PPPoE LAC-Specific Commands

This module describes the Cisco IOS XR software commands used to configure the PPPoE LAC-specific commands for Broadband Network Gateway (BNG) on the Cisco ASR 9000 Series Router. For details regarding the related configurations, refer to the *Cisco ASR 9000 Series Aggregation Services Router Broadband Network Gateway Configuration Guide*.

To use commands of this module, 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 any command, contact your AAA administrator for assistance.

l2tp-class

To create the l2tp class that needs to be used for L2TP parameters for the vpdn-group and to enter the l2tp class configuration submode, use the **l2tp-class** command in Global Configuration mode. To disable this feature, use the **no** form of this command.

l2tp-class {**c1** | **l1** | *l2tp_class_name*} [**authentication** | **congestion-control** | **digest** | **hello-interval** | **hidden** | **hostname** | **ip** | **password** | **receive-window** | **retransmit** | **security** | **timeout** | **tunnel**]

c1	Specifies the l2tp class name.
l1	Specifies the l2tp class name.
l2tp_class_name	Specifies the l2tp class name.
authentication	Authenticates the L2TP control connection.
congestion-control	Enables L2Tp congestion control.
digest	Specifies message digest configuration for L2TPv3 control connection.
hello-interval	Hides AVPs in outgoing control messages.
hidden	Sets HELLO message interval.
hostname	Specifies the local hostname for control connection authentication.
ip	Specifies the settings for tunnel.
password	Specifies the password for control connection authentication.
receive-window	Receives the window size for control connection.
retransmit	Specifies the control message retransmission parameters.
security	Specifies the L2TP security command.
timeout	Specifies the control connection timeout parameters.
tunnel	Specifies the tunnel settings.

Command Default

No default behavior or values

Command Modes

Global Configuration mode

Command History	Release	Modification
	Release 4.2.0	This command was introduced.

Usage Guidelines   No specific guidelines impact the use of this command.

Task ID	Task ID	Operation
	tunnel	read, write

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# l2tp-class c1
RP/0/RSP0/CPU0:router(config)# l2tp-class c1 congestion-control
```

Related Commands

Command	Description
tunnel, on page 9	Configures l2tp tunnel.

l2tp-source-ip

To configure the tunnel source IP address for the subscriber redundancy group, use the **l2tp-source-ip** command in subscriber redundancy group configuration mode. To remove the tunnel source IP address configuration, use the **no** form of this command.

l2tp-source-ip *ip-address*

Syntax Description

ip-address	Source IP address of the L2TP tunnel.

Command Default

None

Command Modes

Subscriber redundancy group configuration

Command History

Release	Modification
Release 5.3.2	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
config-services	read, write

This example shows how to configure the L2TP tunnel source IP address for the subscriber redundancy group:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# subscriber redundancy group 1
RP/0/RSP0/CPU0:router(config-susbscr-red-group)# l2tp-source-ip 10.10.10.1
```

process-failures switchover

To force a switchover in case of a process failure, use the **process-failures switchover** command in VPDN redundancy configuration mode.

process-failures switchover

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes VPDN redundancy configuration mode

Command History

Release	Modification
Release 4.3.1	This command was introduced.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
tunnel	read, write

This is an example of enabling process-failures switchover.

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# vpdn
RP/0/RSP0/CPU0:router(config-vpdn)# redundancy
RP/0/RSP0/CPU0:router(config-vpdn-redundancy)# process-failures switchover
RP/0/RSP0/CPU0:router(config-vpdn-redundancy)#
```

Related Commands

Command	Description
vpdn, on page 10	Configures VPDN and enters the VPDN sub-configuration mode.
redundancy (BNG), on page 6	Enables VPDN redundancy and enters the VPDN redundancy configuration mode.

redundancy (BNG)

To enable VPDN redundancy and to enter the VPDN redundancy configuration mode, use the **redundancy** command in VPDN configuration mode. To disable VPDN redundancy, use the **no** form of this command.

redundancy

Syntax Description

This command has no keywords or arguments.

Command Default

None

Command Modes

VPDN configuration mode

Command History

Release	Modification
Release 4.3.1	This command was introduced.

Usage Guidelines

No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
tunnel	read, write

This is an example of enabling the vpdn **redundancy** and entering the vpdn redundancy configuration submode:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# vpdn
RP/0/RSP0/CPU0:router(config-vpdn)# redundancy
RP/0/RSP0/CPU0:router(config-vpdn-redundancy)#
```

Related Commands

Command	Description
vpdn, on page 10	Configures VPDN and enters the VPDN sub-configuration mode.

session-limit (BNG)

To configure maximum simultaneous VPDN sessions, use the **session-limit** command in vpdn configuration mode. To disable this feature, use the **no** form of this command.

session-limit *number*

Syntax Description

number	Specifies the number of sessions and the value can range between 1-131072.

