Configuring CDP

This chapter contains the following sections:

Information About CDP

The Cisco Discovery Protocol (CDP), which runs over the data link layer, is used to advertise information to all attached Cisco devices and to discover and view information about attached Cisco devices. CDP runs on all Cisco-manufactured equipment.

Each device that you configure for CDP sends periodic advertisements to a multicast address. Each device advertises at least one address at which it can receive SNMP messages. The advertisements also contain hold time information, which indicates the length of time that a receiving device should hold CDP information before discarding it. You can configure the advertisement or refresh timer and the hold timer.

CDP Version 2 (CDPv2) allows you to track instances where the native VLAN ID or port duplex states do not match between connecting devices.

CDP advertises the following type-length-value fields (TLVs):

- Device ID
- Address
- Port ID
- Capabilities

- Version
- Platform
- Native VLAN
- Full/half duplex
- Maximum Transmission Unit (MTU)
- Sysname
- SysObjectID
- Management address
- Physical location

All CDP packets include a VLAN ID. The CDP packet is untagged, so it goes over the native/access VLAN, which is then also added to the packet.

High Availability

Stateless restarts are supported for CDP. After a reboot or a supervisor switchover, the running configuration is applied.

Guidelines and Limitations

- CDP gathers protocol addresses of neighboring devices and discovers the platform of those devices. CDP runs over the data link layer only. With CDP, two systems that support different Layer 3 protocols can learn about each other.
- CDP can discover up to 256 neighbors per port if the port is connected to a hub with 256 connections.
- CDP must be enabled globally before you can configure CDP on an interface. CDP is enabled globally by default.
- You can configure CDP on physical interfaces and port channels only.

Default Settings

Parameters	Default
CDP	Enabled globally and on all interfaces
CDP version	Version 2
CDP device ID	System name
CDP timer	60 seconds
CDP hold timer	180 seconds

Configuring CDP

This section includes the following topics:

- CDP Global Configuration
- Enabling CDP on an Interface
- Disabling CDP on an Interface

Enabling or Disabling CDP Globally

Be sure you understand that when you globally disable the CDP feature, all CDP configurations are removed.

Before You Begin

Before beginning this procedure, you must be logged in to the CLI in EXEC mode.

Procedure

	Command or Action	Purpose
Step 1	switch# **config t**	Places you in global configuration mode.
Step 2	switch(config)# [**no**] **cdp enable**	Enables or disables the CDP feature globally.

```
switch# config t
switch(config)# no cdp enable
```

Enabling or Disabling CDP on an Interface

You can enable or disable CDP on an interface.

Note Although CDP is enabled by default on all interfaces, should it become disabled, you can use this procedure to enable it again.

Procedure

	Command or Action	Purpose
Step 1	switch# **configure terminal**	Enters global configuration mode.

	Command or Action	Purpose
Step 2	switch(config)# **interface** *interface-type number*	Places you in interface configuration mode for the specific interface.
Step 3	switch(config-if)# [**no**] **cdp enable**	Disables or enables CDP on this interface.
Step 4	switch(config-if)# **show cdp interface** *interface-type number*	(Optional) Displays CDP information for the specified interface.
Step 5	switch(config-if)# **copy running-config startup-config**	(Optional) Saves the change persistently through reboots and restarts by copying the running configuration to the startup configuration.

```
switch# config terminal
switch(config)# interface ethernet 3/1
switch(config-if)# no cdp enable
switch(config-if)# show cdp interface mgmt0
mgmt0 is up
    CDP disabled on interface
    Sending CDP packets every 60 seconds
    Holdtime is 180 seconds
switch(config)# copy running-config startup-config
```

Configuring CDP Options

You can configure the following for CDP:

- The device ID format to use

Note Only the system-name device ID format is supported

- The maximum hold time for neighbor information
- The refresh time for sending advertisements

Note You can view output from the upstream Catalyst 6500 Series switch by using the **show cdp neighbor command**.

Before You Begin

Before beginning this procedure, be sure you know the following information:

- How long you want CDP to retain neighbor information if you are setting the holdtime.
- How often you want CDP to advertise if you are setting the CDP timer.

