HP VSR1000 Virtual Services Router

Layer 2 - WAN Access

Command Reference

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Contents

PPPoE client commands

dialer diagnose

Use **dialer diagnose** to configure DDR to operate in diagnostic mode.

Use **undo dialer diagnose** to restore the default.

Syntax

dialer diagnose [**interval** *interval*]

undo dialer diagnose

Default

DDR operates in non-diagnostic mode.

Views

Dialer interface view

Predefined user roles

network-admin

Parameters

seconds: Specifies the diagnostic interval in the range of 5 to 65535 seconds. The default is 120 seconds.

Usage guidelines

This command takes effect only when a dialer interface is used with PPPoE client application.

In diagnostic mode, the device dials a PPPoE connection immediately after the device configurations are complete, automatically terminates the connection and starts the auto-dial timer after a configurable diagnostic interval, and redials a connection when the auto-dial timer expires. By establishing and terminating PPPoE sessions periodically, you can monitor the operating status of the PPPoE link.

In diagnostic mode, the link idle-timeout timer is ignored.

Examples

Configure interface Dialer 1 to operate in diagnostic mode, with a diagnostic interval of 300 seconds.

```
<Sysname> system-view
[Sysname] interface dialer 1
[Sysname-Dialer1] dialer diagnose interval 300
```

Related commands

- **dialer timer autodial**
- **dialer timer idle**

display pppoe-client session packet

Use **display pppoe-client session packet** to display the protocol packet statistics for a PPPoE session.

Syntax

display pppoe-client session packet [**dial-bundle-number** *number*]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

dial-bundle-number *number*: Specifies a dialer bundle by its number in the range of 0 to1023. If this option is not specified, this command displays protocol packet statistics for all PPPoE sessions.

Examples

Display the protocol packet statistics for all PPPoE sessions.

```
<Sysname> display pppoe-client session packet
Bundle:    1                    Interface:  Eth1/1
InPackets: 19                   OutPackets: 19
InBytes:   816                  OutBytes:   816
InDrops:   0                    OutDrops:   0

Bundle:    2                    Interface:  Eth1/1
InPackets: 18                   OutPackets: 18
InBytes:   730                  OutBytes:   730
InDrops:   0                    OutDrops:   0
```

Table 1 Command output

Field	Description
Bundle	Dialer bundle to which a PPPoE session belongs.
Interface	Ethernet interface where the PPPoE session is present.
InPackets	Number of incoming packets.
OutPackets	Number of outgoing packets.
InBytes	Number of bytes received.
OutBytes	Number of bytes transmitted.
InDrops	Number of discarded incoming packets.
OutDrops	Number of discarded outgoing packets.

Related commands

reset pppoe-client session packet

display pppoe-client session summary

Use **display pppoe-client session summary** to display summary information about a PPPoE session.

Syntax

display pppoe-client session summary [**dial-bundle-number** *number*]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

dial-bundle-number *number*: Specifies a dialer bundle by its number in the range of 0 to1023. If this option is not specified, this command displays summary information about all PPPoE sessions.

Examples

Display summary information about all PPPoE sessions.

```
<Sysname> display pppoe-client session summary
Bundle ID    Interface    VA          RemoteMAC      LocalMAC       State
1      1     Eth1/1       VA0         00e0-1400-4300 00e0-1500-4100 SESSION
2      1     Eth1/2       VA1         00e0-1500-4300 00e0-1600-4100 SESSION
```

Table 2 Command output

Field	Description
Bundle	Dialer bundle to which the PPPoE session belongs.
Interface	Ethernet interface where the PPPoE session is present.
VA	Virtual access interface created for the PPPoE session.
RemoteMAC	MAC address of the remote end.
LocalMAC	MAC address of the local end.
State	PPPoE session state: • **IDLE**—Initialization state. • **PADI SENT**—A PPPoE Active Discovery Initiation (PADI) packet has been sent, and a PPPoE Active Discovery Offer (PADO) packet is being expected. • **PADR SENT**—A PPPoE Active Discovery Request (PADR) packet has been sent, and a PPPoE Active Discovery Session-confirmation (PADS) packet is being expected. • **SESSION**—The PPPoE session is successfully established.

pppoe-client

Use **pppoe-client** to establish a PPPoE session and specify the dialer bundle corresponding to the session.

Use **undo pppoe-client** to remove a PPPoE session.

Syntax

pppoe-client dial-bundle-number *number* [**no-hostuniq**]

undo pppoe-client dial-bundle-number *number*

Default

No PPPoE session is established.

Views

Layer 3 Ethernet interface/subinterface view

Predefined user roles

network-admin

Parameters

dial-bundle-number *number*: Specifies the dialer bundle number corresponding to a PPPoE session. A dialer bundle number uniquely identifies a PPPoE session. It can also be used as a PPPoE session ID. The value range for the *number* argument is 0 to 1023.

no-hostuniq: Configures the client not to carry the Host-Uniq field in discovery packets. Without this keyword, the client carries the Host-Unique field. The Host-Unique field uniquely identifies a PPPoE client when an interface is configured with multiple PPPoE sessions. When the PPPoE server receives a packet with this field, it must include this field unmodified in the response packet. The device identifies the PPPoE client where the response packet belongs based on the Host-Unique field in the response packet.

Examples

Establish a PPPoE session on Layer 3 Ethernet interface Ethernet 1/1.

```
<Sysname> system-view
[Sysname] interface ethernet 1/0
[Sysname-Ethernet1/1] pppoe-client dial-bundle-number 1
```

reset pppoe-client

Use **reset pppoe-client** to reset a PPPoE session corresponding to a dialer bundle.

Syntax

reset pppoe-client { **all** | **dial-bundle-number** *number* }

Views

User view

Predefined user roles

network-admin

Parameters

all: Resets all the PPPoE sessions.

dial-bundle-number *number*: Specifies a dialer bundle by its number. The value range for the *number* argument is 0 to 1023.

Usage guidelines

A PPPoE session in permanent mode and terminated by this command will be established again when the auto dial timer expires.

A PPPoE session in on-demand mode and terminated by this command will be established again only when there is a need for data transmission.

Examples

Reset all PPPoE sessions.

```
<Sysname> reset pppoe-client all
```

Related commands

dialer timer autodial (DDR commands)

reset pppoe-client session packet

Use **reset pppoe-client session packet** to reset the protocol packet statistics for a PPPoE session.

Syntax

reset pppoe-client session packet [**dial-bundle-number** *number*]

Views

User view

Predefined user roles

network-admin

Parameters

dial-bundle-number *number*: Specifies the dialer bundle number corresponding to a PPPoE session. The value range for the *number* argument is 0 to 1023. If this option is not specified, this command resets the protocol packet statistics for all PPPoE sessions.

Examples

Reset the protocol packet statistics for all PPPoE sessions.

```
<Sysname> reset pppoe-client session packet
```

Related commands

display pppoe-client session packet

L2TP commands

allow l2tp

Use **allow l2tp** to configure an LNS to accept L2TP tunneling requests from a specified LAC, and to specify a VT interface for tunnel setup.

Use **undo allow** to restore the default.

Syntax

- For L2TP group 1:

  allow l2tp virtual-template *virtual-template-number* [**remote** *remote-name*]

  undo allow
- For L2TP groups other than L2TP group 1:

  allow l2tp virtual-template *virtual-template-number* **remote** *remote-name*

  undo allow

Default

An LNS denies L2TP tunneling requests from any LACs.

Views

L2TP group view

Predefined user roles

network-admin

Parameters

virtual-template *virtual-template-number*: Specifies a VT interface by its number in the range of 0 to 1023. An LNS dynamically creates virtual access (VA) interfaces based on the configuration of a VT interface. Each VA interface is used to carry data for a different L2TP session.

remote *remote-name*: Specifies the name of the tunnel peer (LAC) initiating tunneling requests, a case-sensitive string of 1 to 31 characters.