Command Default
The default and max value for global session-limit is 65536(64k sessions).

Command Modes
VPDN configuration mode

Command History

Release	Modification
Release 4.2.0	This command was introduced.

Usage Guidelines
Use the **vpdn** command to enter vpdn configuration submode.

> **Note**   Per vpdn group session limiting is not supported on LAC.

If limit is configured after a number of sessions are up, then those sessions remain up irrespective of the limit and new sessions will not come up based on the limit. The **no** form of the command results in removing limits on number of sessions and new sessions are accepted by vpdn.

Task ID

Task ID	Operation
tunnel	read, write

This is an example of configuring the **session-limit** command in vpdn configuration mode:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# vpdn
RP/0/RSP0/CPU0:router(config-vpdn)# session-limit 567
```

template (BNG)

To configure the VPDN template and enter the vpdn template configuration mode, use the **template** command in vpdn configuration mode. To disable vpdn template, use the **no** form of this command.

template *vpdn-template_name*{**description** | **caller-id** | **ip** | **dsl-line-forwarding** | **ipv4** | **l2tp-class** | **tunnel** | **vpn**}

Syntax Description

vpdn-template_name	Specifies the vpdn template name.
description	Specifies the description of the vpdn template.
caller-id	Specifies the options to apply on calling station id.
ip	Specifies the tos ip value.
dsl-line-forwarding	Enables dsl line information forwarding.
ipv4	Specifies the ipv4 settings for tunnel.
l2tp-class	Specifies the l2tp class name.
tunnel	Specifies the l2tp tunnel commands.
vpn	Specifies the vpn id/vrf name.

Command Default None

Command Modes VPDN configuration mode

Command History

Release	Modification
Release 4.2.0	This command was introduced.

Usage Guidelines Use the **vpdn** command, to enter vpdn configuration submode.

Task ID

Task ID	Operation
tunnel	read, write

This is an example of configuring the **template** command in vpdn configuration mode:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# vpdn
RP/0/RSP0/CPU0:router(config-vpdn)# template temp1
RP/0/RSP0/CPU0:router(config-vpdn-temp)#
```

tunnel

To configure the amount of time that the peer will be put in a dead cache, use the **tunnel** command in vpdn template configuration mode. To disable this feature, use the **no** form of this command.

tunnel busy list timeout *timeout_value*

Syntax Description	*timeout_value* Specifies the amount of time in seconds that the peer will remain in dead cache. This value ranges from 60 to 65535.

Command Default   None

Command Modes   VPDN template configuration

Command History

Release	Modification
Release 4.2.0	This command was introduced.

Usage Guidelines   Use the **vpdn template** command to enter vpdn template configuration submode.

Task ID

Task ID	Operation
tunnel	read, write

This is an example of configuring the **tunnel** command in vpdn template configuration mode:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# vpdn template
RP/0/RSP0/CPU0:router(config-vpdn-template)# tunnel busy list timeout 56
```

Related Commands

Command	Description
vpdn, on page 10	Configures VPDN and to enter the VPDN sub-configuration mode.

vpdn

To configure VPDN and to enter the VPDN configuration submode, use the **vpdn** command in Global Configuration mode. To disable vpdn, use the **no** form of this command.

vpdn{**caller-id** | **history** | **l2tp** | **logging** | **session-limit** | **softshut** | **template**}

Syntax Description		
	caller-id	Specifies the options to apply on calling station id.
	history	Enables VPDN history logging.
	l2tp	Specifies the l2tpv2 protocol commands.
	logging	Enables logging for VPDN.
	session-limit	Allows to configure maximum simultaneous VPDN sessions.
	softshut	Specifies that a new session is no longer allowed.
	template	Specifies the VPDN template configuration.

Command Default   None

Command Modes   Global Configuration mode

Command History

Release	Modification
Release 4.2.0	This command was introduced.

Usage Guidelines   Use the **vpdn** command in Global Configuration mode to enter vpdn sub-configuration mode.

Task ID

Task ID	Operation
tunnel	read, write

This is an example of configuring the **vpdn** command in Global Configuration mode:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# vpdn
RP/0/RSP0/CPU0:router(config-vpdn)# history failure
RP/0/RSP0/CPU0:router(config-vpdn)# softshut
```

