



## **Cisco Cyber Vision Active Discovery Configuration Guide, Release 4.2.0**

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# CHAPTER 1

## About this documentation

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

### Document purpose

This configuration guide explains how to configure Active Discovery in Cisco Cyber Vision and gives details on expected results.

This documentation is applicable to **system version 4.2.0**.

Active Discovery is **available on** the following devices:

- Cisco Catalyst IE3300 10G Rugged Series Switch
- Cisco Catalyst IE3400 Rugged Series Switch
- Cisco Catalyst IE9300 Rugged Series Switch
- Cisco Catalyst 9300 Series Switch
- Cisco Catalyst 9400 Series Switch
- Cisco IC3000 Industrial Compute Gateway
- Cisco IR8340 Integrated Services Router Rugged

### Warnings and notices

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

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



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**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.

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

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

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## CHAPTER 2

# Overview

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- [General principles, on page 3](#)
- [Design considerations, on page 4](#)
- [Basic configuration workflow, on page 4](#)

## General principles

Active Discovery allows the sensor to send packets to the network to discover previously unseen devices and gather additional properties for known devices.

There are two different types of Active Discovery operations:

- Broadcast

The sensor sends Broadcast packets targeting all the devices in the subnet. Devices that support the protocol will give a response back and appear in Cisco Cyber Vision.

- Unicast

The sensor sends Unicast packets to known components and analyses the responses received.

The protocols supported for Active Discovery operations are:

- Broadcast:

- EtherNet/IP
- Profinet
- SiemensS7
- ICMPv6

- Unicast:

- EtherNet/IP
- SiemensS7
- SNMPv2c
- SNMPv3

- WMI

For more information about discoverable properties, refer to [Annex: Active Discovery protocols, on page 39](#).

## Design considerations

Several requirements must be met when deploying and configuring Active Discovery on a sensor:

- The sensor must have access to the required subnet:
  - For Broadcast discovery, the target subnet/VLAN must be directly accessible from the sensor, meaning the sensor must have an IP address set in this subnet.  
  
On IOx sensors, the AppGigabit interface must be in trunk mode, and the VLAN must be allowed on this port.  
  
On the Cisco IC3000, one of the interfaces must be connected to a port on the VLAN, with no span configured on this port.
  - For Unicast discovery, the target subnet/VLAN must be either directly accessible from the sensor, or the sensor must have the required gateway or route to reach the targeted devices.
- The list of nodes targeted in Unicast discovery comes from the device list of the preset which launch the discovery. A preset configured with sensors in its filter will trigger Active Discovery on these sensors. It means that only the components that have been filtered by this particular preset will be scanned.

## Basic configuration workflow

To configure Active Discovery, you must perform the following steps:

- Deploy a sensor with the required configuration: IP address, VLAN, gateway or routes.
- Create an Active Discovery policy containing the protocols needed and their respective parameters.
- Create an Active Discovery profile with a policy, target IP addresses and and set an execution time or run it once.





## CHAPTER 3

# Sensor configuration

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The Active Discovery configuration procedure will vary depending on the sensor model, whether it is a switch, a router or a Cisco IC3000.

To configure Active Discovery on a switch or a router, the sensors must have been previously deployed using the IOx sensor application file with Active Discovery. In this case, the Active Discovery button should appear in the sensor right side panel in Cisco Cyber Vision's Sensor Explorer page.

On a Cisco IC3000, you can configure Active Discovery performing a manual configuration or redeploying the sensor via the sensor extension.

- [Configure Active Discovery on a Cisco switch or router, on page 5](#)
- [Configure Active Discovery on a Cisco IC3000, on page 9](#)

## Configure Active Discovery on a Cisco switch or router

### Before you begin

This procedure is applicable to:

- Cisco IE3300 10G, Cisco IE3400 and Cisco IE9300.
- Cisco Catalyst 9300 and Cisco Catalyst 9400.
- Cisco IR8340 Integrated Services Router Rugged

The sensors must have been deployed using the IOx sensor application file with Active Discovery.

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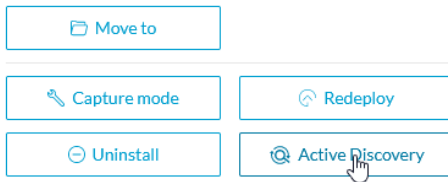
**Step 1** Navigate to **Admin > Sensors > Sensor Explorer**.

**Step 2** Select a sensor in the list.

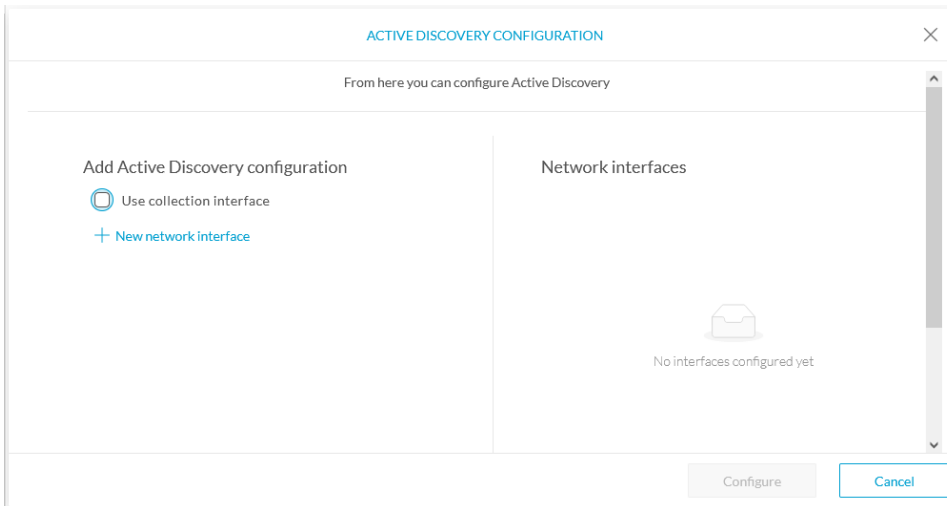
The sensor right side panel appears. The Active Discovery button is displayed if the sensor is compatible.

If there is no Active Discovery button in the panel, you must redeploy the sensor using the IOx application file with Active Discovery.

**Step 3** Click the **Active Discovery** button.

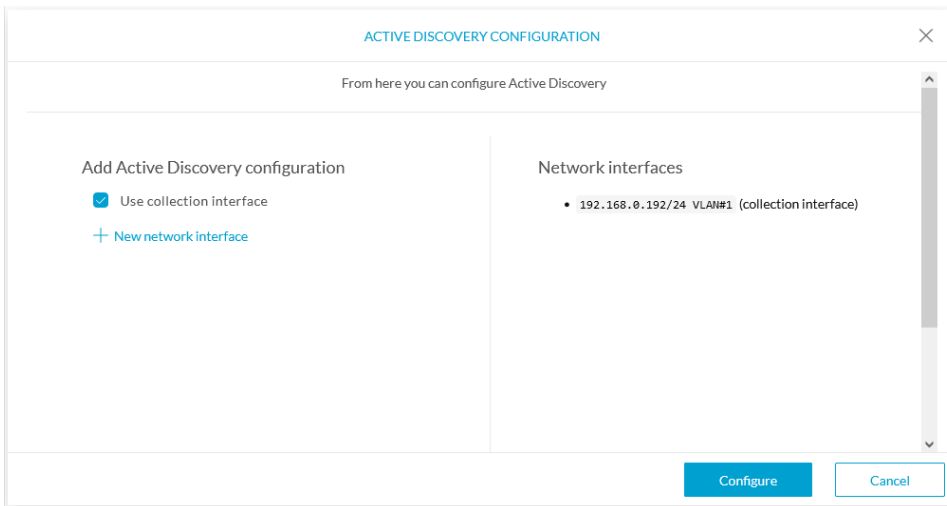


The Active Discovery Configuration window pops up:



**Step 4** If necessary, tick the **Use collection interface** check box for Active Discovery to use the Collection network interface to do discovery on the same subnet as the sensor IP, or using the sensor Collection gateway.

The Collection network interface is added in the list on the right.



**Step 5** Click + **New network interfaces** for the sensor to perform Active Discovery on additional subnetworks.

**Step 6** Fill the following parameters to set dedicated network interfaces:

- IP address
- Prefix length

## • VLAN number

+ New network interface

IP address\*  
192.168.20.145  
IP address interface used to do Active Discovery

Prefix length\*  
24  
Like 24, 16 or 8

VLAN number\*  
20  
Use 1 by default

Add Cancel

**Step 7** Click **Add**.

You can add as many network interfaces as needed, like below.

## ACTIVE DISCOVERY CONFIGURATION

From here you can configure Active Discovery

## Add Active Discovery configuration

Use collection interface

+ New network interface

## Network interfaces

- 192.168.0.192/24 VLAN#1 (collection interface)
- 192.168.20.192/24 VLAN#20 delete
- 192.168.21.192/24 VLAN#21 delete
- 192.168.22.192/24 VLAN#22 delete
- 192.168.24.192/24 VLAN#24 delete

**Step 8** Click **OK**.

The following schemas show how Active Discovery is created and how packets navigate inside the switch (in red).

Figure 1: IE3300 10G and IE3400:

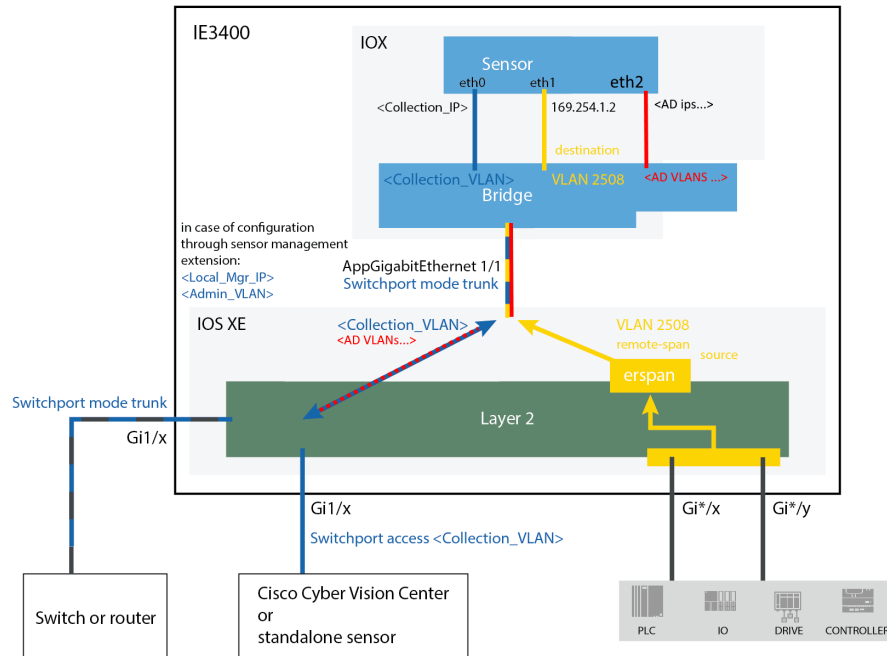


Figure 2: Catalyst 9300 and Catalyst 9400:

