

Service Managed Gateway™

How to Configure a Public Ethernet IP Routed Connection



Issue 2.0

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1 Introduction

1.1 What is a public Ethernet IP?

Ethernet is a standard protocol that is widely used in Local Area Networks (LANs). A Virtual Access LAN gateway has up to four Ethernet interfaces. These interfaces allow the gateway to interconnect and control traffic that passes between up to four LAN segments.

The Ethernet topology is illustrated in Figure 1.

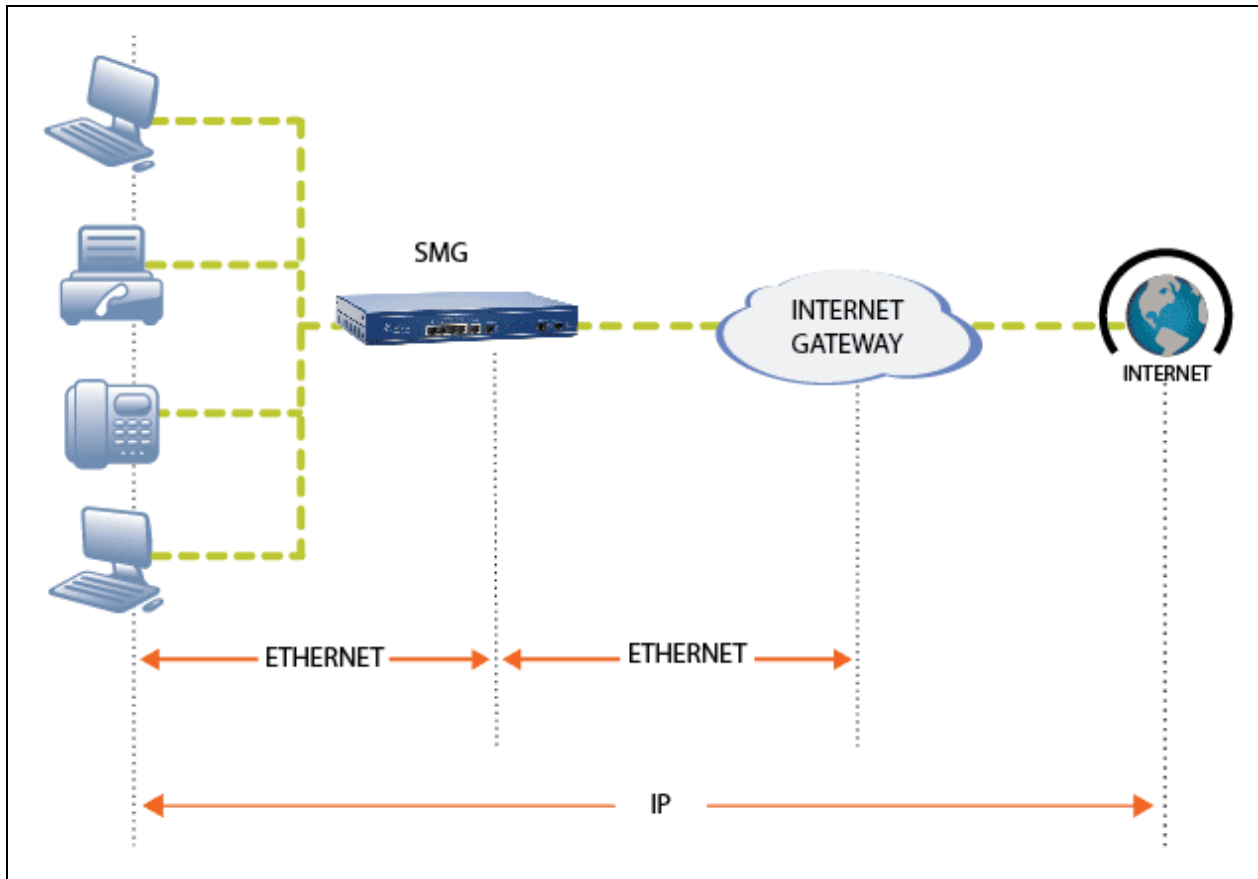


Figure 1: A multiple Ethernet connection

1.1 Connection options on your LAN gateway

You can configure two service types for multiple Ethernet connections on your LAN gateway: routed Internet Protocol (IP) or routed Point to Point Protocol (PPP). This document describes how to configure a connection over routed IP Ethernet. For information on how to configure a connection over routed PPP, read the user guide 'How to Configure a PPPoE Connection'.

1.2 Routed IP

If the LAN gateway connects to ADSL or cable access services through an external router, it operates in simple IP routing mode. IP is a protocol that supports transmission of data across the Internet. Each device on the Internet has a unique IP address. These addresses are used to determine the source and destination of data packets sent over the Internet. As a packet of data travels across the Internet, intermediate devices forward it based on its IP destination information until the packet reaches its destination.

