Service Managed Gateway™

How to Configure an ADSL Connection

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# Table of contents

1 Introduction ............................................................................................................. 3
1.1 What is ADSL technology?................................................................................. 3
1.2 ADSL Connections .......................................................................................... 3
1.3 ADSL Connection Options on your SMG ..................................................... 3
2 Configuring your ADSL connection ............................................................... 7
   2.1 Configuring a routed ADSL Connection over PPP .................................... 7
      2.1.1 Fast Start Wizard.................................................................................. 7
      2.1.2 Disabling Activation ........................................................................... 7
      2.1.3 Generating an ADSL Connection over PPP ....................................... 10
      2.1.4 Configuring advanced options for your PPP network ....................... 12
      2.1.5 Saving your PPP Configuration ......................................................... 13
   2.2 Configuring a bridged ADSL connection ................................................. 16
      2.2.1 The Fast Start Wizard ...................................................................... 16
      2.2.2 Disabling Activation ........................................................................ 17
      2.2.3 Generating a bridged connection ...................................................... 21
      2.2.3 Saving your Bridged Configuration ................................................... 22
1 Introduction

1.1 What is ADSL technology?

Asymmetric Digital Subscriber Line (ADSL) is a technology for transmitting digital information at high speed on existing telephone lines to homes and businesses. Unlike a regular, dial-up telephone service, ADSL provides a continuously available, “always-on” connection. ADSL was specifically designed to exploit the asynchronous nature of most multimedia communication in which the user can obtain large amounts of information and only a small amount of interactive control information is returned. ADSL circuits can support data rates of up to 8 Mbps downstream (from the network service to the user) and 1 Mbps upstream (from the user to the network service).

1.2 ADSL Connections

ADSL access services typically use the Asynchronous Transfer Mode (ATM) protocol to provide a low level communications path between the user's access equipment and the service provider head end. The head end may be a Broadband Access Server (BAS) that sits (logically) behind the ADSL central office Digital Subscriber Line Access Multiplexer (DSLAM) and is connected using an Asynchronous Transfer Mode (ATM) backbone. ATM is a high-speed switching technology where data is grouped into cells.

Connection between the user equipment and the BAS is then achieved using the Point-to-Point Protocol (PPP) running over the ATM connection path. PPP is a defined industry standard used widely to allow two devices to communicate across a logical link. It is extensively deployed by service providers as a means of connecting customers to Internet Protocol (IP)-based services, such as the Internet.

![Figure 1: PPP over a DSL connection](image)

The method of running PPP between the user equipment and the BAS may be either directly over the ATM layer (PPPoA) or over an intermediate Ethernet layer (PPPoE).

1.3 ADSL Connection Options on your SMG

You can configure two main types of ADSL service on your Service Managed Gateway:

- ADSL Routed PPP Connection
- ADSL Bridged Connection
If you select the Routed PPP service, you can run the PPP over ATM (PPPoA) or over Ethernet (PPPOE). The following diagrams illustrate the topology of these connections:

Figure 2: A routed ADSL connection over PPPoA
Less commonly, you may need to configure a bridged connection over ADSL. A bridge is a device that connects two local networks, and forwards packets between them. If your ADSL service is delivered as a bridged connection, the SMG has no visibility of the IP (or other) protocol. This type of service is often associated with single PC user connections where the higher level 'routing' is performed in the PC client software.
Figure 4: A bridged ADSL connection
2 Configuring your ADSL connection

2.1 Configuring a routed ADSL Connection over PPP

2.1.1 Fast Start Wizard

Your Service Managed Gateway is designed to be automatically configured by the Activator Distributed System (DSS) upon correct installation of the SMG.

If necessary, you can bypass Activation and use the Fast Start Wizard to manually configure your SMG. See the ADSL installation guide for details of how to complete the physical installation. When your SMG is correctly connected to your PC, type fast.start into the URL line of your browser to display the Start page.

