



# Configure CDP

*Table 1: Feature History*

Feature Name	Release Information	Feature Description
CDP Support	Cisco IOS XR Release 7.10.1	Cisco Discovery Protocol (CDP) support is introduced on NCS 1010. CDP is a Layer 2 network discovery protocol for learning about directly connected Cisco devices. This protocol lets you easily view peer Cisco device information such as IP address, version number, platform type, connected ports, and so on for network planning and troubleshooting.

CDP is a Cisco proprietary layer 2 protocol used to obtain information about peer Cisco devices. It exchanges CDP packets with its neighbors to discover the platform type and capabilities of the peer device.

Each device configured for CDP sends periodic messages, known as advertisements, to a multicast address. Each device advertises at least one address at which it can receive messages. The advertisements also contain time-to-live or hold-time information which indicates the length of time a receiving device holds CDP information (180 seconds by default) before discarding it. Each device also listens to the periodic CDP messages sent by others (every 60 seconds by default) to learn about neighboring devices and determine when their interfaces go up or down.



**Note** CDP feature is available by installing the following RPMs:

- `xr-cdp-7.10.1.19Iv1.0.0-1.x86_64.rpm`
- `xr-cdp-82eb6a4d2fa15d0e-7.10.1.19Iv1.0.0-1.x86_64.rpm`
- `xr-cdp-ncs1010-7.10.1.19Iv1.0.0-1.x86_64.rpm`

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## Enable CDP Globally

To enable CDP globally, use the following commands:

```
configure  
cdp  
commit
```

## Disable CDP Globally

To disable CDP globally, use the following commands:

```
configure  
no cdp  
commit
```

## Enable CDP on Interfaces

To enable CDP on the management interface, use the following commands:

```
configure  
interface mgmtEth rack/slot/instance/port  
cdp  
commit
```

The following example enables CDP on the management interface.

```
RP/0/RP0/CPU0:ios#configure  
RP/0/RP0/CPU0:ios(config)#interface mgmtEth 0/RP0/CPU0/1  
RP/0/RP0/CPU0:ios(config-if)#cdp  
RP/0/RP0/CPU0:ios(config-if)#commit
```

To enable CDP on the Gigabit Ethernet (GE) interface, use the following commands:

```
configure  
interface gigabitEthernet rack/slot/instance/port  
cdp  
commit
```

The following example enables CDP on the Gigabit Ethernet (GE) interface.

```
RP/0/RP0/CPU0:ios#configure
```

```
RP/0/RP0/CPU0:ios(config)#interface gigabitEthernet 0/0/0/0
RP/0/RP0/CPU0:ios(config-if)#cdp
RP/0/RP0/CPU0:ios(config-if)#commit
```

## Modify CDP Default Settings

Use this task to modify CDP parameters such as the default version, holdtime, and timer.

### Step 1 **configure**

**Example:**

```
RP/0/RP0/CPU0:ios#configure
```

Enters global configuration mode.

### Step 2 **cdp advertise v1**

**Example:**

```
RP/0/RP0/CPU0:ios(config)#cdp advertise v1
```

Configures CDP to use only version 1 (CDPv1) in communicating with neighboring devices.

By default, when CDP is enabled, the device sends CDPv2 packets. CDP also sends and receives CDPv1 packets if the device with which CDP is interacting does not process CDPv2 packets.

In this example, the device is configured to send and receive only CDPv1 packets.

To disable CDP v1, use the **no cdp advertise v1** form of this command.

### Step 3 **cdp holdtime seconds**

**Example:**

```
RP/0/RP0/CPU0:ios(config)#cdp holdtime 120
```

Specifies the amount of time that the receiving device holds a CDP packet sent from another device before discarding it.

By default, when CDP is enabled, the receiving device holds a CDP packet for 180 seconds before discarding it. The range of **holdtime** parameter is 10 to 255 seconds.

**Note** The CDP hold time must be set to a higher number of seconds than the time between CDP transmissions, which is set with the **cdp timer** command.

### Step 4 **cdp timer seconds**

**Example:**

```
RP/0/RP0/CPU0:ios(config)#cdp timer 65
```

Specifies the frequency at which CDP update packets are sent.