1.3 Physical set up

By default, the switch is configured to have four separate segmented ports

- Port A maps to logical eth-0
- Port B maps to logical eth-1
- Port C maps to logical eth-2
- Port D maps to logical eth-3

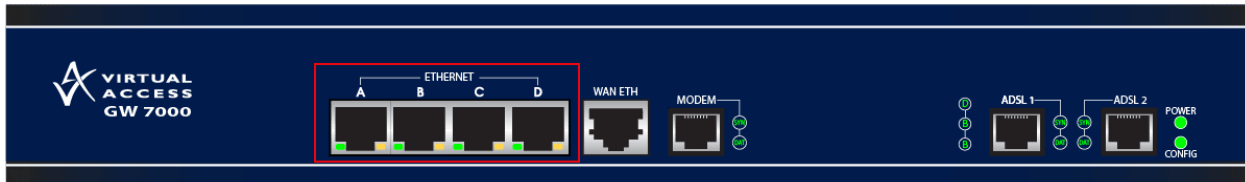


Figure 2: The GW7000 showing the Ethernet ports A, B, C and D

Fast.Start configures your Service Managed Gateway (SMG) to use Eth-1 for the public Ethernet interface so you must connect the physical cable for the public Ethernet connection to port B.

To check the switch mappings, from the start page, click **Advanced**.

In the Advanced menu, click **Expert View**.

In the top menu, click **Operations**.

In the Operations menu, click **performance -> interface stats -> ethernet switch**. The Statistics Ethernet Switch page appears.

Switch Port	IP Interface	Port MAC Address
Port A	eth-0	00-e0-c8-00-8b-70
Port B	eth-1	00-e0-c8-80-8b-70
Port C	eth-2	00-e0-c8-40-8b-70
Port D	eth-3	00-e0-c8-c0-8b-70

Figure 3: The mappings table on the statistics Ethernet switch page

To re-configure the switch mappings, read the guide, 'Segmenting the Ethernet Switch'.

2 How to configure an IP connection

2.1 Open the fast start wizard

Access the Fast Start Wizard by clicking the Fast.Start icon on the start page of the Service Managed Gateway (SMG) web.



