



# Any Transport over MPLS (AToM): Remote Ethernet Port Shutdown

This Cisco IOS software feature allows a service provider edge router on the local end of an Ethernet over MPLS (EoMPLS) pseudowire to detect a remote link failure and cause the shutdown of the Ethernet port on the local customer edge router. Shutting down the Ethernet port on the local customer edge router prevents or mitigates a condition where that router would otherwise lose data by forwarding traffic continuously to the remote failed link, especially if the link were configured as a static IP route.

## Feature History for Any Transport over MPLS (AToM): Remote Ethernet Port Shutdown

Cisco IOS Release	Modification
12.0(30)S	This feature was introduced for Cisco 12000 Series Gigabit Ethernet line cards.

## Finding Support Information for Platforms and Cisco IOS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at <http://www.cisco.com/go/fn>. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

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## Prerequisites for Any Transport over MPLS (AToM): Remote Ethernet Port Shutdown

In Cisco IOS Release 12.0(30)S, the Any Transport over MPLS (AToM): Remote Ethernet Port Shutdown feature is supported only on the following Cisco 12000 series line cards:

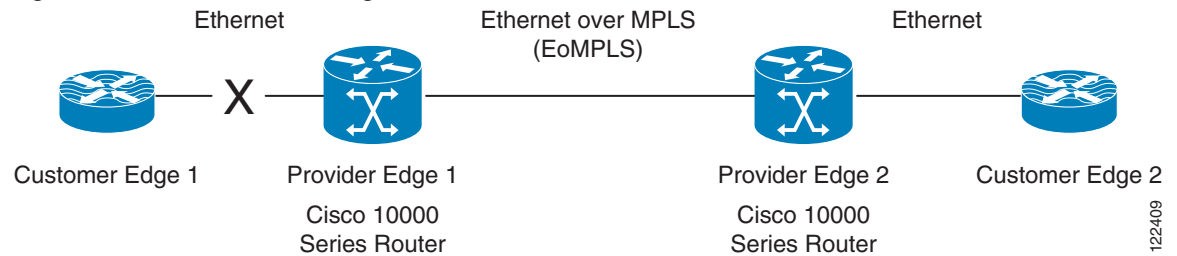
- 3-port Gigabit Ethernet line card (Engine 2)  
Product Number: **3GE-GBIC-SC=**
- 4-port-Gigabit Ethernet line card (Engine 3)  
Product Number: **4GE-SFP-LC=**
- 1-port 10 Gigabit Ethernet line card, 1310nm serial, 10km, SC (Engine 4+)  
Product Number: **X10GE-LR-SC=**
- 1-port 10 Gigabit Ethernet line card, 1310nm serial, 10km, SC (Engine 4+)  
Product Number: **1x10GE-ER-SC=**
- 10-port 1-Gigabit Ethernet line card (Engine 4+)  
Product Number: **10x1GE-SFP-LC-B=**

## Restrictions for Any Transport over MPLS (AToM): Remote Ethernet Port Shutdown

- For Cisco IOS Release 12.0(30)S, this feature is implemented only for port mode Ethernet over MPLS (EoMPLS) connections between Cisco 12000 series Gigabit Ethernet line cards.
- The feature is asymmetric when only one provider edge router (PE) supports Any Transport over MPLS (AToM): Remote Ethernet Port Shutdown. A router that is not running the supported software of hardware could not detect the remote link failure.

## Information About Any Transport over MPLS (AToM): Remote Ethernet Port Shutdown

[Figure 1](#) illustrates a condition in an EoMPLS Wide Area Network, with a down Layer 2 tunnel link between a customer edge router (Customer Edge 1) and the service provider edge (Provider Edge 1). A customer edge router on the far side of the Layer 2 tunnel (Customer Edge 2), continues to forward traffic to Customer Edge 1 through the L2 tunnel.

