



Configuring the Cisco Discovery Protocol

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Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table at the end of this module.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to <http://www.cisco.com/go/cfn>. An account on Cisco.com is not required.

Information About CDP

CDP Overview

CDP 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 CDP, network management applications can learn the device type and the Simple Network Management Protocol (SNMP) agent address of neighboring devices running lower-layer, transparent protocols. This feature enables applications to send SNMP queries to neighboring devices.

CDP runs on all media that support Subnetwork Access Protocol (SNAP). Because CDP runs over the data-link layer only, two systems that support different network-layer protocols can learn about each other.

Each CDP-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, or holdtime information, which is the length of time a receiving device holds CDP information before discarding it. Each device also listens to the messages sent by other devices to learn about neighboring devices.

On the device, CDP enables Network Assistant to display a graphical view of the network. The device uses CDP 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.

Related Topics

- [Configuring CDP Characteristics](#), on page 2
- [Monitoring and Maintaining CDP](#), on page 10

Default CDP Configuration

This table shows the default CDP configuration.

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

Related Topics

- [Enabling CDP](#), on page 5
- [Disabling CDP](#), on page 4
- [Enabling CDP on an Interface](#), on page 8
- [Disabling CDP on an Interface](#), on page 7

How to Configure CDP

Configuring CDP Characteristics

You can configure these CDP characteristics:

- Frequency of CDP 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 CDP characteristics.

SUMMARY STEPS

1. **enable**

2. **configure terminal**
3. **cdp timer** *seconds*
4. **cdp holdtime** *seconds*
5. **cdp advertise-v2**
6. **end**
7. **show running-config**
8. **copy running-config startup-config**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	cdp timer <i>seconds</i> Example: Device(config)# cdp timer 20	(Optional) Sets the transmission frequency of CDP updates in seconds. The range is 5 to 254; the default is 60 seconds.
Step 4	cdp holdtime <i>seconds</i> Example: Device(config)# cdp holdtime 60	(Optional) Specifies the amount of time a receiving device should hold the information sent by your device before discarding it. The range is 10 to 255 seconds; the default is 180 seconds.
Step 5	cdp advertise-v2 Example: Device(config)# cdp advertise-v2	(Optional) Configures CDP to 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.

	Command or Action	Purpose
Step 8	copy running-config startup-config Example: Device# <code>copy running-config startup-config</code>	(Optional) Saves your entries in the configuration file.

What to do next

Use the **no** form of the CDP commands to return to the default settings.

Related Topics

[CDP Overview](#), on page 1

[Monitoring and Maintaining CDP](#), on page 10

Disabling CDP

CDP is enabled by default.

**Note**

Device clusters and other Cisco devices (such as Cisco IP Phones) regularly exchange CDP messages. Disabling CDP can interrupt cluster discovery and device connectivity.

Follow these steps to disable the CDP device discovery capability.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **no cdp run**
4. **end**
5. **show running-config**
6. **copy running-config startup-config**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Device> <code>enable</code>	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example:	Enters global configuration mode.

	Command or Action	Purpose
	Device# <code>configure terminal</code>	
Step 3	no cdp run Example: Device(config)# <code>no cdp run</code>	Disables CDP.
Step 4	end Example: Device(config)# <code>end</code>	Returns to privileged EXEC mode.
Step 5	show running-config Example: Device# <code>show running-config</code>	Verifies your entries.
Step 6	copy running-config startup-config Example: Device# <code>copy running-config startup-config</code>	(Optional) Saves your entries in the configuration file.

What to do next

You must reenable CDP to use it.

Related Topics

[Enabling CDP](#), on page 5

[Default CDP Configuration](#), on page 2

Enabling CDP

CDP is enabled by default.



Note Device clusters and other Cisco devices (such as Cisco IP Phones) regularly exchange CDP messages. Disabling CDP can interrupt cluster discovery and device connectivity.

Follow these steps to enable CDP when it has been disabled.

Before you begin

CDP must be disabled, or it cannot be enabled.

