SMC®
Networks

DOCSIS 2.0 Wireless Cable Modem Gateway

SMC8014WN and SMC8014WN2 Administrator Manual

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SMC8014WN and SMC8014WN2 Wireless Cable Modem Gateway Administrator Manual

Contents

Preface

Congratulations on your purchase of the SMC8014WN or SMC8014WN2 Wireless Cable Modem Gateway. The SMC8014WN and SMC8014WN2 Wireless Cable Modem Gateways are ideal all-in-one wired and wireless solutions for the home or business environment. SMC is proud to provide you with a powerful, yet simple, communication device for connecting your local area network (LAN) to the Internet.

This user manual contains all the information administrators need to install and configure your new Wireless Cable Modem Gateway.

SMC8014WN

SMC8014WN2

Key Features

The following list summarizes the Gateway’s key features.

- Integrated CableLabs-compliant DOCSIS 1.1 and 2.0 cable modem
- Internet connection to cable modem service via an integrated cable modem port
- High-speed 300 Mbps IEEE 802.11b/g/n wireless Access Point - interoperable with multiple vendors
- Wireless WEP, WPA, and WPA2 encryption, hide SSID, and MAC filtering
- Local network connection via four 10/100 Mbps auto-sensing LAN ports with auto-MDI/MDIX feature
- DHCP for dynamic IP configuration, and DNS for domain name mapping
- Firewall with Stateful Packet Inspection, client privileges, hacker prevention, DoS, and NAT
- Universal Plug and Play (UPnP) allows to enable any UPnP device seamlessly
- Quality of Service (QoS) to ensure high-quality performance with existing networks
- Comprehensive LEDs for network status and troubleshooting
- Reset button
- Easy setup through a Web browser regardless of operating system.
- Compatible with all popular Internet applications

Note: Cable modems can provide data rates up to 38 Mbps downstream and 10 Mbps upstream. However, the actual rate provided by specific service providers can vary dramatically from these upper limits.

Document Organization

This document consists of four chapters and two appendixes.

- **Chapter 1** - describes the contents in the Gateway package, system requirements, and an overview of the Gateway’s front and rear panels.
- **Chapter 2** - describes how to install the Gateway.
- **Chapter 3 -** describes how to configure TCP/IP settings on the computer you will use to configure the Gateway.
- **Chapter 4** - describes how to configure the Gateway.
- **Appendix A -** provides wall-mounting instructions for the SMC8014WN Gateway.
- **Appendix B -** contains compliance information.

Document Conventions

This document uses the following conventions to draw your attention to certain information.

Models Covered in this Guide

This document covers the SMC8014WN and SMC8014WN2 Gateways. The term “Gateway” is used to collectively refer to both models. If information in this document applies to one model only, that model is identified.

Safety and Warnings

This document uses the following symbols to draw your attention to certain information.

Symbol	Meaning	Description
ℹ	Note	Notes emphasize or supplement important points of the main text.
💡	Tip	Tips provide helpful information, guidelines, or suggestions for performing tasks more effectively.
⚠	Warning	Warnings indicate that failure to take a specified action could result in damage to the device.
⚡	Electric Shock Hazard	This symbol warns users of electric shock hazard. Failure to take appropriate precautions such as not opening or touching hazardous areas of the equipment could result in injury or death.

Typographic Conventions

This document also uses the following typographic conventions.

Convention	Description
Bold	Indicates text on a window, other than the window title, including menus, menu options, buttons, fields, and labels.
Italic	Indicates a variable, which is a placeholder for actual text provided by the user or system. Angled brackets (< >) are also used to indicate variables.
`screen/code`	Indicates text that is displayed on screen or entered by the user.
< > angled brackets	Indicates a variable, which is a placeholder for actual text provided by the user or system. Italic font is also used to indicate variables.
[ ] square brackets	Indicates optional values.
{ } braces	Indicates required or expected values.
| vertical bar	Indicates that you have a choice between two or more options or arguments.

1 Getting to Know the Gateways

Before you install the Gateway, check the package contents and become familiar with the Gateway's front and rear panels.

The topics covered in this chapter are:

- Unpacking Package Contents (page 10)
- System Requirements (page 10)
- Hardware Overview (page 11)
- Restoring Factory Defaults (page 15)
- Rebooting the Gateway (page 15)

Unpacking Package Contents

The SMC8014WN and SMC8014WN2 packages should include the following items:

- One SMC8014WN or SMC8014WN2 Wireless Cable Modem Gateway
- One external power supply 12V 1.25mA
- One Category 5E Ethernet cable

System Requirements

To complete the installation, you will need the following items:

- Provisioned Internet access on a cable network that supports cable modem service
- A computer with a wired network adapter with TCP/IP installed
- A Java-enabled Web browser, such as Microsoft Internet Explorer 5.5 or above
- Microsoft® Windows® 98 second edition or higher for USB driver support

Hardware Overview

SMC8014WN Front and Rear panels

The front panel of the SMC8014WN Wireless Cable Modem Gateway contains a set of light-emitting diode (LED) indicators that show the status of the Gateway and simplify troubleshooting. Figure 1 shows the front panel LEDs and Table 1 describes the them.

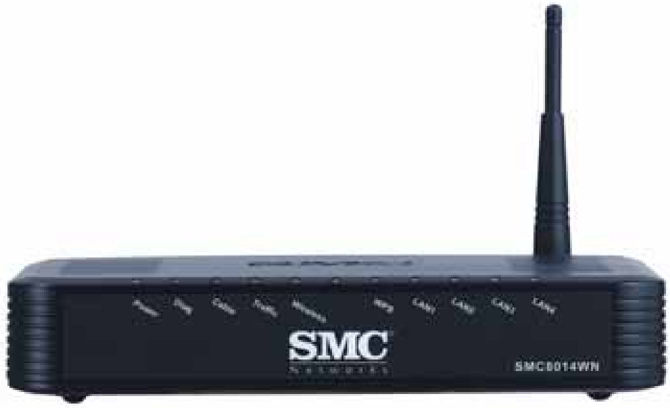


Figure 1. Front Panel of the SMC8014WN Wireless Cable Modem Gateway

Table 1. SMC8014WN Front Panel LEDs

LED	Color	Description
Power	Green	ON = power is supplied to the Gateway. OFF = power is not supplied to the Gateway.

Diag	Green	ON =- system failure. Reboot Gateway.
		OFF = normal operation.

Cable	Green	ON = connected to cable network successfully. Flashing = attempting to connect to network.
Traffic	Green	ON = cable modem has finished CMTS registration. Flashing = attempting to register with CMTS.

Wireless	Green	ON = wireless enabled.
		Flashing = data is transmitting.
		OFF = wireless disabled.

WPS	Green	ON = enabled.
		Flashing = data is transmitting.

