VPWS Command Reference

This chapter describes the commands to configure VPWS.

discovery targeted-hello

To configure the interval between transmission of consecutive Label Distribution Protocol (LDP) discovery targeted-hello messages, the hold time for a discovered targeted LDP neighbor, and to accept targeted hello from peers, use the **discovery targeted-hello** command in MPLS LDP configuration mode. To return to the default behavior, use the **no** form of this command.

discovery targeted-hello address-family { } { **accept** | | **holdtime** *seconds* | **interval** *seconds* }

no discovery targeted-hello { } { **accept** | | **holdtime** *seconds* | **interval** *seconds* }

Syntax Description

accept	Accepts targeted hellos from any source.
holdtime	Configures the time a discovered LDP neighbor is remembered without receipt of an LDP hello message from a neighbor.
interval	Displays time between consecutive hello messages.
seconds	Time value, in seconds. Range is 1 to 65535.

Command Default

accept: Targeted hello messages are not accepted from any source (neighbor).

holdtime: 90

interval: 10

Command Modes

MPLS LDP configuration

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
mpls-ldp	read, write

The following example shows how to configure the targeted-hello holdtime to 45 seconds, interval to 5 seconds, and configure acceptance of targeted hellos from all peers:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# mpls ldp
RP/0/RP0:hostname(config-ldp)# discovery targeted-hello holdtime 45
RP/0/RP0:hostname(config-ldp)# discovery targeted-hello interval 5
RP/0/RP0:hostname(config-ldp)# discovery targeted-hello accept
```

graceful-restart

To configure graceful restart, use the **graceful-restart** command in MPLS LDP configuration mode. To return to the default behavior, use the **no** form of this command.

graceful-restart [**reconnect-timeout** *seconds* | **forwarding-state-holdtime** *seconds*]

no graceful-restart [**reconnect-timeout** *seconds* | **forwarding-state-holdtime** *seconds*]

Syntax Description

reconnect-timeout *seconds*	(Optional) Configures the time that the local LDP sends to its graceful restartable peer, indicating how long its neighbor should wait for reconnection in the event of a LDP session failure, in seconds. Range is 60 to 1800
forwarding-state-holdtime *seconds*	(Optional) Configures the time the local forwarding state is preserved (without being reclaimed) after the local LDP control plane restarts, in seconds. Range is 60 to 1800.

Command Default

By default, graceful restart is disabled.

reconnect-timeout: 120

forwarding-state-holdtime : 180

Command Modes

MPLS LDP configuration

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the LDP graceful restart capability to achieve nonstop forwarding (NSF) during an LDP control plane communication failure or restart. To configure graceful restart between two peers, enable LDP graceful restart on both label switch routers (LSRs).

When an LDP graceful restart session is established and there is control plane failure, the peer LSR starts graceful restart procedures, initially keeps the forwarding state information pertaining to the restarting peer, and marks this state as stale. If the restarting peer does not reconnect within the reconnect timeout, the stale forwarding state is removed. If the restarting peer reconnects within the reconnect time period, it is provided recovery time to resynchronize with its peer. After this time, any unsynchronized state is removed.

The value of the forwarding state hold time keeps the forwarding plane state associated with the LDP control-plane in case of a control-plane restart or failure. If the control plane fails, the forwarding plane retains the LDP forwarding state for twice the forwarding state hold time. The value of the forwarding state hold time is also used to start the local LDP forwarding state hold timer after the LDP control plane restarts. When the LDP graceful restart sessions are renegotiated with its peers, the restarting LSR sends the remaining value

of this timer as the recovery time to its peers. Upon local LDP restart with graceful restart enabled, LDP does not replay forwarding updates to MPLS forwarding until the forwarding state hold timer expires.

Note In the presence of a peer relationship, any change to the LDP graceful restart configuration will restart LDP sessions. If LDP configuration changes from nongraceful restart to graceful restart, all the sessions are restarted. Only graceful restart sessions are restarted upon graceful restart to nongraceful restart configuration changes.

Task ID

Task ID	Operations
mpls-ldp	read, write

The following example shows how to configure an existing session for graceful restart:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# mpls ldp
RP/0/RP0:hostname(config-ldp)# graceful-restart
```

interface

To configure an attachment circuit, use the **interface** command in p2p configuration submode. To return to the default behavior, use the **no** form of this command.

interface *type interface path-id* [**PW-Ether**]

no interface *type interface path-id* [**PW-Ether**]

Syntax Description

type	Interface type. For more information, use the question mark (?) online help function.
interface path-id	Physical interface or a virtual interface. **Note** Use the **show interfaces** command to see a list of all possible interfaces currently configured on the router.
PW-Ether	(Optional) Configures an Ethernet Interface.