Usage guidelines

The **allow l2tp** command is available only to L2TP groups in LNS mode.

Make sure the specified name of the tunnel peer is consistent with the local name configured on the LAC.

If you execute this command multiple times for an L2TP group, the most recent configuration takes effect.

For L2TP group 1, if you do not specify the **remote** *remote-name* option, an LNS accepts tunneling requests from any LACs. In this case, L2TP group 1 serves as the default L2TP group.

The **allow l2tp** command is available only to LNSs. When an LAC that initiates a tunneling request matches the tunnel peer name configured in an L2TP group, the LNS uses the tunnel parameters (for example, tunnel authentication and flow control) configured in this L2TP group for tunnel setup. When the LAC does not match the tunnel peer name configured in any L2TP group, the LNS uses the tunnel parameters for the default L2TP group (if it exists), or it cannot set up a tunnel with the LAC (if the default L2TP group does not exist).

HP recommends that you configure a default L2TP group on the LNS in the following cases:

- There are LACs (such as hosts with Windows 2000 Beta 2 installed) that include blank local names in their tunneling requests.
- The LNS sets up tunnels with multiple LACs by using the same tunnel parameters.

Examples

Specify L2TP group 1 as the default L2TP group, and specify Virtual-Template 1 for tunnel setup. For L2TP group 2, configure the LNS to accept the L2TP tunneling request initiated by the peer (LAC) named **aaa** ,and specify Virtual-Template 2 for tunnel setup.

```
<Sysname> system-view
[Sysname] l2tp-group 1 mode lns
[Sysname-l2tp1] allow l2tp virtual-template 1
[Sysname-l2tp1] quit
[Sysname] l2tp-group 2 mode lns
[Sysname-l2tp2] allow l2tp virtual-template 2 remote aaa
```

Related commands

tunnel name

bandwidth

Use **bandwidth** to configure the expected bandwidth of an interface.

Use **undo bandwidth** to restore the default.

Syntax

bandwidth *bandwidth-value*

undo bandwidth

Default

The expected bandwidth (in kbps) is 0.

Views

Virtual PPP interface view

Predefined user roles

network-admin

Parameters

bandwidth-value: Specifies the expected bandwidth in the range of 1 to 400000000 kbps.

Usage guidelines

The expected bandwidth of an interface affects the link costs in OSPF, OSPFv3, and IS-IS. For more information, see *Layer 3—IP Routing Configuration Guide*.

Examples

Set the expected bandwidth of virtual PPP interface 10 to 100 kbps.

```
<Sysname> system-view
[Sysname] interface virtual-ppp 10
[Sysname-Virtual-PPP10] bandwidth 100
```

default

Use **default** to restore the default settings for a virtual PPP interface.

Syntax

default

Views

Virtual PPP interface view

Predefined user roles

network-admin

Usage guidelines

CAUTION:

The **default** command might interrupt ongoing network services. Make sure you are fully aware of the impacts of this command when you execute it in a live network.

This command might fail to restore the default settings for some commands for reasons such as command dependencies or system restrictions. Use the **display this** command in interface view to identify these commands, and then use their **undo** forms or follow the command reference to individually restore their default settings. If your restoration attempt still fails, follow the error message instructions to resolve the problem.

Examples

Restore the default settings for Virtual-PPP 10.

```
<Sysname> system-view
[Sysname] interface virtual-ppp 10
[Sysname-Virtual-PPP10] default
```

description

Use **description** to configure the description for a virtual PPP interface.

Use **undo description** to restore the default.

Syntax

description *text*

undo description

Default

The description of an interface is the *interface-name* plus **Interface**. For example, the default description of Virtual-PPP254 is **Virtual-PPP254 Interface**.

Views

Virtual PPP interface view

Predefined user roles

network-admin

Parameters

text: Specifies the interface description, a case-sensitive string of 1 to 80 characters.

Examples

Set the description of Virtual-PPP 10 to **virtual-interface**.

```
<Sysname> system-view
[Sysname] interface virtual-ppp 10
[Sysname-Virtual-PPP10] description virtual-interface
```

display interface virtual-ppp

Use **display interface virtual-ppp** to display information about virtual PPP interfaces.

Syntax

display interface [**virtual-ppp**] [**brief** [**down**]]

display interface [**virtual-ppp** [*interface-number*]] [**brief** [**description**]]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

interface-number: Specifies an existing virtual PPP interface by its number in the range of 0 to 255.

brief: Displays brief interface information. If this keyword is not specified, this command displays detailed interface information.

down: Displays information about the interfaces in physically down state and the causes. If this keyword is not specified, this command displays information about the interfaces in all states.

description: Displays the entire interface description. If this keyword is not specified, this command displays only the first 27 characters of a description.

Usage guidelines

If the **virtual-ppp** keyword is not specified, this command displays information about all interfaces.

If the **virtual-ppp** keyword is specified without any interface number specified, this command displays information about all virtual PPP interfaces.

Examples

Display detailed information about virtual PPP interface Virtual-PPP 10.

```
<Sysname> display interface virtual-ppp 10
Virtual-PPP10
Current state: Administratively DOWN
Line protocol state: DOWN
Description: Virtual-PPP10 Interface
Bandwidth: 0kbps
Maximum Transmit Unit: 1500
Hold timer: 10 seconds
```

```
Internet Address is 10.0.0.1/24 Primary
Link layer protocol: PPP
LCP: initial
Physical: L2TP
Last clearing of counters: Never
Last 300 seconds input rate: 0 bytes/sec, 0 bits/sec, 0 packets/sec
Last 300 seconds output rate: 0 bytes/sec, 0 bits/sec, 0 packets/sec
Input: 154 packets, 1880 bytes, 0 drops
Output: 155 packets, 1875 bytes, 0 drops
```

Table 3 Command output

Field	Description
Current state	Physical state and administrative state of the virtual PPP interface: • **Administratively DOWN**—The interface is administratively shut down by using the **shutdown** command. • **DOWN**—The interface is administratively up but physically down. • **UP**—The interface is up both administratively and physically.
Line protocol state	Link layer protocol state of the virtual PPP interface: • **UP**—The interface is up at the data link layer. • **UP (spoofing)**—The link layer protocol of an interface is UP, but its link is an on-demand link or not present at all. • **DOWN**—The interface is down at the data link layer.
Bandwidth	Intended bandwidth of the interface.
Hold timer	Interval in seconds for the interface to send keepalive packets.
Internet Address	IP address of the interface: • **Internet protocol processing: disabled**—No IP address is configured, and the interface cannot process IP packets. • **Primary**—The IP address is the primary one of the interface.
Link layer protocol	Link layer protocol of the interface: PPP.
Physical	Physical type of the interface: L2TP.
Last clearing of counters	Time when the interface statistics were last cleared. **Never** indicates that the interface statistics have never been cleared.
Last 300 seconds input rate: 0 bytes/sec, 0 bits/sec, 0 packets/sec	Average rate of inbound traffic in the last 300 seconds.
Last 300 seconds output rate: 0 bytes/sec, 0 bits/sec, 0 packets/sec	Average rate of outbound traffic in the last 300 seconds.
Input: 154 packets, 1880 bytes, 0 drops	Total number of inbound packets, total number of inbound bytes, and total number of dropped inbound packets.
Output: 155 packets, 1875 bytes, 0 drops	Total number of outbound packets, total number of outbound bytes, and total number of dropped outbound packets.