LAN (1-4)	Green	ON = connected at 10 Mbps or 100 Mbps.
		Flashing = data is transmitting.
		OFF = no Ethernet link is detected.

The rear panel of the SMC8014WN Wireless Cable Modem Gateway contains a reset button and the ports for attaching the supplied power adapter and making additional connections. Figure 2 shows the rear panel components and Table 2 describes them.

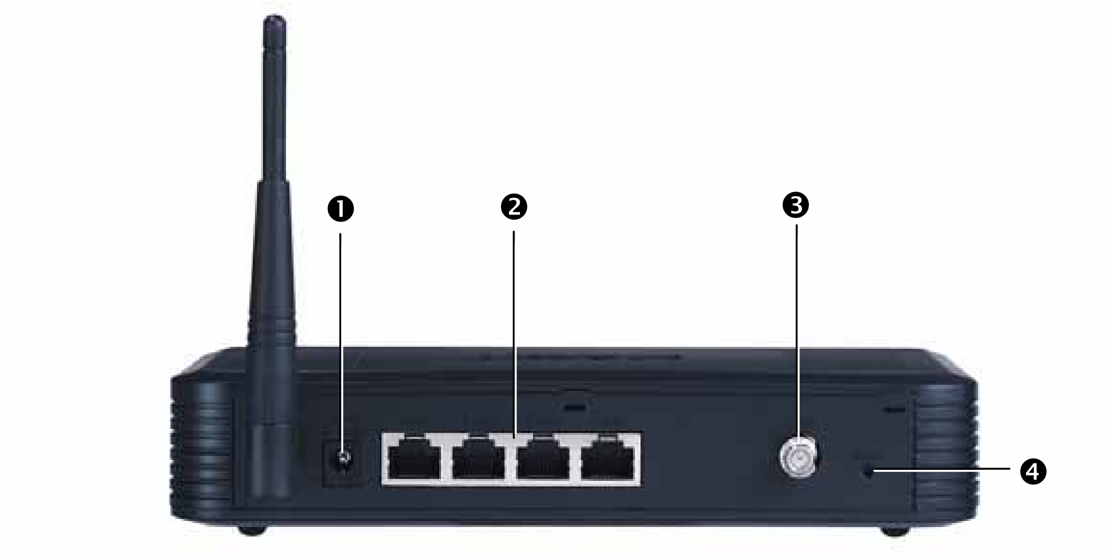


Figure 2. Rear Panel of SMC8014WN Wireless Cable Modem Gateway

Table 2. SMC8014WN Rear Panel

Item		Description
❶	Power	Connect the included power adapter to this port.
❷	Reset	Use this button to reset the power or restore the default factory settings. The button is recesses to prevent accidental resets. Use a paper clip or a pencil tip to push the Reset button.
❸	LAN 1-4	Four 10/100 auto-sensing switch (RJ-45) ports. Connect your local-area network devices, such as a PC, hub, or switch, to these ports.
❹	CATV	Connect your cable line to this port.

SMC8014WN2 Front and Rear panels

The front panel of the SMC8014WN2 Wireless Cable Modem Gateway contains a set of light-emitting diode (LED) indicators that show the status of the Gateway and simplify troubleshooting. Figure 3 shows the front panel LEDs and Table 3 describes the them.

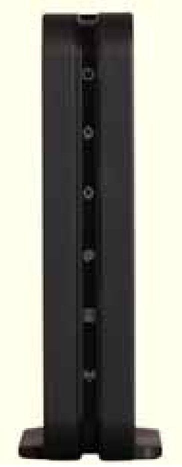


Figure 3. Front Panel of the SMC8014WN2 Wireless Cable Modem Gateway

Table 3. SMC8014WN2 Front Panel LEDs

Icon	Icon Name	Description
⏻	Power	Green = power is supplied to the Gateway. OFF = power is not supplied to the Gateway.
⬇	DS	Green Flashing =-attempt to connect to downstream frequency. Green On = Gateway is connected to downstream frequency. OFF = not scanning.
⬆	US	Green Flashing= attempt to connect upstream frequency Green ON = Gateway is connected to upstream frequency. OFF = not scanning.
@	Status	Green ON = cable modem has finished CMTS registration. Green Flashing = cable modem is attempting to register with CMTS.
▦	LAN	Green ON = connected at 10 Mbps or 100 Mbps Green Flashing = data is transmitting. OFF = no Ethernet link is detected.
📶	WLAN/WPS	Wireless Function Green ON = wireless interface is enabled. Green Flashing= data is transmitting. OFF = wireless interface is disabled. WPS Function Green and Red dual colors LED generate WPS LED behavior . Disable WLAN control ability to avoid WPS LED behavior if LED works as WPS function.

The rear panel of the SMC8014WN2 Wireless Cable Modem Gateway contains a reset button and the ports for attaching the supplied power adapter and making additional connections. Figure 4 shows the rear panel components and Table 4 describes them.

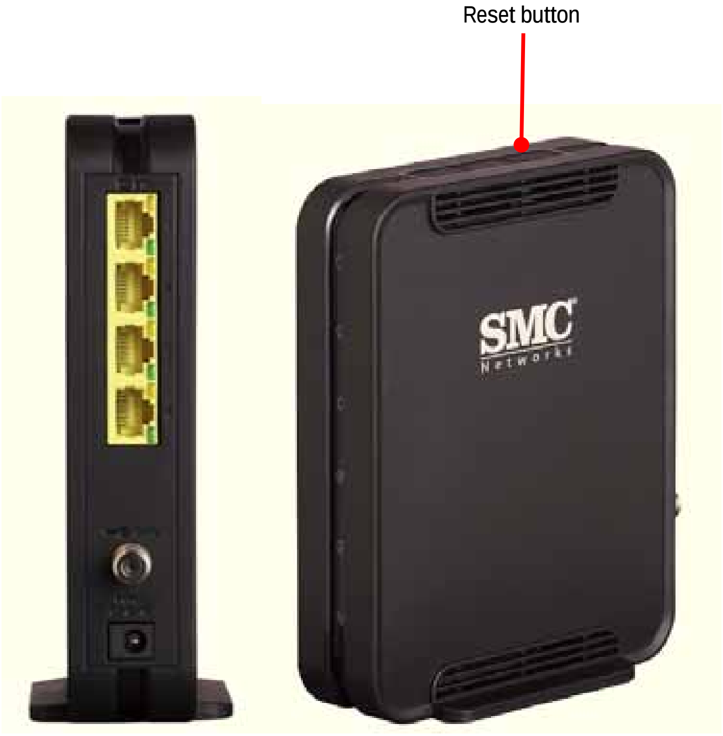


Figure 4. Rear Panel of SMC8014WN2 Wireless Cable Modem Gateway

Table 4. SMC8014WN2 Rear Panel

Item	Description
Power	Connect the included power adapter to this port.
Reset	Use this button to reset the power or restore the default factory settings. The button is recesses to prevent accidental resets. Use a paper clip or a pencil tip to push the Reset button.
ETH 1-4	Four 10/100 auto-sensing switch (RJ-45) ports. Connect your local-area network devices, such as a PC, hub, or switch, to these ports.
CATV	Connect your cable line to this port.

