



Service Managed Gateway™

How to Configure an ADSL Connection

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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.

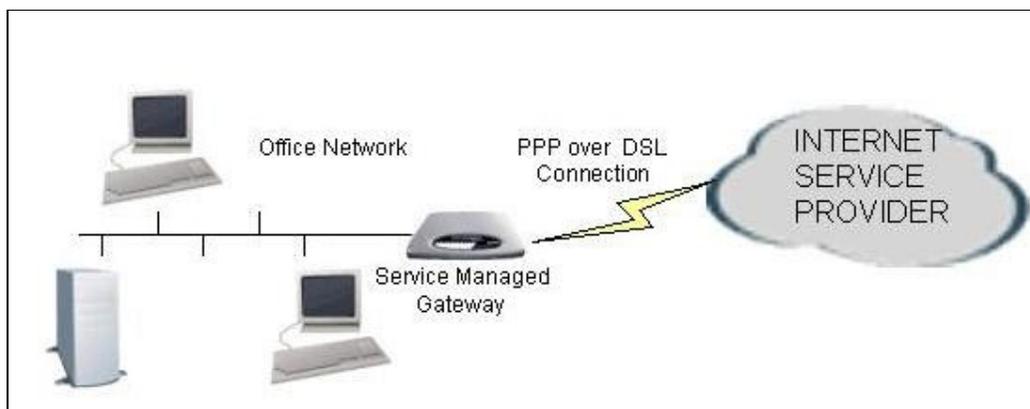


Figure 1: PPP over a DSL connection

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:

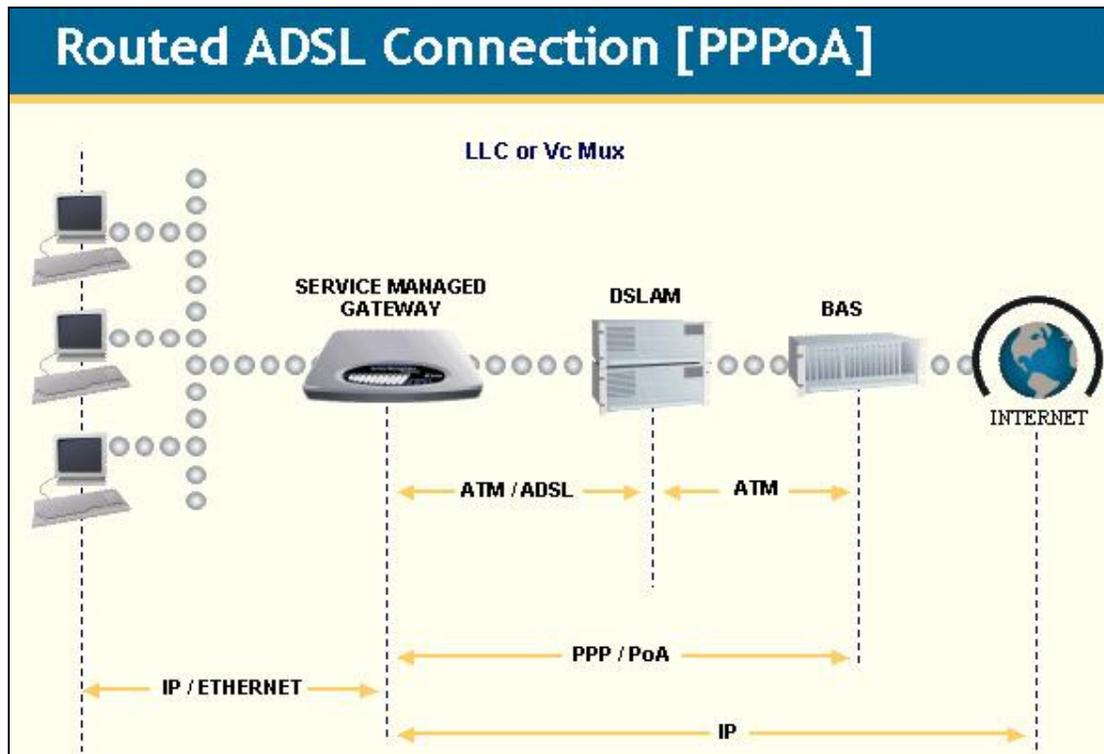


Figure 2: A routed ADSL connection over PPPoA

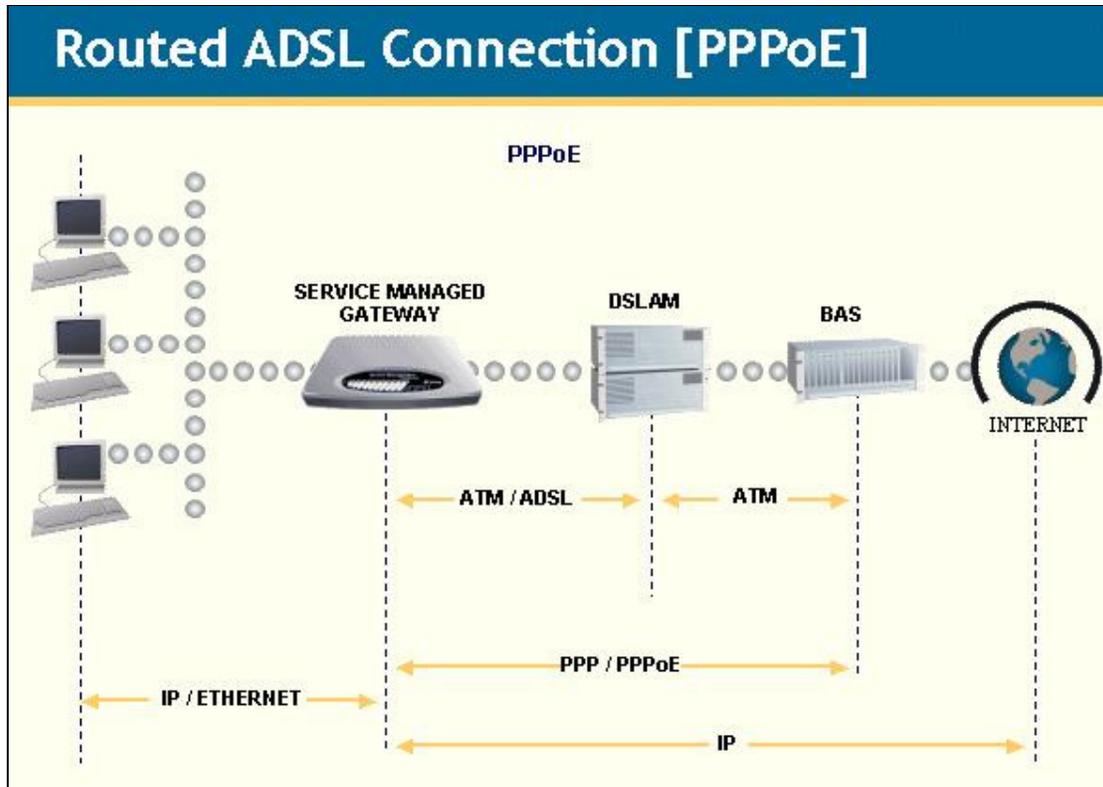


Figure 3: A routed ADSL connection over PPPoE

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.

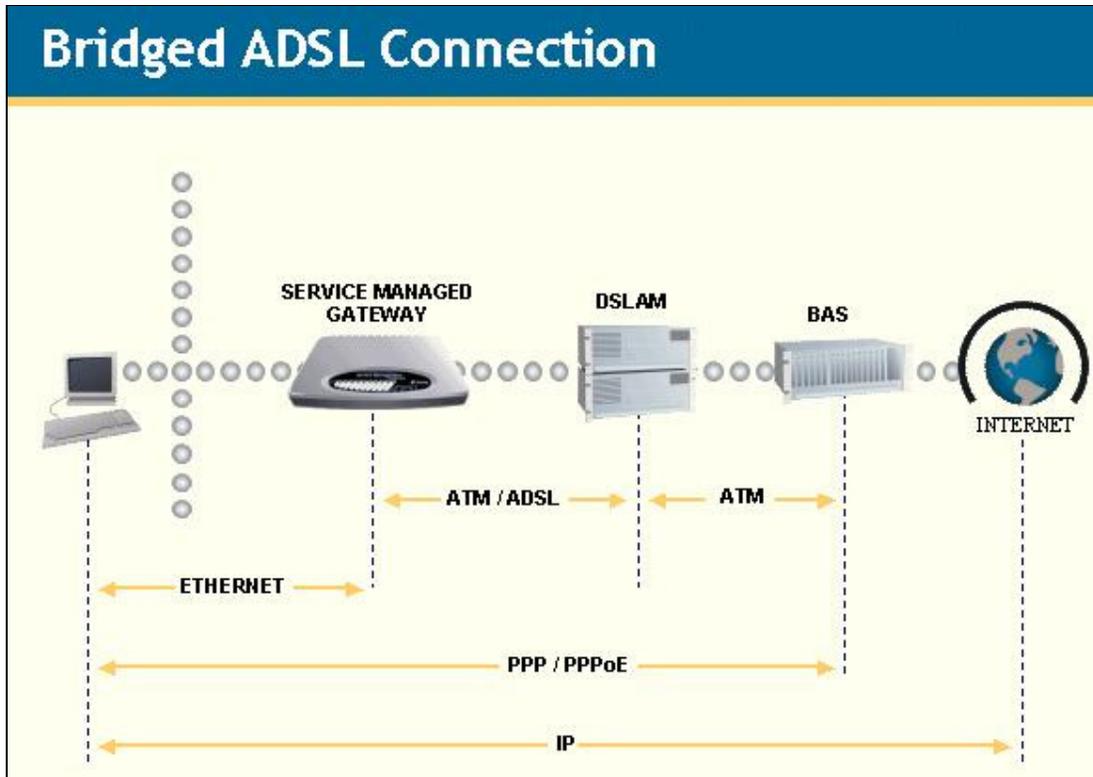


Figure 4: A bridged ADSL connection

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.

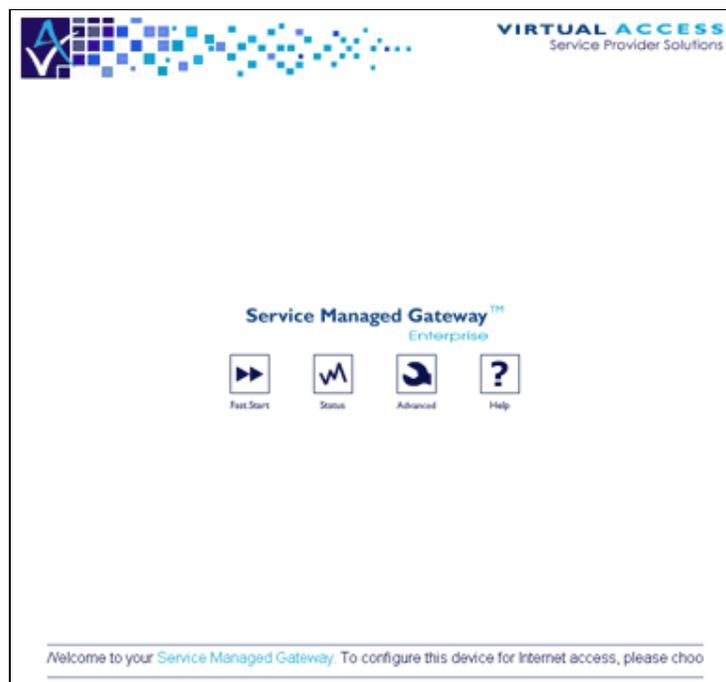


Figure 5: The SMG home page

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.