Display summary information about virtual PPP interface Virtual-PPP 10.

```
<Sysname> display interface virtual-ppp 10 brief
Brief information on interface(s) under route mode:
Link: ADM - administratively down; Stby - standby
```

```
Protocol: (s) - spoofing
Interface            Link Protocol Main IP         Description
VPPP10               UP   UP       10.0.0.1        aaaaaaaaaaaaaaaaaaaaaaaaaa
```

Display information about the virtual PPP interfaces in physically down state and the causes.

```
<Sysname> display interface virtual-ppp brief down
Brief information on interface(s) under route mode:
Link: ADM - administratively down; Stby - standby
Interface            Link Cause
VPPP9                ADM  Administratively
VPPP11               ADM  Administratively
VPPP12               ADM  Administratively
```

Display summary information about virtual PPP interface Virtual-PPP 10, including the entire interface description.

```
<Sysname> display inter Virtual-PPP 10 brief description
Brief information on interface(s) under route mode:
Link: ADM - administratively down; Stby - standby
Protocol: (s) - spoofing
Interface            Link Protocol Main IP         Description
VPPP10               UP   UP       10.0.0.1        aaaaaaaaaaaaaaaaaaaaaaaaaaaaaaaa
aaaaaaaaaaaaaaaa
```

Table 4 Command output

Field	Description
The brief information of interface(s) under route mode/Brief information on interface(s) under route mode	Summary information about Layer 3 interfaces.
Link: ADM - administratively down; Stby - standby	**ADM**—The interface has been shut down by the network administrator. To recover its physical layer state, execute the **undo shutdown** command.
Protocol: (s) - spoofing	The link layer protocol of an interface is UP, but its link is an on-demand link or not present.
Interface	Abbreviated interface name.
Link	Physical link state of the interface: • **UP**—The link is physically up. • **DOWN**—The link is physically down. • **ADM**—The link has been administratively shut down. To recover its physical state, execute the **undo shutdown** command.
Protocol	Link layer protocol state of the interface: • **UP**. • **DOWN**. • **UP (spoofing)**—The link of the interface is an on-demand link or not present at all.
Description	Interface description configured by using the **description** command. Without the **description** keyword, the **display interface brief** command displays at most 27 characters of the description. With the **description** keyword, this command displays the entire description.

Field	Description
Cause	Causes for the physical state of the interface to be Down: • **Not connected**—No physical connection exists (possibly because the L2TP negotiation fails or insufficient configuration exists to trigger L2TP negotiation). • **Administratively**—The interface was shut down by using the **shutdown** command. To restore the physical state of the interface, use the **undo shutdown** command.

display l2tp session

Use **display l2tp session** to display information about L2TP sessions.

Syntax

display l2tp session [**statistics**]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

statistics: Displays statistics for L2TP sessions.

Examples

Display statistics for L2TP sessions.

```
<Sysname> display l2tp session statistics
Total number of sessions: 1
```

Display information about L2TP sessions.

```
<Sysname> display l2tp session
LocalSID      RemoteSID      LocalTID      State
1             1              1             Established
```

Table 5 Command output

Field	Description
LocalSID	Local session ID.
RemoteSID	Remote session ID.
LocalTID	Local tunnel ID.

Field	Description
State	Session state: • **Idle**. • **Wait-tunnel**—Waits for the tunnel to be established. • **Wait-reply**—Waits for an Incoming-Call-Reply (ICRP) message indicating the call is accepted. • **Wait-connect**—Waits for an Incoming-Call-Connected (ICCN) message. • **Established**.

display l2tp tunnel

Use **display l2tp tunnel** to display information about L2TP tunnels.

Syntax

display l2tp tunnel [**statistics**]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

statistics: Displays statistics for L2TP tunnels.

Examples

Display statistics for L2TP tunnels.

```
<Sysname> display l2tp tunnel statistics
Total number of tunnels: 1
```

Display information about L2TP tunnels.

```
<Sysname> display l2tp tunnel
LocalTID RemoteTID State         Sessions RemoteAddress    RemotePort RemoteName
1        1         Established   1        20.1.1.2         1701       lns
```

Table 6 Command output

Field	Description
LocalTID	Local tunnel ID.
RemoteTID	Remote tunnel ID.
State	Tunnel state: • **Idle**. • **Wait-reply**. • **Wait-connect**. • **Established**. • **Stopping**.

Field	Description
Sessions	Number of sessions within the tunnel.
RemoteAddress	IP address of the peer.
RemotePort	UDP port number of the peer.
RemoteName	Name of the tunnel peer.

Related commands

reset l2tp tunnel

interface virtual-ppp

Use **interface virtual-ppp** to create a virtual PPP interface and enter its view. If the interface has been created, you directly enter its view.

Use **undo interface virtual-ppp** to remove a virtual PPP interface.

Syntax

interface virtual-ppp *interface-number*

undo interface virtual-ppp *interface-number*

Default

No virtual PPP interface exists.

Views

System view

Predefined user roles

network-admin

Parameters

interface-number: Specifies a virtual PPP interface by its number in the range of 0 to 255.

Usage guidelines

A virtual PPP interface is required on the LAC for establishing an LAC-auto-initiated L2TP tunnel.

Examples

Create virtual PPP interface Virtual-PPP 10 and enter its view.

```
<Sysname> system-view
[Sysname] interface virtual-ppp 10
[Sysname-Virtual-PPP10]
```

l2tp enable

Use **l2tp enable** to enable the L2TP function.

Use **undo l2tp enable** to disable the L2TP function.

Syntax

l2tp enable

undo l2tp enable

Default

The L2TP function is disabled.

Views

System view

Predefined user roles

network-admin

Usage guidelines

L2TP must be enabled for relevant L2TP configurations to take effect.

Examples

Enable the L2TP function.

```
<Sysname> system-view
[Sysname] l2tp enable
```

l2tp-auto-client

Use **l2tp-auto-client** to trigger an LAC to automatically establish an L2TP tunnel.

Use **undo l2tp-auto-client** to remove the automatically established L2TP tunnel.

Syntax

l2tp-auto-client l2tp-group *group-number*

undo l2tp-auto-client

Default

An LAC does not automatically establish an L2TP tunnel.

Views

Virtual PPP interface view

Predefined user roles

network-admin

Parameters

l2tp-group *group-number*: Specifies an L2TP group whose tunnel parameters are used by the LAC to establish the tunnel. The value range for the *group-number* argument is 1 to 65535.

Usage guidelines

The L2TP group specified must be an existing one in LAC mode.

An L2TP tunnel automatically established in LAC-auto-initiated mode exists until you remove the tunnel by using the **undo l2tp-auto-client** or **undo l2tp-group** *group-number* command.

Examples

Trigger the LAC to automatically establish an L2TP tunnel by using the tunnel parameters of L2TP group 10.

```
<Sysname> system-view
[Sysname] interface virtual-ppp 1
```

```
[Sysname-Virtual-PPP1] l2tp-auto-client l2tp-group 10
```

Related commands

l2tp-group

l2tp-group

Use **l2tp-group** to create an L2TP group and enter its view.

Use **undo l2tp-group** to remove an L2TP group.

Syntax

l2tp-group *group-number* [**mode** { **lac** | **lns** }]

undo l2tp-group *group-number*

Default

No L2TP group exists.

Views

System view

Predefined user roles

network-admin

Parameters

group-number: Specifies an L2TP group by its number in the range of 1 to 65535.

mode: Specifies a mode for the L2TP group.

lac: Specifies the LAC mode.

lns: Specifies the LNS mode.

Usage guidelines

To create a new L2TP group, you must specify the **mode** keyword. To enter the view of an existing L2TP group, you do not need to specify this keyword.

In L2TP group view, you can configure L2TP tunnel parameters, such as tunnel authentication and flow control.

A device can have L2TP groups in both LAC and LNS modes at the same time, and can have a maximum number of 1000 L2TP groups.

Examples

Create L2TP group 2 in LAC mode, and enter its view.

```
<Sysname> system-view
[Sysname] l2tp-group 2 mode lac
[Sysname-l2tp2]
```

Related commands

- **allow l2tp**
- **lns-ip**
- **user**

lns-ip

Use **lns-ip** to specify LNS IP addresses on an LAC.

