



# Configuring the Cisco Discovery Protocol

- [Finding Feature Information, on page 1](#)
- [Information About CDP, on page 1](#)
- [How to Configure CDP, on page 2](#)
- [Monitoring and Maintaining CDP, on page 9](#)
- [Additional References, on page 10](#)
- [Feature History and Information for Cisco Discovery Protocol, on page 11](#)

## 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 switch, CDP enables Network Assistant to display a graphical view of the network. The switch 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 switch by default.

#### Related Topics

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

[Monitoring and Maintaining CDP](#), on page 9

## 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 Cisco Discovery Protocol on an Interface](#), on page 7

[Disabling Cisco Discovery Protocol on an Interface](#), on page 6

## 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.

## Procedure

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b>  Switch> <b>enable</b>	Enables privileged EXEC mode.  • Enter your password if prompted.
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b>  Switch# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 3</b>	<b>cdp timer <i>seconds</i></b> <b>Example:</b>  Switch(config)# <b>cdp timer 20</b>	(Optional) Sets the transmission frequency of CDP updates in seconds.  The range is 5 to 254; the default is 60 seconds.
<b>Step 4</b>	<b>cdp holdtime <i>seconds</i></b> <b>Example:</b>  Switch(config)# <b>cdp holdtime 60</b>	(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.
<b>Step 5</b>	<b>cdp advertise-v2</b> <b>Example:</b>  Switch(config)# <b>cdp advertise-v2</b>	(Optional) Configures CDP to send Version-2 advertisements.  This is the default state.
<b>Step 6</b>	<b>end</b> <b>Example:</b>  Switch(config)# <b>end</b>	Returns to privileged EXEC mode.
<b>Step 7</b>	<b>show running-config</b> <b>Example:</b>  Switch# <b>show running-config</b>	Verifies your entries.
<b>Step 8</b>	<b>copy running-config startup-config</b> <b>Example:</b>  Switch# <b>copy running-config startup-config</b>	(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 9

## Disabling CDP

CDP is enabled by default.



**Note** Switch 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.

**Procedure**

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> Switch> <b>enable</b>	Enables privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> Switch# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 3</b>	<b>no cdp run</b> <b>Example:</b> Switch(config)# <b>no cdp run</b>	Disables CDP.
<b>Step 4</b>	<b>end</b> <b>Example:</b> Switch(config)# <b>end</b>	Returns to privileged EXEC mode.
<b>Step 5</b>	<b>show running-config</b> <b>Example:</b> Switch# <b>show running-config</b>	Verifies your entries.

	Command or Action	Purpose
<b>Step 6</b>	<b>copy running-config startup-config</b> <b>Example:</b> <pre>Switch# copy running-config startup-config</pre>	(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** Switch 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.

**Procedure**

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b> <b>Example:</b> <pre>Switch&gt; enable</pre>	Enables privileged EXEC mode. <ul style="list-style-type: none"> <li>• Enter your password if prompted.</li> </ul>
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b> <pre>Switch# configure terminal</pre>	Enters global configuration mode.
<b>Step 3</b>	<b>cdp run</b> <b>Example:</b> <pre>Switch(config)# cdp run</pre>	Enables CDP if it has been disabled.

	Command or Action	Purpose
<b>Step 4</b>	<b>end</b> <b>Example:</b> <pre>Switch(config)# end</pre>	Returns to privileged EXEC mode.
<b>Step 5</b>	<b>show running-config</b> <b>Example:</b> <pre>Switch# show running-config</pre>	Verifies your entries.
<b>Step 6</b>	<b>copy running-config startup-config</b> <b>Example:</b> <pre>Switch# copy running-config startup-config</pre>	(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 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.



**Note** Switch 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** Cisco Discovery Protocol bypass is not supported and may cause a port go into err-disabled state.

Follow these steps to disable Cisco Discovery Protocol on a port.

**Procedure**

	Command or Action	Purpose
<b>Step 1</b>	<b>enable</b>	Enables privileged EXEC mode.