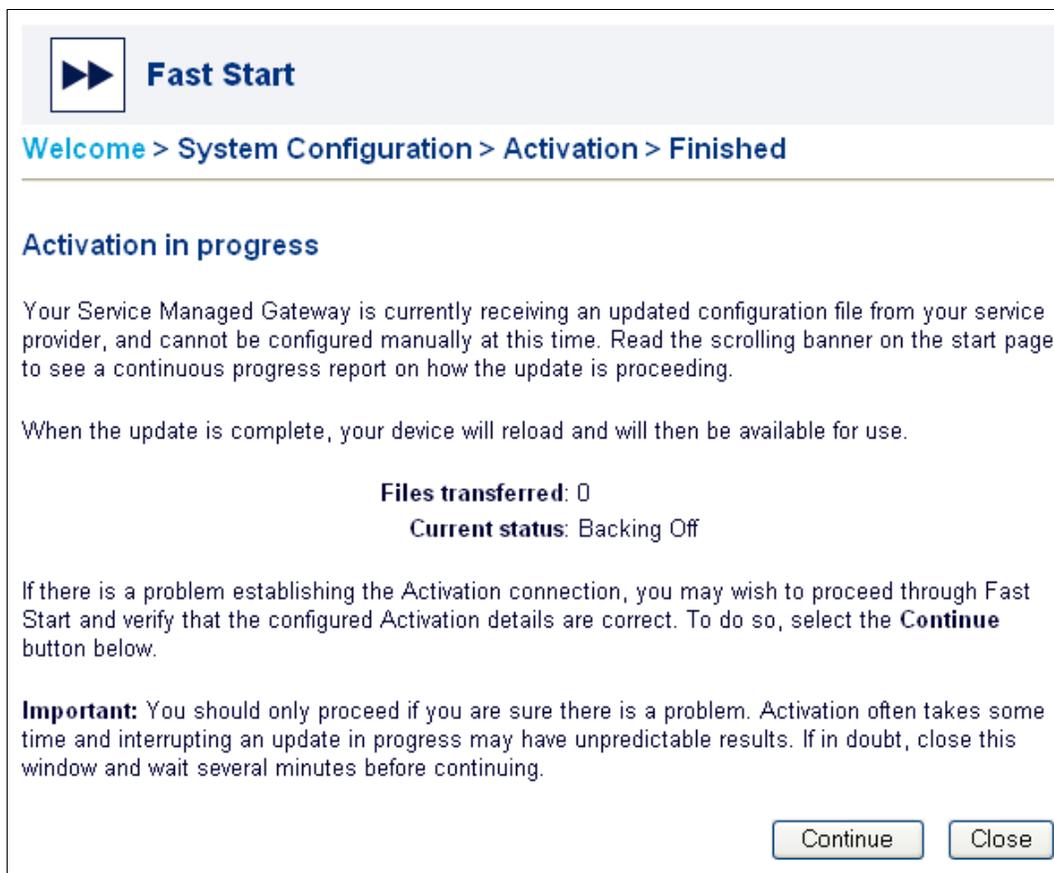


Figure 6: The Activation in progress page

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.