Use **undo lns-ip** to remove the specified LNS IP addresses.

Syntax

lns-ip { *ip-address* }&<1-5>

undo lns-ip

Default

No LNS IP addresses are specified.

Views

L2TP group view

Predefined user roles

network-admin

Parameters

{ *ip-address* }&<1-5>: Specifies LNS IP addresses. &<1-5> indicates that you can enter a maximum of five IP addresses.

Usage guidelines

The LAC initiates an L2TP tunneling request to its specified LNSs consecutively in their configuration order until it receives an acknowledgement from an LNS, which then becomes the tunnel peer.

The **lns-ip** command is available only to L2TP groups in LAC mode.

If you execute this command multiple times for an L2TP group, the most recent configuration takes effect.

Examples

Specify the LNS IP address as 202.1.1.1.

```
<Sysname> system-view
[Sysname] l2tp-group 1 mode lac
[Sysname-l2tp1] lns-ip 202.1.1.1
```

mandatory-chap

Use **mandatory-chap** to force the LNS to perform a CHAP authentication for users.

Use **undo mandatory-chap** to restore the default.

Syntax

mandatory-chap

undo mandatory-chap

Default

An LNS does not perform CHAP authentication for users.

Views

L2TP group view

Predefined user roles

network-admin

Usage guidelines

The LNS uses the LAC as an authentication proxy. The LAC sends the LNS all user authentication information from users and the authentication method configured on the LAC itself. The LNS then checks the user validity according to the received information and the locally configured authentication method.

When mandatory CHAP authentication is configured, a user who depends on an LAC to initiate tunneling requests is authenticated by both the LAC and the LNS for increased security. Some users might not support the authentication on the LNS. In this situation, do not configure this command, because CHAP authentication on the LNS will fail.

This command is available only to L2TP groups in LNS mode.

This command is effective only on NAS-initiated L2TP tunnels.

The **mandatory-lcp** command takes precedence over this command. If both commands are configured for an L2TP group, the LNS performs LCP renegotiation with the user.

Examples

Force the LNS to perform a CHAP authentication for users.

```
<Sysname> system-view
[Sysname] l2tp-group 1 mode lns
[Sysname-l2tp1] mandatory-chap
```

Related commands

mandatory-lcp

mandatory-lcp

Use **mandatory-lcp** to force an LNS to perform LCP renegotiation with users.

Use **undo mandatory-lcp** to restore the default.

Syntax

mandatory-lcp

undo mandatory-lcp

Default

An LNS does not perform LCP renegotiation with users.

Views

L2TP group view

Predefined user roles

network-admin

Usage guidelines

By default, to establish a NAS-initiated tunnel, the user performs LCP negotiation with the LAC. If the negotiation succeeds, the LAC initiates a tunneling request and sends the negotiation results (including authentication information) to the LNS. Then, the LNS determines whether the user is valid based on the information received instead of performing LCP renegotiation with the user.

If you do not expect the LNS to accept LCP negotiation parameters, configure this command to perform a new round of LCP negotiation between the LNS and the user. In this case, the information sent by the LAC will be ignored.

Some users might not support LCP renegotiation. In this case, do not configure this command because LCP renegotiation will fail.

This command is available only to L2TP groups in LNS mode.

This command is effective only on NAS-initiated L2TP tunnels.

This command takes precedence over the **mandatory-chap** command. If both commands are configured for an L2TP group, the LNS performs LCP renegotiation with the user.

Examples

Force an LNS to perform LCP renegotiation with users.

```
<Sysname> system-view
[Sysname] l2tp-group 1 mode lns
[Sysname-l2tp1] mandatory-lcp
```

Related commands

mandatory-chap

reset counters interface virtual-ppp

Use **reset counters interface virtual-ppp** to clear the statistics for virtual PPP interfaces.

Syntax

reset counters interface [**virtual-ppp** [*interface-number*]]

Views

User view

Predefined user roles

network-admin

Parameters

interface-number: Specifies a virtual PPP interface by its number in the range of 0 to 255.

Usage guidelines

Clear the existing statistics before collecting traffic statistics within a specific period of time on an interface.

If you specify neither **virtual-ppp** nor *interface-number*, this command clears the statistics for all interfaces.

If you specify **virtual-ppp** but not *interface-number*, this command clears the statistics for all virtual PPP interfaces.

If you specify both **virtual-ppp** and *interface-number*, this command clears the statistics for the specified virtual PPP interface.

Examples

Clear the statistics for interface Virtual-PPP 10.

```
<Sysname> reset counters interface virtual-ppp 10
```

reset l2tp tunnel

Use **reset l2tp tunnel** to disconnect a tunnel and all sessions within the tunnel.

Syntax

reset l2tp tunnel { **id** *tunnel-id* | **name** *remote-name* }

Views

User view

Predefined user roles

network-admin

Parameters

id *tunnel-id*: Specifies a tunnel by its local ID in the range of 1 to 65535.

name *remote-name*: Specifies L2TP tunnels by the tunnel peer name, a case-sensitive string of 1 to 31 characters.

Usage guidelines

When the number of user connections is 0 or a network fault occurs, you can disconnect the L2TP tunnel by using this command on either the LAC or LNS. After the tunnel is disconnected, all sessions within it are disconnected.

If you specify a tunnel peer name, all tunnels with the tunnel peer name will be disconnected. If no tunnel with the tunnel peer name exists, nothing happens.

A tunnel disconnected by force can be re-established when a client makes a call.

Examples

Disconnect all tunnels with the tunnel peer name of **aaa**.

```
<Sysname> reset l2tp tunnel name aaa
```

Related commands

display l2tp tunnel

shutdown

Use **shutdown** to shut down a virtual PPP interface.

Use **undo shutdown** to bring up a virtual PPP interface.

Syntax

shutdown

undo shutdown

Default

A virtual PPP interface is up.

Views

Virtual PPP interface view

Predefined user roles

network-admin

Examples

Shut down interface Virtual-PPP 10.

```
<Sysname> system-view
[Sysname] interface virtual-ppp 10
[Sysname-Virtual-PPP10] shutdown
```

tunnel authentication

Use **tunnel authentication** to enable the L2TP tunnel authentication function.

Use **undo tunnel authentication** to disable the L2TP tunnel authentication function.

Syntax

tunnel authentication

undo tunnel authentication

Default

L2TP tunnel authentication is enabled.

Views

L2TP group view

Predefined user roles

network-admin

Usage guidelines

Tunnel authentication prevents the local end from establishing L2TP tunnels with illegal remote ends.

If the LAC (or LNS) is enabled with tunnel authentication, to successfully establish a tunnel, enable tunnel authentication on the peer, and configure the same non-null key (by using the **tunnel password** command) on the LAC (or LNS) and the peer.

Examples

Enable L2TP tunnel authentication.

```
<Sysname> system-view
[Sysname] l2tp-group 1 mode lns
[Sysname-l2tp1] tunnel authentication
```

tunnel avp-hidden

Use **tunnel avp-hidden** to enable transferring AVP data in hidden mode.

Use **undo tunnel avp-hidden** to restore the default.

Syntax

tunnel avp-hidden

undo tunnel avp-hidden

Default

AVP data is transferred over the tunnel in plaintext mode.

Views

L2TP group view

Predefined user roles

network-admin

Usage guidelines

L2TP uses Attribute Value Pairs (AVPs) to transmit tunnel negotiation parameters, session negotiation parameters, and user authentication information. This feature can hide sensitive AVP data, such as user passwords. With this feature enabled, AVP data is encrypted before transmission with the key configured by using the **tunnel password** command.

The **tunnel avp-hidden** command can be configured for L2TP groups in both LAC and LNS modes, but it does not take effect on L2TP groups in LNS mode.