Command Default

None

Command Modes

p2p configuration submode

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
l2vpn	read, write

The following example shows how to configure an attachment circuit on a TenGigE interface:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# l2vpn
RP/0/RP0:hostname(config-l2vpn)# xconnect group group1
RP/0/RP0:hostname(config-l2vpn-xc)# p2p xc1
RP/0/RP0:hostname(config-l2vpn-xc-p2p)# interface TenGigE 0/3/0/11
```

ipv4 source

To configure source IP address for the pseudowire class with encapsulation mpls, use the **ipv4 source** command in the L2VPN pseudowire class encapsulation mpls configuration mode.

ipv4 source *source-ip-address*

Syntax Description

source-ip-address	Source IP address

Command Default

None

Command Modes

L2VPN pseudowire class encapsulation mpls configuration.

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
l2vpn	read, write

This example shows how to configure the source IP address:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# l2vpn
 RP/0/RP0:hostname(config-l2vpn)# pw-class kant1
RP/0/RP0:hostname(config-l2vpn-pwc)# encapsulation mpls
RP/0/RP0:hostname(config-l2vpn-pwc-mpls)# ipv4 source 112.22.1.4
```

log neighbor

To enable logging of notices describing session changes, use the **log neighbor** command in MPLS LDP configuration mode. To return to the default behavior, use the **no** form of this command.

log neighbor

no log neighbor

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

MPLS LDP configuration

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **log neighbor** command to receive a syslog or console message when a neighbor goes up or down.

Task ID

Task ID	Operations
mpls-ldp	read, write

The following example shows how to enable logging messages for neighbor session up and down events:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# mpls ldp
RP/0/RP0:hostname(config-ldp)# log neighbor
```

A logging message is issued when an LDP session state changes from up to down (and down to up).

l2vpn

To enter L2VPN configuration mode, use the **l2vpn** command in global configuration mode. To return to the default behavior, use the **no** form of this command.

l2vpn

no l2vpn

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

Global configuration

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Note All L2VPN configuration can be deleted using the **no l2vpn** command.

Task ID

Task ID	Operations
l2vpn	read, write

The following example shows how to enter L2VPN configuration mode:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# l2vpn
RP/0/RP0:hostname(config-l2vpn)#
```

l2 transport propagate

To propagate Layer 2 transport events, use the **l2transport propagate** command in interface configuration mode. To return to the default behavior, use the **no** form of this command.

l2transport propagate remote-status

no l2transport propagate remote-status

Syntax Description

remote-status	Propagates remote link status changes.

Command Default

None

Command Modes

Interface configuration

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

The **l2transport propagate** command provides a mechanism for the detection and propagation of remote link failure for port mode VPWS.

Task ID

Task ID	Operations
l2vpn	read, write

The following example shows how to propagate remote link status changes:

```
RP/0/RP0:hostname# configure
 RP/0/RP0:hostname(config)# interface TenGigE0/3/0/11
 RP/0/RP0:hostname(config-if)# l2transport propagate remote-status
```

load-balancing flow-label

To balance the load based on flow-labels, use the **load-balancing flow label** command in the l2vpn pseudowire class mpls configuration submode. To undo flow-label based load-balancing, use the **no** form of this command.

load-balancing flow-label both

Syntax Description

both	Inserts or discards flow labels on transmit or receive.

Command Default

None

Command Modes

L2vpn pseudowire class mpls configuration submode

Command History

Release	Modification
Release 6.5.25	This command was introduced.