vpn

To configure the VPN ID or VRF name, use the **vpn** command in vpdn template configuration mode. To disable this feature, use the **no** form of this command.

vpn { **id** *vpn_index* | **vrf** *vrf_name* }

Syntax Description	id	Specifies the VPN ID.
	vrf	Specifies the VRF.
	vpn_index	Specifies a value between 0-ffffff.
	vrf_name	Specifies the name of the vrf.

Command Default None

Command Modes VPDN template configuration mode

Command History

Release	Modification
Release 4.2.0	This command was introduced.

Usage Guidelines Use the **vpdn template** command to enter vpdn template configuration submode.

Task ID

Task ID	Operation
tunnel	read, write

This is an example of configuring the **vpn** command in vpdn template configuration mode:

```
RP/0/RSP0/CPU0:router# configure
RP/0/RSP0/CPU0:router(config)# vpdn template
RP/0/RSP0/CPU0:router(config-vpdn-template)# vpn vrf vrf1
```

show l2tpv2

To display the tunnel-related information, use the **show l2tpv2** command in the EXEC mode.

show l2tpv2{**class** | **counters** | **session** | **statistics** | **tunnel**}

Syntax Description

class	Displays the L2TP class details.
counters	Displays the L2TP counter information.
session	Displays the L2TP session information.
statistics	Displays the L2TP protocol statistics.
tunnel	Displays the L2TP tunnel information.

Command Default None

Command Modes EXEC mode

Command History

Release	Modification
Release 4.2.0	This command was introduced.

Usage Guidelines No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
ipv4	read
network	read

This is the sample output of the **show l2tpv2** command in the EXEC mode:

```
RP/0/RSP0/CPU0:router# show l2tpv2 class name c1
RP/0/RSP0/CPU0:router# show l2tpv2 counters forwarding tunnel id 67
RP/0/RSP0/CPU0:router# show l2tpv2 session brief if 89 789
RP/0/RSP0/CPU0:router# show l2tpv2 statistics | file tftp: vrf vrf1 |
RP/0/RSP0/CPU0:router# show l2tpv2 tunnel accounting statistics | file tftp: vrf vrf1 |
```

Show output for l2tpv2 session:

```
Sun Dec  4 22:37:48.554 PST

Session id 46362 is up, tunnel id 58775, logical session id 131086
  Remote session id is 16, remote tunnel id 54970
  Locally initiated session
Call serial number is 2062300015
Remote tunnel name is ios_lns
  Internet address is 3.3.3.4
Local tunnel name is blah_client_auth_id
  Internet address is 1.1.1.1
```

```
IP protocol 17
  Session is L2TP signaled
  Session state is established, time since change 00:06:56
  UDP checksums are enabled
  Sequencing is off
  Conditional debugging is disabled
  Unique ID is 0
  Session username is user3_vpdn@domain.com
    Interface GigabitEthernet0_0_0_1.pppoe14
```

Show output for l2tpv2 tunnel detail:

```
  Mon Dec  5 20:37:55.891 PST
Tunnel id 133 is up, remote id is 15705, 1 active sessions
  Locally initiated tunnel
  Tunnel state is established, time since change 6d09h
Tunnel transport is UDP (17)
  Remote tunnel name is IOS_LNS
    Internet Address 3.3.3.3, port 1701
  Local tunnel name is XR_LAC
    Internet Address 1.1.1.1, port 1701
  VRF name: default
  Tunnel group id
  L2TP class for tunnel is VPDN_3.3.3.3
  Control Ns 9205, Nr 342
  Local RWS 512 (default), Remote RWS 1024
  Control channel Congestion Control is disabled
  Tunnel PMTU checking disabled
  Retransmission time 1, max 1 seconds
  Unsent queuesize 0, max 0
  Resend queuesize 0, max 2
  Total resends 0, ZLB ACKs sent 340
  Total out-of-order dropped pkts 0
  Total out-of-order reorder pkts 0
  Total peer authentication failures 0
  Current no session pak queue check 0 of 5
  Retransmit time distribution: 0 0 0 0 0 0 0 0 0 0
  Control message authentication is disabled
```