For this command to take effect, you must enable tunnel authentication by using the **tunnel authentication** command.

Examples

Enable transferring AVP data in hidden mode.

```
<Sysname> system-view
[Sysname] l2tp-group 1 mode lac
[Sysname-l2tp1] tunnel avp-hidden
```

Related commands

- **tunnel authentication**
- **tunnel password**

tunnel flow-control

Use **tunnel flow-control** to enable the L2TP session flow control function.

Use **undo tunnel flow-control** to disable the L2TP session flow control function.

Syntax

tunnel flow-control

undo tunnel flow-control

Default

The L2TP session flow control function is disabled.

Views

L2TP group view

Predefined user roles

network-admin

Usage guidelines

The L2TP session flow control function adds sequence numbers to transmitted packets, and uses them to reorder packets arriving out of order and to detect lost packets.

This function takes effect on both sent and received L2TP data messages. The L2TP sessions support this function if either the LAC or LNS is enabled with this function.

When the device acts as an LAC, a change in flow control enable state on the LNS causes the same change in flow control enable state of L2TP sessions. When the device acts as an LNS, a change in the flow control enable state on the LAC has no effect on the flow control enable state of L2TP sessions.

Examples

Enable the L2TP session flow control function.

```
<Sysname> system-view
[Sysname] l2tp-group 1 mode lac
[Sysname-l2tp1] tunnel flow-control
```

tunnel name

Use **tunnel name** to specify the local tunnel name.

Use **undo tunnel name** to restore the default.

Syntax

tunnel name *name*

undo tunnel name

Default

The local tunnel name is the device name. For more information about the device name, see *Fundamentals Configuration Guide*.

Views

L2TP group view

Predefined user roles

network-admin

Parameters

name: Specifies the local tunnel name, a case-sensitive string of 1 to 31 characters.

Examples

Specify the local tunnel name as **itsme**.

```
<Sysname> system-view
[Sysname] l2tp-group 1 mode lns
[Sysname-l2tp1] tunnel name itsme
```

Related commands

sysname (*Fundamentals Command Reference*)

tunnel password

Use **tunnel password** to configure the key for tunnel authentication.

Use **undo tunnel password** to remove the configuration.

Syntax

tunnel password { **cipher** | **simple** } *password*

undo tunnel password

Default

No key is configured.

Views

L2TP group view

Predefined user roles

network-admin

Parameters

cipher: Sets a ciphertext key.

simple: Sets a plaintext key.

password: Specifies the key for tunnel authentication. This argument is case-sensitive. If **cipher** is specified, it must be a ciphertext string of 1 to 53 characters. If **simple** is specified, it must be a string of 1 to 16 characters.

Usage guidelines

For this command to take effect, you must enable tunnel authentication by using the **tunnel authentication** command.

For security purposes, all keys, including keys configured in plain text, are saved in cipher text.

Examples

Set the key for tunnel authentication to a plaintext key **yougotit**.

```
<Sysname> system-view
[Sysname] l2tp-group 1 mode lac
[Sysname-l2tp1] tunnel password simple yougotit
```

Related commands

tunnel authentication

tunnel timer hello

Use **tunnel timer hello** to set the interval for sending Hello packets in a tunnel.

Use **undo tunnel timer hello** to restore the default.

Syntax

tunnel timer hello *hello-interval*

undo tunnel timer hello

Default

The interval is 60 seconds.

Views

L2TP group view

Predefined user roles

network-admin

Parameters

hello-interval: Specifies the interval at which the LAC or the LNS sends Hello packets, in the range of 60 to 1000 seconds.

Usage guidelines

When no packet is transmitted between the LAC and LNS, Hello packets are sent at the configured interval to prevent the L2TP tunnels and sessions from being removed due to timeouts.

You can set different Hello intervals for the LNS and LAC.

Examples

Set the Hello interval to 90 seconds.

```
<Sysname> system-view
[Sysname] l2tp-group 1 mode lac
[Sysname-l2tp1] tunnel timer hello 90
```

ip dscp

Use **ip dscp** to configure the DSCP value of L2TP packets.

Use **undo ip dscp** to restore the default.

Syntax

ip dscp *dscp-value*

undo ip dscp

Default

The DSCP value of L2TP packets is 0.

Views

L2TP group view

Predefined user roles

network-admin

Parameters

dscp-value: Specifies the DSCP value of L2TP packets, in the range of 0 to 63.

Usage guidelines

The Differentiated Services Code Point (DSCP) field is the first 6 bits of the IP ToS byte. This field marks the priority of IP packets for forwarding. This command sets the DSCP value for the IP packet when L2TP encapsulates a PPP frame into an IP packet.

Examples

Configure the DSCP value of L2TP packets as 50.

```
<Sysname> system-view
[Sysname] l2tp-group 1 mode lac
[Sysname-l2tp1] ip dscp 50
```

timer-hold

Use **timer-hold** to set the polling interval, the interval for sending keepalive packets.

Use **undo timer-hold** to restore the default.

Syntax

timer-hold *seconds*

undo timer-hold

Default

The polling interval is 10 seconds.

Views

Virtual PPP interface view

Predefined user roles

network-admin

Parameters

seconds: Specifies the interval at which the LAC or the LNS sends keepalive packets, in the range of 0 to 32767 seconds.

Usage guidelines

A virtual PPP interface periodically sends keepalive packets to the peer. If the peer fails to receive keepalive packets within 10 keepalive intervals, it considers the link faulty and reports a link layer down event. As a result, the link is closed.

Do not set too small an interval for low-speed links. On a low-speed link, it might take a long time for large packets to be delivered, which can delay sending and receiving of keepalive packets.

Examples

Set the polling interval to 20 seconds for interface Virtual-PPP 10.

```
<Sysname> system-view
[Sysname] interface virtual-ppp 10
[Sysname-Virtual-PPP10] timer-hold 20
```

user

Use **user** to configure the condition for the LAC to initiate tunneling requests.

Use **undo user** to delete the configured condition.

Syntax

user { **domain** *domain-name* | **fullusername** *user-name* }

undo user

Default

No condition is configured.

Views

L2TP group view

Predefined user roles

network-admin

Parameters

domain *domain-name*: Specifies that the LAC initiate tunneling requests to the LNS when the domain name of a user matches a configured domain name. The *domain-name* argument represents the domain name of the user and is an case-insensitive string of 1 to 24 characters.

fullusername *user-name*: Specifies that the LAC initiate tunneling requests to the LNS when the username of a user matches a configured full username. The *domain-name* argument represents the username of the user and is a case-sensitive string of 1 to 255 characters.

Usage guidelines

This command is available only to L2TP groups in LAC mode.

If you execute this command multiple times for an L2TP group, the most recent configuration takes effect.

Examples

Specifies that the LAC initiate tunneling requests to the LNS when the username of the user is **test@aabbcc.net**.

```
<Sysname> system-view
[Sysname] l2tp-group 1 mode lac
[Sysname-l2tp1] user fullusername test@aabbcc.net
```

vpn-instance

Use **vpn-instance** to specify the VPN to which a tunnel peer belongs.

Use **undo vpn-instance** to restore the default.

Syntax

vpn-instance *vpn-instance-name*

undo vpn-instance

Default

A tunnel peer belongs to the public network.

Views

L2TP group view

Predefined user roles

network-admin

Parameters

vpn-instance-name: Specifies a VPN instance by its name, a case-sensitive string of 1 to 31 characters.

Usage guidelines

By default, the device transmits L2TP control messages and data messages over the public network. With this feature, the device transmits these messages in a specified VPN by searching the routing table in that specified VPN.

When one L2TP endpoint is in a VPN, you should configure this endpoint to belong to the VPN on the peer for correct packet forwarding between the two endpoints.

The tunnel peer and the physical port connecting to the tunnel peer should belong to the same VPN. The VPN to which this physical port belongs is configured by using the **ip binding vpn-instance** command.