Usage Guidelines

None

Task ID

Task ID	Operations
l2vpn	read, write

Example

The following example shows how to configure flow labels.

```
RP/0/RP0:hostname # configure
RP/0/RP0:hostname(config)# l2vpn
RP/0/RP0:hostname(config-l2vpn)# pw-class kanata01
 RP/0/RP0:hostname(config-l2vpn-pwc)# encapsulation mpls
RP/0/RP0:hostname(config-l2vpn-pwc-mpls)# protocol ldp
RP/0/RP0:hostname(config-l2vpn-pwc-mpls)#transport-mode ethernet
RP/0/RP0:hostname(config-l2vpn-pwc-mpls)#load-balancing
RP/0/RP0:hostname(config-l2vpn-pwc-mpls-load-bal)#flow-label both
RP/0/RP0:hostname(config-l2vpn-pwc-mpls-load-bal)#!
RP/0/RP0:hostname(config-l2vpn-pwc-mpls-load-bal)#commit
```

mpls ldp

To enter MPLS Label Distribution Protocol (LDP) configuration mode, use the **mpls ldp** command in global configuration mode.

mpls ldp

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

Global configuration

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
mpls-ldp	read, write

The following example shows how to MPLS LDP configuration mode:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# mpls ldp
RP/0/RP0:hostname(config-ldp)#
```

mpls static label

To configure static labels for MPLS L2VPN, use the **mpls static label** command in L2VPN cross-connect P2P pseudowire configuration mode. To have MPLS assign a label dynamically, use the **no** form of this command.

mpls static label local *label* **remote** *value*

no mpls static label local *label* **remote** *value*

Syntax Description

local *label*	Configures a local pseudowire label. Range is 16 to 15999.
remote *value*	Configures a remote pseudowire label. Range is 16 to 15999.

Command Default

The default behavior is a dynamic label assignment.

Command Modes

L2VPN cross-connect P2P pseudowire configuration

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Task ID

Task ID	Operations
l2vpn	read, write

The following example shows how to configure static labels for MPLS L2VPN:

```
 RP/0/RP0:hostname# configure
 RP/0/RP0:hostname(config)# l2vpn
 RP/0/RP0:hostname(config-l2vpn)# xconnect group group1
 RP/0/RP0:hostname(config-l2vpn-xc)# p2p xc1
 RP/0/RP0:hostname(config-xc-p2p)# neighbor 10.1.1.2 pw-id 1000
RP/0/RP0:hostname(config-l2vpn-xc-p2p-pw)# mpls static label local 800 remote 500
```

neighbor

To configure a pseudowire for a cross-connect, use the **neighbor** command in p2p configuration submode. To return to the default behavior, use the **no**form of this command.

neighbor { *A.B.C.D* | **ipv4** *ipv4 address* } **pw-id** *value* [**mpls** || **pw-class**]

no neighbor { *A.B.C.D* | **ipv4** *ipv4 address* } **pw-id** *value* [**mpls** || **pw-class**]

Syntax Description

class-name	Pseudowire class name.

Command Default

None

Command Modes

L2VPN configuration submode

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Note All L2VPN configurations can be deleted using the **no l2vpn** command.

Task ID

Task ID	Operations
l2vpn	read, write

The following example shows how to define a simple pseudowire class template:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# l2vpn
RP/0/RP0:hostname(config-l2vpn)# xconnect group l1vpn
RP/0/RP0:hostname(config-l2vpn-xc)# p2p rtrA_to_rtrB
RP/0/RP0:hostname(config-l2vpn-xc-p2p)# neighbor 10.1.1.2 pw-id 1000
RP/0/RP0:hostname(config-l2vpn-xc-p2p-pw)# pw-class kanata01
```

nsr

To configure nonstop routing for LDP protocols in the event of a disruption in service, use the **nsr** command in MPLS LDP configuration mode. To return to the default behavior, use the **no** form of this command.

nsr

no nsr

Syntax Description

This command has no keywords or arguments.

Command Default

By default, MPLS LDP NSR is disabled.

Command Modes

MPLS LDP configuration

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

A disruption in service may include any of the following events:

- Route Processor (RP) switchover
- LDP process restart
- In-service system upgrade (ISSU)

Enabling NSR causes events such as these to be invisible to the routing peers and provide minimal service disruption.

Note The LDP Process restart is supported by NSR only if the NSR process-failures switchover is configured, else the process restart causes the session to be unstable.