	Command	Description
Related Commands	l2tp-class, on page 2	Configures the l2tp class.

show l2tpv2 redundancy

To display the L2TP redundancy related information, use the **show l2tpv2 redundancy** command in the EXEC mode.

show l2tpv2 redundancy

Syntax Description   This command has no keywords or arguments.

Command Default   None

Command Modes   EXEC mode

Command History

Release	Modification
Release 4.3.1	This command was introduced.

Usage Guidelines   No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
tunnel	read

This is the sample output of the **show l2tpv2 redundancy** command in the EXEC mode:

```
RP/0/RSP0/CPU0:router# show l2tpv2 redundancy

  L2TP Tunnels:     0/0/0/0 (total/enabled/syncing/synced)
  L2TP Sessions:    0/0/0 (total/enabled/synced)

L2TP HA Timestamps:
  APP VPDN:
    Configured:                  TRUE
    Enabled:                     TRUE
    Time Configured:             Oct 12 14:00:25
    Time Unconfigured:           Oct 12 14:00:25
    Time Enabled:                Oct 12 14:00:35
    Time Disabled:
    Time Ready:                  Oct 12 14:00:35
    Time Not-Ready:

L2TP Switchover Resync Statistics:
  Poisoned sessions:                          0
  Unestablished sessions:                     0
  No app sessions:                            0
  Sessions cleared by peer:                   0
  Attempted during resync sessions:           0
  Tunnel poisoned sessions:                   0
  Tunnel cleared by peer sessions:            0
  Excess restrans tunnel sessions:            0
  Unestablished tunnel sessions:              0
  Tunnel cleared other sessions:              0
```

```
Other cleared sessions:                    0
Poisoned sessions:                         0
Peer cleared tunnels:                      0
Excess retrans tunnel:                     0
Unestablished tunnels:                     0
Other cleared tunnels:                     0
```

Related Commands

Command	Description
l2tp-class, on page 2	Configures the L2TP class.

show l2tpv2 redundancy mirroring

To display the L2TP related mirroring statistics, use the **show l2tpv2 redundancy mirroring** command in the EXEC mode.

show l2tpv2 redundancy mirroring

Syntax Description This command has no keywords or arguments.

Command Default None

Command Modes EXEC mode

Command History

Release	Modification
Release 4.3.1	This command was introduced.

Usage Guidelines This command displays mirrored data on the backup RP. If the data in the show command is not applicable on the backup RP, then trivial output such as '0' or empty is displayed.

