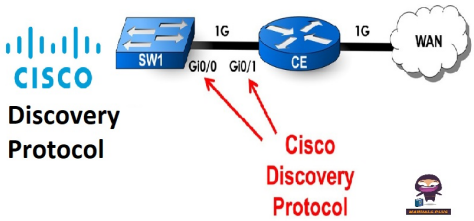
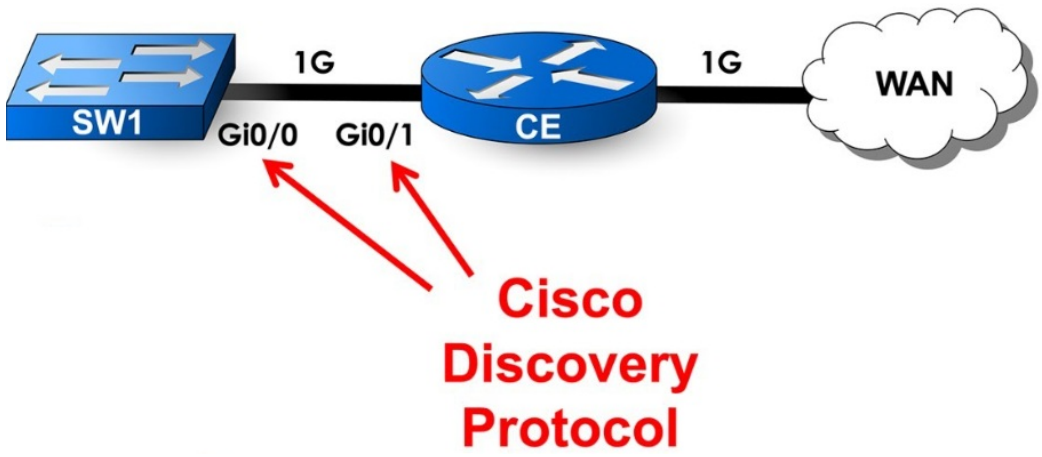


Cisco Discovery Protocol User Guide

Contents

Cisco Discovery Protocol



Information about Cisco Discovery Protocol

The following sections provide information about Cisco Discovery Protocol

Default Cisco Discovery Protocol Configuration
This table shows the default Cisco Discovery Protocol configuration.

Feature	Default Setting
Cisco Discovery Protocol global state	Enabled
Cisco Discovery Protocol interface state	Enabled
Cisco Discovery Protocol timer (packet update frequency)	60 seconds
Cisco Discovery Protocol holdtime (before discarding)	180 seconds
Cisco Discovery Protocol Version-2 advertisements	Enabled

Cisco Discovery Protocol Overview

Cisco Discovery Protocol is a device discovery protocol that runs over Layer 2 (the data-link layer) on all Cisco-manufactured devices (routers, bridges, access servers, controllers, and switches) and allows network management applications to discover Cisco devices that are neighbors of already known devices. With Cisco Discovery Protocol, network management applications can learn the device type and the SNMP agent address of neighboring devices running lower-layer, transparent protocols. This feature enables applications to send SNMP queries to neighboring devices. Cisco Discovery Protocol runs on all media that support Subnetwork Access Protocol (SNAP). Because Cisco Discovery Protocol runs over the data-link layer only, two systems that support different network-layer protocols can learn about each other. Each Cisco Discovery Protocol-configured device sends periodic messages to a multicast address, advertising at least one address at which it can receive SNMP messages. The advertisements also contain time-to-live, orholdtime information, which is the length of time a receiving device holds Cisco Discovery Protocol information before discarding it. Each device also listens to the messages sent by other devices to learn about neighboringdevices. On the device, Cisco Discovery Protocol enables Network Assistant to display a graphical view of the network. The device uses Cisco Discovery Protocol to find cluster candidates and maintain information about cluster members and other devices up to three cluster-enabled devices away from the command device by default.

The following applies to a device and connected endpoint devices:

- Cisco Discovery Protocol identifies connected endpoints that communicate directly with the device.
- To prevent duplicate reports of neighboring devices, only one wired device reports the location information.
- The wired device and the endpoints both send and receive location information.

How to Configure Cisco Discovery Protocol
The following sections provide information about how to configure Cisco Discovery Protocol.

Configuring Cisco Discovery Protocol Characteristics
You can configure these Cisco Discovery Protocol characteristics:

- Frequency of Cisco Discovery Protocol updates
- Amount of time to hold the information before discarding it
- Whether or not to send Version 2 advertisements

Note: Steps 3 through 5 are all optional and can be performed in any order. Follow these steps to configure the Cisco Discovery Protocol characteristics.

Procedure

	Command or Action	Purpose
Step 1	**enable** **Example:**	Enables privileged EXEC mode. • Enter your password if prompted.