Task ID

Task ID	Operations
mpls-ldp	read, write

The following example shows how to enable MPLS LDP NSR:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# mpls ldp
RP/0/RP0:hostname(config-ldp)# nsr
```

preferred path

To configure an MPLS TE tunnel to be used for L2VPN traffic, use the **preferred-path** command in Encapsulation MPLS configuration mode. To delete the preferred-path, use the **no** form of this command.

preferred-path interface { **tunnel-te** } *value* [**fallback disable**]

no preferred-path interface { **tunnel-te** } *value* [**fallback disable**]

Syntax Description

interface	Interface for the preferred path.
value	IP tunnel interface name for the preferred path.
fallback disable	(Optional) Disables fallback for preferred path tunnel settings.
tunnel-te	Specifies the TE tunnel interface name for the preferred path.

Command Default

None

Command Modes

l2vpn pseudowire class mpls encapsulation mode

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

The **preferred-path** command is applicable only to pseudowires with MPLS encapsulation.

Use the show l2vpn xconnect detail command to show the status of fallback (that is, enabled or disabled).

Note All L2VPN configurations can be deleted using the **no l2vpn** command.

Task ID

Task ID	Operations
l2vpn	read, write

This example shows how to configure preferred-path tunnel settings:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# l2vpn
RP/0/RP0:hostname(config-l2vpn-xc-p2p-pw)# pw-class kanata01
RP/0/RP0:hostname(config-l2vpn-pwc)# encapsulation mpls
RP/0/RP0:hostname(config-l2vpn-pwc-encap-mpls)# preferred-path interface tunnel-te 345
RP/0/RP0:hostname(config-l2vpn-pwc-encap-mpls)# preferred-path interface tunnel-te 345
fallback disable
```

pw-class

To enter pseudowire class submode to define a pseudowire class template, use the **pw-class** command in L2VPN configuration submode. To delete the pseudowire class, use the **no** form of this command.

pw-class *class-name*

no pw-class *class-name*

Syntax Description

class-name	Pseudowire class name.

Command Default

None

Command Modes

L2VPN configuration submode

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Note All L2VPN configurations can be deleted using the **no l2vpn** command.

Task ID

Task ID	Operations
l2vpn	read, write

The following example shows how to define a simple pseudowire class template:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# l2vpn
RP/0/RP0:hostname(config-l2vpn)# xconnect group l1vpn
RP/0/RP0:hostname(config-l2vpn-xc)# p2p rtrA_to_rtrB
RP/0/RP0:hostname(config-l2vpn-xc-p2p)# neighbor 10.1.1.2 pw-id 1000
RP/0/RP0:hostname(config-l2vpn-xc-p2p-pw)# pw-class kanata01
```

pw-class encapsulation mpls

To configure MPLS pseudowire encapsulation, use the **pw-class encapsulation mpls** command in L2VPN pseudowire class configuration mode. To undo the configuration, use the **no** form of this command.

pw-class *class-name* **encapsulation mpls** { **ipv4** | **preferred-path** | **protocol ldp** | **transport-mode** }

no pw-class *class-name* **encapsulation mpls** { **ipv4** | **preferred-path** | **protocol ldp** | **transport-mode** }

Syntax Description

class-name	Encapsulation class name
ipv4	Sets the local source IPv4 address.
preferred-path	(Optional) Configures the preferred path tunnel settings.
protocol ldp	Configures LDP as the signaling protocol for this pseudowire class.
transport-mode	(Optional) Configures transport mode to Ethernet.

Command Default

None

Command Modes

L2VPN pseudowire class configuration

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Note All L2VPN configurations can be deleted using the **no l2vpn** command.

Task ID

Task ID	Operations
l2vpn	read, write

The following example shows a point-to-point cross-connect configuration :

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# l2vpn
RP/0/RP0:hostname(config-l2vpn)# pw-class kanata01
RP/0/RP0:hostname (config-l2vpn-pwc)# encapsulation mpls
```

```
RP/0/RP0:hostname (config-l2vpn-pwc-encap-mpls)# protocol ldp
RP/0/RP0:hostname (config-l2vpn-pwc-encap-mpls)# ipv4 source 1.1.1.1
RP/0/RP0:hostname (config-l2vpn-pwc-encap-mpls)# preferred-path interface tunnel-te 1
```

pw load-balance terminated

Use the **fat-pw load-balance terminated** command to configure the ingress interface of the egress PE node so that LAG hashing is performed using the terminating header of the traffic that is received.

fat-pw load-balance terminated

Syntax Description

fat-pw	Configures the fat pseudo wire profile on the interface
load-balance	load balance type
terminated	load balance on terminated header

Command Default

None

Command Modes

config mode

Command History

Release	Modification
Release 6.5.25	This command was introduced.