Restoring Factory Defaults

The Reset button on the rear panel can be used to return the Gateway to its factory default settings. As a result, any changes made to the Gateway’s default settings will be lost.

If you do not have physical access to the Gateway, you can use the GUI to either power cycle the Gateway (see “Reboot Menu” on page 79) or return the Gateway to its factory default settings (see “Restoring Factory Defaults” on page 77).

The following procedure describes how to use the Reset button to power cycle the Gateway and return it to its original factory default settings.

1. Leave power plugged into the Gateway.
2. Find the Reset button on the rear panel, then press and hold it for at least 10 seconds.
3. Release the Reset button.

Rebooting the Gateway

If the Gateway has problems connecting to the Internet, hold down the Reset button on the rear panel for 1 second and then release.

2 Installing the Gateway

This chapter describes how to install the SMC8014WN and SMC8014WN2 Wireless Cable Modem Gateways. The topics covered in this chapter are:

- Finding a Suitable Location (page 17)
- Connecting to the LAN (page 17)
- Connecting the WAN (page 18)
- Powering on the Gateway (page 18)

Finding a Suitable Location

The Gateways can be installed in any location with access to the cable network. All of the cables connect to the rear panel of the Gateway for better organization and utility. The LED indicators on the front panel are easily visible to provide users with information about network activity and status.

For optimum performance, the location you choose should:

- Be close to a working AC power outlet
- Allow sufficient airflow around the Gateway to keep the device as cool as possible
- Not expose the Gateway to a dusty or wet environment
- Be an elevated location such as a high shelf, keeping the number of walls and ceilings between the Gateway and your other devices to a minimum
- Be away from electrical devices that are potential sources of interference, such as ceiling fans, home security systems, microwaves, or the base for a cordless phone
- Be away from any large metal surfaces, such as a solid metal door or aluminum studs. Large expanses of other materials such as glass, insulated walls, fish tanks, mirrors, brick, and concrete can also affect your wireless signal

Connecting to the LAN

Using an Ethernet LAN cable, you can connect the Gateway to a PC or notebook computer, hub, or switch. The Gateways support auto-MDI/MDIX, so you can use either a standard straight-through or crossover Ethernet cable.

1. Connect either end of an Ethernet cable to one of the four **LAN** ports on the rear panel of the Gateway (see Figure 5).

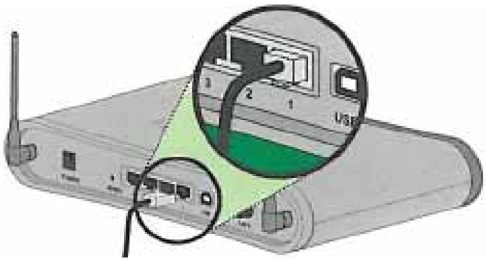


Figure 5. Connecting to a LAN Port on the Gateway Rear Panel

2. Connect the other end of the cable to your computer’s network-interface card (NIC) or to another network device (see Figure 6).

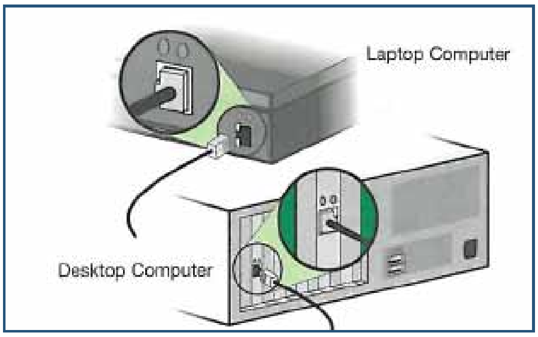


Figure 6. Connecting the Gateway to the a Laptop or Desktop Computer

Connecting the WAN

To connect the Gateway to a Wide Area Network (WAN) interface:

1. Connect a coaxial cable to the port labeled **CATV** on the rear panel of the Gateway from a cable port in your home or office (see Figure 2 on page 6 or Figure 4 on page 14). Use only manufactured coaxial patch cables with F-type connectors at both ends for all connections.
2. Hand-tighten the connectors to secure the connection.

Powering on the Gateway

After making your LAN and WAN connections, use the following procedure to power on the Gateway:

1. Connect the supplied power cord to the port on the rear panel of the Gateway (see Figure 2 on page 6 or Figure 4 on page 14).
2. Connect the other end of the power cord to a working power outlet. The Gateway powers on automatically, the **Power** LED on the front panel goes ON, and the other front panel LEDs show the Gateway’s status (see Table 1 on page 11 or Table 3 on page 13).

⚠ **WARNING:** Only use the power cord supplied with the Gateway. Using a different power cord can damage the Gateway and void the warranty.

3 Configuring Your Computer for TCP/IP

After you install the SMC8014WN or SMC8014WN2 Wireless Cable Modem Gateway, configure the TCP/IP settings on a computer that will be used to configure the Gateway. This chapter describes how to configure TCP/IP for various Microsoft Windows and Apple Macintosh operating systems.

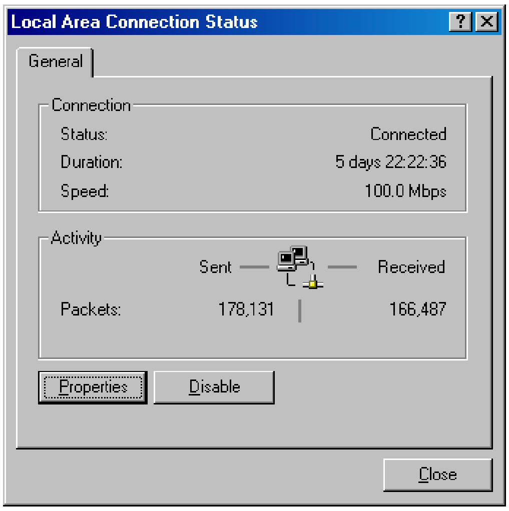
The topics covered in this chapter are:

- Configuring Microsoft Windows 2000 (page 20)
- Configuring Microsoft Windows XP (page 21)
- Configuring Microsoft Windows Vista (page 22)
- Configuring Microsoft Windows 7 (page 24)
- Configuring an Apple® Macintosh® Computer (page 27)

Configuring Microsoft Windows 2000

Use the following procedure to configure your computer if your computer has Microsoft Windows 2000 installed.