Figure 4: The SMG start page

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

2.2 Select a public Ethernet IP routed connection

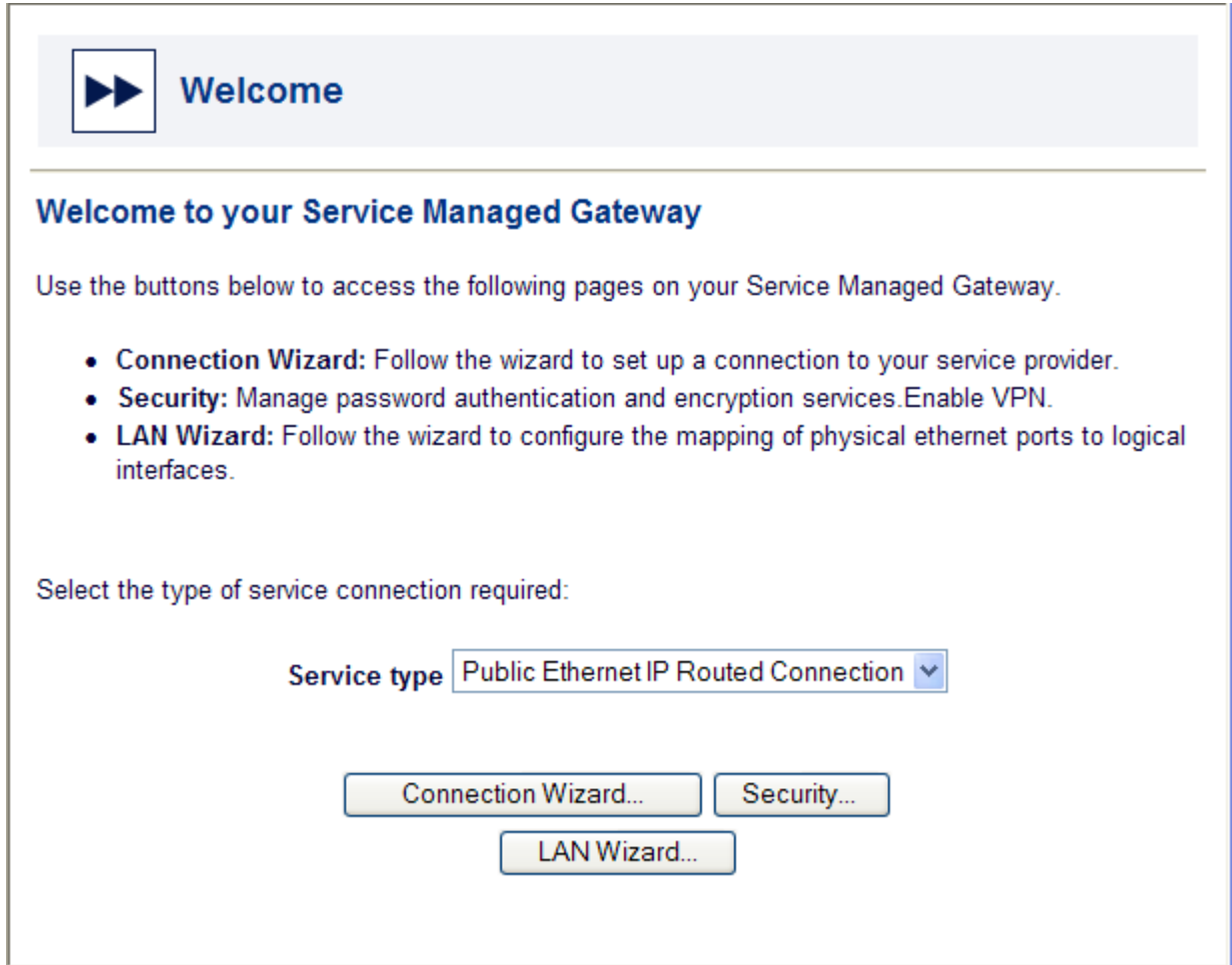


Figure 5: The welcome page

From the Service type drop-down list, select **Public Ethernet IP Routed Connection**.

2.3 Generate a routed IP connection

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

A new IP connection is generated. The Connections page appears. You use the Connections page to configure the routed IP connection.

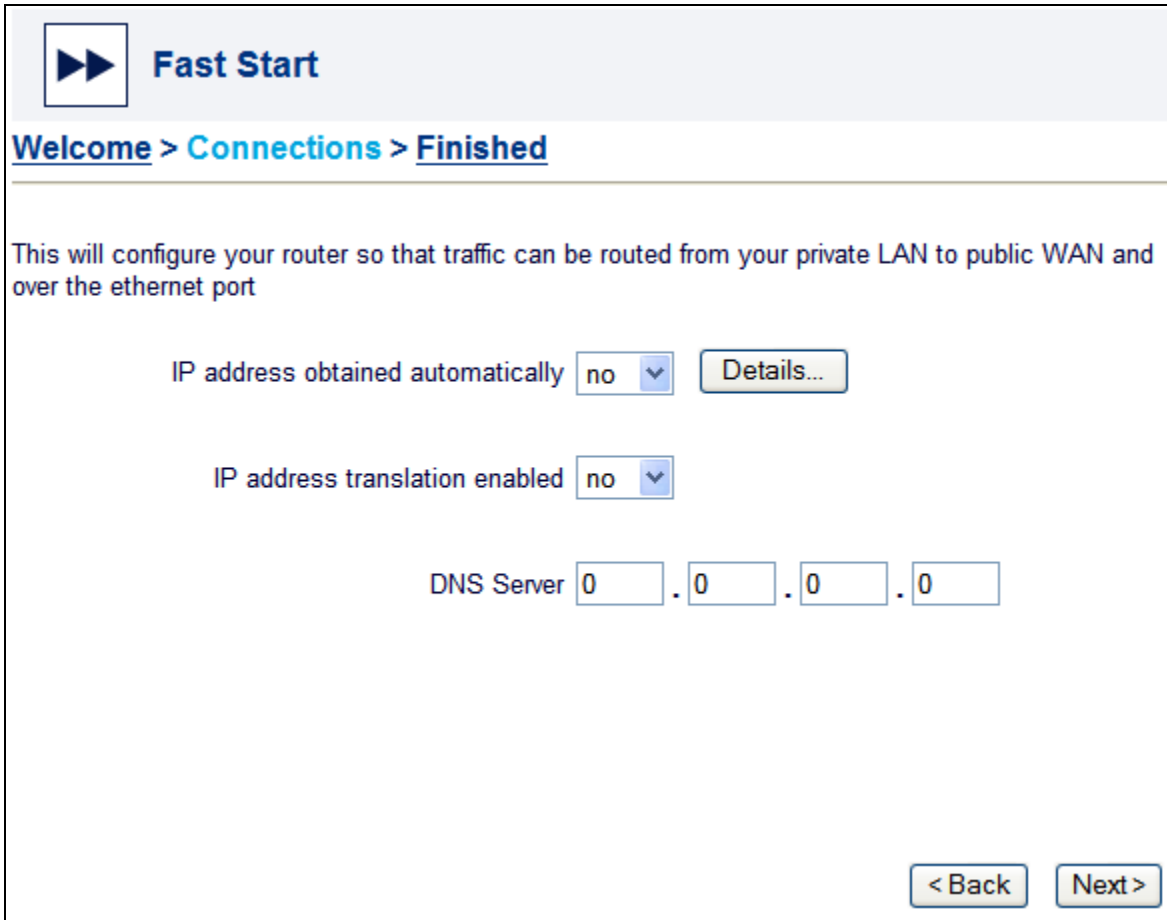


Figure 6: The connections page

Field Name	Description	Command Line
IP address obtained automatically	If the connection is assigned a permanent IP address, select no in the drop-down list. The No details button changes to the Details button.	<pre>set DHCP Client Enabled = yes/no Set DHCP client interface = eth-1</pre>
IP address translation enabled	IP address translation hides the devices on a local LAN. It substitutes the IP address of the originating device with the IP address of the Gateway. If you do not want to hide devices on the local LAN, select no .	<pre>set IP Address Translation Interface Enabled = eth- 1,yes/no</pre>
DNS Server	Type the IP address for the Domain Name Server (DNS).	<pre>Set DNS Proxy server enabled = yes/no Set DNS Proxy server destination IP Address = {DNS IP address}</pre>

Table 1: The connection page field names, their descriptions and command

If your IPS (Internet Service Provider) automatically provides an IP address, select **yes** in the IP address obtained automatically field.