By default, when CDP is enabled, CDP update packets are sent at a frequency of once every 60 seconds. The range of **timer** parameter is 5 to 254 seconds.

**Note** A lower timer setting causes CDP update packets to be sent more frequently.

**Step 5**    **commit****Example:**

```
RP/0/RP0/CPU0:ios(config)#commit
```

Saves the configuration changes and remains within the configuration session.

## Monitor CDP

Use the **show cdp** command to display global CDP information.

```
RP/0/RP0/CPU0:ios#show cdp
Tue Feb 14 16:59:38.255 UTC
Global CDP information:
    Sending CDP packets every 60 seconds
    Sending a holdtime value of 180 seconds
    Sending CDPv2 advertisements is enabled
```

Use the **show cdp neighbors** command to display detailed information about neighboring devices discovered using CDP.

```
RP/0/RP0/CPU0:ios#show cdp neighbors mgmtEth 0/RP0/CPU0/1
Mon Apr 10 12:30:30.902 UTC
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
R1                Mg0/RP0/CPU0/1  172      R           NCS1010   Mg0/RP0/CPU0/1
RP/0/RP0/CPU0:R2#show cdp neighbors
Mon Apr 10 12:30:39.251 UTC
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
R1                Mg0/RP0/CPU0/1  164      R           NCS1010   Mg0/RP0/CPU0/1

RP/0/RP0/CPU0:ios#show cdp neighbors mgmtEth 0/RP0/CPU0/1 detail
Mon Apr 10 12:31:23.622 UTC

-----
Device ID: R1
SysName : R1
Entry address(es):
  IPv4 address: 192.168.0.2
  IPv6 address: 2000:110::1
Platform: cisco NCS1010, Capabilities: Router
Interface: MgmtEth0/RP0/CPU0/1
Port ID (outgoing port): MgmtEth0/RP0/CPU0/1
Holdtime : 120 sec

Version :
7.10.1.19I

advertisement version: 2
Duplex: full
```

Use the **show cdp entry** *entry-name* command to display information about a specific neighboring device or all the neighboring devices discovered using CDP.

```
RP/0/RP0/CPU0:ios#show cdp entry R1
Mon Apr 10 12:22:22.564 UTC

-----
Device ID: R1
SysName : R1
Entry address(es):
  IPv4 address: 192.168.0.2
  IPv6 address: 2000:110::1
Platform: cisco NCS1010, Capabilities: Router
Interface: MgmtEth0/RP0/CPU0/1
Port ID (outgoing port): MgmtEth0/RP0/CPU0/1
Holdtime : 121 sec

Version :
7.10.1.19I

advertisement version: 2
Duplex: full
```

```
RP/0/RP0/CPU0:ios#show cdp entry *
Mon Apr 10 12:24:59.927 UTC

-----
Device ID: R1
SysName : R1
Entry address(es):
  IPv4 address: 192.168.0.2
  IPv6 address: 2000:110::1
Platform: cisco NCS1010, Capabilities: Router
Interface: MgmtEth0/RP0/CPU0/1
Port ID (outgoing port): MgmtEth0/RP0/CPU0/1
Holdtime : 143 sec

Version :
7.10.1.19I

advertisement version: 2
Duplex: full
```

Use the **show cdp interface** [*interface-name*] command to display information about the interfaces on which CDP is enabled.

```
RP/0/RP0/CPU0:ios#show cdp interface Mg0/RP0/CPU0/1
Mon Apr 10 12:24:27.253 UTC
MgmtEth0/RP0/CPU0/1 is Up
  Encapsulation ether
  Sending CDP packets every 60 seconds
  Holdtime is 180 seconds
```

Use the **show cdp traffic** command to display information about the traffic gathered between devices using CDP.

```
RP/0/RP0/CPU0:ios#show cdp traffic
Mon Apr 10 12:32:09.247 UTC

CDP counters :
  Packets output: 11, Input: 5
```

```
Hdr syntax: 0, Chksum error: 0, Encaps failed: 0  
No memory: 0, Invalid packet: 0, Truncated: 0  
CDP version 1 advertisements output: 0, Input: 0  
CDP version 2 advertisements output: 11, Input: 5  
Unrecognize Hdr version: 0, File open failed: 0
```