1. On the Windows taskbar, click **Start**, point to **Settings**, and then click **Control Panel**.
2. In the Control Panel window, double-click the **Network and Dial-up Connections** icon. If the Ethernet adapter in your computer is installed correctly, the **Local Area Connection** icon appears.
3. Double-click the **Local Area Connection** icon for the Ethernet adapter connected to the Gateway. The Local Area Connection Status dialog box appears (see Figure 7).



Connection

Status: Connected

Duration: 5 days 22:22:36

Speed: 100.0 Mbps

Activity

Sent — Received

Packets: 178,131 | 166,487

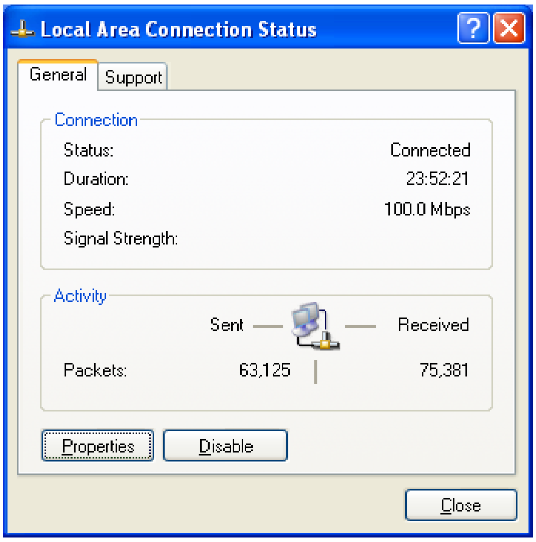
Figure 7. Local Area Connection Status Window

4. In the Local Area Connection Status dialog box, click the **Properties** button. The Local Area Connection Properties dialog box appears.
5. In the Local Area Connection Properties dialog box, verify that **Internet Protocol (TCP/IP)** is checked. Then select **Internet Protocol (TCP/IP)** and click the **Properties** button.
6. Click **Obtain an IP address automatically** to configure your computer for DHCP.
7. Click the **OK** button to save this change and close the Local Area Connection Properties dialog box.
8. Click **OK** button again to save these new changes.
9. Restart your computer.

Configuring Microsoft Windows XP

Use the following procedure to configure a computer running Microsoft Windows XP with the default interface. If you use the Classic interface, where the icons and menus resemble previous Windows versions, perform the procedure under “Configuring Microsoft Windows 2000” on page 20.

1. On the Windows taskbar, click **Start**, click **Control Panel**, and then click **Network and Internet Connections**.
2. Click the **Network Connections** icon.
3. Click **Local Area Connection** for the Ethernet adapter connected to the Gateway. The Local Area Connection Status dialog box appears.
4. In the Local Area Connection Status dialog box, click the **Properties** button (see Figure 8). The Local Area Connection Properties dialog box appears.



Status:	Connected
Duration:	23:52:21
Speed:	100.0 Mbps
Signal Strength:	

	Sent	Received
Packets:	63,125	75,381

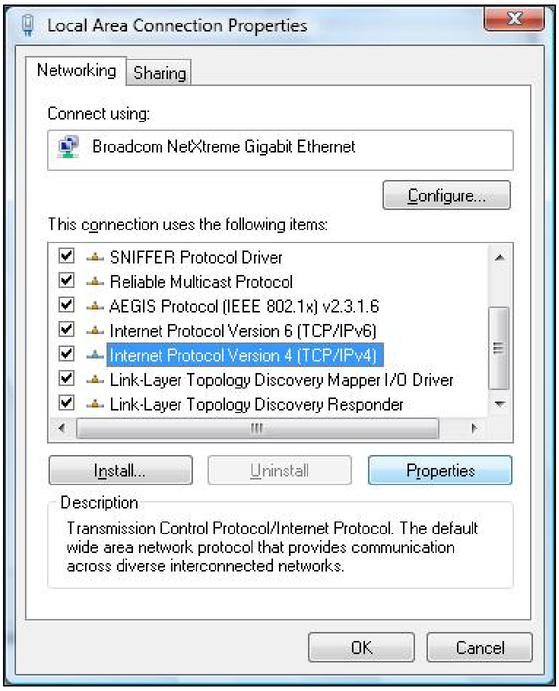
Figure 8. Local Area Connection Status Window

5. In the Local Area Connection Properties dialog box, verify that **Internet Protocol (TCP/IP)** is checked. Then select **Internet Protocol (TCP/IP)** and click the **Properties** button. The Internet Protocol (TCP/IP) Properties dialog box appears.
6. In the Internet Protocol (TCP/IP) Properties dialog box, click **Obtain an IP address automatically** to configure your computer for DHCP. Click the **OK** button to save this change and close the Internet Protocol (TCP/IP) Properties dialog box.
7. Click the **OK** button again to save your changes.
8. Restart your computer.

Configuring Microsoft Windows Vista

Use the following procedure to configure a computer running Microsoft Windows Vista with the default interface. If you use the Classic interface, where the icons and menus resemble previous Windows versions, perform the procedure under “Configuring Microsoft Windows 2000” on page 20.

1. On the Windows taskbar, click **Start**, click **Control Panel**, and then select the **Network and Internet** icon.
2. Click **View Networks Status and tasks** and then click **Management Networks Connections**.
3. Right-click the **Local Area Connection** icon and click **Properties**.
4. Click **Continue**. The Local Area Connection Properties dialog box appears.
5. In the Local Area Connection Properties dialog box, verify that **Internet Protocol (TCP/IPv4)** is checked. Then select **Internet Protocol (TCP/IPv4)** and click the **Properties** button (see Figure 9). The Internet Protocol Version 4 Properties dialog box appears.



Connect using:

Broadcom NetXtreme Gigabit Ethernet

This connection uses the following items:

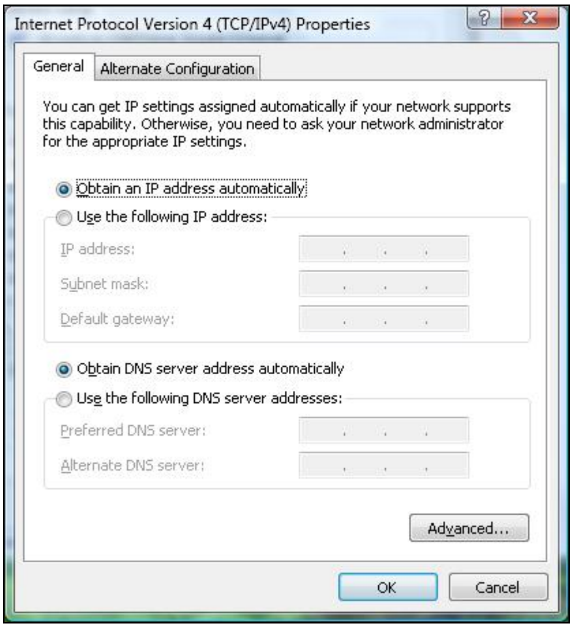
- ☑ SNIFFER Protocol Driver
- ☑ Reliable Multicast Protocol
- ☑ AEGIS Protocol (IEEE 802.1x) v2.3.1.6
- ☑ Internet Protocol Version 6 (TCP/IPv6)
- ☑ Internet Protocol Version 4 (TCP/IPv4)
- ☑ Link-Layer Topology Discovery Mapper I/O Driver
- ☑ Link-Layer Topology Discovery Responder

Description

Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.