Access the Fast Start Wizard by clicking the Fast.Start icon on the home page of the embedded web.

The Fast Start wizard will guide you through a series of forms that you must complete to configure your SMG.

2.1.2 Disabling Activation

When you click the Fast Start icon, the Activation in progress page appears. It displays the status of the Activation process.
To manually configure your SMG, you must disable Activation. To do this, click the Continue button. If you do not need to stop Activation, click Close.

**Warning! Do not disable Activation unless you are sure there is a problem.**

When you click Continue, the Welcome to your Service Managed Gateway page appears.
Welcome

Welcome to your Service Managed Gateway

Use the buttons below to access the following pages on your Service Managed Gateway.

- **Connection Wizard**: Follow the wizard to set up a connection to your service provider.
- **Security**: Manage password authentication and encryption services. Enable VPN.
- **LAN Wizard**: Follow the wizard to configure the mapping of physical ethernet ports to logical interfaces.

Select the type of service connection required:

| Service type | ADSL Routed IP Connection |

This mode of operation allows your router to be remotely managed on your behalf by a service provider. You must already have a service agreement in place before you can use this mode.

- [Connection Wizard...](#)
- [Security...](#)
- [LAN Wizard...](#)

**Figure 7: The Welcome page**

Select **ADSL Routed PPP Connection** from the **Service type** drop-down list.

A dialog box appears. Carefully read the warning in the dialog box.

**Figure 8: The dialog box that lets you cancel Activation**

Warning: switching to ADSL Routed PPP Connection configuration will disable Activation.

You will no longer be able to request automatic configuration updates from your service provider. Instead, you must make any configuration changes yourself. You can re-enable Activation at a later date if you like.

Do you want to disable Activation now?

- [OK](#)
- [Cancel](#)

**Figure 8: The dialog box that lets you cancel Activation**

To allow Activation to continue, click **Cancel**. The dialog box closes and Activation continues.

To disable Activation, click **OK**. The Activation process ends and the next page of the Fast.start wizard appears.
2.1.3 Generating an ADSL Connection over PPP

Figure 9: The Welcome page

Click the Connection Wizard button to open the Connections page.
Figure 10: The Connections page

**Connection name**
Specify a descriptive name for your connection in this field. This name is used to identify the connection for maintenance functions such as connecting, disconnecting, and viewing connection statistics.

**Connection type**
Select PPP over Ethernet (PPPoE), PPP (RFC2364 vc mux), or PPP (RFC 2364 llc) as required.
Note: If you are unsure which connection type to use for a service over PPPoA, you should usually choose RFC2364 vc mux.

**Connection username**
In most cases, your service provider requires that you enter a login and password to access Internet services.

**Connection password**
Enter your password in the Connection password field. For security, an asterisk (*) appears each time you type a character. To verify that you typed the password correctly, re-enter it in the Re-enter connection password field.

**Virtual Path Identifier/Virtual Connection Identifier**
These fields relate to the Asynchronous Transfer Mode (ATM) channel on which the link is established. The Virtual Path Identifier and the Virtual Connection Identifier allow all
packets sent out to have a unique identification number. Use the defaults provided here unless otherwise directed by your service provider.

By default, the SMG is configured to allow your service provider to assign an IP address to the connection. If this is how your service is provided and you are using the default LAN configuration (SMG allocates addresses and acts as DNS server to the PCs on the LAN), then click Next. Otherwise, click the Advanced Options button to display the Advanced Network Options.

### 2.1.4 Configuring advanced options for your PPP network

You do not have to configure advanced options to activate your SMG. If you are not familiar with advanced network options or if your service provider has not given you advanced network options, skip this section.

**Advanced Network Options**

Please refer to the User Guide for details of these parameters.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Default</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP address obtained automatically</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>DNS address obtained automatically</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>IP address translation enabled</td>
<td>no</td>
<td></td>
</tr>
<tr>
<td>PFPoE Service Name</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 11: Advanced network options**

**IP address obtained automatically**

Select yes in the IP address obtained automatically drop-down list to obtain the IP address automatically.

