



L2TP Redirect

The L2TP Redirect feature allows a tunnel server participating in Stack Group Bidding Protocol (SGBP) to send a redirect message to the network access server (NAS) if another tunnel server wins the bid for a Layer 2 Tunnel Protocol (L2TP) call.

In a traditional Multichassis Multilink PPP (MMP) deployment, the stack group tunnel servers use Layer 2 Tunnel Protocol (L2TP) or Layer 2 Forwarding (L2F) tunnels to deliver Multilink PPP (MLP) links to the bundle owner. This architecture does not easily scale beyond a few routers per tunnel server stack, and inherently adds hops and latency variations between links in a bundle.

Enabling the L2TP Redirect feature increases the scalability of Multichassis Multilink PPP (MMP) deployments, load balances sessions across the stack group tunnel servers, and smooths traffic as all links in a multilink bundle experience the same delay and latency.

Configuration Information

Configuration information is included in the “Configuring Multihop VPDN” module in the *Cisco IOS VPDN Configuration Guide*, Release 12.4T, at the following URL:

- http://www.cisco.com/univercd/cc/td/doc/product/software/ios124/124tcg/tvpdn_c/vpc5mhht.htm

Command Reference

This section documents modified commands.

- [clear vpdn redirect](#)
- [show vpdn redirect](#)
- [vpdn redirect](#)
- [vpdn redirect attempts](#)
- [vpdn redirect identifier](#)
- [vpdn redirect source](#)

clear vpdn redirect

To clear the Layer 2 Tunnel Protocol (L2TP) redirect counters shown in the **show vpdn redirect** command output, use the **clear vpdn redirect** command in privileged EXEC mode.

clear vpdn redirect

Syntax Description This command has no arguments or keywords.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.2(8)B	This command was introduced.
	12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T.
	12.2(28)SB	This command was integrated into Cisco IOS Release 12.2(28)SB.

Usage Guidelines Use the **clear vpdn redirect** command to clear the statistics regarding redirects and forwards displayed using the **show vpdn redirect** command.

Examples The following example clears the redirect counters:

```
Router# clear vpdn redirect
```

Related Commands	Command	Description
	show vpdn redirect	Displays statistics for L2TP redirects and forwards.
	vpdn redirect	Enables L2TP redirect functionality.
	vpdn redirect attempts	Restricts the number of redirect attempts possible for an L2TP call on the NAS.
	vpdn redirect identifier	Configures a VPDN redirect identifier to use for L2TP call redirection on a stack group tunnel server.
	vpdn redirect source	Configures the public redirect IP address of an L2TP stack group tunnel server.

show vpdn redirect

To display statistics for Layer 2 Tunneling Protocol (L2TP) redirects and forwards, use the **show vpdn redirect** command in privileged EXEC mode.

show vpdn redirect

Syntax Description This command has no arguments or keywords.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.2(8)B	This command was introduced.
	12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T.
	12.2(28)SB	This command was integrated into Cisco IOS Release 12.2(28)SB.

Usage Guidelines Statistics about the number of L2TP forwards and redirects that were done by the router as an L2TP network access server (NAS) or L2TP tunnel server are displayed when you enter the **show vpdn redirect** command. To clear the redirect counters, use the **clear vpdn redirect** command.

Examples The following example displays statistics for redirects and forwards for a router configured as an L2TP NAS:

```
Router# show vpdn redirect
```

```
vpdn redirection enabled
sessions redirected as access concentrator: 2
sessions redirected as network server: 0
sessions forwarded: 2
```

[Table 1](#) describes the significant fields shown in the display.

Table 1 *show vpdn redirect Field Descriptions*

Field	Description
vpdn redirection enabled	Verifies that L2TP redirect is enabled.
sessions redirected as access concentrator	Displays the number of sessions that the router has redirected when configured as a NAS.
sessions redirected as network server	Displays the number of sessions that the router has redirected when configured as a tunnel server.
sessions forwarded	Displays the total number of sessions that have been forwarded.