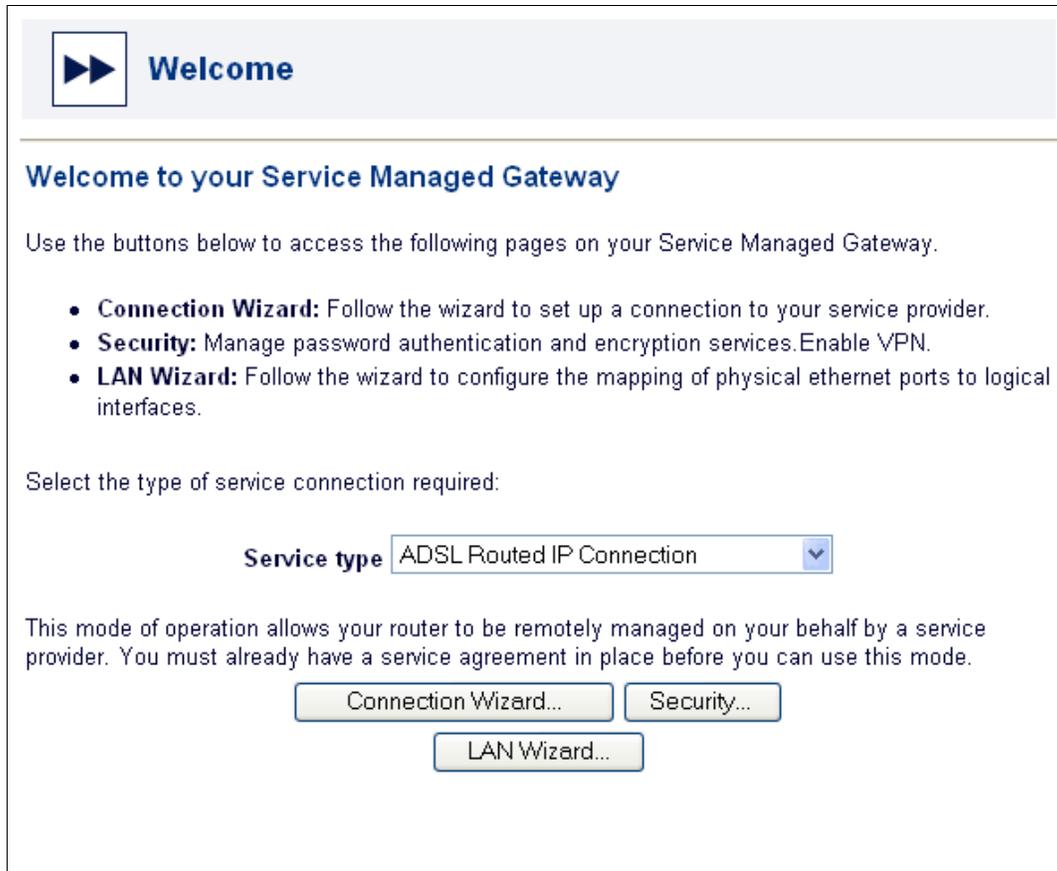


Figure 7: The Welcome page

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

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

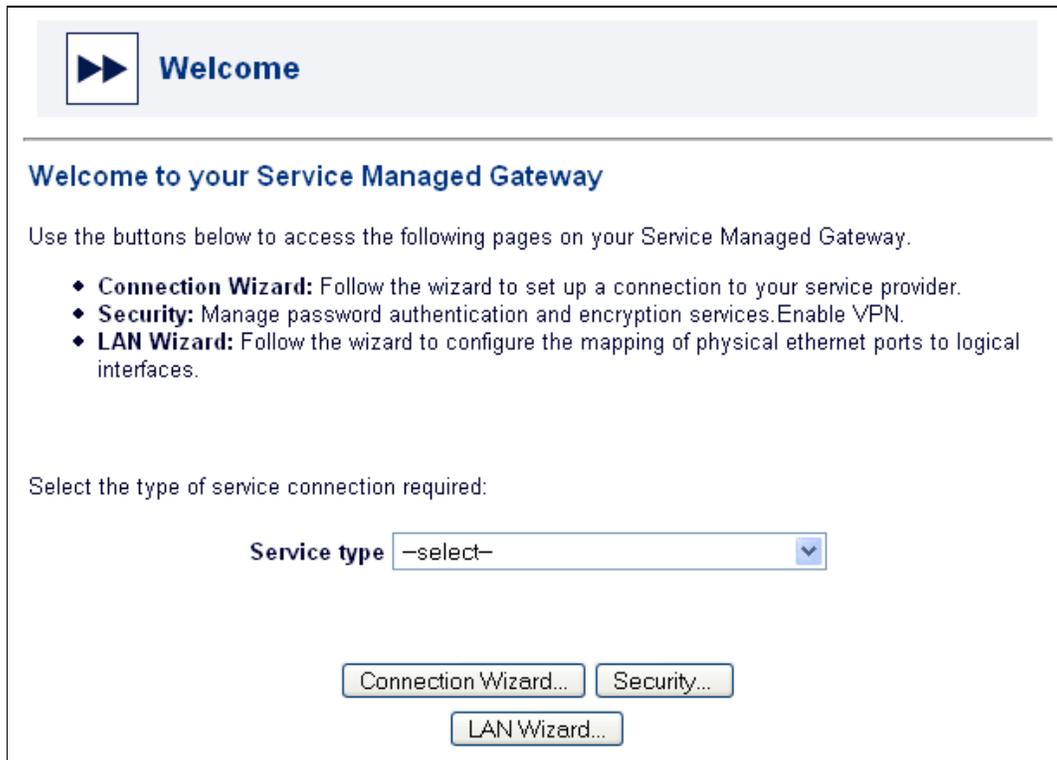


Figure 9: The Welcome page

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

Fast Start

Welcome > Connections > Finished

Please enter the details for your ADSL PPP connection below. Your service provider can supply you with this information. Not all providers require a username and password for ADSL service. In this case, you can simply leave the fields empty.

Connection name

Connection Type

Connection username

Connection password

Re-enter connection password

Virtual Path Identifier

Virtual Connection Identifier

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.

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.

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.

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.

