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Understanding and Configuring CDP

This chapter describes how to configure Cisco Discovery Protocol (CDP) on the Catalyst 4500 series switch. It also provides guidelines, procedures, and configuration examples.

This chapter includes the following major sections:

> **Note** For complete syntax and usage information for the commands used in this chapter, refer to the *Cisco IOS Configuration Fundamentals Configuration Guide*, Release 12.2; *Cisco IOS System Management*; *Configuring Cisco Discovery Protocol (CDP)* at this URL: http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122cgcr/ffun_c/fcfprt3/fcf015.htm and to the *Cisco IOS Configuration Fundamentals Command Reference*, Release 12.1; *Cisco IOS System Management Commands*; and *CDP Commands* publication at this URL: http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122cgcr/ffun_r/ffrprt3/frf015.htm

> **Note** For complete syntax and usage information for the switch commands used in this chapter, refer to the *Catalyst 4500 Series Switch Cisco IOS Command Reference* and related publications at http://www.cisco.com/univercd/cc/td/doc/product/software/ios122/122cgcr/index.htm.

Overview of CDP

CDP is a protocol that runs over Layer 2 (the data link layer) on all Cisco routers, bridges, access servers, and switches. CDP allows network management applications to discover Cisco devices that are neighbors of already known devices, in particular, neighbors running lower-layer, transparent protocols.With CDP, network management applications can learn the device type and the SNMP agent address of neighboring devices. CDP enables applications to send SNMP queries to neighboring devices.

CDP runs on all LAN and WAN media that support Subnetwork Access Protocol (SNAP).

Each CDP-configured device sends periodic messages to a multicast address. Each device advertises at least one address at which it can receive SNMP messages. The advertisements also contain the time-to-live, or holdtime information, which indicates the length of time a receiving device should hold CDP information before discarding it.

Configuring CDP

The following sections describe how to configure CDP:

- Enabling CDP Globally, page 20-2
- Displaying the CDP Global Configuration, page 20-2
- Enabling CDP on an Interface, page 20-3
- Displaying the CDP Interface Configuration, page 20-3
- Monitoring and Maintaining CDP, page 20-3

Enabling CDP Globally

To enable CDP globally, perform this task:

Command	Purpose
Switch(config)# [**no**] **cdp run**	Enables CDP globally.
	Use the **no** keyword to disable CDP globally.

This example shows how to enable CDP globally:

```
Switch(config)# cdp run
```

Displaying the CDP Global Configuration

To display the CDP configuration, perform this task:

Command	Purpose
Switch# **show cdp**	Displays global CDP information.

This example shows how to display the CDP configuration:

```
Switch# show cdp
Global CDP information:
        Sending CDP packets every 120 seconds
        Sending a holdtime value of 180 seconds
        Sending CDPv2 advertisements is enabled
Switch#
```

For additional CDP **show** commands, see the "Monitoring and Maintaining CDP" section on page 20-3.

Enabling CDP on an Interface

To enable CDP on an interface, perform this task:

Command	Purpose
Switch(config-if)# **[no] cdp enable**	Enables CDP on an interface.
	Use the **no** keyword to disable CDP on an interface.

This example shows how to enable CDP on Fast Ethernet interface 5/1:

```
Switch(config)# interface fastethernet 5/1
Switch(config-if)# cdp enable
```

This example shows how to disable CDP on Fast Ethernet interface 5/1:

```
Switch(config)# interface fastethernet 5/1
Switch(config-if)# no cdp enable
```

Displaying the CDP Interface Configuration

To display the CDP configuration for an interface, perform this task:

Command	Purpose
Switch# **show cdp interface** [*type/number*]	Displays information about interfaces where CDP is enabled.

This example shows how to display the CDP configuration of Fast Ethernet interface 5/1:

```
Switch# show cdp interface fastethernet 5/1
FastEthernet5/1 is up, line protocol is up
  Encapsulation ARPA
  Sending CDP packets every 120 seconds
  Holdtime is 180 seconds
Switch#
```

Monitoring and Maintaining CDP

To monitor and maintain CDP on your device, perform one or more of these tasks:

Command	Purpose
Switch# **clear cdp counters**	Resets the traffic counters to zero.
Switch# **clear cdp table**	Deletes the CDP table of information about neighbors.
Switch# **show cdp**	Displays global information such as frequency of transmissions and the holdtime for packets being transmitted.

Command	Purpose
Switch# **show cdp entry** *entry_name* [**protocol** | **version**]	Displays information about a specific neighbor. The display can be limited to protocol or version information.
Switch# **show cdp interface** [*type*/*number*]	Displays information about interfaces on which CDP is enabled.
Switch# **show cdp neighbors** [*type*/*number*] [**detail**]	Displays information about neighboring equipment. The display can be limited to neighbors on a specific interface and expanded to provide more detailed information.
Switch# **show cdp traffic**	Displays CDP counters, including the number of packets sent and received and checksum errors.
Switch# **show debugging**	Displays information about the types of debugging that are enabled for your switch.

This example shows how to clear the CDP counter configuration on your switch:

```
Switch# clear cdp counters
```

This example shows how to display information about the neighboring equipment:

```
Switch# show cdp neighbors
Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater

Device ID          Local Intrfce     Holdtme     Capability   Platform   Port ID
JAB023807H1        Fas 5/3           127              T S      WS-C2948   2/46
JAB023807H1        Fas 5/2           127              T S      WS-C2948   2/45
JAB023807H1        Fas 5/1           127              T S      WS-C2948   2/44
JAB023807H1        Gig 1/2           122              T S      WS-C2948   2/50
JAB023807H1        Gig 1/1           122              T S      WS-C2948   2/49
JAB03130104        Fas 5/8           167              T S      WS-C4003   2/47
JAB03130104        Fas 5/9           152              T S      WS-C4003   2/48
```