



PPPoE Client DDR Idle-Timer

The PPPoE Client DDR Idle-Timer feature supports the dial-on-demand routing (DDR) interesting traffic control list functionality of the dialer interface with a PPP over Ethernet (PPPoE) client, but also keeps original functionality (PPPoE connection up and always on after configuration) for those PPPoE clients that require it.

Feature Specifications for the PPPoE Client DDR Idle-Timer Feature

Feature History

Release	Modification
12.2(13)T	This feature was introduced.

Finding Support Information for Platforms and Cisco IOS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at <http://www.cisco.com/go/fn>. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

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Prerequisites for Using the PPPoE Client DDR Idle-Timer

Before configuring the PPPoE Client DDR Idle-Timer feature, you must understand the concept of DDR interesting packets and access control lists and PPPoE Stage Protocols. See the [“Additional References” section on page 8](#) for links to the documents describing these concepts.

Information About the PPPoE Client DDR Idle-Timer

To configure the PPPoE client DDR idle-timer, you need to understand the following concept:

- [DDR Functionality and the PPPoE Client, page 2](#)

DDR Functionality and the PPPoE Client

Before Cisco IOS Release 12.2(13)T, the DDR interesting traffic control list functionality of the dialer interface was not supported for PPPoE. However, the PPPoE Client DDR Idle-Timer feature, available as part of Cisco IOS Release 12.2(13)T, now supports this DDR functionality for a PPPoE client.

Protocol access lists and dialer access lists are central to the operation of DDR. Access lists are used as the screening criteria for determining when to initiate DDR calls. All packets are tested against the dialer access list. Packets that match a permit entry are deemed *interesting*. Packets that do not match a permit entry or that do match a deny entry are deemed uninteresting. When a packet is found to be interesting, either the dialer idle timer is reset (if the line is active) or a connection is attempted (assuming the line is available but not active). If a tested packet is deemed uninteresting, it will be forwarded if it is intended for a destination known to be on a specific interface and the link is active. However, such a packet will not initiate a DDR call and will not reset the idle timer. If dialer idle timer expires, the dialer interface calls a PPPoE function to tear down the connection.

A new command, **pppoe-client dial-pool-number**, allows configuring a DDR interesting traffic control list for PPPoE connections, but also keeps original connection functionality for those PPPoE clients that require it. If you do not require DDR, the PPPoE connection will be up and always on after configuration. If you do require DDR functionality, the connection will be brought up when interesting traffic comes in from the LAN interface and brought down after the dialer idle timer expires. Interesting traffic that comes from WAN interface will only reset the dialer idle timer.

Protocol access lists and dialer access lists have already been implemented in the dialer interface for the operation of DDR. For a PPPoE client, access lists are used as the screening criteria for determining if PPPoE Discovery initiation or a dialer idle timer reset is needed. But a protocol access list is not required for this feature; it depends on your network needs. An access-list can be configured and associated with dialer-list, or you can configure only the dialer list.

All packets destined to the dialer interface are tested against the dialer access list. Packets that match a permit entry are deemed interesting. Packets that do not match a permit entry or that do match a deny entry are deemed uninteresting. When a packet is found to be interesting, the dialer idle timer will be reset if the PPPoE session has already been set up, or a PPPoE Discovery will be attempted if there is no PPPoE session. If a tested packet is deemed uninteresting, it will not initiate PPPoE Discovery and will not reset the idle timer.

How to Configure the PPPoE Client DDR Idle-Timer

This section contains the following procedures. Each procedure is identified as either required or optional.

- [Configure the PPPoE Client DDR Idle-Timer on an ATM PVC Interface, page 3](#) (required)
- [Configure the PPPoE Client DDR Idle-Timer on an Ethernet Interface, page 4](#) (required)
- [Configure the Dialer Interface, page 5](#) (required)

Configure the PPPoE Client DDR Idle-Timer on an ATM PVC Interface

To configure the PPPoE client DDR idle-timer in interface-ATM-VC configuration mode, use the following commands:

SUMMARY STEPS

1. **enable**
2. **configure** { **terminal** | **memory** | **network** }
3. **interface atm** *atm-interface-number*
4. **pvc** *vpi/vci*
5. **pppoe-client dial-pool-number** *number* [**dial-on-demand**]
6. **exit**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables higher privilege levels, such as privileged EXEC mode. • Enter your password if prompted.
Step 2	configure { terminal memory network } Example: Router# configure terminal	Enters global configuration mode.
Step 3	interface atm <i>atm-interface-number</i> Example: Router# interface atm 2/0	Configures an ATM interface type and enters interface configuration mode.
Step 4	pvc <i>vpi/vci</i> Example: Router(config-if)# pvc 2/100	Creates an ATM permanent virtual circuit (PVC) and enters interface-ATM-VC configuration mode.