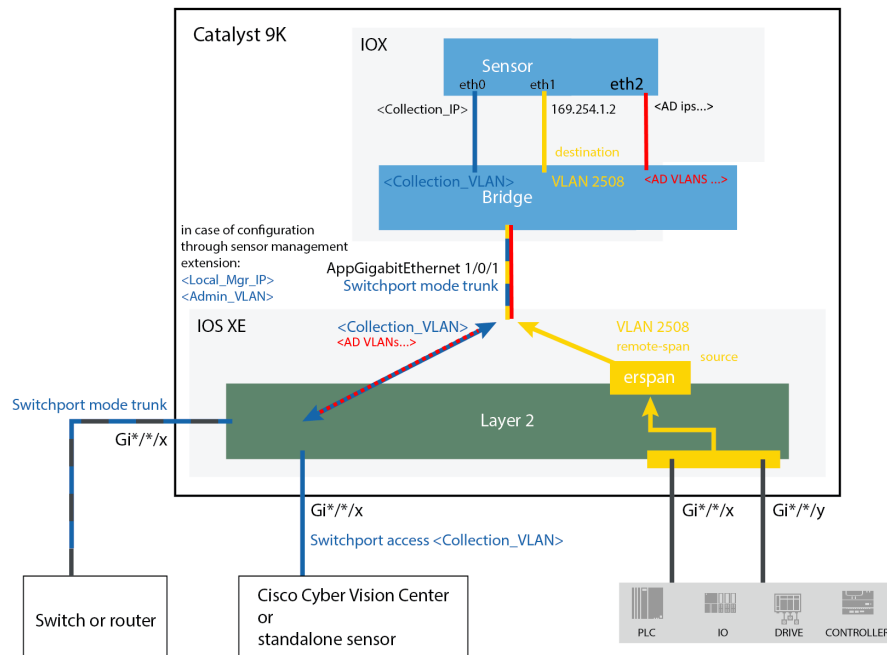
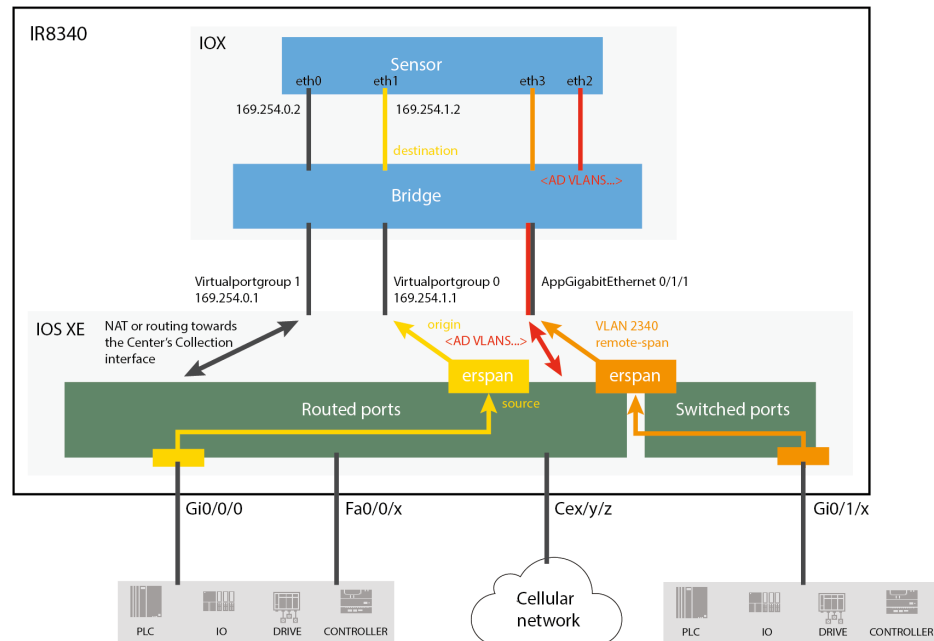


Figure 3: IR8340:

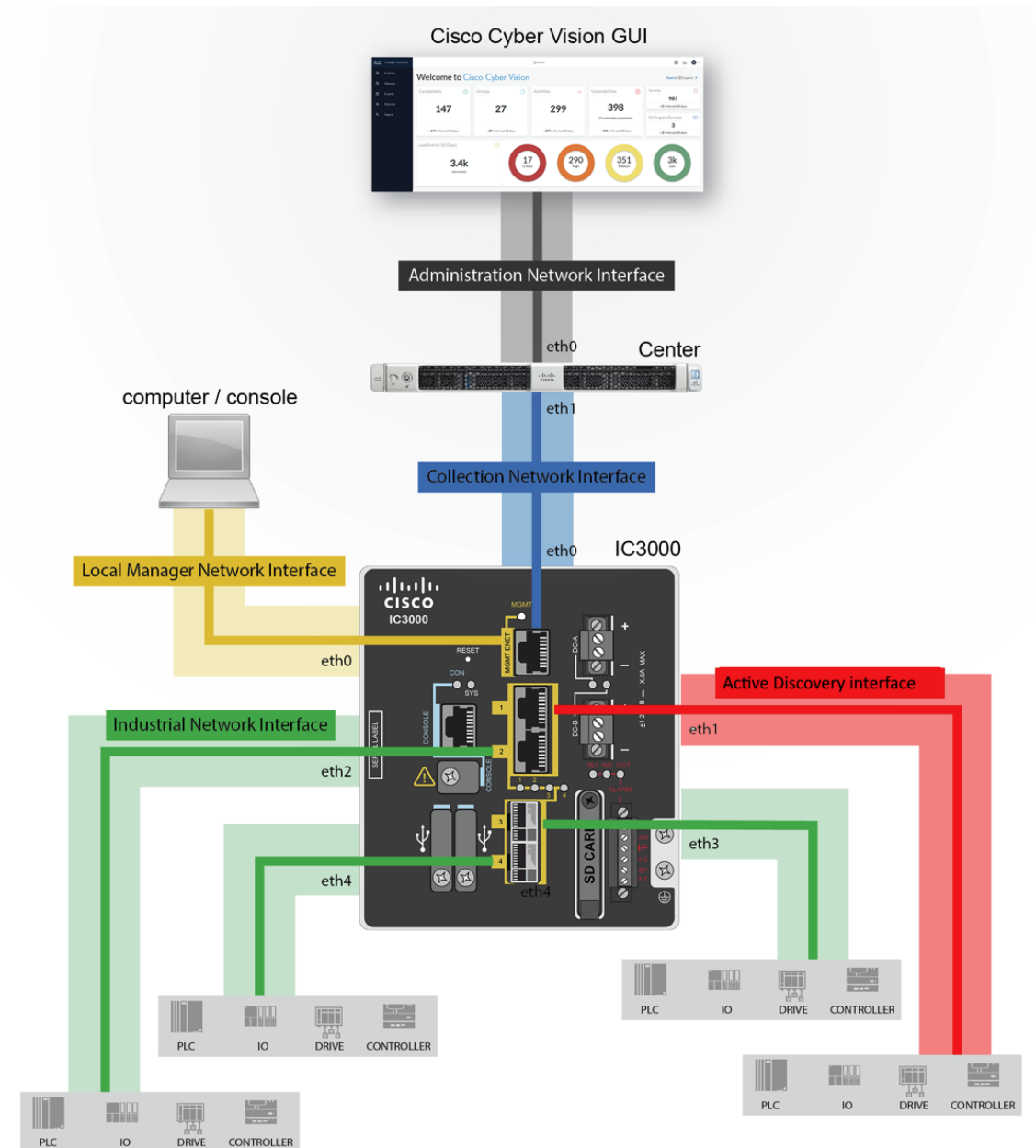
**What to do next**

Proceed to [Policies configuration](#), on page 21.

## Configure Active Discovery on a Cisco IC3000

An interface must be defined on the Cisco IC3000 for Active Discovery to be enabled. Active Discovery can be set on the Collection network interface (i.e. the management port), or one of the four other interfaces of the Cisco IC3000 (i.e. int 1 to int 4).

Example: Active Discovery set on int1 (in red):



In any case, to configure Active Discovery on a Cisco IC3000, you have two options:

- To redeploy the Cisco IC3000 sensor with Active Discovery through the sensor management extension on Cisco Cyber Vision.
- To set up Active Discovery on the sensor, retrieve the provisioning package and deploy it on the device through the Local Manager.

## Redeploy the Cisco IC3000 with Active Discovery

Redeploy the sensor to enable and configure Active Discovery on the Cisco IC3000.

**Step 1** On the Sensor Explorer page, click the sensor to reconfigure/redeploy. The sensor right side panel appears.

**Step 2** Click **Redeploy**.

The screenshot shows the Cisco Sensor Explorer interface. On the left is a navigation menu with options like System, Data Management, Network Organization, Sensors, Management jobs, PCAP Upload, Active Discovery, Users, Events, API, License, External Authentication, and Snort. The 'Sensors' section is expanded, showing 'Sensor Explorer' selected. The main area displays 'Sensor Explorer' with a sub-header: 'From this page, you can explore and manage sensors and sensors folders, and erased. When a sensor connects for the first time, you must authorize...'. Below this are buttons for 'Install sensor', 'Manage Cisco devices', and 'Organize'. A table titled 'Folders and sensors (5)' lists sensors with columns for Label, IP Address, and Version. The sensor 'FCH2309Y01Z' is selected, and its details are shown in a right-hand panel. The 'Redeploy' button in the right-hand panel is highlighted with a red box.

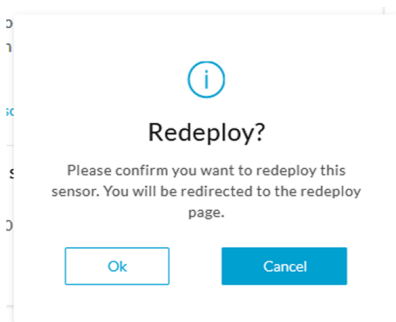
Label	IP Address	Version
FCH2309Y01Z	192.168.49.23	4.1.0+2022031115

Right-hand panel details for FCH2309Y01Z:

- Label: FCH2309Y01Z
- Serial Number: FCH2309Y01Z
- IP address: 192.168.49.23
- Version: 4.1.0+202203111515
- System date: Apr 8, 2022 6:57:33 PM
- Deployment: Sensor Management Extension
- Active Discovery: Scanning
- Capture mode: All
- System Health: Status: Connected, Processing status: Pending data, Uptime: 2 days
- Buttons: Go to statistics, Start Recording, Move to, Download package, Capture mode, **Redeploy**, Enable IDS, Reboot, Shutdown, Uninstall, Active Discovery

A pop up asking to confirm the redeployment of the sensor appears.

**Step 3** Click **OK** to proceed.



A summary of the sensor configuration is displayed.