Task ID

Task ID	Operation
tunnel	read

This is the sample output of the **show l2tpv2 redundancy mirroring** command in the EXEC mode:

```
RP/0/RSP0/CPU0:router# show l2tpv2 redundancy mirroring

L2TPv2 Mirroring Statistics
                                                     Since Last CLear
                          Send/Receive/Drop          Send/Receive/Drop
CCSync                        0/        0/     0         0/        0/      0
CCProtoSync                   0/        0/     0         0/        0/      0
CCUnsync                      0/        0/     0         0/        0/      0
CCSyncAck                     0/        0/     0         0/        0/      0
CCIAck                        0/        0/     0         0/        0/      0
CCSessionSyncDone             0/        0/     0         0/        0/      0
SessionSync                   0/        0/     0         0/        0/      0
AppStatus                     0/        1/     0         0/        1/      0
AddCCSteadyState              0/        1/     0         0/        1/      0
DelCCSteadyState              0/        0/     0         0/        0/      0
ADDSessionSteadyState         0/        5/     3         0/        5/      3
DelSessionSteadyState         0/        0/     0         0/        0/      0
CCOtherPackets                0/        0/     0         0/        0/      0
ZLB ACK                       0/        0/     0         0/        0/      0
SCCRQ                         0/        0/     0         0/        0/      0
SCCRP                         0/        0/     0         0/        0/      0
SCCCN                         0/        1/     0         0/        1/      0
StopCCN                       0/        0/     0         0/        0/      0
Hello                         0/        0/     0         0/        0/      0
OCRQ                          0/        0/     0         0/        0/      0
OCRP                          0/        0/     0         0/        0/      0
```

```
OCCN                                    0/        0/        0         0/        0/        0
ICRQ                                    0/        1/        0         0/        1/        0
ICRP                                    0/        0/        0         0/        0/        0
ICCN                                    0/        4/        0         0/        4/        0
CDN                                     0/        0/        0         0/        0/        0
WEN                                     0/        0/        0         0/        0/        0
SLI                                     0/        0/        0         0/        0/        0
L2TP QAD Send Statistics
                                        Total     Since Last Clear
  Messages Sent:                          0                     0
  Acks Sent:                              1                     1
  No Partner:                             0                     0
  Messages Failed:                        0                     0
  Acks Failed:                            0                     0
  Pending Acks:                           0                     0
  Suspends:                               0                     0
  Resumes:                                0                     0
  Sends Fragmented:                       0                     0
L2TP QAD Receive Statistics
                                        Total     Since Last Clear
  Messages Recevied:                      6                     6
  Acks Received:                          0                     0
  Acks Failed:                            0                     0
  Timeouts:                               0                     0
  Messages Processed:                     6                     6
  Message Drops:                          0                     0
  Stale Messages:                         0                     0
  Unknown Acks received:                  0                     0
```

Related Commands

Command	Description
l2tp-class, on page 2	Configures the L2TP class.

show vpdn

To display all vpdn-related information, use the **show vpdn** command in theEXEC mode.

show vpdn{**client** | **config** | **history** | **tunnel destination** | **session**}

Syntax Description	client	Displays VPDN client information.
	config	Dislays VPDN configuration information.
	history	Displays the vpdn session history information.
	tunnel destination	Displays the vpdn tunnel destination information.
	session	Displays the vpdn session information.

Command Default	None	
Command Modes	EXEC mode	

Command History	**Release**	**Modification**
	Release 4.2.0	This command was introduced.
	Release 5.3.2	The command was modified to include a new output display field, **SRG-state**, as part of geo redundancy support for PPPoE sessions.

Usage Guidelines	No specific guidelines impact the use of this command.

Task ID	**Task ID**	**Operation**
	ipv4	read
	network	read

These are some of the options to use the **show vpdn** command in the EXEC mode:

```
RP/0/RSP0/CPU0:router# show vpdn history failure | file tftp: vrf vrf1 |
RP/0/RSP0/CPU0:router# show vpdn client location 0/0/CPU0
RP/0/RSP0/CPU0:router# show vpdn tunnel destination detail |
RP/0/RSP0/CPU0:router# show vpdn session destination 4.5.4.5
```

Show output for vpdn session:

```
Sun Dec  4 22:34:19.328 PST

Subscriber label: 0x45, interface name: GigabitEthernet0/0/0/1.pppoe14
user name: user3_vpdn@domain.com
parent interface: GigabitEthernet0/0/0/1
state: est last change: 00:03:26
```

```
time to setup session:    0:164(s:msec)
conditional debug flags: 0
L2TP data
  local end point: 1.1.1.1 remote end point: 3.3.3.4
  call serial number: 2062300015
  local tunnel id: 58775 remote tunnel id: 54970
  local session id: 46362 remote session id: 16 remote port: 1701
  tunnel client authentication id: blah_client_auth_id
  tunnel server authentication id: ios_lns
  tunnel authentication: disabled
  class attribute mask:
      local hostname from AAA
      tunnel password from AAA
Subscriber data
  NAS port id: lac_circuit_id.lac_remote_id
  NAS port type: PPPoE over Ethernet
  physical channel id: 0
  Rx speed: 1000000000, Tx speed: 1000000000
Configuration data
  table id: 0xe0000000, VRF id: 0x60000000, VPN id: 0:0
  VRF name: default
  dsl line info forwarding: disabled, l2tp busy timeout: 60
  TOS mode: set, value: 13
```

Show output for tunnel destination:

```
Sun Dec  4 22:36:15.296 PST
Destination     VRF-name      Status  Load
3.3.3.4         default       active  1
```