If you selected **no**, click **Details**.

Figure 7: The public LAN configuration page

Field	Description	Command Line
IP address	Type in the IP address of the public IP. Your service provider gives you this address. If your service provider does not give you the address, use the address that is in the window when it opens.	<pre>set IP Interface Enabled = eth-1, yes set IP Interface Address = eth-1, {Public IP address}</pre>
IP address mask	Type the mask details provided by your service provider.	<pre>set IP Interface Address Mask = eth-1, {subnet mask}</pre>
Default Gateway	Type the IP address of the default gateway provided by your service provider.	<pre>set IP Route Default Configured = yes set IP Route Default Numbered = yes set IP Route Default Next Hop IP = {default gateway IP address}</pre>
<p>Note: If you use the CLI, all the configuration changes you make must be committed and then saved into the permanent memory.</p> <p>If the device is currently running into the factory configuration or you saved into the alternative configuration, you must switch to the configuration in which you have saved your previously changes All of these changes take effect after reload.</p>		

Table 2: The public LAN configuration field names, their descriptions and command

Click **OK** to close the Public LAN Configuration window.

2.4 Save the routed IP configuration

Your SMG needs to reload before the newly-configured connections become available. To enable the new configuration, click **Next** to open the Finished page, where you can save your configuration.

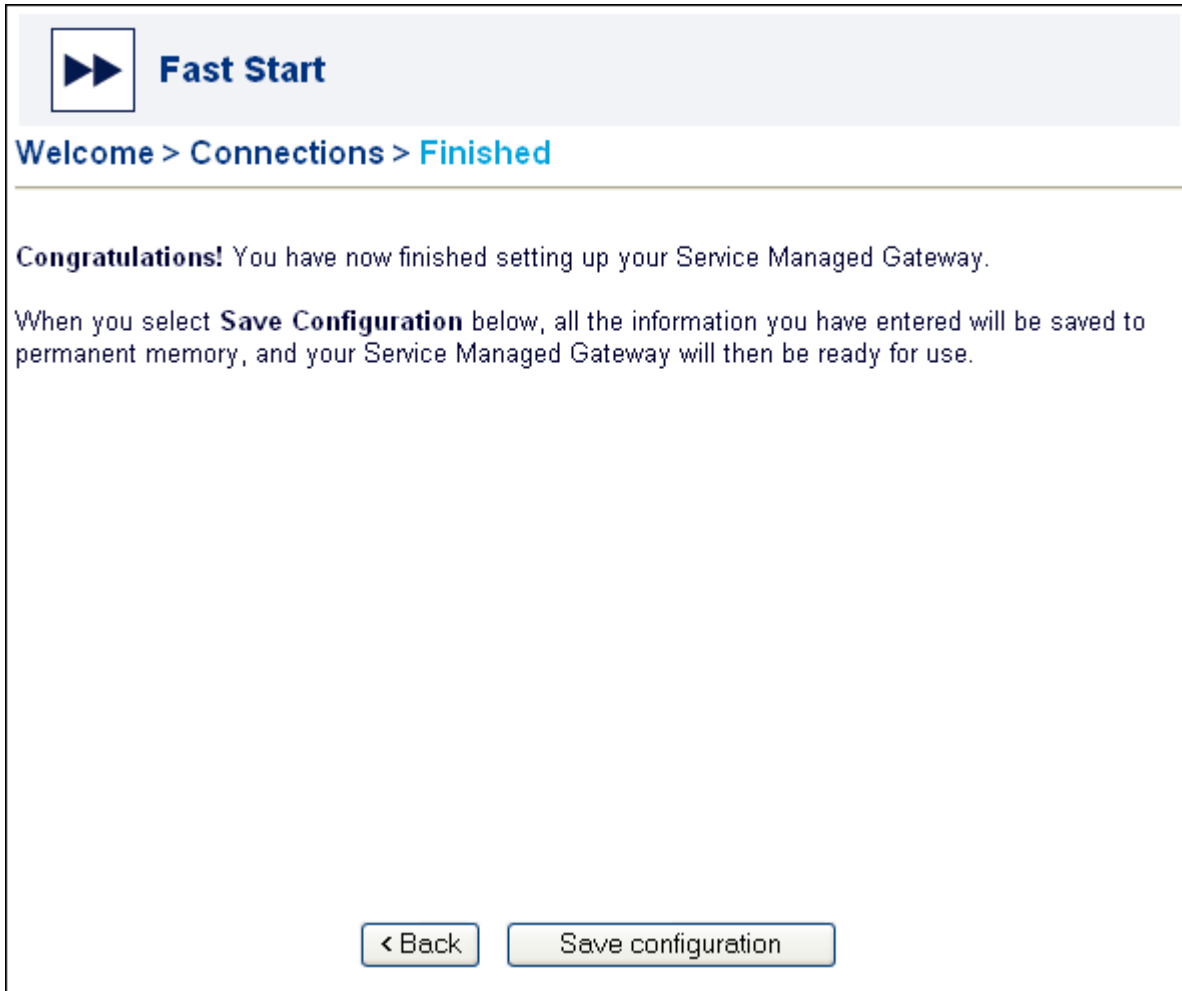


Figure 8: The finished page

Click **Save configuration** to retain the new configuration in your SMG's permanent memory. When the SMG reloads, it displays a page where you can test the connection and register your SMG.

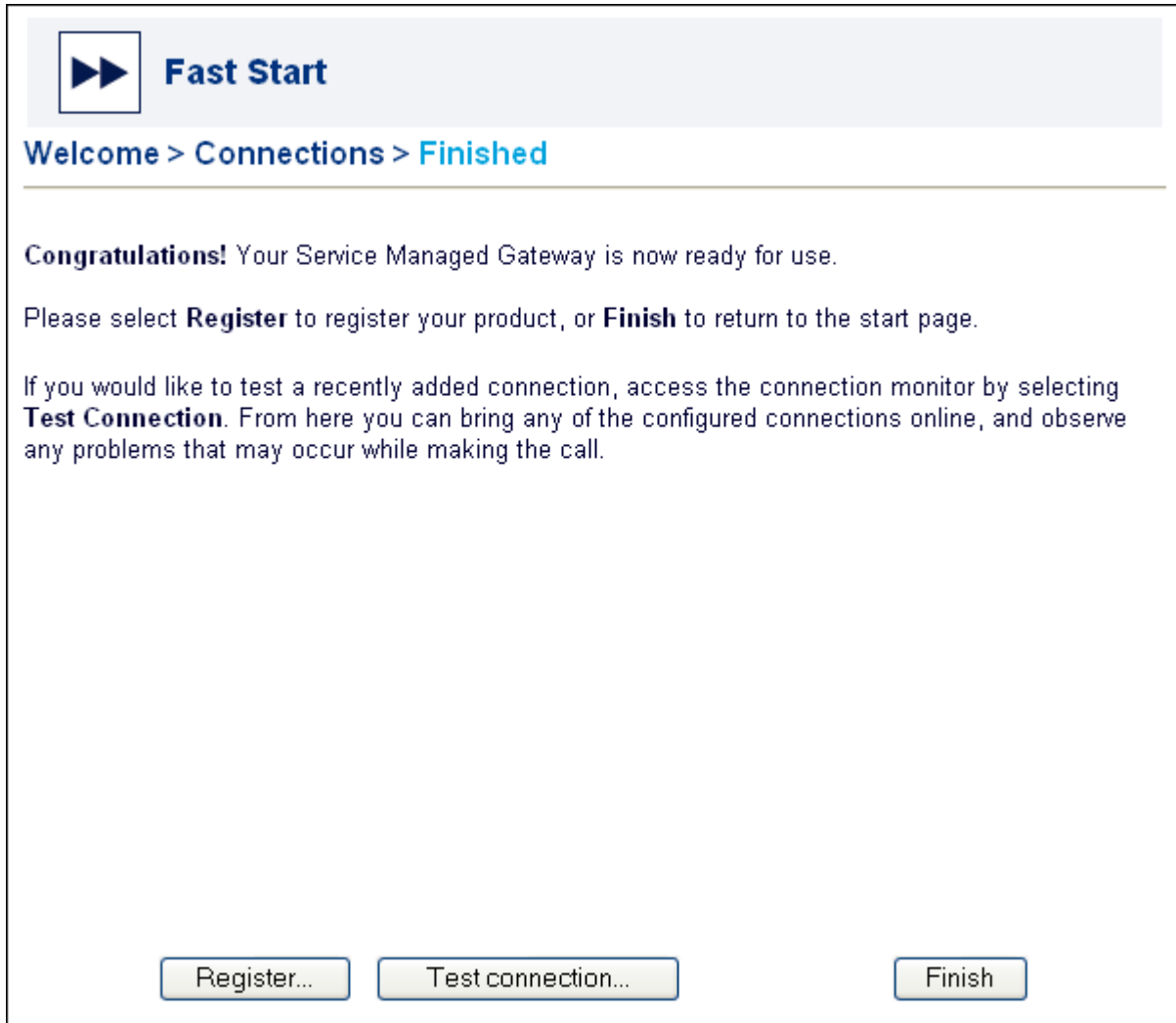


Figure 9: The second finished page, where you can register or test your product

To register your product, click **Register**. The registration form appears. Fill in the form, print it, and fax it to the fax number on the form.