**Step 4** Click **Start**.

Redeploy Cisco device

## Get Cisco device configuration

The current configuration of your Cisco device enables you to:

- Reconfigure the Cyber Vision IOx sensor app on this device;
- Reconfigure your Cisco device for Cyber Vision (i.e modify the IP address);
- Deploy the Cyber Vision IOx sensor app on a new device using this configuration.

Device IP: 192.168.49.22	Device port: 8443
Collection IP address: 192.168.49.23	Collection prefix length: 24
Use global credentials: Yes	Disk size: Use as much space as possible
Active Discovery interfaces: ETH2 192.168.50.40/24	

Exit
Start

The reach Cisco device window appears. The device's IP address and port are displayed.

Redeploy Cisco device

## Reach Cisco device

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

IP address* 192.168.49.22	Port* 8443 <small>For example 443 or 8443</small>
Center collection IP <input type="text"/> <small>leave blank to use current collection IP</small>	
Credentials <input checked="" type="checkbox"/> Use global credentials	

Exit
Connect

**Step 5** Enter the credentials to reach the device or tick **Use global credentials**.

**Step 6** Click **Connect**.

The Configure Cyber Vision IOx sensor app window appears.



Redeploy Cisco device

### Configure Cyber Vision IOx sensor app

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

[Click here to fill the warning fields with the current sensor configuration](#)

Cisco device: IC3000-2C2F-K9

Collection IP address\* ⚠

Collection prefix length\* ⚠

Like 24, 16 or 8

Collection gateway

**Step 7**

Click the blue link to fill the warning fields with the current sensor configuration.

The Collection IP address and Collection prefix length are automatically filled.

### Configure Cyber Vision IOx sensor app

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

[Click here to fill the warning fields with the current sensor configuration](#)

Cisco device: IC3000-2C2F-K9

Collection IP address\*

Collection prefix length\*

Like 24, 16 or 8

Collection gateway

it

Next

**Step 8**

Click **Next**.

The Configure Active Discovery window appears.

## Configure Active Discovery

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

[Click here to add the current Active Discovery configuration on this sensor](#)

- Passive only  
 Passive and Active Discovery

Select a physical interface

MGMT / Collection (enables DPI on collection inte... ▼

Select the port used to send packets

it

Back

Deploy

**Step 9** Select **Passive and Active Discovery**.

**Step 10** Select a physical interface.

**Step 11** Click **Deploy**.

A message saying that the sensor is being redeployed appears. You can either go the jobs page or go back to the Sensor Explorer page.

Redeploy Cisco device

## Done!

The Cyber Vision IOx sensor application is being redeployed on your device. A job has been created to track deployment progress.

What's next?

[Back to Sensor Explorer](#)

[Go to the jobs page](#)

If you click **Go to the jobs page** you are redirected to the Management jobs page.

The screenshot shows the 'Management jobs' page. The left sidebar contains navigation options: System, Data Management..., Network Organizat..., Sensors (expanded to show Sensor Explorer, Management jobs, and PCAP Upload), Active Discovery, and Users. The main content area is titled 'Management jobs' and includes the subtitle 'Jobs execution for sensor management tasks.' Below this is a table with columns 'Jobs', 'Steps', and 'Duration'. The table shows two rows for 'Single redeployment (FCH2309Y01Z)'. The first row has a progress indicator showing a blue circle followed by three grey circles, with the status 'In progress'. The second row has four green checkmarks, with the status '1m 10s'. The table is paginated with '1' of '20' items per page.

You can see the redeployment advancement. This can take several minutes.

If you go back to the Sensor Explorer page, you will see that the sensor is in Redeploying status.

The screenshot shows the 'Sensor Explorer' page. The left sidebar contains navigation options: System, Data Management..., Network Organizat..., Sensors (expanded to show Sensor Explorer, Management jobs, and PCAP Upload), Active Discovery, Users, Events, API, License, and External Authen... The main content area is titled 'Sensor Explorer' and includes the subtitle '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.' Below this are buttons for 'Install sensor', 'Manage Cisco devices', and 'Organize'. The section 'Folders and sensors (5)' includes a 'Filter' button, '0 Selected', 'Move selection to', and 'More Actions'. The table below shows sensor details with columns: Label, IP Address, Version, Location, Health status, Processing status, Active Discovery, and Uptime. The sensor FCH2309Y01Z is highlighted with a blue background and has a 'Redeploying' health status and 'Not enrolled' processing status.

Once the redeployment is finished, the sensor will switch status to Connected and Active Discovery to Enabled.

<input type="checkbox"/>	Label	IP Address	Version	Location	Health status	Processing status	Active Discovery	Uptime
<input type="checkbox"/>	[blurred]							
<input type="checkbox"/>	[blurred]							
<input type="checkbox"/>	[blurred]				Disconnected	Disconnected	Disabled	0s
<input type="checkbox"/>	FCH2309Y01Z	192.168.49.23	4.1.0+202203111515		Connected	Pending data	Enabled	2 minutes
<input type="checkbox"/>	[blurred]				Connected	Not enrolled	Disabled	0s

### What to do next

Proceed to [Policies configuration](#), on page 21.

## Manually configure Active Discovery on the Cisco IC3000

To do so, you will:

1. Set up the Cisco IC3000 sensor with Active Discovery on Cisco Cyber Vision and download the provisioning package.
2. Deploy the provisioning package on the Cisco IC3000 device through the Local Manager.

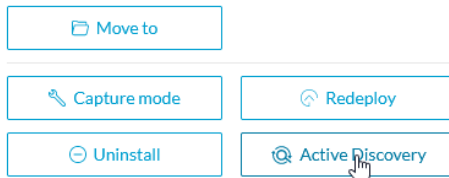
### Set up Active Discovery on Cisco Cyber Vision

**Step 1** Navigate to **Admin > Sensors > Sensor Explorer**.

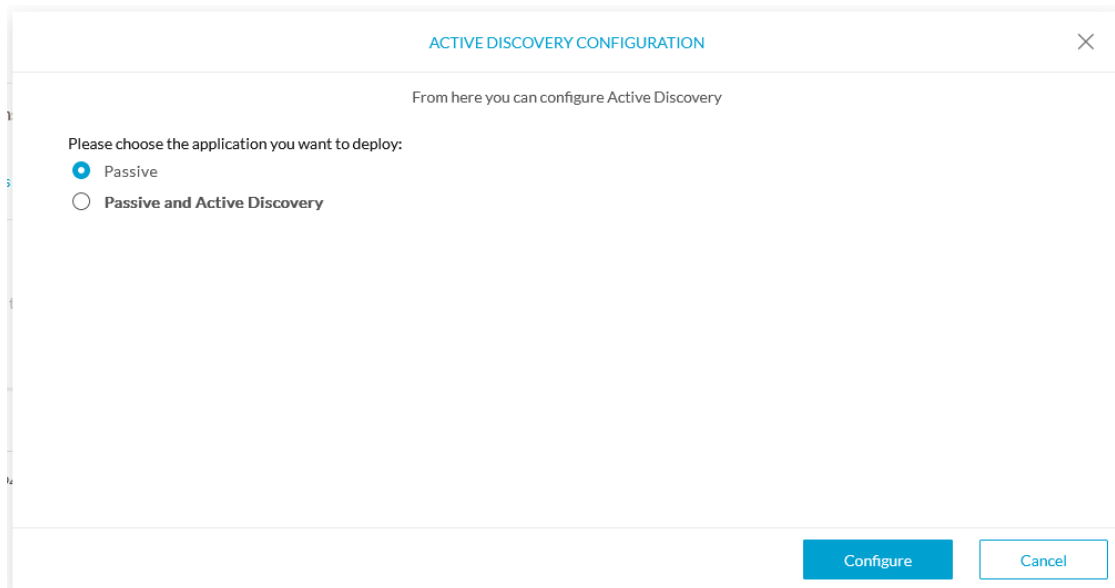
**Step 2** Select a sensor in the list.

The sensor right side panel appears.

**Step 3** Click the **Active Discovery** button.



The Active Discovery configuration window pops up.



**Step 4** Select the **Passive and Active Discovery** option.

A list of network interfaces appears.

ACTIVE DISCOVERY CONFIGURATION ×

From here you can configure Active Discovery

Please choose the application you want to deploy:

Passive

Passive and Active Discovery

int1 ^

MGMT / Collection (enables DPI on collection interface)

int1

int2 ☞

int3

int4

Configure
Cancel

**Step 5** Select the network interface dedicated to Active Discovery, i.e. the management port or one of the four interfaces.

The following fields appear:


- IP address
- Prefix length

**Step 6** Fill them with the proper network information.

**Step 7** Click **Configure**.

The following message appears:

ACTIVE DISCOVERY CONFIGURATION ×



The configuration has been saved successfully. Please download a new provisioning package to apply the configuration to your sensor.

OK

**Step 8** Click **OK**.

**Step 9** In the sensor list, click the Cisco IC3000 you just set with Active Discovery.

Its right side panel appears.

**Step 10** Click **Download package**.

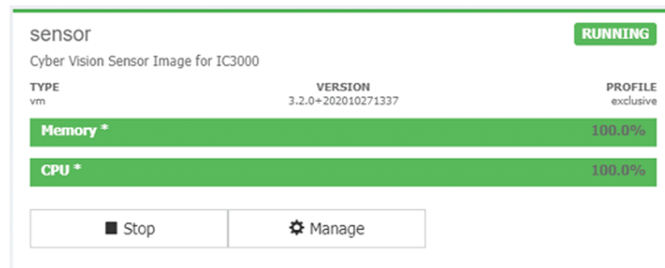
The provisioning package including the Active Discovery configuration is downloaded.

### What to do next

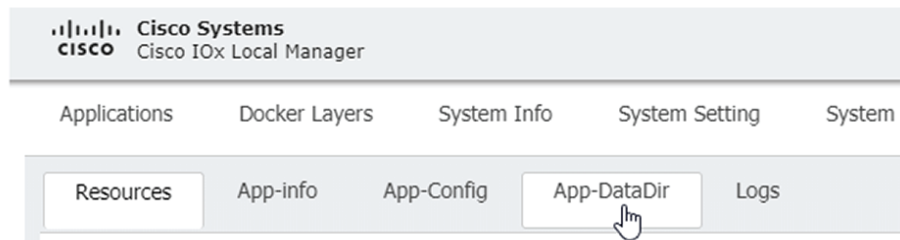
Import the provisioning package in the Cisco IC3000 device through the Local Manager.