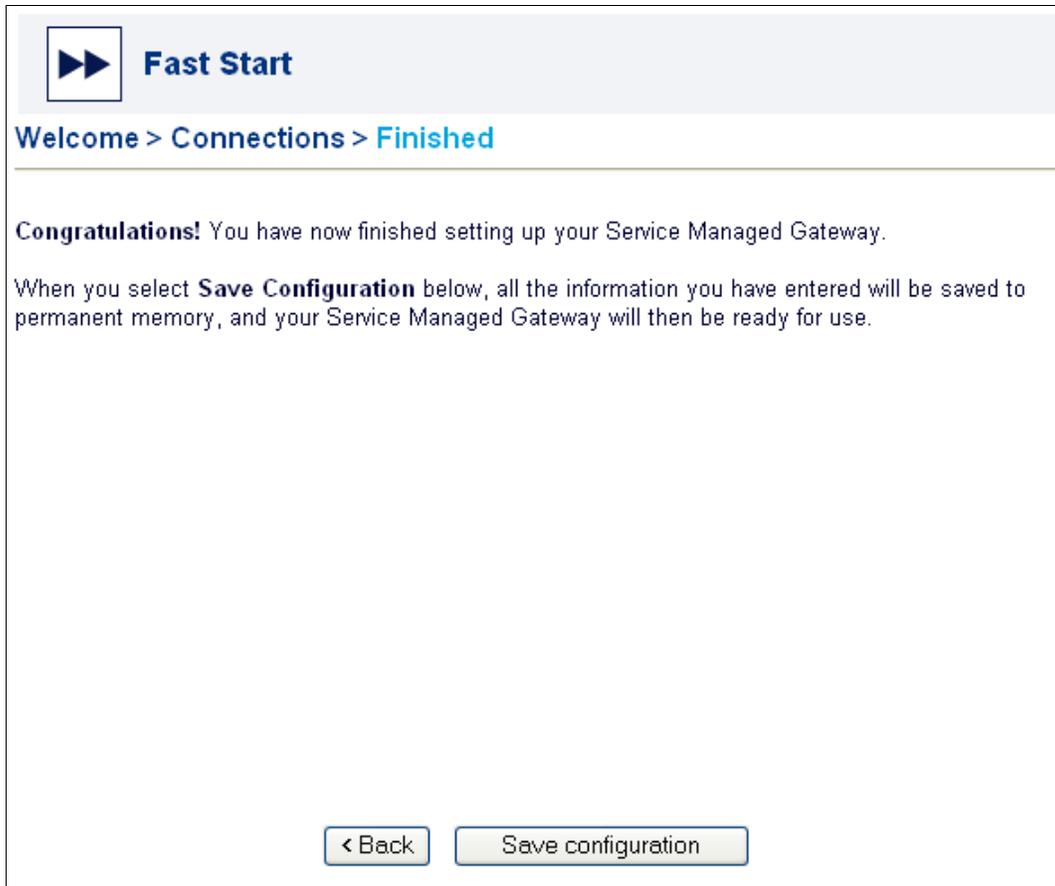


Figure 14: The first Finished page, where you save the configuration

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.



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.

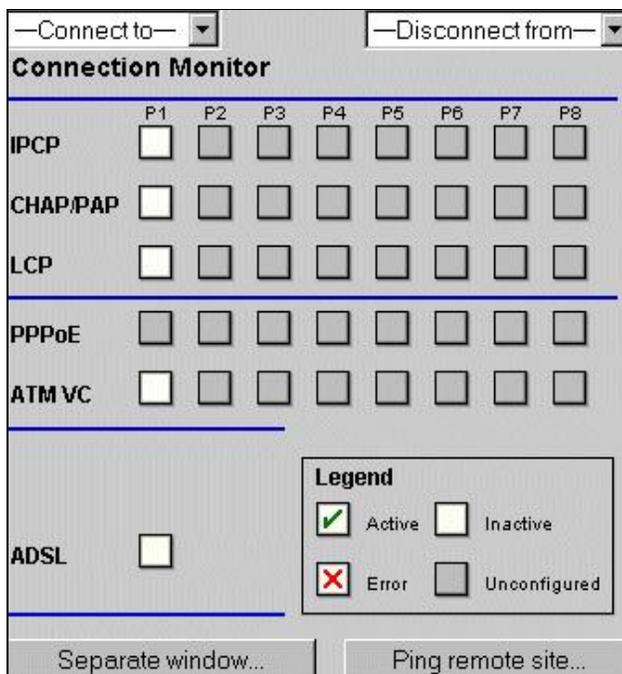


Figure 16: The connection monitor

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.

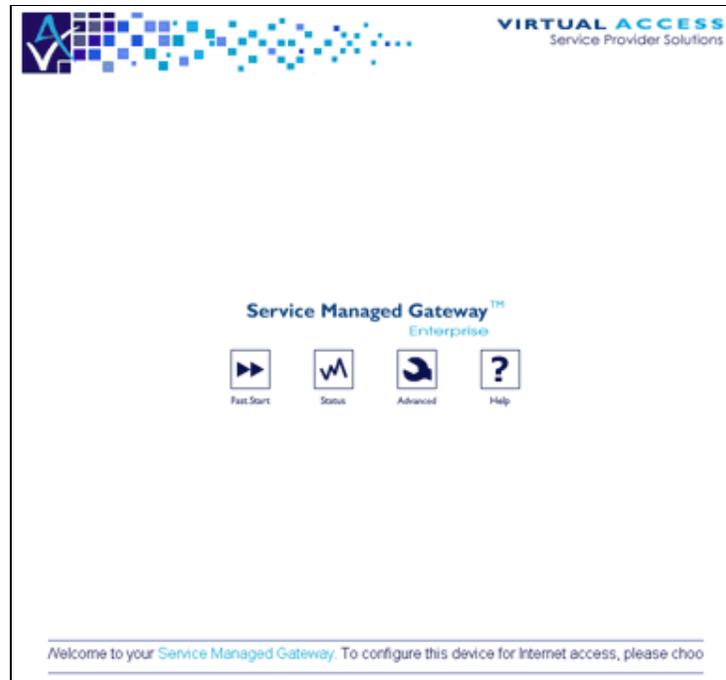


Figure 17: The Service Managed Gateway home page

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.