2.5 Test the PPPoE configuration

Before you click **Finish**, you can test your connection to ensure that it is configured correctly. Click **Test Connection** on the Finished page to open the Connection Monitor.

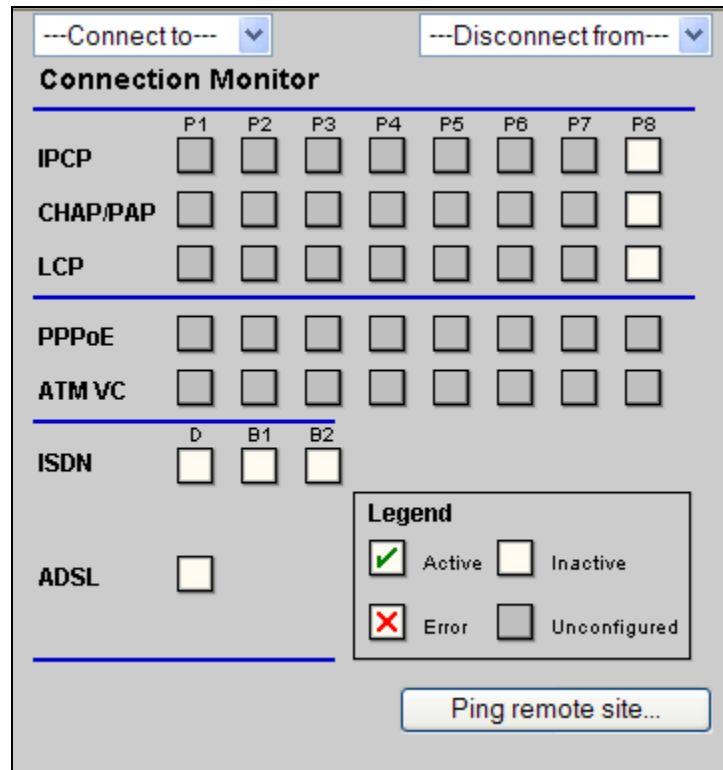


Figure 10: The connection monitor.

Click **Ping remote site** to check your connection.

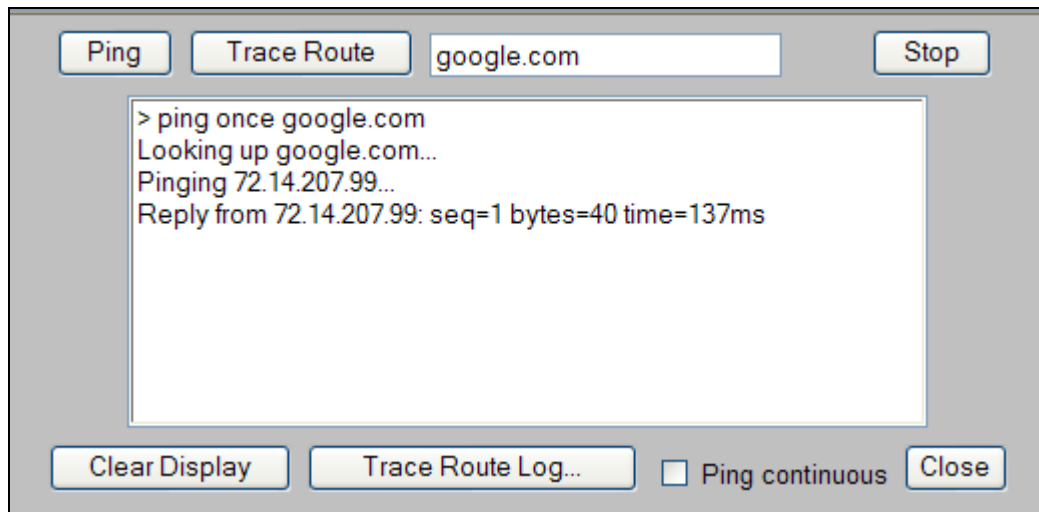


Figure 11: The ping window

You can ping a specific IP address or a domain name if DNS is available. If you receive a response, your SMG is configured correctly.

For more information about the Connection Monitor, read section 3, 'Diagnostics'.

On the Finished page, click **Finish**. The start page appears. From the start page you can access the **Advanced** and **Status** menus to further configure, view, and monitor your SMG.

3 Diagnostics

The Service Managed Gateway supports extensive remote diagnostics, status and SLA monitoring capabilities.

The status and diagnostic tools are provided as a series of Java Applets described below.

The command line interactive command used by each java applet is also described.

3.1 General diagnostics

3.1.1 Event log

The Event Log is a history of informational events with timestamps. It contains the time and date the event occurred, the severity of the event, and the event message text.

To view event logs, from the SMG Start page, click **Advanced**.

In the **Advanced** menu, click **Diagnostics**.

On the Diagnostics page, click **Event Log**.