	Command or Action	Purpose
	Device>**enable**	
Step 2	**configure terminal** **Example:** Device# **configure terminal**	
Step 3	**cdp timer** *seconds* **Example:** Device(config)# **cdp timer 20**	(Optional) Sets the transmission frequency of Ci sco Discovery Protocol updates in seconds. The range is 5 to 254; the default is 60 seconds.
Step 4	**cdp holdtime** *seconds* **Example:** Device(config)# **cdp holdtime 60**	(Optional) Specifies the amount of time a receiving device should hold the information sen t by your device before discarding it. The range is 10 to 255 seconds; the default is 1 80 seconds.
Step 5	**cdp advertise-v2** **Example:** Device(config)# **cdp advertise-v2**	(Optional) Configures Cisco Discovery Protocol t o send Version 2 advertisements. This is the default state.
Step 6	**end** **Example:** Device(config)# **end**	Returns to privileged EXEC mode.

Step 7	**show running-config** **Example:** Device# **show running-config**	Verifies your entries.
Step 8	**copy running-config startup-config** **Example:** Device# **copy running-config startup-config**	(Optional) Saves your entries in the configuratio n file.

What to do next
Use the no form of the Cisco Discovery Protocol commands to return to the default settings.

Disabling Cisco Discovery Protocol
Cisco Discovery Protocol is enabled by default. Device clusters and other Cisco devices (such as Cisco IP Phones) regularly exchange Cisco Discovery Protocol messages. Disabling Cisco Discovery Protocol can interrupt cluster discovery and device connectivity.

Note: Follow these steps to disable the Cisco Discovery Protocol device discovery capability.

	Command or Action	Purpose
Step 1	**enable** **Example:** Device>**enable**	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** Device# **configure terminal**	Enters global configuration mode.
Step 3	**no cdp run** **Example:** Device(config)# **no cdp run**	Disables Cisco Discovery Protocol.
Step 4	**end** **Example:** Device(config)# **end**	Returns to privileged EXEC mode.
Step 5	**show running-config** **Example:** Device# **show running-config**	Verifies your entries.
Step 6	**copy running-config startup-config** **Example:** Device# **copy running-config startup-config**	(Optional) Saves your entries in the configuratio n file.

What to do next
You must reenable Cisco Discovery Protocol to use it.

Enabling Cisco Discovery Protocol
Cisco Discovery Protocol is enabled by default.

Note: Device clusters and other Cisco devices (such as Cisco IP Phones) regularly exchange Cisco Discovery Protocol messages. Disabling Cisco Discovery Protocol can interrupt cluster discovery and device connectivity. Follow these steps to enable Cisco Discovery Protocol when it has been disabled.

Before you begin

Cisco Discovery Protocol must be disabled, or it cannot be enabled.

	Command or Action	Purpose
Step 1	**enable** **Example:** Device>**enable**	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** Device# **configure terminal**	Enters global configuration mode.
Step 3	**cdp run** **Example:** Device(config)# **cdp run**	Enables Cisco Discovery Protocol if it has been disabled.
Step 4	**end** **Example:** Device(config)# **end**	Returns to privileged EXEC mode.
Step 5	**show running-config** **Example:** Device# **show running-config**	Verifies your entries.

	Command or Action	Purpose
Step 6	**copy running-config startup-config** **Example:** Device# **copy running-config startup-config**	(Optional) Saves your entries in the configuratio n file.

What to do next
Use the show run all command to check if Cisco Discovery Protocol has been enabled. If you run the show run command, the enabling of Cisco Discovery Protocol may not be displayed.

Disabling Cisco Discovery Protocol on an Interface
Cisco Discovery Protocol is enabled by default on all supported interfaces to send and to receive Cisco Discovery

Protocol information.

- Device clusters and other Cisco devices (such as Cisco IP Phones) regularly exchange Cisco Discovery Protocol messages. Disabling Cisco Discovery Protocol can interrupt cluster discovery and device connectivity.
- Cisco Discovery Protocol bypass is not supported and may cause a port go into err-disabled state.
- **Note:** Follow these steps to disable Cisco Discovery Protocol on a port.

	Command or Action	**Purpose**
Step 1	**enable** **Example:** Device>**enable**	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	**configure terminal** **Example:** Device# **configure terminal**	Enters global configuration mode.
Step 3	**interface** *interface-id* **Example:** Device(config)# **interface gigabitethernet 1/0/1**	Specifies the interface on which you are disablin g Cisco Discovery Protocol, and enters interface configuration mode.