If you do not want to obtain the IP address automatically, select no from the drop-down list. Then click the Details button to open the IP Addressing pop-up window.

**IP Addressing**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local PPP IP address</td>
<td>0.0.0.0</td>
</tr>
<tr>
<td>Remote PPP IP address</td>
<td>0.0.0.0</td>
</tr>
<tr>
<td>PPP IP address mask</td>
<td>255.255.255.0</td>
</tr>
</tbody>
</table>

**Figure 12: IP addressing parameters**
Your service provider will give you the addresses that you should type in the three fields in the **IP Addressing** pop-up window.

If your service provider does not give you any addresses, use the addresses that are in the pop-window when it pops up.

Click **OK** to close the IP Addressing pop-up window.

**Automatically obtaining a DNS address**

You do not have to configure DNS addressing. If you are not familiar with DNS addressing or your service provider has not given you DNS addresses, you can skip this section.

The Domain Name System (DNS) associates host names with IP addresses. The DNS server is responsible for tracking these associations. The DNS address is usually obtained automatically. However, if it is not, select **no** from the **DNS address obtained automatically** drop-down list. Then click the **Details** button to display the **DNS Addressing** pop-up window.

![DNS Addressing](image)

**Figure 13: DNS address parameters**

Type the IP address of the primary DNS server in the **Primary DNS IP Address** field. If there is a secondary DNS server, type its address of the secondary DNS server in the **Secondary DNS IP Address** field.

Click **OK** to close the DNS Addressing pop-up window.

**IP address translation enabled**

IP address translation (IPAT) can be used to hide the devices on the local LAN by substituting the IP address of the originating device with the IP address of the SMG. If IP address translation is to be disabled for the leased line connection, select **no** from the **IP address translation enabled** drop-down list.

**PPPoE Service Name**

Enter the name of the PPP over Ethernet (PPPoE) service.

Click **OK** to close the Advanced ADSL Network Options pop-up window. Then click the **Next** button on the Connections page to open the Finished page.

2.1.5 **Saving your PPP Configuration**

Click **Next** on the Connections page. The Finished page appears.
Click **Save configuration** to save the new or updated ADSL over PPP connection. Then reload your SMG. After the SMG reloads, click the **Close** button. A Finished page appears to let you test your connection and register your SMG.
Congratulations! Your Service Managed Gateway is now ready for use.

Please select Register to register your product, or Finish to return to the start page.

If you would like to test a recently added connection, access the connection monitor by selecting Test Connection. From here you can bring any of the configured connections online, and observe any problems that may occur while making the call.

**Figure 15: The second Finished page, where you register or test the connection**

Click Register to register your product. Fill in the form that appears, print it and email, fax or send it to the number and address on the form.

Before you click Finish, you can test your connection to ensure that you have configured it correctly. Click the Test Connection button on the Finished page to access the Connection Monitor.
2. Configuring your ADSL connection

2.1 Configuring an ADSL connection

How to Configure an ADSL Connection
Issue 1.1 Page 16 of 23
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Note: If the connection details don’t appear, you can click a gray ATM VC box and a list of active VPI/VCI numbers will be displayed. You can use these numbers to reconfigure the default value in the wizard.

For more information about the Connection Monitor, consult the Advanced menu in ‘Operating Your Service Managed Gateway’.

When you click Finish you return to the SMG home page. From the home page you can access the Advanced and Status menus to further configure, view, and monitor your SMG.

2.2 Configuring a bridged ADSL connection

If you configure a bridged connection on your SMG, your Internet Service provider (ISP) allocates one or more IP addresses to devices on the local network. You can still access the Internet, but in order to regain management access, you must:

- reset the SMG to its RESET button at the back of the box, or
- assign an ISP-supported IP address to the Service Managed Gateway using the Advanced Options feature.