SUMMARY STEPS

1. enable
2. configure terminal
3. cdp run
4. end
5. show running-config
6. copy running-config startup-config

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • 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 CDP 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.
Step 6	copy running-config startup-config Example: Device# copy running-config startup-config	(Optional) Saves your entries in the configuration file.

What to do next

Use the **show run all** command to show that CDP has been enabled. If you enter only **show run**, the enabling of CDP may not be displayed.

Related Topics

[Default CDP Configuration](#), on page 2

[Disabling CDP](#), on page 4

Disabling CDP on an Interface

CDP is enabled by default on all supported interfaces to send and to receive CDP information.



Note Device clusters and other Cisco devices (such as Cisco IP Phones) regularly exchange CDP messages. Disabling CDP can interrupt cluster discovery and device connectivity.

Follow these steps to disable CDP on a port.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface** *interface-id*
4. **no cdp enable**
5. **end**
6. **show running-config**
7. **copy running-config startup-config**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	interface <i>interface-id</i> Example: Device(config)# interface gigabitethernet1/0/1	Specifies the interface on which you are disabling CDP, and enters interface configuration mode.

	Command or Action	Purpose
Step 4	no cdp enable Example: Device(config-if)# no cdp enable	Disables CDP 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.

Related Topics

[Enabling CDP on an Interface](#), on page 8

[Default CDP Configuration](#), on page 2

Enabling CDP on an Interface

CDP is enabled by default on all supported interfaces to send and to receive CDP information.



Note Device clusters and other Cisco devices (such as Cisco IP Phones) regularly exchange CDP messages. Disabling CDP can interrupt cluster discovery and device connectivity.

Follow these steps to enable CDP on a port on which it has been disabled.

Before you begin

CDP must be disabled on the port that you are trying to CDP enable on, or it cannot be enabled.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface *interface-id***
4. **cdp enable**

5. `end`
6. `show running-config`
7. `copy running-config startup-config`

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Device> <code>enable</code>	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Device# <code>configure terminal</code>	Enters global configuration mode.
Step 3	interface <i>interface-id</i> Example: Device(config)# <code>interface gigabitethernet1/0/1</code>	Specifies the interface on which you are enabling CDP, and enters interface configuration mode.
Step 4	cdp enable Example: Device(config-if)# <code>cdp enable</code>	Enables CDP on a disabled interface.
Step 5	end Example: Device(config)# <code>end</code>	Returns to privileged EXEC mode.
Step 6	show running-config Example: Device# <code>show running-config</code>	Verifies your entries.
Step 7	copy running-config startup-config Example: Device# <code>copy running-config startup-config</code>	(Optional) Saves your entries in the configuration file.

Related Topics

- [Default CDP Configuration](#), on page 2
- [Disabling CDP on an Interface](#), on page 7

Monitoring and Maintaining CDP

Table 1: Commands for Displaying CDP Information

Command	Description
clear cdp counters	Resets the traffic counters to zero.
clear cdp table	Deletes the CDP table of information about neighbors.
show cdp	Displays global information, such as frequency of transmissions and the holdtime for packets being sent.
show cdp entry <i>entry-name</i> [version] [protocol]	<p>Displays information about a specific neighbor.</p> <p>You can enter an asterisk (*) to display all CDP neighbors, or you can enter the name of the neighbor about which you want information.</p> <p>You can also limit the display to information about the protocols enabled on the specified neighbor or information about the version of software running on the device.</p>
show cdp interface [<i>interface-id</i>]	<p>Displays information about interfaces where CDP is enabled.</p> <p>You can limit the display to the interface about which you want information.</p>
show cdp neighbors [<i>interface-id</i>] [<i>detail</i>]	<p>Displays information about neighbors, including device type, interface type and number, holdtime settings, capabilities, platform, and port ID.</p> <p>You can limit the display to neighbors of a specific interface or expand the display to provide more detailed information.</p>
show cdp traffic	Displays CDP counters, including the number of packets sent and received and checksum errors.

Related Topics

[Configuring CDP Characteristics](#), on page 2

[CDP Overview](#), on page 1