The specified VPN must already exist.

Examples

Configure the VPN **vpn1** to which the tunnel peer belongs.

```
<Sysname>system-view
[Sysname] l2tp-group 1 mode lac
[Sysname-l2tp1] vpn-instance vpn1
```

Related commands

- **ip vpn-instance** (*MPLS Command Reference*)
- **ip binding vpn-instance** (*MPLS Command Reference*)

DDR commands

bandwidth

Use **bandwidth** to configure the expected bandwidth of an interface.

Use **undo bandwidth** to restore the default.

Syntax

bandwidth *bandwidth-value*

undo bandwidth

Default

The expected bandwidth (in kbps) is the interface baud rate divided by 1000.

Views

Dialer interface view

Predefined user roles

network-admin

Parameters

bandwidth-value: Specifies the expected bandwidth in the range of 1 to 400000000 kbps.

Usage guidelines

The expected bandwidth of an interface affects the link costs in OSPF, OSPFv3, and IS-IS. For more information, see *Layer 3—IP Routing Configuration Guide*.

Examples

Set the expected bandwidth of dialer interface 1 to 100 kbps.

```
<Sysname> system-view
[Sysname] interface dialer 1
[Sysname-Dialer1] bandwidth 100
```

default

Use **default** to restore the default settings for a dialer interface.

Syntax

default

Views

Dialer interface view

Predefined user roles

network-admin

Usage guidelines

CAUTION:

The **default** command might interrupt ongoing network services. Make sure you are fully aware of the impacts of this command when you execute it on a live network.

This command might fail to restore the default settings for some commands for reasons such as command dependencies or system restrictions. Use the **display this** command in interface view to identify these commands, and then use their **undo** forms or follow the command reference to individually restore their default settings. If your restoration attempt still fails, follow the error message instructions to resolve the problem.

Examples

Restore the default settings for interface Dialer 1.

```
<Sysname> system-view
[Sysname] interface dialer 1
[Sysname-Dialer1] default
```

description

Use **description** to configure a description for a dialer interface.

Use **undo description** to restore the default.

Syntax

description *text*

undo description

Default

The description of an interface is *interface-name* **Interface**, for example, **Dialer1 Interface**.

Views

Dialer interface view

Predefined user roles

network-admin

Parameters

text: Specifies the interface description, a case-sensitive string of 1 to 80 characters.

Examples

Set the description of interface Dialer 1 to **dialer-intf**.

```
<Sysname> system-view
[Sysname] interface dialer 1
[Sysname-Dialer1] description dialer-intf
```

dialer bundle enable

Use **dialer bundle enable** to enable bundle DDR on a dialer interface.

Use **undo dialer bundle enable** to disable bundle DDR on a dialer interface.

Syntax

dialer bundle enable

undo dialer bundle enable

Default

No DDR is enabled on a dialer interface.

Views

Dialer interface view

Predefined user roles

network-admin

Usage guidelines

Before using bundle DDR, use this command to enable bundle DDR on a dialer interface.

The **undo dialer bundle enable** command clears all DDR configurations on a dialer interface.

Examples

Enable bundle DDR on interface Dialer 1.

```
<Sysname> system-view
[Sysname] interface dialer 1
[Sysname-Dialer1] dialer bundle enable
```

dialer timer autodial

Use **dialer timer autodial** to set the auto-dial timer of DDR.

Use **undo dialer timer autodial** to restore the default.

Syntax

dialer timer autodial *autodial-interval*

undo dialer timer autodial

Default

The auto-dial timer of DDR is 300 seconds.

Views

Dialer interface view

Predefined user roles

network-admin

Parameters

autodial-interval: Specifies the interval between call attempts, in the range of 1 to 604800 seconds.

Examples

Set the auto-dial interval of DDR to 60 seconds on interface Dialer 0.

```
<Sysname> system-view
[Sysname] interface dialer 0
[Sysname-Dialer0] dialer timer autodial 60
```

dialer timer enable

Use **dialer timer enable** to set the link holddown timer.

Use **undo dialer timer enable** to restore the default.

Syntax

dialer timer enable *interval*

undo dialer timer enable

Default

The link holddown timer is 5 seconds.

Views

Dialer interface view

Predefined user roles

network-admin

Parameters

interval: Holddown timer value, setting the interval for originating a call to bring up a link after it is disconnected. The value range for this argument is 5 to 65535 seconds.

Usage guidelines

A holddown timer starts upon disconnection of a link. The call attempt to bring up this link can be made only after the timer expires. This is to prevent a remote SPCS from being overloaded.

To make sure the server has enough time to place a return call, the link holddown timer of the client must be at least 10 seconds longer than that of the server. HP recommends that you set the link holddown timer to 5 seconds (the default) on the server, and 15 seconds on the client.

Examples

Set the interval for DDR to make the next call attempt to 15 seconds.

```
<Sysname> system-view
[Sysname] interface dialer 0
[Sysname-Dialer0] dialer timer enable 15
```

dialer timer idle

Use **dialer timer idle** to set the link idle-timeout timer.

Use **undo dialer timer idle** to restore the default.

Syntax

dialer timer idle *idle* [**in** | **in-out**]

undo dialer timer idle

Default

The link idle-timeout timer is 120 seconds, and only outgoing interesting packets reset this timer.

Views

Dialer interface view

Predefined user roles

network-admin

Parameters

idle: Link idle-timeout timer, setting the time for a link to stay idle before it is disconnected. The value range for this argument is 0 to 65535 seconds.

in: Allows only incoming interesting packets to reset the timer.

in-out: Allows both incoming and outgoing interesting packets to reset the timer.

Usage guidelines

A link idle-timeout timer starts upon setup of a link. If no interesting packets are present before the timer expires, DDR disconnects the link.

If you do not specify the **in** or **in-out** keyword, only outgoing interesting packets reset the timer.

If the timer is set to 0, the link will never be disconnected, whether or not there are interesting packets on the link. For PPPoE client application, if the timer is set to 0, a connection is dialed automatically and remains active permanently.

Examples

Set the link idle-timeout timer to 50 seconds on interface Dialer 0.

```
<Sysname> system-view
[Sysname] interface dialer 0
[Sysname-Dialer0] dialer timer idle 50
```

dialer timer wait-carrier

Use **dialer timer wait-carrier** to set the wait-carrier timer.

Use **undo dialer timer wait-carrier** to restore the default.

Syntax

dialer timer wait-carrier *wait-carrier*

undo dialer timer wait-carrier

Default

The wait-carrier timer is 60 seconds.

Views

Dialer interface view

Predefined user roles

network-admin

Parameters

wait-carrier: Wait-carrier timer value, setting the time waiting for call setup. The value range for this argument is 0 to 65535 seconds.

Usage guidelines

Sometimes, the time that DDR waits for a connection to be established varies from call to call. You can use a wait-carrier timer to start when a call is placed. If the connection is not established upon expiration of the timer, DDR terminates the call.

Examples

Set the wait-carrier timer to 100 seconds on interface Dialer 0.

```
<Sysname> system-view
[Sysname] interface dialer 0
[Sysname-Dialer0] dialer timer wait-carrier 100
```

dialer timer warmup

Use **dialer timer warmup** to configure the warm-up timer for dynamic route backup.

Use **undo dialer timer warmup** to restore the default.

Syntax

dialer timer warmup *delay*

undo dialer timer warmup

Default

The warm-up timer is 30 seconds, or dynamic route backup takes effect 30 seconds after a system reboot.

Views

System view

Predefined user roles

network-admin

Parameters

delay: Sets the warm-up timer for dynamic route backup, in the range of 0 to 66635 seconds.

