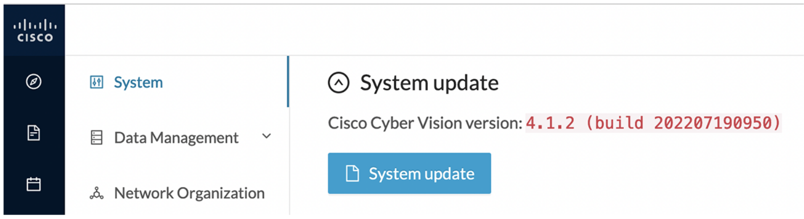
From this page, you can update the system, configure exports parameters, import and export the database, update the Knowledge DB and reset data and system settings.

Changing these parameters can impact your Cisco Cyber Vision setup. We recommend editing these parameters with care.

You can trigger a safe shutdown and reboot of the Center from the System administration page.

The reboot can be used in case of a minor bug. For example, in case of a system overload.

Upgrade with a combined update file



Cisco Cyber Vision version: 4.1.2 (build 202207190950)

Version releases include a combined update file for the Center, the SENSOR3, SENSOR5, SENSOR7 and the Cisco IC3000 Industrial Compute Gateway. If operating conditions make it possible, you can update the Center and these sensors at once from the GUI.

Note Make sure that all your sensors are connected by accessing the Sensor Explorer page, and SSH is authorized between the Center and the sensors before proceeding to a combined update.

Important Rolling back to an older Cisco Cyber Vision version is not possible.

Requirements:

- A combined update to retrieve from cisco.com.

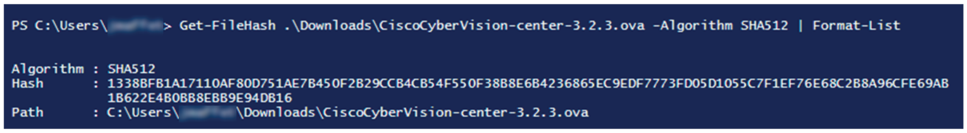
To verify that the file you just downloaded is healthy, it is recommended to use the SHA512 checksum provided by Cisco.

To do so (Windows users):

Step 1 Retrieve the Cisco Cyber Vision combined update from cisco.com.

Step 2 Open a shell prompt such as Windows Powershell and use the following command to retrieve the file checksum:

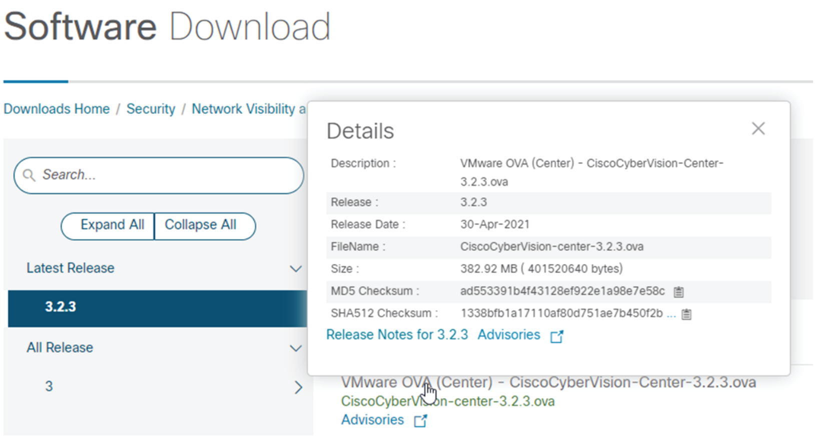
Get-FileHash .\CiscoCyberVision-<TYPE>-<VERSION>.<EXT> -Algorithm SHA512 | Format-List



```
PS C:\Users\[redacted]> Get-FileHash .\Downloads\CiscoCyberVision-center-3.2.3.ova -Algorithm SHA512 | Format-List


Algorithm : SHA512
Hash      : 1338BFB1A17110AF80D751AE7B450F2B29CCB4CB54F550F38B8E6B4236865EC9EDF7773FD05D1055C7F1EF76E68C2B8A96CFE69AB
            1B622E4B0BB8EBB9E94DB16
Path      : C:\Users\[redacted]\Downloads\CiscoCyberVision-center-3.2.3.ova
```

Step 3 In cisco.com, mouse over the file and copy the SHA512 checksum.



Details

Description :	VMware OVA (Center) - CiscoCyberVision-Center-3.2.3.ova
Release :	3.2.3
Release Date :	30-Apr-2021
FileName :	CiscoCyberVision-center-3.2.3.ova
Size :	382.92 MB (401520640 bytes)
MD5 Checksum :	ad553391b4f43128ef922e1a98e7e58c
SHA512 Checksum :	1338bfb1a17110af80d751ae7b450f2b ...

VMware OVA (Center) - CiscoCyberVision-Center-3.2.3.ova
CiscoCyberVision-center-3.2.3.ova

Step 4 Compare both checksums.

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

To update the Center and all applicable sensors:

Step 5 Access Cisco Cyber Vision's GUI.

Step 6 Navigate to Admin > System and use the System update button.

Step 7 Select the update file CiscoCyberVision-update-combined-<VERSION>.dat

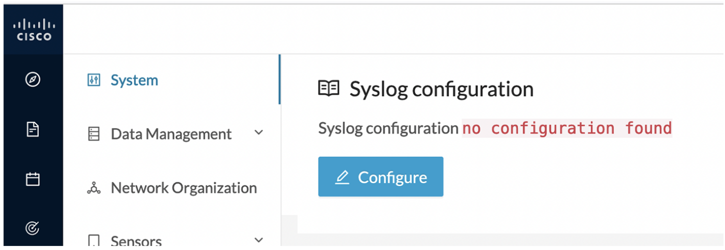
Step 8 Confirm the update.

As the Center and sensors updates proceed, you are redirected to a holding page. Once the update is finished the Center and the sensors need to reboot and you will be logged out from the user interface.

Step 9 Log in again.

If sensors were offline when the update occurred, the same procedure can be used as many times as necessary to update all sensors.

Syslog configuration

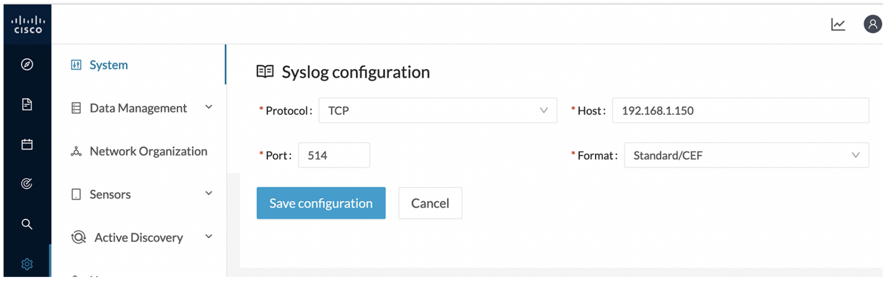


Syslog configuration

Syslog configuration `no configuration found`

Cisco Cyber Vision provides syslog configuration so that events can be exported and used by a SIEM. To configure which machine syslogs will be sent to:

Step 1 Click **Configure**.



Syslog configuration

*Protocol: TCP

*Host: 192.168.1.150

*Port: 514

*Format: Standard/CEF

Step 2 Select a protocol.

If you select TCP + TLS connection an additional "set certificate" button is displayed to import a p12 file. This file is to be provided by the administrator of your SIEM solution to secure communications between the Center and the syslog collector.

Step 3 Enter the IP address of the SIEM reachable from the Administration network interface (i.e. eth0) of the Center.

Step 4 Enter the port on the SIEM that will receive syslogs.

Step 5 Select the variant of syslog format:

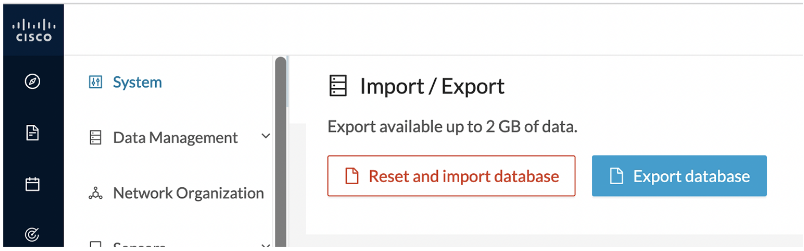
- Standard: event messages are sent in a format specific to Cisco Cyber Vision and with legacy timestamps (one-second precision).
- CEF: industry standard ("Common Event Format") which is understood by most SIEM solutions (no extra configuration is needed on the SIEM). This is the recommended option.
- RFC3164: extended syslog header format with microsecond precision for timestamps.

Step 6 Click **Save configuration**.

Import/Export

You can import and export the Cisco Cyber Vision database from the System administration page.

This can be used on a regular basis to back up the industrial network data on Cisco Cyber Vision or if you need to transfer the database to a different Center.



Import / Export

Export available up to 2 GB of data.

Exports are possible up to 2 GB of data to avoid side effects related to slow database exports. If the database is larger than 2 GB, you will get an error message. In this case, you must connect to the Center using SSH and perform a data dump using the command `sbs db dump`.

Network data, events, users will be kept as well as all customizations (e.g. groups, component names).

As for configurations, only those made in Cisco Cyber Vision's GUI will be kept. Thus, if you change Center you will have to perform a basic configuration of the Center and then configure Cisco Cyber Vision again (refer to the corresponding Center Installation Guide).

Note Import can last up to one hour for big databases. However, you can refresh the page from time to time to check that the import keeps going on normally (i.e. no error message).

Knowledge DB

Cisco Cyber Vision uses an internal database which contains the list of recognized vulnerabilities, icons, threats, etc.

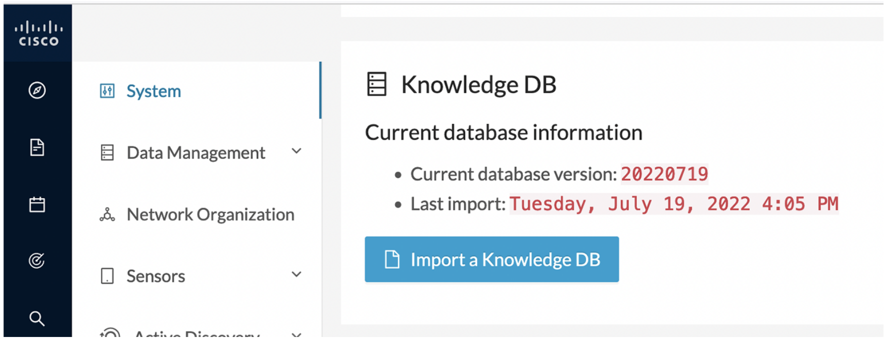
Important It is important to update the Knowledge DB in Cisco Cyber Vision as soon as possible after notification of a new version to be protected against vulnerabilities.

To update the Knowledge DB:

Step 1 Download the latest.db file available from cisco.com.

Step 2 From the Cisco Cyber Vision system administration page click the **Import a knowledge DB** button to upload the file.

Importing the new database will rematch your existing components against any new vulnerabilities and update network data.



Knowledge DB

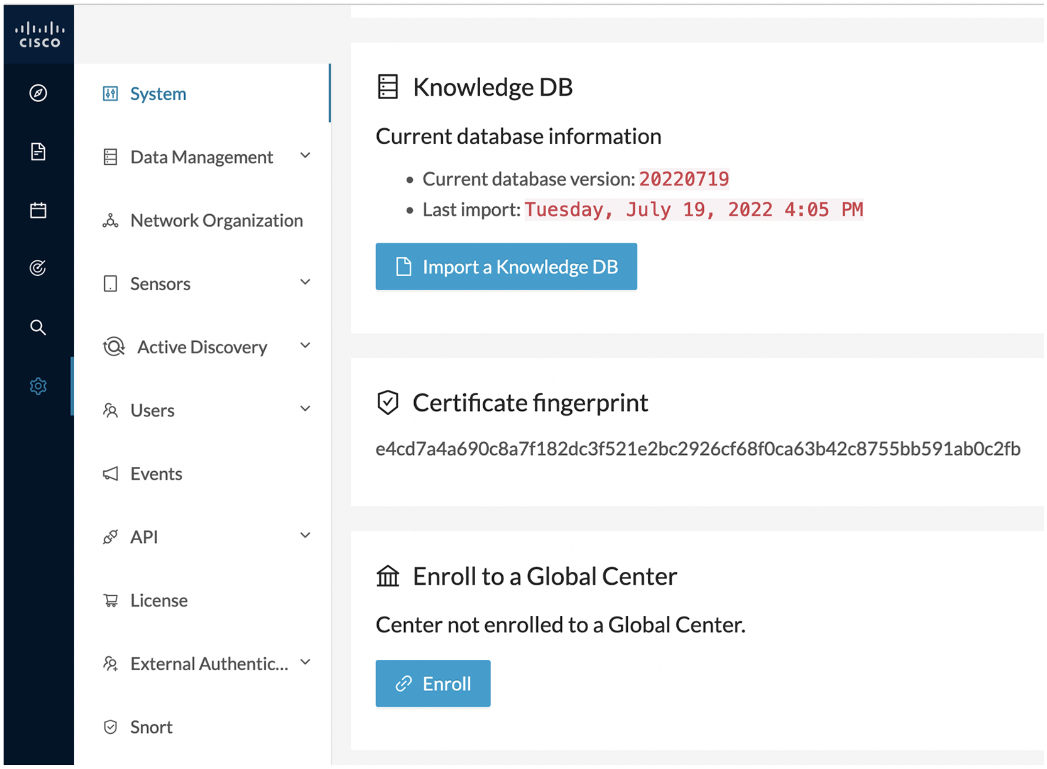
Current database information

- Current database version: 20220719
- Last import: Tuesday, July 19, 2022 4:05 PM

Certificate fingerprint

The certificate fingerprint is used to register a Global Center with its synchronized Centers and vice versa.

The Enroll button is used to enroll a Global Center with its synchronized Centers.



Knowledge DB

Current database information

- Current database version: 20220719
- Last import: Tuesday, July 19, 2022 4:05 PM

Certificate fingerprint

e4cd7a4a690c8a7f182dc3f521e2bc2926cf68f0ca63b42c8755bb591ab0c2fb

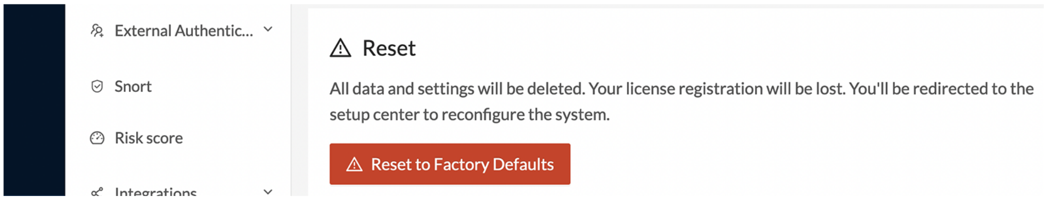
Enroll to a Global Center

Center not enrolled to a Global Center.

For more information, refer the Centers Installation Guides.

Reset to factory defaults

Resetting the system to factory defaults should be performed carefully with the help of Cisco product support and be used only as a last resort when all other troubleshooting attempts have failed. Please read below all implications of taking this action.



Reset

All data and settings will be deleted. Your license registration will be lost. You'll be redirected to the setup center to reconfigure the system.

Reset to Factory Defaults is to be used as a last resort to clear all existing data from the Center.

Proceeding to a Reset to Factory Defaults will lead to the deletion of:

- Some Center configuration data elements.

- The GUI configuration (such as user accounts, the setup of event severities, etc.).
- Data collected by the sensors.
- The configuration of all known sensors (such as IP addresses, capture modes, etc.).

Root password, certificates and configurations from the Basic Center configuration will be kept.

Once a Reset to Factory Defaults has been performed, the GUI page refreshes with the Cisco Cyber Vision installation wizard (refer to the corresponding Center Installation Guides).

CHAPTER 2

Data management

From the system administration page, you can manage data stored on Cisco Cyber Vision by Clear data to optimize the Center performances, Expiration settings, and Ingestion configuration.

Cisco Cyber Vision update procedure will not purge any data automatically. The Center's 3.2.x database will be migrated to the new 4.0.0 schema. All components, activities, flows, events, etc. will be migrated. Since the migration process can take hours (from 1 to 24 hours), it is possible to proceed to a data purge in release 3.2.x to shorten the migration process. This purge can be launched either from the Clear data page in the Graphic User Interface (GUI), or from the Command Line Interface (CLI), using the following command where different options will be offered:

```
sbs-db --help
```

Once migrated, the database content will be managed with version 4.0.0 new data retention policies. Expiration settings will be applied, and the system will purge by default:

- Events after 6 months
- Flows after 6 months
- Variables after 2 years

The user will have 3 days once the migration from 3.2.x to 4.0.0 is done to set Expiration settings as needed before default settings are applied by the system.

Clear data

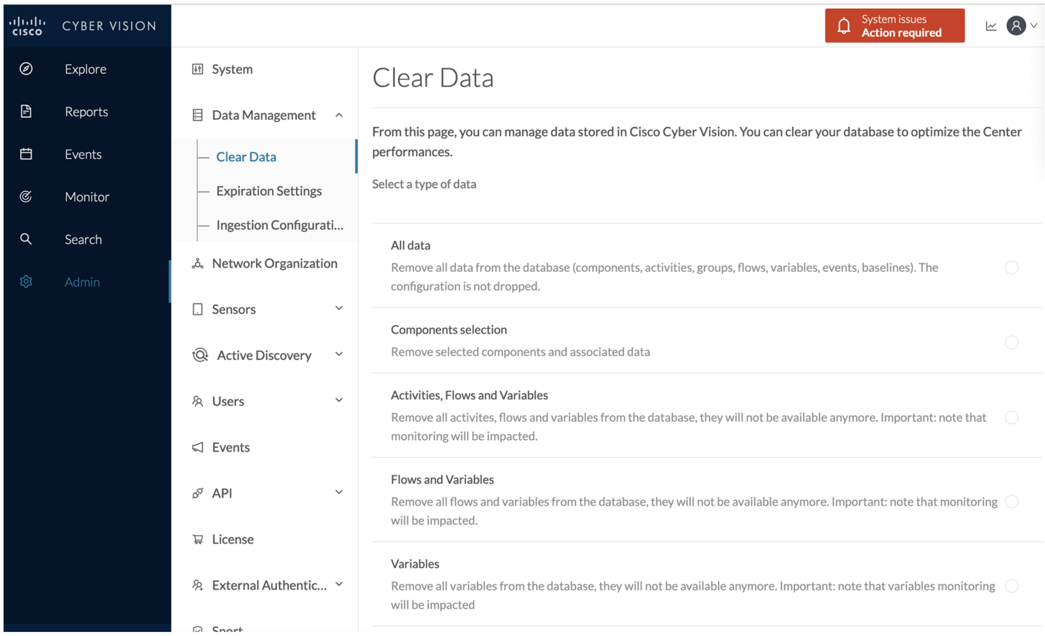
From this page, you can clear data stored on Cisco Cyber Vision to optimize the Center's performances.

You can clear data partially or totally, like below:

- all data
- components and associated data (refer to Purge components, on page 10)
- activities, flows and variables
- flows and variables

- variables

Clearing data should be performed carefully. Clearing any data can impact monitoring of the network. Please read below all implications about all data clearance.



Clear Data

From this page, you can manage data stored in Cisco Cyber Vision. You can clear your database to optimize the Center performances.

Select a type of data

All data
Remove all data from the database (components, activities, groups, flows, variables, events, baselines). The configuration is not dropped. ○

Components selection
Remove selected components and associated data ○

Activities, Flows and Variables
Remove all activites, flows and variables from the database, they will not be available anymore. Important: note that monitoring will be impacted. ○

Flows and Variables
Remove all flows and variables from the database, they will not be available anymore. Important: note that monitoring will be impacted. ○

Variables
Remove all variables from the database, they will not be available anymore. Important: note that variables monitoring will be impacted ○

About all data clearance:

Clearing all data is to be used as a last resort in case of database overload issues.

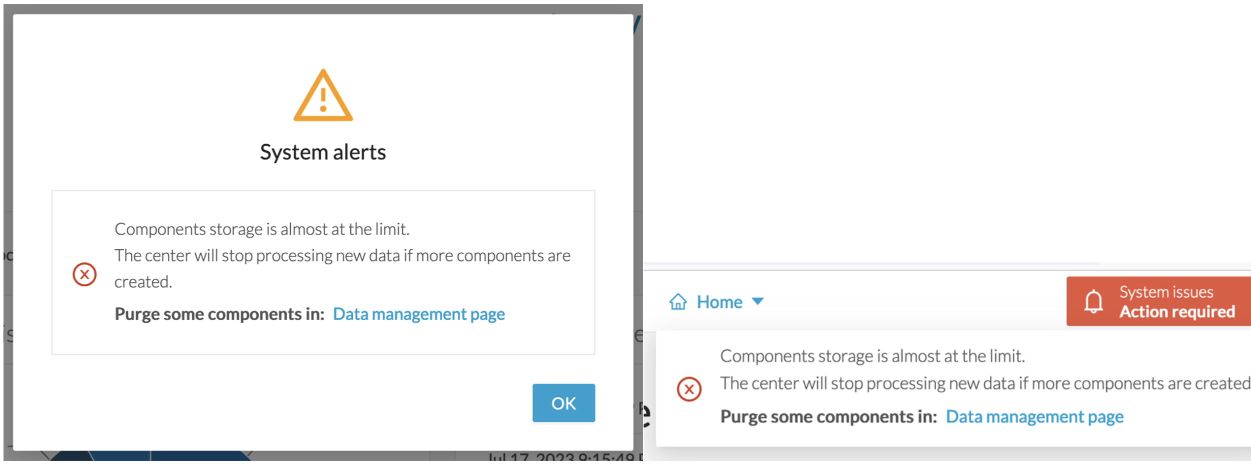
This will result in the entire database content deletion. Network data such as components, flows, events and baselines will be deleted from Cisco Cyber Vision and the GUI will be emptied.

All configurations will be saved. Existing users and user data configuration (such as capture modes, events severity set up, syslog configuration) will remain unchanged.

Purge components

In Cisco Cyber Vision, a component represents an object of the industrial network from a network point of view. It can be the network interface of a PLC, a PC, a SCADA station, etc., or a broadcast or multicast address. To protect the system the number of components stored in the database is limited.

As the system reaches more than 120,000 components a popup and red banner alert appears on the user interface to inform the user that a purge must be performed. Components purge can be based on several criteria.

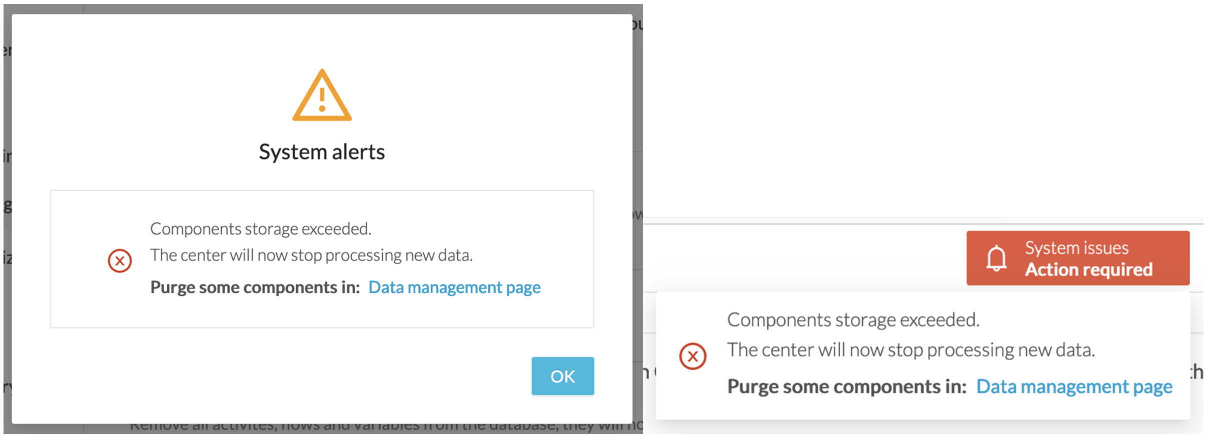


System alerts

Components storage is almost at the limit.
The center will stop processing new data if more components are created.
Purge some components in: Data management page

Components storage is almost at the limit.
The center will stop processing new data if more components are created
Purge some components in: Data management page

If the system reaches 150,000 components the ingestion stops. Incoming sensor data are not treated nor stored and are directly deleted. A popup and a red banner alert appears on the user interface to inform the user that a purge must be performed.



System alerts

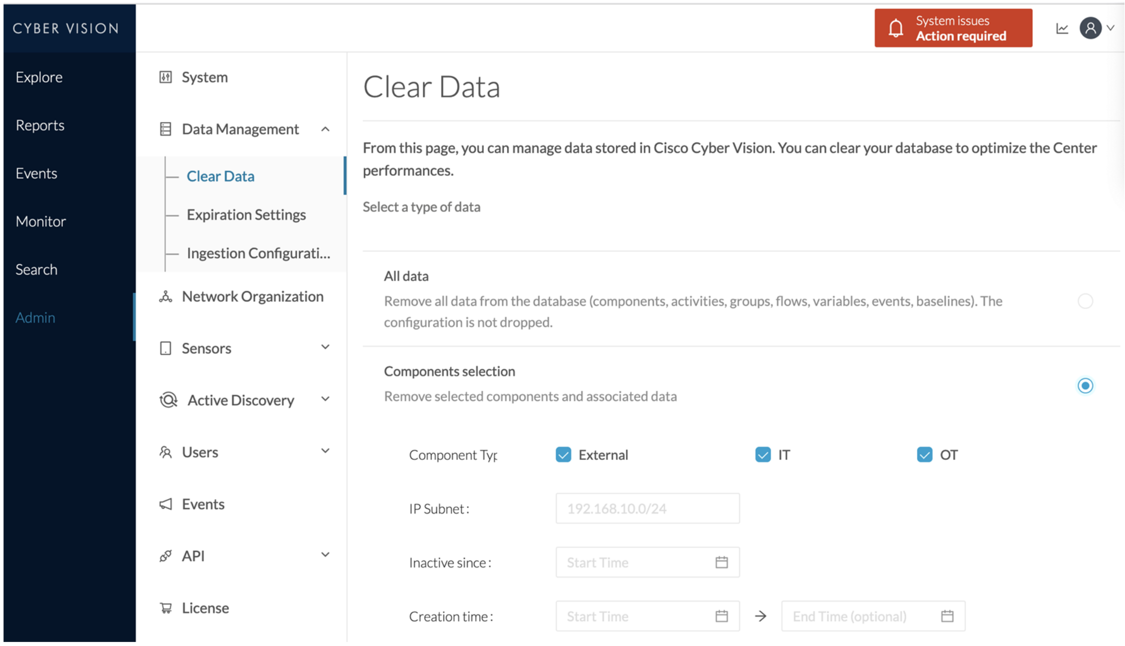
Components storage exceeded.
The center will now stop processing new data.
Purge some components in: Data management page

Components storage exceeded.
The center will now stop processing new data.
Purge some components in: Data management page

To do so:

Step 1 Navigate to Admin > Data management > Clear Data.

Step 2 Deploy the **Components selection** menu.



Clear Data

From this page, you can manage data stored in Cisco Cyber Vision. You can clear your database to optimize the Center performances.

Select a type of data

All data
Remove all data from the database (components, activities, groups, flows, variables, events, baselines). The configuration is not dropped. ○

Components selection
Remove selected components and associated data ●

Component Typ ☑ External ☑ IT ☑ OT

IP Subnet : 192.168.10.0/24

Inactive since : Start Time

Creation time : Start Time → End Time (optional)

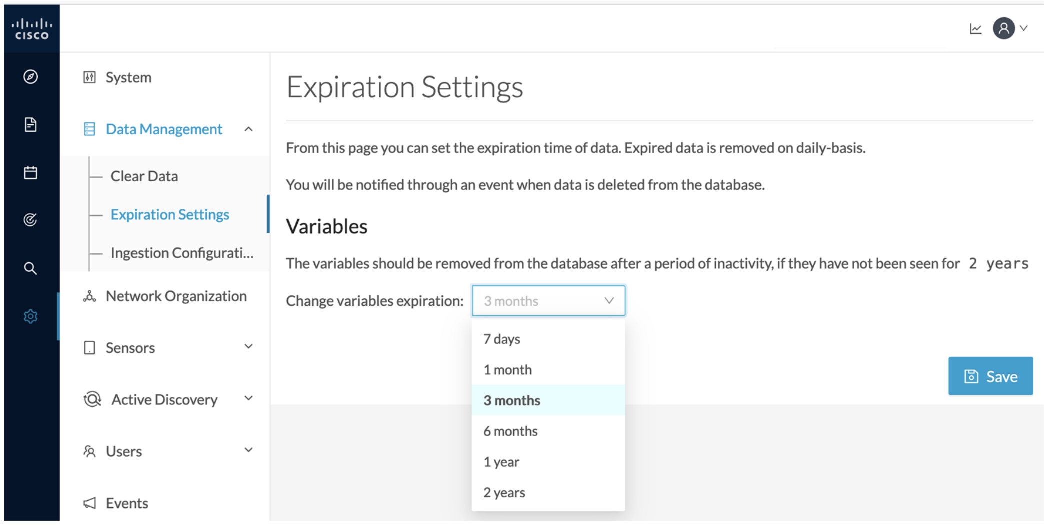
Step 3 Select which components to delete based on:

- the component type (External, IT or OT),
- their IP subnet,
- their inactivity,
- their creation time.

Step 4 Click **Clear data**.

Expiration settings

From this page, you can set data expiration time. Data is removed on a daily-basis once they expire. You can set an expiration time to variables for a period of 7 days, 1 month, 3 months, 6 months, 1 year or 2 years.



Expiration Settings

From this page you can set the expiration time of data. Expired data is removed on daily-basis.

You will be notified through an event when data is deleted from the database.

Variables

The variables should be removed from the database after a period of inactivity, if they have not been seen for 2 years

Change variables expiration: 3 months

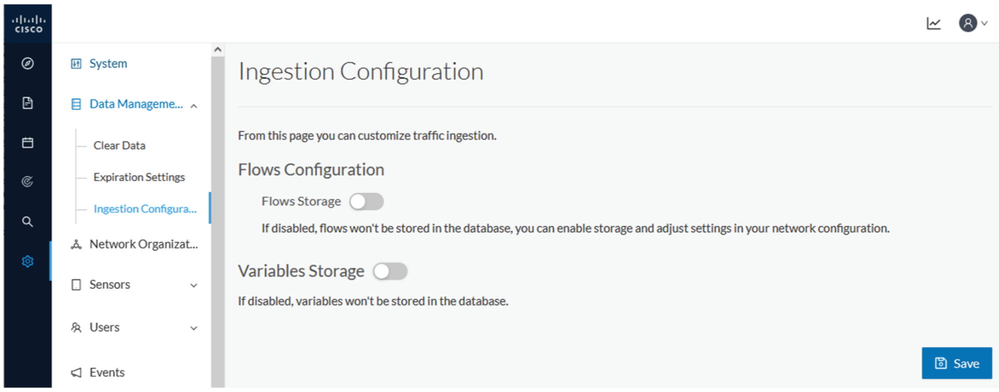
- 7 days
- 1 month
- 3 months
- 6 months
- 1 year
- 2 years

Ingestion configuration

The ingestion configuration page allows you to configure flow and variable traffic storage.

You can choose whether to store flows and variables.

Flows and variables storage is disabled by default.



Ingestion Configuration

From this page you can customize traffic ingestion.

Flows Configuration

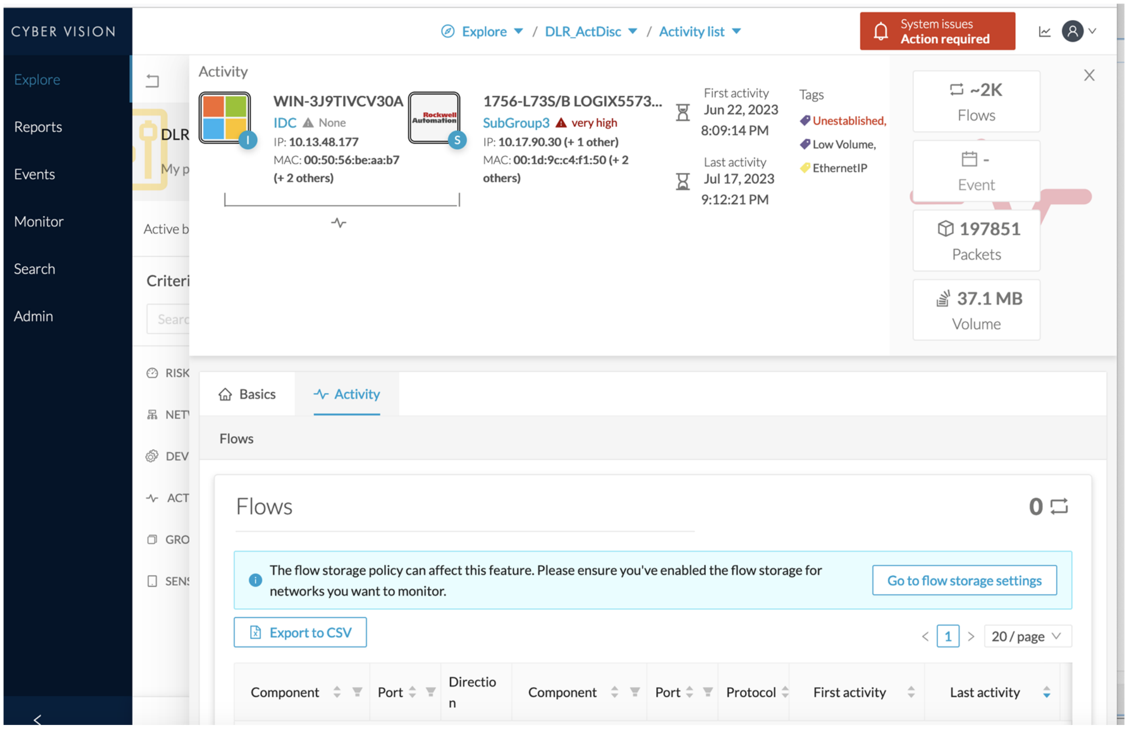
Flows Storage

If disabled, flows won't be stored in the database, you can enable storage and adjust settings in your network configuration.

Variables Storage

If disabled, variables won't be stored in the database.

Messages can appear in Cisco Cyber Vision's user interface to indicate to the user that features may be limited due to absence of flows in the database. For example, in the activity technical sheet, at the top of the flows table:



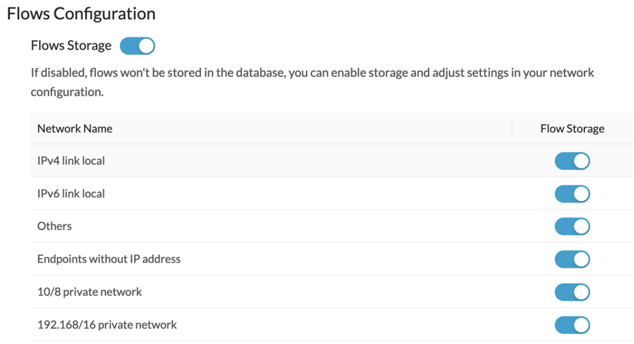
The flow storage policy can affect this feature. Please ensure you've enabled the flow storage for networks you want to monitor.

Component	Port	Direction	Component	Port	Protocol	First activity	Last activity

In this case, you can click **Go to flow storage settings** and enable flow storage.

If flows storage is enabled, it is possible to choose from which subnetworks flows should be stored. These subnetworks can be set on the Network organization page. The option "others" includes flows that are not part of the industrial private network.

An automatic purge will occur on selected flows when a period of inactivity exceeds 7 days.



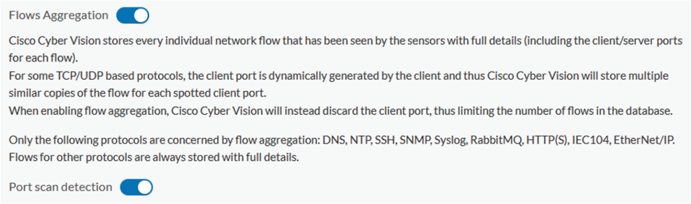
Flows Configuration

Flows Storage

If disabled, flows won't be stored in the database, you can enable storage and adjust settings in your network configuration.

Network Name	Flow Storage
IPv4 link local	●
IPv6 link local	●
Others	●
Endpoints without IP address	●
10/8 private network	●
192.168/16 private network	●

It is also possible to enable flows aggregation and port scan detection.