This is a sample output of the **show vpdn session** command, with geo redundancy enabled for PPPoE sessions:

```
RP/0/RSP0/CPU0:router# show vpdn session

SRG Role: Master
Subscriber label: 0x42, interface name: Bundle-Ether1.10.pppoe3
 user name: user1@lns2.com
 parent interface: Bundle-Ether1.10
 state: est last change: 00:01:01
 time to setup session:   0:2  (s:msec)
 conditional debug flags: 0
 L2TP data
  local end point: 11.1.1.1 remote end point: 19.9.9.2
  call serial number: 1970100002
  local tunnel id: 46813 remote tunnel id: 40849
  local session id: 36198 remote session id: 33437 remote port: 1701
  tunnel assigned id:
  tunnel client authentication id: LAC
  tunnel server authentication id: LNS
  tunnel authentication: disabled
  class attribute mask:
 Subscriber data
  NAS port id: 0/0/1/10
  NAS port type: Virtual PPPoE over VLAN
  physical channel id: 0
  Rx speed: 1000000000, Tx speed: 1000000000
 Configuration data
  table id: 0xe0000000, VRF id: 0x60000000, VPN id: 0:0
  VRF name: default
  dsl line info forwarding: disabled, l2tp busy timeout: 60
```

```
TOS mode: default
```

Related Commands	Command	Description
	vpdn, on page 10	Configures VPDN and enters the VPDN sub-configuration mode.

show vpdn redundancy

To display all vpdn redundancy related information, use the **show vpdn redundancy** command in the EXEC mode.

show vpdn redundancy

Syntax Description   This command has no keywords or arguments.

Command Default   None

Command Modes   EXEC mode

Command History

Release	Modification
Release 4.3.1	This command was introduced.

Usage Guidelines   No specific guidelines impact the use of this command.

Task ID

Task ID	Operation
network	read

This is the sample output of the **show vpdn redundancy** command in the EXEC mode:

```
RP/0/RSP0/CPU0:router# show vpdn redundancy

VPDN HA STATUS       :        STEADY_STATE

VPDN HA SUMMARY
Total Sessions      :        2000
Sessions Synced     :        2000

VPDN HA TIME STAMPS
Init sync started   :        Dec 15 04:37:56
Init sync finished  :        Dec 15 04:37:56
Init sync aborted   :
```

Related Commands

Command	Description
vpdn, on page 10	Configures VPDN and enters the VPDN sub-configuration mode.
redundancy (BNG), on page 6	Enables VPDN redundancy and enters the VPDN redundancy configuration mode.

show vpdn redundancy mirroring

To display vpdn related mirroring statistics, use the **show vpdn redundancy mirroring** command in the EXEC mode.

show vpdn redundancy mirroring

Syntax Description   This command has no keywords or arguments.

Command Default   None

Command Modes   EXEC mode

Command History

Release	Modification
Release 4.3.1	This command was introduced.

Usage Guidelines   This command displays mirrored data on the backup RP. If the data in the show command is not applicable on the backup RP, then trivial output such as '0' or empty is displayed.

Task ID

Task ID	Operation
network	read

This is the sample output of the **show vpdn redundancy mirroring** command in the EXEC mode:

```
RP/0/RSP0/CPU0:router# show vpdn redundancy mirroring

HA SSO Msg Stats

Sync not conn count                     0
SSO error count                         0
SSO batch error count                   0
ALLOC error count                       0
ALLOC count                             0

VPDN QAD Send Statistics
                              Total    Since Last Clear
Messages :                      0              0
Acks :                          2              2
Messages Failed:                0              0
Acks Failed:                    0              0
Pending Acks:                   0              0
Suspends:                       0              0
Resumes:                        0              0
Sends Fragmented:               0              0

VPDN QAD Receive Statistics
                              Total    Since Last Clear
Messages Recevied:              2              2
Acks Received:                  0              0
Acks Failed:                    0              0
Timeouts:                       0              0
```

```
Messages Processed:                      2             2
Message Drops:                           0             0
Stale Messages:                          0             0
Unknown Acks received:                   0             0
```

Related Commands

Command	Description
vpdn, on page 10	Configures VPDN and enters the VPDN sub-configuration mode.
redundancy (BNG), on page 6	Enables VPDN redundancy and enters the VPDN redundancy configuration mode.