Index	Timestamp	Class	Severity	Details
70	16:20:44 Dec-11-2008	HTTP	INFO	HTTP: TCP Conn req from 10.1.66.99
71	16:20:44 Dec-11-2008	HTTP	INFO	HTTP: User: super IP:10.1.66.99 web login
72	16:20:46 Dec-11-2008	TELNET	INFO	Telnet login super 10.1.66.99
73	16:22:08 Dec-11-2008	TELNET	INFO	Telnet logout super 10.1.66.99
74	16:32:27 Dec-11-2008	HTTP	INFO	HTTP: User session 10.1.66.99 (super) timed out
75	16:38:00 Dec-11-2008	HTTP	INFO	HTTP: TCP Conn req from 10.1.66.99
76	16:38:00 Dec-11-2008	HTTP	INFO	HTTP: User: super IP:10.1.66.99 web login
77	16:50:12 Dec-11-2008	HTTP	INFO	HTTP: User session 10.1.66.99 (super) timed out
78	16:54:10 Dec-11-2008	POWER	ERROR	Power lost at main supply
79	16:54:26 Dec-11-2008	POWER	NOTICE	System restarted
80	16:54:26 Dec-11-2008	CONFIG	WARNING	System clock may be inaccurate
81	16:54:28 Dec-11-2008	DST	INFO	NTP Time Location set to GMT: London, Dublin, Edinburgh, Lisbon
82	16:54:28 Dec-11-2008	CONFIG	INFO	Correctly loaded configl
83	16:54:30 Dec-11-2008	IKE	ERROR	IKE: Hardware encryption failed self-test 1
84	16:54:31 Dec-11-2008	POB	INFO	POB link up rpp-1

Download event log ...

Figure 12: The event log window

CLI Syntax	Description
Show events	This command shows the events log on the SMG

Table 3: The show events command and its description

3.1.2 Change log

The Change Log records all configuration changes made to the router. You can use it to check whether the configuration has been modified recently, and if so, to discover exactly what was changed.

To view change logs, from the SMG Start page, click **Advanced**.

In the **Advanced** menu, click **Diagnostics**.

On the Diagnostics page, click **Change Log**.

Recent configuration changes

[Save configuration](#) Display Wide [Download changes](#)

```

--- 192.168.100.100 on 11-Dec-2008 ---
14:11:48      Set PPP interface WAN interface ppp-1,pppeth-1
14:11:48      Set PPP interface POE enabled ppp-1,yes
14:11:48      Set Dial Neighbour call Autoconnect ppp-1,yes
14:11:48      Set ADSL interface enabled adsl-0,no
14:11:56      Save config1
14:12:00      Set next config config1
14:12:01      Reload
14:12:20      System restarted
14:16:00      Set IP interface Address eth-0,10.1.66.98
14:16:00      Set IP interface Address mask eth-0,255.255.0.0
14:16:07      Save config1
14:16:46      Set DHCP server enabled no
14:17:00      Save config1

--- console on 11-Dec-2008 ---
14:18:12      System restarted
16:54:30      System restarted

```

Figure 13: The change log window

CLI Syntax	Description
Show changes	This command shows all the changes made on the SMG

Table 4: The show changes command and its description

3.1.3 The LED panel

The LED panel shows the current status of LED. The graphics show the status in real time.

To view the LED Panel, from the SMG Start page, click **Advanced**.

In the **Advanced** menu, click **Diagnostics**.

On the Diagnostics page, click **LED Panel**.

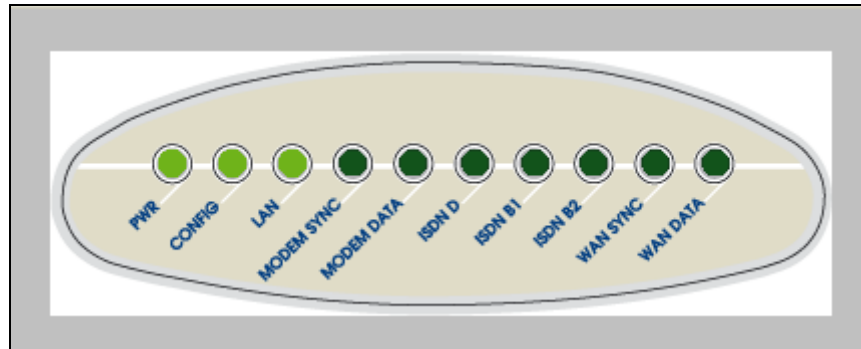


Figure 14: The LED panel

3.1.4 Statistics for Ethernet switch

The Statistics for Ethernet Switch page shows how all switch ports are mapped on the SMG. The SMG ports have a unique MAC address. This MAC address is shown on the Port MAC Address field. Below this is the View active MAC Addresses table. This table shows which MAC addresses have been assigned to each port. The assigned MAC addresses belong to other appliances such as PCs, routers, and printers.

To view the Statistics for Ethernet Switch page, from the SMG Start page, click **Advanced**.

In the **Advanced** menu, click **Expert View**.

