

Configuring Gigabit Ethernet Autonegotiation

Configuring Gigabit Ethernet Autonegotiation with Remote Fault

To configure explicit autonegotiation and remote fault, include the `auto-negotiation` statement and the `remote-fault` option at the `[edit interfaces ge-fpc/pic/port gether-options]` hierarchy level.

```
[edit interfaces ge-fpc/pic/port gether-options]
([Unresolved xref] | no-auto-negotiation) remote-fault <local-interface-online |
local-interface-offline>
```

Configuring Flow Control

To enable flow control, include the `flow-control` statement at the `[edit interfaces ge-fpc/pic>/port gether-options]` hierarchy level.

Configuring Autonegotiation Speed on MX-series Routers

MX-series routers with Combo Line Rate DPCs and Tri-Rate Copper SFPs support autonegotiation of speed. The autonegotiation specified interface speed is propagated to CoS, routing protocols, and other system components. Half-duplex mode is not supported.

To specify the autonegotiation speed, use the `speed <(auto | 1Gbps | 100Mbps | 10Mbps)>` statement at the `[edit interface ge-fpc/pic>/port]` hierarchy level.

To set port speed negotiation to a specific rate, set the port speed to **1Gbps**, **100Mbps**, or **10Mbps**. If the negotiated speed and the interface speed do not match, the link will not be brought up.

If you set the autonegotiation speed `auto` option, then the port speed is negotiated.

You can disable auto MDI/MDIX using the `no-auto-mdix` statement at the `[edit interface ge-fpc/pic>/port gether-options]` hierarchy level.

Use the `show interfaces ge-fpc/pic>/port brief` command to display the auto negotiation of speed and auto MDI/MDIX states.

Displaying Autonegotiation Status

To display Gigabit Ethernet interface details, including the autonegotiation status, use the operational mode command `show interfaces ge-fpc/pic/port extensive`.

Table 1 and Table 2 provide information about the autonegotiation status on local and remote routers with fiber interfaces. The status of the link and LED can vary depending on the level of autonegotiation set and the transmit and receive fiber status.

Table 1: Mode and Autonegotiation Status (Local)

Transmit	Receive	Mode	LED	Link	Autonegotiation Status
ON	ON	Default	Green	UP	Complete
ON	OFF	Default	Red	DOWN	
OFF	ON	Default	Red	DOWN	
OFF	OFF	Default	Red	DOWN	
ON	ON	Default	Red	DOWN	
ON	ON	Default	Green	UP	No-autonegotiation
ON	OFF	Default	Red	DOWN	
OFF	OFF	Default	Red	DOWN	
ON	ON	Default	Green	UP	
ON	ON	Default	Red	DOWN	
ON	ON	No-autonegotiation	Green	UP	Incomplete
ON	OFF	No-autonegotiation	Red	DOWN	
OFF	ON	No-autonegotiation	Green	UP	
OFF	OFF	No-autonegotiation	Red	DOWN	
ON	ON	No-autonegotiation	Red	DOWN	
ON	ON	Explicit	Green	UP	Complete
ON	OFF	Explicit	Red	DOWN	
OFF	ON	Explicit	Red	DOWN	
OFF	OFF	Explicit	Red	DOWN	
ON	ON	Explicit	Red	DOWN	
ON	OFF	Explicit + RFI-Offline	Red	DOWN	
ON	ON	Explicit	Green	UP	No-autonegotiation
ON	OFF	Explicit	Red	DOWN	
OFF	ON	Explicit	Green	UP	
OFF	OFF	Explicit	Red	DOWN	
ON	ON	Explicit	Red	DOWN	
ON	ON	Explicit + RFI-Offline	Green	UP	Complete

Table 1: Mode and Autonegotiation Status (Local) *(continued)*

Transmit	Receive	Mode	LED	Link	Autonegotiation Status
OFF	ON	Explicit + RFI-Offline	Red	DOWN	
OFF	OFF	Explicit + RFI-Offline	Red	DOWN	
ON	ON	Explicit + RFI-Offline	Red	DOWN	
ON	ON	Explicit + RFI-Offline	Green	UP	No-autonegotiation
ON	OFF	Explicit + RFI-Offline	Red	DOWN	
OFF	ON	Explicit + RFI-Offline	Green	UP	
OFF	OFF	Explicit + RFI-Offline	Red	DOWN	
ON	ON	Explicit + RFI-Offline	Red	DOWN	
ON	ON	Explicit + RFI-Offline	Red	DOWN	Complete
ON	OFF	Explicit + RFI-Offline	Red	DOWN	
OFF	ON	Explicit + RFI-Online	Red	DOWN	
OFF	OFF	Explicit + RFI-Online	Red	DOWN	
ON	ON	Explicit + RFI-Online	Red	DOWN	
ON	ON	Explicit + RFI-Online	Green	UP	No-autonegotiation*
ON	OFF	Explicit + RFI-Online	Red	DOWN	
OFF	ON	Explicit + RFI-Online	Green	UP	
OFF	OFF	Explicit + RFI-Online	Red	DOWN	
ON	ON	Explicit + RFI-Online	Green	UP	
ON	ON	Explicit + RFI-Online	Red	DOWN	
ON	ON	Explicit + RFI-Online	Red	DOWN	Complete
ON	OFF	Explicit + RFI-Online	Red	DOWN	
OFF	ON	Explicit + RFI-Online	Red	DOWN	
OFF	OFF	Explicit + RFI-Online	Red	DOWN	
ON	ON	Explicit + RFI-Online	Red	DOWN	
ON	ON	Explicit + RFI-Online	Green	UP	Complete

Table 2: Mode and Autonegotiation Status (Remote)

