# Configuring Auto-MDIX


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# Prerequisites for Auto-MDIX

Automatic medium-dependent interface crossover (auto-MDIX) is enabled by default.

Auto-MDIX is supported on all 10/100/1000-Mb/s and on 10/100/1000BASE-TX small form-factor pluggable (SFP)-module interfaces. It is not supported on 1000BASE-SX or -LX SFP module interfaces.

# Restrictions for Auto-MDIX

The device might not support a pre-standard powered device—such as Cisco IP phones and access points that do not fully support IEEE 802.3af—if that powered device is connected to the device through a crossover cable. This is regardless of whether auto-MIDX is enabled on the switch port.

# Information About Configuring Auto-MDIX

## Auto-MDIX on an Interface

When automatic medium-dependent interface crossover (auto-MDIX) is enabled on an interface, the interface automatically detects the required cable connection type (straight through or crossover) and configures the connection appropriately. When connecting devices without the auto-MDIX feature, you must use straight-through cables to connect to devices such as servers, workstations, or routers and crossover cables to connect to other devices or repeaters. With auto-MDIX enabled, you can use either type of cable to connect to other devices, and the interface automatically corrects for any incorrect cabling. For more information about cabling requirements, see the hardware installation guide.

This table shows the link states that result from auto-MDIX settings and correct and incorrect cabling.

*Table 1: Link Conditions and Auto-MDIX Settings*

| Local Side Auto-MDIX | Remote Side Auto-MDIX | With Correct Cabling | With Incorrect Cabling |
|---|---|---|---|
| On | On | Link up | Link up |
| On | Off | Link up | Link up |
| Off | On | Link up | Link up |
| Off | Off | Link up | Link down |

# How to Configure Auto-MDIX

## Configuring Auto-MDIX on an Interface

**Procedure**

| | Command or Action | Purpose |
|---|---|---|
| **Step 1** | **enable**<br>**Example:**<br>`Switch> enable` | Enables privileged EXEC mode.<br>• Enter your password if prompted. |
| **Step 2** | **configure terminal**<br>**Example:**<br>`Switch# configure terminal` | Enters global configuration mode |
| **Step 3** | **interface** *interface-id*<br>**Example:**<br>`Switch(config)# interface gigabitethernet 1/0/1` | Specifies the physical interface to be configured, and enter interface configuration mode. |
| **Step 4** | **speed auto**<br>**Example:**<br>`Switch(config-if)# speed auto` | Configures the interface to autonegotiate speed with the connected device. |
| **Step 5** | **duplex auto**<br>**Example:** | Configures the interface to autonegotiate duplex mode with the connected device. |

| | Command or Action | Purpose |
|---|---|---|
| | `Switch(config-if)# duplex auto` | |
| **Step 6** | **end**<br>**Example:**<br>`Switch(config-if)# end` | Returns to privileged EXEC mode. |
| **Step 7** | **copy running-config startup-config**<br>**Example:**<br>`Switch# copy running-config startup-config` | (Optional) Saves your entries in the configuration file. |

# Example for Configuring Auto-MDIX

This example shows how to enable auto-MDIX on a port:

```
Switch# configure terminal
Switch(config)# interface gigabitethernet 1/0/1
Switch(config-if)# speed auto
Switch(config-if)# duplex auto
Switch(config-if)# mdix auto
Switch(config-if)# end
```