Flows Aggregation

Cisco Cyber Vision stores every individual network flow that has been seen by the sensors with full details (including the client/server ports for each flow).
For some TCP/UDP based protocols, the client port is dynamically generated by the client and thus Cisco Cyber Vision will store multiple similar copies of the flow for each spotted client port.
When enabling flow aggregation, Cisco Cyber Vision will instead discard the client port, thus limiting the number of flows in the database.

Only the following protocols are concerned by flow aggregation: DNS, NTP, SSH, SNMP, Syslog, RabbitMQ, HTTP(S), IEC104, EtherNet/IP.
Flows for other protocols are always stored with full details.

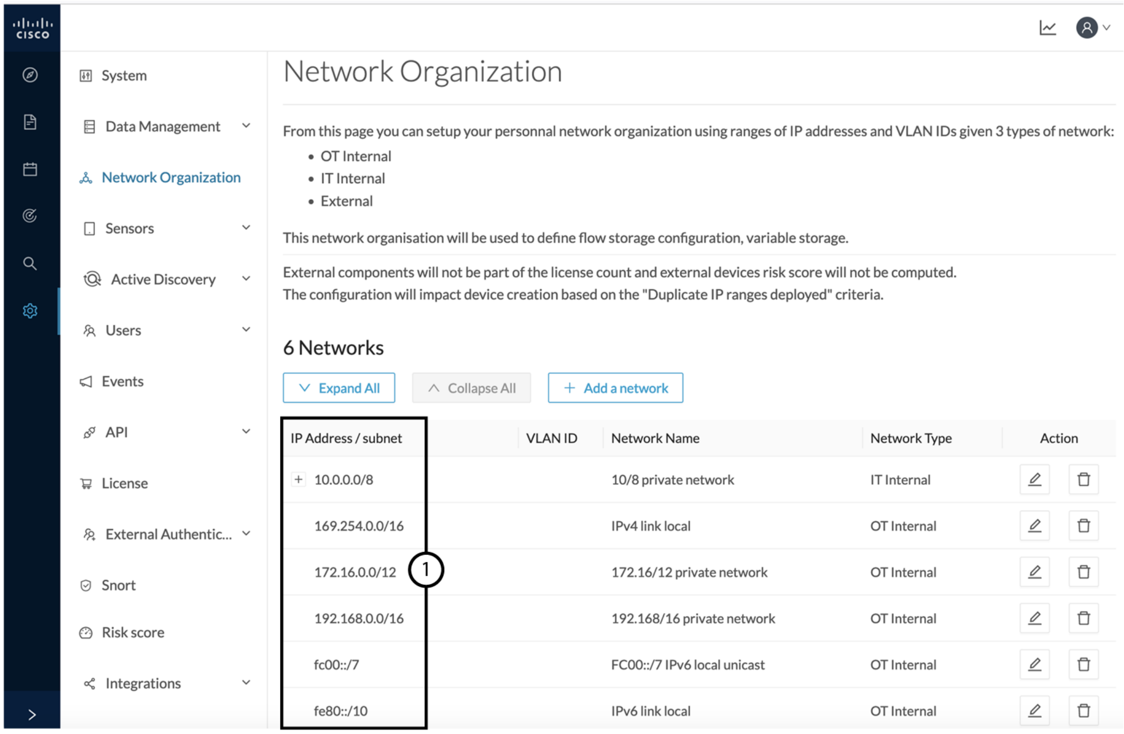
Port scan detection

CHAPTER 3

Network organization

Network organization

This page allows you to define the subnetworks inside the industrial network by setting up IP address ranges and declaring whether networks are internal or external.



Network Organization

From this page you can setup your personnal network organization using ranges of IP addresses and VLAN IDs given 3 types of network:

- OT Internal
- IT Internal
- External

This network organisation will be used to define flow storage configuration, variable storage.

External components will not be part of the license count and external devices risk score will not be computed.
The configuration will impact device creation based on the "Duplicate IP ranges deployed" criteria.

6 Networks

Expand All | Collapse All | + Add a network

IP Address / subnet	VLAN ID	Network Name	Network Type	Action
+ 10.0.0.0/8		10/8 private network	IT Internal	
169.254.0.0/16		IPv4 link local	OT Internal	
172.16.0.0/12		172.16/12 private network	OT Internal	
192.168.0.0/16		192.168/16 private network	OT Internal	
fc00::/7		FC00::/7 IPv6 local unicast	OT Internal	
fe80::/10		IPv6 link local	OT Internal	

In Cisco Cyber Vision all private IP addresses are classified as OT internal. They appear in the Network Organization page **(1)**.

Every other IP address is considered as external, except for:

- Broadcast IPv4: 255.255.255.255

- IPv4 and IPv6 zero: 0.0.0.0 et 0:0:0:0:0:0:0:0
- Loopback IPv4 and IPv6: 127.0.0.1 and ::1
- Link Lock Multicast IPv4 and IPv6: 224.0.0.0/8 and ff00::/8

If you want to declare a public IP address as internal, you must add an exception by changing their network type.

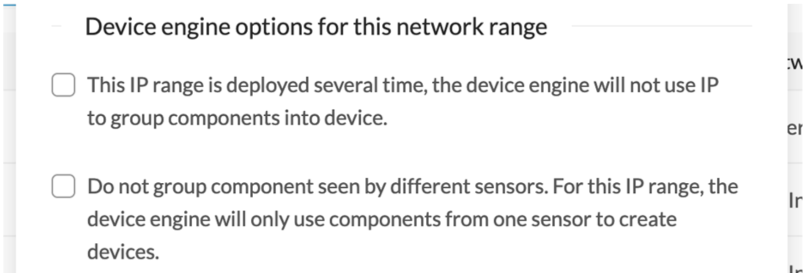
Declaring a subnetwork as OT internal is useful in case public IP addresses are used in a private network of an industrial site. Conversely, declaring a set of IP addresses as external will exclude their flows from the database, and exclude their devices from the license device count and the risk score.

Overall, defining subnetworks in Cisco Cyber Vision is useful for several reasons:

- It allows you to choose afterwards how related flows should be stored through the Ingestion configuration. Excluding unnecessary flows will have positive impact on performances.
- It will impact devices' risk scores, since a private network is considered as safer than an external one.
- Cisco Cyber Vision's license will be more accurate, because devices from an external network will be excluded from the licensing device count.

By default, Cisco Cyber Vision groups identical IP addresses detected inside the industrial network into a single device, because in most cases these belong to several components of a device. However, it can happen that the same IP address is used by several devices. In this case, you can choose to select the first option when declaring a subnetwork to prevent duplicate IP addresses from grouping within this subnetwork.

The second option is to be used when components with the same IP address are found by different sensors. This happens when same addressing parameters are used on several subnetworks, for example in case of identical production lines. By using this option, components detected by different sensors will not be aggregated into a single device.

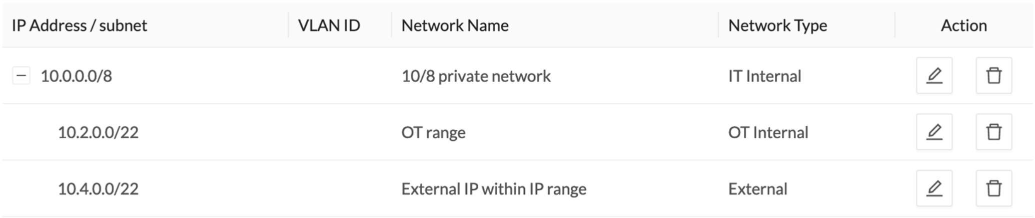


Device engine options for this network range

☐ This IP range is deployed several time, the device engine will not use IP to group components into device.

☐ Do not group component seen by different sensors. For this IP range, the device engine will only use components from one sensor to create devices.

IP ranges can be **organized into groups** which subranges can be defined like in the example below:



IP Address / subnet	VLAN ID	Network Name	Network Type	Action
− 10.0.0.0/8		10/8 private network	IT Internal	✎ 🗑
10.2.0.0/22		OT range	OT Internal	✎ 🗑
10.4.0.0/22		External IP within IP range	External	✎ 🗑

Here, the user specified that the IP range 10.2.0.0/22 is OT internal and that 10.4.0.0/22 is external.

Thus, flow storage can be specificly set in the Ingestion configuration, on page 13 for the IP range set here as OT internal, whereas flows and devices from the IP range set as external will be excluded from the database and the license device count and risk score.

Note It is also possible to organize subnetworks through the API.

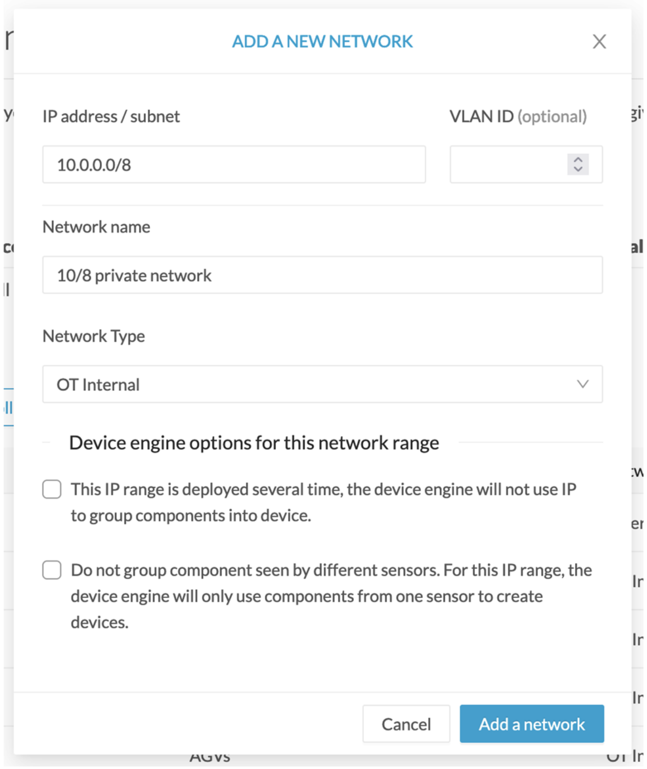
Define a subnetwork

To define a subnetwork:

Step 1 In Cisco Cyber Vision, navigate to Admin > Network organization.

Step 2 Click the **Add a network** button.

The Edit a network window pops up:



ADD A NEW NETWORK

IP address / subnet: 10.0.0.0/8

VLAN ID (optional):

Network name: 10/8 private network

Network Type: OT Internal

Device engine options for this network range

□ This IP range is deployed several time, the device engine will not use IP to group components into device.

□ Do not group component seen by different sensors. For this IP range, the device engine will only use components from one sensor to create devices.

Step 3 Enter an IP address range and its subnet.

Step 4 If possible, add a VLAN ID.

This will allow you to create overlapping networks.

Step 5 Give the network a name.

Step 6 Set the network type as OT internal, IT internal or External.

Note Setting the network type can impact Cisco Cyber Vision's performances by setting flows storage, devices' risk score and the license's device count.

Step 7 If applicable, tick the first option.

Note Enable this option in case several devices share the same IP across the monitored network.

The components won't be grouped by IP.

Step 8 If applicable, tick the second option.

Note Enable this option in case same addressing parameters are used within different subnetworks. For example in case of identical production lines.

For that particular network range, the system will not aggregate components with components with same IPs detected by sensors monitoring other subnetworks. The system will aggregate the components into devices when subnetworks monitored are using the same IP ranges for several machines or production lines.

In this case, for a specific IP range, a component with an IP of that range seen by a sensor will be grouped with a component with the same IP only if components were detected by the same sensor.

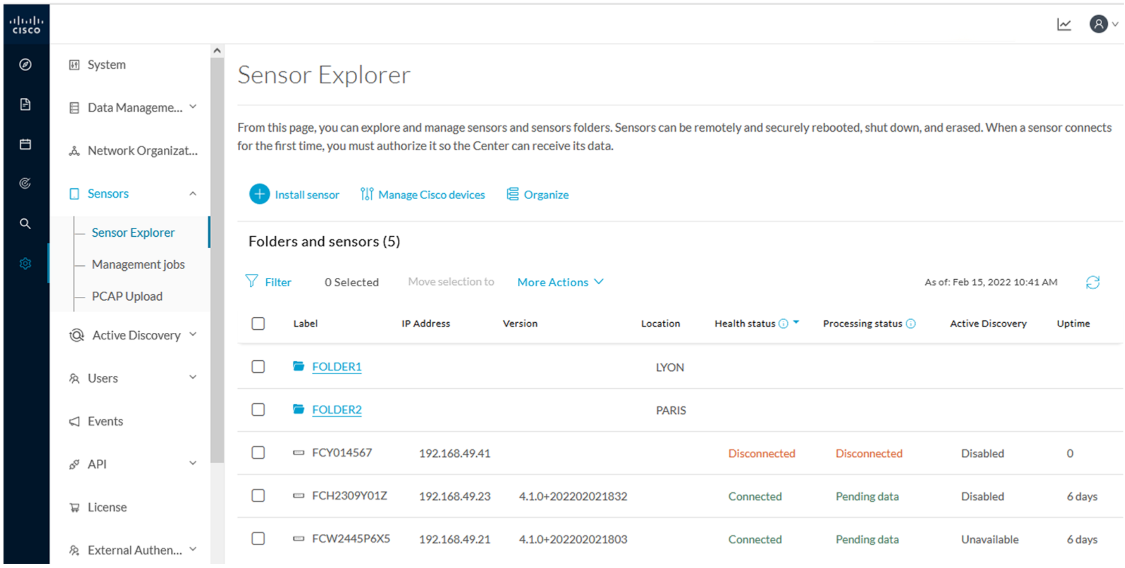
Step 9 Click **Save**.

CHAPTER 4

Sensors

Sensor Explorer

The Sensor Explorer page allows you to install, manage, and obtain information about the sensors monitoring your industrial network.



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.

Folders and sensors (5)

As of: Feb 15, 2022 10:41 AM

□	Label	IP Address	Version	Location	Health status	Processing status	Active Discovery	Uptime
□	FOLDER1			LYON				
□	FOLDER2			PARIS				
□	FCY014567	192.168.49.41			Disconnected	Disconnected	Disabled	0
□	FCH2309Y01Z	192.168.49.23	4.1.0+202202021832		Connected	Pending data	Disabled	6 days
□	FCW2445P6X5	192.168.49.21	4.1.0+202202021803		Connected	Pending data	Unavailable	6 days

First, you need to know that sensors can be used in two modes, and for different purposes:

- Online mode: A sensor in online mode is placed at a particular and strategic point of the industrial network and will continually capture traffic.

  Applicable to: Cisco IE3400, IE3300 10G, Cisco IC3000, Catalyst 9300 and Cisco IR1101.

- Offline mode: A sensor in offline mode allows you to easily connect it at different points of the industrial network that may be isolated or difficult to access to occasionally make traffic captures. Traffic is captured on a USB drive. The file will then be imported in Cisco Cyber Vision.

  Only applicable to Cisco IC3000.

On the Sensor Explorer page, you will see a list of your folders and sensors (when installed) and buttons that will allow you to perform several actions.

Installation modes, features, and information will be available depending on the sensor model and the mode in which it’s being used.

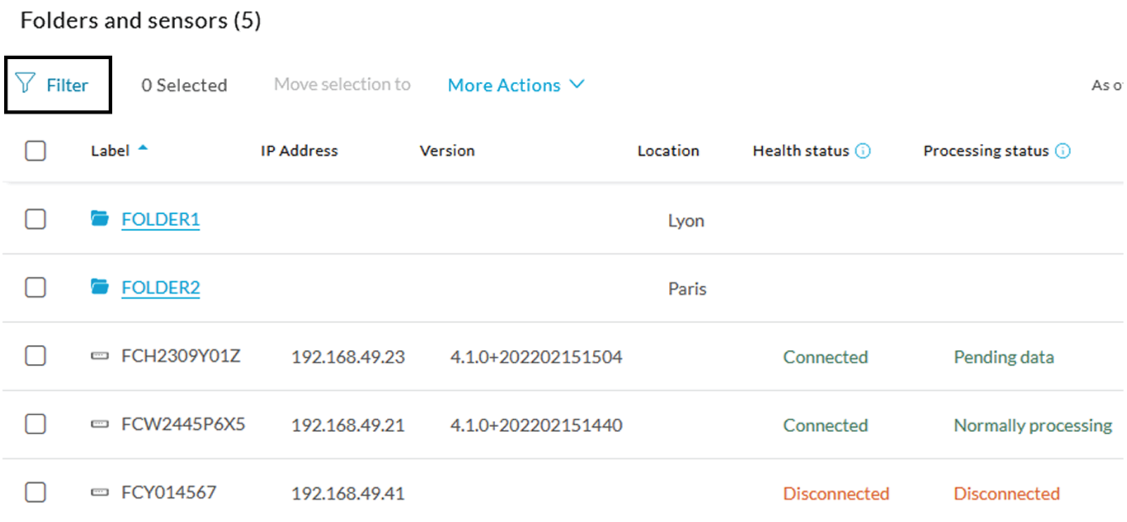
Additional information and actions are available as you click a sensor in the list. A right side panel will appear allowing you to see this information such as the serial number, and buttons to perform other actions.

Filter and sort the sensor list

Filtering

Clicking the Filter button allows you to filter the folders and sensors in the list by label, IP address, version, location, health and processing status.

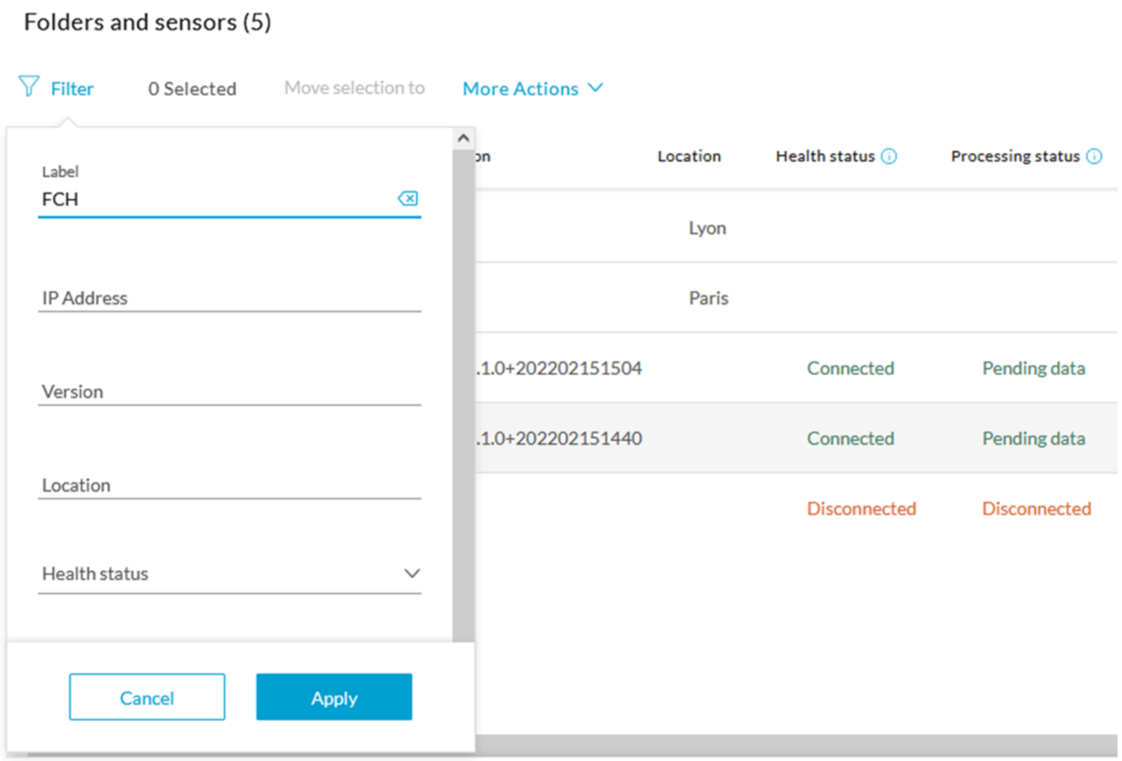
The folders and sensors list without filtering:



Folders and sensors (5)

□	Label	IP Address	Version	Location	Health status	Processing status
□	FOLDER1			Lyon		
□	FOLDER2			Paris		
□	FCH2309Y01Z	192.168.49.23	4.1.0+202202151504		Connected	Pending data
□	FCW2445P6X5	192.168.49.21	4.1.0+202202151440		Connected	Normally processing
□	FCY014567	192.168.49.41			Disconnected	Disconnected

Type in the field or select from the drop down menu to reach the folder(s) or sensor(s) and click the Apply button:



Label: FCH

IP Address

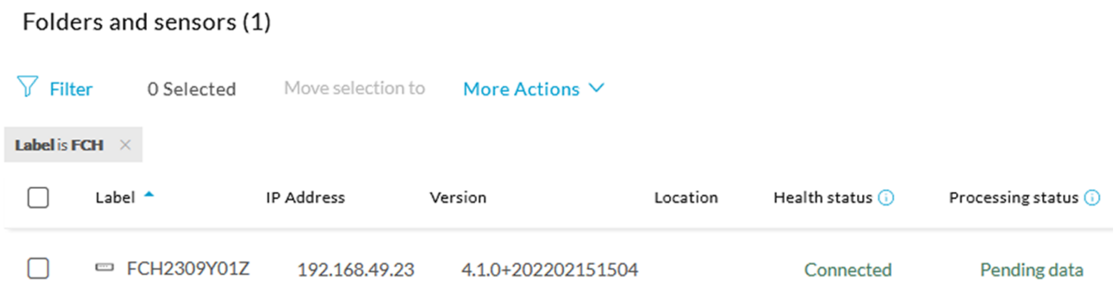
Version

Location

Health status

on	Location	Health status	Processing status
	Lyon		
	Paris		
.1.0+202202151504		Connected	Pending data
.1.0+202202151440		Connected	Pending data
		Disconnected	Disconnected

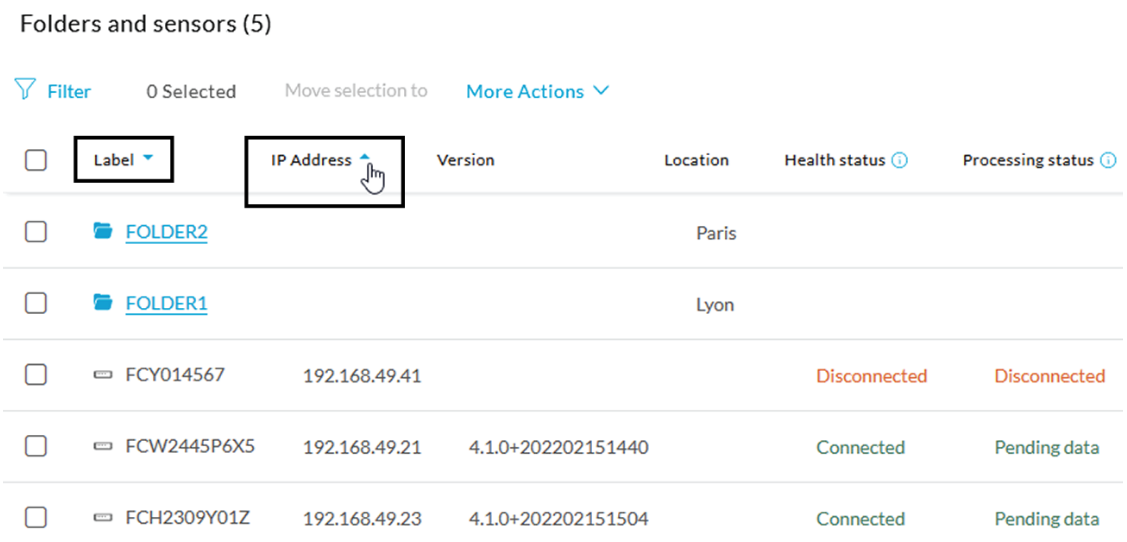
The folders and sensors list after filtering by label:



☐	Label	IP Address	Version	Location	Health status	Processing status
☐	FCH2309Y01Z	192.168.49.23	4.1.0+202202151504		Connected	Pending data

Sorting

Sort icons allow you to sort sensors by label, IP address, version, location, health and processing status by alphabetical or by ascending/descending order. Sort icons appear when applied or as you hover over them.



Folders and sensors (5)

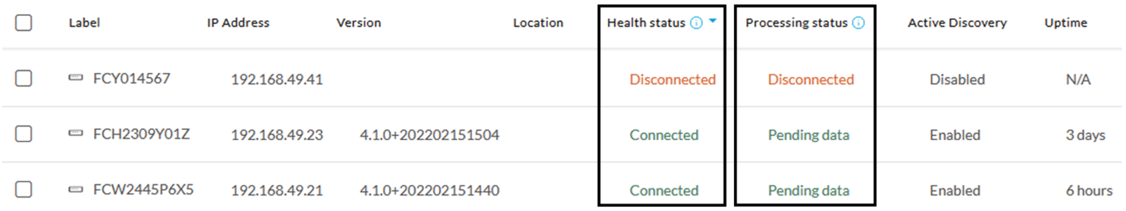
Filter 0 Selected Move selection to More Actions

□	Label	IP Address	Version	Location	Health status	Processing status
□	FOLDER2			Paris		
□	FOLDER1			Lyon		
□	FCY014567	192.168.49.41			Disconnected	Disconnected
□	FCW2445P6X5	192.168.49.21	4.1.0+202202151440		Connected	Pending data
□	FCH2309Y01Z	192.168.49.23	4.1.0+202202151504		Connected	Pending data

Sensors status

There are two types of sensor status:

- The health status, which indicates at which step of the enrollment process the sensor is.
- The processing status, which indicates the network connection state between the sensor and the Center.



□	Label	IP Address	Version	Location	Health status	Processing status	Active Discovery	Uptime
□	FCY014567	192.168.49.41			Disconnected	Disconnected	Disabled	N/A
□	FCH2309Y01Z	192.168.49.23	4.1.0+202202151504		Connected	Pending data	Enabled	3 days
□	FCW2445P6X5	192.168.49.21	4.1.0+202202151440		Connected	Pending data	Enabled	6 hours

Health status:

- **New**

  This is the sensor's first status when it is detected by the Center. The sensor is asking the DHCP server for an IP address.

- **Request Pending**

  The sensor has asked the Center for a certificate and is waiting for the authorization to be enrolled.

- **Authorized**

  The sensor has just been authorized by the Admin or the Product user. The sensor remains as "Authorized" for only a few seconds before displaying as "Enrolled".

- **Enrolled**

  The sensor has successfully connected with the Center. It has a certificate and a private key.

- **Disconnected**

The sensor is enrolled but isn't connected to the Center. The sensor may be shut down, encountering a problem, or there is a problem on the network.

Processing status:

- **Disconnected**

  The sensor is enrolled but isn't connected to the Center. The sensor may be shut down, encountering a problem, or there is a problem on the network.

- **Not enrolled**

  The sensor is not enrolled. The health status is New or Request Pending. The user must enroll the sensor for it to operate.

- **Normally processing**

  The sensor is connected to the Center. Data are being sent and processed by the Center.

- **Waiting for data**

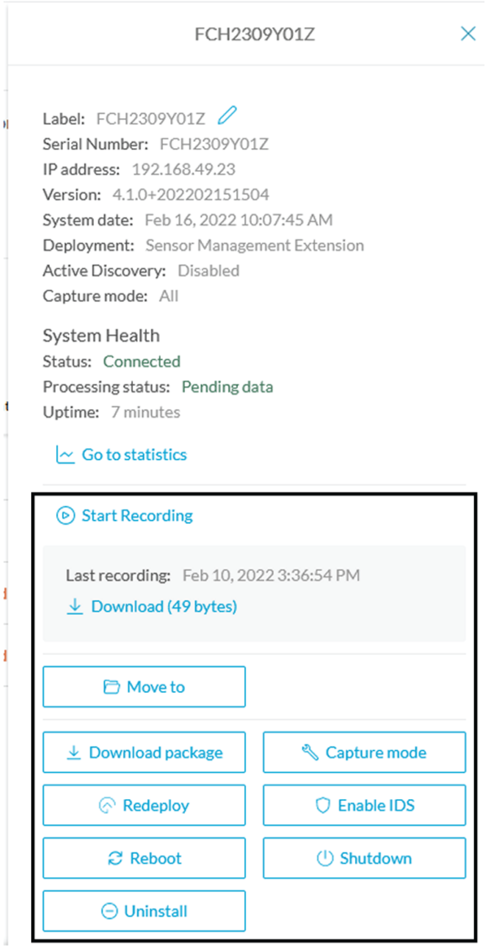
  The sensor is connected to the Center. The Center has treated all data sent by the sensor and is waiting for more data.

- **Pending data**

  The sensor is connected to the Center. The sensor is trying to send data to the Center but the Center is busy with other data treatment.

Sensors features

You will find in the Sensor Explorer page several features to manage and use your sensors. Some buttons are accessible from the Sensor Explorer page itself to manage one or more sensors. Other buttons are available when clicking a sensor in the list. A right side panel opens with additional sensor information and actions that are available or not depending on the sensor model, mode (online or offline) and the installation type performed.



FCH2309Y01Z

Label: FCH2309Y01Z

Serial Number: FCH2309Y01Z

IP address: 192.168.49.23

Version: 4.1.0+202202151504

System date: Feb 16, 2022 10:07:45 AM

Deployment: Sensor Management Extension

Active Discovery: Disabled

Capture mode: All

System Health

Status: Connected

Processing status: Pending data

Uptime: 7 minutes

Last recording: Feb 10, 2022 3:36:54 PM

- The **Start recording** button records a traffic capture on the sensor. Records can be used for traffic analysis and may be requested by Cisco support in case of malfunctions. You can download the recording clicking the link below.

Note This feature is targeted for short captures only. Performing long captures may cause the sensor overload and packets loss.

- The **Move to** button is to move the sensor through different folders. For more information, refer to Organize sensors, on page 27.

- The **Download package** button provides a configuration file to be deployed on the sensor when installing the sensor manually (online mode). Only applicable to the Cisco IC3000. Refer to its Installation Guide.

- The **Capture Mode** button can be used to set a filter on a sensor sending data to the Center. Refer to the procedure for Set a capture mode.

- The **Redeploy** button can be used to partly reconfigure the sensor, for example to change its parameters such as its IP address.

- The **Enable IDS** button can be used to enable the SNORT engine embedded in some sensors to analyze traffic by using SNORT rules. SNORT rules management is available on the SNORT administration page.
- The **Reboot** button can be used to reboot the sensor in case of a malfunction.
- The **Shutdown** button triggers a clean shutdown of the sensor from the GUI.

Note After performing a shutdown, you must switch the sensor ON directly and manually on the hardware.

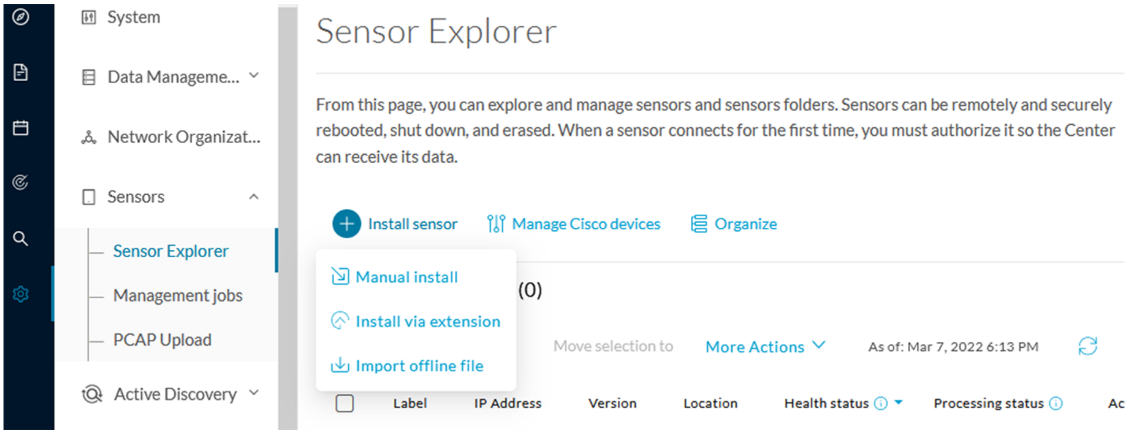
- The **Uninstall** button can be used to remove an uninstalled sensor from the list or to fully uninstall a sensor. Diverse options are available according to the sensor model or deployment mode. In the case of a sensor deployed through the management extension, the IOx app can be removed from the device, whereas a reset to factory defaults can be performed in other cases. In any case, the sensor will be removed from the Center.

Install sensor

From the Sensor Explorer page, you can:

- Install a sensor manually.
- Install a sensor via the IOx extension. To use the Install via extension button you must first install the sensor management extension via the Extensions page.
- Capture traffic with an offline sensor (only applicable to Cisco IC3000).

  For more information about how to install a sensor, refer to the corresponding Sensor Installation Guide.

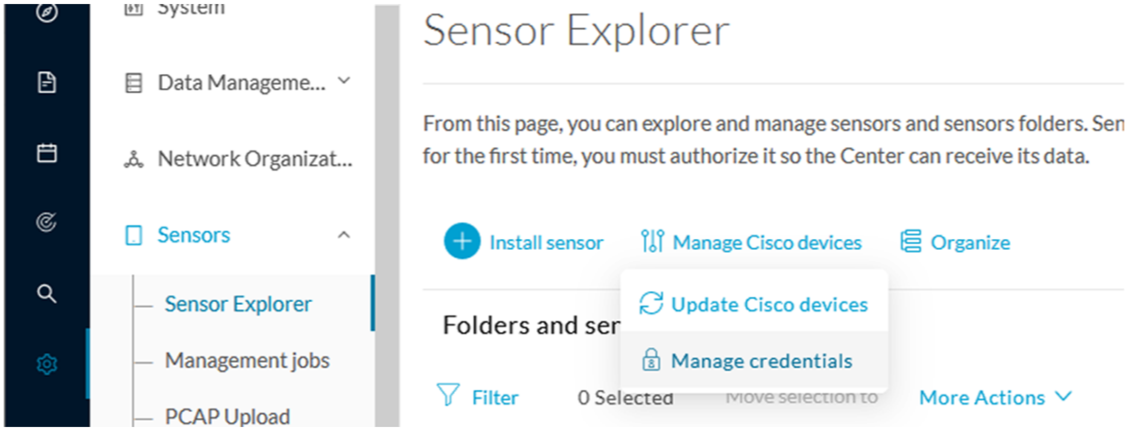


Sensor Explorer

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.

Manage credentials

The Manage credentials button, which you can have access by clicking Manage Cisco devices in the Sensor Explorer page, is to register your global credentials if configured before in the Local Manager.



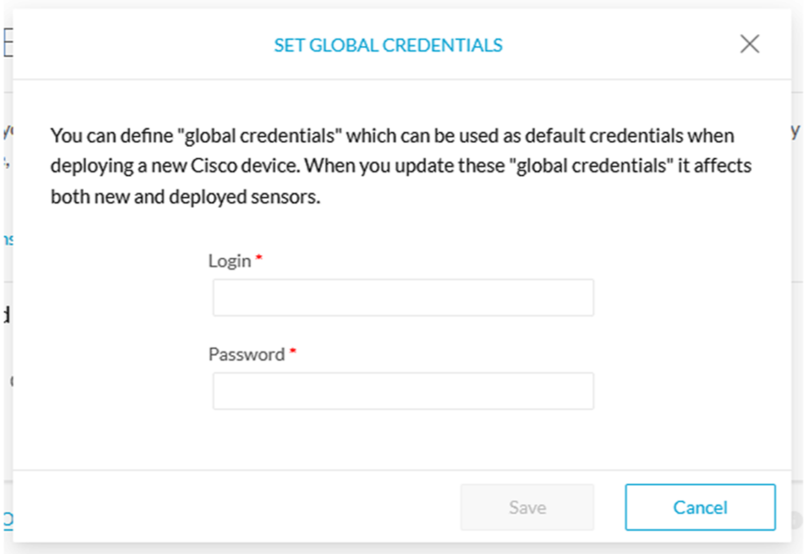
From this page, you can explore and manage sensors and sensors folders. Sen
for the first time, you must authorize it so the Center can receive its data.

This feature can be used to register your global credentials in Cisco Cyber Vision. This will allow you to enter these credentials only once and they will be used when performing actions that require these credentials, that is installing and updating sensors via the IOx extension.

Only one set of global credentials can be used per Cisco Cyber Vision instance, which means that you cannot have several set of sensors accessible by different global credentials in a single instance. If there are several sensor administrators, they must use the same global credentials registered in Cisco Cyber Vision. However, you can have a set of sensors using a single global credentials and other sensors with their own single credentials.

