# Configuring Cisco Discovery Protocol Bypass

In Cisco Discovery Protocol Bypass mode Cisco Discovery Protocol packets are received and transmitted unchanged. Received packets are not processed. No packets are generated. In this mode, 'bump-in-the-wire' behavior is applied to Cisco Discovery Protocol packets. This is a backward compatible mode, equivalent to not having Cisco Discovery Protocol support.

## Restrictions for Cisco Discovery Protocol Bypass

Cisco Discovery Protocol Bypass does not support standard ACLs on the switch port.

## Information about Cisco Discovery Protocol Bypass

When a Cisco IP Phone is plugged into a port that is configured with a Voice VLAN and single-host mode, the phone will be silently allowed onto the network by way of a feature known as Cisco Discovery Protocol Bypass. The phone (or any device) that sends the appropriate Type Length Value (TLV) in a Cisco Discovery Protocol message will be allowed access to the voice VLAN.

In Cisco Discovery Protocol Bypass mode, Cisco Disocvery Protocol packets are received and transmitted unchanged. Received packets are not processed. No packets are generated. In this mode, 'bump-in-the-wire' behaviour is applied to Cisco Discovery Protocol packets. This is a backward compatible mode, equivalent to not having Cisco Discovery Protocol support.

In Cisco Discovery Protocol Bypass mode authentication sessions are established in single and multi-host modes for IP Phones. However, if voice VLAN and 802.1x on an interface port is enabled, then Cisco Discovery Protocol Bypass is enabled when the host mode is set to single or multi-host mode.

It is possible to use the Multi-Domain Authentication (MDA) feature instead of Cisco Discovery Protocol Bypass feature as it provides better Access Control, Visibility and Authorization.

**Note** By default the host mode is set to single mode in legacy mode and multi-authentication in the edge mode.

Cisco Discovery Protocol Enhancement for Second Port Disconnect—Allows a Cisco IP phone to send a Cisco Discovery Protocol message to the switch when a host unplugs from behind the phone. The switch is then able to clear any authenticated session for the indirectly connected host, the same as if the host had been directly connected and the switch had detected a link down event. This is supported in latest IP telephones.

Cisco Discovery Protocol Bypass provides no support for third-party phones—Cisco Discovery Protocol Bypass works only with Cisco phones.

# How to configure Cisco Discovery Protocol Bypass

Follow these steps to enable Cisco Discovery Protocol Bypass:

### SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface** *interface-id*
4. **switchport mode access**
5. **switchport access vlan** *vlan id*
6. **switchport voice vlan** *vlan-id*
7. **authentication port-control auto**
8. **authentication host-mode** {**single-host** | **multi-host**}
9. **dot1x pae authenticator**

### DETAILED STEPS

| | Command or Action | Purpose |
|---|---|---|
| **Step 1** | **enable**<br>**Example:**<br>`Device> enable` | Enables privileged EXEC mode.<br>• Enter your password if prompted. |
| **Step 2** | **configure terminal**<br>**Example:**<br>`Device# configure terminal` | Enters the global configuration mode. |
| **Step 3** | **interface** *interface-id*<br>**Example:**<br>`Device(config)# interface GigabitEthernet1/0/12` | Specifies a physical port, and enters interface configuration mode.<br>• Valid interfaces are physical ports. |
| **Step 4** | **switchport mode access**<br>**Example:**<br>`Device(config-if)# switchport mode access` | Specifies that the interface is in access mode. |

| | Command or Action | Purpose |
|---|---|---|
| **Step 5** | **switchport access vlan** *vlan id*<br>**Example:**<br>`Device(config-if)# switchport access vlan 10` | Assigns all ports as static-access ports in the same VLAN<br>• If you configure the port as a static-access port, assign it to only one VLAN. The range is 1 to 4094. |
| **Step 6** | **switchport voice vlan** *vlan-id*<br>**Example:**<br>`Device(config-if)# switchport voice vlan 3` | Instruct the Cisco IP phone to forward all voice traffic through the specified VLAN. By default, the Cisco IP phone forwards the voice traffic with an 802.1Q priority of 5.<br>Valid VLAN IDs are from 1 to 4094 when the enhanced software image (EI) is installed and 1 to 1001 when the standard software image is installed. Do not enter leading zeros. |
| **Step 7** | **authentication port-control auto**<br>**Example:**<br>`Device(config-if)# authentication port-control auto` | Enables 802.1x authentication on the port. |
| **Step 8** | **authentication host-mode** {**single-host** \| **multi-host**}<br>**Example:**<br>`Device(config-if)# authentication host-mode single | multi-host` | The keywords allow the following:<br>• single-host-Single host (client) on an IEEE 802.1X-authorized port.<br>• multi-host-Multiple hosts on an 802.1X-authorized port after a authenticating a single host. |
| **Step 9** | **dot1x pae authenticator**<br>**Example:**<br>`Device(config-if)# dot1x pae authenticator` | Enables 802.1X authentication on the port with default parameters |

# Configuration Examples for Cisco Discovery Protocol Bypass

## Example: Enabling Cisco Discovery Protocol Bypass

Cisco Discovery Protocol Bypass is enabled by default once ‘Authetication port-control auto’ is configured with dotx1 or MAB or if voice vlan is configured on interface along with single/multiple host mode.

This following configuration example configures Cisco Disovery Protocol Bypass when authenticating using MAB.

```
 Device(config)# interface GigabitEthernet1/0/12
Device(config-if)# switchport mode access
Device(config-if)# switchport access vlan 10
Device(config-if)# switchport voice vlan 3
Device(config-if)# authentication port-control auto
Device(config-if)# mab
```

## Displaying Cisco Discovery Protocol neighbours

The following configuration example displays Cisco Discovery Protocol neighbours.

```
Device# show cdp neighbors g1/0/37 detail
Device ID: SEP24B657B038DF
Entry address(es):
Platform: Cisco IP Phone 9971,  Capabilities: Host Phone Two-port Mac Relay
Interface: GigabitEthernet1/0/37,  Port ID (outgoing port): Port 1
Holdtime : 157 sec
Second Port Status: Down <<<<<<<<<<
Version :
sip9971.9-1-1SR1
advertisement version: 2
Duplex: full
Power drawn: 12.804 Watts
Power request id: 57146, Power management id: 4
Power request levels are:12804 0 0 0 0
Total cdp entries displayed : 1
```

## Example:Disabling Cisco Discovery Protocol Bypass

To disable Cisco Discovery Protocol Bypass,'Authetication port-control auto' needs to be removed from the interface.

# Feature Information for Cisco Discovery Protocol Bypass

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

*Table 1: Feature Information for Cisco Discovery Protocol Bypass*

| Releases | Feature Information |
|---|---|
| Cisco IOS XE Fuji 16.9.2 | The feature was introduced. |