## Import the provisioning package

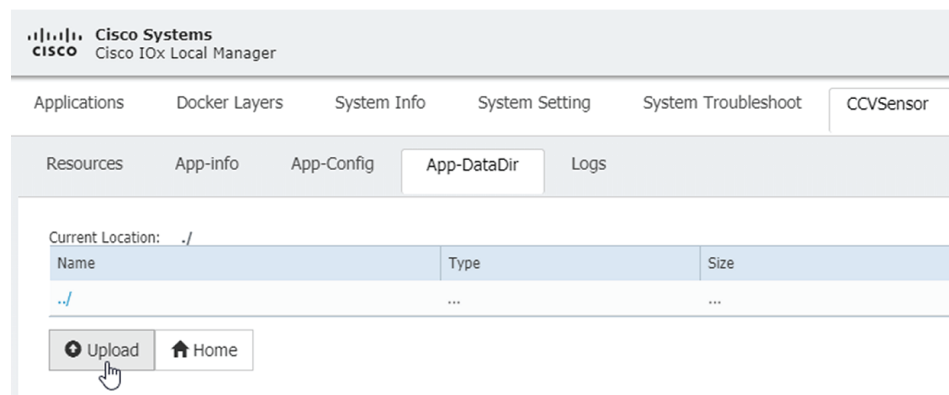
1. In the Local Manager, in the IOx configuration menu, click **Manage**.



2. Navigate to **App\_DataDir**.



3. Before browsing the file, you must unzip the provisioning package.
4. Click **Upload**.



5. Navigate to the folder with the sensor serial name (i.e. FCH2312Y03F) > appconfigs, and select cybervision-sensor-config.zip.



6. Make sure the path contains the entire file name (with .zip).



7. Click **OK**.







## CHAPTER 4

# Policies configuration

- [Create a policy, on page 21](#)
- [Set Active Discovery Broadcast, on page 23](#)
- [Set Active Discovery Unicast Ethernet/IP, on page 24](#)
- [Set Active Discovery Unicast SiemensS7, on page 25](#)
- [Set Active Discovery Unicast SNMPv2c, on page 27](#)
- [Set Active Discovery Unicast SNMPv3, on page 29](#)
- [Set Active Discovery Unicast WMI, on page 32](#)
- [Modify a policy, on page 33](#)

## Create a policy


An Active Discovery policy is a list of settings which define protocols and their parameters that will be used to inspect the industrial network. The policy will be applied to an IP address, an IP range and/or a preset and used on a list of sensors and components.

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

**Step 1** Navigate to **Admin > Active Discovery > Policies** .

## Active Discovery policies

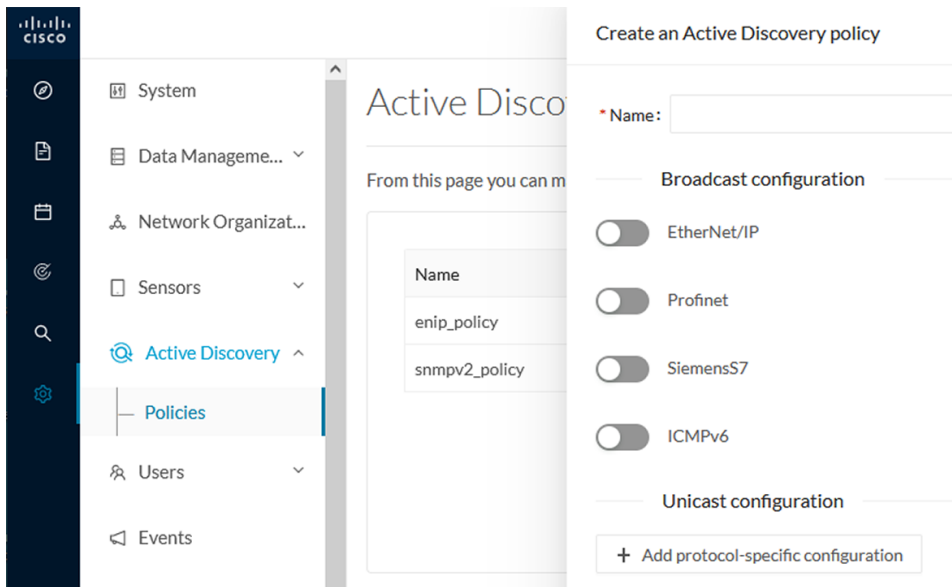
From this page you can manage the Active Discovery policies.

Name	Number of associated presets
 No Data	

[+ Create policy](#)

**Step 2** Click **+ Create policy**.

A Create an Active Discovery policy overlay appears.



The screenshot shows the Cisco Active Discovery configuration interface. On the left is a navigation menu with options: System, Data Management..., Network Organization..., Sensors, Active Discovery (selected), Policies (sub-selected), Users, and Events. The main content area displays the 'Create an Active Discovery policy' overlay. This overlay includes a 'Name' field with a red asterisk, a 'Broadcast configuration' section with four toggle switches (EtherNet/IP, Profinet, SiemensS7, ICMPv6), and a 'Unicast configuration' section with a '+ Add protocol-specific configuration' button. A preview window shows a table with columns 'Name' and 'Number of associated presets', containing entries for 'enip\_policy' and 'snmpv2\_policy'.

### What to do next

- [Set Active Discovery Broadcast, on page 23](#)
- [Set Active Discovery Unicast Ethernet/IP, on page 24](#)
- [Set Active Discovery Unicast SiemensS7, on page 25](#)
- [Set Active Discovery Unicast SNMPv2c, on page 27](#)
- [Set Active Discovery Unicast SNMPv3, on page 29](#)
- [Set Active Discovery Unicast WMI, on page 32](#)

# Set Active Discovery Broadcast

## Before you begin

Active Discovery is compatible with the following Broadcast protocols:

- EtherNet/IP
- Siemens S7
- Profinet
- ICMPv6

The sensor will send requests on all defined interfaces.

**Step 1** Type a policy name.

**Step 2** Toggle the Broadcast protocol buttons ON to enable Active Discovery on these protocols.

× Create an Active Discovery policy

\* Name: Broadcast\_policy

Broadcast configuration

<input checked="" type="checkbox"/> EtherNet/IP	* Retry: 3	* Timeout: 10
<input checked="" type="checkbox"/> Profinet	* Retry: 3	* Timeout: 10
<input checked="" type="checkbox"/> SiemensS7	* Retry: 3	* Timeout: 10
<input type="checkbox"/> ICMPv6		

Unicast configuration

+ Add protocol-specific configuration

Cancel Create

**Step 3** Leave the Retry and Timeout settings with the default values (3 and 10).

Retry: number of request attempts.

Timeout: waiting time in seconds for a response.

**Step 4** Click **Create** to finish or add Unicast configurations to the policy.

## What to do next

Add an Active Discovery Unicast configuration:

- [Set Active Discovery Unicast Ethernet/IP, on page 24.](#)
- [Set Active Discovery Unicast SiemensS7, on page 25](#)

- [Set Active Discovery Unicast SNMPv2c, on page 27.](#)
- [Set Active Discovery Unicast SNMPv3, on page 29.](#)
- [Set Active Discovery Unicast WMI, on page 32](#)

## Set Active Discovery Unicast Ethernet/IP

Set Active Discovery Unicast Ethernet/IP to search for devices and components with Ethernet/IP requests. All components with an IPV4 address will be queried.

**Step 1** Give the policy a name.

**Step 2** Under Unicast configuration, click + **Add protocol-specific configuration**.

Create an Active Discovery policy

\* Name:

Broadcast configuration

EtherNet/IP

Profinet

SiemensS7

ICMPv6

Unicast configuration

[+ Add protocol-specific configuration](#)

**Step 3** Click the **Select protocol** dropdown menu and select **EtherNet/IP**.

Unicast configuration

Select protocol

- EtherNet/IP
- SNMPv2c
- SNMPv3

**Step 4** Toggle the **Enable** button ON.

**Step 5** Leave the Retry attempts and Timeout settings with the default values (0 and 5).

**Step 6** You can toggle the **Backplane discovery** button ON. Active Discovery will look for the different module details within the discovered chassis.

Unicast configuration

EtherNet/IP

Enable

\* Retry attempts  \* Timeout (in seconds)

Backplane discovery

Cancel Save

+ Add protocol-specific configuration

Cancel Create

**Step 7** Click **Save**.  
The menu closes.

**Step 8** Click **Create**.

### What to do next

Add an Active Discovery Unicast configuration:

- [Set Active Discovery Unicast SiemensS7, on page 25](#)
- [Set Active Discovery Unicast SNMPv2c, on page 27](#)
- [Set Active Discovery Unicast SNMPv3, on page 29](#)
- [Set Active Discovery Unicast WMI, on page 32](#)

## Set Active Discovery Unicast SiemensS7

Set Active Discovery Unicast SiemensS7 to search for devices and components with SiemensS7 requests. SiemensS7 is a communication protocol used on Siemens PLCs. Siemens PLCs with an IPV4 address will be queried.

**Step 1** Give the policy a name.

**Step 2** Under Unicast configuration, click + **Add protocol-specific configuration**.

Create an Active Discovery policy

\*Name:

Broadcast configuration

EtherNet/IP

Profinet

SiemensS7

ICMPv6

Unicast configuration

[+ Add protocol-specific configuration](#)

**Step 3** Click the **Select protocol** dropdown menu and select **SiemensS7**.

Unicast configuration

Select protocol

- EtherNet/IP
- Melsoft
- SiemensS7
- SNMPv2c
- SNMPv3
- WMI

**Step 4** Toggle the **Enable** button ON.

**Step 5** Leave the Retry attempts and Timeout settings with the default values (0 and 5).

Unicast configuration

SiemensS7

Enable

\*Retry attempts  \*Timeout (in seconds)

Rack

Slot

**Step 6** Enter a number of racks and slots to be queried.

Slot: number of modules to search for within a chassis.

**Step 7** Click **Save**.  
The menu closes.

**Step 8** Click **Create**.

### What to do next

Add an Active Discovery Unicast configuration:

- [Set Active Discovery Unicast Ethernet/IP, on page 24](#)
- [Set Active Discovery Unicast SNMPv2c, on page 27](#).
- [Set Active Discovery Unicast SNMPv3, on page 29](#).
- [Set Active Discovery Unicast WMI, on page 32](#)

## Set Active Discovery Unicast SNMPv2c

Set Active Discovery Unicast SNMPv2c to search for devices and components with SNMPv2c requests. All components with an IPV4 address will be queried. Default OIDs are requested for all devices and some specific OIDs are requested based on the vendor and the type of components.

**Step 1** Give the policy a name.

**Step 2** Under Unicast configuration, click + **Add protocol-specific configuration**.

Create an Active Discovery policy

Name:

Broadcast configuration

EtherNet/IP

Profinet

SiemensS7

ICMPv6

Unicast configuration

**Step 3** Click the **Select protocol** dropdown menu and select **SNMPv2c**.

The image shows a 'Unicast configuration' dialog box. At the top, there is a dropdown menu labeled 'Select protocol' with a downward arrow. Below the dropdown, three options are listed: 'EtherNet/IP', 'SNMPv2c', and 'SNMPv3'. The 'SNMPv2c' option is highlighted with a grey background. To the right of the 'SNMPv2c' option, there is a small button labeled 'SNMPv2c'.

