CHAPTER 22

# Configuring CDP

This chapter describes how to configure Cisco Discovery Protocol (CDP) on the Catalyst 2960 switch.

**Note** For complete syntax and usage information for the commands used in this chapter, see the command reference for this release and the "System Management Commands" section in the *Cisco IOS Configuration Fundamentals Command Reference, Release 12.2*.

This chapter consists of these sections:


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- Configuring CDP, page 22-2
- Monitoring and Maintaining CDP, page 22-4


## Understanding CDP

CDP is a device discovery protocol that runs over Layer 2 (the data link layer) on all Cisco-manufactured devices (routers, bridges, access servers, 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.

The switch supports CDP Version 2.

# Configuring CDP

These sections contain this configuration information:


- Default CDP Configuration, page 22-2
- Configuring the CDP Characteristics, page 22-2
- Disabling and Enabling CDP, page 22-3
- Disabling and Enabling CDP on an Interface, page 22-4


## Default CDP Configuration

Table 22-1 shows the default CDP configuration.

*Table 22-1 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 |

## Configuring the CDP Characteristics

You can configure the frequency of CDP updates, the amount of time to hold the information before discarding it, and whether or not to send Version-2 advertisements.

Beginning in privileged EXEC mode, follow these steps to configure the CDP timer, holdtime, and advertisement type.

**Note** Steps 2 through 4 are all optional and can be performed in any order.

| | Command | Purpose |
|---|---|---|
| Step 1 | **configure terminal** | Enter global configuration mode. |
| Step 2 | **cdp timer** *seconds* | (Optional) Set the transmission frequency of CDP updates in seconds.<br>The range is 5 to 254; the default is 60 seconds. |
| Step 3 | **cdp holdtime** *seconds* | (Optional) Specify the amount of time a receiving device should hold the information sent by your device before discarding it.<br>The range is 10 to 255 seconds; the default is 180 seconds. |
| Step 4 | **cdp advertise-v2** | (Optional) Configure CDP to send Version-2 advertisements.<br>This is the default state. |
| Step 5 | **end** | Return to privileged EXEC mode. |

| | Command | Purpose |
|---|---|---|
| Step 6 | **show cdp** | Verify your settings. |
| Step 7 | **copy running-config startup-config** | (Optional) Save your entries in the configuration file. |

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

This example shows how to configure CDP characteristics.

```
Switch# configure terminal
Switch(config)# cdp timer 50
Switch(config)# cdp holdtime 120
Switch(config)# cdp advertise-v2
Switch(config)# end
```

For additional CDP **show** commands, see the "Monitoring and Maintaining CDP" section on page 22-4.

# Disabling and 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. For more information, see Chapter 5, "Clustering Switches" and see *Getting Started with Cisco Network Assistant*, available on Cisco.com.

Beginning in privileged EXEC mode, follow these steps to disable the CDP device discovery capability:

| | Command | Purpose |
|---|---|---|
| Step 1 | **configure terminal** | Enter global configuration mode. |
| Step 2 | **no cdp run** | Disable CDP. |
| Step 3 | **end** | Return to privileged EXEC mode. |

Beginning in privileged EXEC mode, follow these steps to enable CDP when it has been disabled:

| | Command | Purpose |
|---|---|---|
| Step 1 | **configure terminal** | Enter global configuration mode. |
| Step 2 | **cdp run** | Enable CDP after disabling it. |
| Step 3 | **end** | Return to privileged EXEC mode. |

This example shows how to enable CDP if it has been disabled.

```
Switch# configure terminal
Switch(config)# cdp run
Switch(config)# end
```

## Disabling and Enabling CDP on an Interface

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

Beginning in privileged EXEC mode, follow these steps to disable CDP on a port:

| | Command | Purpose |
|---|---|---|
| Step 1 | **configure terminal** | Enter global configuration mode. |
| Step 2 | **interface** *interface-id* | Specify the interface on which you are disabling CDP, and enter interface configuration mode. |
| Step 3 | **no cdp enable** | Disable CDP on the interface. |
| Step 4 | **end** | Return to privileged EXEC mode. |
| Step 5 | **copy running-config startup-config** | (Optional) Save your entries in the configuration file. |

Beginning in privileged EXEC mode, follow these steps to enable CDP on a port when it has been disabled:

| | Command | Purpose |
|---|---|---|
| Step 1 | **configure terminal** | Enter global configuration mode. |
| Step 2 | **interface** *interface-id* | Specify the interface on which you are enabling CDP, and enter interface configuration mode. |
| Step 3 | **cdp enable** | Enable CDP on the interface after disabling it. |
| Step 4 | **end** | Return to privileged EXEC mode. |
| Step 5 | **copy running-config startup-config** | (Optional) Save your entries in the configuration file. |

This example shows how to enable CDP on a port when it has been disabled.

```
Switch# configure terminal
Switch(config)# interface gigabitethernet0/1
Switch(config-if)# cdp enable
Switch(config-if)# end
```

# Monitoring and Maintaining CDP

To monitor and maintain CDP on your device, perform one or more of these tasks, beginning in privileged EXEC mode.

| Command | Description |
|---|---|
| **clear cdp counters** | Reset the traffic counters to zero. |
| **clear cdp table** | Delete the CDP table of information about neighbors. |
| **show cdp** | Display global information, such as frequency of transmissions and the holdtime for packets being sent. |

| Command | Description |
|---|---|
| **show cdp entry** *entry-name* [**protocol** \| **version**] | Display information about a specific neighbor.<br>You can enter an asterisk (*) to display all CDP neighbors, or you can enter the name of the neighbor about which you want information.<br>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. |
| **show cdp interface** [*interface-id*] | Display information about interfaces where CDP is enabled.<br>You can limit the display to the interface about which you want information. |
| **show cdp neighbors** [*interface-id*] [**detail**] | Display information about neighbors, including device type, interface type and number, holdtime settings, capabilities, platform, and port ID.<br>You can limit the display to neighbors of a specific interface or expand the display to provide more detailed information. |
| **show cdp traffic** | Display CDP counters, including the number of packets sent and received and checksum errors. |