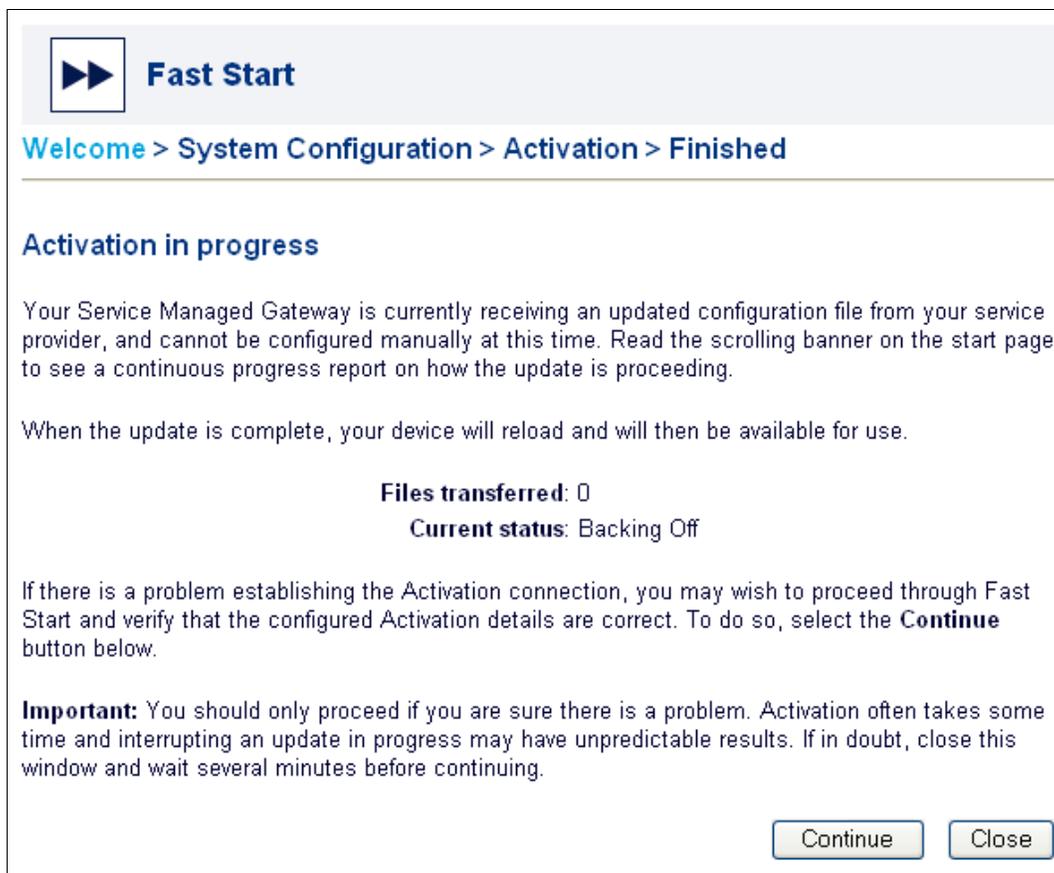


Figure 18: The status of the Activation process

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.

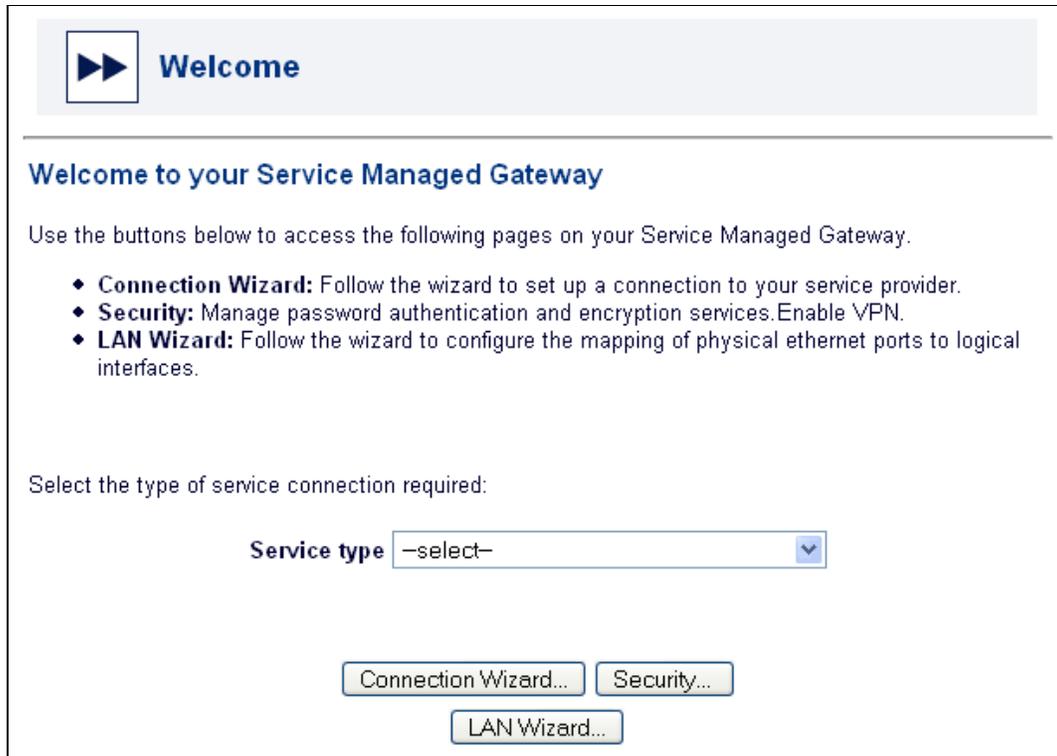


Figure 19: The Welcome page that lets you access the Connection Wizard

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



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.