Figure 9. Local Area Connection Properties Window

6. In the Internet Protocol Version 4 Properties dialog box, click **Obtain an IP address automatically** to configure your computer for DHCP (see Figure 10).



Internet Protocol Version 4 (TCP/IPv4) Properties

General | Alternate Configuration

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

● Obtain an IP address automatically

○ Use the following IP address:

IP address: . . .

Subnet mask: . . .

Default gateway: . . .

● Obtain DNS server address automatically

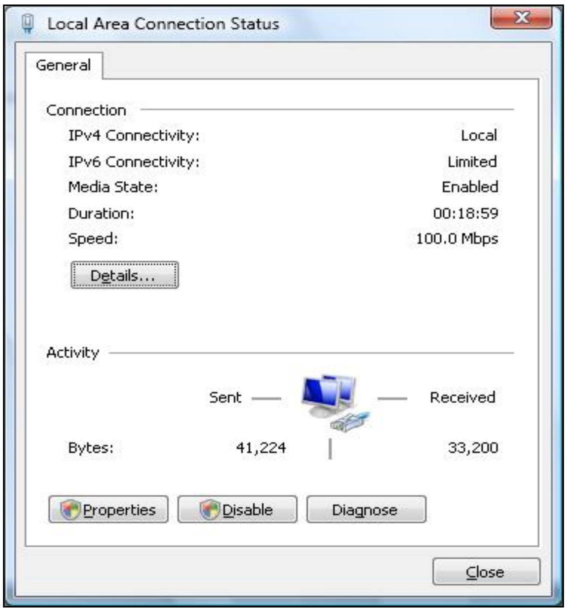
○ Use the following DNS server addresses:

Preferred DNS server: . . .

Alternate DNS server: . . .

Figure 10. Internet Protocol Properties Window

7. Click the **OK** button to save your changes and close the dialog box.
8. Click the **OK** button again to save your changes.



Local Area Connection Status

General

Connection

IPv4 Connectivity:	Local
IPv6 Connectivity:	Limited
Media State:	Enabled
Duration:	00:18:59
Speed:	100.0 Mbps

Activity

	Sent	Received
Bytes:	41,224	33,200

Figure 11. Local Area Connection Status Window

Configuring Microsoft Windows 7

Use the following procedure to configure a computer running Microsoft Windows 7.

1. In the Start menu search box, type: **ncpa.cpl**

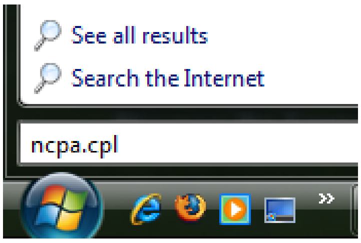


Figure 12. Typing ncpa.cpl in the Start Menu Box

The Network Connections List appears.

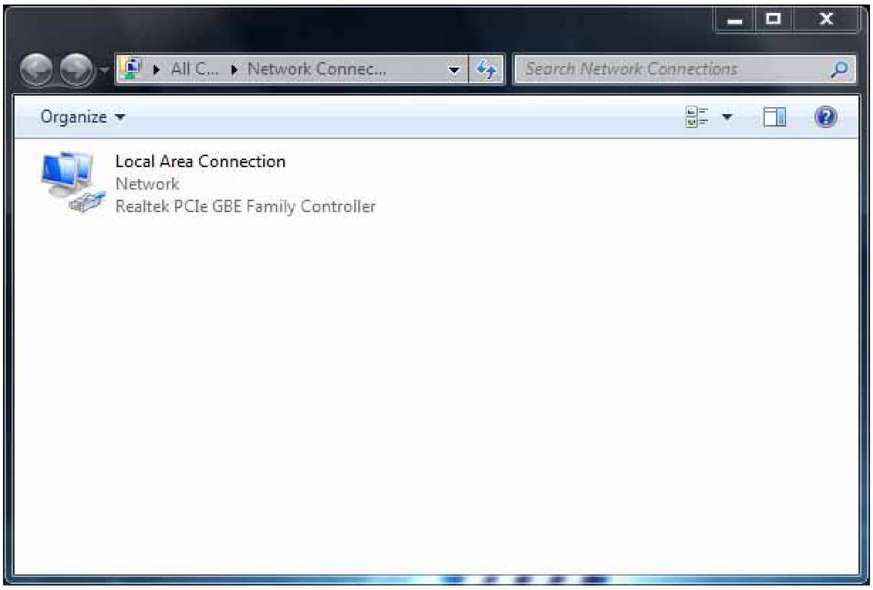
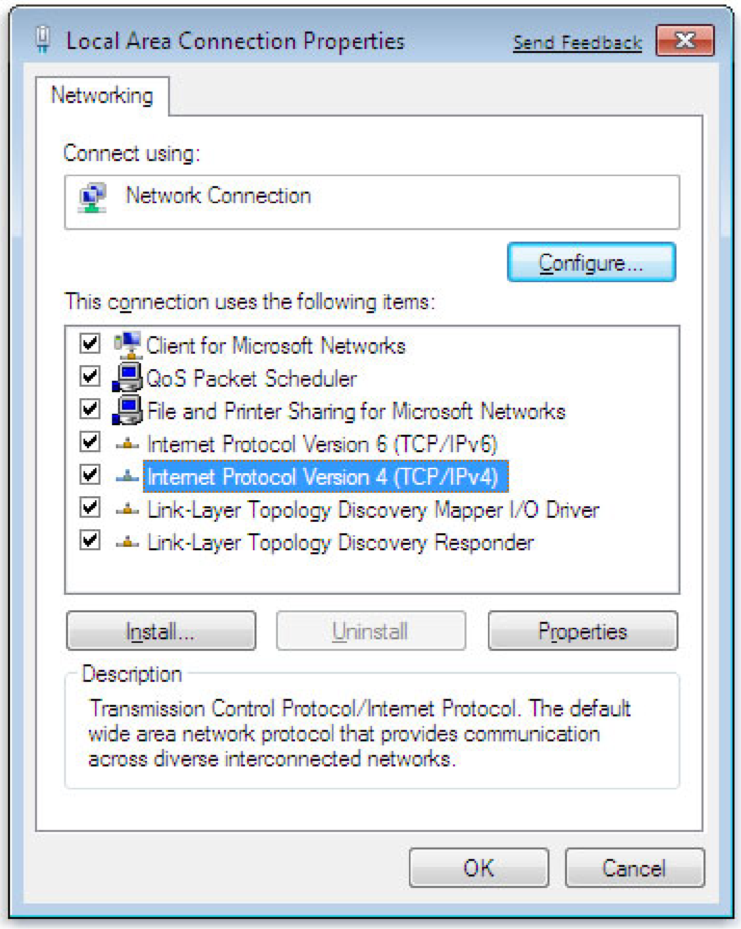