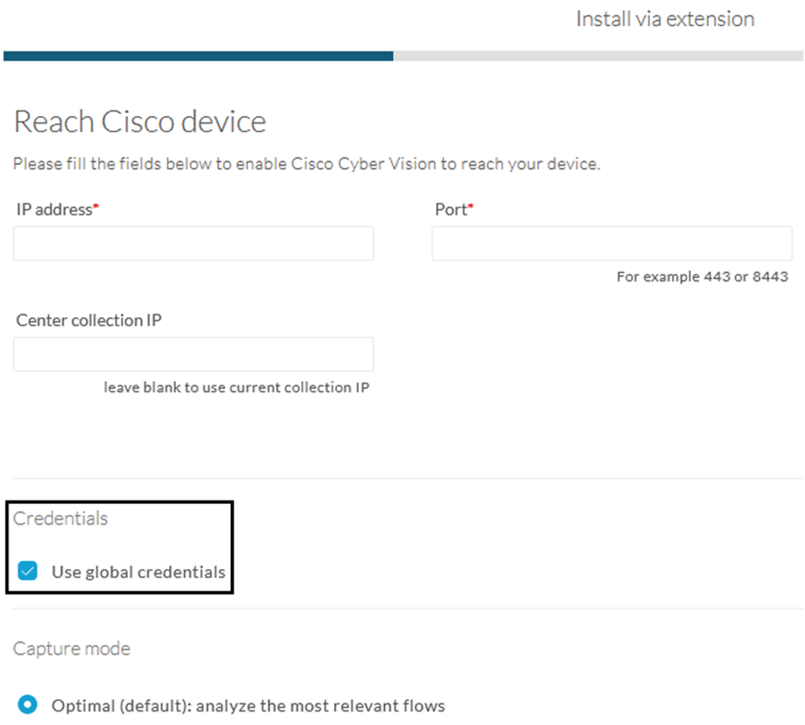
Global credentials are stored in Cisco Cyber Vision but are set at the switch level in the Local Manager. Consequently, if you lose your global credentials, you must refer to the switch customer support and documentation.

The Manage credentials button can be used the first time you register your global credentials and each time global credentials are changed in the Local Manager. To do so, enter the login and password and click Save.



You can define "global credentials" which can be used as default credentials when deploying a new Cisco device. When you update these "global credentials" it affects both new and deployed sensors.

Once the global credentials are registered, the feature will be enabled in the Install via extension procedure. Select the Use global credentials option to use your global credentials.



Install via extension

Reach Cisco device

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

IP address*

Port*

For example 443 or 8443

Center collection IP

leave blank to use current collection IP

Credentials

☑ Use global credentials

Capture mode

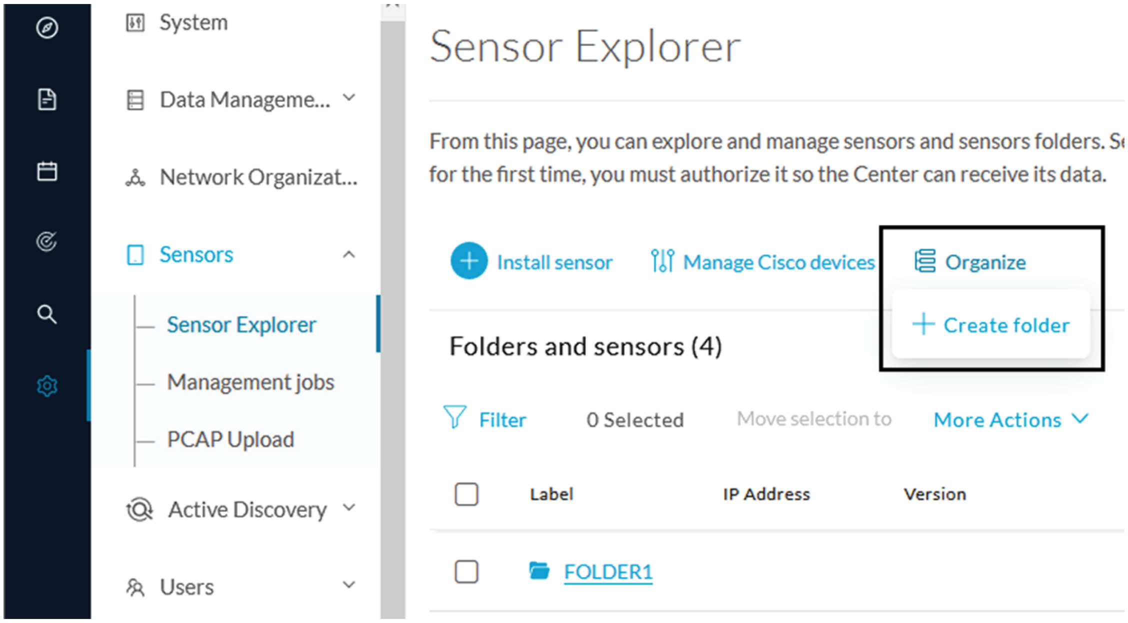
● Optimal (default): analyze the most relevant flows

Organize sensors

You can create folders and move your sensors into the folders for more clarity. Folders can correspond to a location, a person in charge, a set of disconnected sensors, etc.

To create a folder and move a sensor in it:

1. Click the Organize button and click Create folder.

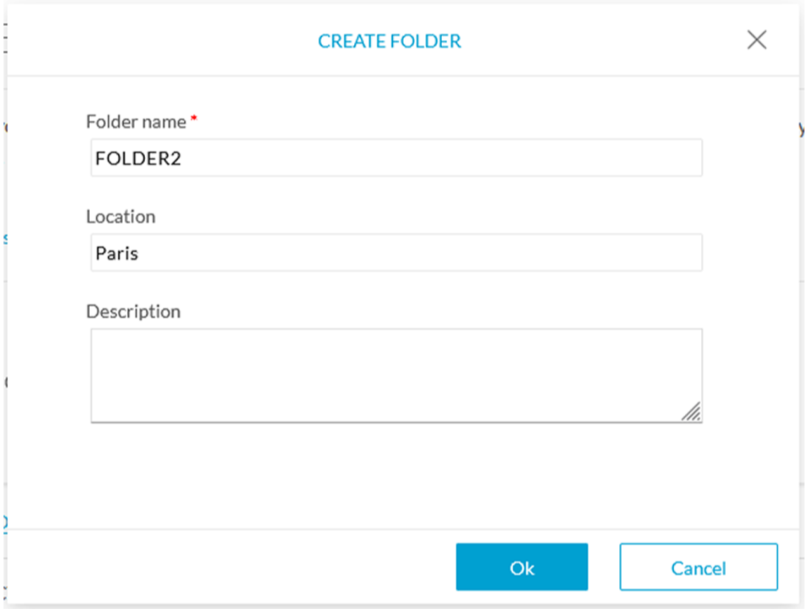


Sensor Explorer

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

Folders and sensors (4)

2. Write a folder name, and, if needed, a location and a description.

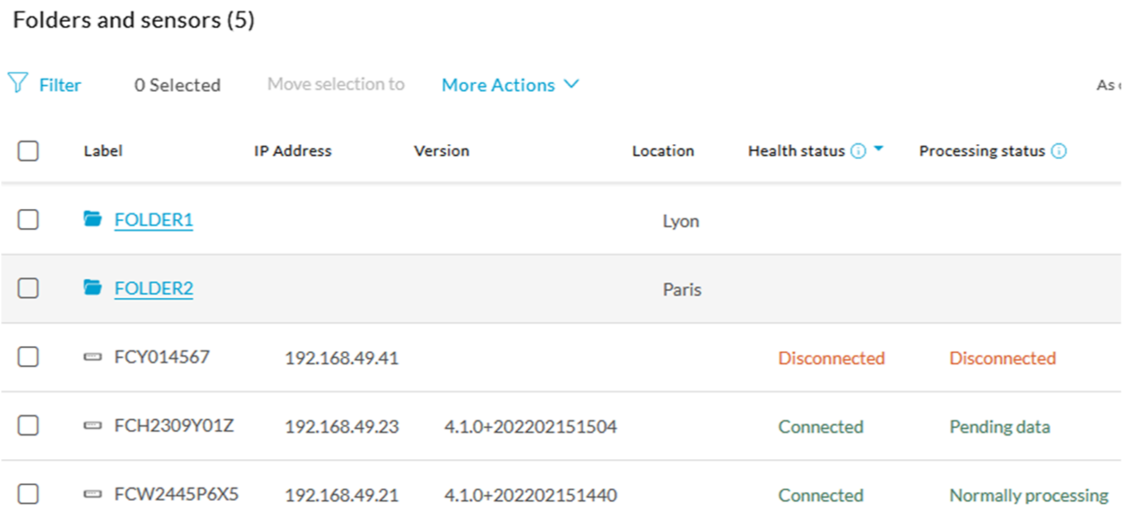


Folder name *: FOLDER2

Location: Paris

Description:

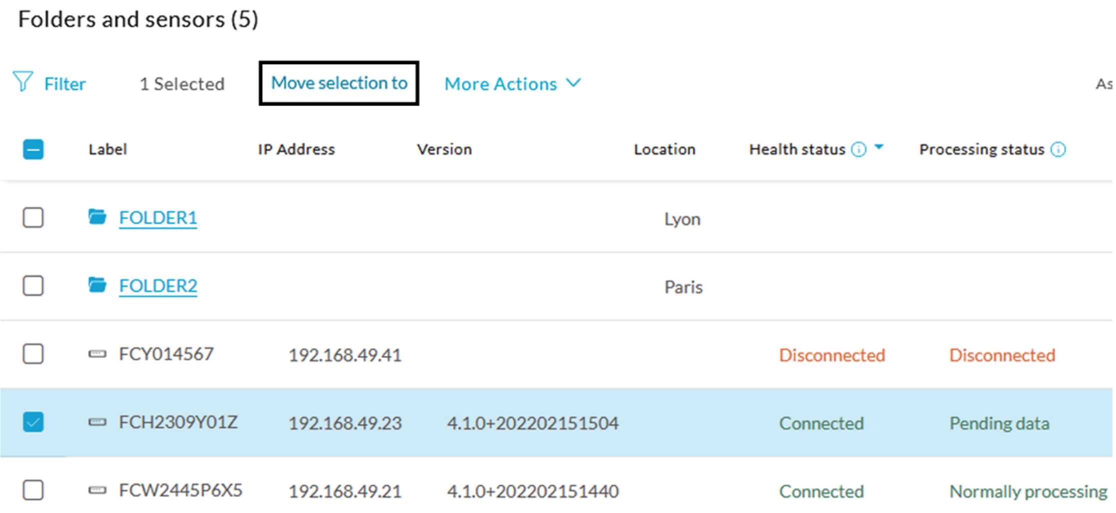
The new folder is displayed in the sensor list.



Folders and sensors (5)

□	Label	IP Address	Version	Location	Health status	Processing status
□	FOLDER1			Lyon		
□	FOLDER2			Paris		
□	FCY014567	192.168.49.41			Disconnected	Disconnected
□	FCH2309Y01Z	192.168.49.23	4.1.0+202202151504		Connected	Pending data
□	FCW2445P6X5	192.168.49.21	4.1.0+202202151440		Connected	Normally processing

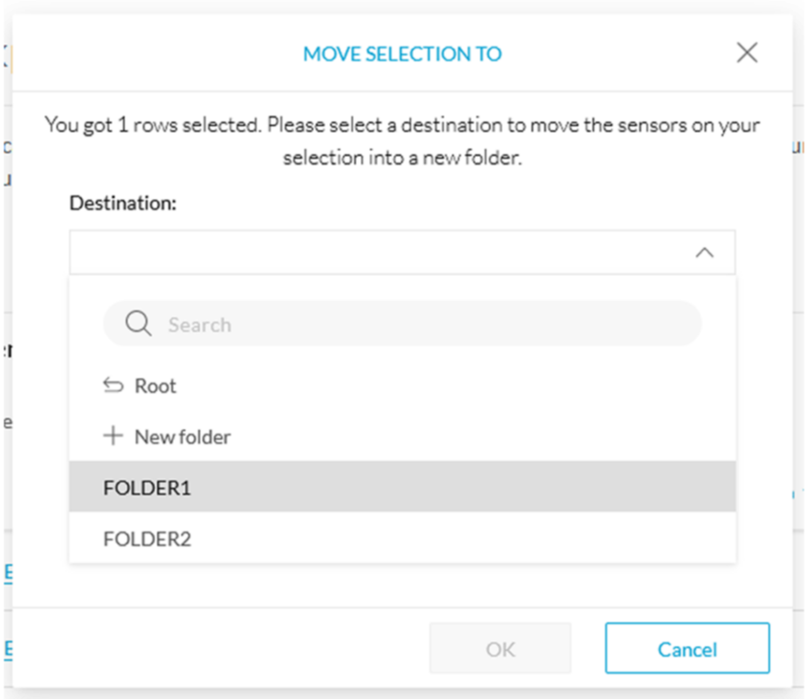
3. Select a sensor in the list and click the button Move selection to.



Folders and sensors (5)

▬	Label	IP Address	Version	Location	Health status	Processing status
□	FOLDER1			Lyon		
□	FOLDER2			Paris		
□	FCY014567	192.168.49.41			Disconnected	Disconnected
☑	FCH2309Y01Z	192.168.49.23	4.1.0+202202151504		Connected	Pending data
□	FCW2445P6X5	192.168.49.21	4.1.0+202202151440		Connected	Normally processing

4. Select the folder you want to place the sensor in or create a new folder. Root can be used to move sensors back into the primary list.

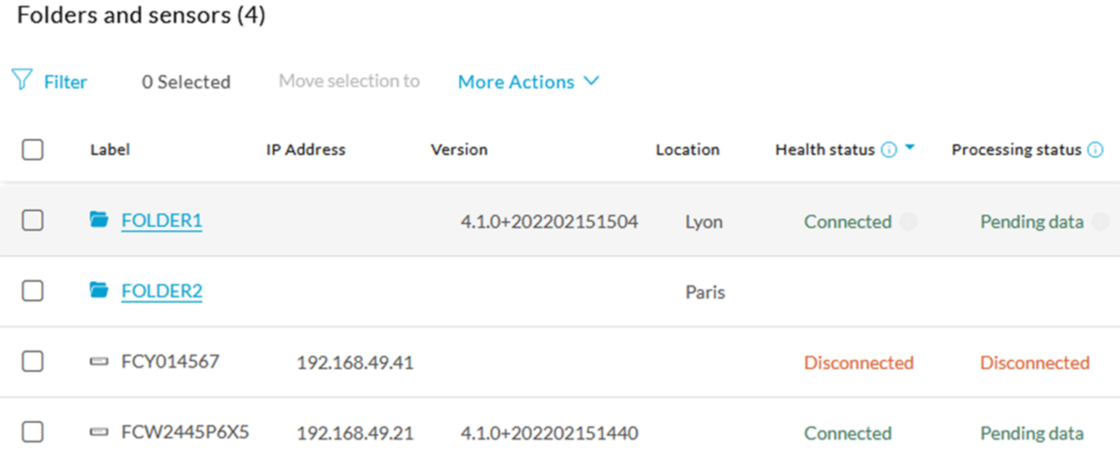


MOVE SELECTION TO

You got 1 rows selected. Please select a destination to move the sensors on your selection into a new folder.

Destination:

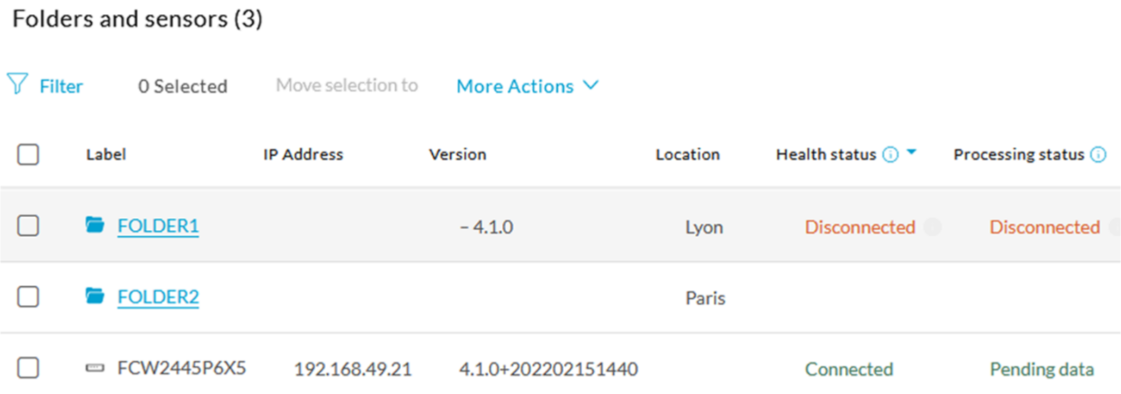
The sensor is moved into the folder. The sensor version, health status and processing status are displayed in the folder line.



Folders and sensors (4)

	Label	IP Address	Version	Location	Health status	Processing status
☐	FOLDER1		4.1.0+202202151504	Lyon	Connected	Pending data
☐	FOLDER2			Paris		
☐	FCY014567	192.168.49.41			Disconnected	Disconnected
☐	FCW2445P6X5	192.168.49.21	4.1.0+202202151440		Connected	Pending data

If you move a sensor in a disconnected state inside this same folder, then its information will be displayed in the folder line rather than the sensor in connected state. Less secure sensor status are showcased in priority to drag your attention.

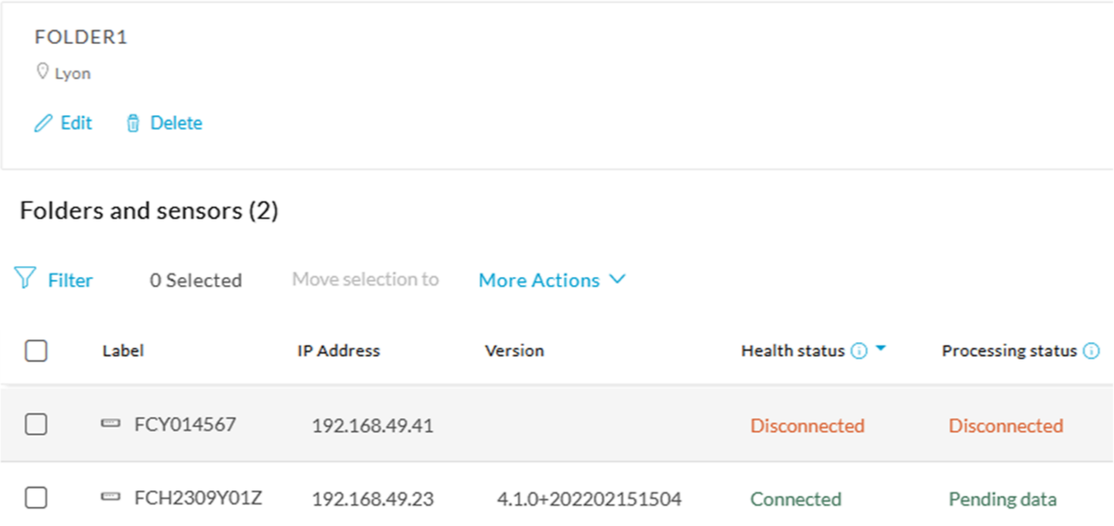


Folders and sensors (3)

Filter 0 Selected Move selection to More Actions

☐	Label	IP Address	Version	Location	Health status	Processing status
☐	FOLDER1		- 4.1.0	Lyon	Disconnected	Disconnected
☐	FOLDER2			Paris		
☐	FCW2445P6X5	192.168.49.21	4.1.0+202202151440		Connected	Pending data

The sensors inside a folder:



FOLDER1

Lyon

Edit Delete

Folders and sensors (2)

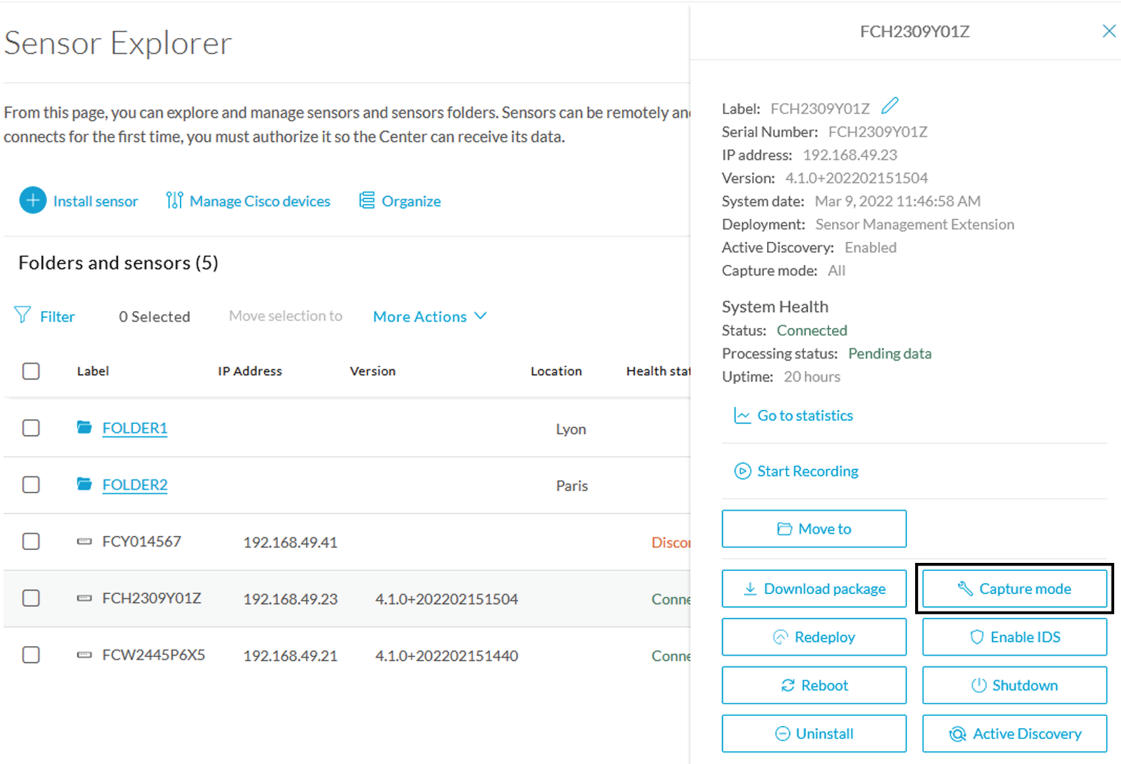
Filter 0 Selected Move selection to More Actions

☐	Label	IP Address	Version	Health status	Processing status
☐	FCY014567	192.168.49.41		Disconnected	Disconnected
☐	FCH2309Y01Z	192.168.49.23	4.1.0+202202151504	Connected	Pending data

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 an
connects for the first time, you must authorize it so the Center can receive its data.

Folders and sensors (5)

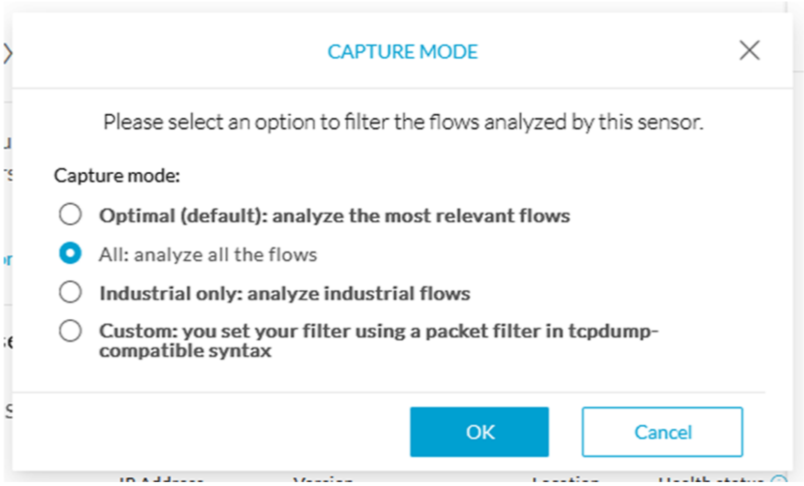
□	Label	IP Address	Version	Location	Health stat
□	FOLDER1			Lyon	
□	FOLDER2			Paris	
□	FCY014567	192.168.49.41			Discor
□	FCH2309Y01Z	192.168.49.23	4.1.0+202202151504		Conne
□	FCW2445P6X5	192.168.49.21	4.1.0+202202151440		Conne

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

Capture modes:



CAPTURE MODE

Please select an option to filter the flows analyzed by this sensor.

Capture mode:

○ **Optimal (default): analyze the most relevant flows**

● All: analyze all the flows

○ **Industrial only: analyze industrial flows**

○ **Custom: you set your filter using a packet filter in tcpdump-compatible syntax**

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.

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.

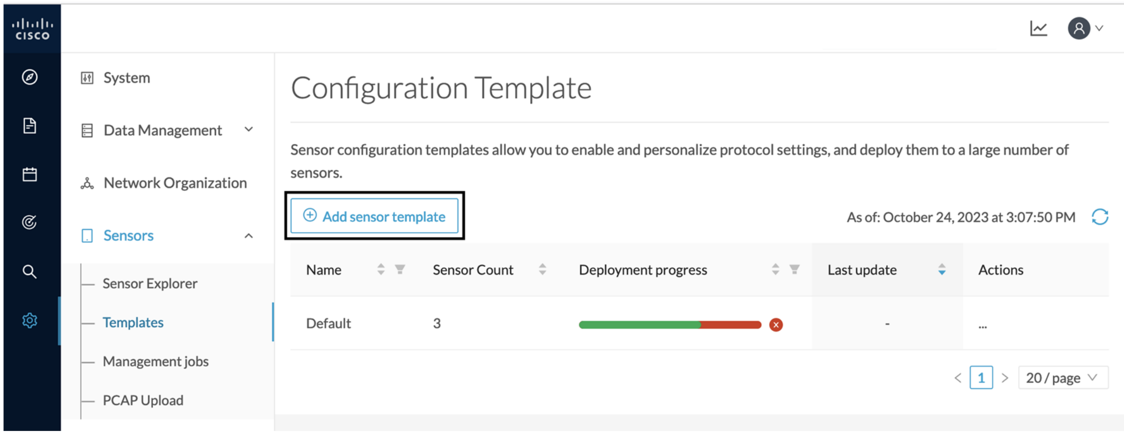
A sensor can be associated with a single template only. Deployment of the template can fail:

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

Create templates

Step 1 In Cisco Cyber Vision, navigate to Admin > Sensors > Templates.

Step 2 Click **Add sensor template**.



Configuration Template

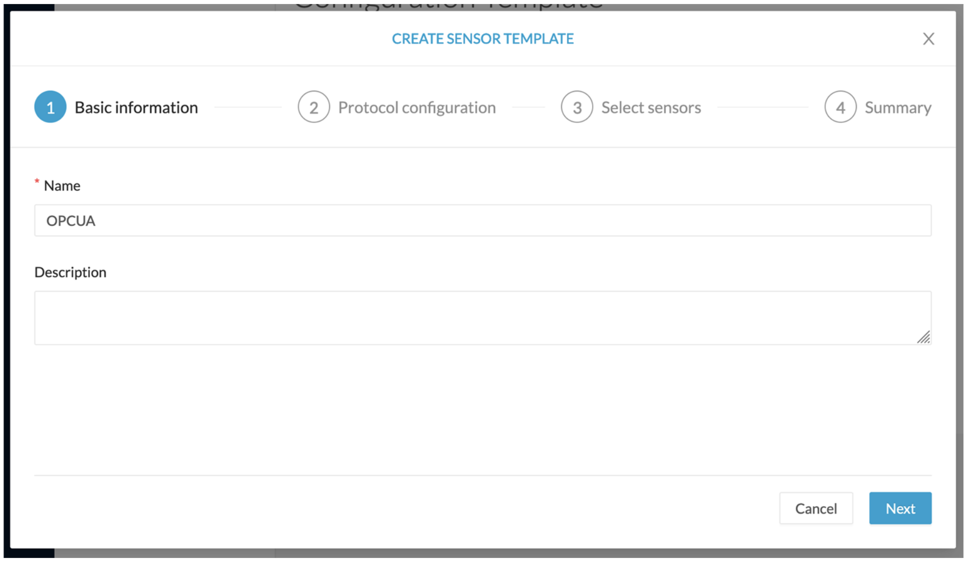
Sensor configuration templates allow you to enable and personalize protocol settings, and deploy them to a large number of sensors.

As of: October 24, 2023 at 3:07:50 PM

Name	Sensor Count	Deployment progress	Last update	Actions
Default	3		-	...

The Create sensor template window pops up.

Step 3 Add a name to the template. You can also add a description.



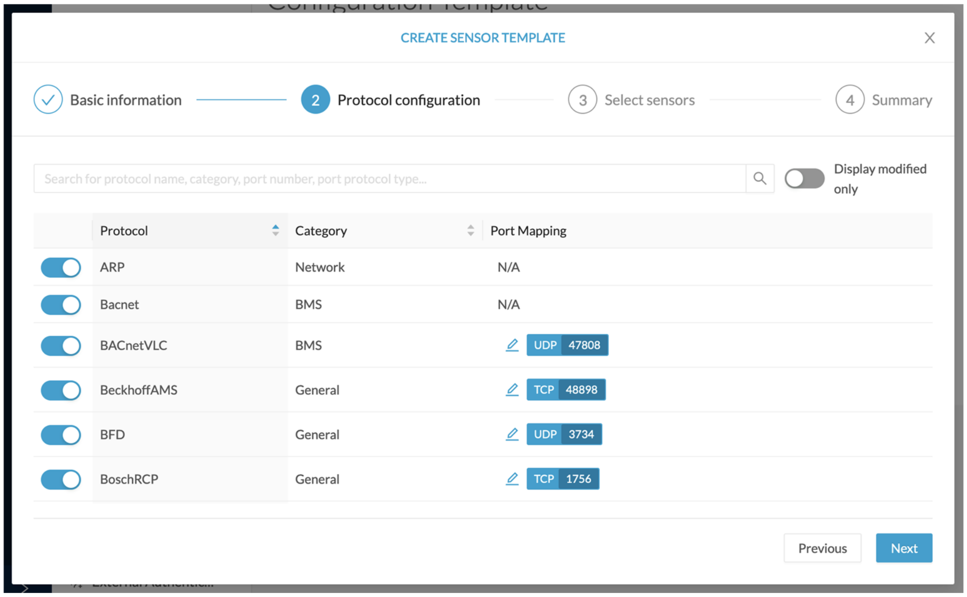
CREATE SENSOR TEMPLATE

* Name: OPCUA

Description:

Step 4 Click **Next**.

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

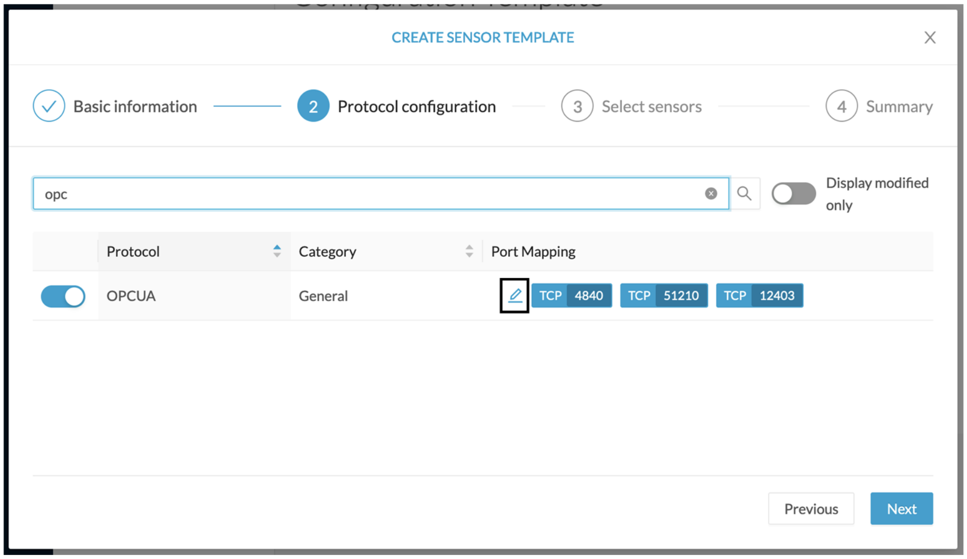


CREATE SENSOR TEMPLATE

	Protocol	Category	Port Mapping
●	ARP	Network	N/A
●	Bacnet	BMS	N/A
●	BACnetVLC	BMS	UDP 47808
●	BeckhoffAMS	General	TCP 48898
●	BFD	General	UDP 3734
●	BoschRCP	General	TCP 1756

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.



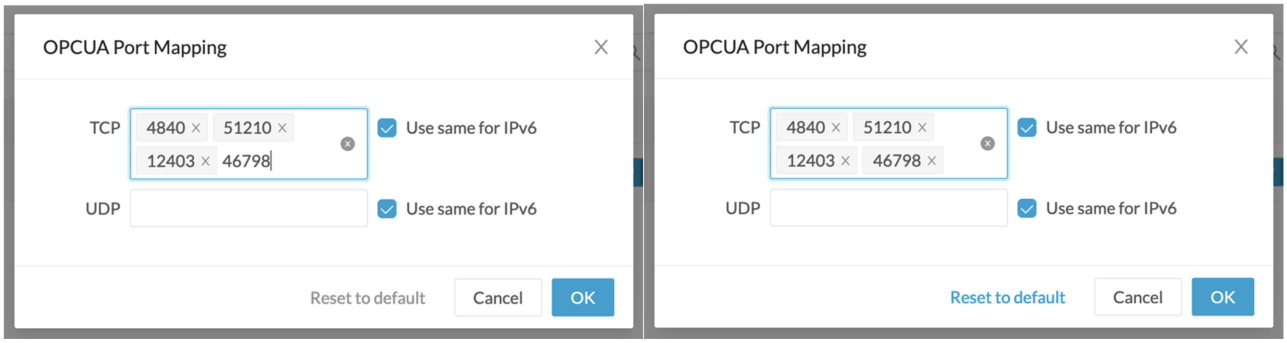
CREATE SENSOR TEMPLATE

	Protocol	Category	Port Mapping
●	OPCUA	General	TCP 4840 TCP 51210 TCP 12403

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.



OPCUA Port Mapping

TCP: 4840 × 51210 × 12403 × 46798 ☑ Use same for IPv6

UDP: ☑ Use same for IPv6

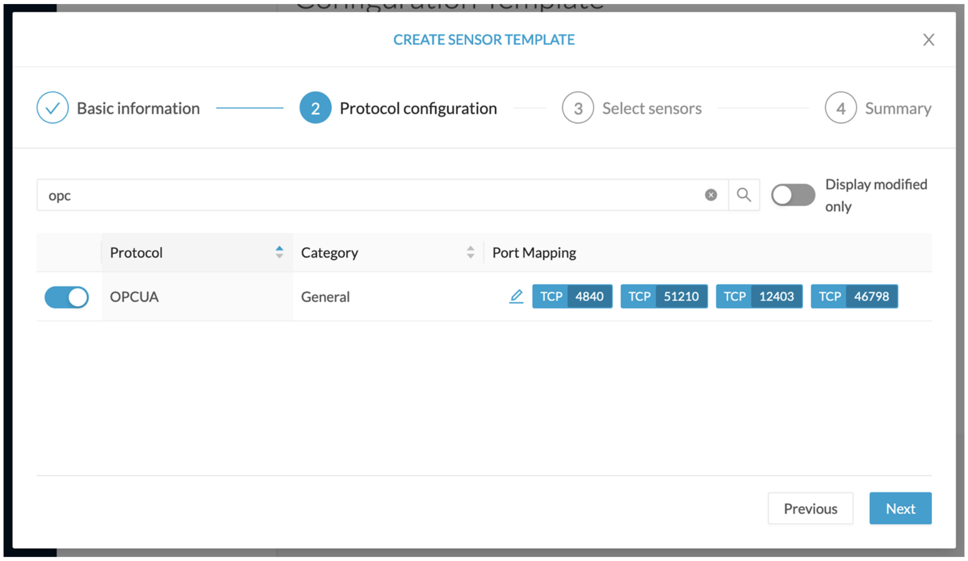
OPCUA Port Mapping

TCP: 4840 × 51210 × 12403 × 46798 × ☑ Use same for IPv6

UDP: ☑ Use same for IPv6

Step 8 Click **OK**.