Related Commands

Command	Description
clear vpdn redirect	Clears the L2TP redirect counters shown in the output from the show vpdn redirect command.
vpdn redirect	Enables L2TP redirect functionality.
vpdn redirect attempts	Restricts the number of redirect attempts possible for an L2TP call on the NAS.
vpdn redirect identifier	Configures a VPDN redirect identifier to use for L2TP call redirection on a stack group tunnel server.
vpdn redirect source	Configures the public redirect IP address of an L2TP stack group tunnel server.

vpdn redirect

To enable Layer 2 Tunneling Protocol (L2TP) redirect functionality, use the **vpdn redirect** command in global configuration mode. To disable L2TP redirect functionality, use the **no** form of this command.

vpdn redirect

no vpdn redirect

Syntax Description

This command has no arguments or keywords.

Command Default

L2TP redirect functionality is disabled so that current multihop forwarding behavior is preserved.

Command Modes

Global configuration

Command History

Release	Modification
12.2(8)B	This command was introduced.
12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T.
12.2(28)SB	This command was integrated into Cisco IOS Release 12.2(28)SB.

Usage Guidelines

Configuring this command on the L2TP network access server (NAS) enables the NAS to perform L2TP redirection by sending a new vendor-specific attribute-value (AV) pair to the L2TP tunnel server. Configuring this command on the stack group tunnel server allows the tunnel server to redirect a call by disconnecting it and requesting the NAS to redirect it. The Stack Group Bidding Protocol (SGBP) stack group tunnel servers must have this command enabled in order to receive redirected calls, or else they will receive calls only through the usual multihop forwarding from the tunnel server that first took the call.

Examples

The following example enables the L2TP redirect feature on the NAS:

```
Router(config)# vpdn redirect
```

Related Commands

Command	Description
clear vpdn redirect	Clears the L2TP redirect counters shown in the output from the show vpdn redirect command.
show vpdn redirect	Displays statistics for L2TP redirects and forwards.
vpdn redirect attempts	Restricts the number of redirect attempts possible for an L2TP call on the NAS.

Command	Description
vpdn redirect identifier	Configures a VPDN redirect identifier to use for L2TP call redirection on a stack group tunnel server.
vpdn redirect source	Configures the public redirect IP address of an L2TP stack group tunnel server.

vpdn redirect attempts

To restrict the number of redirect attempts possible for a given Layer 2 Tunneling Protocol (L2TP) call on the L2TP network access server (NAS), use the **vpdn redirect attempts** command in global configuration mode. To revert to the default of three redirect attempts, use the **no** form of this command.

vpdn redirect attempts *number-of-attempts*

no vpdn redirect attempts *number-of-attempts*

Syntax Description

<i>number-of-attempts</i>	Number of redirect attempts, ranging from 1 to 20.
---------------------------	--

Command Default

A maximum of three redirect attempts are allowed.

Command Modes

Global configuration

Command History

Release	Modification
12.2(8)B	This command was introduced.
12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T.
12.2(28)SB	This command was integrated into Cisco IOS Release 12.2(28)SB.

Usage Guidelines

Note that the number of redirect attempts is by default always restricted to three, even if this command is not explicitly configured. The only use of this command is to configure a redirect attempts value other than the default (which is always in effect).

Examples

The following example configures four redirect attempts:

```
Router(config)# vpdn redirect attempts 4
```

Related Commands

Command	Description
clear vpdn redirect	Clears the L2TP redirect counters shown in the output from the show vpdn redirect command.
show vpdn redirect	Displays statistics for L2TP redirects and forwards.
vpdn redirect	Enables L2TP redirect functionality.
vpdn redirect identifier	Configures a VPDN redirect identifier to use for L2TP call redirection on a stack group tunnel server.
vpdn redirect source	Configures the public redirect IP address of an L2TP stack group tunnel server.

vpdn redirect identifier

To configure a virtual private dialup network (VPDN) redirect identifier to use for Layer 2 Tunneling Protocol (L2TP) call redirection on a stack group tunnel server, use the **vpdn redirect identifier** command in global configuration mode. To remove the name of the redirect identifier from the tunnel server, use the **no** form of this command.

vpdn redirect identifier *identifier-name*

no vpdn redirect identifier *identifier-name*

Syntax Description	<i>identifier-name</i>	Name of the redirect identifier to use for call redirection.
---------------------------	------------------------	--

Command Default	No identifier name is configured.
------------------------	-----------------------------------

Command Modes	Global configuration
----------------------	----------------------

Command History	Release	Modification
	12.2(8)B	This command was introduced.
	12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T.
	12.2(28)SB	This command was integrated into Cisco IOS Release 12.2(28)SB.