	Command or Action	Purpose
	<b>Example:</b>  Switch> <b>enable</b>	<ul style="list-style-type: none"> <li>Enter your password if prompted.</li> </ul>
<b>Step 2</b>	<b>configure terminal</b>  <b>Example:</b>  Switch# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 3</b>	<b>interface <i>interface-id</i></b>  <b>Example:</b>  Switch(config)# <b>interface gigabitethernet 0/1</b>	Specifies the interface on which you are disabling Cisco Discovery Protocol, and enters interface configuration mode.
<b>Step 4</b>	<b>no cdp enable</b>  <b>Example:</b>  Switch(config-if)# <b>no cdp enable</b>	Disables Cisco Discovery Protocol on the interface specified in Step 3.
<b>Step 5</b>	<b>end</b>  <b>Example:</b>  Switch(config)# <b>end</b>	Returns to privileged EXEC mode.
<b>Step 6</b>	<b>show running-config</b>  <b>Example:</b>  Switch# <b>show running-config</b>	Verifies your entries.
<b>Step 7</b>	<b>copy running-config startup-config</b>  <b>Example:</b>  Switch# <b>copy running-config startup-config</b>	(Optional) Saves your entries in the configuration file.

**Related Topics**

[Enabling Cisco Discovery Protocol on an Interface](#), on page 7

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

## 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.



**Note** Switch 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** 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
<b>Step 1</b>	<b>enable</b> <b>Example:</b>  Switch> <b>enable</b>	Enables privileged EXEC mode.  • Enter your password if prompted.
<b>Step 2</b>	<b>configure terminal</b> <b>Example:</b>  Switch# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 3</b>	<b>interface <i>interface-id</i></b> <b>Example:</b>  Switch(config)# <b>interface</b> <b>gigabitethernet0/1</b>	Specifies the interface on which you are enabling Cisco Discovery Protocol, and enters interface configuration mode.
<b>Step 4</b>	<b>cdp enable</b> <b>Example:</b>  Switch(config-if)# <b>cdp enable</b>	Enables Cisco Discovery Protocol on a disabled interface.
<b>Step 5</b>	<b>end</b> <b>Example:</b>  Switch(config)# <b>end</b>	Returns to privileged EXEC mode.
<b>Step 6</b>	<b>show running-config</b> <b>Example:</b>	Verifies your entries.



	Command or Action	Purpose
	Switch# <code>show running-config</code>	
<b>Step 7</b>	<b>copy running-config startup-config</b> <b>Example:</b> Switch# <code>copy running-config startup-config</code>	(Optional) Saves your entries in the configuration file.

**Related Topics**

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

[Disabling Cisco Discovery Protocol on an Interface](#), on page 6

## Monitoring and Maintaining CDP

*Table 1: Commands for Displaying CDP Information*

Command	Description
<code>clear cdp counters</code>	Resets the traffic counters to zero.
<code>clear cdp table</code>	Deletes the CDP table of information about neighbors.
<code>show cdp</code>	Displays global information, such as frequency of transmissions and the holdtime for packets being sent.
<code>show cdp entry entry-name [version] [protocol]</code>	<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>
<code>show cdp interface [interface-id]</code>	<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>

Command	Description
<code>show cdp neighbors</code> [ <i>interface-id</i> ] [ <i>detail</i> ]	Displays information about neighbors, including device type, interface type and number, holdtime settings, capabilities, platform, and port ID.  You can limit the display to neighbors of a specific interface or expand the display to provide more detailed information.
<code>show cdp traffic</code>	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

## Additional References

**Related Documents**

Related Topic	Document Title
System Management Commands	

**Error Message Decoder**

Description	Link
To help you research and resolve system error messages in this release, use the Error Message Decoder tool.	<a href="https://www.cisco.com/cgi-bin/Support/Errordecoder/index.cgi">https://www.cisco.com/cgi-bin/Support/Errordecoder/index.cgi</a>

**Standards and RFCs**

Standard/RFC	Title
None	-

**MIBs**

MIB	MIBs Link
All supported MIBs for this release.	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL:  <a href="http://www.cisco.com/go/mibs">http://www.cisco.com/go/mibs</a>

**Technical Assistance**

Description	Link
<p>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.</p> <p>To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds.</p> <p>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</p>	<a href="http://www.cisco.com/support">http://www.cisco.com/support</a>

## Feature History and Information for Cisco Discovery Protocol

Release	Modification
Cisco IOS Release 15.2(5)E	This feature was introduced.