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



CREATE SENSOR TEMPLATE

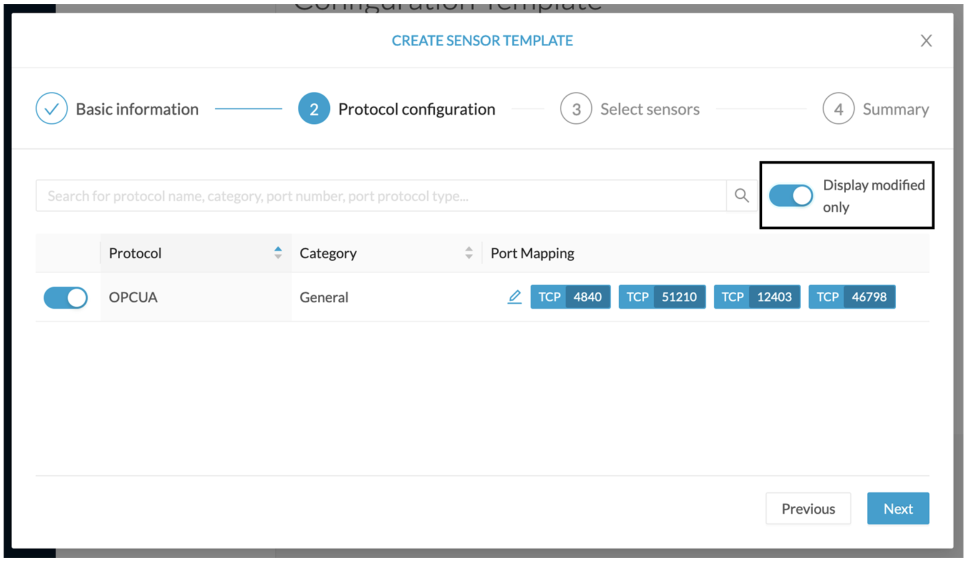
✓ Basic information — 2 Protocol configuration — 3 Select sensors — 4 Summary

opc

○ Display modified only

	Protocol	Category	Port Mapping
●	OPCUA	General	TCP 4840 TCP 51210 TCP 12403 TCP 46798

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



CREATE SENSOR TEMPLATE

✓ Basic information — 2 Protocol configuration — 3 Select sensors — 4 Summary

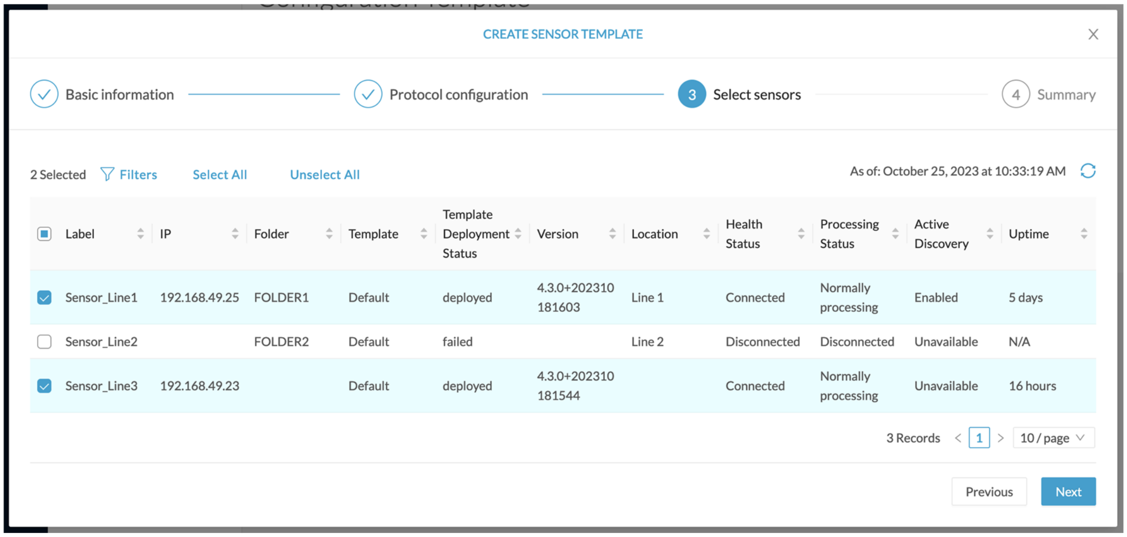
Search for protocol name, category, port number, port protocol type...

● Display modified only

	Protocol	Category	Port Mapping
●	OPCUA	General	TCP 4840 TCP 51210 TCP 12403 TCP 46798

Step 9 Click **Next**.

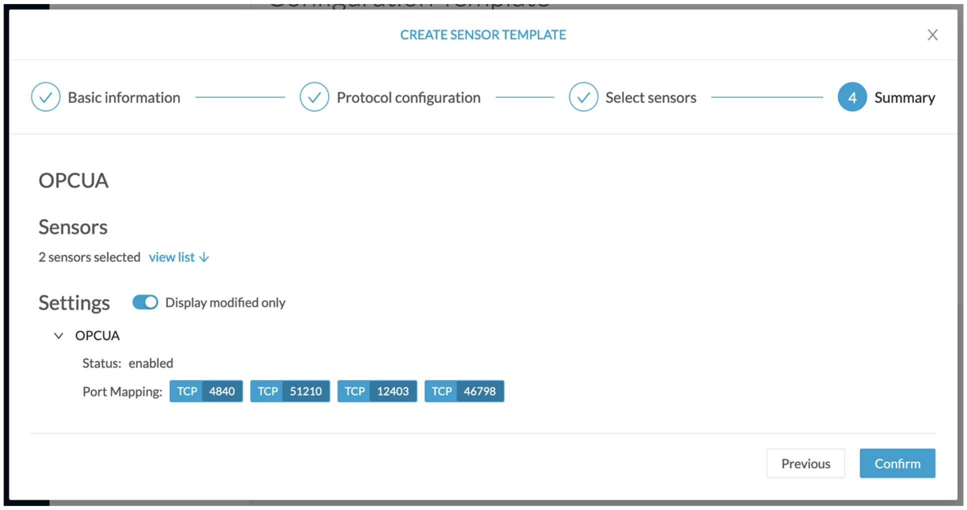
Step 10 Select the sensor(s) you want to apply the template to.



☐	Label	IP	Folder	Template	Template Deployment Status	Version	Location	Health Status	Processing Status	Active Discovery	Uptime
☑	Sensor_Line1	192.168.49.25	FOLDER1	Default	deployed	4.3.0+202310181603	Line 1	Connected	Normally processing	Enabled	5 days
☐	Sensor_Line2		FOLDER2	Default	failed		Line 2	Disconnected	Disconnected	Unavailable	N/A
☑	Sensor_Line3	192.168.49.23		Default	deployed	4.3.0+202310181544		Connected	Normally processing	Unavailable	16 hours

Step 11 Click **Next**.

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



OPCUA

Sensors

2 sensors selected

Settings ● Display modified only

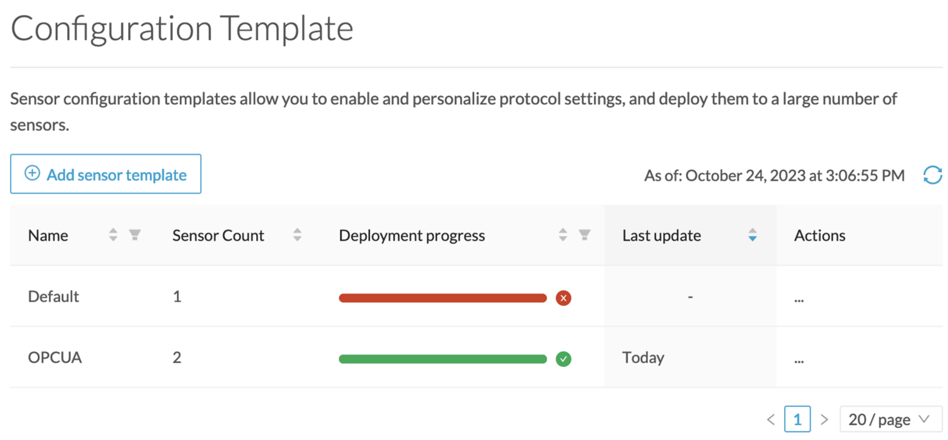
OPCUA

Status: enabled

Port Mapping: TCP 4840 TCP 51210 TCP 12403 TCP 46798

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

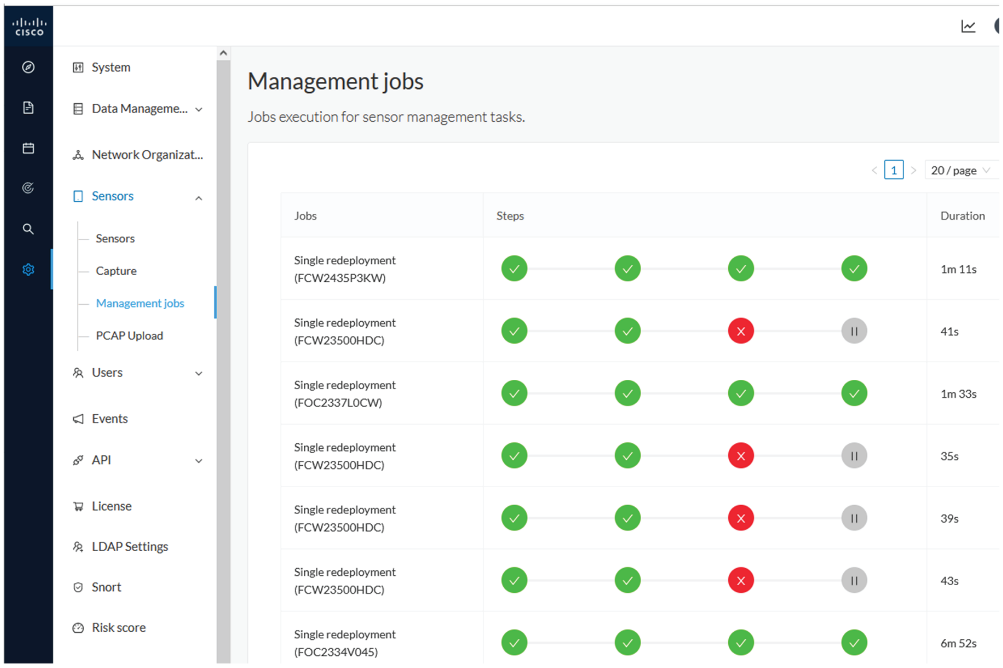
Sensor configuration templates allow you to enable and personalize protocol settings, and deploy them to a large number of sensors.

Name	Sensor Count	Deployment progress	Last update	Actions
Default	1	🟥 ✗	-	...
OPCUA	2	🟩 ✓	Today	...

Management jobs

As some deployment tasks on sensors can take several minutes, this page shows the jobs execution status and advancement for each sensor deployed with the sensor management extension.

This page is only visible when the sensor management extension is installed in Cisco Cyber Vision.



Management jobs

Jobs execution for sensor management tasks.

Jobs	Steps	Duration
Single redeployment (FCW2435P3KW)	✓ ✓ ✓ ✓	1m 11s
Single redeployment (FCW23500HDC)	✓ ✓ ✗ ⏸	41s
Single redeployment (FOC2337L0CW)	✓ ✓ ✓ ✓	1m 33s
Single redeployment (FCW23500HDC)	✓ ✓ ✗ ⏸	35s
Single redeployment (FCW23500HDC)	✓ ✓ ✗ ⏸	39s
Single redeployment (FCW23500HDC)	✓ ✓ ✗ ⏸	43s
Single redeployment (FOC2334V045)	✓ ✓ ✓ ✓	6m 52s

You will find the following jobs:

- Single deployment

This job is launched when clicking the Deploy Cisco device button in the sensor administration page, that is when a new IOx sensor is deployed.

- Single redeployment

  This job is launched when clicking the Reconfigure Redeploy button in the sensor administration page, that is when deploying on a sensor that has already been deployed. This option is used for example to change the sensor's parameters like enabling active discovery.

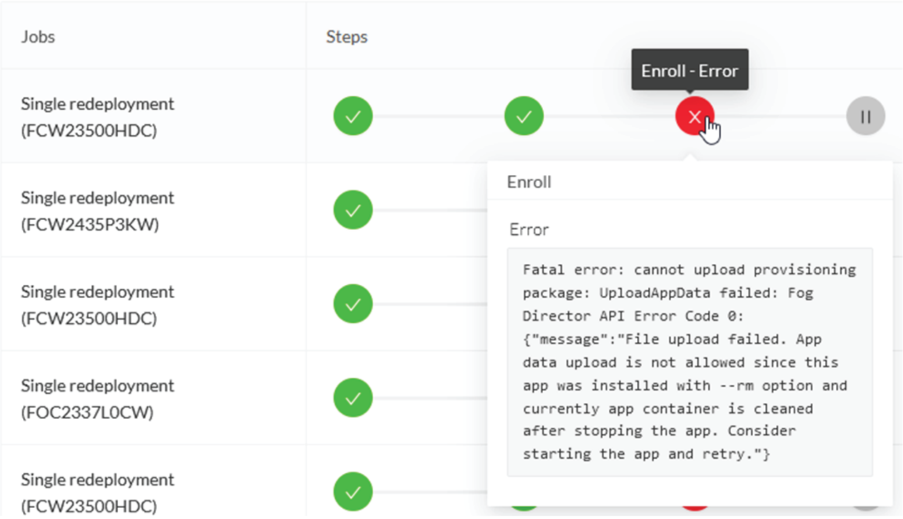
- Single removal

  This job is launched when clicking the Remove button from the sensor administration page.

- Update all devices

  This job is launched when clicking the Update Cisco devices button from the sensor administration page. A unique job is created for all managed sensors that are being updated.

If a job fails, you can click on the error icon to view detailed logs.



Single redeployment (FCW23500HDC)

Single redeployment (FCW2435P3KW)

Single redeployment (FCW23500HDC)

Single redeployment (FOC2337L0CW)

Single redeployment (FCW23500HDC)

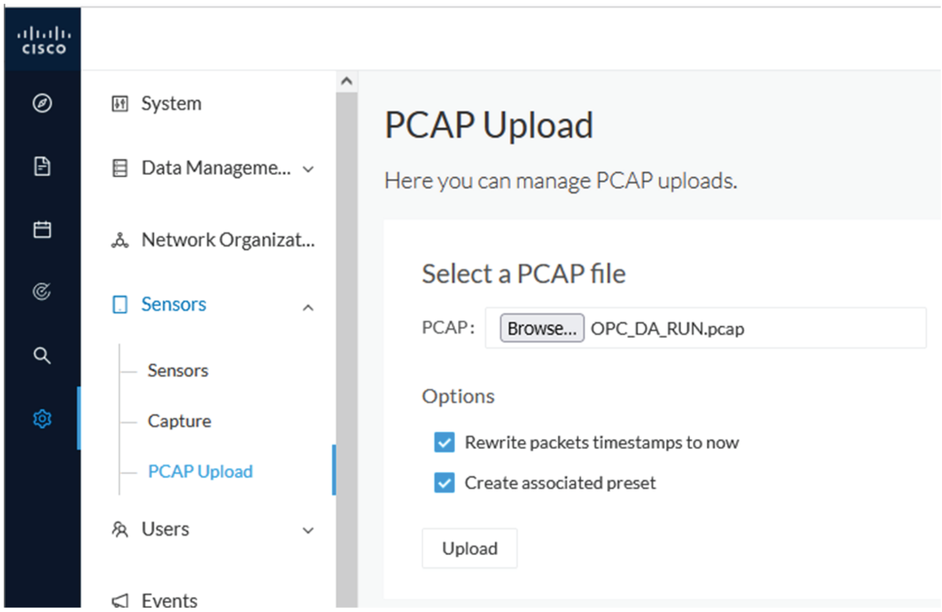
```
Fatal error: cannot upload provisioning
package: UploadAppData failed: Fog
Director API Error Code 0:
{"message":"File upload failed. App
data upload is not allowed since this
app was installed with --rm option and
currently app container is cleaned
after stopping the app. Consider
starting the app and retry."}
```

PCAP Upload

This page allows you to upload pcaps to view their data in Cisco Cyber Vision.

When selecting a pcap, two options are available:

- You can choose to use the timestamp of the pcap or the current timestamp instead. Choosing the current timestamp can be useful if the pcap timestamp is old and searching for its data in Cisco Cyber Vision is thus easier.
- You can define a preset from the pcap. Once the pcap is uploaded you'll just have to click the pcap link to be redirected to its preset.



PCAP Upload

Here you can manage PCAP uploads.

Select a PCAP file

PCAP: Browse... OPC_DA_RUN.pcap

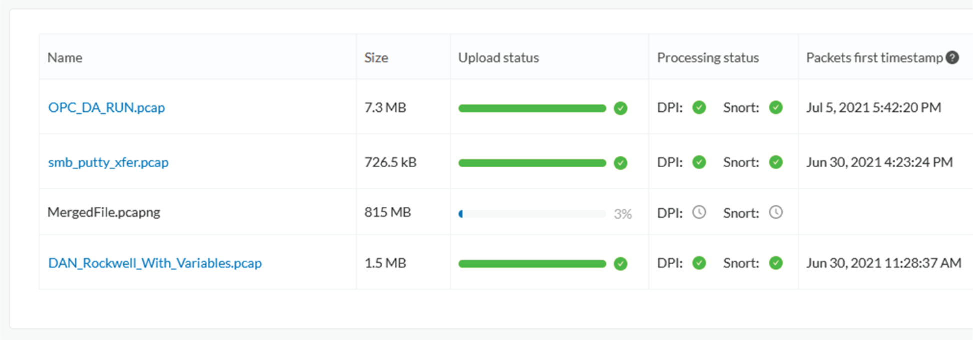
Options

☑ Rewrite packets timestamps to now

☑ Create associated preset

Upload

Note that during the upload that the status for the DPI and Snort are displayed.



Name	Size	Upload status	Processing status	Packets first timestamp
OPC_DA_RUN.pcap	7.3 MB	✓	DPI: ✓ Snort: ✓	Jul 5, 2021 5:42:20 PM
smb_putty_xfer.pcap	726.5 kB	✓	DPI: ✓ Snort: ✓	Jun 30, 2021 4:23:24 PM
MergedFile.pcapng	815 MB	3%	DPI: 🕓 Snort: 🕓	
DAN_Rockwell_With_Variables.pcap	1.5 MB	✓	DPI: ✓ Snort: ✓	Jun 30, 2021 11:28:37 AM

If uploading a large file, you have the possibility to pause it. To relaunch the upload, you just need to select the same pcap again with the browse button and click Resume.

Note pcap data cannot be erased individually from Cisco Cyber Vision. You will need to use the Clear data button and it will affect the whole database. Upload pcaps with caution.

CHAPTER 5

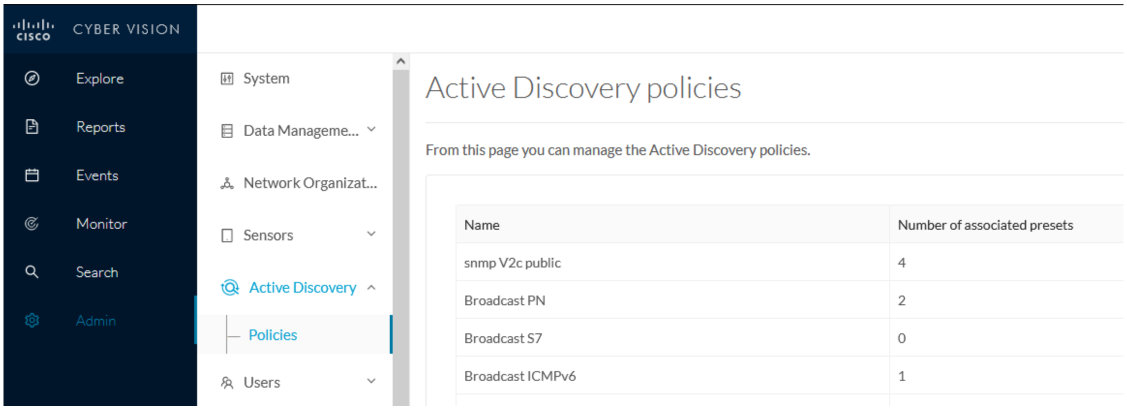
Active Discovery

Active Discovery policies

Active Discovery is used to allow a sensor to send packets to the network to discover previously unseen devices and gather additional properties for known devices.

Active Discovery operates in Broadcast and Unicast, and responses received will be analyzed by Cisco Cyber Vision.

An Active Discovery policy is a list of settings which define protocols and their parameters that will be used to scan the industrial network. The policy will be used in a preset and be applied on a list of sensors and components.



Active Discovery policies

From this page you can manage the Active Discovery policies.

Name	Number of associated presets
snmp V2c public	4
Broadcast PN	2
Broadcast S7	0
Broadcast ICMPv6	1

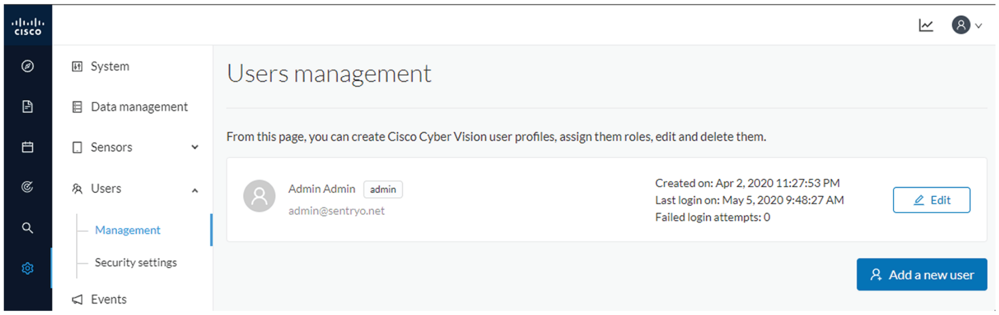
For more information, refer to the Cisco Cyber Vision Active Discovery Configuration Guide.

CHAPTER 6

Users

Management

You can create, edit and delete users through the users administration page.



Users management

From this page, you can create Cisco Cyber Vision user profiles, assign them roles, edit and delete them.

Admin Admin admin
admin@sentryo.net

Created on: Apr 2, 2020 11:27:53 PM
Last login on: May 5, 2020 9:48:27 AM
Failed login attempts: 0

During their creation each user must be assigned with one of the following user roles (from full rights to read-only) or with a custom role (refer to Role Management).

- **Admin**

  The Admin user has full rights on the Cisco Cyber Vision platform. Users who have this role assigned oversee all sensitive actions like user rights management, system updates, syslog configuration, reset and capture modes configuration on sensors.

- **Product**

  The product user has access to several features of the system administration page (i.e. the system, sensors and events administration pages). This access level is for users who manage sensors from a remote location. In addition, they can manage the severity of events and, if enabled by the Admin user, can manage their export to syslog.

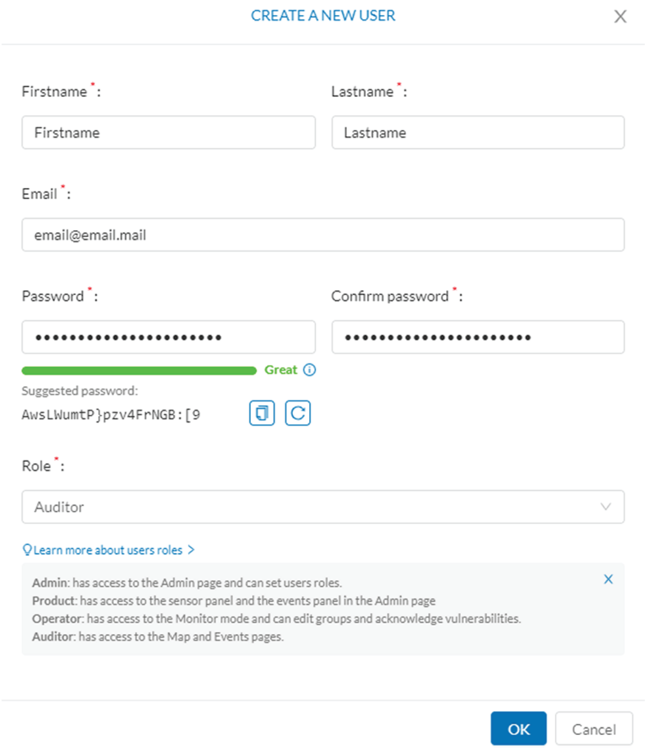
- **Operator**

This access level is for users who use the Monitor mode and manage groups but do not have to work with the platform administration. Thus, the Operator user has access to all pages, except the system administration page.

- **Auditor**

  This access level provides read-only access to the Explore, Reports, Events and Search pages. Auditors can use sorting features (such as search bars and filters) that do not require persistent changes to the Cisco Cyber Vision data (unlike Autolayout), and generate reports.

You can create as many users as needed with any user rights. Thus, several administrators can use and administrate the whole platform.



CREATE A NEW USER

Firstname *: Firstname

Lastname *: Lastname

Email *: email@email.mail

Password *: ••••••••••••••••••••••

Confirm password *: ••••••••••••••••••••••

Great

Suggested password:
AwsLWumtP}pzv4FrNGB:[9

Role *: Auditor

Learn more about users roles >

Admin: has access to the Admin page and can set users roles.
Product: has access to the sensor panel and the events panel in the Admin page
Operator: has access to the Monitor mode and can edit groups and acknowledge vulnerabilities.
Auditor: has access to the Map and Events pages.

However, each user must have their own account. That is:

- Accounts must be nominative.
- One email address for several accounts is not allowed (note that email will be requested for login access).

  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: ~!"#$%&’()*+,-./:;<=>?@[]^_{|}.

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

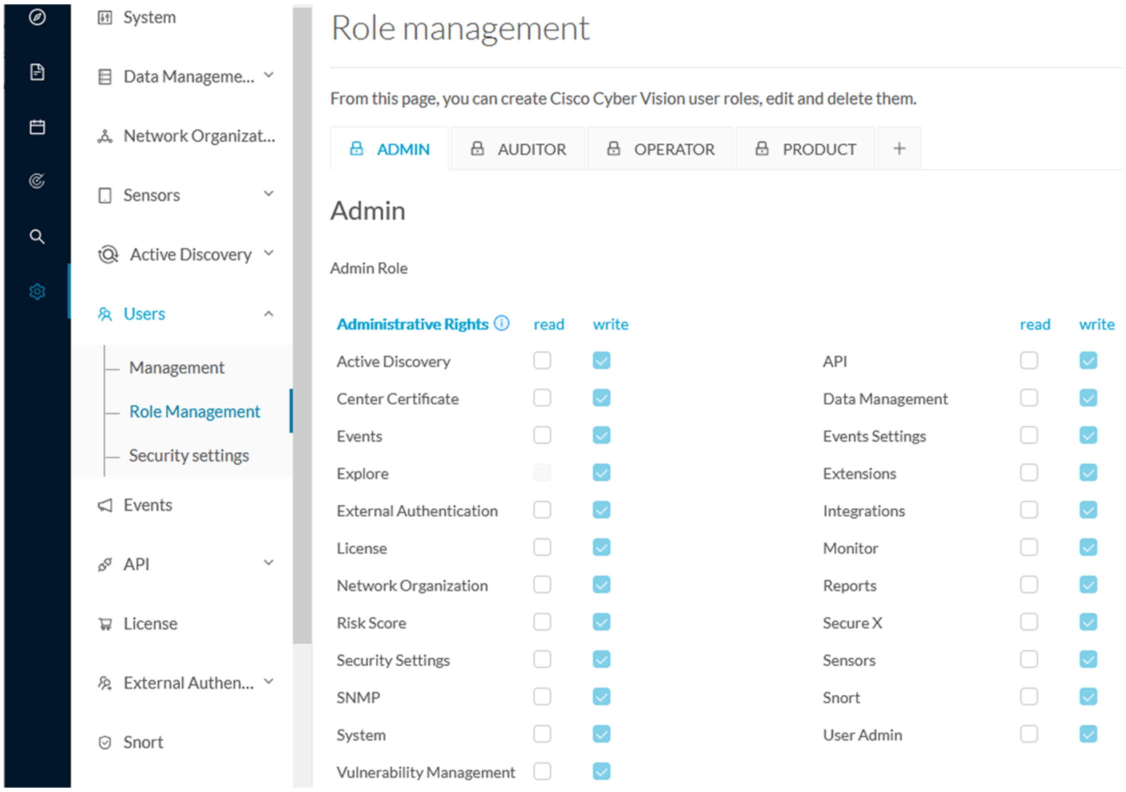
Passwords' lifetime is defined in the Security settings.

You can create custom user roles in the Role Management.

You can map Cisco Cyber Vision user roles with an external directory's user groups in the LDAP settings page.

Role Management

In addition to the four Cisco Cyber Vision default roles (i.e. Admin, Auditor, Operator and Product), customized roles can be created and modified from the Role management page.



Role management

From this page, you can create Cisco Cyber Vision user roles, edit and delete them.

Admin

Admin Role

Administrative Rights	read	write		read	write
Active Discovery	□	☑	API	□	☑
Center Certificate	□	☑	Data Management	□	☑
Events	□	☑	Events Settings	□	☑
Explore	□	☑	Extensions	□	☑
External Authentication	□	☑	Integrations	□	☑
License	□	☑	Monitor	□	☑
Network Organization	□	☑	Reports	□	☑
Risk Score	□	☑	Secure X	□	☑
Security Settings	□	☑	Sensors	□	☑
SNMP	□	☑	Snort	□	☑
System	□	☑	User Admin	□	☑
Vulnerability Management	□	☑			

These roles will help you defining specific privileges and accesses for each group of users.

Default roles cannot be edited or deleted.

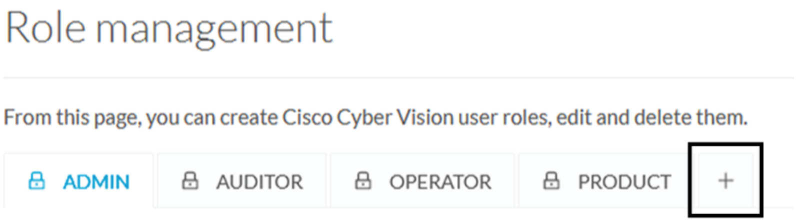
You can map Cisco Cyber Vision custom roles with an external directory's user groups in the LDAP settings page.

Create roles

This section explains how to create customized user roles on Cisco Cyber Vision. These can be later mapped to groups in Active Directory.

Step 1 In Cisco Cyber Vision, navigate to Admin > Users > Role Management.

Step 2 Click the + button next to default user roles.

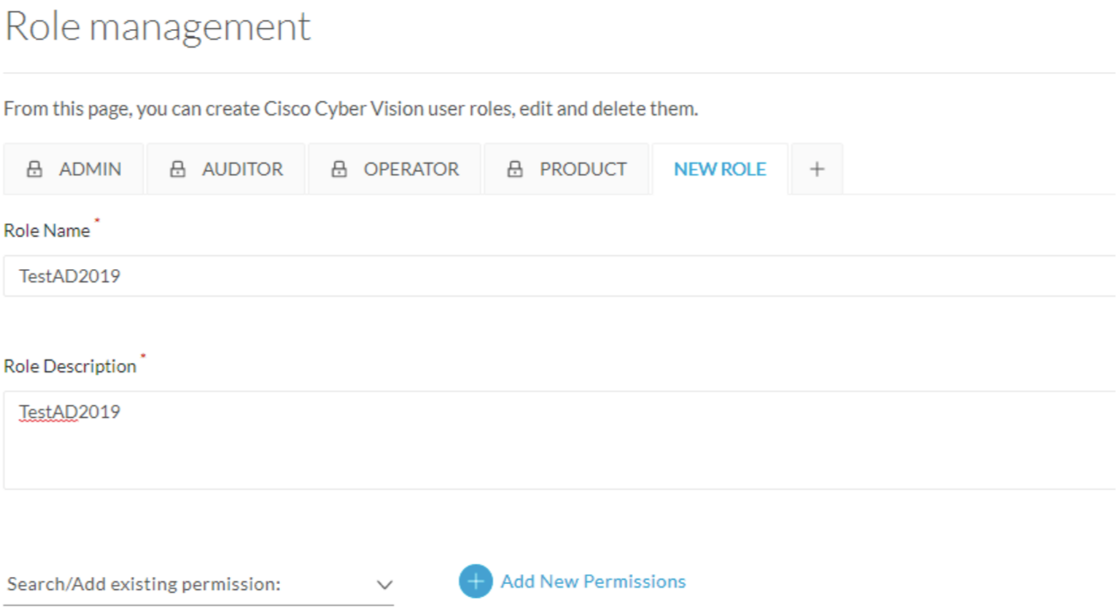


Role management

From this page, you can create Cisco Cyber Vision user roles, edit and delete them.

A new role tab appears.

Step 3 Type a role name and a description.



Role management

From this page, you can create Cisco Cyber Vision user roles, edit and delete them.

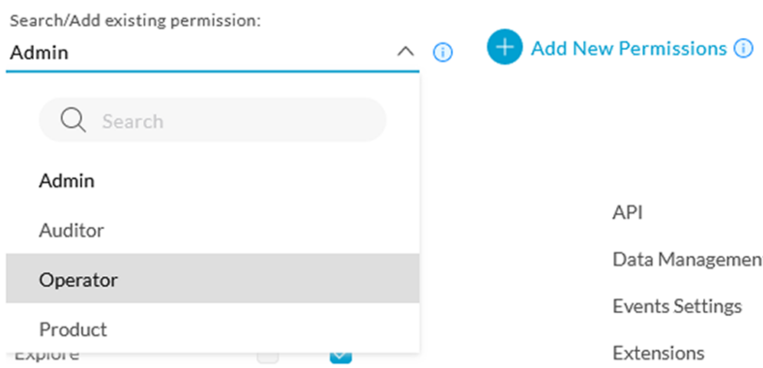
Role Name *

TestAD2019

Role Description *

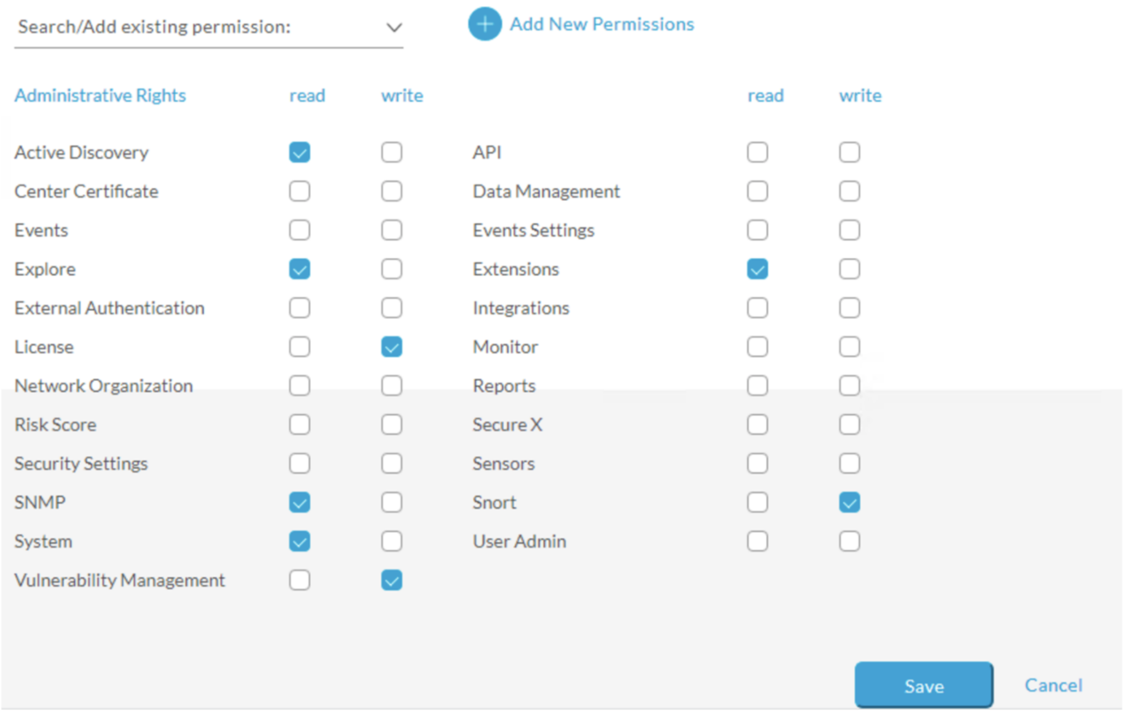
TestAD2019

Step 4 Select an existing role from the Search/Add existing permissions drop down menu, or click the Add New Permissions button to build the new user role from scratch.



