This chapter describes how to configure Cisco Discovery Protocol (CDP) on the ML-Series card or the ML-MR-10 card.

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:

- Understanding CDP
- Configuring CDP
- Monitoring and Maintaining CDP

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Understanding CDP

CDP is a device discovery protocol that runs over Layer 2 (the data link layer) on 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.

The ML-Series card and the ML-MR-10 card supports CDP Version 2.

Configuring CDP

These sections include CDP configuration information and procedures:

- Default CDP Configuration
- Configuring the CDP Characteristics

- Disabling and Enabling CDP
- Disabling and Enabling CDP on an Interface

Default CDP Configuration

Table 26-1 shows the default CDP configuration.

Table 26-1: 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.

Step	Command	Purpose
1	**configure terminal**	Enter global configuration mode.
2	**cdp timer** *seconds*	(Optional) Set the transmission frequency of CDP updates in seconds. The range is 5 to 254; the default is 60 seconds.
3	**cdp holdtime** *seconds*	(Optional) Specify 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.
4	**cdp advertise-v2**	(Optional) Configure CDP to send Version-2 advertisements. This is the default state.
5	**end**	Return to privileged EXEC mode.
6	**show cdp**	Verify configuration by displaying global information about CDP on the device.
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 and verify CDP characteristics.

```
Switch# configure terminal

Switch(config)# cdp timer 50
```

```
Switch(config)# cdp holdtime 120

Switch(config)# cdp advertise-v2

Switch(config)# end

Switch # show cdp

      Global CDP information:

      Sending CDP packets every 50 seconds

      Sending a holdtime value of 120 seconds

      Sending CDPv2 advertisements is enabled
```

For additional CDP **show** commands, see the Monitoring and Maintaining CDP.

Disabling and Enabling CDP

CDP is disabled by default.

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

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

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

Step	Command	Purpose
1	**configure terminal**	Enter global configuration mode.
2	**cdp run**	Enable CDP after disabling it.
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 receive CDP information.

Beginning in privileged EXEC mode, follow these steps to disable CDP on an interface:

Step	Command	Purpose
1	**configure terminal**	Enter global configuration mode.

2	**interface** *interface-id*	Enter interface configuration mode, and enter the interface on which you are disabling CDP.
3	**no cdp enable**	Disable CDP on an interface.
4	**end**	Return to privileged EXEC mode.
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 an interface when it has been disabled:

Step	Command	Purpose
1	**configure terminal**	Enter global configuration mode.
2	**interface** *interface-id*	Enter interface configuration mode, and enter the interface on which you are enabling CDP.
3	**cdp enable**	Enable CDP on an interface after disabling it.
4	**end**	Return to privileged EXEC mode.
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 gigabitethernet1/0/1

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.
show cdp entry *entry-name* [**protocol** | version]	Display information about a specific neighbor. You can enter an asterisk (*) to display all CDP neighbors, or you can enter the name of the neighbor about which you want information. 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. Enter an interface ID to display CDP information for that interface only.

	Note: Interfaces with CDP disabled will not appear in the command output.
show cdp neighbors[*interface-id*] [**detail**]	Display information about neighbors, including device type, interface type and number, holdtime settings, capabilities, platform, and port ID. You can limit the display to neighbors on 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.

This is an example of the output from the **show cdp** privileged EXEC commands:

```
Switch # show cdp

Global CDP information:

Sending CDP packets every 50 seconds

Sending a holdtime value of 120 seconds

Sending CDPv2 advertisements is enabled
```