**Step 4** Toggle the **Enable** button ON.

**Step 5** Leave the Retry attempts and Timeout settings with the default values (0 and 5).

**Step 6** Type a community string for authentication.

The community string is defined by IT or network administrators. The value "public" is often used by default.

**Step 7** You can toggle the **Enable SNMPv1 fallback** button ON. Active Discovery will look for PLCs and I/O chassis with module details.

The image shows the 'SNMPv2c' configuration dialog box. It has a title bar with 'SNMPv2c' and a close button. The main area contains several settings:
 

- An 'Enable' toggle switch, which is currently turned ON.
- '\* Retry attempts' with a text input field containing '0'.
- '\* Timeout (in seconds)' with a text input field containing '5'.
- '\* Community' with a text input field containing 'public'.
- An 'Enable SNMPv1 fallback' toggle switch, which is currently turned ON.

 At the bottom right, there are two buttons: 'Cancel' and 'Save'.

**Step 8** Click **Save**.

The menu closes.

**Step 9** Click **Create**.

Refer to the Annex appended at the end of this document to see examples of Unicast SNMPv2c results and detailed information about packets.

### What to do next

Add an Active Discovery Unicast configuration:

- [Set Active Discovery Unicast Ethernet/IP, on page 24](#)
- [Set Active Discovery Unicast SiemensS7, on page 25](#)
- [Set Active Discovery Unicast SNMPv3, on page 29.](#)
- [Set Active Discovery Unicast WMI, on page 32](#)



# Set Active Discovery Unicast SNMPv3

Set Active Discovery Unicast SNMPv3 to search for devices and components with SNMPv3 requests. All components with an IPV4 address will be queried. Default OIDs are requested for all devices and some specific OIDs are requested based on the vendor and the type of components.

**Step 1** Give the policy a name.

**Step 2** Under Unicast configuration, click + **Add protocol-specific configuration**.

**Step 3** Click the **Select protocol** dropdown menu and select **SNMPv3**.

**Step 4** Toggle the **Enable** button ON.

**Step 5** Leave the Retry attempts and Timeout settings with the default values (0 and 5).

**Step 6** Type a community string for authentication.

The community string is defined by IT or network administrators. The value "public" is often used by default.

**Step 7** Select the proper security and privacy level based on the information provided by the IT or network administrators.

All options available on SNMPv3 are implemented in Cisco Cyber Vision. Three security levels are available:

- **Disable both authentication and privacy.**

Only a username is requested for authentication.

\* Security type

Enable authentication and disable privacy

Disable both authentication and privacy

**Enable authentication and disable privacy**

Enable both authentication and privacy

- **Enable authentication and disable privacy.**

Authentication will be based on HMAC-MD5 or HMAC-SHA algorithms.

Select the algorithm to use and provide a username and an authentication password.

\* Authentication type

sha256

md5

sha

sha224

**sha256**

sha384

sha512

- **Enable both authentication and privacy.**

In addition to the previous level, a DES or AES encryption of the content is requested. Select the level of encryption to use and provide a username and an authentication password. In addition, you must provide a password used for the encryption.

\* Privacy type

des

nopriv

**des**

aes

aes192

aes256

aes192c

aes256c

**Step 8** Click **Save**.

Create an Active Discovery policy X

\*Name:

Broadcast configuration

EtherNet/IP

Profinet

SiemensS7

ICMPv6

Unicast configuration

SNMPv3 v

Enable

\* Retry attempts       \* Timeout (in seconds)

User-based security model configuration

\* Security type

\* Username

\* Authentication type       \* Authentication password

\* Privacy type       \* Privacy password

The menu closes.

**Step 9** Click **Create**.

Refer to the Annex appended at the end of this document to see examples of Unicast SNMPv3 results and detailed information about packets.

**What to do next**

Add an Active Discovery Unicast configuration:

- [Set Active Discovery Unicast Ethernet/IP, on page 24](#)

- [Set Active Discovery Unicast SiemensS7, on page 25](#)
- [Set Active Discovery Unicast SNMPv2c, on page 27.](#)
- [Set Active Discovery Unicast WMI, on page 32](#)

## Set Active Discovery Unicast WMI

Set Active Discovery Unicast WMI (Windows Management Instrumentation) to collect Windows information like local-host names and operating system versions.

**Step 1** Give the policy a name.

**Step 2** Under Unicast configuration, click + **Add protocol-specific configuration**.

Create an Active Discovery policy

\*Name:

Broadcast configuration

EtherNet/IP

Profinet

SiemensS7

ICMPv6

Unicast configuration

[+ Add protocol-specific configuration](#)

**Step 3** Click the **Select protocol** dropdown menu and select **WMI**.

Unicast configuration

Select protocol

- EtherNet/IP
- Melsec
- SiemensS7
- SNMPv2c
- SNMPv3
- WMI

**Step 4** Toggle the **Enable** button ON.

**Step 5** Leave the Retry attempts and Timeout settings with the default values (0 and 5).

**Step 6** Enter a Windows user account and password with the suitable WMI rights.

An Active Directory user account for authentication on multiple hosts with single login credentials can also be used.

Unicast configuration

WMI

Enable

\* Retry attempts  \* Timeout (in seconds)

\* Username ⓘ

\* Password ⓘ

Cancel Save

+ Add protocol-specific configuration

Cancel Create

**Step 7** Click **Save**.  
The menu closes.

**Step 8** Click **Create**.

### What to do next

Add an Active Discovery Unicast configuration:

- [Set Active Discovery Unicast Ethernet/IP, on page 24](#)
- [Set Active Discovery Unicast SiemensS7, on page 25](#)
- [Set Active Discovery Unicast SNMPv2c, on page 27.](#)
- [Set Active Discovery Unicast SNMPv3, on page 29.](#)

## Modify a policy

**Step 1** Navigate to **Admin > Active Discovery > Policies**.

**Step 2** Click the policy in the list you want to modify.

Name	Number of associated presets
enip_policy	0
snmpv2_policy	0
snmpv3_policy	0
ICMPv6_policy	1

An overlay appears with the policy's configurations.

**Step 3** Click **Edit**, **Duplicate** or **Delete**.

If you clicked **Edit**, an Edit policy overlay appears.

Edit policy ×

\* Name:

**Broadcast configuration**

EtherNet/IP  
 Profinet  
 SiemensS7  
 ICMPv6

**Unicast configuration**

- > EtherNet/IP - Enabled ✎ 🗑
- > SNMPv2c - Enabled ✎ 🗑
- > SNMPv3 - Enabled ✎ 🗑

**Step 4** You can toggle the buttons ON/OFF to enable/disable broadcast protocols.

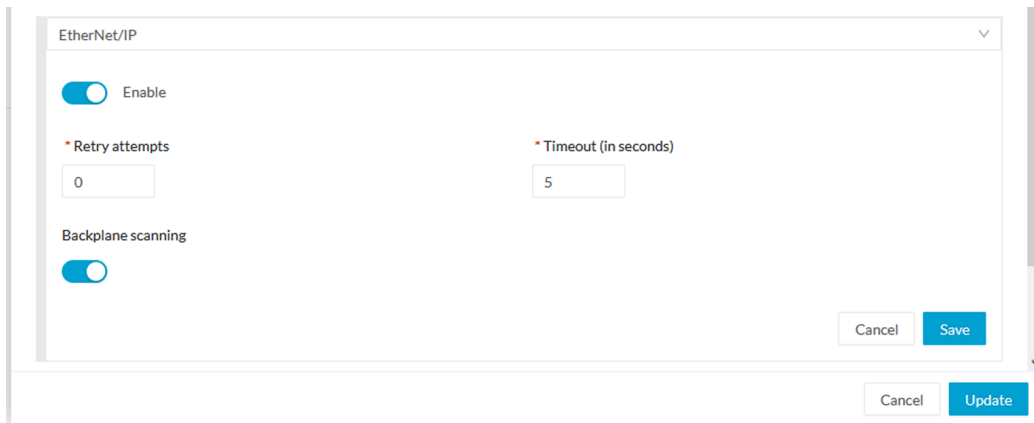
**Step 5** Click the pencil button to edit Unicast protocols settings.

**Unicast configuration**

- v EtherNet/IP - Enabled ✎ 🗑
  - Retry attempts: 0
  - Timeout: 5
  - Backplane scanning: enabled
- > SNMPv2c - Enabled ✎ 🗑

The Unicast configuration panels appears below the list of Unicast protocols.

## Modify a policy



The screenshot shows a configuration dialog box titled "EtherNet/IP". It contains the following settings:

- Enable:** A toggle switch that is currently turned on.
- Retry attempts:** A text input field containing the value "0".
- Timeout (in seconds):** A text input field containing the value "5".
- Backplane scanning:** A toggle switch that is currently turned on.

At the bottom right of the dialog, there are two buttons: "Cancel" and "Save". Below the dialog, there are two more buttons: "Cancel" and "Update".

**Step 6** Make the necessary modifications.

**Step 7** Click **Save**.

The overlay closes.

**Step 8** Click **Update**.

---





## CHAPTER 5

# Profiles configuration

- [Set an Active Discovery profile, on page 37](#)

## Set an Active Discovery profile

Set an Active Discovery profile by adding a policy, targeting IP addresses and arranging a schedule.

### Before you begin

**Step 1** On Cisco Cyber Vision, navigate to Admin > Active Discovery > Profiles.

**Step 2** Click the **Create profile** button.

A form to create an Active Discovery profile pops up.

**Step 3** Give the profile a name.

**Step 4** Select a policy to base the profile on.

CREATE AN ACTIVE DISCOVERY PROFILE

Name:

Discovery policy:

**Step 5** Set target IP addresses: different options are available, such as:

- selecting a preset: the preset's device list will be used to list the IP addresses to be queried. In other words, the Active Discovery engine will use the IPv4 inside a component list to build its own list of components to check. You can use default and custom presets.
- setting IP targets: you can directly add the IP addresses, IP ranges and subnets you want to be queried.
- selecting sensors: all IP addresses detected by a sensor will be queried. You can also tick the **Use all sensors available** option.

## Set an Active Discovery profile

**Step 6** Optionally, you can arrange a schedule for Active Discovery to be launched. To do so:

- Toggle ON the **Schedule periodic discoveries** button.

Additional options to setup appear:

- Set a time range by selecting a start and end date and time.

The end date and time is optional. If you don't set it, Active Discovery will be launched endlessly.

- Set a frequency. You can set it to hourly, daily, weekly and monthly.

**Step 7** Click **Create**.



## CHAPTER 6

# Annex: Active Discovery protocols

All protocols implemented in the Active Discovery feature use standard packets commonly used by vendors. The system will never send requests on the network without a clear configuration made by the user. It is possible to schedule requests at a pre-defined frequency.

Discovered devices' responses will depend on the protocol implemented by the manufacturer and the user configuration. Except for what is clearly stated in this documentation, no specific configuration is required on discovered devices. Devices may give an answer by default, but it can vary in the field depending on the configuration.