	Command or Action	Purpose
Step 4	**no cdp enable** **Example:** Device(config-if)# **no cdp enable**	Disables Cisco Discovery Protocol on the interface specified in Step 3.
Step 5	**end** **Example:** Device(config)# **end**	Returns to privileged EXEC mode.
Step 6	**show running-config** **Example:** Device# **show running-config**	Verifies your entries.
Step 7	**copy running-config startup-config** **Example:** Device# **copy running-config startup-config**	(Optional) Saves your entries in the configuration file.

Enabling Cisco Discovery Protocol on an Interface
Cisco Discovery Protocol is enabled by default on all supported interfaces to send and to receive Cisco Discovery Protocol information.

- Device clusters and other Cisco devices (such as Cisco IP Phones) regularly exchange Cisco Discovery Protocol messages. Disabling Cisco Discovery Protocol can interrupt cluster discovery and device connectivity.
- Cisco Discovery Protocol bypass is not supported and may cause a port go into err-disabled state. Follow these steps to enable Cisco Discovery Protocol on a port on which it has been disabled.

Before you begin
Cisco Discovery Protocol must be disabled on the port that you are trying to Cisco Discovery Protocol enable on, or it cannot be enabled.

Procedure

	Command or Action	Purpose
Step 1	**enable**	Enables privileged EXEC mode.

	Command or Action	Purpose
	Example: Device>**enable**	• Enter your password if prompted.
Step 2	**configure terminal** **Example:** Device# **configure terminal**	Enters global configuration mode.
Step 3	**interface** *interface-id* **Example:** Device(config)# **interface gigabitethernet1/0/1**	Specifies the interface on which you are enabling Cisco Discovery Protocol, and enters i nterface configuration mode.
Step 4	**cdp enable** **Example:** Device(config-if)# **cdp enable**	Enables Cisco Discovery Protocol on a disabled interface.
Step 5	**end** **Example:** Device(config)# **end**	Returns to privileged EXEC mode.
Step 6	**show running-config** **Example:** Device# **show running-config**	Verifies your entries.
Step 7	**copy running-config startup-config** **Example:** Device# **copy running-config startup-config**	(Optional) Saves your entries in the configuratio n file.

Monitoring and Maintaining Cisco Discovery Protocol

Table 1: Commands for Displaying Cisco Discovery Protocol Information

Command	Description
clear cdp counters	Resets the traffic counters to zero.
clear cdp table	Deletes the Cisco Discovery Protocol table of information abou t nei

show cdp	Displays global information, such as frequency of transmissio ns an for packets being sent.
show cdp entry *entry-name* [**version**] [**protoco l**]	Displays information about a specific neighbor. You can enter an asterisk (*) to display all Cisco Discovery Pr oto or you can enter the name of the neighbor about which yo u want You can also limit the display to information about the protoco ls the specified neighbor or information about the version of s oftwa the device.
show cdp interface [*interface-id*]	Displays information about interfaces where Cisco Discovery Proto You can limit the display to the interface about which you want
show cdp neighbors [*interface-id*] [*detail*]	Displays information about neighbors, including device type, i nte number, holdtime settings, capabilities, platform, and port ID. You can limit the display to neighbors of a specific interface o r display to provide more detailed information.
show cdp traffic	Displays Cisco Discovery Protocol counters, including the nu mb sent and received and checksum errors.
show ap cdp neighbors	Displays information regarding the access point's Cisco Disco ve neighbors.
show ap cdp neighbors detail	Displays detailed information regarding the access point's Cis co Protocol neighbors.
show ap name *ap-name* **cdp neighbors**	Displays the Cisco Discovery Protocol information for an access
show ap name *ap-name* **cdp neighbors detail**	Displays details about a specific access point neighbor that is usi Discovery Protocol.

Feature History for Cisco Discovery Protocol

This table provides release and related information for the features explained in this module. These features are available in all the releases subsequent to the one they were introduced in, unless noted otherwise.

Release	Feature	Feature Information
Cisco IOS XE Everest 16.5.1a	Cisco Discovery Protocol	Cisco Discovery Protocol is a Layer 2, media-independent, and network -independent protocol that runs on Cisco devices and enables networking applications to learn ab out directly connected devices near by. Support for this feature was introdu ced on the C9500-12Q, C9500-16X , C9500-24Q, C9500-40X models.
Cisco IOS XE Fuji 16.8.1a	Cisco Discovery Protocol	This feature was implemented on th e C9500-32C, C9500-32QC, C9500-48Y4C, and C9500-24Y4C models.
Cisco IOS XE Cupertino 17.7.1	Cisco Discovery Protocol	This feature was implemented on th e C9500X-28C8D model.

Use the Cisco Feature Navigator to find information about platform and software image support. To access Cisco Feature Navigator, go to **https://cfnng.cisco.com**.

Documents / Resources

	**CISCO Cisco Discovery Protocol** [pdf] User Guide Cisco Discovery Protocol, Discovery Protocol, Protocol

References

- **User Manual**