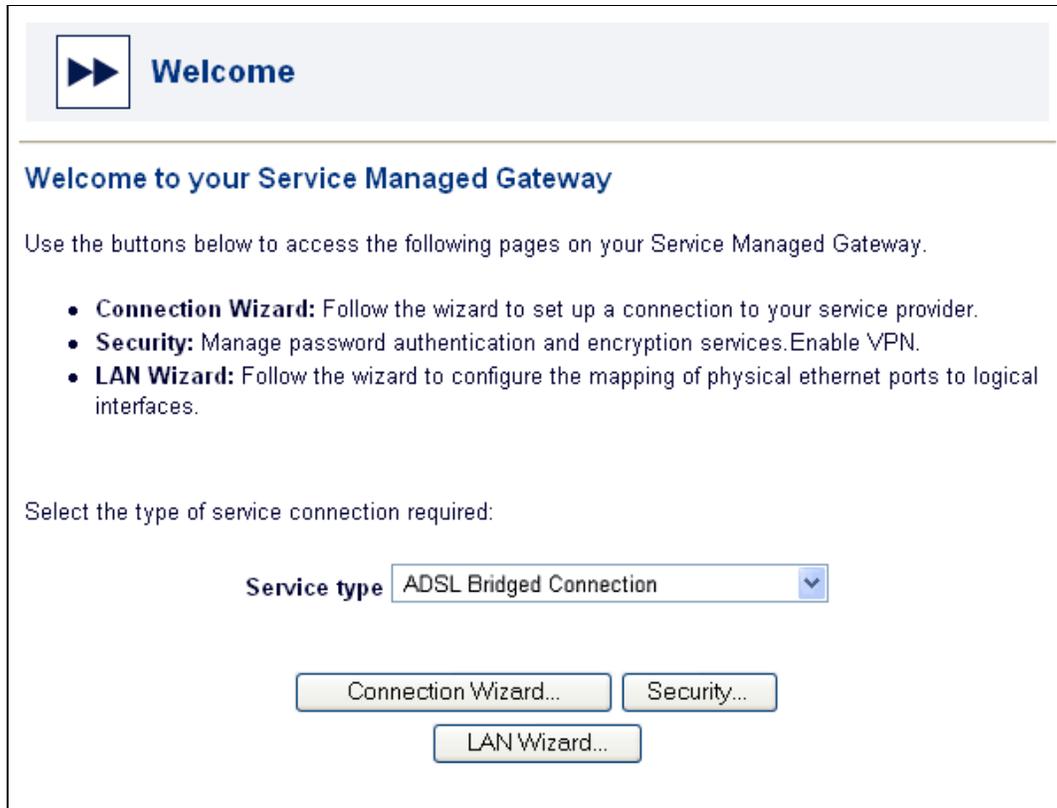
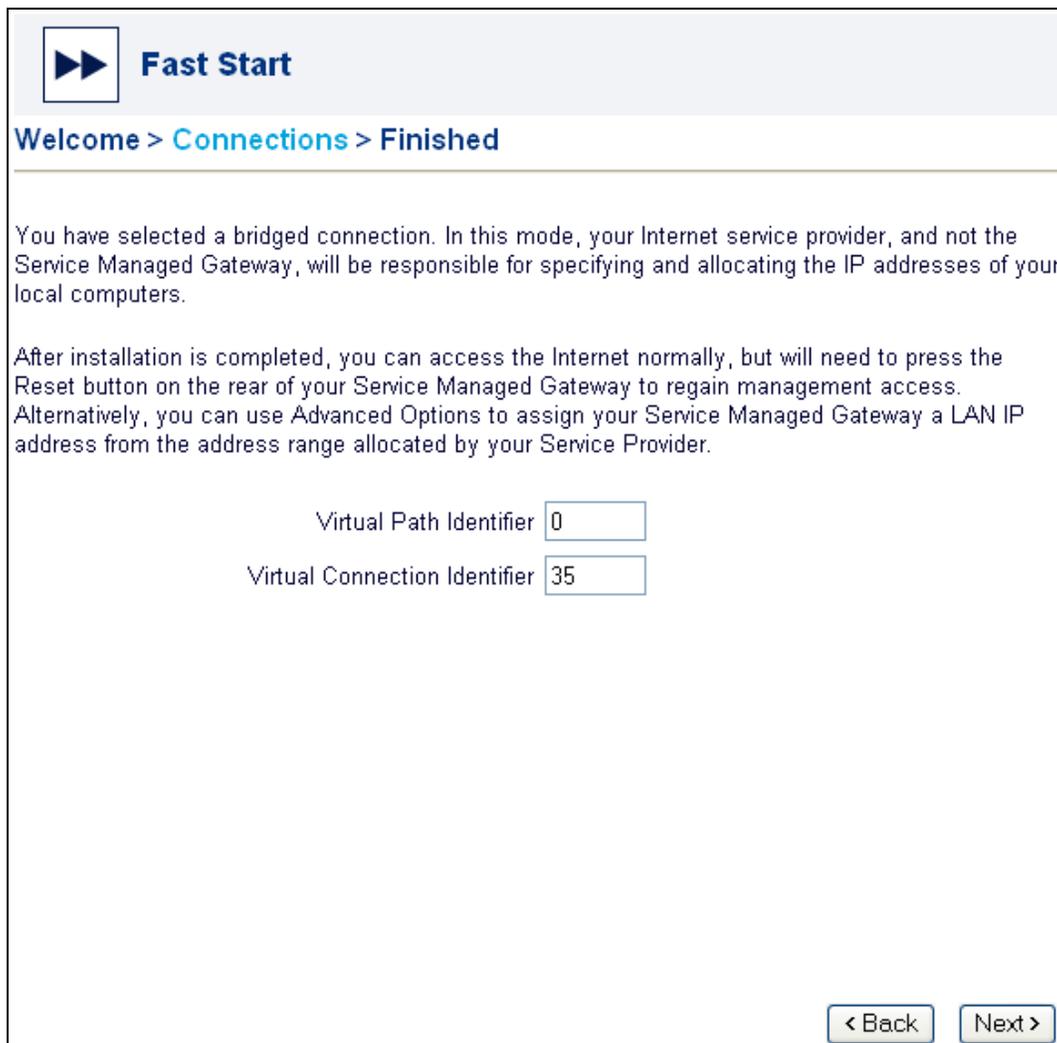