**Figure 1 Remote Link Outage in EoMPLS Wide Area Network**

Previous to this feature, the Provider Edge 2 router could not detect a failed remote link. Traffic forwarded from Customer Edge 2 to Customer Edge 1 would be lost until routing or spanning tree protocols detected the down remote link. If the link was configured with static routing, the remote link outage would be even more difficult to detect.

With Any Transport over MPLS (AToM): Remote Ethernet Port Shutdown, the Provider Edge 2 router detects the remote link failure and causes a shutdown of the local Customer Edge 2 Ethernet port. When the remote L2 tunnel link is restored, the local interface is automatically restored as well. The possibility of data loss is thus diminished.

With reference to [Figure 1](#), the Remote Ethernet Shutdown sequence is generally described as follows:

1. The remote link between Customer Edge 1 and Provider Edge 1 fails.
2. Provider Edge 2 running Cisco IOS Release 12.0(30)S detects the remote link failure and disables the transmit laser on the line card interface connected to Customer Edge 2.
3. An RX\_LOS error alarm is received by Customer Edge 2 causing Customer Edge 2 to bring down the interface.
4. Provider Edge 2 maintains its interface with Customer Edge 2 in an up state.
5. When the remote link and EoMPLS connection is restored, the Provider Edge 2 router enables the transmit laser.
6. The Customer Edge 2 router brings up its downed interface.

The Any Transport over MPLS (AToM): Remote Ethernet Port Shutdown feature is enabled by default for Ethernet over MPLS (EoMPLS), and can be disabled using **no remote link failure notification** command in the `xconnect` sub-mode. Use the **show ip interface brief** privileged EXEC command to display the status of all remote L2 tunnel links. Use the **show interface slot/number** privileged EXEC command to show the status of the L2 tunnel on a specific interface.

**Note**

The **no remote link failure notification** command will not give notification to clients for remote attachment circuit status down.

## Configuration Examples for Any Transport over MPLS (AToM): Remote Ethernet Port Shutdown

There are no configuration tasks for the Any Transport over MPLS (AToM): Remote Ethernet Port Shutdown feature. The related show command output now reports operational status for all remote L2 Tunnels by interface.

```
router# show interface G8/0
GigabitEthernet8/0 is L2 Tunnel remote down, line protocol is up
Hardware is GigMac 4 Port GigabitEthernet, address is 0003.ff4e.12a8 (bia 0003.ff4e.12a8)
```

## Additional References

```

Internet address is 9.9.9.2/16
MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec, rely 255/255, load 1/255
. . .
router# show ip interface brief
Interface          IP-Address      OK? Method Status Protocol
GigabitEthernet2/0 unassigned      YES NVRAM  L2 Tunnel remote down up
GigabitEthernet2/1 unassigned      YES NVRAM  administratively down down
. . .

```

## Additional References

The following sections provide references related to the Any Transport over MPLS (AToM): Remote Ethernet Port Shutdown feature.

## Related Documents

Related Topic	Document Title
Any Transport over MPLS	<a href="#">Overview: Cisco Any Transport over MPLS</a>

## Standards

Standards	Title
There are no new standards for Any Transport over MPLS (AToM): Remote Ethernet Port Shutdown	—

## MIBs

MIBs	MIBs Link
<ul style="list-style-type: none"> <li>There are no related MIBs for the Any Transport over MPLS (AToM): Remote Ethernet Port Shutdown feature</li> </ul>	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use the Cisco MIB Locator at the following URL: <a href="http://www.cisco.com/go/mibs">http://www.cisco.com/go/mibs</a>

## RFCs

RFCs	Title
There are no RFCs related to the Any Transport over MPLS (AToM): Remote Ethernet Port Shutdown feature	—

## Technical Assistance

Description	Link
Technical Assistance Center (TAC) home page, containing 30,000 pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access more content.	<a href="http://www.cisco.com/public/support/tac/home.shtml">http://www.cisco.com/public/support/tac/home.shtml</a>

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