This annex gives examples of the packets used by Cisco Cyber Vision to discover devices and of typical answers the user can expect.

- [EtherNet/IP, on page 39](#)
- [Profinet Multicast, on page 43](#)
- [S7 Broadcast, on page 44](#)
- [S7 Unicast, on page 45](#)
- [ICMPv6 Multicast, on page 46](#)
- [SNMP Unicast, on page 47](#)
- [WMI, on page 55](#)

## EtherNet/IP

Ethernet/IP Active Discovery can be performed by Cisco Cyber Vision using Broadcast or Unicast mode. In any case, requests sent and component properties collected in return will be the same. The main differences will be:

- Broadcast will discover all devices in the local LAN.
- Unicast will only discover the devices and components which have an IPv4 address.
- Unicast will search for, once an EtherNet/IP node is discovered, the devices' content. If a device is a chassis with a backplane, it will be queried and all modules will send their properties.

The EtherNet/IP command used is the List Identity request (0x00063). This command will be sent to the IPv4 broadcast address or directly to an IPv4 address or to a module inside a backplane behind an IPv4 address. The result whether in Broadcast or Unicast will always be the same CIP Identity response (0x000c) with the following properties:

#	Name	Cyber Vision Properties	Example
1	Vendor ID	enip-vendor	Rockwell Automation/Allen-Bradley
2	Device Type	enip-devicetype	ProgrammableLogicController
3	Product Code	enip-productcode	235
4	Revision	enip-version	33.012
5	Status	enip-status	AtLeastOneIOConnectionInRunMode, MinorRecoverableFault, ReservedBits12-15:0x3
6	Serial Number	enip-serial	01105356
7	Product Name	enip-name	1756-L81ES/B

## EtherNet/IP Broadcast or Unicast

A Broadcast Ethernet/IP Active Discovery consists of a packet sent by the sensor which requests EtherNet/IP identities to all devices in the local LAN. For example, a sensor with an Active Discovery IPv4 address 192.168.20.192/24 will send this EtherNet/IP request to the Broadcast address, here 192.168.20.255. All devices in the IPv4 range 192.168.20.0 to 192.168.20.254 will answer with the packet described above (CIP Identity response (0x000c)).

A direct Unicast Ethernet/IP (i.e. no backplane) will consist of the same request but sent directly to the device. When a preset is configured to query EtherNet/IP devices, the system will take the list of components of this preset which have an IPv4 address. Then, the Active Discovery engine will try to reach each IPv4 with this EtherNet/IP identities request. All reachable EtherNet/IP nodes of this list will answer with the packet described above (CIP Identity response (0x000c)).

In both cases (Broadcast and Unicast), the answer will be sent by the discovered devices to the sensor's Active Discovery network interface. The answer will be a UDP packet for the Broadcast request and some TCP packets for the Unicast request.

Figure 4: Example of properties received from a Rockwell Automation EtherNet/IP communication adapter (1756-EN2T):

The screenshot displays the 'Flow' view for a Rockwell Automation EtherNet/IP communication adapter. The interface includes a gear icon, IP address (192.168.20.192), port (45896), and MAC address (52:54:dd:61:05:d7) on the left. On the right, it shows the device name (1756-EN2T/D), IP (192.168.20.22), port (44818), and MAC (5c88:16:efd1:2e). Activity timestamps for 'First activity' and 'Last activity' are both listed as Feb 9, 2022 3:00:57 PM. Tags include 'Active Discovery' and 'Low Volume, EthernetIP'. Below the flow view, the 'Basics' tab is active, showing a 'Properties' section with the following details:

enip-command: ListIdentity	enip-devicetype: CommunicationsAdapter
enip-event: Equipment	enip-location: Endpoint
enip-name: 1756-EN2T/D	enip-productcode: 0xa6
enip-serial: 0114f91d	enip-status: AtLeastOneIOConnectionInRunMode
enip-status-ra-major: RUN	enip-status-ra-minor: ???
enip-vendor: Rockwell Automation/Allen-Bradley	enip-version: 11.001
ethertype: IPv4	protocol: UDP

Figure 5: Example of properties received from a Rockwell Automation EtherNet/IP safety controller (1756-L81ES):

The screenshot displays the 'Flow' view for a Rockwell Automation EtherNet/IP safety controller. The interface includes a gear icon, IP address (192.168.20.192), port (47928), and MAC address (52:54:dd:61:05:d7) on the left. On the right, it shows the device name (1756-L81ES/B), IP (192.168.20.25), port (44818), and MAC (5c88:16:redcc:8e). Activity timestamps for 'First activity' and 'Last activity' are both listed as Feb 15, 2022 4:57:25 PM. Tags include 'Low Volume, EthernetIP'. Summary statistics show 8 Packets and 1.071 Volume. Below the flow view, the 'Basics' tab is active, showing a 'Properties' section with the following details:

enip-command: ListIdentity	enip-devicetype: ProgrammableLogicController
enip-event: Equipment	enip-location: Endpoint
enip-name: 1756-L81ES/B	enip-productcode: 0xd3
enip-serial: 01105356	enip-status: AtLeastOneIOConnectionInRunMode, MinorRecoverableFault, ReservedBits12-15: 0x3
enip-status-ra-major: REM	enip-status-ra-minor: RUN
enip-vendor: Rockwell Automation/Allen-Bradley	enip-version: 33.012
ethertype: IPv4	protocol: TCP

Figure 6: Example of properties received from a Schneider Electric EtherNet/IP controller (TM221ME16R):

The screenshot displays a network management interface for a Schneider Electric TM221ME16R controller. The top section shows the device's IP address (192.168.22.192), port (33604), and MAC address (52:54:00:61:05:d7). It also shows the device's IP (192.168.22.63), port (44818), and MAC address (00:80:f4:0d:1d:04). The interface includes activity logs for 'First activity' and 'Last activity' on Feb 9, 2022, at 3:02:08 PM. Tags include 'Active Discovery', 'Low Volume', and 'EthernetIP'. The main section is titled 'Properties' and contains a table of key-value pairs.

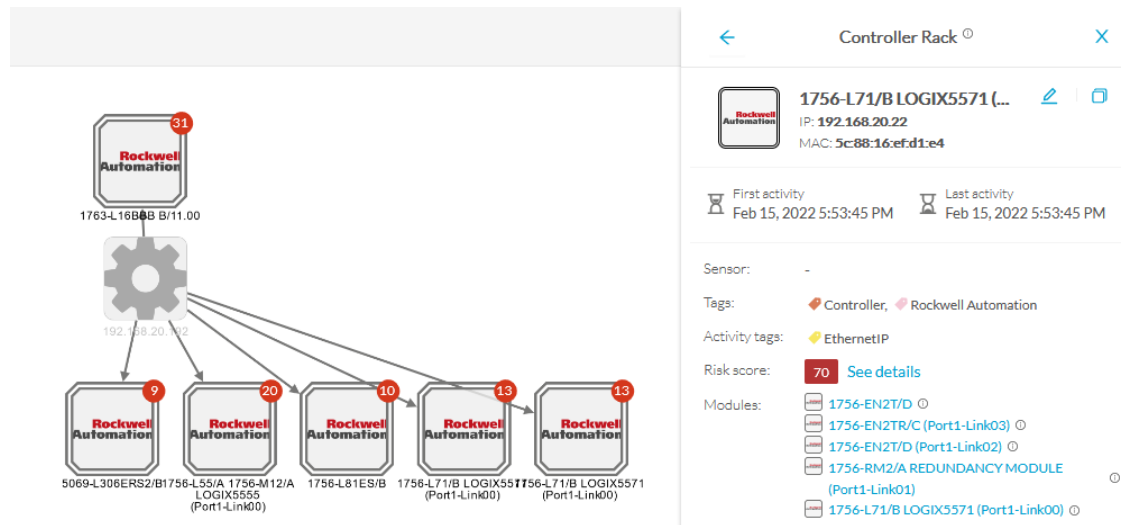
Properties	
enip-command: ListIdentity	enip-devicetype: ProgrammableLogicController
enip-event: Equipment	enip-location: Endpoint
enip-name: TM221ME16R	enip-productcode: 0x1003
enip-serial: 08a48761	enip-status: Configured, AtLeastOneIOConnectionInRunMode
enip-status-ra-major: RUN	enip-status-ra-minor: ???
enip-vendor: Schneider Electric	enip-version: 1.6
ethertype: IPv4	protocol: UDP

## Ethernet/IP backplane discovery

To browse backplanes, the Active Discovery policy with the Unicast EtherNet/IP protocol enabled needs to have the backplane discovery option set to enabled.

In such case, all EtherNet/IP nodes detected by Active Discovery Ethernet/IP Unicast will be queried again by the sensor. The sensor will try to know the backplane size and then send a request to the different modules (link addresses from 0 to the chassis size). All modules will then send their properties such as the product reference and the firmware version.

For example, an Ethernet/IP communication adapter with the IPv4 192.168.20.22 was first discovered. Then, all seven slots of the chassis backplane were queried. Four of them have answered back, which allowed Cisco Cyber Vision to build a Controller Rack:



A controller and a firmware version were discovered in the slot 0 of this backplane thanks to Active Discovery:

### Properties

enip-cip-class: Connection Manager Object	enip-cip-request: true
enip-devicetype: ProgrammableLogicController	enip-event: Equipment
enip-location: Port1-Link00	enip-name: 1756-L71/B LOGIX5571
enip-productcode: 0x5c	enip-serial: 0115289b
enip-status: AtLeastOneIOConnectionInRunMode,ReservedBits12-15:0x3	enip-status-ra-major: REM
enip-status-ra-minor: RUN	enip-vendor: Rockwell Automation/Allen-Bradley
enip-version: 32.051	ethertype: IPv4
protocol: TCP	

## Profinet Multicast

Cisco Cyber Vision Active Discovery can use a Profinet DCP service called Identify Request. This request will be sent by the sensor interfaces defined for Active Discovery. All Profinet devices will answer with a specific Profinet DCP identify response packet.

The request is sent by the sensor MAC address to a specific Ethernet Multicast address: 01:0e:cf:00:00:00. This Profinet DCP Multicast address will allow Cisco Cyber Vision to join all Profinet nodes on the local LAN. The answer of each node will be a specific Profinet DCP packet sent to the sensor MAC address.

The information collected are:

- The IP address + mask.
- The Manufacturer name.
- The name of the station.

