



Configuring the Cisco Discovery Protocol

This chapter describes the configuration of the Cisco Discovery Protocol (CDP).

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Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release.

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.

CDP and Stacks

A switch stack appears as a single switch in the network. Therefore, CDP discovers the switch stack, not the individual stack members. The switch stack sends CDP messages to neighboring network devices when there are changes to the switch stack membership, such as stack members being added or removed.

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

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

Beginning in privileged EXEC mode, follow these steps to configure these characteristics.

SUMMARY STEPS

1. **configure terminal**
2. **cdp timer *seconds***
3. **cdp holdtime *seconds***
4. **cdp advertise-v2**
5. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure terminal Example: Switch# configure terminal	Enters the global configuration mode.
Step 2	cdp timer <i>seconds</i> Example: Switch(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 3	cdp holdtime <i>seconds</i> Example: Switch(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 4	cdp advertise-v2 Example: Switch(config)# cdp advertise-v2	(Optional) Configures CDP to send Version-2 advertisements. This is the default state.
Step 5	end Example: Switch(config)# end	Returns to privileged EXEC mode.

Example

The following 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
```

What to Do Next

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

Related Topics

[Monitoring and Maintaining CDP, on page 8](#)

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.

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

SUMMARY STEPS

1. **configure terminal**
2. **no cdp run**
3. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure terminal Example: Switch# configure terminal	Enters the global configuration mode.
Step 2	no cdp run Example: Switch(config)# no cdp run	Disables CDP.
Step 3	end Example: Switch(config)# end	Returns to privileged EXEC mode.

What to Do Next

You must reenable CDP to use it.

Related Topics[Enabling CDP, on page 5](#)

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.

Beginning in privileged EXEC mode, 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. **configure terminal**
2. **cdp run**
3. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure terminal Example: Switch# configure terminal	Enters the global configuration mode.
Step 2	cdp run Example: Switch(config)# cdp run	Enables CDP if it has been disabled.
Step 3	end Example: Switch(config)# end	Returns to privileged EXEC mode.

Example

The following example shows how to enable CDP if it has been disabled:

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

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

[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**

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

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

SUMMARY STEPS

1. **configure terminal**
2. **interface** *interface-id*
3. **no cdp enable**
4. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure terminal Example: Switch# configure terminal	Enters the global configuration mode.
Step 2	interface <i>interface-id</i> Example: Switch(config)# interface gigabitethernet1/0/1	Specifies the interface on which you are disabling CDP, and enters interface configuration mode.

	Command or Action	Purpose
Step 3	no cdp enable Example: Switch(config-if)# no cdp enable	Disables CDP on the interface specified in Step 2.
Step 4	end Example: Switch(config-if)# end	Returns to privileged EXEC mode.

Related Topics

[Enabling CDP on an Interface, on page 7](#)

Enabling CDP on an Interface

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



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.

Beginning in privileged EXEC mode, 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. **configure terminal**
2. **interface** *interface-id*
3. **cdp enable**
4. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure terminal Example: Switch# configure terminal	Enters the global configuration mode.

	Command or Action	Purpose
Step 2	interface <i>interface-id</i> Example: Switch(config)# interface gigabitethernet1/0/1	Specifies the interface on which you are enabling CDP, and enters interface configuration mode.
Step 3	cdp enable Example: Switch(config-if)# cdp enable	Enables CDP on a disabled interface.
Step 4	end Example: Switch(config-if)# end	Returns to privileged EXEC mode.

Example

The following example shows how to enable CDP on a disabled port:

```
Switch# configure terminal
Switch(config)# interface gigabitethernet1/0/1
Switch(config-if)# cdp enable
Switch(config-if)# end
```

Related Topics

[Disabling CDP on an Interface, on page 6](#)

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.

Command	Description
show cdp entry <i>entry-name</i> [version] [protocol]	Displays 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 [<i>interface-id</i>]	Displays information about interfaces where CDP is enabled. You can limit the display to the interface about which you want information.
show cdp neighbors [<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.
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](#)

Additional References

Related Documents

Related Topic	Document Title
System Management Commands	<i>Configuration Fundamentals Command Reference, Cisco IOS XE Release 3S (Catalyst 3850 Switches)</i>

MIBs

MIB	MIBs Link
	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

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>	<p>http://www.cisco.com/support</p>

Feature History and Information for Cisco Discovery Protocol

Release	Modification
Cisco IOS 15.0(2)EX1	This feature was introduced.