2.2.1 The Fast Start Wizard

Your Service Managed Gateway is designed to be automatically configured by the Activator Distributed System (DSS) upon correct installation of the SMG.

If necessary, you can bypass Activation and use the Fast Start Wizard to manually configure your SMG. See the ADSL installation guide for details of how to complete the physical installation. When your SMG is correctly connected to your PC, type fast.start into the URL line of your browser to display the Start page.
Now click the **Fast Start** icon. The Fast Start wizard will guide you through a series of forms that you must complete to configure your SMG.

### 2.2.2 Disabling Activation

When you click the Fast.Start icon, the status of the Activation process appears.
Fast Start

Welcome > System Configuration > Activation > Finished

Activation in progress

Your Service Managed Gateway is currently receiving an updated configuration file from your service provider, and cannot be configured manually at this time. Read the scrolling banner on the start page to see a continuous progress report on how the update is proceeding.

When the update is complete, your device will reload and will then be available for use.

Files transferred: 0
Current status: Backing Off

If there is a problem establishing the Activation connection, you may wish to proceed through Fast Start and verify that the configured Activation details are correct. To do so, select the Continue button below.

Important: You should only proceed if you are sure there is a problem. Activation often takes some time and interrupting an update in progress may have unpredictable results. If in doubt, close this window and wait several minutes before continuing.

Figure 18: The status of the Activation process

To manually configure your SMG, you must disable Activation. To do this, first click the Continue button. If you do not need to stop Activation, click Close.

Warning! Do not disable Activation unless you are sure there is a problem or if you must manually activate your Service Managed Gateway.

When you click Continue, a Welcome page appears.
Welcome to your Service Managed Gateway

Use the buttons below to access the following pages on your Service Managed Gateway.

- **Connection Wizard**: Follow the wizard to set up a connection to your service provider.
- **Security**: Manage password authentication and encryption services. Enable VPN.
- **LAN Wizard**: Follow the wizard to configure the mapping of physical ethernet ports to logical interfaces.

Select the type of service connection required:

<table>
<thead>
<tr>
<th>Service type</th>
<th>Select</th>
</tr>
</thead>
</table>

Connection Wizard  Security  LAN Wizard

Figure 19: The Welcome page that lets you access the Connection Wizard

From the **Service type** drop-down list, select **ADSL Bridged Connection**. A dialog box appears. Carefully read the warning in the dialog box.

![Warning dialog box]

**Figure 20: The dialog box that lets you cancel Activation**

To allow Activation to continue, click **Cancel**. The dialog box closes and Activation continues.

To disable Activation, click **OK**. The Activation process ends and the next page of the Fast.start wizard appears.
Welcome to your Service Managed Gateway

Use the buttons below to access the following pages on your Service Managed Gateway.

- **Connection Wizard**: Follow the wizard to set up a connection to your service provider.
- **Security**: Manage password authentication and encryption services. Enable VPN.
- **LAN Wizard**: Follow the wizard to configure the mapping of physical ethernet ports to logical interfaces.

Select the type of service connection required:

```
Service type: ADSL Bridged Connection
```

Click the **Connection Wizard** button to open the Connections page.

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**Figure 21: The Welcome page**
2.2.3 Generating a bridged connection

Virtual Path Identifier/Virtual Connection Identifier

These fields relate to the Asynchronous Transfer Mode (ATM) channel on which the link is established. The Virtual Path Identifier and the Virtual Connection Identifier allow all packets sent out to have a unique identification number. Use the defaults provided here unless otherwise directed by your service provider.

Click Next to display the Finished page.

Figure 22: The service provider allocates IP addresses
2.2.3 Saving your Bridged Configuration

Click Save configuration to save the new or updated bridged connection. This will automatically reload your SMG so that the changes can be implemented.

After the SMG reloads, click the Close window button.