Transmit	Receive	Mode	LED	Link	Autonegotiation Status
ON	ON	Default	Green	UP	Complete
ON	ON	Default	Red	DOWN	
ON	OFF	Default	Red	DOWN	
OFF	ON	Default	Red	DOWN	
OFF	OFF	Default	Red	DOWN	
ON	ON	No-autonegotiation	Green	UP	Incomplete
ON	ON	No-autonegotiation	Red	DOWN	
ON	OFF	No-autonegotiation	Red	DOWN	
OFF	ON	No-autonegotiation	Green	UP	
OFF	OFF	No-autonegotiation	Red	DOWN	
ON	ON	No-autonegotiation	Green	UP	Incomplete
ON	ON	No-autonegotiation	Red	DOWN	
ON	ON	No-autonegotiation	Red	DOWN	
ON	OFF	No-autonegotiation	Red	DOWN	
OFF	ON	No-autonegotiation	Green	UP	
OFF	OFF	No-autonegotiation	Red	DOWN	
ON	ON	Default	Green	UP	Complete
ON	ON	Default	Red	DOWN	
ON	OFF	Default	Red	DOWN	
OFF	ON	Default	Red	DOWN	
OFF	OFF	Default	Red	DOWN	
ON	ON	Explicit	Green	UP	Complete
ON	ON	Explicit	Red	DOWN	
ON	OFF	Explicit	Red	DOWN	
OFF	ON	Explicit	Red	DOWN	
OFF	OFF	Explicit	Red	DOWN	

Table 2: Mode and Autonegotiation Status (Remote) *(continued)*

Transmit	Receive	Mode	LED	Link	Autonegotiation Status
ON	ON	No-autonegotiation	Green	UP	Incomplete
ON	ON	No-autonegotiation	Red	DOWN	
ON	OFF	No-autonegotiation	Red	DOWN	
OFF	ON	No-autonegotiation	Green	UP	
OFF	OFF	No-autonegotiation	Red	DOWN	
ON	ON	Explicit	Red	DOWN	Complete
ON	OFF	Explicit	Red	DOWN	
OFF	ON	Explicit	Red	DOWN	
OFF	OFF	Explicit	Red	DOWN	
ON	ON	Default	Green	UP	Complete
ON	ON	Default	Red	DOWN	
ON	OFF	Default	Red	DOWN	
OFF	ON	Default	Red	DOWN	
OFF	OFF	Default	Red	DOWN	
ON	ON	No-autonegotiation	Green	UP	Incomplete
ON	ON	No-autonegotiation	Green	UP	
ON	ON	No-autonegotiation	Red	DOWN	
ON	ON	No-autonegotiation	Red	DOWN	
ON	OFF	No-autonegotiation	Red	DOWN	
OFF	ON	No-autonegotiation	Green	UP	
OFF	OFF	No-autonegotiation	Red	DOWN	
ON	ON	Explicit + RFI-Offline	Red	DOWN	Complete
ON	ON	Explicit + RFI-Offline	Red	DOWN	
ON	ON	Explicit + RFI-Offline	Red	DOWN	
ON	ON	Explicit + RFI-Offline	Red	DOWN	
ON	OFF	Explicit + RFI-Offline	Red	DOWN	
OFF	ON	Explicit + RFI-Offline	Red	DOWN	

Table 2: Mode and Autonegotiation Status (Remote) *(continued)*

Transmit	Receive	Mode	LED	Link	Autonegotiation Status
OFF	OFF	Explicit + RFI-Offline	Red	DOWN	
ON	ON	Explicit	Green	UP	Complete
ON	ON	Explicit	Red	DOWN	
ON	ON	Explicit	Red	DOWN	
ON	ON	Explicit	Red	DOWN	
ON	OFF	Explicit	Red	DOWN	
OFF	ON	Explicit	Red	DOWN	
OFF	OFF	Explicit	Red	DOWN	
ON	ON	Default	Green	UP	Complete
ON	ON	Default	Red	DOWN	
ON	ON	Default	Red	DOWN	
ON	ON	Default	Red	DOWN	
ON	OFF	Default	Red	DOWN	
OFF	ON	Default	Red	DOWN	
OFF	OFF	Default	Red	DOWN	
ON	ON	No-autonegotiation	Green	UP	Incomplete
ON	ON	No-autonegotiation	Green	UP	
ON	ON	No-autonegotiation	Red	DOWN	
ON	ON	No-autonegotiation	Red	DOWN	
ON	OFF	No-autonegotiation	Red	DOWN	
OFF	ON	No-autonegotiation	Green	UP	
OFF	OFF	No-autonegotiation	Red	DOWN	
ON	ON	Explicit + RFI-Offline	Green	UP	Complete
ON	ON	Explicit + RFI-Offline	Red	DOWN	
ON	ON	Explicit + RFI-Offline	Red	DOWN	
ON	ON	Explicit + RFI-Offline	Red	DOWN	
ON	OFF	Explicit + RFI-Offline	Red	DOWN	

Table 2: Mode and Autonegotiation Status (Remote) *(continued)*

Transmit	Receive	Mode	LED	Link	Autonegotiation Status
OFF	ON	Explicit + RFI-Offline	Red	DOWN	
OFF	OFF	Explicit + RFI-Offline	Red	DOWN	
ON	ON	Explicit + RFI-Online	Green	UP	Complete
ON	ON	Explicit + RFI-Online	Red	DOWN	
ON	ON	Explicit + RFI-Online	Red	DOWN	
ON	ON	Explicit + RFI-Online	Red	DOWN	
ON	OFF	Explicit + RFI-Online	Red	DOWN	
OFF	ON	Explicit + RFI-Online	Red	DOWN	
OFF	OFF	Explicit + RFI-Online	Red	DOWN	