Search/Add existing permission: Admin

Step 5 Select/unselect permissions from the list as read or write

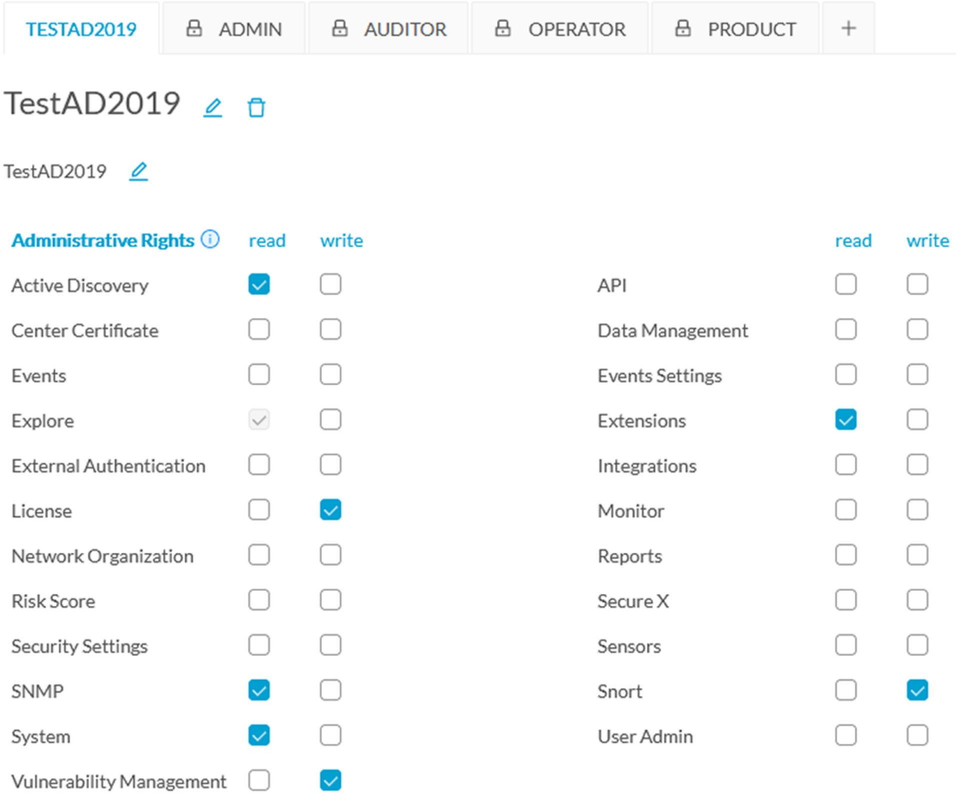


Administrative Rights	read	write		read	write
Active Discovery	☑	□	API	□	□
Center Certificate	□	□	Data Management	□	□
Events	□	□	Events Settings	□	□
Explore	☑	□	Extensions	☑	□
External Authentication	□	□	Integrations	□	□
License	□	☑	Monitor	□	□
Network Organization	□	□	Reports	□	□
Risk Score	□	□	Secure X	□	□
Security Settings	□	□	Sensors	□	□
SNMP	☑	□	Snort	□	☑
System	☑	□	User Admin	□	□
Vulnerability Management	□	☑			

Step 6 Click save.

A message saying that the user role has been created successfully appears.

The new user role is displayed in the tab list.



TestAD2019

TestAD2019

Administrative Rights	read	write		read	write
Active Discovery	☑	□	API	□	□
Center Certificate	□	□	Data Management	□	□
Events	□	□	Events Settings	□	□
Explore	☑	□	Extensions	☑	□
External Authentication	□	□	Integrations	□	□
License	□	☑	Monitor	□	□
Network Organization	□	□	Reports	□	□
Risk Score	□	□	Secure X	□	□
Security Settings	□	□	Sensors	□	□
SNMP	☑	□	Snort	□	☑
System	☑	□	User Admin	□	□
Vulnerability Management	□	☑			

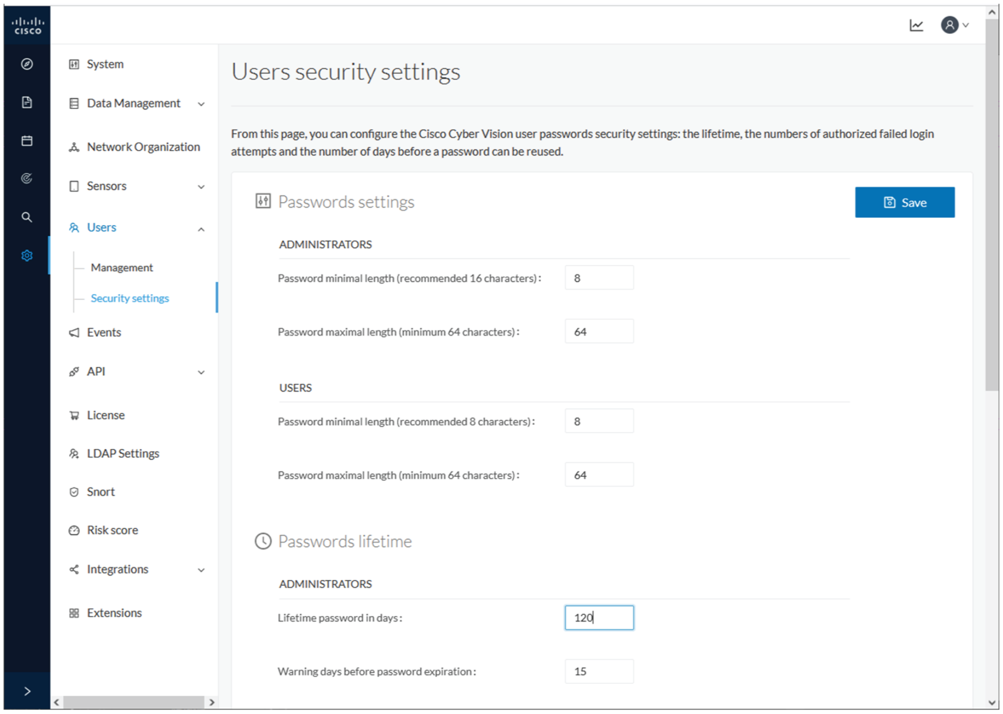
You can modify or delete directly in the tab.

What to do next

Custom roles created can be mapped with an external directory's user groups in the LDAP settings page.

Security settings

From this page you can configure the security settings of users' password such as its lifetime, the number of authorized login attempts, the number of days before a password can be reused, etc.



Users security settings

From this page, you can configure the Cisco Cyber Vision user passwords security settings: the lifetime, the numbers of authorized failed login attempts and the number of days before a password can be reused.

Passwords settings

ADMINISTRATORS

Password minimal length (recommended 16 characters): 8

Password maximal length (minimum 64 characters): 64

USERS

Password minimal length (recommended 8 characters): 8

Password maximal length (minimum 64 characters): 64

Passwords lifetime

ADMINISTRATORS

Lifetime password in days: 120

Warning days before password expiration: 15

CHAPTER 7

Events

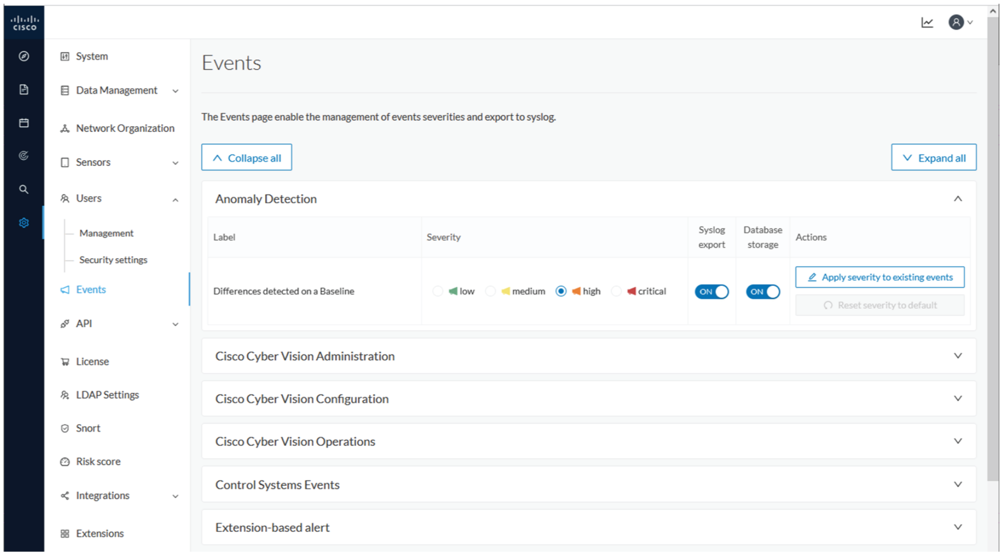
Events

The severity of events can be customized on the events administration page. By default, changes will be applied to future events only. However, you can apply new customized severities to past events by enabling Apply severity to existing events.

Important This action is irreversible and can take several minutes to complete.

You can reset the severity to default.

You can enable or disable the export of events to syslog and database storage. These two options are active by default. However, make sure Syslog configuration before the export.



Events

The Events page enable the management of events severities and export to syslog.

Anomaly Detection

Label	Severity	Syslog export	Database storage	Actions
Differences detected on a Baseline	○ low ○ medium ● high ○ critical	ON	ON	Apply severity to existing events Reset severity to default

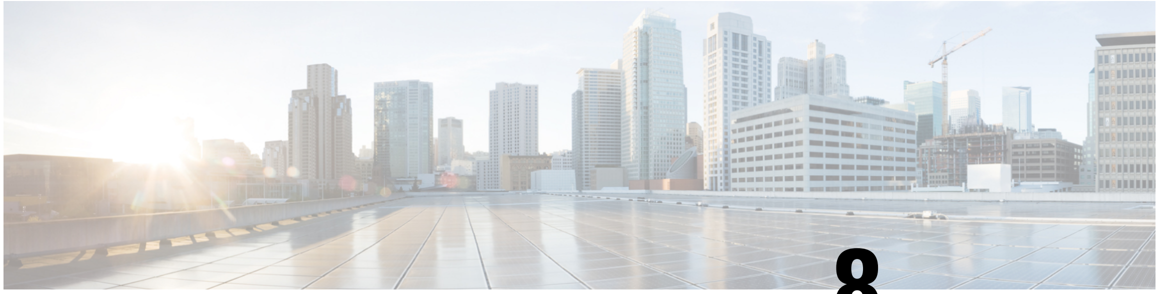
Cisco Cyber Vision Administration

Cisco Cyber Vision Configuration

Cisco Cyber Vision Operations

Control Systems Events

Extension-based alert



CHAPTER 8

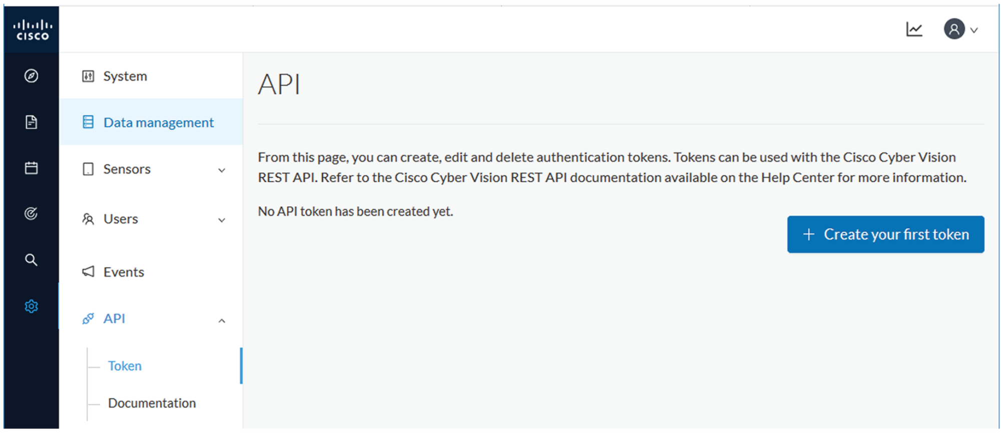
API

Token

Cisco provides a REST API. To use it you first need to create a token through the API administration page.

A token is a random password which authenticates a request to Cisco Cyber Vision to access or even modify the data in the Center through the REST API. For instance, you can request the latest 10 components detected on Cisco Cyber Vision or create new references. Requests can be used by external applications like a SOC solution.

Note Best practice: create one token per application so you can remove or expire accesses separately.

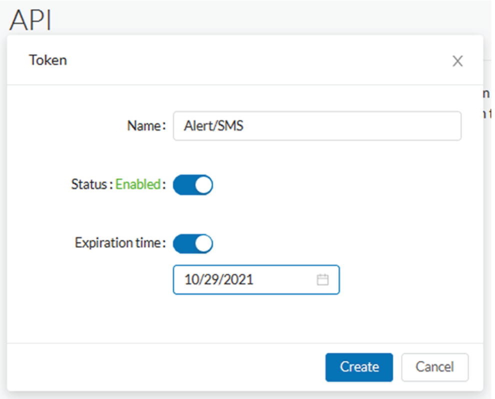


API

From this page, you can create, edit and delete authentication tokens. Tokens can be used with the Cisco Cyber Vision REST API. Refer to the Cisco Cyber Vision REST API documentation available on the Help Center for more information.

No API token has been created yet.

Create your first token and enter a name that will help you identifying the token. For security reasons you can also use the status toggle button to disable authorization to use the token (for example, if the token created is to be used later and you want to prevent access until then) and set an expiration time.



API

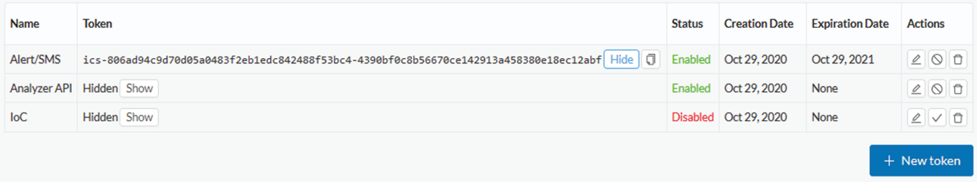
Token

Name: Alert/SMS

Status: Enabled:

Expiration time: 10/29/2021

Once the token is created click show to see and copy the token to the clipboard.



Name	Token	Status	Creation Date	Expiration Date	Actions
Alert/SMS	ics-806ad94c9d70d05a0483f2eb1edc842488f53bc4-4390bf0c8b56670ce142913a458380e18ec12abf Hide	Enabled	Oct 29, 2020	Oct 29, 2021	
Analyzer API	Hidden Show	Enabled	Oct 29, 2020	None	
IoC	Hidden Show	Disabled	Oct 29, 2020	None	✓

For more information about the REST API refer to the REST API user documentation available on cisco.com.

Documentation

This page is a simplified API development feature. It contains an advanced API documentation with a list of all possible routes that can be used and, as you scroll down the page to Models, a list of possible data responses (data type, code values and meaning).

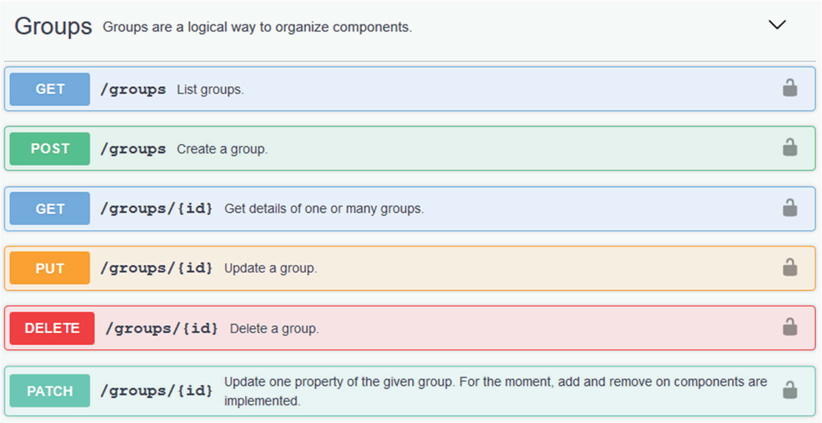
In addition to information research, this page allows you to perform basic tests and call the API by sending requests such as GET, DELETE and POST. You will get real results from the Center dataset. Specifications about routes are available such as the route's structure, and parameters and arguments that can be set. An URL is generated and curl can be used in a terminal as it is.

However, for an advanced use, you must create an application that will send requests to the API (refer to the REST API documentation).

Important All routes other than GET will modify data on the Center. As some actions cannot be reversed, use DELETE, PATCH, POST, PUT with caution.

Routes are classified by Cisco Cyber Vision's elements type (activities, baselines, components, flows, groups, etc.).

The category "Groups" containing all possible group routes:



Groups Groups are a logical way to organize components.

GET `/groups` List groups.

POST `/groups` Create a group.

GET `/groups/{id}` Get details of one or many groups.

PUT `/groups/{id}` Update a group.

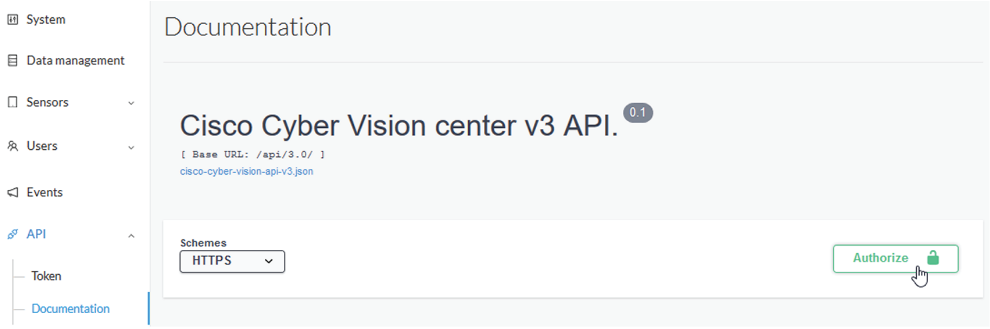
DELETE `/groups/{id}` Delete a group.

PATCH `/groups/{id}` Update one property of the given group. For the moment, add and remove on components are implemented.

To authorize API communications:

Step 1 Access the API Token menu to create and/or copy a Token.

Access the API Documentation page and click the Authorize button.



Documentation

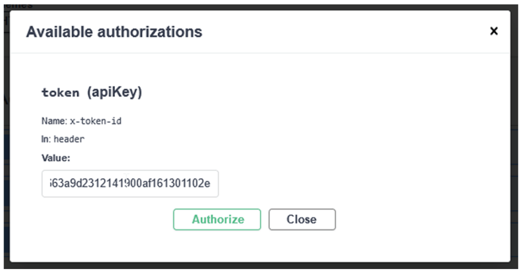
Cisco Cyber Vision center v3 API. 0.1

[Base URL: /api/3.0/]
cisco-cyber-vision-api-v3.json

Schemes: HTTPS

Step 2 Paste the token.

Step 3 Click Authorize.



Available authorizations ×

token (apiKey)

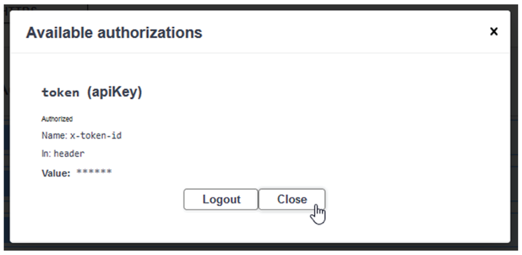
Name: x-token-id

In: header

Value:

i63a9d2312141900af161301102e

Step 4 Click Close.



Available authorizations

token (apiKey)

Authorized

Name: x-token-id

In: header

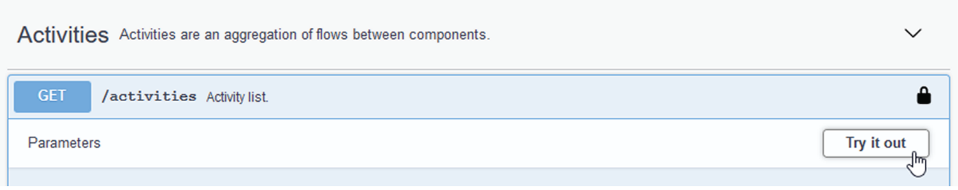
Value: ******

Closed lockers displays. They indicate that routes are secured and authorization to use them is up.

To use a route:

Step 5 Click a route to deploy it. In the example, we choose Get activity list.

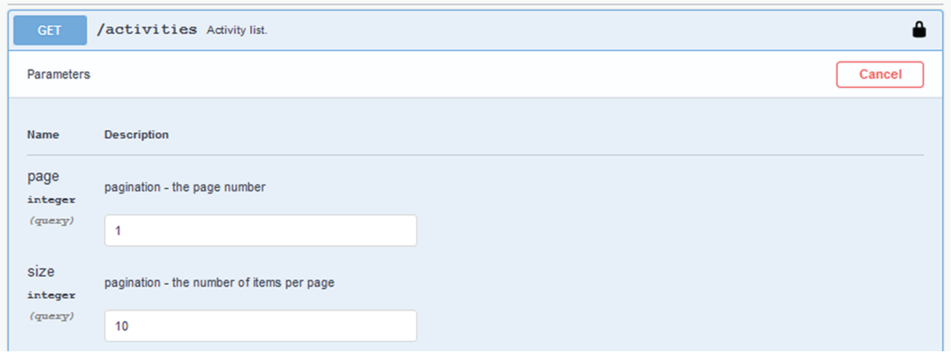
Step 6 Click Try it out.



Activities Activities are an aggregation of flows between components.

GET /activities Activity list.

Step 7 You can set some parameters. In the example, we set page to 1 and size to 10.



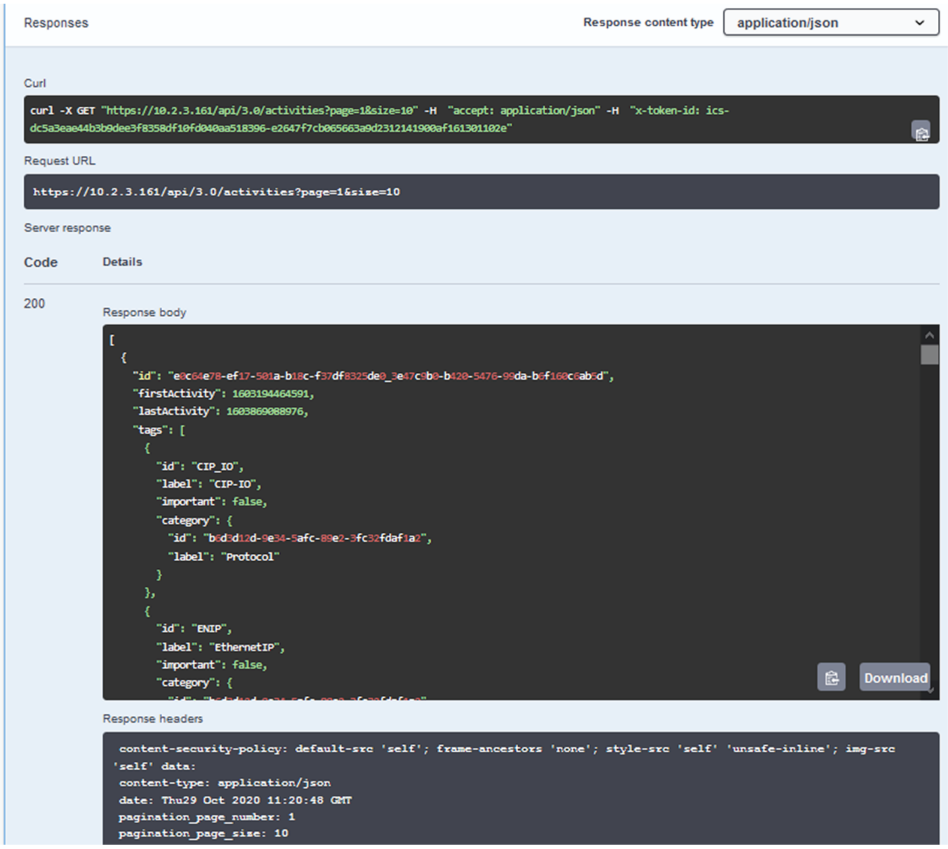
GET /activities Activity list.

Name	Description
page integer (query)	pagination - the page number 1
size integer (query)	pagination - the number of items per page 10

Step 8 Click Execute.

Note You can only execute one route at a time.

A loading icon appears for a few moments. Responses display with curl, Request URL and the server response that you can copy or even download.



Curl

```
curl -X GET "https://10.2.3.161/api/3.0/activities?page=1&size=10" -H  "accept: application/json" -H  "x-token-id: ics-
dc5a3eae44b3b9dee3f8358df10fd040aa518396-e2647f7cb065663a9d2312141900af161301102e"
```

Request URL

```
https://10.2.3.161/api/3.0/activities?page=1&size=10
```

Server response

Code	Details
200	Response body

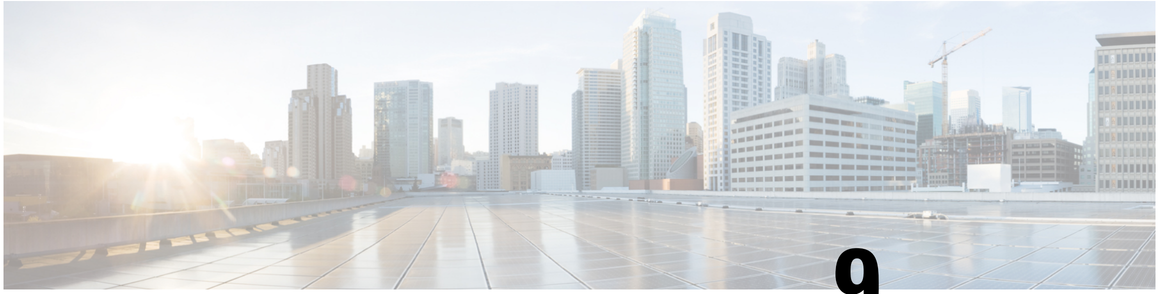
```
[
  {
    "id": "e0c64e78-ef17-501a-b18c-f37df8325de0_3e47c9b0-b420-5476-99da-b6f160c6ab5d",
    "firstActivity": 1603194464591,
    "lastActivity": 1603869088976,
    "tags": [
      {
        "id": "CIP_IO",
        "label": "CIP-IO",
        "important": false,
        "category": {
          "id": "b6d3d12d-9e34-5afc-89e2-3fc32fdaf1a2",
          "label": "Protocol"
        }
      },
      {
        "id": "ENIP",
        "label": "EthernetIP",
        "important": false,
        "category": {
```

Response headers

```
 content-security-policy: default-src 'self'; frame-ancestors 'none'; style-src 'self' 'unsafe-inline'; img-src
'self' data:
 content-type: application/json
 date: Thu29 Oct 2020 11:20:48 GMT
 pagination_page_number: 1
 pagination_page_size: 10
```

Step 9 When you're finished, click the Authorize button.

Step 10 Logout to clean the token variable, and click Close.



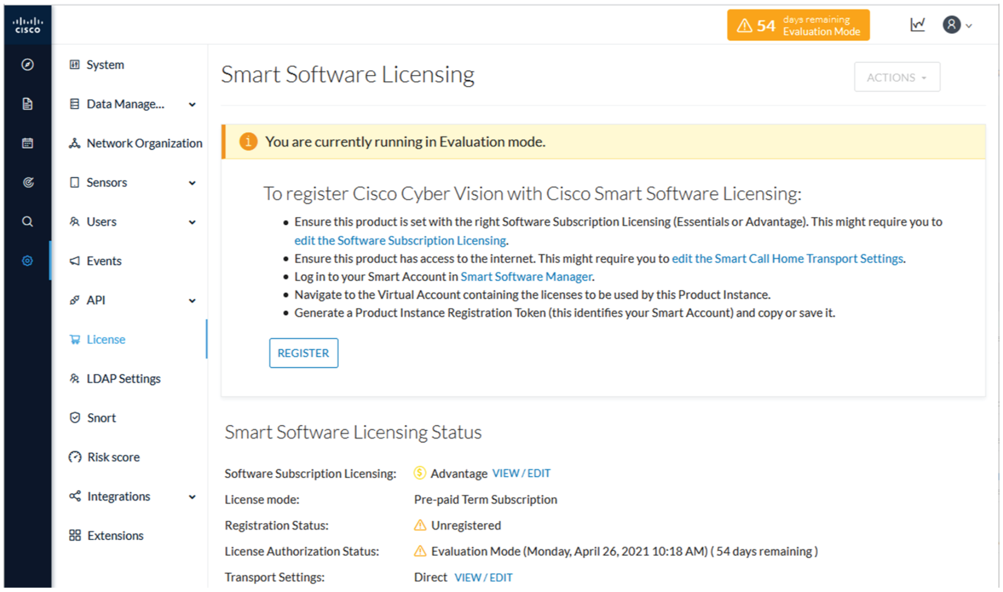
CHAPTER 9

License

License

You can install a license in Cisco Cyber Vision in the License administration panel.

Licensing is based on device count. For device count to be more accurate, it is advised to setup the subnetworks of the monitored industrial network through the Network organization page. By doing so, you will declare which subnetworks are internal, and which are external. Devices from external subnetworks will be excluded from the license count and related costs would be reduced.



Smart Software Licensing

You are currently running in Evaluation mode.

To register Cisco Cyber Vision with Cisco Smart Software Licensing:

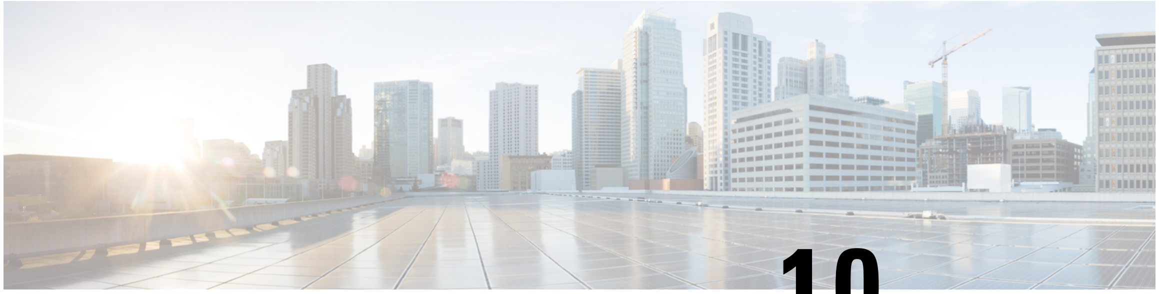
- Ensure this product is set with the right Software Subscription Licensing (Essentials or Advantage). This might require you to edit the Software Subscription Licensing.
- Ensure this product has access to the internet. This might require you to edit the Smart Call Home Transport Settings.
- Log in to your Smart Account in Smart Software Manager.
- Navigate to the Virtual Account containing the licenses to be used by this Product Instance.
- Generate a Product Instance Registration Token (this identifies your Smart Account) and copy or save it.

REGISTER

Smart Software Licensing Status

Software Subscription Licensing:	Advantage VIEW / EDIT
License mode:	Pre-paid Term Subscription
Registration Status:	⚠ Unregistered
License Authorization Status:	⚠ Evaluation Mode (Monday, April 26, 2021 10:18 AM) (54 days remaining)
Transport Settings:	Direct VIEW / EDIT

For more information about how to install a license, refer to the Cisco Cyber Vision Smart Licensing User Guide available on cisco.com.



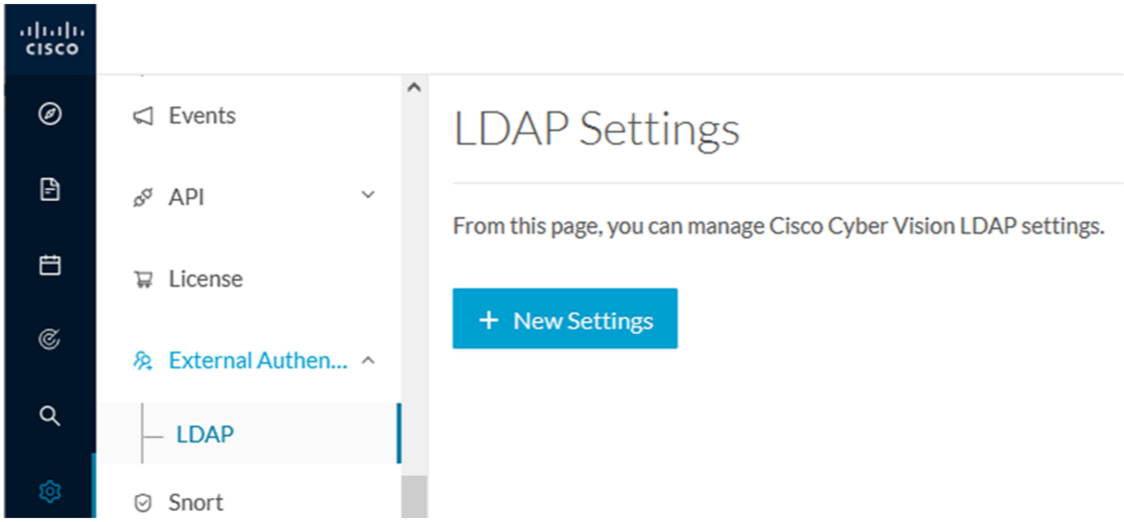
CHAPTER 10

External Authentication

LDAP

Cisco Cyber Vision can delegate user authentication to external services using LDAP (Lightweight Directory Access Protocol), and in particular to Microsoft Active Directory services.

You can enable LDAP authentication in the LDAP Settings administration page.



LDAP Settings

From this page, you can manage Cisco Cyber Vision LDAP settings.

Configuring LDAP:

LDAP integration can be done through normal connection or securely by using certificates depending on the installation compatibility.

Mapping Cisco Cyber Vision roles with Microsoft Active Directory groups:

User groups available in the external directory can be mapped to Cisco Cyber Vision Product, Operator and Auditor user roles or custom roles. Refer to Role Management to create custom roles.

Because the Admin user role is exclusively reserved for Cisco Cyber Vision internal usage, it cannot be mapped to any external users and thus is not proposed in LDAP settings.

Testing LDAP connection:

After setting up LDAP, the connection between the Cisco Cyber Vision Center and the external directory is to be tested. On the LDAP test connection window, you will use a user login and a password set in the external directory. The Center will attempt to authenticate on the directory server with these credentials. In return, you will get either a successful authentication, or a failed one with an error message.

Login in Cisco Cyber Vision:

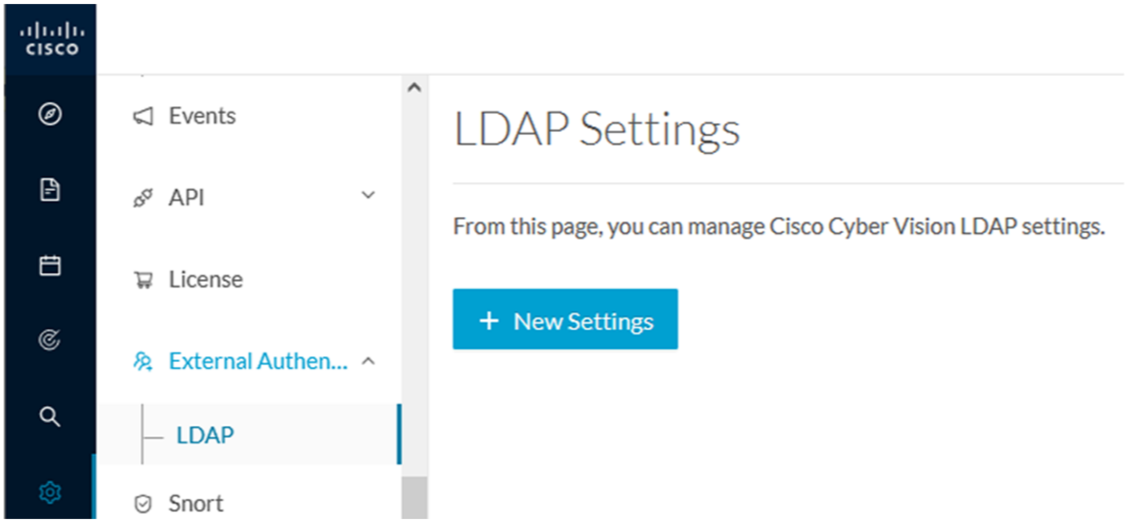
When logging into Cisco Cyber Vision, the login format used will determine the base (i.e. internal or external) to be queried:

- If you use an email, the Cisco Cyber Vision database is queried.
- If you use the Active Directory format <domain_name>\<user_name> (e.g. cisco\john_doe), then the external directory is used to authenticate users.

Configure LDAP

This section explains how to configure LDAP in Cisco Cyber Vision using a normal connection or a secure connection.

Step 1 In Cisco Cyber Vision, navigate to Admin > External Authentication > LDAP.