Figure 21: The Welcome page

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

2.2.3 Generating a bridged connection



Fast Start

Welcome > Connections > Finished

You have selected a bridged connection. In this mode, your Internet service provider, and not the Service Managed Gateway, will be responsible for specifying and allocating the IP addresses of your local computers.

After installation is completed, you can access the Internet normally, but will need to press the Reset button on the rear of your Service Managed Gateway to regain management access. Alternatively, you can use Advanced Options to assign your Service Managed Gateway a LAN IP address from the address range allocated by your Service Provider.

Virtual Path Identifier

Virtual Connection Identifier

< Back Next >

Figure 22: The service provider allocates IP addresses

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.

2.2.3 Saving your Bridged Configuration

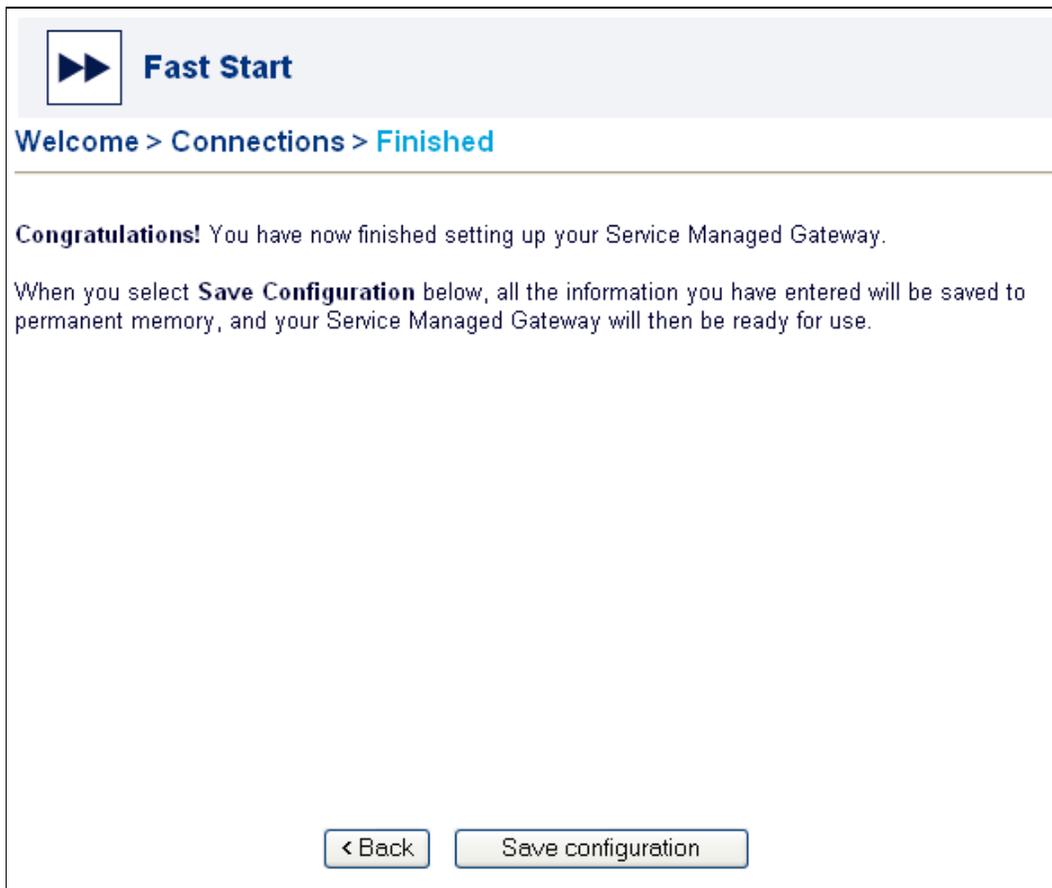


Figure 23: The page where you save the configuration

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

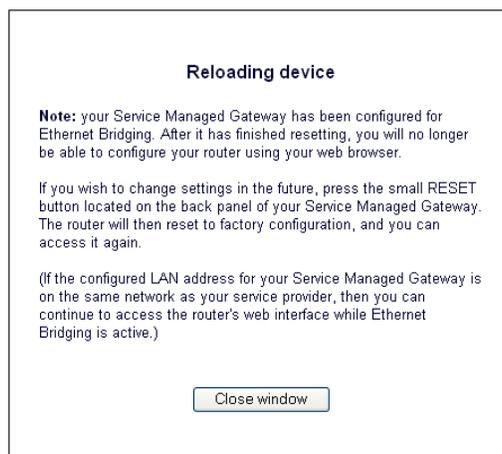


Figure 24: Reloading message

After the SMG reloads, click the **Close** window button.