Figure 7: For example, a Siemens S7-1500 controller:

Flow

52:54:dd:61:05:d7  
IP: -  
MAC: 52:54:dd:61:05:d7

SIEMENS

s7-1500rxrh-systemxb1.p...  
IP: 192.168.21.50  
MAC: ac:64:17:a6:37:54

First activity  
Feb 16, 2022 1:19:01 PM

Last activity  
Feb 16, 2022 1:19:22 PM

Tags  
Active Discovery,  
Profinet, Profinet DCP

Basics

Properties Content Statistics Tags

Properties

ethertype: PROFINET	profinetdcp-devicegw: 192.168.21.254
profinetdcp-deviceip: 192.168.21.50	profinetdcp-devicenetmask: 255.255.255.0
profinetdcp-manufacturername: S7-1500	profinetdcp-nameofstation: s7-1500rxrh-systemxb1.plcxb1.profinetxainterfacexb23431
profinetdcp-service-id: Identify	protocol:

## S7 Broadcast

Cyber Vision Active Discovery can use a request on the protocol S7 discovery with a command: "identification". This request will be sent by the sensor interfaces defined for Active Discovery. All S7 devices will answer with a specific S7 Discovery identification response packet.

The request is sent by the sensor MAC address to the Ethernet broadcast address: ff:ff:ff:ff:ff:ff. The answer of each S7 protocol capable node will be a specific S7 discovery packet sent by the device MAC address to the sensor MAC address.

The information collected are:

- The model name.
- The name of the device.



Figure 8: For example, a Siemens S7-300 controller:

Flow

52:54:dd:c1:f1:ed  
IP: -  
MAC: 52:54:dd:c1:f1:ed

SIEMENS  
SIMATIC 300  
IP: -  
MAC: 08:00:06:92:c1:84

First activity  
Feb 16, 2022 2:19:50 PM

Last activity  
Feb 16, 2022 2:20:10 PM

Tags  
Active Discovery,  
S7Discovery

Basics

Properties Content Statistics Tags

Properties

ethertype: LLC	protocol:
s7discovery-command: identification	s7discovery-devicename: SIMATIC 300
s7discovery-model: S7-300 CP	s7discovery-type: response
snap-org-code: 0x080006	snap-org-name: Siemens
snap-protocol-id: 0x1fd	

## S7 Unicast

The Active Discovery engine uses a specific S7 Unicast command to request properties from S7-compatible devices, such as:

- Hardware reference
- Firmware version

The screenshot shows the 'Properties' page in the Cisco Cyber Vision interface. The page is divided into two main sections: 'Normalized Properties' and 'Other Properties'. The 'Normalized Properties' section includes the following fields:

- fw-version: V 2.2.0
- hw-version: 1
- ip: 192.168.21.41
- mac: 00:1c:06:00:88:19
- model-ref: 6ES7 214-1AE30-0XB0
- name: project-s7-1200
- public-ip: no
- vendor-name: Siemens Numerical Control Ltd., Nanjing

The 'Other Properties' section includes the following fields:

- name-profinet: project-s7-1200
- profinetdcp-devicerole: IO-Controller
- profinetdcp-manufacturer-specific: S7-1200
- s7-fwver: V 2.2.0
- s7-hwref: 6ES7 214-1AE30-0XB0
- s7-hwver: 1
- s7-moduleref: 6ES7 214-1AE30-0XB0
- s7-modulever: 1
- s7-rack: 0
- s7-slot: 0
- vendor: Siemens Numerical Control Ltd., Nanjing

The s7-fwver and s7-hwref fields are highlighted with a red box.

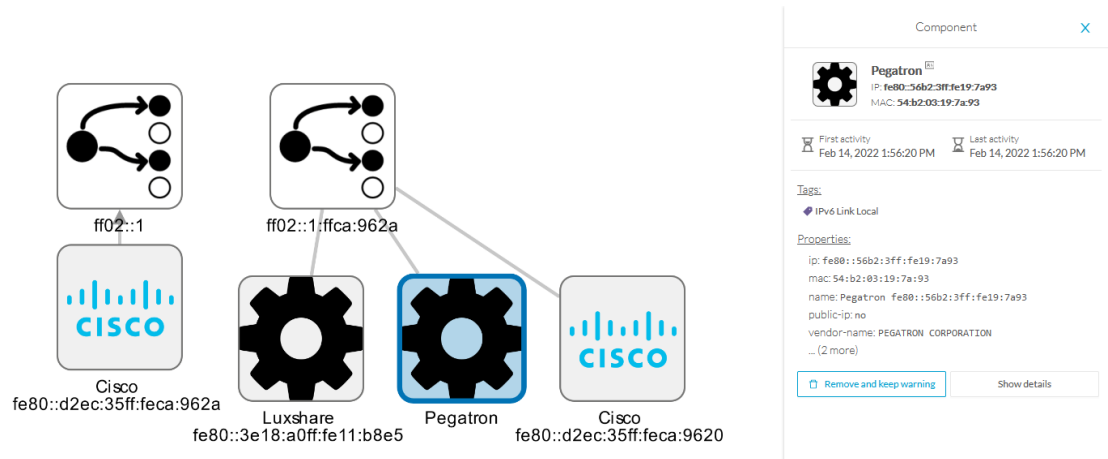
## ICMPv6 Multicast

For the ICMPv6 Active Discovery protocol, the Cisco Cyber Vision sensor will use an ICMPv6 Echo request (ping) to the all-nodes link-local scope multicast address. The sensor will thus ping all IPv6 nodes on the local link. All reachable nodes will answer back with their link-local IPv6 address and their MAC address.

Cisco Cyber Vision sensors use a specific ICMPv6 packet, echo request (type 128) to the address ff02::1 (All nodes on the local network segment) with a hop limit of 1.

The different nodes will answer with a ICMPv6 Neighbor solicitation (type 135) to the Solicited-Node Multicast address which has the form ff02::1:ff with the least-significant 24 bits of the sensor IPv6 Unicast address.

Figure 9: For example, a sensor with IPv6: fe80::d2ec:35ff:feca:962a is requesting ff:02::1. Three different devices are answering back:



## SNMP Unicast

Cisco Cyber Vision sensor can use the SNMP protocol to collect network devices information.

SNMP Active Discovery results highly depend on the configuration, type and version of the queried devices. Some devices might respond without any specific configuration, others might need complex configurations, and others not respond at all.

While doing SNMP Active Discovery, the sensor will try to read some generic and vendor-specific values. The generic values will be used by the sensor to build extra queries based on vendors and hardware models.

Generic values collected are:

Property	Description
snmp-sys-descr	Description
snmp-sys-name	Name

The Cisco Cyber Vision sensor Active Discovery supports:

- SNMP Version 2c (SNMPv2c) with a fallback in SNMP Version 1 (SNMPv1).
- SNMP Version 3 (SNMPv3).

SNMPv3 Active Discovery is able to provide authentication and encryption.


All SNMP versions will give the same results in the Cisco Cyber Vision application. They are important regarding data access. The subsequent section describes the SNMP results with different types of network devices.

## AD SNMP with Schneider PLC


The Cisco Cyber Vision SNMP Active Discovery with Schneider Electric PLC requests generic values (snmp-sys-descr and snmp-sys-name).

Typical results with nodes where SNMP is enabled by default are:

Flow



**192.168.22.192**  
IP: 192.168.22.192  
Port: 58600  
MAC: 52:54:00:61:05:d7



**BMEP581020**  
IP: 192.168.22.70  
Port: 161  
MAC: 00:80:f4:29:27:2a

First activity  
Feb 16, 2022 4:31:20 PM

Last activity  
Feb 16, 2022 4:31:20 PM

Tags

- ◆ Net Management,
- ◆ Active Discovery, ◆ SNMP

---

Basics


Properties   Content Statistics   Tags

### Properties


ethertype: IPv4	protocol: UDP
snmp-command: get-request	snmp-community: public
snmp-sys-descr: Modicon M580 - P58 1020 Processor - DIO	snmp-sys-name: BMEP581020
snmp-sys-objectid: 1.3.6.1.4.1.3833.1.7.255.46	snmp-sys-services: 74
snmp-version: v2c	

---

Flow



**192.168.22.192**  
IP: 192.168.22.192  
Port: 36281  
MAC: 52:54:00:61:05:d7



**BMENOC0301**  
IP: 192.168.22.74  
Port: 161  
MAC: 00:00:54:30:10:89

First activity  
Feb 16, 2022 4:31:30 PM

Last activity  
Feb 16, 2022 4:31:31 PM

Tags

- ◆ Net Management,
- ◆ Active Discovery, ◆ SNMP

---


Basics

Properties   Content Statistics   Tags


### Properties

ethertype: IPv4	protocol: UDP
snmp-command: get-request	snmp-community: public
snmp-sys-descr: Product: BMENOC0301 - Ethernet Communication Module, FwId 02.16	snmp-sys-name: BMENOC0301
snmp-sys-objectid: 1.3.6.1.4.1.3833.1.7.255.53	snmp-sys-services: 74
snmp-version: v2c	

Flow



**192.168.22.192**  
IP: 192.168.22.192  
Port: 33685  
MAC: 52:54:00:61:05:d7



**TM262-15**  
IP: 192.168.22.73  
Port: 161  
MAC: 00:80:f4:4e:86:f5

First activity  
Feb 16, 2022 4:30:49 PM

Last activity  
Feb 16, 2022 4:30:49 PM

Tags

- Net Management,
- Active Discovery, SNMP

---

Basics

Properties Content Statistics Tags

### Properties


ethertype: IPv4	protocol: UDP
snmp-command: getBulkRequest	snmp-community: public
snmp-sys-descr: SCHNEIDER M262 Fast Ethernet TCP/IP	snmp-sys-name: TM262-15
snmp-sys-objectid: 1.3.6.1.4.1.3833.1.7.255.44	snmp-sys-services: 4
snmp-version: v2c	

## AD SNMP with Siemens PLC


The Cisco Cyber Vision SNMP Active Discovery with Siemens PLC requests generic values (snmp-sys-descr and snmp-sys-name).

Typical results with nodes where SNMP is enabled by default are:

Flow



**192.168.21.192**  
IP: 192.168.21.192  
Port: 48006  
MAC: 52:54:00:61:05:d7



**project-s7-1200**  
IP: 192.168.21.41  
Port: 161  
MAC: 00:1c:06:00:88:19

First activity  
Feb 16, 2022 4:18:30 PM

Last activity  
Feb 16, 2022 4:18:30 PM

Tags

- Net Management,
- Active Discovery, SNMP

---

Basics

Properties Content Statistics Tags

### Properties

ethertype: IPv4	protocol: UDP
snmp-command: get-request	snmp-community: public
snmp-sys-descr: Siemens, SIMATIC S7, CPU-1200, 6ES7 214-1AE30-0XB0, HW: 1, FW: V.2.2.0, SZVX7YYW002898	snmp-sys-objectid: 0.0
snmp-sys-services: 76	snmp-version: version-1

Flow

192.168.21.192  
IP: 192.168.21.192  
Port: 35904  
MAC: 52:54:00:61:05:d7

cpu1512-sp  
IP: 192.168.21.46  
Port: 161  
MAC: ac:64:17:81:21:3c

First activity: Feb 16, 2022 4:18:50 PM  
Last activity: Feb 16, 2022 4:18:50 PM

Tags: Net Management, Active Discovery, SNMP

Basics

Properties Content Statistics Tags

Properties

ethertype: IPv4	protocol: UDP
snmp-command: get-request	snmp-community: public
snmp-sys-descr: Siemens, SIMATIC S7, CPU 1512SP F-1 PN, 6ES7 512-1SK01-0AB0, HW: Version 5, FW: Version V2.6.1, S C-LNEW86312019	snmp-sys-objectid: 0.0
snmp-sys-services: 78	snmp-version: version-1

## AD SNMP with Rockwell PLC

The Cisco Cyber Vision SNMP Active Discovery with Rockwell Automation PLC requests generic values (snmp-sys-descr and snmp-sys-name).