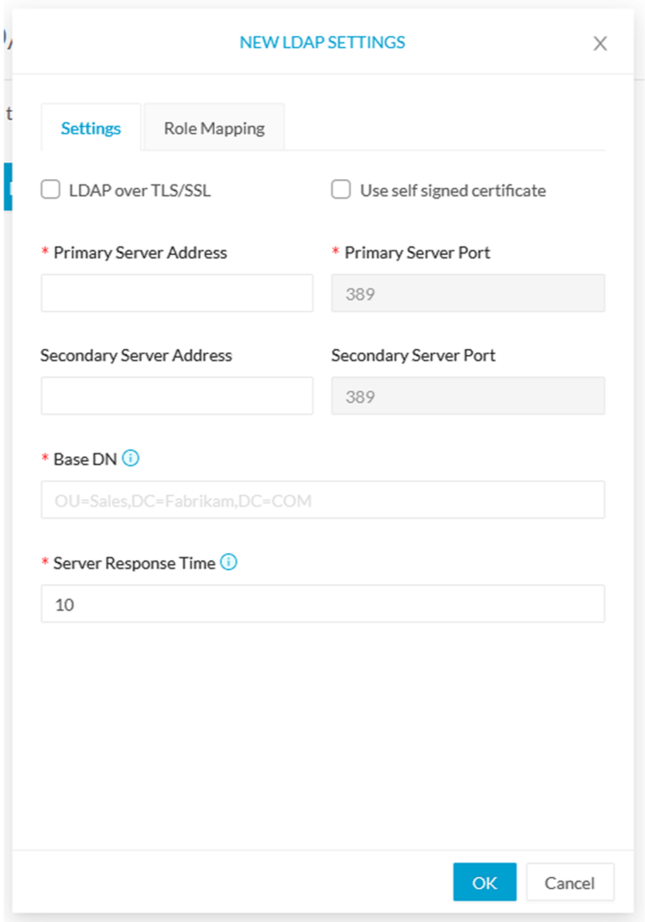


LDAP Settings

From this page, you can manage Cisco Cyber Vision LDAP settings.

Step 2 Click New Settings.

The New LDAP Settings window pops up.



NEW LDAP SETTINGS

Settings | Role Mapping

☐ LDAP over TLS/SSL ☐ Use self signed certificate

* Primary Server Address:

* Primary Server Port: 389

Secondary Server Address:

Secondary Server Port: 389

* Base DN: OU=Sales,DC=Fabrikam,DC=COM

* Server Response Time: 10

What to do next

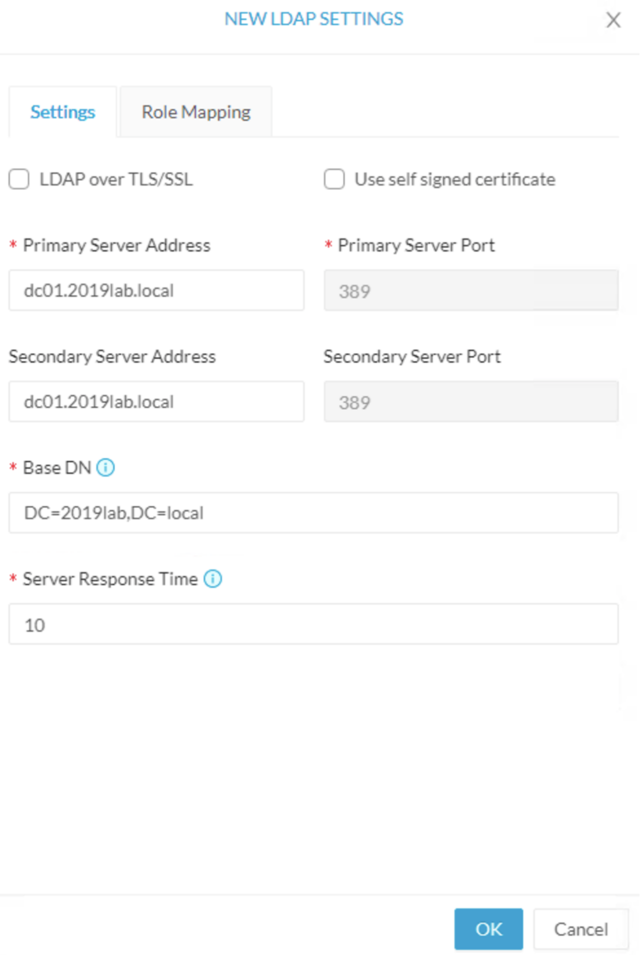
Configure LDAP using a LDAP normal connection or a LDAP secure connection.

LDAP normal connection

After clicking the New Settings button, the following New LDAP Settings window pops up.

Before you begin

Step 1 Fill in the LDAP settings.



□ LDAP over TLS/SSL

□ Use self signed certificate

* Primary Server Address: dc01.2019lab.local

* Primary Server Port: 389

Secondary Server Address: dc01.2019lab.local

Secondary Server Port: 389

* Base DN: DC=2019lab,DC=local

* Server Response Time: 10

Step 2 Click the Role Mapping tab.

Step 3 Fill in the following fields:

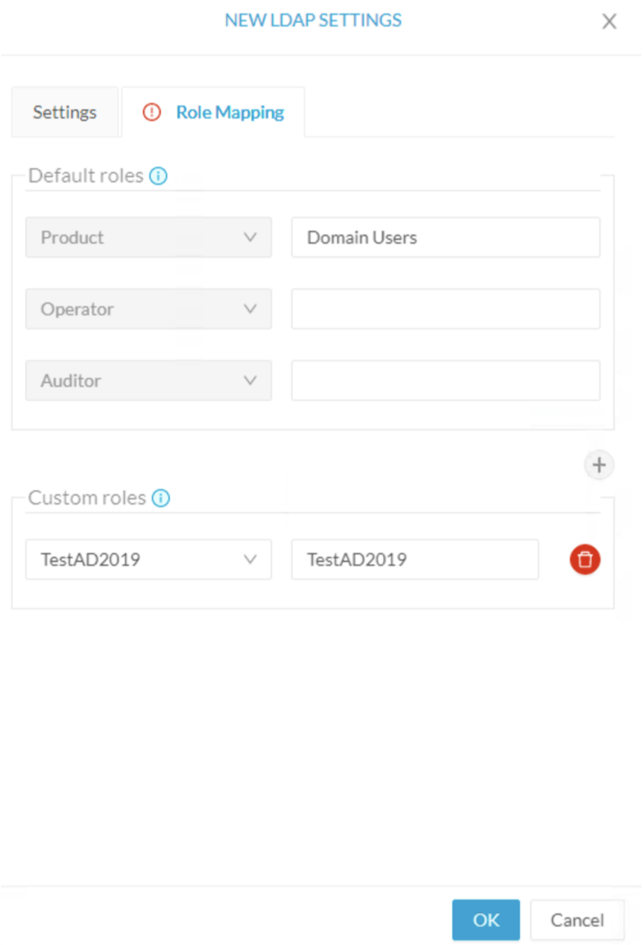
a) Map one or more Cisco Cyber Vision default roles with an Active Directory group.

Note At least one default role must be mapped.

Note Because the Admin user role is exclusively reserved for Cisco Cyber Vision internal usage, it cannot be mapped to any external users and thus is not proposed in LDAP settings.

b) Map Cisco Cyber Vision custom roles with Active Directory groups.

You must type the exact group names as configured into the remote directory so they can be retrieved and mapped to user roles.


NEW LDAP SETTINGS

Settings | Role Mapping

Default roles

Product: Domain Users

Operator:

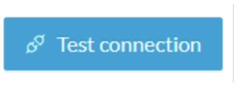
Auditor:

Custom roles

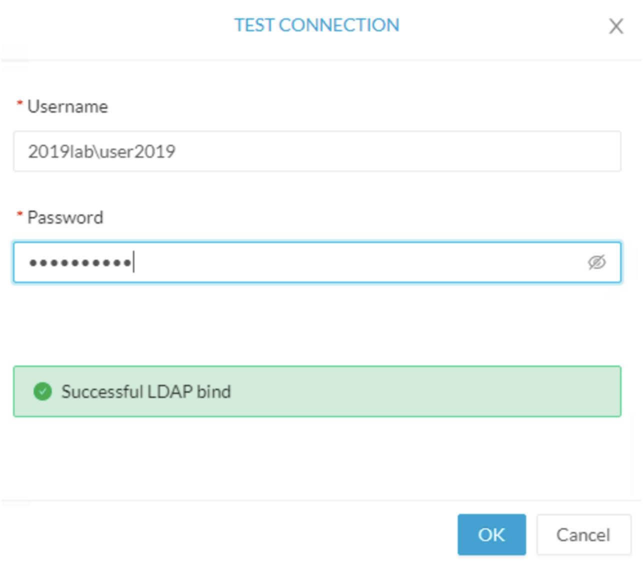
TestAD2019: TestAD2019

Step 4 Click OK.

Step 5 Click the Test connection button.



The Test Connection window pops up.



TEST CONNECTION

* Username

2019lab\user2019

* Password

••••••••••

Successful LDAP bind

Step 6 Enter a user credentials to test the connection between Cisco Cyber Vision and Active Directory.

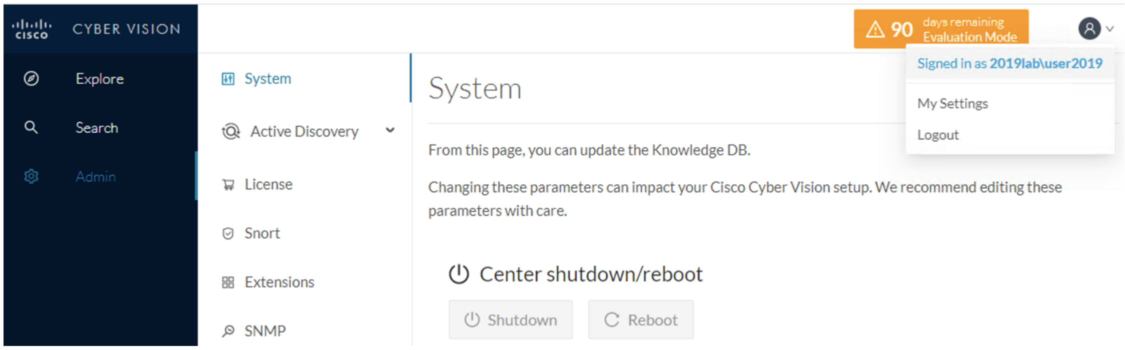
Note The Username format is domain\user.

A message Successful LDPA bind should appear.

Step 7 Click OK.

Step 8 Test the connection by logging out of Cisco Cyber Vision and logging in with the mapped user credentials.

Menus are displayed according to the rights granted to the user.



Signed in as 2019lab\user2019

System

From this page, you can update the Knowledge DB.

Changing these parameters can impact your Cisco Cyber Vision setup. We recommend editing these parameters with care.

Center shutdown/reboot

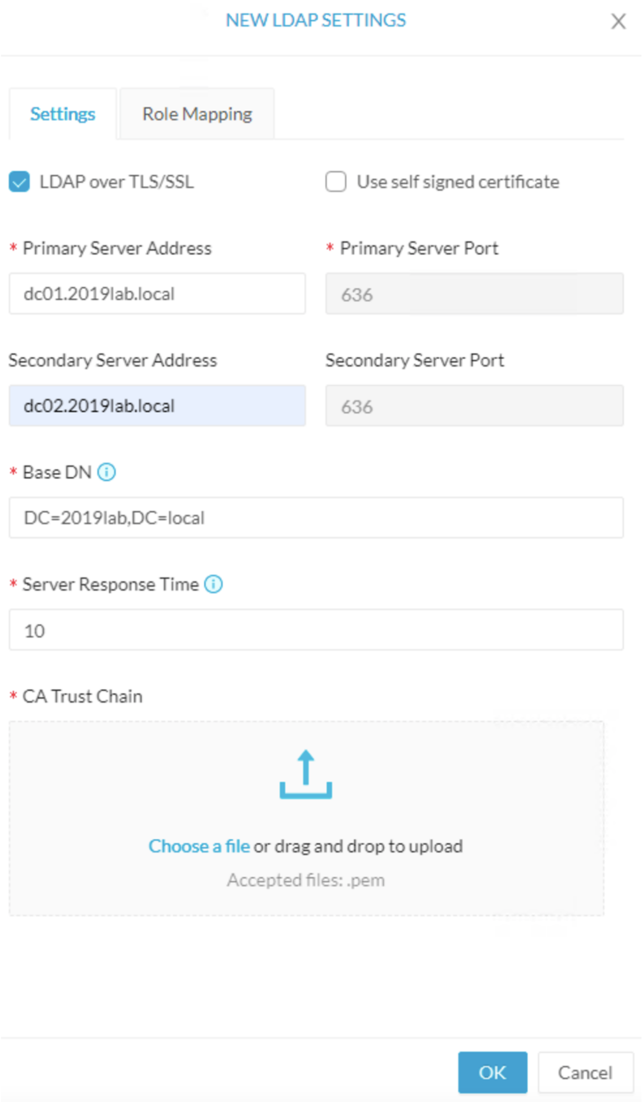
What to do next

LDAP secure connection

After clicking the New Settings button, the following New LDAP Settings window pops up.

Before you begin

Step 1 Fill in the following fields:



NEW LDAP SETTINGS

☑ LDAP over TLS/SSL

□ Use self signed certificate

* Primary Server Address: dc01.2019lab.local

* Primary Server Port: 636

Secondary Server Address: dc02.2019lab.local

Secondary Server Port: 636

* Base DN: DC=2019lab,DC=local

* Server Response Time: 10

* CA Trust Chain

Choose a file or drag and drop to upload

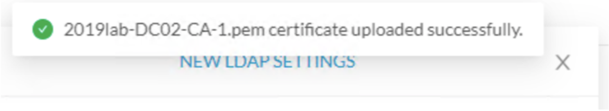
Accepted files: .pem

a) Tick LDAP over TLS/SLL.

b) Fill in the LDAP settings.

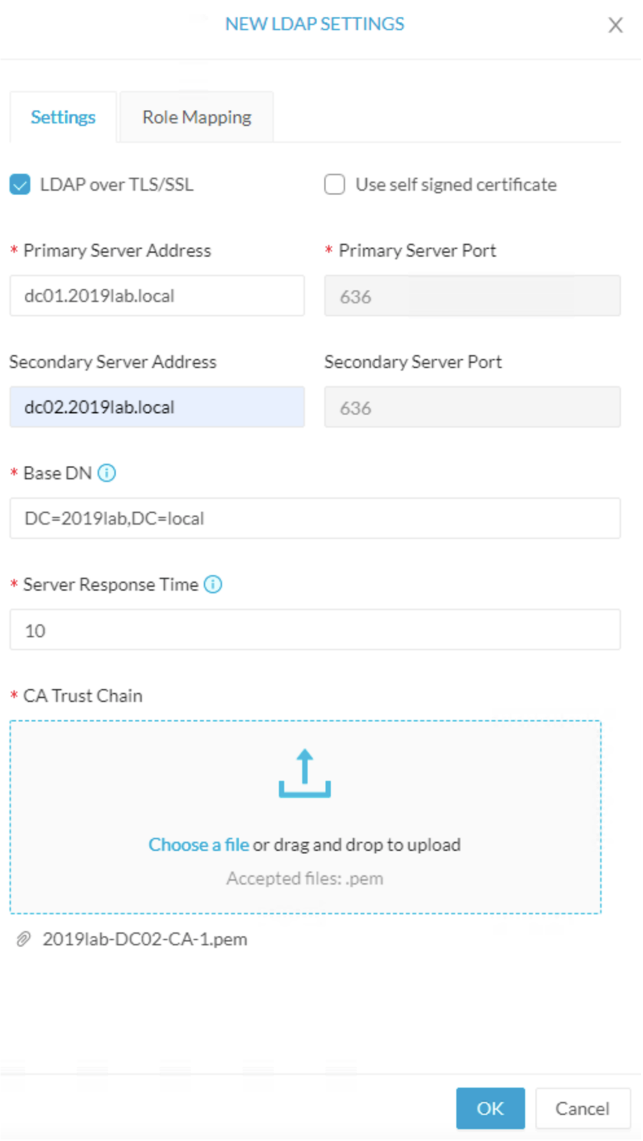
c) Upload a .pem root certificate or a chain certificate, or tick Use a self-signed certificate.

If you upload a certificate, a message indicating that the certificate has been uploaded successfully appears.



2019lab-DC02-CA-1.pem certificate uploaded successfully.

The certificate appears at the bottom of the New LDAP Settings window.



NEW LDAP SETTINGS

Settings | Role Mapping

☑ LDAP over TLS/SSL

□ Use self signed certificate

* Primary Server Address: dc01.2019lab.local

* Primary Server Port: 636

Secondary Server Address: dc02.2019lab.local

Secondary Server Port: 636

* Base DN: DC=2019lab,DC=local

* Server Response Time: 10

* CA Trust Chain

Choose a file or drag and drop to upload

Accepted files: .pem

2019lab-DC02-CA-1.pem

OK | Cancel

Step 2 Click OK.

Step 3 Click the Role Mapping tab.

Step 4 Fill in the following fields:

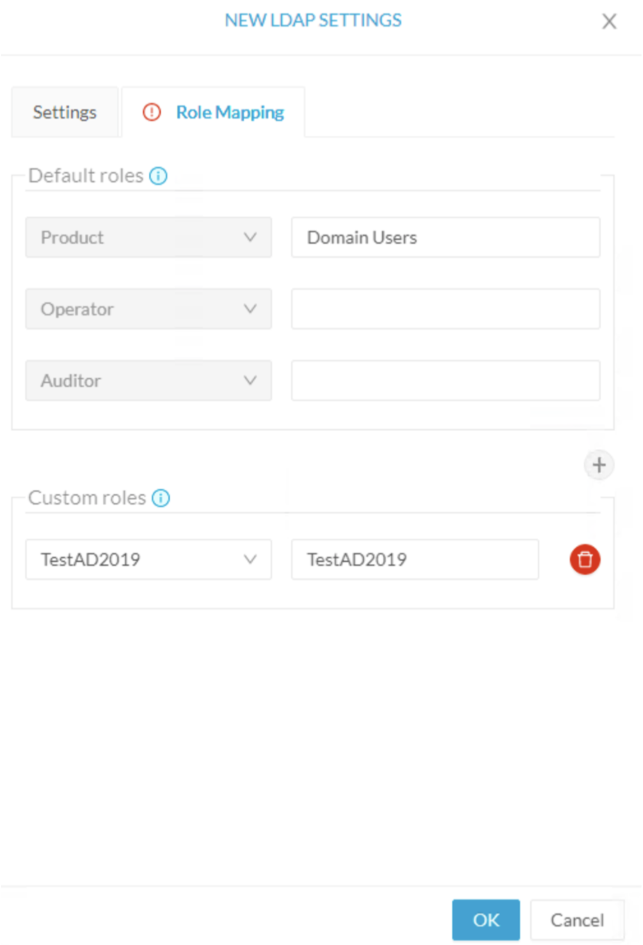
a) Map one or more Cisco Cyber Vision default roles with an Active Directory group.

Note At least one default role must be mapped.

Note Because the Admin user role is exclusively reserved for Cisco Cyber Vision internal usage, it cannot be mapped to any external users and thus is not proposed in LDAP settings.

b) Map Cisco Cyber Vision custom roles with Active Directory groups.

You must type the exact group names as configured into the remote directory so they can be retrieved and mapped to user roles.



Default roles

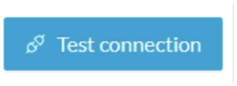
- Product: Domain Users
- Operator:
- Auditor:

Custom roles

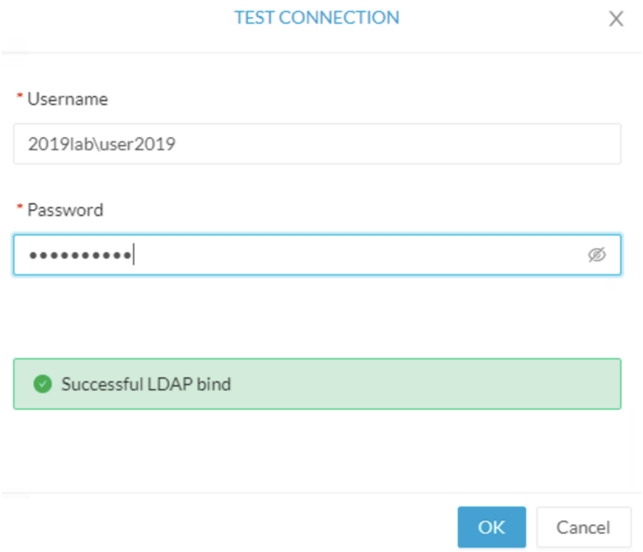
- TestAD2019: TestAD2019

Step 5 Click OK.

Step 6 Click the Test connection button.



The Test Connection window pops up.



* Username

2019lab\user2019

* Password

●●●●●●●●●●●

Successful LDAP bind

Step 7 Enter a user credentials to test the connection between Cisco Cyber Vision and Active Directory.

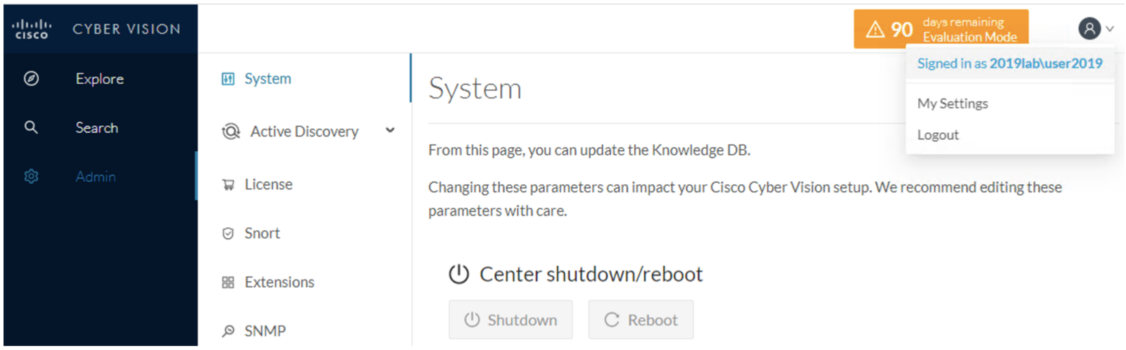
Note The Username format is <domain_name>\<user_name> (e.g. cisco\john_doe).

A message Successful LDPA bind should appear.

Step 8 Click OK.

Step 9 Test the connection by logging out of Cisco Cyber Vision and logging in with the mapped user credentials.

Menus are displayed according to the rights granted to the user.



System

From this page, you can update the Knowledge DB.

Changing these parameters can impact your Cisco Cyber Vision setup. We recommend editing these parameters with care.

Center shutdown/reboot

CHAPTER 11

Snort

Snort

Snort is a Network Intrusion Detection System (NIDS) software which detects malicious network behavior based on a rule matching engine and a set of rules characterizing malicious network activity. Cisco Cyber Vision can run the Snort engine on both the Center and some sensors. The Center stores the configuration rule files, pushes rules on compatible sensors, and intercepts Snort alerts to display them as events in the Cisco Cyber Vision's GUI.

Snort is not activated by default on sensors, so you must first Enable IDS on a sensor.

It is available on the following sensor devices:

- The Cisco IC3000 Industrial Compute Gateway
- The Cisco Catalyst 9300 Series Switches
- The Cisco IR8340 Integrated Services Router Rugged

It is also avaible on the Center DPI, and is enabled by default.

Snort Community Rules is set by default in Cisco Cyber Vision. You can enable Snort Subscriber Rules using the corresponding toggle button **(1)**. Note that this option requires the Advantage licensing and a specific IDS sensor license per enabled sensor.

Community ruleset

- The community ruleset is a Talos certified ruleset that is distributed freely. It includes rules that have been submitted by the open-source community or by Snort integrators. This ruleset is a subset of the full ruleset available to the subscriber users. It does not contain the latest Snort rules and does not ensure coverage of the latest threats.

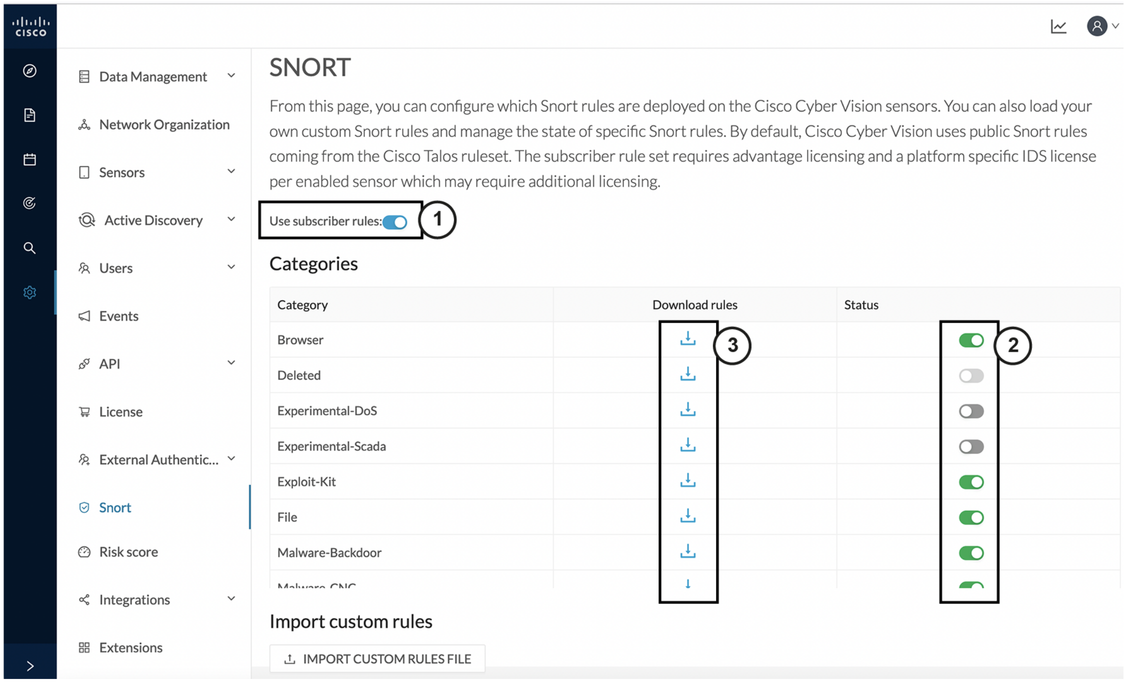
Subscriber ruleset

- The subscriber ruleset includes all the rules released by the Talos Security Intelligence and Research Team. The ruleset ensures fast access to the latest rules and early coverage of exploits. Compared to the

Community ruleset, it contains more rules and remains in sync with the latest Talos research work on vulnerability detection.

In the Snort administration page, you can find Snort rules grouped into categories, and configure which set of rules to enable or not using the toggle status button **(2)**.

You can download each category rule file using the corresponding button **(3)**.



SNORT

From this page, you can configure which Snort rules are deployed on the Cisco Cyber Vision sensors. You can also load your own custom Snort rules and manage the state of specific Snort rules. By default, Cisco Cyber Vision uses public Snort rules coming from the Cisco Talos ruleset. The subscriber rule set requires advantage licensing and a platform specific IDS license per enabled sensor which may require additional licensing.

Use subscriber rules: ●

Categories

Category	Download rules	Status
Browser	⤓	●
Deleted	⤓	○
Experimental-DoS	⤓	○
Experimental-Scada	⤓	○
Exploit-Kit	⤓	●
File	⤓	●
Malware-Backdoor	⤓	●
Malware-CNC	⤓	●

Import custom rules

Note that some rules are **not** enabled inside these categories. So, using the toggle button on a category won't necessarily have an effect on their rules. The ones that are considered the most useful are enabled by default, others have been disabled to avoid performance issues. Consequently, if you want to enable these rules you need to use the Enable/disable a rule.

It is also possible to enable/disable a specific rule from a custom rule file.

Snort rules categories:

- Browser:

  Rules for vulnerabilities present in several browsers including, but not restricted to, Chrome, Firefox, Internet Explorer and Webkit. This category also covers vulnerabilities related to browser plugins such as Active-x.

- Deleted:

  When a rule has been deprecated or replaced it is moved to this category.

- Experimental-DoS:

  Rules developed by the Cisco CyberVision team for various kinds of DoS activities (TCP SYN flooding, DNS/HTTP flooding, LOIC, etc.).

- Experimental-Scada:

  Rules developed by the Cisco CyberVision team for attacks against industrial control system assets.

- Exploit-Kit:

  Rules that are specifically tailored to detect exploit kit activity.

- File:

  Rules for vulnerabilities found in numerous types of files including, but not restricted to, executable files, Microsoft Office files, flash files, image files, Java files, multimedia files and pdf files.

- Malware-Backdoor:

  Rules for the detection of traffic destined to known listening backdoor command channels.

- Malware-CNC:

  Known malicious command and control activity for identified botnet traffic. This includes call home, downloading of dropped files, and ex-filtration of data.

- Malware-Other:

  Rules that deal with tools that can be considered malicious in nature as well as other malware-related rules.

- Misc:

  Rules that do not fit in any other categories such as indicator rules (compromise, scan, obfuscation, etc.), protocol-related rules, policy violation rules (spam, social media, etc.), and rules for the detection of potentially unwanted applications (p2p, toolbars, etc.).

- OS-Other:

  Rules that are looking for vulnerabilites in various operating systems such as Linux based OSes, Mobile based OSes, Solaris based OSes and others.

- OS-Windows

  Rules that are looking for vulnerabilities in Windows based OSes.

- Server-Other:

  Rules dealing with vulnerabilities found in numerous types of servers including, but not restricted to, web servers (Apache, IIS), SQL servers (Microsoft SQL server, MySQL server, Oracle DB server), mail servers (Exchange, Courier) and Samba servers.

- Server-Webapp:

  Rules pertaining to vulnerabilities in or attacks against web based applications on servers.

In case of mistake, or to revert to the default configuration, you can use the **Reset to default** button. Note that all categories status and specific rules status will be reset and any added custom rules file will be deleted.

In addition, this page allows you to import custom rules, to enable or disable rules, and reset Snort's parameters to default.

Enable IDS on a sensor

To enable the Snort engine on a sensor:

Before you begin

To use Snort you need to enable IDS on sensors.

Snort is only compatible with sensors embedded in:

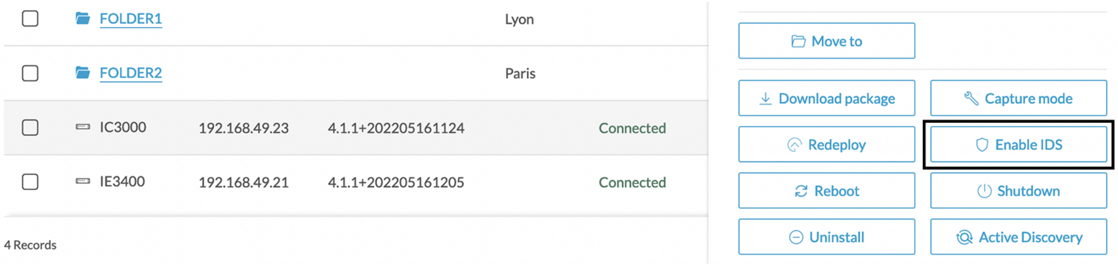
- The Cisco IC3000 Industrial Compute Gateway
- The Cisco Catalyst 9300 Series Switches
- The Cisco IR8340 Integrated Services Router Rugged

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

Step 2 Click a compatible sensor in the list.

The sensor's right side panel opens.

Step 3 Click **Enable IDS**.



□	FOLDER1			Lyon	
□	FOLDER2			Paris	
□	IC3000	192.168.49.23	4.1.1+202205161124		Connected
□	IE3400	192.168.49.21	4.1.1+202205161205		Connected

4 Records

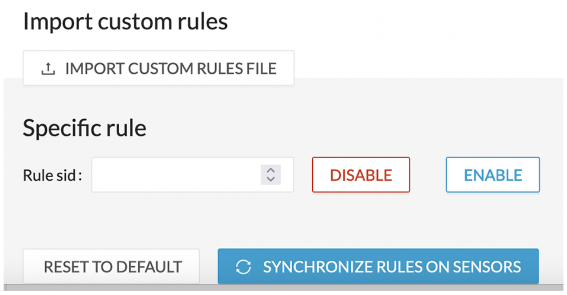
Import Snort custom rules

Custom rules are useful if you want to define and use your own rules in addition to the rules provided in the Cyber Vision rulesets. To do this, a file must be created containing syntactically well-formed Snort rules and imported into Cisco Cyber Vision. Refer to Snort documentation for more information about creating rules.

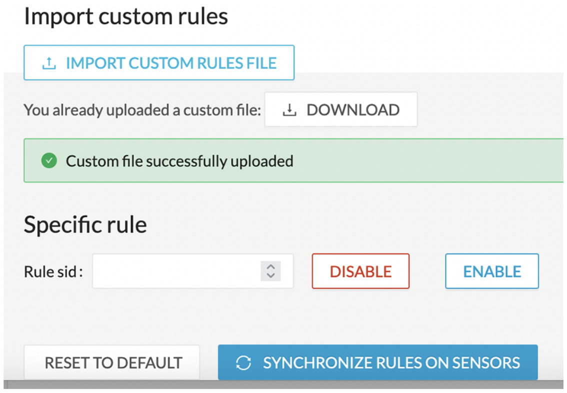
To import custom rules in the Center:

Step 1 Prepare your custom rules file.

Step 2 Click the **Import custom rules file** button.



Once a custom rules file is imported, it is stored in the Center, and a **Download** button appears to check its content.


Import custom rules

IMPORT CUSTOM RULES FILE

You already uploaded a custom file: DOWNLOAD

Custom file successfully uploaded

Specific rule

Rule sid :

DISABLE

ENABLE

RESET TO DEFAULT

SYNCHRONIZE RULES ON SENSORS

Step 3 Click **Synchronize rules on sensors**.

What to do next

You can Enable/disable a rule.

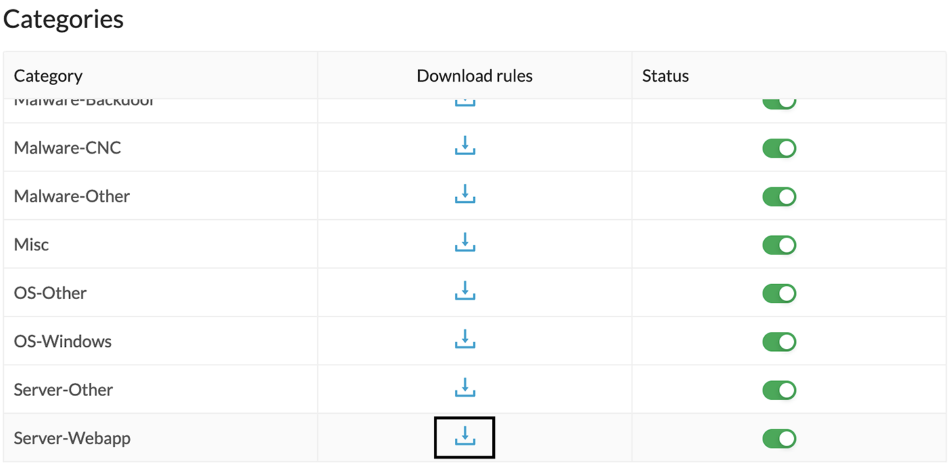
Enable/disable a rule

You can manually enable and disable any specific rule, whether it is a default or a custom one. To do so you need the sid (i.e. signature id) that you will find in the rules file.

In the following procedure, we will disable Snort rule sid 50772 as example.

> **sid 50772**: An unverified password change vulnerability (CVE-2018-7811) exists in the embedded web servers of Schneider Electric Quantum Modicon Ethernet modules. This vulnerability could allow an unauthenticated remote user to access the "change password" functionality of the web server. Snort rule with sid 50772 detects such attempts. It monitors and analyzes HTTP flows coming from the external network and raises an alert when the HTTP URI fields contain specific keywords (ex. "passwd=","cnfpasswd=","subhttppwd=") that indicate a password change attempt targeting the web server.

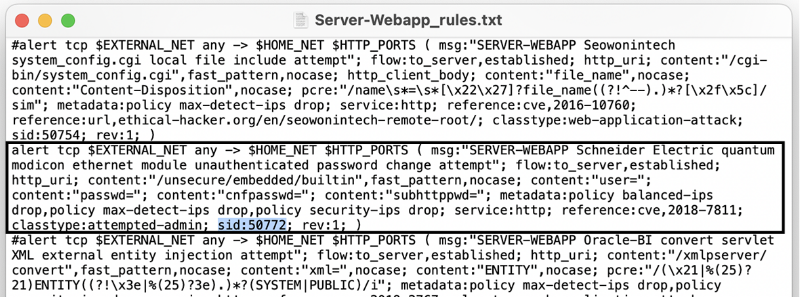
Step 1 Click the **download icon** button.



