

Routed Pseudo-Wire and Routed VPLS

This feature module explains how to configure Routed Pseudo-Wire and Routed VPLS .

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Finding Feature Information

Your software release may not support all the features documented in this module. For the latest caveats and feature information, see Bug Search Tool and the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the feature information table.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Configuring Routed Pseudo-Wire and Routed VPLS

RPW and Routed VPLS can route Layer 3 traffic as well as switch Layer 2 frames for pseudowire connections between provider edge (PE) devices. Both point-to-point PE connections, in the form of Ethernet over MPLS (EoMPLS), and Virtual Private LAN Services (VPLS) multipoint PE connections are supported. The ability to route frames to and from these interfaces supports termination of a pseudowire into a Layer 3 network (VPN or global) on the same switch, or to tunnel Layer 3 frames over a Layer 2 tunnel (EoMPLS or VPLS). The feature supports faster network convergence in the event of a physical interface or device failure through the MPLS Traffic Engineering (MPLS-TE) and Fast Reroute (FRR) features. In particular, the feature enables MPLS TE-FRR protection for Layer 3 multicast over a VPLS domain.

When the RPW is configured in A-VPLS mode, TE/FRR is not supported because A-VPLS runs over ECMP and the ECMP convergence is comparable to TE/FRR.

To configure routing support for the pseudowire, configure an IP address and other Layer 3 features for the Layer 3 domain (VPN or global) in the virtual LAN (VLAN) interface configuration. The following example assigns the IP address 10.10.10.1 to the VLAN 100 interface, and enables Multicast PIM. (Layer 2 forwarding is defined by the VFI VFI100.)

```
interface bdi 100


  ip address 10.10.10.1 255.255.255.0
```

The following example assigns an IP address 20.20.20.1 of the VPN domain VFI200. (Layer 2 forwarding is defined by the VFI VFI200.)

```
interface bdi 200


  ip address 20.20.20.1 255.255.255.0
```

Verifying Routed Pseudo-Wire and Routed VPLS Configuration

You can use the **show mpls platform** command to view information about a routed pseudowire and routed VPLS configuration.

The following example shows how to display information about a routed pseudowire and routed VPLS configuration:

SUMMARY STEPS

1. show mpls platform vpls 100

DETAILED STEPS

show mpls platform vpls 100

Example:

```
Device# show mpls platform vpls 100

----------------------------
VPLS VLAN 100 (BD 100): V4
  VC info (#spoke VCs 0) :
    Imp:  tcam 224    (68    ) adj 131076 (0x20004) [peer 1.1.1.1 ID vc_id 100 2:1]  \
stats 0/0 0/0
    Disp: tcam 324    (66    ) adj 114692 (0x1C004) [in_label 16] stats 0/0
------------------------------
BD Flood Manager: VLAN/BD 100, 3 peers, V4
  CMET handle 0x8 top 8 (0x8) bottom 3280 (0xCD0)
  Ingr flood: tcam 64/0x40 (sw 15) adj 196608   (0x30000) elif 0x701C0064 stats 0/0  \
0/0
  Egr  flood: tcam 65/0x41 (sw 72) adj 180228   (0x2C004) elif 0x701C0064 stats 0/0  \
0/0
    BD ports:       adj 32868    (0x8064) elif 0x20000064 stats 3/208
  Ingr local: tcam 32/0x20 (sw 13) adj 180224   (0x2C000) elif 0x20000064 stats 0/0
  Egr  local: tcam 33/0x21 (sw 14) adj 180225   (0x2C001) elif 0x20000064 stats 0/0
  IRB Ingr V4 Mcast control 162/0xA2 (sw 79), adj 196609   (0x30001)
      Egr  V4 Mcast control 164/0xA4 (sw 84), adj 180229   (0x2C005)
      Ingr V4 Mcast data 192/0xC0 (sw 80), adj 1966
(0x30000)
      Egr  V4 Mcast data 194/0xC2 (sw 85), adj 180228   (0x2C004)
```

```
      Ingr V4 Bcast 34/0x22 (sw 81), adj 196609   (0x30001)
      Egr  V4 Bcast 35/0x23 (sw 86), adj 180229   (0x2C005)
  IRB Ingr V6 Mcast control 608/0x260 (sw 82), adj 196608   (0x30000)
      Egr  V6 Mcast control 612/0x264 (sw 89), adj 180228   (0x2C004)
      Ingr V6 Mcast data 672/0x2A0 (sw 83), adj 196608   (0x30000)
      Egr  V6 Mcast data 676/0x2A4 (sw 90), adj 180228   (0x2C004)
      ip2irb local 36/0x24 (sw 87), adj 180226   (0x2C002) stats 0/0
      ip2irb flood 66/0x42 (sw 88), adj 180230   (0x2C006) stats 0/0
BD Flood Manager: 1 BDs, LTL base 0x90E, LTL clients: VPLS
                : Wildcard entry tcam 288 (12) adj 78089 (0x13109)
```

Feature Information for Routed Pseudo-Wire and Routed VPLS

Table 1: Feature Information for Routed Pseudo-Wire and Routed VPLS

Feature Name	Releases	Feature Information
Routed Pseudo-Wire and Routed VPLS	12.2(33)SRB 12.2(33)SXJ1 15.0(1)SY 15.2(4)M Cisco IOS XE Release 3.6S	This feature routes Layer 3 traffic as well as switch Layer 2 frames for pseudowire connections between provider edge (PE) devices. In Cisco IOS Release 12.2(33)SRB, this feature was introduced on the Cisco 7600 series routers. In Cisco IOS Release 12.2(33)SXJ1, this feature was integrated. This feature is supported on WAN cards. The following command was modified: **show mpls platform** In Cisco IOS Release 15.0(1)SY, this feature was integrated. In Cisco IOS Release 15.2(4)M, this feature was integrated. In Cisco IOS XE Release 3.6S, support was added for the Cisco ASR 1000 Series Routers.