Usage Guidelines

None

Example

The following example shows how to configure flow labels.

```
RP/0/RP0:hostname # configure
RP/0/RP0:hostname(config)# int FortyGigE0/0/0/2
RP/0/RP0:hostname(config-if)# fat-pw load-balance terminated
 RP/0/RP0:hostname (config-if)# commit
```

p2p

To enter p2p configuration submode to configure point-to-point cross-connects, use the **p2p** command in L2VPN xconnect mode. To return to the default behavior, use the **no** form of this command.

p2p *xconnect-name*

no p2p *xconnect-name*

Syntax Description

xconnect-name	(Optional) Configures the name of the point-to-point cross- connect.

Command Default

None

Command Modes

L2VPN xconnect

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The name of the point-to-point cross-connect string is a free format description string.

Task ID

Task ID	Operations
l2vpn	read, write

The following example shows a point-to-point cross-connect configuration:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# l2vpn
RP/0/RP0:hostname(config-l2vpn)# xconnect group group1
RP/0/RP0:hostname(config-l2vpn-xc)# p2p xc1
```

router-id

To specify an IPv4 address to act as the router ID, use the **router-id** command in MPLS LDP configuration mode. To return to the default behavior, use the **no** form of this command.

router-id *lsr-id*

no router-id *lsr-id*

Syntax Description

lsr-id	LSR ID in A.B.C.D format.

Command Default

LDP uses router ID as determined by global router ID agent, IP Address Repository Manager (IP ARM).

Command Modes

MPLS LDP configuration

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

LDP uses the router ID from different sources in the following order:

1. Configured LDP router ID.
2. Global router ID (if configured).
3. Calculated (computed) using the primary IPv4 address of the highest numbered configured loopback address. We recommend configuring at least one loopback address.

Note We recommend that you configure an IP address for the LDP router-id to avoid unnecessary session flaps.

Task ID

Task ID	Operations
mpls-ldp	read, write

We recommend that you configure an IP address for the LDP router-id to avoid unnecessary session flaps.

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# mpls ldp
RP/0/RP0:hostname(config-ldp)# router-id 10.0.0.1
```

session protection

To enable the LDP session protection feature for keeping LDP peer session up by means of targeted discovery following the loss of link discovery with a peer, use the **session protection** command in MPLS LDP configuration mode. To return to the default behavior, use the **no** form of this command.

session protection [**duration** *seconds* | **infinite**]

no session protection

Syntax Description

duration *seconds*	(Optional) Specifies the protection duration, that is, the number of seconds that targeted discovery should continue following the loss of link discovery to a neighbor. Range is 30 to 2147483.
infinite	(Optional) Specifies session protection to last forever after loss of link discovery.

Command Default

By default, session protection is disabled. When enabled without duration, session protection is provided for all LDP peers and continues for 24 hours after a link discovery loss.

Command Modes

MPLS LDP configuration

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

LDP session protection feature allows you to enable the automatic setup of targeted hello adjacencies with all or a set of peers and specify the duration for which session needs to be maintained using targeted hellos after loss of link discovery.

Task ID

Task ID	Operations
mpls-ldp	read, write

The following example shows how to enable session protection for all discovered peers with unlimited duration to maintain the session after link discovery loss:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# mpls ldp
RP/0/RP0:hostname(config-ldp)# session protection
```

xconnect group

To configure cross-connect groups, use the **xconnect group** command in L2VPN configuration mode. To return to the default behavior, use the **no** form of this command.

xconnect group *group-name*

no xconnect group *group-name*

Syntax Description

group-name	Configures a cross-connect group name using a free-format 32-character string.

Command Default

None

Command Modes

L2VPN configuration

Command History

Release	Modification
Release 6.1.42	This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Note You can configure up to a maximum of 16K cross-connects per box.

Task ID

Task ID	Operations
l2vpn	read, write

The following example shows how to group all cross -connects for customer_atlantic:

```
RP/0/RP0:hostname# configure
RP/0/RP0:hostname(config)# l2vpn
RP/0/RP0:hostname(config-l2vpn)# xconnect group customer_atlantic
```