
How to Configure a PPPoE xDSL WAN Connection with an External DSL Modem

<https://campus.barracuda.com/doc/73719020/>

The firewall can dial in using PPPoE with an external modem and PPPoA on specific models with an internal DSL modem. The xDSL connection can be configured to be in Active or Standby mode. In Standby mode, the activation and subsequent monitoring of the link must be triggered externally. PPPoE/PPPoA requires no special configuration to the access network. Each PPP session learns the Ethernet address of the remote peer and creates a unique session identification (ID).

Before You Begin

- Connect the external xDSL modem supplied by your ISP to a port on the Barracuda CloudGen Firewall.
- Verify that you have all the necessary configuration information provided to you by your ISP.

Step 1. Configure Link Properties

Specify the properties for the DHCP link and define the transport protocol for PPP.

1. Go to **CONFIGURATION > Configuration Tree > Box > Network**.
2. In the left menu, select **xDSL/DHCP/ISDN**.
3. Click **Lock**.
4. Set **xDSL Enabled** to **Yes**.
5. In the **xDSL Links** table, click **+** to add an entry.
6. Enter a name for the xDSL link (no special characters) and click **OK**. The **xDSL Links** window opens.
7. Select the **Connection Type** to specify the transport protocol for PPP.
8. (optional) Enter the **Static Local** and **Gateway IP** address if your ISP does not assign it automatically.
9. Select the **Ethernet Interface** the xDSL modem is attached to.

Step 3. Configure Authentication

Most ISPs require authentication information to connect. These configuration settings are provided by your ISP. If no authentication is required, set **Authentication Method** to **NONE**.

1. In the **Authentication** section, select the **Authentication Method**. Default: **PAP_or_CHAP**

2. Enter the user IDs as supplied by your xDSL provider:
 - **User Access ID** - Enter the username assigned by your ISP.
 - **User Access Sub-ID** - If provided by your ISP, enter a sub ID.

The user ID is generated automatically by combining the **User Access ID** and **User Access Sub-ID** with # and @ symbols added between the user parameters:
[user_id]#[access_sub_id]@[provider_name] E.g., 000xxxxxxxxx520069204717#0001@t-online.de

3. Enter the **Access Password** assigned by your ISP.
4. If you want to use your ISP's DNS servers, select **Use ProviderDNS**.
5. To use dynamic DNS, select **Use Dynamic DNS** and click **Set**. The **Dynamic DNS Params** window opens.
 1. Select a dynamic DNS **Service Type**. For information on DynDNS service types, see <http://www.dyndns.com/services/>.
 2. Enter the **Dyn DNS Name** that was registered on dyndns.org.
 3. Enter the **User Access ID** and **Password** for accessing the dyndns.org service.
6. Click **OK**.

Step 4. Configure Routing Settings

Configure whether to create a default route, dynamic routing, and the route metric.

1. Set **Create Default Route** to **YES** to automatically create a default route via this xDSL connection.
2. If you are using dynamic routing protocols like [OSPF/RIP/BGP](#), enable **Advertise Route**.
3. Enter a **Route Metric** if multiple dynamic links are available. The link with the lowest route metric is automatically chosen if more than one default route is available.

Step 5. Configure Connection Monitoring

Configure log settings and define target IP addresses that will be regularly pinged to monitor the availability of the connection. Each target IP address is pinged every 20 seconds (2 ICMP packets each). If there is no response, the link is re-established.

1. In the **Connection Monitoring** section, select the **Monitoring** method:
 - **LCP** - If ping fails, the dial-in daemon is probed directly via LCP.
 - **ICMP** - The Barracuda CloudGen Firewall probes the **Reachable IPs** and, if there is no response, the gateway.
 - **StrictLCP** - No ICMP probing occurs.
2. Enter one or more **Reachable IPs** to monitor the availability of the connection. The target IP addresses should be accessible only via the xDSL connection.
3. Select the **Unreachable Action** to be taken if the connection cannot be established. The

following options are available:

- **Restart** - Restarts the xDSL connection.
 - **Increase-Metric** - Changes the preference for xDSL routes until the probe succeeds.
4. Click **OK**.
 5. Click **Send Changes** and **Activate**.

Step 6. Activate Network Changes

You must activate the network changes to bring up the xDSL connection.

1. Go to **CONTROL > Box**.
2. In the left menu, expand the **Network** section and click **Activate new network configuration**.
3. Select **Failsafe**.

Your xDSL connection is now active, and the IP address assigned by your ISP is visible on the **CONTROL > Network** page. All status icons next to the ppp1 interface are green, indicating an active connection. If the xDSL connection is your primary Internet connection, the default route pointing to the ppp1 interface is also created. If more than one default route is present, the connection with the lowest route metric is used.

Operating an xDSL Link in Standby Mode

If required, e.g., for maintenance purposes, you can enable **Standby Mode** in the link configuration. In Standby Mode, the activation and subsequent monitoring of the link must be triggered externally. Standby Mode also lets you combine [HA setups](#) for HA xDSL connections. In Standby Mode:

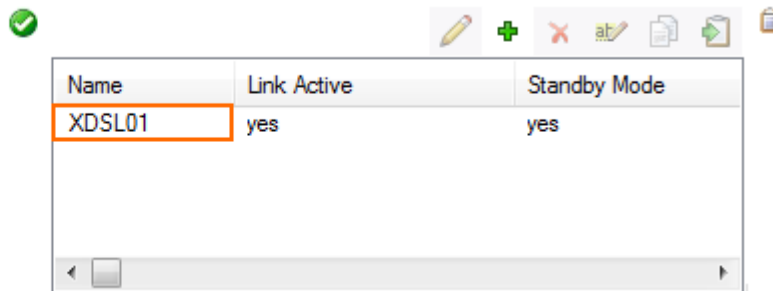
1. The involved routes are set to a pending state, and it is not checked whether they are established.
2. The configuration is completely run through, but the connection is not yet established.

Connecting is handled from the [Command-Line Interface](#) via a server-side script that is used for starting and stopping the connection with corresponding command lines:

- Start all xDSL connections - `/etc/phion/bin/openxDSL start &`
- Stop all xDSL connections - `/etc/phion/bin/openxDSL stop &`
- Start an explicit xDSL connection - `/etc/phion/bin/openxDSL start <linkname> &`
- Stop an explicit xDSL connections - `/etc/phion/bin/openxDSL stop <linkname> &`

<linkname> is the name of the configuration entry in the **xDSL Links** list:

xDSL Links



The image shows a screenshot of the 'xDSL Links' configuration page in the Barracuda CloudGen Firewall interface. At the top left, there is a green checkmark icon. To the right of the title, there is a toolbar with icons for edit (pencil), add (+), delete (X), copy (AT), save (floppy), and refresh (circular arrow). Below the toolbar is a table with three columns: 'Name', 'Link Active', and 'Standby Mode'. The table contains one row with the name 'XDSL01', 'Link Active' set to 'yes', and 'Standby Mode' set to 'yes'. The 'Name' cell is highlighted with an orange border. At the bottom of the table, there is a horizontal scrollbar.

Name	Link Active	Standby Mode
XDSL01	yes	yes

Troubleshooting

In some cases, especially in combination with PPPoE acceleration, the segment size of the packets going into the tunnel might be too big. Set the **MSS (Maximum Segment Size)** to **1350** and **clear DF bit** to **yes** in the **Advanced Settings** tab for all access rules handling incoming and outgoing traffic for the PPPoE connection.

Figures

1. xDSL_01.png

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