Categories

Category	Download rules	Status
Malware-Backdoor	⤓	●
Malware-CNC	⤓	●
Malware-Other	⤓	●
Misc	⤓	●
OS-Other	⤓	●
OS-Windows	⤓	●
Server-Other	⤓	●
Server-Webapp	⤓	●

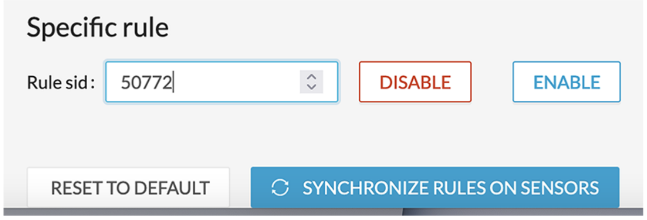
Step 2 In the rule files, look for the rule you want to enable/disable.



Server-Webapp_rules.txt

```
#alert tcp $EXTERNAL_NET any -> $HOME_NET $HTTP_PORTS ( msg:"SERVER-WEBAPP Seowonintech
system_config.cgi local file include attempt"; flow:to_server,established; http_uri; content:"/cgi-
bin/system_config.cgi",fast_pattern,nocase; http_client_body; content:"file_name",nocase;
content:"Content-Disposition",nocase; pcre:"/name\s*=\s*[\x22\x27]?file_name((?!^--).)*?[\x2f\x5c]/
sim"; metadata:policy max-detect-ips drop; service:http; reference:cve,2016-10760;
reference:url,ethical-hacker.org/en/seowonintech-remote-root/; classtype:web-application-attack;
sid:50754; rev:1; )
alert tcp $EXTERNAL_NET any -> $HOME_NET $HTTP_PORTS ( msg:"SERVER-WEBAPP Schneider Electric quantum
modicon ethernet module unauthenticated password change attempt"; flow:to_server,established;
http_uri; content:"/unsecure/embedded/builtin",fast_pattern,nocase; content:"user=";
content:"passwd="; content:"cnfpasswd="; content:"subhttppwd="; metadata:policy balanced-ips
drop,policy max-detect-ips drop,policy security-ips drop; service:http; reference:cve,2018-7811;
classtype:attempted-admin; sid:50772; rev:1; )
#alert tcp $EXTERNAL_NET any -> $HOME_NET $HTTP_PORTS ( msg:"SERVER-WEBAPP Oracle-BI convert servlet
XML external entity injection attempt"; flow:to_server,established; http_uri; content:"/xmlpserver/
convert",fast_pattern,nocase; content:"xml=",nocase; content:"ENTITY",nocase; pcre:"/(\x21|%(25)?
21)ENTITY((?!\x3e|%(25)?3e).)*?(SYSTEM|PUBLIC)/i"; metadata:policy max-detect-ips drop,policy
```

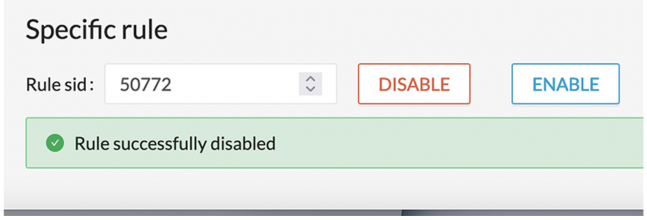
Step 3 Type the rule sid and click **Disable**.



Specific rule

Rule sid : 50772

A message indicating the rule is disabled appears.

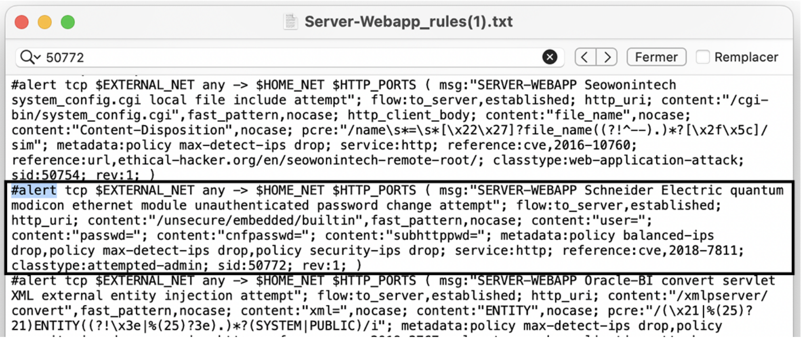


Specific rule

Rule sid : 50772

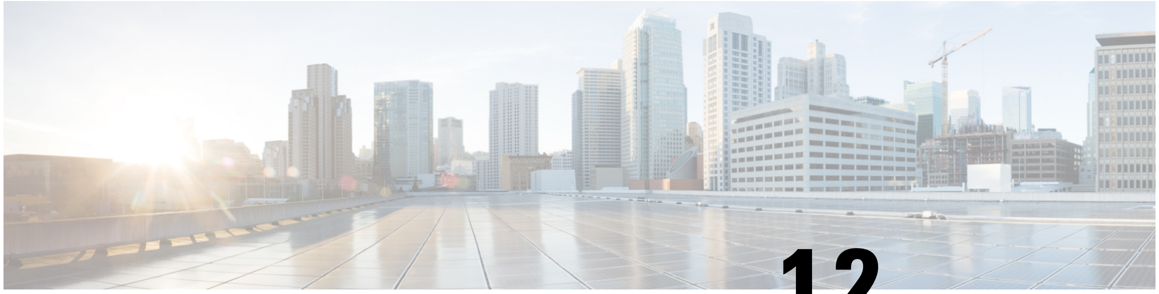
Rule successfully disabled

If you download the rules file again you will find a "#" preceding the rule. This indicates the rule is disabled.



```
#alert tcp $EXTERNAL_NET any -> $HOME_NET $HTTP_PORTS ( msg:"SERVER-WEBAPP Seowonintech
system_config.cgi local file include attempt"; flow:to_server,established; http_uri; content:"/cgi-
bin/system_config.cgi",fast_pattern,nocase; http_client_body; content:"file_name",nocase;
content:"Content-Disposition",nocase; pcre:"/name\s*=\s*[\x22\x27]?file_name((?!^--).)*?[\x2f\x5c]/
sim"; metadata:policy max-detect-ips drop; service:http; reference:cve,2016-10760;
reference:url,ethical-hacker.org/en/seowonintech-remote-root/; classtype:web-application-attack;
sid:50754; rev:1; )
#alert tcp $EXTERNAL_NET any -> $HOME_NET $HTTP_PORTS ( msg:"SERVER-WEBAPP Schneider Electric quantum
modicon ethernet module unauthenticated password change attempt"; flow:to_server,established;
http_uri; content:"/unsecure/embedded/builtin",fast_pattern,nocase; content:"user=";
content:"passwd="; content:"cnfpasswd="; content:"subhttppwd="; metadata:policy balanced-ips
drop,policy max-detect-ips drop,policy security-ips drop; service:http; reference:cve,2018-7811;
classtype:attempted-admin; sid:50772; rev:1; )
#alert tcp $EXTERNAL_NET any -> $HOME_NET $HTTP_PORTS ( msg:"SERVER-WEBAPP Oracle-BI convert servlet
XML external entity injection attempt"; flow:to_server,established; http_uri; content:"/xmlpserver/
convert",fast_pattern,nocase; content:"xml=",nocase; content:"ENTITY",nocase; pcre:"/(\x21|%(25)?
21)ENTITY((?!\x3e|%(25)?3e).)*?(SYSTEM|PUBLIC)/i"; metadata:policy max-detect-ips drop,policy
```

Step 4 Click **Synchronize rules on sensors** to save and push changes on the sensors.



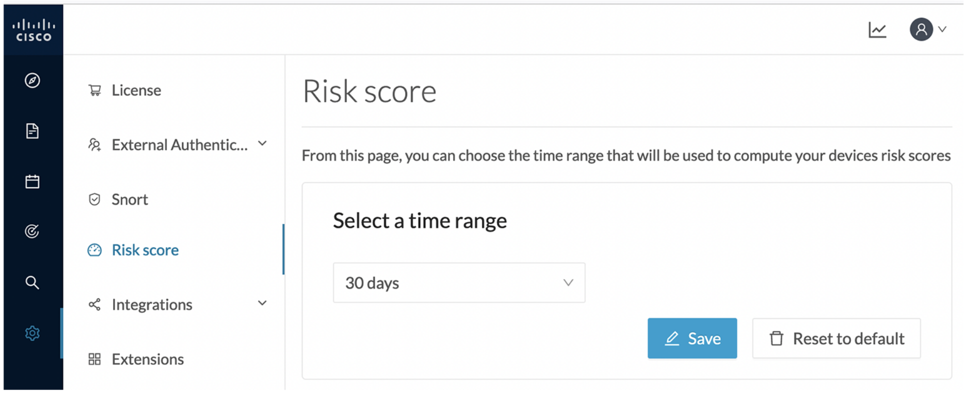
CHAPTER 12

Risk score

Risk score

This page is meant to set up the time range used for risk score computation.

The computation is done every hour, but considers only the activities of the configured time period.



Risk score

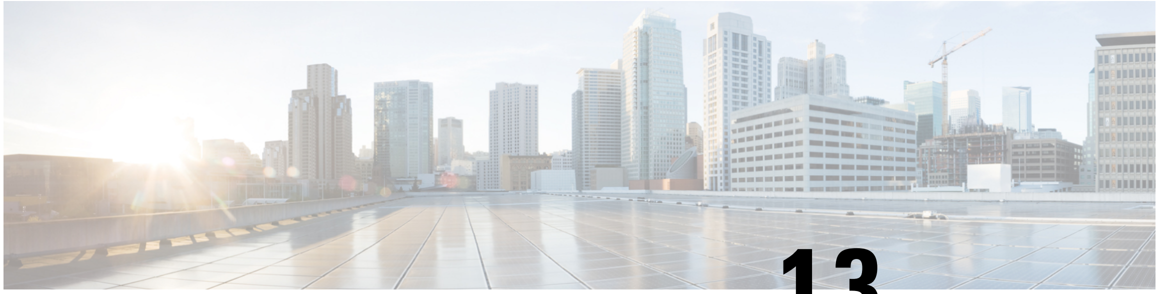
From this page, you can choose the time range that will be used to compute your devices risk scores

Select a time range

30 days

You can select a time range of 30 days (by default), 7 days, or set a custom one, with a minimum of one day.

For more information about risk scores, refer to the Concepts section of the User Guide..



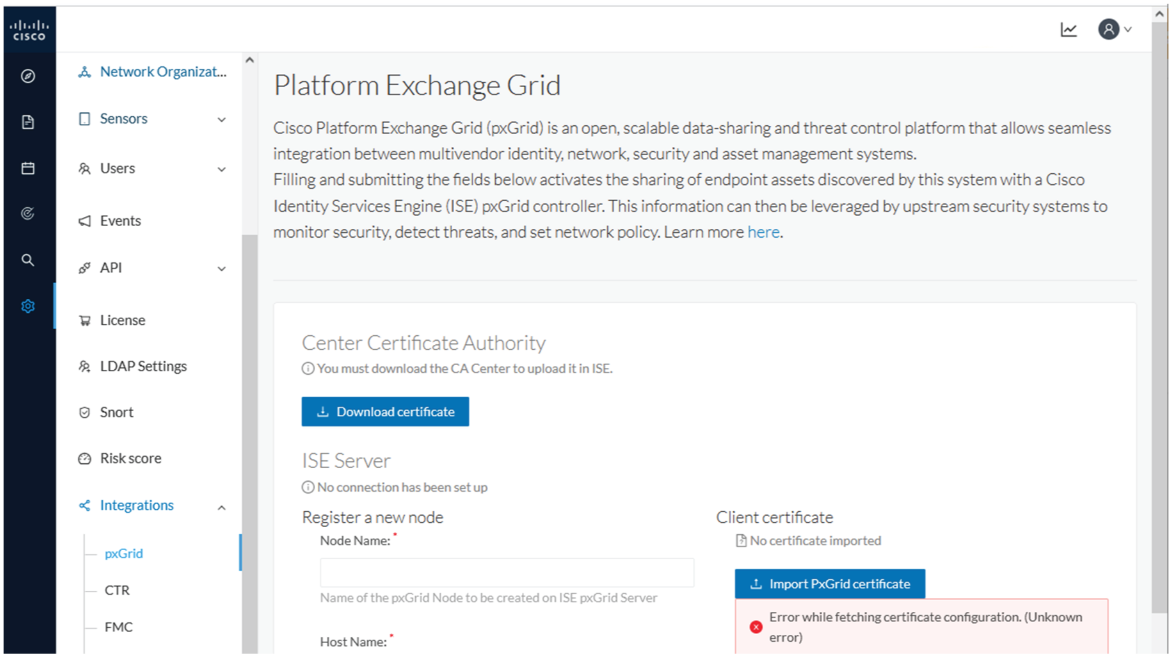
CHAPTER 13

Integrations

pxGrid

From this page, you can configure ISE pxGrid Cisco Cyber Vision integration.

Cisco Platform Exchange Grid (pxGrid) is an open, scalable data-sharing and threat control platform that allows seamless integration between multivendor identity, network, security and asset management systems.



Platform Exchange Grid

Cisco Platform Exchange Grid (pxGrid) is an open, scalable data-sharing and threat control platform that allows seamless integration between multivendor identity, network, security and asset management systems.
Filling and submitting the fields below activates the sharing of endpoint assets discovered by this system with a Cisco Identity Services Engine (ISE) pxGrid controller. This information can then be leveraged by upstream security systems to monitor security, detect threats, and set network policy. Learn more here.

Center Certificate Authority

ⓘ You must download the CA Center to upload it in ISE.

ISE Server

ⓘ No connection has been set up

Register a new node

Node Name:*

Name of the pxGrid Node to be created on ISE pxGrid Server

Host Name:*

Client certificate

No certificate imported

Error while fetching certificate configuration. (Unknown error)

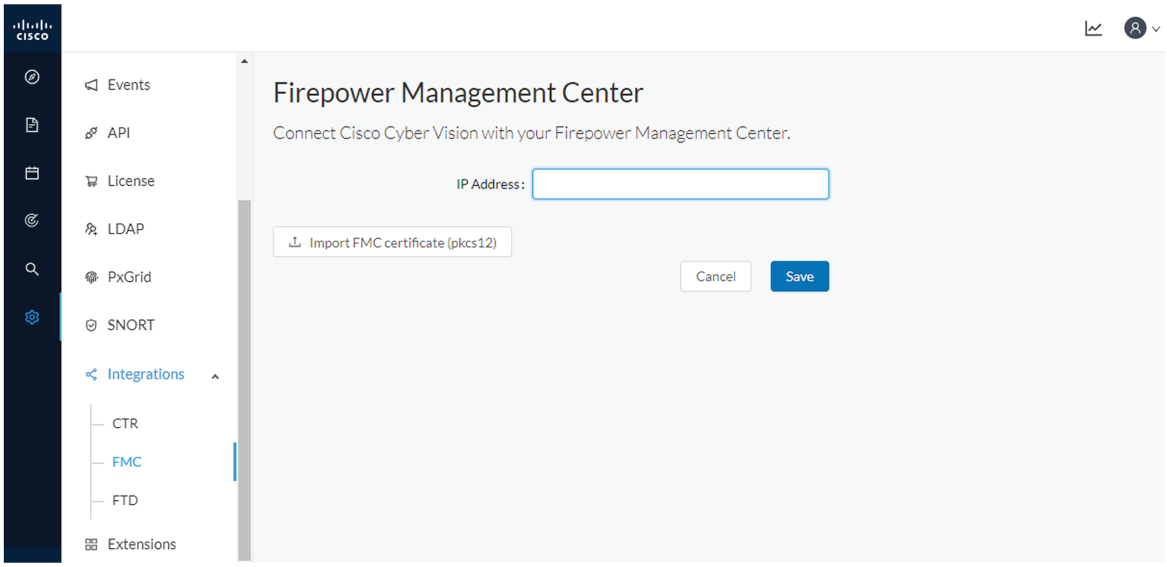
For more information about how to perform this integration, refer to the manual "Integrating Cisco Cyber Vision with Cisco Identity Services Engine (ISE) via pxGrid".

FMC

FMC administration page permits to configure a link between Cisco Cyber Vision with your Firepower Management Center. This connection will permit to send regularly (every 10 seconds) the components discovered by Cisco Cyber Vision. Every 10 seconds a list of new discovered components will be sent with the following properties in Cisco Cyber Vision:

- Name
- Id
- Ip
- Mac
- And if they are available:
  - hw_version
  - model-ref
  - serial_number
  - fw_version
  - tags

The configuration of this connection consists of adding the IP address of FMC, then importing a certificate in Cisco Cyber Vision.



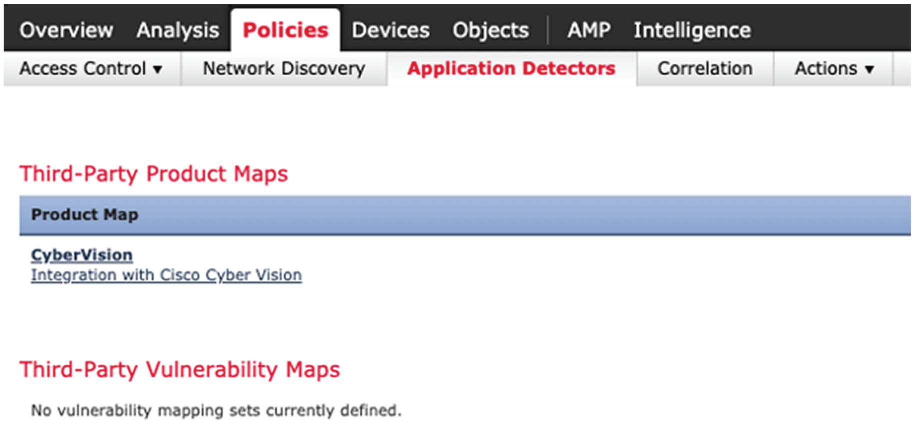
Firepower Management Center

Connect Cisco Cyber Vision with your Firepower Management Center.

IP Address:

In FMC, to download the necessary certificate, please navigate to "System" then to "Integration" and open the "Host Input Client" tab. In the tab create a new Client with the button "Create Client". Add the Cisco Cyber Vision Center IP address as host name, then download the pkcs12 certificate.

Then, in FMC, menu "Policies", "Application Detectors" add a new Product Map with the button "Create Product Map Set". Please create the new product Map with the exact name and case as presented below:



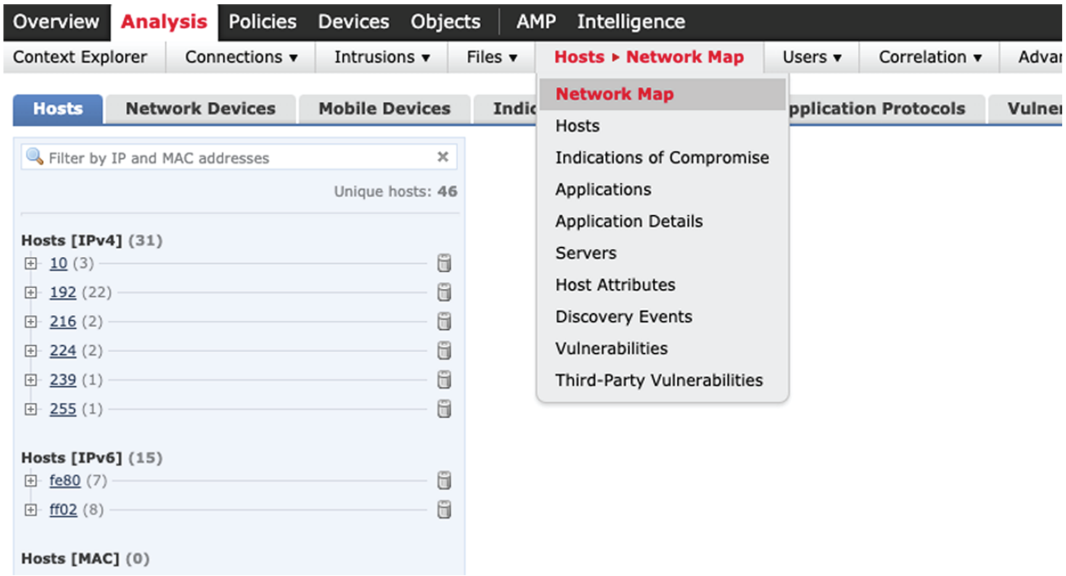
Third-Party Product Maps

Product Map
CyberVision Integration with Cisco Cyber Vision

Third-Party Vulnerability Maps

No vulnerability mapping sets currently defined.

The created hosts could be consulted in FMC, menu "Analysis", tab "Hosts – Network Map":



Unique hosts: 46

Hosts [IPv4] (31)
- 10 (3)
- 192 (22)
- 216 (2)
- 224 (2)
- 239 (1)
- 255 (1)

Hosts [IPv6] (15)
- fe80 (7)
- ff02 (8)

Hosts [MAC] (0)

FTD

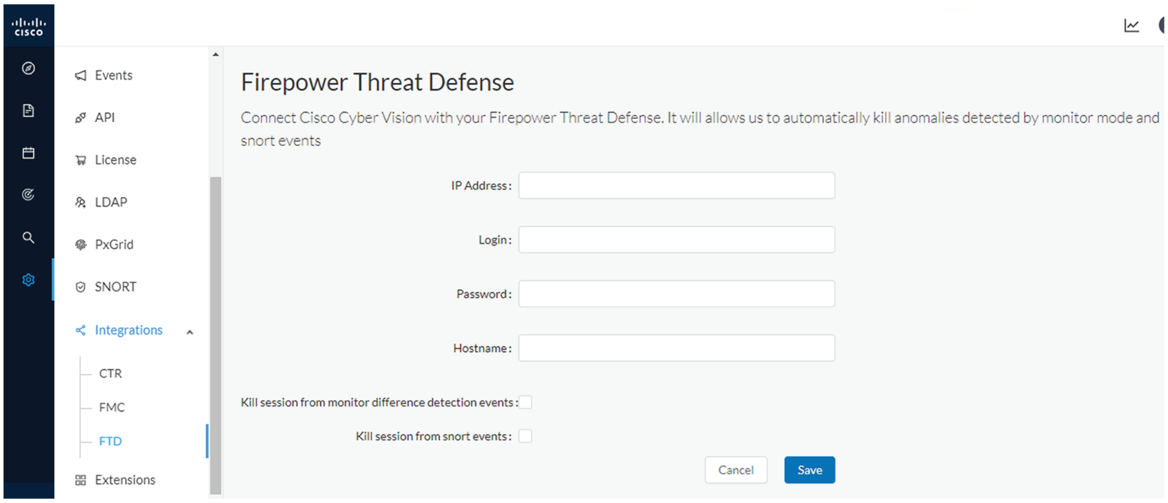
FTD administration page permits to connect Cisco Cyber Vision with your Firepower Threat Defense. It will allow to automatically kill anomalies detected by monitor mode and snort events. The corresponding session found in FTD will be killed.

Every 10 seconds Cisco Cyber Vision will browse the new monitor and SNORT events and send the corresponding action to the firewall. To enable that functionality, the user needs to add the following parameters in the FTD administration page:

- Ip address of the firewall

- Login: admin login, an ssh connection will be established between the center and the firewall
- Password: corresponding password
- Hostname: is the name of the device, by default "firepower"

Two option are available: kill session from monitor difference detection events and kill session from snort events.



Firepower Threat Defense

Connect Cisco Cyber Vision with your Firepower Threat Defense. It will allows us to automatically kill anomalies detected by monitor mode and snort events

IP Address:

Login:

Password:

Hostname:

Kill session from monitor difference detection events: □

Kill session from snort events: □

SecureX

Cisco SecureX is an online platform that centralizes security events from different Cisco software equipments through an API. For example, events like Cisco Cyber Vision events or firewall events can be sent to Cisco SecureX and correlated to be presented through different dashboards.

SecureX integration enables three features in Cisco Cyber Vision:

- without SecureX SSO login, the button **Investigate in SecureX Threat Response** will appear in components' technical sheet.
- with SecureX SSO login, the button **Report to SecureX** will appear in some events of the event calendar page. This button is used to push the events to SecureX.
- with SecureX SSO login, a SecureX ribbon with several features can be activated in Cisco Cyber Vision.

This section describes how to configure SecureX in Cisco Cyber Vision and the different features authorized.

SecureX configuration

Before you begin

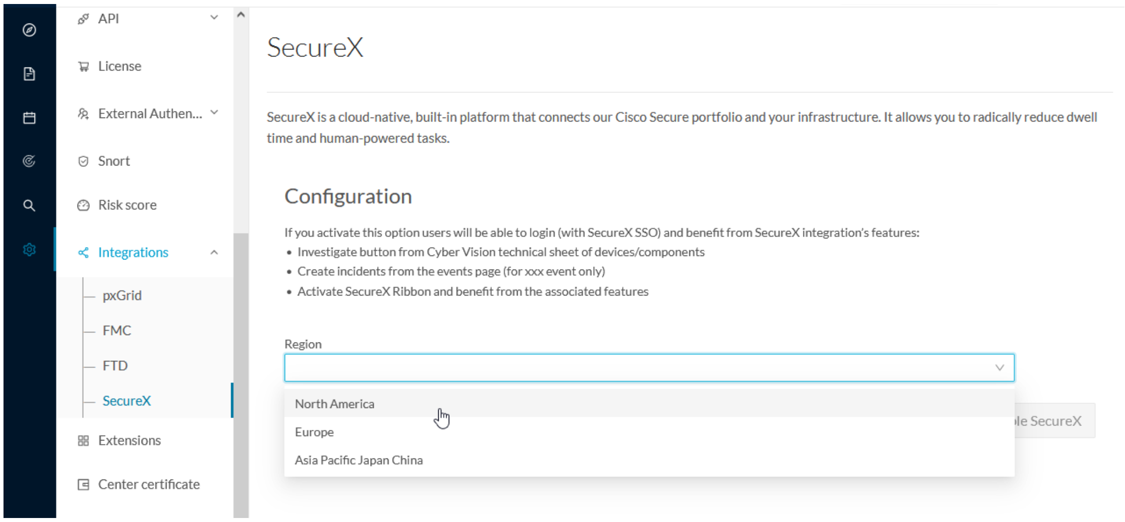
The Cisco SecureX configuration in Cisco Cyber Vision requests:

- An Admin access to Cisco Cyber Vision.

- A Cisco Cyber Vision Center with internet access.
- A SecureX account with an admin role.

Step 1 In Cisco Cyber Vision, navigate to **Admin** > **Integrations** > **SecureX**.

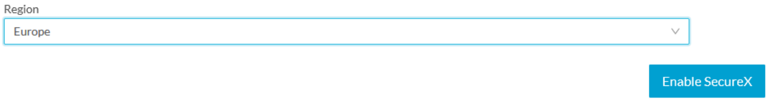
Step 2 Select a Region.



SecureX is a cloud-native, built-in platform that connects our Cisco Secure portfolio and your infrastructure. It allows you to radically reduce dwell time and human-powered tasks.

If you activate this option users will be able to login (with SecureX SSO) and benefit from SecureX integration's features:
- Investigate button from Cyber Vision technical sheet of devices/components
- Create incidents from the events page (for xxx event only)
- Activate SecureX Ribbon and benefit from the associated features

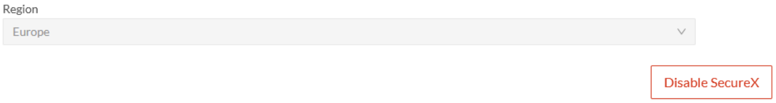
The button **Enable SecureX** appears.



Region: Europe

Step 3 Click **Enable SecureX** to enable the link.

Once the link enabled, the button turns red to disable SecureX.

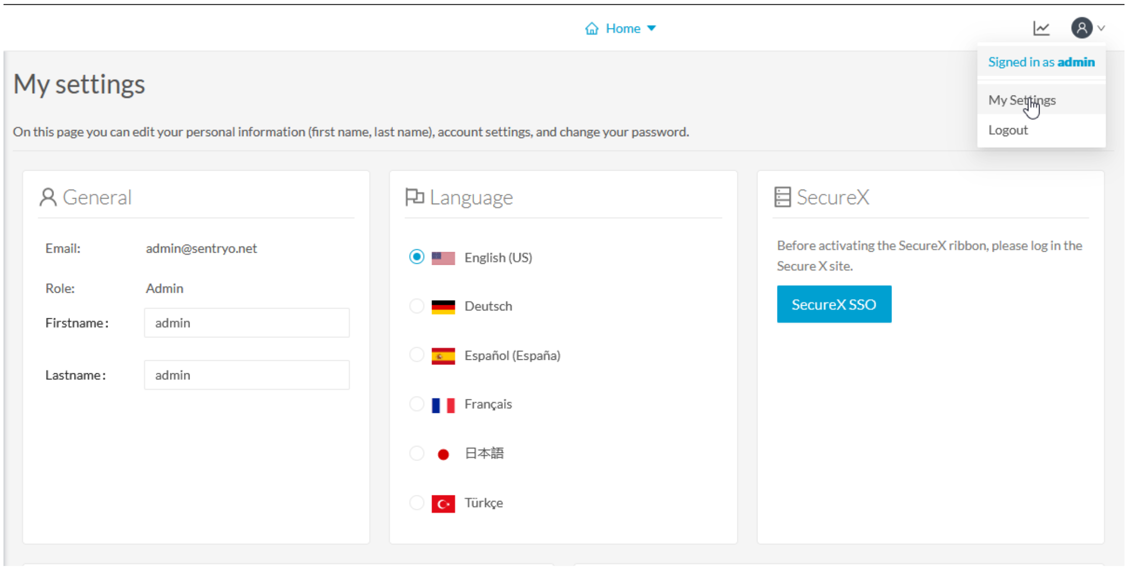


Region: Europe

By completing the steps above, you are now able to use the button **Investigate in SecureX Threat Response** that will appear in the components' technical sheet. To install and use the SecureX ribbon and the Report to SecureX button, complete the steps herebelow.

Step 4 Navigate to the user menu on the top right corner of the GUI and click **My Settings**.

A new SecureX menu appears on the right.



My settings

On this page you can edit your personal information (first name, last name), account settings, and change your password.

General

Email:	admin@sentryo.net
Role:	Admin
Firstname :	admin
Lastname :	admin

Language

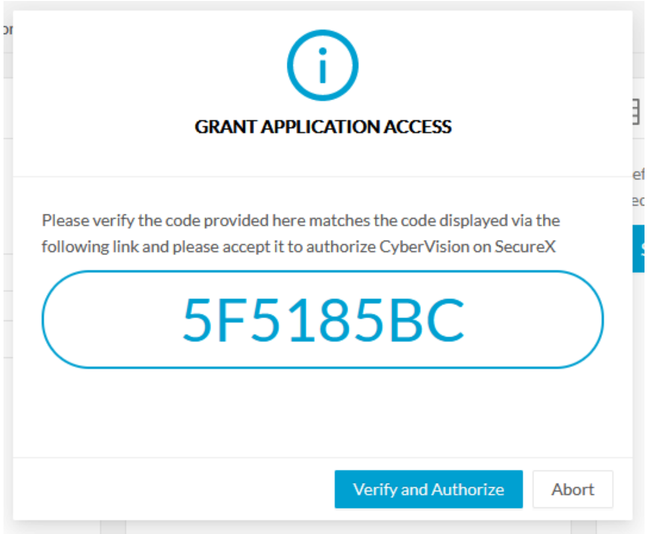
● English (US)
○ Deutsch
○ Español (España)
○ Français
○ 日本語
○ Türkçe

SecureX

Before activating the SecureX ribbon, please log in the Secure X site.

Step 5 Click the **SecureX SSO** button.

A popup appears with an authentication code.

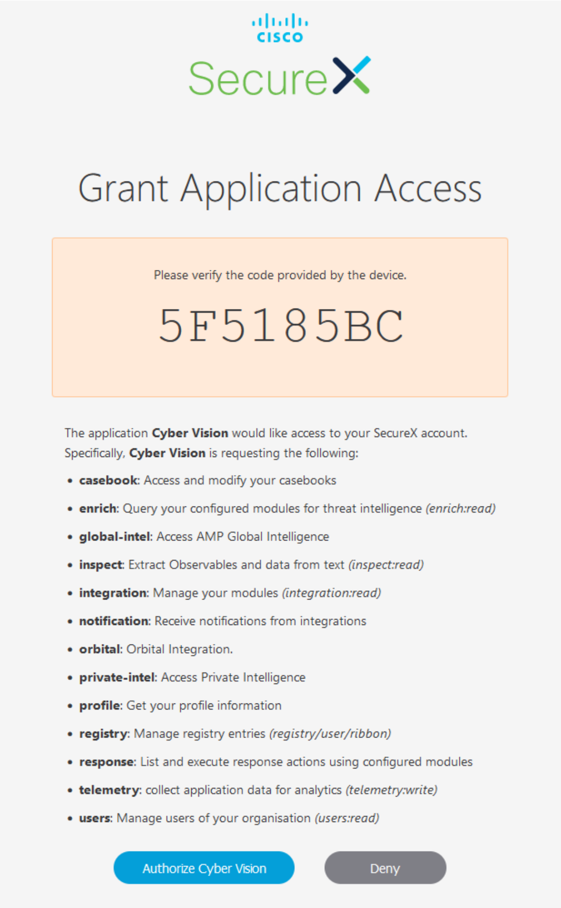


GRANT APPLICATION ACCESS

Please verify the code provided here matches the code displayed via the following link and please accept it to authorize CyberVision on SecureX

5F5185BC

A page opens in the browser to grant Cisco Cyber Vision access to SecureX.



SecureX

Grant Application Access

Please verify the code provided by the device.

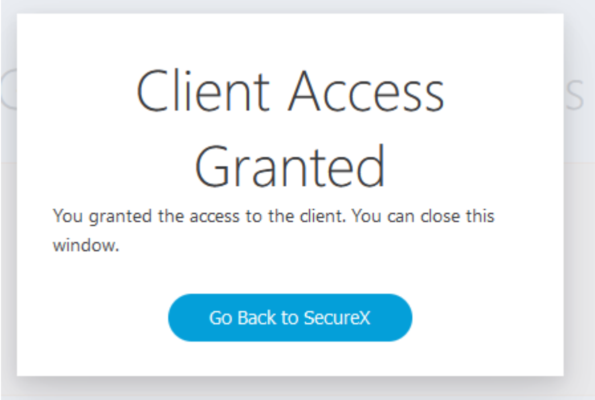
5F5185BC

The application **Cyber Vision** would like access to your SecureX account. Specifically, **Cyber Vision** is requesting the following:

- **casebook**: Access and modify your casebooks
- **enrich**: Query your configured modules for threat intelligence *(enrich:read)*
- **global-intel**: Access AMP Global Intelligence
- **inspect**: Extract Observables and data from text *(inspect:read)*
- **integration**: Manage your modules *(integration:read)*
- **notification**: Receive notifications from integrations
- **orbital**: Orbital Integration.
- **private-intel**: Access Private Intelligence
- **profile**: Get your profile information
- **registry**: Manage registry entries *(registry/user/ribbon)*
- **response**: List and execute response actions using configured modules
- **telemetry**: collect application data for analytics *(telemetry:write)*
- **users**: Manage users of your organisation *(users:read)*

Step 6 Click **Authorize Cyber Vision**.

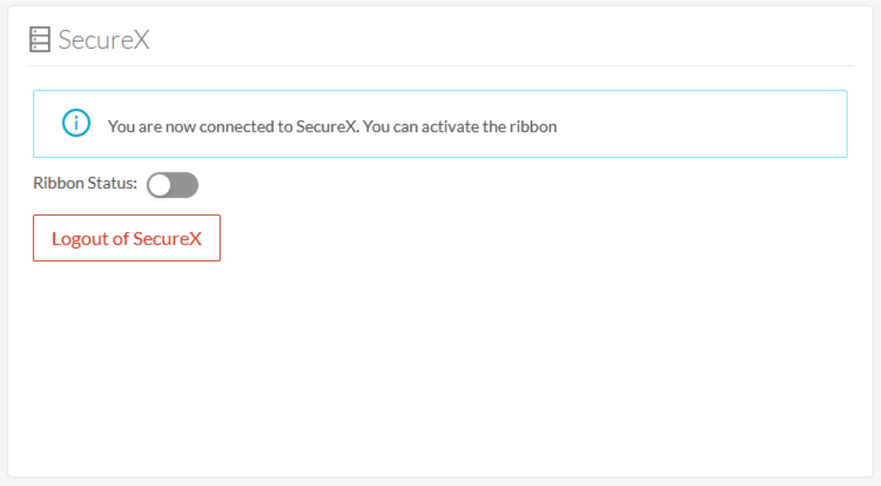
Step 7 A Client Access Granted popup appears.