Figure 13. Example of Network Connections List

2. Right-click the **Local Area Connection** icon and click **Properties**.
3. In the **Networking** tab, click either **Internet Protocol Version 4 (TCP/IPv4)** or **Internet Protocol Version 6 (TCP/IPv6)**, and then click **Properties**.



Local Area Connection Properties

Networking

Connect using:

Network Connection

This connection uses the following items:

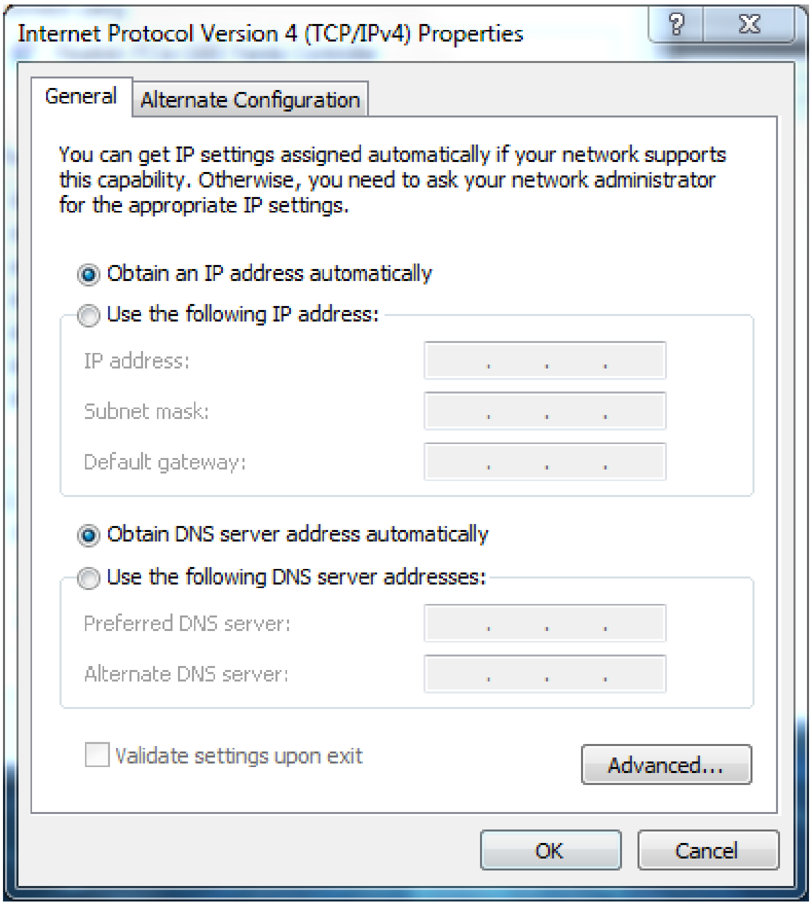
☑ Client for Microsoft Networks
☑ QoS Packet Scheduler
☑ File and Printer Sharing for Microsoft Networks
☑ Internet Protocol Version 6 (TCP/IPv6)
☑ Internet Protocol Version 4 (TCP/IPv4)
☑ Link-Layer Topology Discovery Mapper I/O Driver
☑ Link-Layer Topology Discovery Responder

Description

Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.

Figure 14. Local Area Network Connection Properties Dialog Box

4. In the properties dialog box, click **Obtain an IP address automatically** to configure your computer for DHCP (see Figure 15).



Internet Protocol Version 4 (TCP/IPv4) Properties

General | Alternate Configuration

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

● Obtain an IP address automatically

○ Use the following IP address:

IP address: . . .

Subnet mask: . . .

Default gateway: . . .

● Obtain DNS server address automatically

○ Use the following DNS server addresses:

Preferred DNS server: . . .

Alternate DNS server: . . .

□ Validate settings upon exit

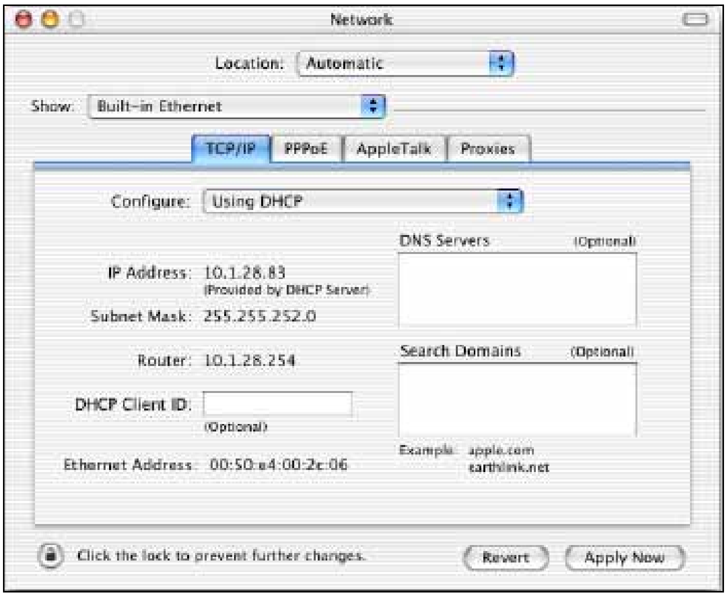
Figure 15. Properties Window

5. Click the **OK** button to save your changes and close the dialog box.
6. Click the **OK** button again to save your changes.

Configuring an Apple® Macintosh® Computer

The following procedure describes how to configure TCP/IP on an Apple Macintosh running Mac OS 10.2. If your Apple Macintosh is running Mac OS 7.x or later, the steps you perform and the screens you see may differ slightly from the following. However, you should still be able to use this procedure as a guide to configuring your Apple Macintosh for TCP/IP.

1. Pull down the Apple Menu, click **System Preferences**, and select **Network**.
2. Verify that the NIC connected to the SMC8014WN or SMC8014WN2 is selected in the **Show** field.
3. In the **Configure** field on the **TCP/IP** tab, select **Using DHCP** (see Figure 16).
4. Click **Apply Now** to apply your settings and close the TCP/IP dialog box.



