



Configuring Auto-MDIX

This module contains the following sections:

- [Prerequisites for Auto-MDIX, page 1](#)
- [Restrictions for Auto-MDIX, page 1](#)
- [Information about Configuring Auto-MDIX, page 2](#)
- [How to Configure Auto-MDIX, page 2](#)
- [Monitoring Auto-MDIX, page 3](#)
- [Example for Configuring Auto-MDIX, page 4](#)

Prerequisites for Auto-MDIX

To configure Layer 2 parameters, if the interface is in Layer 3 mode, you must enter the **switchport** interface configuration command without any parameters to put the interface into Layer 2 mode. This shuts down the interface and then re-enables it, which might generate messages on the device to which the interface is connected. When you put an interface that is in Layer 3 mode into Layer 2 mode, the previous configuration information related to the affected interface might be lost, and the interface is returned to its default configuration.

Automatic medium-dependent interface crossover (auto-MDIX) is enabled by default. When you enable auto-MDIX, you must also set the interface speed and duplex to **auto** so that the feature operates correctly.

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 switch 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 switch 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 switches 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 switches 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

SUMMARY STEPS

1. **configure terminal**
2. **interface *interface-id***
3. **speed auto**
4. **duplex auto**
5. **mdix auto**
6. **end**

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure terminal Example: Switch# configure terminal	Enters global configuration mode
Step 2	interface <i>interface-id</i> Example: Switch(config)# interface gigabitethernet1/0/1	Specifies the physical interface to be configured, and enter interface configuration mode.
Step 3	speed auto Example: Switch(config-if)# speed auto	Configures the interface to autonegotiate speed with the connected device.
Step 4	duplex auto Example: Switch(config-if)# duplex auto	Configures the interface to autonegotiate duplex mode with the connected device.
Step 5	mdix auto Example: Switch(config-if)# mdix auto	Enables auto-MDIX on the interface.
Step 6	end Example: Switch(config-if)# end	Returns to privileged EXEC mode.

Monitoring Auto-MDIX

Command	Purpose
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<code>show controllers ethernet-controller <i>interface-id</i> phy</code>	Verifies the operational state of the auto-MDIX feature on the interface.
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Example for Configuring Auto-MDIX

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

```
Switch# configure terminal
Switch(config)# interface gigabitethernet1/0/1
Switch(config-if)# speed auto
Switch(config-if)# duplex auto
Switch(config-if)# mdix auto
Switch(config-if)# end
```