Client Access Granted

You granted the access to the client. You can close this window.

Step 8 In Cisco Cyber Vision > My Settings, the SecureX menu indicates that Cisco Cyber Vision is connected to SecureX. A toggle button to enable the SecureX ribbon and a button to logout of SecureX are displayed.

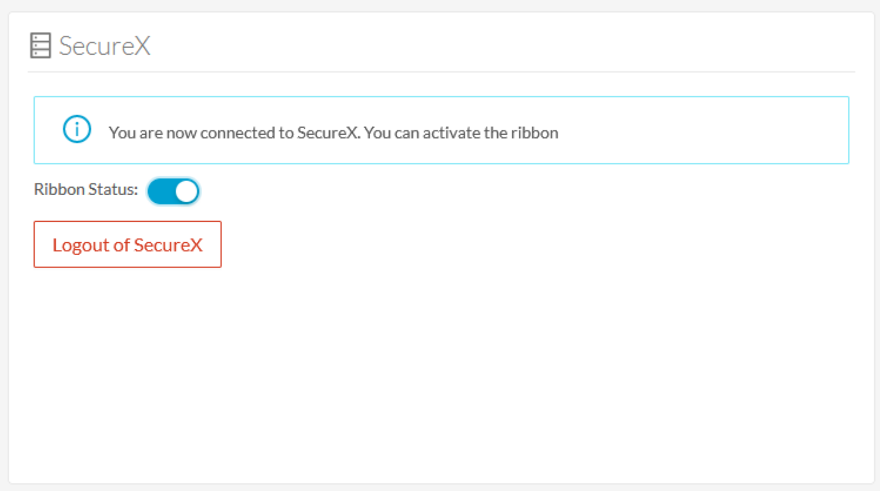

SecureX

You are now connected to SecureX. You can activate the ribbon

Ribbon Status:

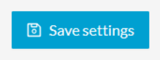
Step 9 Use the **Ribbon status** toggle button to enable the SecureX ribbon.

Step 10 Click **Save settings**.

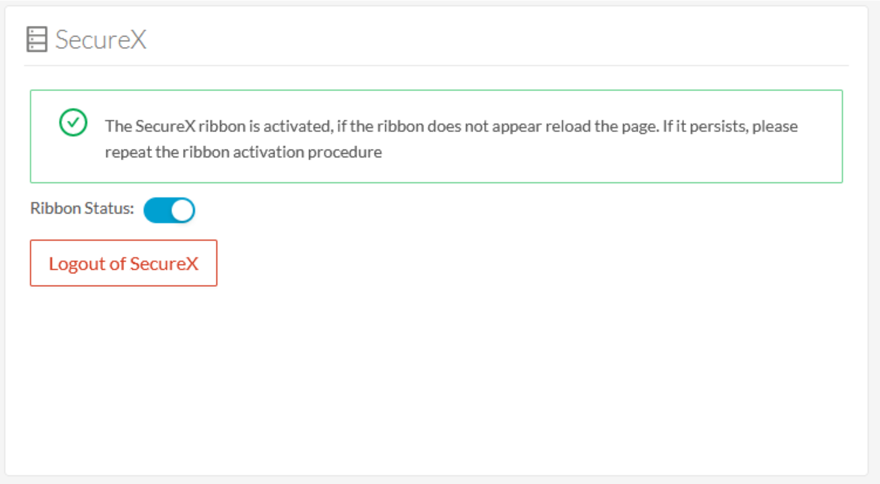

SecureX

You are now connected to SecureX. You can activate the ribbon

Ribbon Status:



A message indicating that the SecureX ribbon is enabled appears.



SecureX

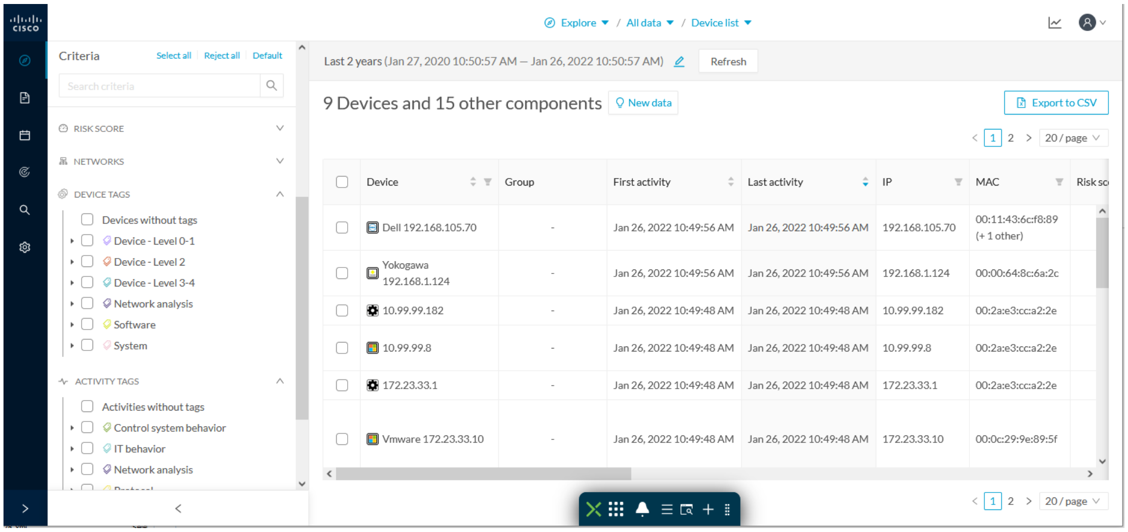
The SecureX ribbon is activated, if the ribbon does not appear reload the page. If it persists, please repeat the ribbon activation procedure

Ribbon Status:

SecureX ribbon

Once configured and activated, the SecureX ribbon will appear at the bottom of the Cisco Cyber Vision GUI of the Explore menu.

The SecureX ribbon in the Device List view:



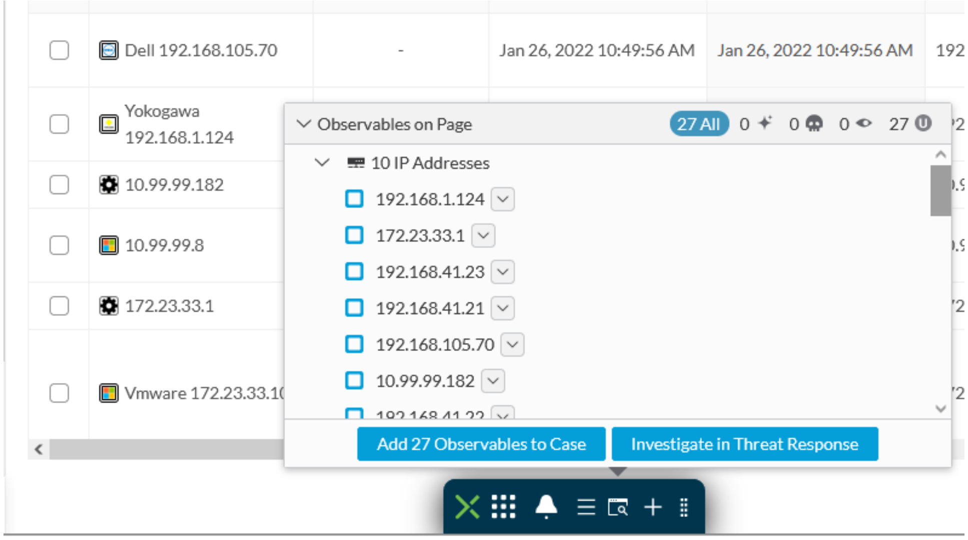
Last 2 years (Jan 27, 2020 10:50:57 AM — Jan 26, 2022 10:50:57 AM)

9 Devices and 15 other components

□	Device	Group	First activity	Last activity	IP	MAC	Risk sc
□	Dell 192.168.105.70	-	Jan 26, 2022 10:49:56 AM	Jan 26, 2022 10:49:56 AM	192.168.105.70	00:11:43:6c:f8:89 (+ 1 other)	
□	Yokogawa 192.168.1.124	-	Jan 26, 2022 10:49:56 AM	Jan 26, 2022 10:49:56 AM	192.168.1.124	00:00:64:8c:6a:2c	
□	10.99.99.182	-	Jan 26, 2022 10:49:48 AM	Jan 26, 2022 10:49:48 AM	10.99.99.182	00:2a:e3:cc:a2:2e	
□	10.99.99.8	-	Jan 26, 2022 10:49:48 AM	Jan 26, 2022 10:49:48 AM	10.99.99.8	00:2a:e3:cc:a2:2e	
□	172.23.33.1	-	Jan 26, 2022 10:49:48 AM	Jan 26, 2022 10:49:48 AM	172.23.33.1	00:2a:e3:cc:a2:2e	
□	Vmware 172.23.33.10	-	Jan 26, 2022 10:49:48 AM	Jan 26, 2022 10:49:48 AM	172.23.33.10	00:0c:29:9e:89:5f	

The Cisco SecureX Getting Started Guide explains how to use the SecureX ribbon.

For example, to find observables and investigate them in SecureX Threat Response, click the **Find Observables** icon like below:



☐	Dell 192.168.105.70	-	Jan 26, 2022 10:49:56 AM	Jan 26, 2022 10:49:56 AM	192
☐	Yokogawa 192.168.1.124				
☐	10.99.99.182				
☐	10.99.99.8				
☐	172.23.33.1				
☐	Vmware 172.23.33.1(				

Observables on Page 27 All 0 0 0 27

10 IP Addresses

- ☐ 192.168.1.124
- ☐ 172.23.33.1
- ☐ 192.168.41.23
- ☐ 192.168.41.21
- ☐ 192.168.105.70
- ☐ 10.99.99.182
- ☐ 192.168.41.22

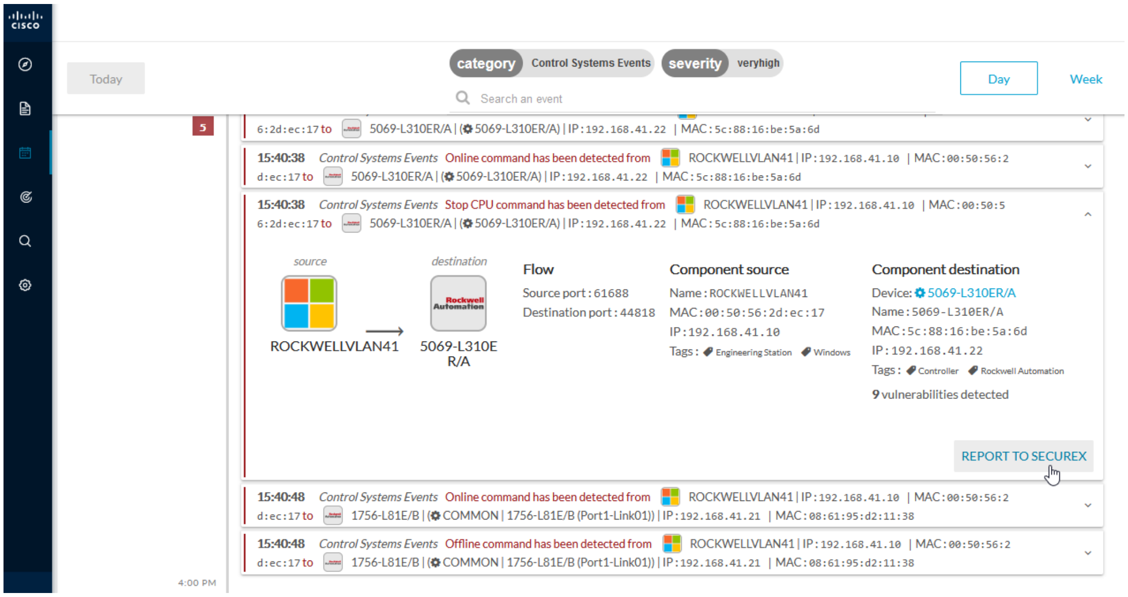
SecureX event integration

Once SecureX has been configured in Cisco Cyber Vision, a **Report to SecureX** button appears on some events of the event calendar page. Using this button will push the event to SecureX and create an incident.

The SecureX button appears on three categories of event:

- Anomaly Detection
- Control Systems Events
- Signature Based Detection

The Report to SecureX button on a Control Systems Events:



6:2d:ec:17 to 5069-L310ER/A | (5069-L310ER/A) | IP:192.168.41.22 | MAC:5c:88:16:be:5a:6d

15:40:38 *Control Systems Events* Online command has been detected from ROCKWELLVLAN41 | IP:192.168.41.10 | MAC:00:50:56:2d:ec:17 to 5069-L310ER/A | (5069-L310ER/A) | IP:192.168.41.22 | MAC:5c:88:16:be:5a:6d

15:40:38 *Control Systems Events* Stop CPU command has been detected from ROCKWELLVLAN41 | IP:192.168.41.10 | MAC:00:50:56:2d:ec:17 to 5069-L310ER/A | (5069-L310ER/A) | IP:192.168.41.22 | MAC:5c:88:16:be:5a:6d

source: ROCKWELLVLAN41 → destination: 5069-L310ER/A

Flow
Source port : 61688
Destination port : 44818

Component source
Name : ROCKWELLVLAN41
MAC : 00:50:56:2d:ec:17
IP : 192.168.41.10
Tags : Engineering Station Windows

Component destination
Device: 5069-L310ER/A
Name : 5069-L310ER/A
MAC : 5c:88:16:be:5a:6d
IP : 192.168.41.22
Tags : Controller Rockwell Automation

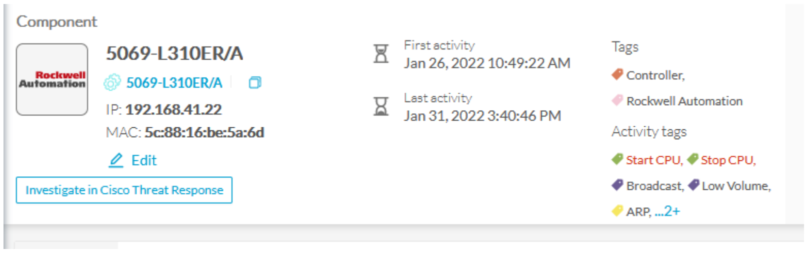
9 vulnerabilities detected

15:40:48 *Control Systems Events* Online command has been detected from ROCKWELLVLAN41 | IP:192.168.41.10 | MAC:00:50:56:2d:ec:17 to 1756-L81E/B | (COMMON | 1756-L81E/B (Port1-Link01)) | IP:192.168.41.21 | MAC:08:61:95:d2:11:38

15:40:48 *Control Systems Events* Offline command has been detected from ROCKWELLVLAN41 | IP:192.168.41.10 | MAC:00:50:56:2d:ec:17 to 1756-L81E/B | (COMMON | 1756-L81E/B (Port1-Link01)) | IP:192.168.41.21 | MAC:08:61:95:d2:11:38

SecureX component button

Once SecureX has been configured in Cisco Cyber Vision, the button **Investigate in Cisco Threat Response** appears on the components' technical sheet. The component's IP and MAC addresses will be investigated in SecureX Threat Response if you use this button.



Component

5069-L310ER/A

5069-L310ER/A

IP: 192.168.41.22

MAC: 5c:88:16:be:5a:6d

First activity
Jan 26, 2022 10:49:22 AM

Last activity
Jan 31, 2022 3:40:46 PM

Tags
Controller,
Rockwell Automation

Activity tags
Start CPU, Stop CPU,
Broadcast, Low Volume,
ARP, ...2+

External resources for SecureX integration

Herebelow is the list of all URLs called by the Cisco Cyber Vision Center in case you need to authorize them, for example in a firewall.

Center:

- private.intel.eu.amp.cisco.com
- private.intel.apjc.amp.cisco.com
- private.intel.amp.cisco.com
- intel.amp.cisco.com
- visibility.eu.amp.cisco.com
- visibility.apjc.amp.cisco.com
- visibility.amp.cisco.com

Web client:

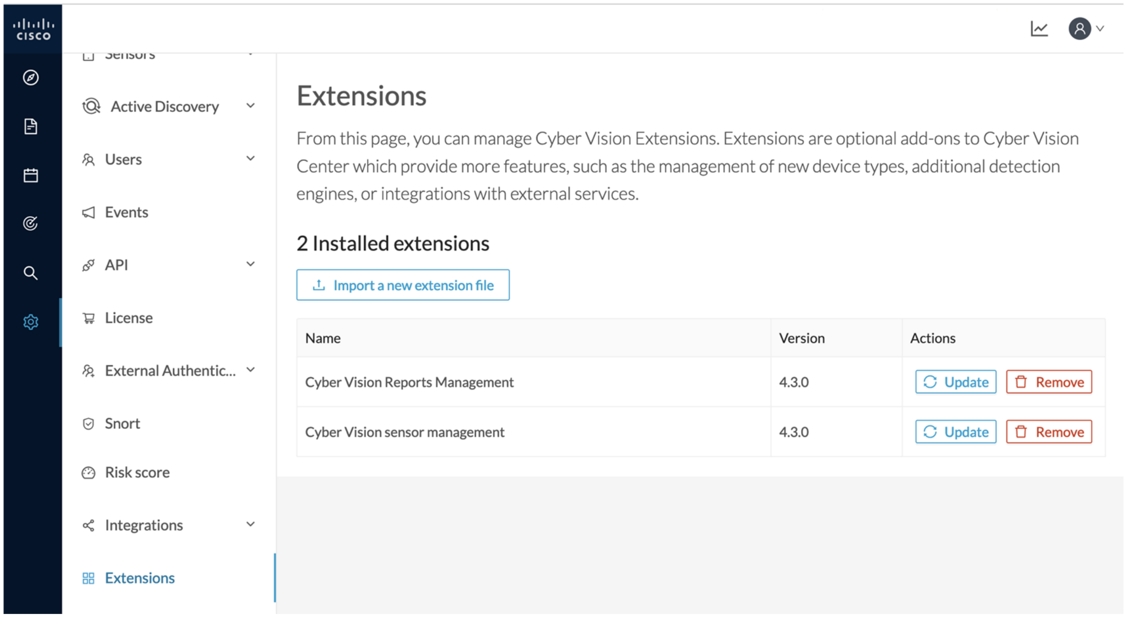
- securex.apjc.security.cisco.com
- securex.us.security.cisco.com

CHAPTER 14

Extensions

Extensions

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



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.

2 Installed extensions

Name	Version	Actions
Cyber Vision Reports Management	4.3.0	Update Remove
Cyber Vision sensor management	4.3.0	Update Remove

Currently, there are two extensions available:

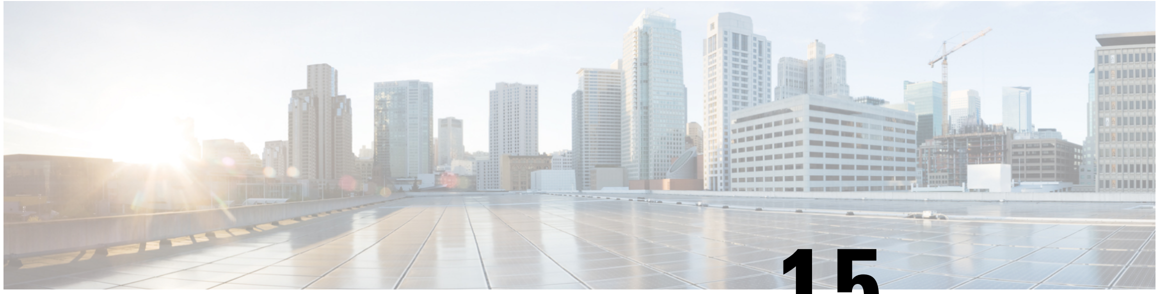
- Sensor management extension

  For more information about this extension and how to use it, refer to the corresponding Cisco Cyber Vision Sensor Installation Guide available on cisco.com.

- Reports management extension

  For more information about this extension and how to use it, refer to the Cisco Cyber Vision GUI User Guide available on cisco.com.

To install an extension, retrieve the extension file on cisco.com and import it with the **Import a new extension file** button.

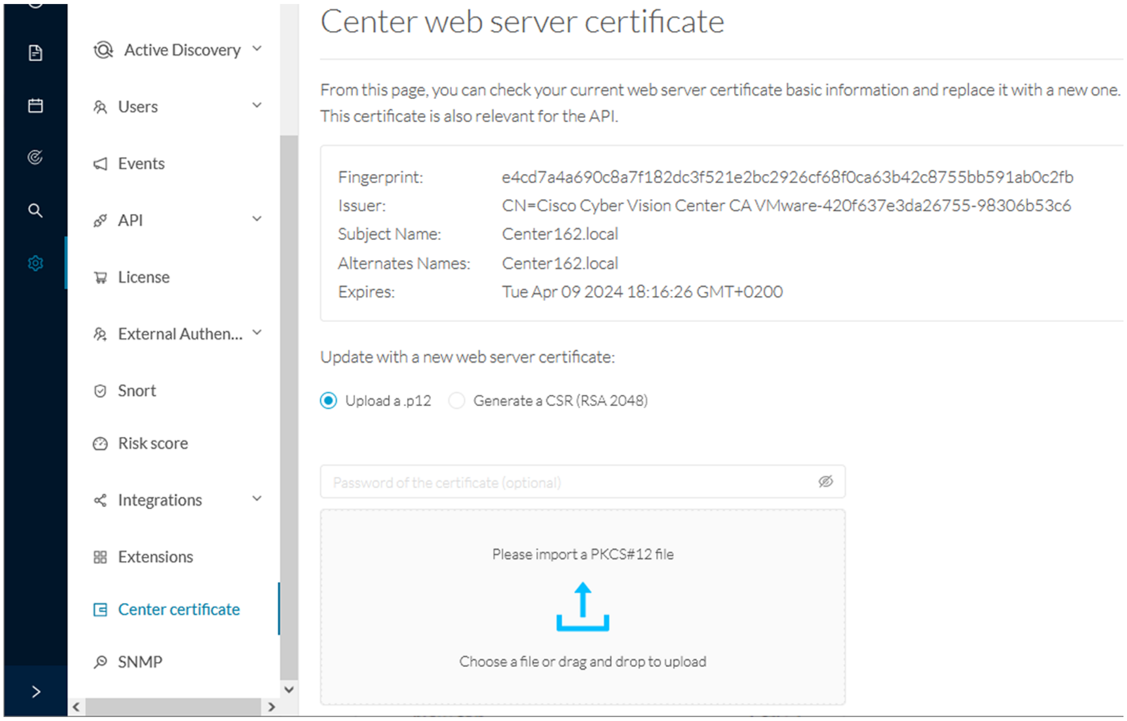


CHAPTER 15

Web Server Certificate

Center web server certificate

The Center web server certificate page is 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.



Center web server certificate

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

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

Update with a new web server certificate:

● Upload a .p12 ○ Generate a CSR (RSA 2048)

Password of the certificate (optional)

Please import a PKCS#12 file

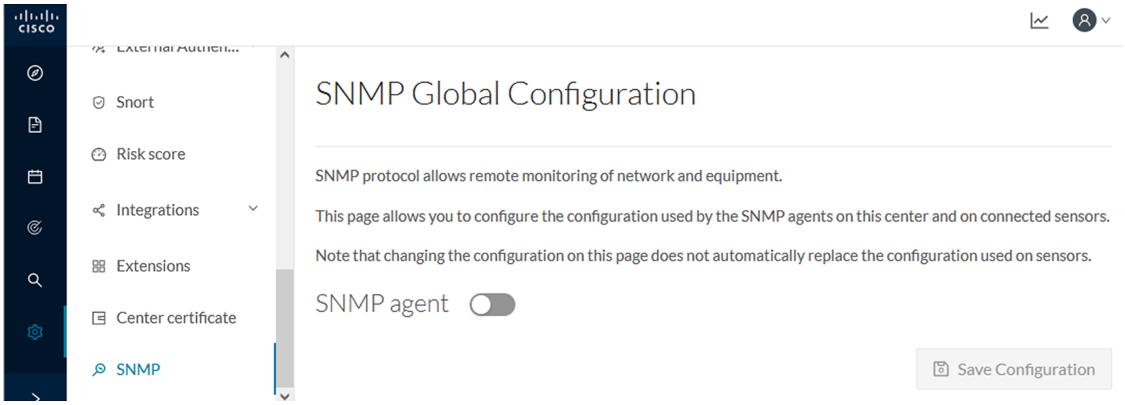
Choose a file or drag and drop to upload

For more information, refer to the corresponding Center Installation Guide.

CHAPTER 16

SNMP

SNMP Protocol in CyberVision is used for remote monitoring purposes.



SNMP Global Configuration

SNMP protocol allows remote monitoring of network and equipment.

This page allows you to configure the configuration used by the SNMP agents on this center and on connected sensors.

Note that changing the configuration on this page does not automatically replace the configuration used on sensors.

SNMP agent ○

Save Configuration

Supported versions are:

- SNMP V2C
- SNMP V3

Older versions are not supported.

Important It is highly recommended to use version 3 of the SNMP protocol. Version 2c is available due to a large number of infrastructures still using it. However, take into account that risks in terms of security are higher.

Snmp information:

- CPU % per core
- Load 0 to 100 (combination of CPU and I/O loads)
- RAM kilobytes
- Swap kilobytes
- Traffic for all physical interfaces (nb bytes in and out/interface (since the snmp service startup))
- Data storage (% - 250G)

- Packets stats (packets/sec/int)

- Configure SNMP, on page 98
- SNMP MIB, on page 100

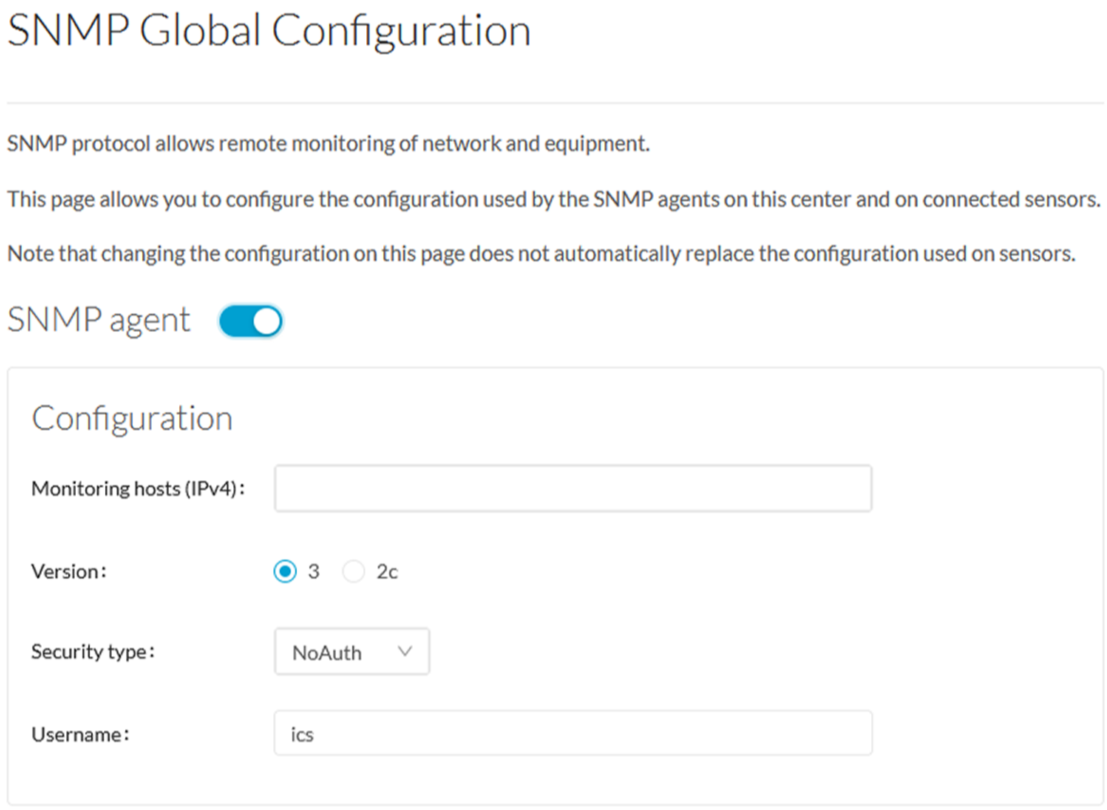
Configure SNMP

This section explains how to configure SNMP on a CyberVision Center.

Step 1 In Cisco Cyber Vision, navigate to Admin > SNMP.

Step 2 Toggle the SNMP agent button.

A configuration menu appears.



SNMP Global Configuration

SNMP protocol allows remote monitoring of network and equipment.

This page allows you to configure the configuration used by the SNMP agents on this center and on connected sensors.

Note that changing the configuration on this page does not automatically replace the configuration used on sensors.

SNMP agent

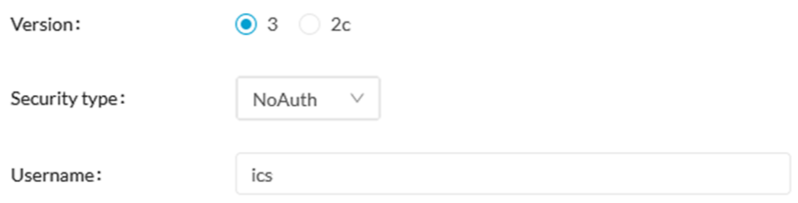
Configuration

Monitoring hosts (IPv4):	
Version:	● 3 ○ 2c
Security type:	NoAuth
Username:	ics

Step 3 In the Monitoring hosts (IPv4) field, fill in the IP address of the Monitoring host.

Step 4 Select a version:

- Version 3
- Version 2c



Version: ● 3 ○ 2c

Security type: NoAuth

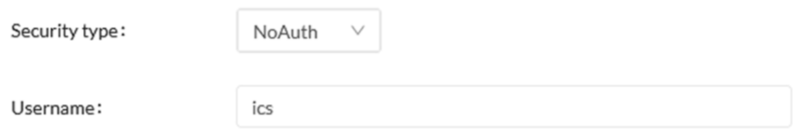
Username: ics

Note For security reasons, it is recommended to use SNMP version 3.

a) **Version 3**

Select a security type:

- NoAuth: Only a username is required. No authentication password required.

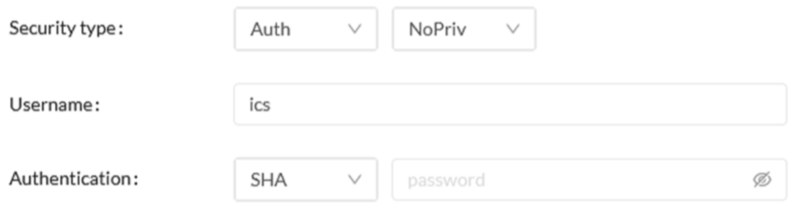


Security type: NoAuth

Username: ics

Add the username that will be used for the SNMP authentication. "ics" is used by default.

- Auth with NoPriv : A username and an encrypted password are required.



Security type: Auth NoPriv

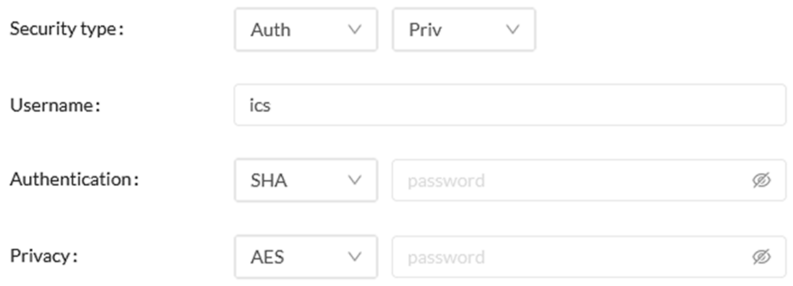
Username: ics

Authentication: SHA password

Add the username that will be used for the SNMP authentication. "ics" is used by default.

Add the Hash algorithm needed and its password. It must be at least 8 characters long.

- Auth with Priv: Only the AES encryption is available. A username, an encrypted password, and an AES encryption are required.



Security type: Auth Priv

Username: ics

Authentication: SHA password

Privacy: AES password

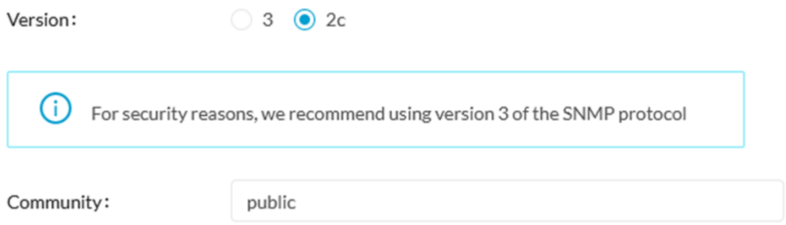
Add the username that will be used for the SNMP authentication. "ics" is used by default.

Add the Hash algorithm needed and its password. It must be at least 8 characters long.

Add the AES password. It must be at least 8 characters long.

b) **Version 2c**

Add the community string for the Center to communicate with the monitoring host.

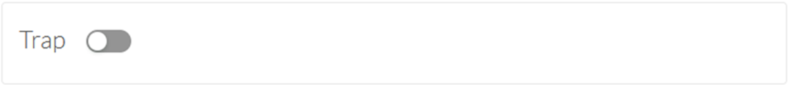


Version: ○ 3 ● 2c

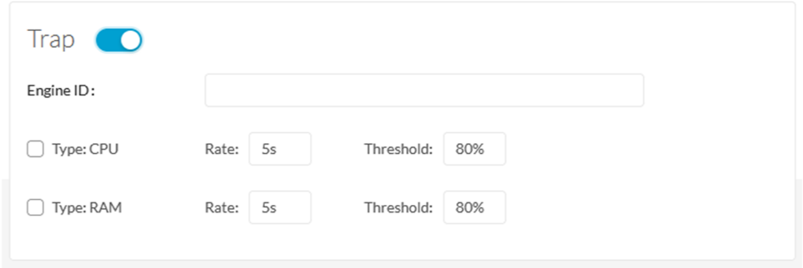
For security reasons, we recommend using version 3 of the SNMP protocol

Community: public

Step 5 Toggle the Trap button.



The following configuration menu appears:

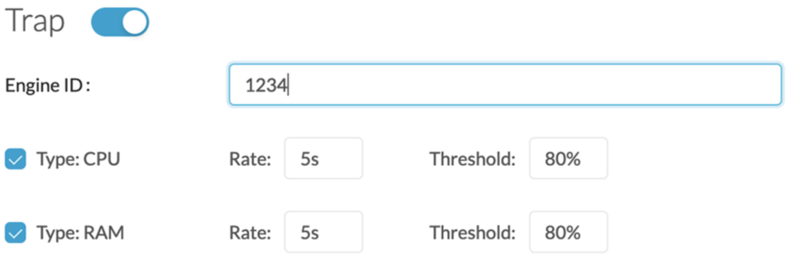


Engine ID:

□ Type: CPU Rate: 5s Threshold: 80%

□ Type: RAM Rate: 5s Threshold: 80%

Step 6 Setup traps to be delivered.



Engine ID: 1234

☑ Type: CPU Rate: 5s Threshold: 80%

☑ Type: RAM Rate: 5s Threshold: 80%

a) If SNMP v3 has been selected, the Engine ID field (i.e. the Center id) is displayed so you can customize it.
b) Select and set the CPU and memory rate limit and threshold according to your needs.

Step 7 Click Save Configuration.

SNMP MIB

Table 1:

MIB	OID prefix	Description
MIB-2	.1.3.6.1.2.1.1	System

MIB	OID prefix	Description
IF-MIB	.1.3.6.1.2.1.2.2.1.1	All physical interfaces
IF-MIB	.1.3.6.1.2.1.31.1.1	All physical interfaces
HOST-RESOURCES-MIB	.1.3.6.1.2.1.25.1	System
HOST-RESOURCES-MIB	.1.3.6.1.2.1.25.2.3	Storage
HOST-RESOURCES-MIB	.1.3.6.1.2.1.25.3.3	CPU
UCD-SNMP-MIB	.1.3.6.1.4.1.2021.4	Memory
UCD-SNMP-MIB	.1.3.6.1.4.1.2021.9	Disk
UCD-SNMP-MIB	.1.3.6.1.4.1.2021.10	Load
UCD-SNMP-MIB	.1.3.6.1.4.1.2021.11	CPU
UCD-DISKIO-MIB	.1.3.6.1.4.1.2021.13.15.1	Disk IO