	Command or Action	Purpose
Step 5	<pre>pppoe-client dial-pool-number <i>number</i> [dial-on-demand]</pre> <p>Example: Router(config-if-atm-vc)# pppoe-client dial-pool-number 1 dial-on-demand</p>	<p>Configures DDR interesting traffic control list functionality of the dialer interface with a PPPoE client.</p> <ul style="list-style-type: none"> The optional dial-on-demand keyword enables DDR functionality on the PPPoE connection.
Step 6	<pre>exit</pre> <p>Example: Router(config-if-atm-vc)# exit</p>	<p>Exits the configuration mode.</p> <ul style="list-style-type: none"> Enter the exit command at each configuration mode to leave that mode.

What to Do Next

To support DDR functionality for the PPPoE client, DDR functionality *must* be configured. See the [“Configure the Dialer Interface” section on page 5](#) for the steps to do this.

Configure the PPPoE Client DDR Idle-Timer on an Ethernet Interface

To configure the PPPoE client DDR idle-timer on an Ethernet interface, use the following commands:

SUMMARY STEPS

1. **enable**
2. **configure {terminal | memory | network}**
3. **interface ethernet** *ethernet-number*
4. **pppoe enable**
5. **pppoe-client dial-pool-number** *number* [**dial-on-demand**]

DETAILED STEPS

	Command or Action	Purpose
Step 1	<pre>enable</pre> <p>Example: Router> enable</p>	<p>Enables higher privilege levels, such as privileged EXEC mode.</p> <ul style="list-style-type: none"> Enter your password if prompted.
Step 2	<pre>configure {terminal memory network}</pre> <p>Example: Router# configure terminal</p>	<p>Enters global configuration mode.</p>
Step 3	<pre>interface ethernet <i>ethernet-number</i></pre> <p>Example: Router# interface ethernet 1</p>	<p>Configures an Ethernet interface and enters interface configuration mode.</p>

	Command or Action	Purpose
Step 4	<code>pppoe enable</code> Example: Router(config-if)# pppoe enable	Enables PPPoE sessions on an Ethernet interface.
Step 5	<code>pppoe-client dial-pool-number number</code> <code>[dial-on-demand]</code> Example: Router(config-if)# pppoe-client dial-pool-number 1 dial-on-demand	Configures DDR interesting traffic control list functionality of the dialer interface with a PPPoE client. <ul style="list-style-type: none"> The optional dial-on-demand keyword enables DDR functionality on the PPPoE connection.
Step 6	<code>exit</code> Example: Router(config-if-atm-vc)# exit	Exits the configuration mode. <ul style="list-style-type: none"> Enter the exit command at each configuration mode to leave that mode.

What to Do Next

To support DDR functionality for the PPPoE client, DDR functionality *must* be configured. See the [“Configure the Dialer Interface”](#) section for the steps to do this.

Configure the Dialer Interface

To configure the dialer interface (required when using the `pppoe-client dial-pool-number` command), you must also configure the following commands:

SUMMARY STEPS

- `enable`
- `configure {terminal | memory | network}`
- `interface dialer dialer-rotary-group-number`
- `dialer idle-timeout seconds [inbound | either]`
- `dialer hold-queue packets [timeout seconds]`
- `dialer-group group-number`
- `exit`
- `dialer-list dialer-group protocol protocol-name {permit | deny | list access-list-number | access-group}`

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables higher privilege levels, such as privileged EXEC mode. <ul style="list-style-type: none"> Enter your password if prompted.
Step 2	configure { terminal memory network } Example: Router# configure terminal	Enters global configuration mode.
Step 3	interface dialer <i>dialer-rotary-group-number</i> Example: Router# interface dialer 1	Defines a dialer rotary group and enters interface configuration mode.
Step 4	dialer idle-timeout <i>seconds</i> [inbound either] Example: Router(config-if)# dialer idle-timeout 180 either	Specifies the duration of idle time before a line is disconnected. <ul style="list-style-type: none"> inbound—Only inbound traffic will reset the idle timeout. either—Both inbound and outbound traffic will reset the idle timeout.
Step 5	dialer hold-queue <i>packets</i> [timeout <i>seconds</i>] Example: Router(config-if)# dialer hold-queue 100	Allows interesting outgoing packets to be queued until a modem connection is established. <ul style="list-style-type: none"> timeout—Amount of time, in seconds, to queue the packets.
Step 6	dialer-group <i>group-number</i> Example: Router(config-if)# dialer-group 1	Controls access by configuring an interface to belong to a specific dialing group.
Step 7	exit Example: Router(config-if)# exit	Leaves interface configuration mode and returns to global configuration mode.
Step 8	dialer-list <i>dialer-group</i> protocol <i>protocol-name</i> { permit deny list <i>access-list-number</i> <i>access-group</i> } Example: Router(config)# dialer-list 1 protocol ip permit	Defines a DDR dialer list for dialing by protocol or by a combination of a protocol and a previously defined access list. <ul style="list-style-type: none"> permit and deny—Configure access permissions. list—Specifies that an access list will be used for defining a granularity finer than an entire protocol.