Location: Automatic

Show: Built-in Ethernet

Configure: Using DHCP

DNS Servers (Optional)

IP Address: 10.1.28.83
(Provided by DHCP Server)

Subnet Mask: 255.255.252.0

Router: 10.1.28.254

Search Domains (Optional)

DHCP Client ID:
(Optional)

Ethernet Address: 00:50:e4:00:2c:06

Example: apple.com
earthlink.net

Click the lock to prevent further changes.

Figure 16. Selecting Using DHCP in the Configure Field

4 Configuring the Gateway

This chapter describes how to use a Web browser to configure the Gateway.

The topics covered in this chapter are:

- Pre-configuration Guidelines (page 29)
- Accessing the Gateway's Web Management (page 31)
- Understanding the Web Management Interface Screens (page 32)
- Web Management Interface Menus (page 33)

Pre-configuration Guidelines

Before you configure the Gateway, observe the guidelines in the following sections.

Disabling Proxy Settings

Disable proxy settings in your Web browser. Otherwise, you will not be able to view the Gateway's Web-based configuration pages.

Disabling Proxy Settings in Internet Explorer

The following procedure describes how to disable proxy settings in Internet Explorer 5 and later.

1. Start Internet Explorer.
2. On your browser's **Tool** menu, click **Options**. The Internet Options dialog box appears.
3. In the Internet Options dialog box, click the **Connections** tab.
4. In the **Connections** tab, click the **LAN settings** button. The Local Area Network (LAN) Settings dialog box appears.
5. In the Local Area Network (LAN) Settings dialog box, uncheck all check boxes.
6. Click **OK** until the Internet Options window appears.
7. In the Internet Options window, under **Temporary Internet Files**, click **Settings**.
8. For the option **Check for newer versions of stored pages**, select **Every time I visit the webpage**.
9. Click **OK** until you close all open browser dialog boxes.

Note: To ensure the screen refreshes properly after command entry, on the **Tools** menu, click **Internet Options**. In the **General** or **Temporary Internet Files** tab, click **Settings**. Set **Check for newer versions of stored pages** to **Every time I visit the webpage** or **Every visit to the page**. Click **OK** until you exit all dialog boxes.

Disabling Proxy Settings in Firefox

The following procedure describes how to disable proxy settings in Firefox.

1. Start Firefox.
2. On your browser’s **Tools** menu, click **Options**. The Options dialog box appears.
3. Click the **Advanced** tab.
4. In the **Advanced** tab, click the **Network** tab.
5. Click the **Settings** button.
6. Click **Direct connection to the Internet**.
7. Click the **OK** button to confirm this change.

Disabling Proxy Settings in Safari

The following procedure describes how to disable proxy settings in Safari.

1. Start Safari.
2. Click the **Safari** menu and select **Preferences**.
3. Click the **Advanced** tab.
4. In the **Advanced** tab, click the **Change Settings** button.
5. Choose your location from the **Location** list (this is generally **Automatic**).
6. Select your connection method. If using a wired connection, select **Built-in Ethernet**. For wireless, select **Airport**.
7. Click the **Proxies** tab.
8. Be sure each proxy in the list is unchecked.
9. Click **Apply Now** to finish.

Disabling Firewall and Security Software

Disable any firewall or security software that may be running on your computer. For more information, refer to the documentation for your firewall.

Accessing the Gateway’s Web Management

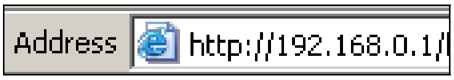
After configuring your computer for TCP/IP and performing the preconfiguration guidelines on the previous page, you can now easily configure the Gateway from the convenient Web-based management interface. From your Web browser (Microsoft Internet Explorer version 5.5 or later), you will log in to the interface to define system parameters, change password settings, view status windows to monitor network conditions, and control the Gateway and its ports.

To access the Gateway Web-based management screens, use the following procedure.

1. Launch a Web browser.

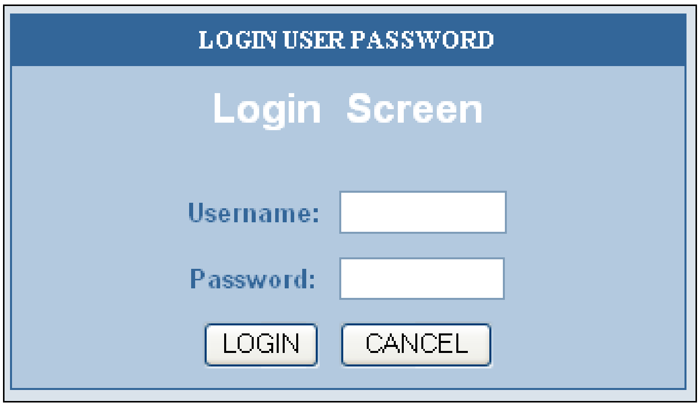
Note: The cable modem does not have to be online to configure the Gateway.

2. In the browser address bar, type http://192.168.0.1 and press the Enter key. For example:



Address http://192.168.0.1/

The Login User Password screen appears (see Figure 17)



LOGIN USER PASSWORD

Login Screen

Username:

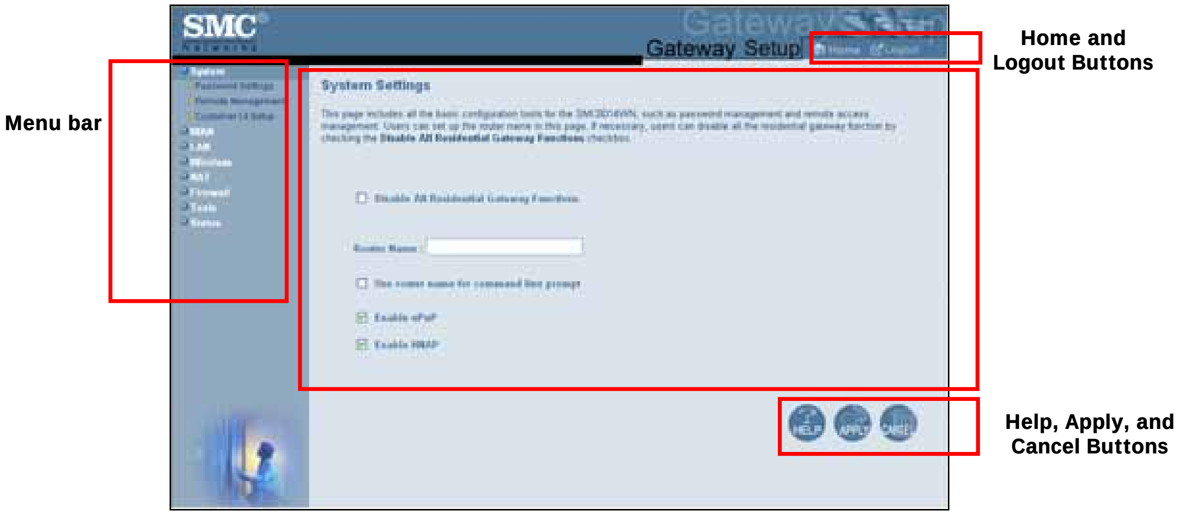
Password:

Figure 17. Login User Password Screen

3. In the Login User Password screen, enter the default administrator username and the default administrator password provided by SMC Networks. Both the username and password are case sensitive.
4. Click the **Login** button to access the Gateway. The Status page appears, showing connection status information about the Gateway.

