



PPPoE Client DDR Idle-Timer

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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.

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Finding Feature Information

Your software release may not support all the features documented in this module. For the latest feature information and caveats, see the release notes for your platform and software release. To find information about the features documented in this module, and to see a list of the releases in which each feature is supported, see the Feature Information Table at the end of this document.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Prerequisites for 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 [Prerequisites for PPPoE Client DDR Idle-Timer, page 1](#) for links to the documents describing these concepts.



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Information About PPPoE Client DDR Idle-Timer

- [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 PPPoE Client DDR Idle-Timer

- [Configure the PPPoE Client DDR Idle-Timer on an ATM PVC Interface, page 2](#)
- [Configure the PPPoE Client DDR Idle-Timer on an Ethernet Interface, page 4](#)
- [Configure the Dialer Interface, page 5](#)

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. <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 atm atm-interface-number Example: Router# interface atm 2/0	Configures an ATM interface type and enters interface configuration mode.
Step 4 pvc vpi/vci Example: Router(config-if)# pvc 2/100	Creates an ATM permanent virtual circuit (PVC) and enters interface-ATM-VC configuration mode.
Step 5 pppoe-client dial-pool-number number [dial-on-demand] Example: Router(config-if-atm-vc)# 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.

Command or Action	Purpose
Step 6 <code>exit</code> Example: <code>Router(config-if-atm-vc)# exit</code>	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, page 4](#)

What to Do Next

To support DDR functionality for the PPPoE client, DDR functionality must be configured. See the [Configure the Dialer Interface, 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

- `enable`
- `configure {terminal | memory | network}`
- `interface ethernet ethernet-number`
- `pppoe enable`
- `pppoe-client dial-pool-number number [dial-on-demand]`
- `exit`

DETAILED STEPS

Command or Action	Purpose
Step 1 <code>enable</code> Example: <code>Router> enable</code>	Enables higher privilege levels, such as privileged EXEC mode. <ul style="list-style-type: none"> Enter your password if prompted.
Step 2 <code>configure {terminal memory network}</code> Example: <code>Router# configure terminal</code>	Enters global configuration mode.

Command or Action	Purpose
<p>Step 3 <code>interface ethernet <i>ethernet-number</i></code></p> <p>Example:</p> <pre>Router# interface ethernet 1</pre>	<p>Configures an Ethernet interface and enters interface configuration mode.</p>
<p>Step 4 <code>pppoe enable</code></p> <p>Example:</p> <pre>Router(config-if)# pppoe enable</pre>	<p>Enables PPPoE sessions on an Ethernet interface.</p>
<p>Step 5 <code>pppoe-client dial-pool-number <i>number</i> [dial-on-demand]</code></p> <p>Example:</p> <pre>Router(config-if)# pppoe-client dial-pool-number 1 dial-on-demand</pre>	<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.
<p>Step 6 <code>exit</code></p> <p>Example:</p> <pre>Router(config-if-atm-vc)# exit</pre>	<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, page 5](#)

What to Do Next

To support DDR functionality for the PPPoE client, DDR functionality must be configured. See the [Configure the Dialer Interface, page 5](#) 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

1. **enable**
2. **configure** { **terminal** | **memory** | **network** }
3. **interface dialer** *dialer-rotary-group-number*
4. **dialer idle-timeout** *seconds* [**inbound** | **either**]
5. **dialer hold-queue** *packets* [**timeout** *seconds*]
6. **dialer-group** *group-number*
7. **exit**
8. **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: <pre>Router> enable</pre>	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: <pre>Router# configure terminal</pre>	Enters global configuration mode.
Step 3 interface dialer <i>dialer-rotary-group-number</i> Example: <pre>Router# interface dialer 1</pre>	Defines a dialer rotary group and enters interface configuration mode.
Step 4 dialer idle-timeout <i>seconds</i> [inbound either] Example: <pre>Router(config-if)# dialer idle-timeout 180 either</pre>	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: <pre>Router(config-if)# dialer hold-queue 100</pre>	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.

Command or Action	Purpose
<p>Step 6 <code>dialer-group group-number</code></p> <p>Example:</p> <pre>Router(config-if)# dialer-group 1</pre>	Controls access by configuring an interface to belong to a specific dialing group.
<p>Step 7 <code>exit</code></p> <p>Example:</p> <pre>Router(config-if)# exit</pre>	Leaves interface configuration mode and returns to global configuration mode.
<p>Step 8 <code>dialer-list dialer-group protocol protocol-name { permit deny list access-list-number access-group }</code></p> <p>Example:</p> <pre>Router(config)# dialer-list 1 protocol ip permit</pre>	<p>Defines a DDR dialer list for dialing by protocol or by a combination of a protocol and a previously defined access list.</p> <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 8](#)

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

```

PPPoE 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

Related Documents

Related Topic	Document Title
Cisco IOS commands	Cisco IOS Master Commands List, All Releases
DDR interesting packets and access control lists	<i>Cisco IOS Dial Technologies Configuration Guide</i> , Release 12.2. 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	<i>Cisco IOS Dial Technologies Command Reference</i> , Release 12.2.

Related Topic	Document Title
PPPoE Stage Protocols	<i>Cisco IOS Wide-Area Networking Configuration Guide</i> , Release 12.2. See the section "PPPoE Stage Protocols" in the chapter "Configuring Broadband Access: PPP and Routed Bridge Encapsulation."
PPPoE configuration commands: complete command syntax, command mode, defaults, usage guidelines, and example	<i>Cisco IOS Wide-Area Networking Command Reference</i> , Release 12.2. See the chapter "Broadband Access: PPP and Routed Bridge Encapsulation Commands."

Standards

Standard	Title
None	--

MIBs

MIB	MIBs Link
<ul style="list-style-type: none"> None 	<p>To locate and download MIBs for selected platforms, Cisco software releases, and feature sets, use Cisco MIB Locator found at the following URL:</p> <p>http://www.cisco.com/go/mibs</p>

RFCs

RFC	Title
None	--

Technical Assistance

Description	Link
The Cisco Support and Documentation website provides online resources to download documentation, software, and tools. Use these resources to install and configure the software and to troubleshoot and resolve technical issues with Cisco products and technologies. Access to most tools on the Cisco Support and Documentation website requires a Cisco.com user ID and password.	http://www.cisco.com/cisco/web/support/index.html

Feature Information for PPPoE Client DDR Idle-Timer

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Table 1 Feature Information for PPPoE Client DDR Idle-Timer

Feature Name	Releases	Feature Information
PPPoE Client DDR Idle-Timer	12.2(13)T	<p>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.</p> <p>This feature is supported on Cisco 806, Cisco 827, Cisco SOHO 70 series routers.</p> <p>The following commands were introduced or modified: pppoe-client dial-pool-number.</p>

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