In the Expert View menu, select **Operations**. In the Operations menu, click **Performance - > Interface stats -> Ethernet switch**. The Ethernet switch page appears

Switch Port	IP Interface	Port MAC Address
Port A	eth-0	00-e0-c8-00-be-53
Port B	eth-1	00-e0-c8-80-be-53
Port C	eth-2	00-e0-c8-40-be-53
Port D	eth-3	00-e0-c8-c0-be-53

View active MAC addresses for				All ports	
Port C	eth-2	00-03-ff-1c-55-00	Age	2	
Port C	eth-2	00-11-43-be-88-07	Age	3	
Port C	eth-2	00-e0-c8-80-d5-09	Age	2	
Port C	eth-2	00-50-da-5f-79-14	Age	2	

Figure 15: The statistics for Ethernet switch page

CLI Syntax	Description
show Ethernet vmap	This commands shows how each SMG physical port is mapped.
Show arp	This command shows which are the Mac addresses learned by each SMG port.

Table 5: Ethernet commands and their description

3.1.5 Statistics for interface Ethernet

The Statistics for Interface Ethernet page shows transmission statistics on the interface selected. You can check:

- the interface status;
- which speed the interface is working;
- how many packets have been transmitted (tx)
- or how many packets have been received (rx); and
- if there are errors on the link: overruns, crc errors, overlong frames, and unaligned errors.

To view the statistics for Ethernet Switch, from the SMG Start page, click **Advanced**.

In the **Advanced** menu, click **Expert View**.

In the Expert View menu, select **Operations**. In the Operations menu, select **Performance -> Interface stats -> Eth-0** (LAN interface) or **Eth-1** (PPPoE interface). The Statistics for Interface page appears.

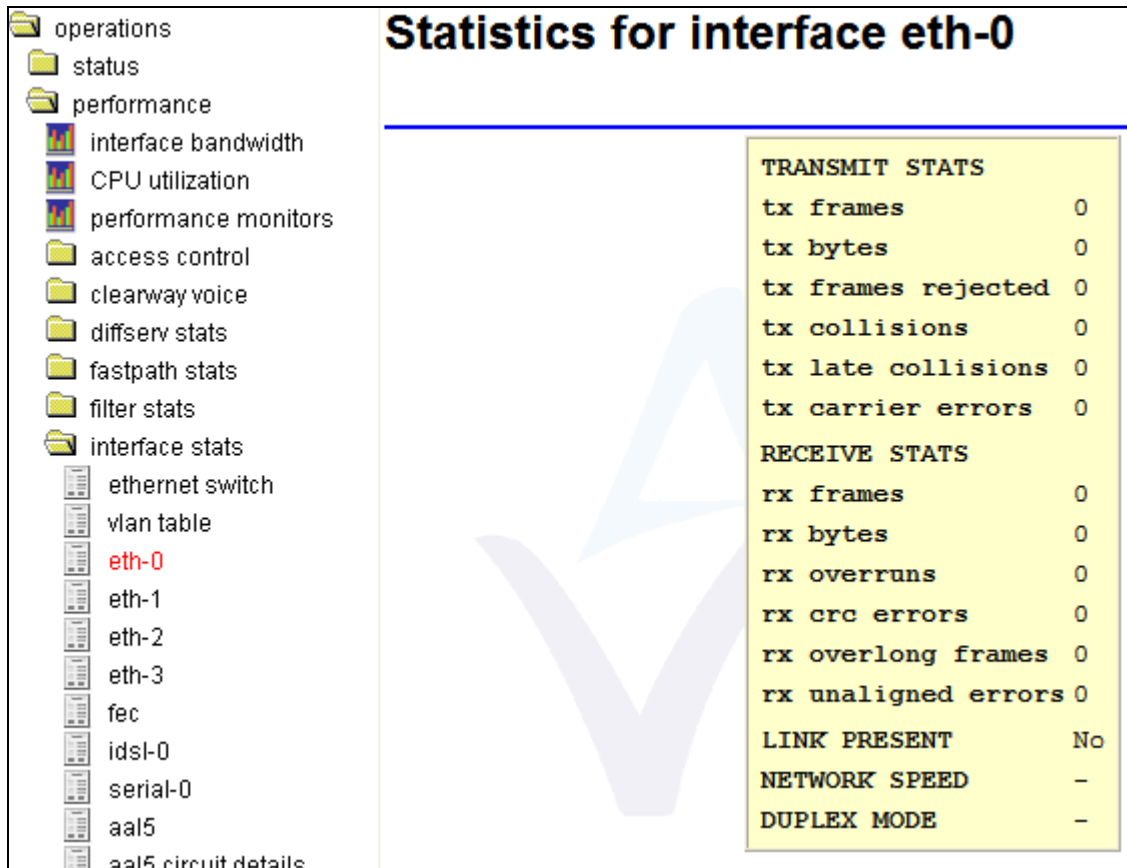


Figure 16: The statistics for interface eth page

CLI Syntax	Description
show ethernet eth-0	This command shows the statistics for interface Ethernet 0.
show ethernet eth-1	This command shows the statistics for interface Ethernet 1.

Table 1: Ethernet commands and their descriptions