Procedure

	Command or Action	Purpose
Step 1	switch# **configure terminal**	Enters global configuration mode.
Step 2	switch(config)# **cdp format device-id system-name**	(Optional) Specifies that CDP uses the system name for the device ID format.
Step 3	switch(config)# **show cdp neighbors**	Displays the upstream device from your device.
Step 4	switch(config)# **cdp holdtime** *seconds*	(Optional) Sets the maximum amount of time that CDP holds onto neighbor information before discarding it. • The range for the *seconds* argument is from 10 to 255 seconds. • The default is 180 seconds.
Step 5	switch(config)# **cdp timer** *seconds*	Sets the refresh time for CDP to send advertisements to neighbors. • The range for the *seconds* argument is from 5 to 254 seconds.
Step 6	switch(config)# **show cdp global**	(Optional) Displays the CDP version that is being advertised or sent to other devices.
Step 7	switch(config)# **copy running-config startup-config**	(Optional) Saves the change persistently through reboots and restarts by copying the running configuration to the startup configuration.

```
switch# config terminal
switch(config)# cdp format device-id system-name
switch(config)# show cdp neighbors
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater,
                  V - VoIP-Phone, D - Remotely-Managed-Device,
                  s - Supports-STP-Dispute

Device ID              Local Intrfce   Hldtme  Capability  Platform      Port ID

swordfish-6k-2         Eth2/2          169     R S I    WS-C6503-E    Gig1/14
swordfish-6k-2         Eth2/3          139     R S I    WS-C6503-E    Gig1/15
swordfish-6k-2         Eth2/4          135     R S I    WS-C6503-E    Gig1/16
swordfish-6k-2         Eth2/5          177     R S I    WS-C6503-E    Gig1/17
swordfish-6k-2         Eth2/6          141     R S I    WS-C6503-E    Gig1/18
switch(config)# cdp holdtime 10
switch(config)# cdp timer 5
switch(config)# show cdp global
Global CDP information:
    CDP enabled globally
```

```
    Sending CDP packets every 5 seconds
    Sending a holdtime value of 10 seconds
    Sending CDPv2 advertisements is disabled
    Sending DeviceID TLV in Mac Address Format
switch(config-if)# copy running-config startup-config
```

Advertising a CDP Version

Before beginning this procedure, be sure you have know the following information:

- The version of CDP currently supported on the device.
- Only one version of CDP (version 1 or version 2) is advertised at a time for all uplinks and port channels on the switch.

Before You Begin

Before beginning this procedure, you must be logged in to the CLI in EXEC mode.

Procedure

	Command or Action	Purpose
Step 1	switch# **config t**	Places you in global configuration mode.
Step 2	switch(config)# **cdp advertise** {**v1** | **v2**}	Assigns the CDP version to advertise: • CDP Version 1 • CDP Version 2
Step 3	switch(config)# **show cdp global**	(Optional) Displays the CDP version that is being advertised or sent to other devices.
Step 4	switch(config)# **copy running-config startup-config**	(Optional) Copies the running configuration to the startup configuration.

```
switch# config t
switch(config)# cdp advertise v1
switch(config)# show cdp global
Global CDP information:
    CDP enabled globally
    Sending CDP packets every 60 seconds
    Sending a holdtime value of 180 seconds
    Sending CDPv2 advertisements is disabled
    Sending DeviceID TLV in Default Format
switch(config)# copy running-config startup-config
```

Verifying the CDP Configuration

Use one of the following commands to verify the configuration:

Command	Purpose
show cdp all	Displays all interfaces that have CDP enabled.
show cdp entry {**all** | **name** *entry-name*}	Displays the CDP database entries.
show cdp global	Displays the CDP global parameters.
show cdp interface *interface-type slot/port*	Displays the CDP interface status.
show cdp neighbors {**detail** | **interface** *interface-type slot/port*}	Displays the CDP neighbor status.

Monitoring CDP

Monitoring CDP Statistics

Command	Purpose
show cdp traffic interface *interface-type slot/port*	Displays the CDP traffic statistics on an interface.

Clearing CDP Statistics

Use one of the following commands to clear CDP statistics:

Command	Purpose
clear cdp counters	Clears CDP statistics on all interfaces.
clear cdp counters interface *number*	Clears CDP statistics on the specified interface.
clear cdp table	Clears the CDP cache for one or all interfaces.

Configuration Example for CDP

This example shows how to enable the CDP feature and configures the refresh and hold timers:

```
switch# config t
switch(config)# cdp enable
switch(config)# cdp timer 50
switch(config)# cdp holdtime 100
```

Feature History for CDP

Feature	Releases	Feature Information
CDP	Release 5.2(1)SK1(2.1)	This feature was introduced.