



Configuring Pseudowire Group Message Generation



Note Pseudowire Group Message Generation is *not* supported on the Cisco ASR 900 RSP3 module.

This chapter provides information about configuring the pseudowire (PW) group message generation feature on Cisco routers.

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Pseudowire Group Message Generation

The Pseudowire Group Message Generation feature assigns the pseudowire group ID for a group of pseudowires and sends wildcard status notifications or label withdrawal messages for a group.

Prerequisites for Pseudowire Group Message Generation

- The remote provider edge (PE) router must be capable of receiving group status messages.
- Label Distribution Protocol (LDP) must be implemented on the network.

Restrictions for Pseudowire Group Message Generation

The Pseudowire Group Message Generation feature is supported on Cisco IOS XE Release 3.16 and later releases.

- This feature is supported on Cisco Routers on the following attachment circuits:
 - Ethernet VLAN
 - Asynchronous Transfer Mode (ATM)
 - Circuit Emulation over MPLS (CEM)
- Pseudowire group ID is unique and is assigned automatically.

- This feature can only be configured globally rather than for each xconnect.
- Hot Standby Pseudowire (HSPW) has high convergence for Cisco RSP3 Module.

Information About Pseudowire Group Message Generation

The pseudowires associated with a given attachment circuit parent (e.g. physical or port channel) interface are grouped together by assigning a group ID. The group ID is assigned based on port index or virtual tunnel index of the interface. When a fault occurs in a group of pseudowires, a single status message is sent to the remote PE router for that particular group ID. When the status message is received by the remote PE router, it can switch the entire group to the designated backup pseudowires, instead of switching an individual pseudowire, thus reducing switchover time.

The Pseudowire Group Message Generation feature thus enhances recovery performance and scalability by reducing switchover time.



Note The Pseudowire Group Message Generation feature is disabled by default.

Multisegment Pseudowire

An L2VPN multisegment pseudowire (MS-PW) is a set of two or more PW segments that function as a single PW. When a MS-PW is configured, the switching provider edge router (S-PE) assigns Local group IDs to each pseudowire. This group ID is then sent to the terminating provider edge routers (T-PEs). Pseudowire group status messages received from a T-PE are then converted into group status messages for another T-PE by using the locally assigned group ID to prevent replication of group IDs.

Configuring Pseudowire Group Message Generation

Procedure

	Command or Action	Purpose
Step 1	enable Example: Device> enable	Enables privileged EXEC mode. • Enter your password if prompted.
Step 2	configure terminal Example: Device# configure terminal	Enters global configuration mode.
Step 3	l2vpn Example: Device(config)# l2vpn	Enters l2vpn configuration mode.
Step 4	pseudowire group status Example:	Sends pseudowire group status messages.

	Command or Action	Purpose
	Device(config-l2vpn)# pseudowire group status	
Step 5	end Example: Device(config-l2vpn)# end	Exits l2vpn configuration mode and returns to privileged EXEC mode.

Example for Configuring Pseudowire Group Message

The following example shows how to configure a pseudowire group message:

PE1:

```
Router# show run interface GigabitEthernet0/3/5
Building configuration...
```

```
Current configuration: 1623 bytes
!
interface GigabitEthernet0/3/5
 mtu 1504
 no ip address
 carrier-delay msec 0
 negotiation auto
 service instance 100 ethernet
 encapsulation dot1q 100
 xconnect 2.2.2.2 1000 encapsulation mpls
 backup peer 3.3.3.3 1000
 backup delay 0 40
```

PE2:

```
Router# show run | section l2vpn
l2vpn
 logging pseudowire status
 pseudowire group status
```

Verifying a Pseudowire Group Message Configuration

You can use **show** commands to view information about a pseudowire group message configuration.

The following example displays the information about local pseudowire groups and the parent interface state the last time when the pseudowire status was sent:

```
Device# show l2vpn atom group local
```

```
Peer Address      Group ID  Status
-----
1.1.1.1           5         UP
```

The following example displays the count of the number of LDP messages sent and received:

```
Device# show l2vpn atom statistics ldp
```

```
Load for five secs: 0%/0%; one minute: 0%; five minutes: 0%
Time source is hardware calendar, *07:36:32.858 PST Wed Dec 10 2014
```

LDP Message Type	Sent	Received
-----	-----	-----
Label Mapping	10	10
Label Request	0	0
Label Release	0	0
Label Withdraw	0	0
Group Withdraw	0	0
VC Notification	55	20
Group Notification	0	1