Usage Guidelines	The vpdn redirect identifier command is configured on each of the stack group tunnel servers. To configure the name of the redirect identifier on the network access server (NAS), use the redirect identifier command in VPDN group configuration mode.
	The NAS compares the configured redirect identifier with the one received from the stack group tunnel server to determine authorization information to redirect the call.
	Configuring the redirect identifier is not necessary to perform redirects. If the redirect identifier is not configured, the NAS uses the redirect IP address in order to get authorization information to redirect the call. In that case, the IP address of the new redirected tunnel server must be present in the initiate-to command configuration of the VPDN group on the NAS.
	The redirect identifier allows new stack group members to be added without the need to update the NAS configuration with their IP addresses. With the redirect identifier configured, a new stack group member can be added and given the same redirect identifier as the rest of the stack group.
	If the authorization information for getting to the new redirected tunnel server is different, then you will need to configure the authorization information via RADIUS using tagged attributes: Cisco:Cisco-Avpair = :0:"vpdn:vpdn-redirect-id= <i>identifier name</i> "
	The NAS will choose the correct tagged parameters to get authorization information for the new redirected tunnel server by first trying to match the redirect identifier (if present) or else by matching the Tunnel-Server-Endpoint IP address.

Examples

The following example configures the redirect identifier named lns1 on a stack group tunnel server:

```
Router(config)# vpdn redirect identifier lns1
```

The following attribute-value (AV) pair configures the RADIUS server with the redirect identifier named lns1 for a tunnel server:

```
Cisco:Cisco-Avpair = :0:"vpdn:vpdn-redirect-id=lns1"
```

Related Commands

Command	Description
clear vpdn redirect	Clears the L2TP redirect counters shown in the output from the show vpdn redirect command.
show vpdn redirect	Displays statistics for L2TP redirects and forwards.
vpdn redirect	Enables L2TP redirect functionality.
vpdn redirect attempts	Restricts the number of redirect attempts possible for an L2TP call on the NAS.
vpdn redirect source	Configures the public redirect IP address of an L2TP stack group tunnel server.

vpdn redirect source

To configure the public redirect IP address of a Layer 2 Tunnel Protocol (L2TP) stack group tunnel server, use the **vpdn redirect source** command in global configuration mode. To remove the public redirect IP address of a stack group tunnel server, use the **no** form of this command.

vpdn redirect source *redirect-ip-address*

no vpdn redirect source *redirect-ip-address*

Syntax Description

<i>redirect-ip-address</i>	Public redirect IP address for a stack group tunnel server.
----------------------------	---

Command Default

If the **vpdn redirect source** command is not configured, then the IP address used for Stack Group Bidding Protocol (SGBP) bidding itself will be used as the redirect address (the public redirect address is then omitted in the bid response).

Command Modes

Global configuration

Command History

Release	Modification
12.2(8)B	This command was introduced.
12.2(13)T	This command was integrated into Cisco IOS Release 12.2(13)T.
12.2(28)SB	This command was integrated into Cisco IOS Release 12.2(28)SB.

Usage Guidelines

On the network access server (NAS), this command will have no effect.

Examples

The following example configures a public IP address as a redirect source:

```
Router(config)# vpdn redirect source 10.1.1.1
```

Related Commands

Command	Description
clear vpdn redirect	Clears the L2TP redirect counters shown in the output from the show vpdn redirect command.
show vpdn redirect	Displays statistics for L2TP redirects and forwards.
vpdn redirect	Enables L2TP redirect functionality.
vpdn redirect attempts	Restricts the number of redirect attempts possible for an L2TP call on the NAS.
vpdn redirect identifier	Configures a VPDN redirect identifier to use for L2TP call redirection on a stack group tunnel server.