Configuration Examples for PPPoE Client DDR Idle-Timer

This section provides configuration examples to match the identified configuration tasks in the previous sections. The dialer interface configurations for each interface type required by the **pppoe-client dial-pool-number** command are included in the following client configuration examples:

- [PPPoEoA Client Configuration Example, page 7](#)
- [PPPoEoE Client Configuration Example, page 7](#)

PPPoEoA Client Configuration Example

The following example shows how to configure the PPPoE client DDR idle-timer on an ATM PVC interface:

```
!  
vpdn enable  
no vpdn logging  
!  
vpdn-group 1  
  request-dialin  
  protocol pppoe  
!  
interface ATM2/0  
  pvc 2/100  
    pppoe-client dial-pool-number 1 dial-on-demand  
!  
interface Dialer1  
  ip address negotiated  
  ip mtu 1492  
  encapsulation ppp  
  dialer pool 1  
  dialer idle-timeout 180 either  
  dialer hold-queue 100  
  dialer-group 1  
!  
dialer-list 1 protocol ip permit  
!  
ip route 0.0.0.0 0.0.0.0 Dialer1
```

PPPoEoE Client Configuration Example

The following example shows how to configure the PPPoE client DDR idle-timer on an Ethernet interface:

```
!  
vpdn enable  
no vpdn logging  
!  
vpdn-group 1  
  request-dialin  
  protocol pppoe  
!  
interface Ethernet1  
  pppoe enable  
  pppoe-client dial-pool-number 1 dial-on-demand  
!  
interface Dialer1  
  ip address negotiated
```

```

ip mtu 1492
encapsulation ppp
dialer pool 1
dialer idle-timeout 180 either
dialer hold-queue 100
dialer-group 1
!
dialer-list 1 protocol ip permit
!
ip route 0.0.0.0 0.0.0.0 Dialer1

```

Additional References

For additional information related to the PPPoE client DDR idle-timer, refer to the following references:

Related Documents

Related Topic	Document Title
DDR interesting packets and access control lists	Cisco IOS Dial Technologies Configuration Guide . See the section “Configuring Access Control for Outgoing Calls “ in the chapter “Configuring Legacy DDR Hubs.”
DDR and dialer commands: complete command syntax, command mode, defaults, usage guidelines, and examples	Cisco IOS Dial Technologies Command Reference .
PPPoE Client DDR Idle-Timer	Cisco IOS Broadband Access Aggregation and DSL Configuration Guide .
PPPoE configuration commands: complete command syntax, command mode, defaults, usage guidelines, and example	Cisco IOS Wide-Area Networking Command Reference .

Standards

Standards	Title
None	—

MIBs

MIBs	MIBs Link
None	To obtain lists of supported MIBs by platform and Cisco IOS release, and to download MIB modules, go to the Cisco MIB website on Cisco.com at the following URL: http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml

To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL:

<http://tools.cisco.com/ITDIT/MIBS/servlet/index>

If Cisco MIB Locator does not support the MIB information that you need, you can also obtain a list of supported MIBs and download MIBs from the Cisco MIBs page at the following URL:

<http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>

To access Cisco MIB Locator, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to cco-locksmith@cisco.com. An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions found at this URL:

<http://www.cisco.com/register>

RFCs

RFCs	Title
None	—

Technical Assistance

Description	Link
Technical Assistance Center (TAC) home page, containing 30,000 pages of searchable technical content, including links to products, technologies, solutions, technical tips, tools, and lots more. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/public/support/tac/home.shtml

Command Reference

The following modified command is pertinent to this feature. To see the command pages for this command and other commands used with this feature, go to the *Cisco IOS Master Commands List*, at http://www.cisco.com/en/US/docs/ios/mcl/allreleasemcl/all_book.html.

- **pppoe-client dial-pool-number**

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