



## Configuring Auto-MDIX

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## 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.

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-MDIX 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. **enable**
2. **configure terminal**
3. **interface** *interface-id*
4. **speed auto**
5. **duplex auto**
6. **end**
7. **copy running-config startup-config**

## DETAILED STEPS

	Command or Action	Purpose
Step 1	<b>enable</b>  <b>Example:</b> Switch> <b>enable</b>	Enables privileged EXEC mode. Enter your password if prompted.
Step 2	<b>configure terminal</b>  <b>Example:</b> Switch# <b>configure terminal</b>	Enters global configuration mode
Step 3	<b>interface <i>interface-id</i></b>  <b>Example:</b> Switch(config)# <b>interface gigabitethernet1/0/1</b>	Specifies the physical interface to be configured, and enter interface configuration mode.
Step 4	<b>speed auto</b>  <b>Example:</b> Switch(config-if)# <b>speed auto</b>	Configures the interface to autonegotiate speed with the connected device.
Step 5	<b>duplex auto</b>  <b>Example:</b> Switch(config-if)# <b>duplex auto</b>	Configures the interface to autonegotiate duplex mode with the connected device.
Step 6	<b>end</b>  <b>Example:</b> Switch(config-if)# <b>end</b>	Returns to privileged EXEC mode.
Step 7	<b>copy running-config startup-config</b>  <b>Example:</b> Switch# <b>copy running-config startup-config</b>	(Optional) Saves your entries in the configuration file.

## Monitoring Auto-MDIX

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

## 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
```

## Additional References

### Error Message Decoder

Description	Link
To help you research and resolve system error messages in this release, use the Error Message Decoder tool.	<a href="https://www.cisco.com/cgi-bin/Support/Errordecoder/index.cgi">https://www.cisco.com/cgi-bin/Support/Errordecoder/index.cgi</a>

### MIBs

MIB	MIBs Link
All supported MIBs for this release.	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: <a href="http://www.cisco.com/go/mibs">http://www.cisco.com/go/mibs</a>

**Technical Assistance**

Description	Link
<p>The Cisco Support website provides extensive online resources, including documentation and tools for troubleshooting and resolving technical issues with Cisco products and technologies.</p> <p>To receive security and technical information about your products, you can subscribe to various services, such as the Product Alert Tool (accessed from Field Notices), the Cisco Technical Services Newsletter, and Really Simple Syndication (RSS) Feeds.</p> <p>Access to most tools on the Cisco Support website requires a Cisco.com user ID and password.</p>	<a href="http://www.cisco.com/support">http://www.cisco.com/support</a>

## Feature History and Information for Auto-MDIX

Release	Modification
Cisco IOS XE 3.3SE	This feature was introduced.