Typical results with nodes where SNMP is enabled by default are:

Flow

192.168.20.192  
IP: 192.168.20.192  
Port: 40265  
MAC: 52:54:00:61:05:d7

1756-ENBT/A  
IP: 192.168.20.20  
Port: 161  
MAC: 00:00:bc:5f:bc:ce

First activity: Feb 16, 2022 4:09:20 PM  
Last activity: Feb 16, 2022 4:09:20 PM

Tags: Net Management, Active Discovery, SNMP

Basics

Properties Content Statistics Tags

Properties

ethertype: IPv4	protocol: UDP
snmp-command: get-request	snmp-community: public
snmp-sys-descr: Rockwell Automation 1756-ENBT	snmp-sys-objectid: 1.3.6.1.4.1.95.1.12
snmp-sys-services: 79	snmp-version: v2c

## AD SNMP with Moxa switches

The Cisco Cyber Vision SNMP Active Discovery with Moxa switches requests generic values (snmp-sys-descr and snmp-sys-name) with the addition of:

Property	Description
snmp-moxapriv-model-name	Model

snmp-moxapriv-fw-version	Firmware version
--------------------------	------------------

Typical results with nodes where SNMP is enabled by default are:

The screenshot displays two nodes in the Cisco Cyber Vision Active Discovery interface. Each node card includes a gear icon, IP address, port, MAC address, and activity timestamps. Below each card is a 'Properties' section with various SNMP-related attributes.

**Node 1: Managed Redundant Switch**

- IP: 192.168.0.192
- Port: 36352
- MAC: 52:54:dd:c1:f1:ed
- Model: EDS-405A-SS-SC
- snmp-moxapriv-fw-version-raw: V2.7
- snmp-sys-descr: MOXA EDS-405A-SS-SC
- snmp-sys-objectid: 1.3.6.1.4.1.8691.7.6
- snmp-version: v2c
- snmp-community: public
- snmp-moxapriv-model-name: EDS-405A-SS-SC
- snmp-sys-name: Managed Redundant Switch 09866
- snmp-sys-services: 2

**Node 2: Moxa 192.168.0.28**

- IP: 192.168.0.192
- Port: 48394
- MAC: 52:54:dd:c1:f1:ed
- Model: EDS-G508E
- snmp-moxapriv-fw-version-raw: V5.1.12 build 17072518
- snmp-sys-descr: EDS-G508E
- snmp-sys-objectid: 1.3.6.1.4.1.8691.7.69
- snmp-version: v2c
- snmp-community: public
- snmp-moxapriv-model-name: EDS-G508E
- snmp-sys-services: 2

## AD SNMP with Siemens Switches

The Cisco Cyber Vision SNMP Active Discovery with Siemens switches requests generic values (snmp-sys-descr and snmp-sys-name) with the addition of:

Property	Description
snmp-siemens-scalence-model-ref	Model
snmp-siemens-scalence-model-version	Firmware version

Typical results with nodes where SNMP is enabled by default are:

The screenshot displays the configuration and properties of a SCALANCE X-300 node. The 'Properties' section is detailed below:

Property	Value
ethertype	IPv4
protocol	UDP
snmp-command	getBulkRequest
snmp-community	public
snmp-siemens-scalence-model-ref	6GK5 308-2FL00-2AA3
snmp-siemens-scalence-model-version	V2.2.0
snmp-sys-descr	SCALANCE X-300
snmp-sys-name	S10-4-S
snmp-sys-objectid	1.3.6.1.4.1.4196.1.1.5.4
snmp-sys-services	14
snmp-version	v2c

## AD SNMP with Hirschmann hardware


The Cisco Cyber Vision SNMP Active Discovery with Hirschmann switches requests generic values (snmp-sys-descr and snmp-sys-name) with the addition of:

Property	Description
snmp-hmpriv-mgmt-model-ref	Model
snmp-hmpriv-mgmt-fw-version	Firmware version
snmp-hm2-indus-model-ref	Model
snmp-hm2-indus-fw-version	Firmware version
snmp-hm-disc-fw-version	Model
snmp-hm-disc-model-ref	Firmware version


Typical results with nodes where SNMP is enabled by default are:



Flow



**192.168.0.192**  
IP: 192.168.0.192  
Port: 33687  
MAC: 52:54:00:11:f1:ed



**BRS-646038BFF9AE**  
IP: 192.168.0.32  
Port: 161  
MAC: 64:60:38:bf:f9:ae

First activity  
Feb 17, 2022 11:12:15 AM

Last activity  
Feb 17, 2022 11:12:15 AM

Tags

- Net Management,
- Active Discovery,
- SNMP

**100**  
Packets

---

**Basics**


Properties   Content Statistics   Tags

**Properties**


ethertype: IPv4	protocol: UDP
snmp-command: getBulkRequest	snmp-community: public
snmp-hm-disc-fw-version-raw: HiOS-25-08.5.00 2020-11-26 16:52	snmp-hm-disc-model-ref: BRS30-08040000-STCZ99HHSES
snmp-hm2-indus-fw-version: 08.5.00	snmp-hm2-indus-model-ref: BRS30-08040000-STCZ99HHSES
snmp-sys-descr: Hirschmann BOBCAT	snmp-sys-name: BRS-646038BFF9AE
snmp-sys-objectid: 1.3.6.1.4.1.248.11.2.1.15	snmp-sys-services: 2
snmp-version: v2c	

---

Flow



**192.168.0.192**  
IP: 192.168.0.192  
Port: 40150  
MAC: 52:54:00:11:f1:ed



**RS-58AB3C**  
IP: 192.168.0.31  
Port: 161  
MAC: ece5:55:58:ab:3c

First activity  
Feb 17, 2022 11:12:15 AM

Last activity  
Feb 17, 2022 11:12:15 AM

Tags

- Net Management,
- Active Discovery,
- SNMP

**1**  
Pack

---

**Basics**

Properties   Content Statistics   Tags

**Properties**

ethertype: IPv4	protocol: UDP
snmp-command: getBulkRequest	snmp-community: public
snmp-hmpriv-mgmt-fw-version: 07.1.05	snmp-hmpriv-mgmt-model-ref: RS30-0802T1T15DAEHH
snmp-sys-descr: Hirschmann Railswitch	snmp-sys-name: RS-58AB3C
snmp-sys-objectid: 1.3.6.1.4.1.248.14.10.41	snmp-sys-services: 2
snmp-version: v2c	

## AD SNMP with Cisco hardware

The Cisco Cyber Vision SNMP Active Discovery with Cisco Hardware demands some specific configurations on the device side and requests generic values (snmp-sys-descr and snmp-sys-name) with the addition of:

Property	Description
snmp-ent-physical-model-name	Model
snmp-ent-physical-entry	Description
snmp-ent-physical-serial-number	Serial number

snmp-probe-software-rev	Firmware version
-------------------------	------------------

Typical results with nodes where SNMP is enabled by default are:

The screenshot displays two nodes in the Cisco Cyber Vision Active Discovery interface. Each node's details are shown in a 'Flow' view at the top and a 'Properties' view below.

**Node 1: IE3300Mitsubishi.ccv**

- IP: 192.168.0.192
- Port: 39953
- MAC: 52:54:00:1f:1f:ed
- SNMP Community: public
- SNMP Probe Software Rev: 17.3.1
- SNMP System Name: IE3300Mitsubishi.ccv
- SNMP System Services: 6
- SNMP Version: v2c

**Node 2: IE34ROCPLC.ccv**

- IP: 192.168.0.192
- Port: 37610
- MAC: 52:54:00:1f:1f:ed
- SNMP Community: public
- SNMP Probe Software Rev: 17.4.1
- SNMP System Name: IE34ROCPLC.ccv
- SNMP System Services: 6
- SNMP Version: v2c

## AD SNMP with Microsoft Windows OS

The Cisco Cyber Vision SNMP Active Discovery with Microsoft Windows stations demands a specific operating system configuration and requests generic values (snmp-sys-descr and snmp-sys-name) with the addition of:

Property	Description
snmp-primary-domain-name	Domain name of the machine

Typical results with nodes where SNMP is enabled by default are:

The screenshot shows a network management interface with the following details:

- Flow:** 192.168.0.192 (IP: 192.168.0.192, Port: 41716, MAC: 52-54-00-11-11-11) to AVEVASRV (IP: 192.168.0.51, Port: 161, MAC: 00-50-56-8F-4a-3c).
- Activity:** First activity: Feb 17, 2022 10:32:24 AM; Last activity: Feb 17, 2022 10:32:24 AM.
- Tags:** Net Management, Active Discovery, SNMP.
- Statistics:** 140 Packets.
- Properties:**
  - ethertype: IPv4
  - protocol: UDP
  - snmp-command: getBulkRequest
  - snmp-community: public
  - snmp-primary-domain-name: LAB-AUTOM-CCV
  - snmp-sys-descr: Hardware: Intel64 Family 6 Model 85 Stepping 7 AT/AT COMPATIBLE - Software: Windows Version 6.3 (Build 17763 Multiprocessor Free)
  - snmp-sys-name: AVEVASRV.lab-autom-ccv.local
  - snmp-sys-objectid: 1.3.6.1.4.1.311.1.1.3.1.2
  - snmp-sys-services: 76
  - snmp-version: v2c

## WMI

WMI is used to collect the following Windows hosts' properties.

- wmi-caption: operating system's name and version
- wmi-kb-list: security updates installed in the host
- wmi-last-update: latest update date
- wmi-name: host name

## Properties

### Normalized Properties

ip: 192.168.44.203

mac: 00:50:56:8f:12:51

name: 192.168.44.203

os-name: Windows 10 Enterprise

public-ip: no

vendor-name: Microsoft Corporation

### Other Properties

name-ip: 192.168.44.203

vendor: VMware, Inc.

wmi-caption: Microsoft Windows 10 Enterprise

wmi-kb-list: KB5012170 (Security Update)

wmi-last-update: 3/8/2023

wmi-name: WMILAB1003LOC

wmi-organization: escalation

wmi-os-arch: 64-bit

wmi-os-serial: 00329-00000-00003-AA417

wmi-proc-architecture: x64

wmi-proc-name: Intel(R) Xeon(R) Platinum 8260 CPU @ 2.40GHz

wmi-service-pack-major-version: 0

wmi-service-pack-minor-version: 0

wmi-windows-build-number: 19044

wmi-windows-sku: 4