Usage guidelines

The warm-up timer for dynamic route backup starts upon system reboot, and before it expires, the dynamic route backup function is disabled and the system cannot dial a secondary link even if the corresponding primary link is down. If the primary link has not gone up when the timer expires, the system dials the secondary link. After the primary link goes up, the system switches over to it.

Examples

Set the warm-up timer to 20 seconds for dynamic route backup.

```
<Sysname> system-view
[Sysname] dialer timer warmup 20
```

dialer-group

Use **dialer-group** to assign an interface to a dialer access group.

Use **undo dialer-group** to restore the default.

Syntax

dialer-group *group-number*

undo dialer-group

Default

A dialer interface does not belong to any dialer access group.

Views

Dialer interface view

Predefined user roles

network-admin

Parameters

group-number: Number of the dialer access group, in the range of 1 to 255. You define it with the **dialer-group rule** command.

Usage guidelines

A dialer interface can belong to only one dialer access group. If you configure this command multiple times, the most recent configuration takes effect.

You must configure this command for DDR to send packets.

Examples

Add interface Dialer 0 to dialer access group 1.

```
<Sysname> system-view
[Sysname] dialer-group 1 rule acl 3101
[Sysname] interface dialer 0
[Sysname-Dialer0] dialer-group 1
```

Related commands

dialer-group rule

dialer-group rule

Use **dialer-group rule** to create a dialer access group and configure a dial access rule for it.

Use **undo dialer-group rule** to remove the configuration.

Syntax

dialer-group *group-number* **rule** { *protocol-name* { **deny** | **permit** } | **acl** { *acl-number* | **name** *acl-name* } }

undo dialer-group *group-number* **rule**

Views

System view

Predefined user roles

network-admin

Parameters

group-number: Number of the dialer access group, in the range of 1 to 255.

protocol-name: Network protocol, which can only take **ip**.

deny: Denies packets of the specified protocol.

permit: Permits packets of the specified protocol.

acl-number: Specifies an ACL by its number in the range of 2000 to 3999.

name *acl-name*: Specifies an ACL by its name.

Usage guidelines

Dial access rules are used to determine when an interface initiates DDR calls. You need to configure dial access rules only on the initiator of DDR calls.

Dial access rules filter packets in one of the following ways:

- **By protocol**—Only IP packets can be matched.
- **By ACL**—This way can achieve a finer granularity.

Packets include the following categories, depending on whether they comply with the permit or deny statements in the dial access rule:

- **Interesting packets**—Permitted protocol packets or packets that match a permit statement of an ACL. When receiving such a packet, DDR either sends it out if a link is present and resets the idle-timeout timer, or originates a new call to set up a link if no link is present.
- **Uninteresting packets**—Denied protocol packets or packets that match a deny statement of an ACL. When receiving such a packet, DDR either sends it out without resetting the idle-timeout timer if a link is present, or drops it without originating calls for link setup if no link is present.

For DDR to forward packets correctly, you must configure a dial access rule and associate it with the dialer interface by using the **dialer-group** command.

Examples

#Create dialer access group 1, configure DDR to trigger calls for IP packets, and associate interface Dialer 0 with dialer access group 1.

```
<Sysname> system-view
[Sysname] dialer-group 1 rule ip permit
[Sysname] interface dialer 0
[Sysname-Dialer0] dialer-group 1
```

Related commands

dialer-group

display dialer

Use **display dialer** to display the DDR information for an interface.

Syntax

display dialer [**interface** *interface-type interface-number*]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

interface *interface-type interface-number*: Specifies an interface by its type and number. If no interface is specified, this command displays DDR information for all the interfaces.

Examples

Display DDR-related information about all the DDR interfaces.

```
<Sysname> display dialer
Dialer0:
  Dialer Route:
    NextHop: 111.111.111.111  Dialer number: 12345678901234567890123456789O
    NextHop: 222.222.222.222  Dialer number: 12345678901234567890123456789O
  Dialer number: 12345678901234567890123456789O
  Dialer Timers(in seconds):
    Auto-dial: 300,      Compete: 20,          Enable: 5
    Idle: 120,           Wait-for-Carrier: 60
  Total Channels: 1
  Free Channels: 1
```

Table 7 Command output

Field	Description
Dialer Route: NextHop: 111.111.111.111 Dialer number: 12345678901234567890123456789O	Remote IP address and dial string configured by using the **dialer route** command.
Dialer number	Dial string for a remote IP address.
Dialer Timers(in seconds): Auto-dial: 300, Compete: 20, Enable: 5 Idle: 120, Wait-for-Carrier: 60	DDR timers in seconds: • **Auto-dial**—Autodial timer set by the **dialer timer autodial** command. • **Compete**—Compete-idle timer set by the **dialer timer compete** command. • **Enable**—Link holddown timer set by the **dialer timer enable** command. • **Idle**—Link idle-timeout timer set by the **dialer timer idle** command. • **Wait-for-Carrier**—Wait-carrier timer set by the **dialer timer wait-carrier** command.
Total Channels	Total number of physical interfaces on the interface. For an ISDN interface, it refers to the number of B channels.
Free Channels	Number of free channels.

display interface dialer

Use **display interface dialer** to display information about a dialer interface.

Syntax

display interface [**dialer**] [**brief** [**down**]]

display interface [**dialer** [*interface-number*]] [**brief** [**description**]]

Views

Any view

Predefined user roles

network-admin

network-operator

Parameters

interface-number: Existing dialer interface number.

brief: Displays brief interface information. If you do not specify this keyword, the command displays detailed interface information.

down: Displays information about interfaces in physically Down state and the causes. If you do not specify this keyword, this command displays information about interfaces in all states.

description: Displays complete interface descriptions. If this keyword is not specified, this command displays only the first 27 characters of interface descriptions.

Usage guidelines

If you do not specify the **dialer** keyword, this command displays information about all interfaces on the device.

If you specify the **dialer** keyword without the *interface-number* argument, this command displays information about all the dialer interfaces.

Examples

Display detailed information about interface Dialer 1.

```
<Sysname> display interface dialer 1
Dialer1
Current state: UP
Line protocol state: UP (spoofing)
Description: Dialer1 Interface
Bandwidth: 64kbps
Maximum Transmit Unit: 1500
Hold timer: 10 seconds
Internet protocol processing: disabled
Link layer protocol: PPP
LCP: initial
Physical: Dialer, baudrate: 64000 bps
Output queue: (Urgent queuing: Length) 50
Output queue: (Protocol queuing: Length) 500
Output queue: (FIFO queuing: Length) 75
Last clearing of counters: Never
Last 300 seconds input rate: 0 bytes/sec, 0 bits/sec, 0 packets/sec
Last 300 seconds output rate: 0 bytes/sec, 0 bits/sec, 0 packets/sec
Input: 0 packets, 0 bytes, 0 dropped
Output: 0 packets, 0 bytes, 0 dropped
```

Display brief information about interface Dialer 1.

```
<Sysname> display interface dialer 1 brief
Brief information on interface(s) under route mode:
Link: ADM - administratively down; Stby - standby
Protocol: (s) - spoofing
Interface            Link Protocol Main IP         Description
Dia1                 UP   UP(s)    --
```

Display brief information about all dialer interfaces in physically Down state.

```
<Sysname> display interface dialer brief down
Brief information on interface(s) under route mode:
Link: ADM - administratively down; Stby - standby
Interface              Link Cause
Dia1                   ADM  Administratively
```

Table 8 Command output

Field	Description
Dialer1 Current state	Physical state of the dialer interface: • **UP**—The dialer interface is physically up. • **DOWN (Administratively)**—The dialer interface was shut down with the **shutdown** command. To re-enable it, you must use the **undo shutdown** command on it.
Line protocol state	Data link layer protocol state of the dialer interface: UP or DOWN.
Description	Interface description.
Bandwidth	Intended bandwidth of the interface.
Maximum Transmit Unit	MTU of the dialer interface.
Internet protocol processing	Network layer protocol state of the dialer interface.
LCP: initial	LCP initialization is complete.
Physical	Physical interface type.
Output queue: (Urgent queuing : Length)	Statistics on the packets in the urgent output queue.
Output queue: (Protocol queuing : Length)	Statistics on the packets in the protocol output queue.
Output queue: (FIFO queuing : Length)	Statistics on the packets in the FIFO output queue.
Last clearing of counters: Never	Time when statistics on the dialer interfaces were last cleared. *Never* indicates the statistics were never cleared.
Last 300 seconds input rate	Input interface data rate during the latest 300 seconds.
Last 300 seconds output rate	Output interface data rate during the latest 300 seconds.
Input: 0 packets, 0 bytes, 0 dropped	Statistics on the packets reaching the interface.
Output: 0 packets, 0 bytes, 0 dropped	Statistics on the packets sent through the interface.
Brief information on interface(s) under route mode:	Brief information about Layer 3 interfaces.
Link: ADM - administratively down; Stby - standby	Link status: • **ADM**—The interface has been administratively shut down. To recover its physical state, execute the **undo shutdown** command. • **Stby**—The interface is operating as a standby interface. To display the active interface, use the **display standby state** command (*High Availability Command Reference*).

Field	Description
Protocol: (s) - spoofing	If the network layer protocol state of an interface is shown as UP, but its link is an on-demand link or not present at all, its protocol attribute includes the spoofing flag (an **s** in parentheses).
Interface	Abbreviated interface name.
Link	Physical link state of the interface: • **UP**—The link is up. • **ADM**—The link has been administratively shut down. To recover its physical state, execute the **undo shutdown** command.
Protocol	Protocol connection state of the interface: UP or DOWN.
Main IP	Main IP address of the interface.
Description	Description of the interface.
Cause	Cause of a Down physical link. If the port has been shut down with the **shutdown** command, this field displays **Administratively**. To restore the physical state of the interface, use the **undo shutdown** command. **Not connected** indicates no physical connection due to absence or failure of a network cable.

Related commands

reset counters interface

interface dialer

Use **interface dialer** to create a dialer interface. If the dialer interface already exists, you enter the dialer interface view.

Use **undo interface dialer** to remove a dialer interface.

Syntax

interface dialer *number*

undo interface dialer *number*

Default

No dialer interface is created.

Views

System view

Predefined user roles

network-admin

Parameters

number: Dialer interface number in the range of 0 to 1023.

Usage guidelines

The dialer interface has a fixed baud rate of 64000 bps.

Examples

Create dialer interface Dialer 1.

```
<Sysname> system-view
[Sysname] interface dialer 1
```

mtu

Use **mtu** to set the MTU of a dialer interface.

Use **undo mtu** to restore the default.

Syntax

mtu *size*

undo mtu

Default

The MTU of dialer interfaces is 1500 bytes.

Views

Dialer interface view

Predefined user roles

network-admin

Parameters

size: Specifies the maximum transmission unit (MTU) in the range of 128 to 1500 bytes.

Usage guidelines

The MTU setting of a dialer interface affects the fragmentation and reassembly of IP packets.

Examples

Set the MTU of interface Dialer 1 to 1200 bytes.

```
<Sysname> system-view
[Sysname] interface dialer 1
[Sysname-Dialer1] mtu 1200
```

reset counters interface

Use **reset counters interface** to clear the statistics of a dialer interface.

Syntax

reset counters interface [**dialer** [*interface-number*]]

Views

User view

Predefined user roles

network-admin

Parameters

dialer: Specifies a dialer interface.

interface-number: Existing dialer interface number.

Usage guidelines

Before sampling network traffic within a specific period of time on an interface, you must clear the existing statistics.

If neither **dialer** nor *interface-number* is specified, this command clears the statistics of all the interfaces.

If only **dialer** is specified, this command clears the statistics of all dialer interfaces.

If both **dialer** and *interface-number* are specified, this command clears the statistics of the specified dialer interface.

Examples

Clear the statistics of Dialer 1.

```
<Sysname> reset counters interface dialer 1
```

Related commands

display interface dialer

shutdown

Use **shutdown** to shut down a dialer interface.

Use **undo shutdown** to bring up a dialer interface.

Syntax

shutdown

undo shutdown

Default

A dialer interface is up.

Views

Dialer interface view

Predefined user roles

network-admin

Examples

Shut down interface Dialer 1.

```
<Sysname> system-view
[Sysname] interface dialer 1
[Sysname-Dialer1] shutdown
```

Support and other resources

Contacting HP

For worldwide technical support information, see the HP support website:

http://www.hp.com/support

Before contacting HP, collect the following information:

- Product model names and numbers
- Technical support registration number (if applicable)
- Product serial numbers
- Error messages
- Operating system type and revision level
- Detailed questions

Subscription service

HP recommends that you register your product at the Subscriber's Choice for Business website:

http://www.hp.com/go/wwalerts

After registering, you will receive email notification of product enhancements, new driver versions, firmware updates, and other product resources.

Related information

Documents

To find related documents, browse to the Manuals page of the HP Business Support Center website:

http://www.hp.com/support/manuals

- For related documentation, navigate to the Networking section, and select a networking category.
- For a complete list of acronyms and their definitions, see *HP FlexNetwork Technology Acronyms*.

Websites

- HP.com http://www.hp.com
- HP Networking http://www.hp.com/go/networking
- HP manuals http://www.hp.com/support/manuals
- HP download drivers and software http://www.hp.com/support/downloads
- HP software depot http://www.software.hp.com
- HP Education http://www.hp.com/learn

Conventions

This section describes the conventions used in this documentation set.

Command conventions

Convention	Description
Boldface	**Bold** text represents commands and keywords that you enter literally as shown.
Italic	*Italic* text represents arguments that you replace with actual values.
[ ]	Square brackets enclose syntax choices (keywords or arguments) that are optional.
{ x | y | ... }	Braces enclose a set of required syntax choices separated by vertical bars, from which you select one.
[x | y | ...]	Square brackets enclose a set of optional syntax choices separated by vertical bars, from which you select one or none.
{ x | y | ... } *	Asterisk-marked braces enclose a set of required syntax choices separated by vertical bars, from which you select at least one.
[x | y | ...] *	Asterisk-marked square brackets enclose optional syntax choices separated by vertical bars, from which you select one choice, multiple choices, or none.
&<1-n>	The argument or keyword and argument combination before the ampersand (&) sign can be entered 1 to n times.
#	A line that starts with a pound (#) sign is comments.

GUI conventions

Convention	Description
Boldface	Window names, button names, field names, and menu items are in bold text. For example, the **New User** window appears; click **OK**.
>	Multi-level menus are separated by angle brackets. For example, **File** > **Create** > **Folder**.

Symbols

Convention	Description
WARNING	An alert that calls attention to important information that if not understood or followed can result in personal injury.
CAUTION	An alert that calls attention to important information that if not understood or followed can result in data loss, data corruption, or damage to hardware or software.
IMPORTANT	An alert that calls attention to essential information.
NOTE	An alert that contains additional or supplementary information.
TIP	An alert that provides helpful information.

Network topology icons

	Represents a generic network device, such as a router, switch, or firewall.
	Represents a routing-capable device, such as a router or Layer 3 switch.
	Represents a generic switch, such as a Layer 2 or Layer 3 switch, or a router that supports Layer 2 forwarding and other Layer 2 features.
	Represents an access controller, a unified wired-WLAN module, or the switching engine on a unified wired-WLAN switch.
	Represents an access point.
	Represents a security product, such as a firewall, a UTM, or a load-balancing or security card that is installed in a device.
	Represents a security card, such as a firewall card, a load-balancing card, or a NetStream card.

Port numbering in examples

The port numbers in this document are for illustration only and might be unavailable on your device.

Index