Understanding the Web Management Interface Screens

The left side of the management interface contains a menu bar you use to select menus for configuring the Gateway. When you click a menu, information and any configuration settings associated with the menu appear in the main area of the interface (see Figure 18). If the displayed information exceeds what can be shown in the main area, scroll bars appear to the right of the main area so you can scroll up and down through the information.



System Settings

This page includes all the basic configuration tools for the SMC8014WN, such as password management and remote access management. Users can set up the router name in this page. If necessary, users can disable all the residential gateway function by checking the **Disable All Residential Gateway Functions** checkbox.

□ Disable All Residential Gateway Functions

Router Name :

□ Use router name for command line prompt

☑ Enable uPnP

☑ Enable HNAP

Figure 18. Example of Main Areas on the Web Management Interface

Some menus have submenus associated with them. If you click a menu that has submenus, the submenus appear below the menu. For example, if you click the **System** menu, the submenus **Password Settings**, **Remote Management**, and **Customer UI Setup** appear below the **System** menu (see Figure 19).

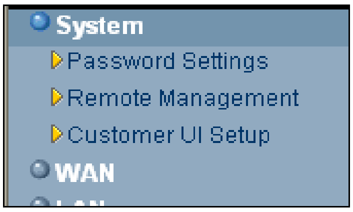


Figure 19. Example of System Submenus

The top-right side of the page contains a **Home** button that displays the Home (Status) page and a **Logout** button for logging out of the Web management interface.

The bottom right side of the screen contains three buttons:

- **Help** displays online help
- **Apply** click this button to save your configuration changes to the displayed page
- **Cancel** click this button to discard any configuration changes made to the current page

Web Management Interface Menus and Submenus

Table 5 on the next page describes the menus and submenus in the Web management interface. All of the menus, submenus, and pages are available with both the SMC8014WN and SMC8014WN2 Gateways.

Note: The figures in this chapter show the model name SMC8014WN Gateway. However, the same information applies to the SMC8014WN2 Gateway.

Table 5. Web Management Interface Menus and Submenus

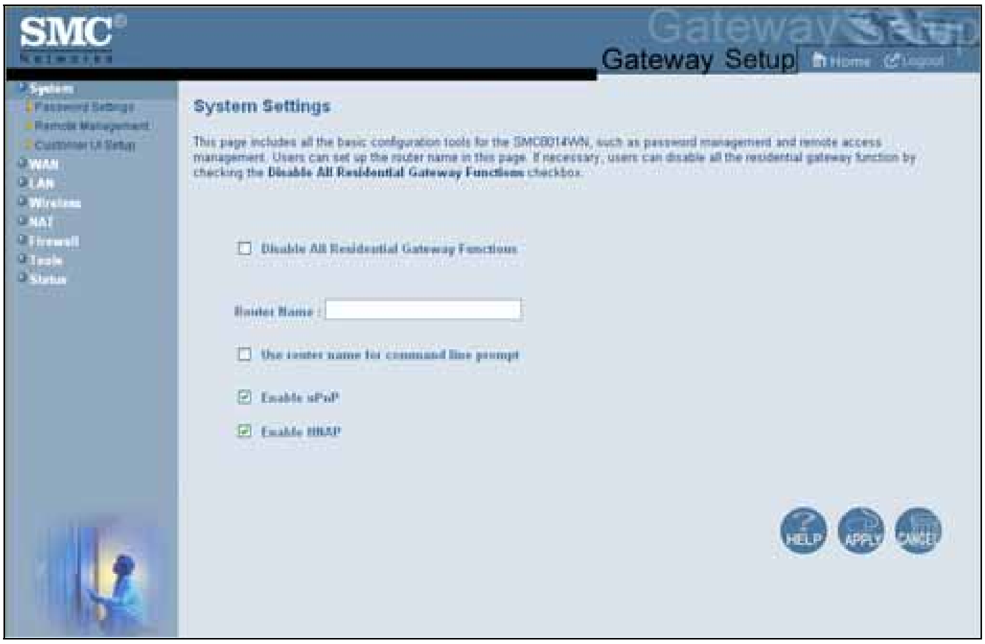
Menus and Submenus	Description	See Page
System	Lets you disable all residential Gateway functions, define a router name, use the router name at command prompts, and enable or disable UPnP and HNAP. Submenus let you:	35
System > Password Settings	• Define user and admin password settings and idle timeout.	37
System > Remote Management	• Allow users to manage the Gateway remotely using the Gateway's Web interface and/or Telnet, and enable or disable remote management of the Gateway's administrator interface.	39
System > Customer UI Setup	• Select which configuration options on the Gateway's user configuration menus are shown to or hidden from users.	41
WAN	Lets you configure Wide Area Network (WAN), renew or release DHCP WAN IP address, and DNS address settings. The submenu lets you:	43
WAN > MAC Spoofing	• Clone ("spoof") the Gateway's MAC address if necessary.	45
LAN	Lets you configure settings for a private LAN,. The submenu lets you:	46
LAN > Ether Switch Control	• Specify fixed-speed and duplex settings, and disable individual LAN ports.	48
Wireless	Lets you configure basic wireless settings, set 802.11 mode, configure one or multiple Service Set Identifier (SSID), and select the wireless channel.	50
NAT	Provides the following submenu that lets you:	
NAT > Port Forwarding	• Configure predefined and customer port forwarding settings to let Internet users access local services such as the Web Server or FTP server at your local site.	52
Firewall	Lets you enable or disable the Gateway's firewall. Submenus let you:	57
Firerwall > Access Control	• Block traffic at the Gateway's LAN interfaces from accessing the Internet.	58
Firerwall > Special Application	• Allow the firewall to open ports for outgoing and incoming sessions automatically for multi-session protocols and applications.	62
Firerwall > URL Blocking	• Block access to certain Web sites from local computers by entering either a full URL address or keywords of the Web site.	65
Firerwall > Schedule Rule	• Define schedule rules that work with the Gateway's URL blocking feature.	68
Firerwall > Email/Syslog Alert	• Send email notifications or add entries to the syslog when traffic is blocked, attempts are made to intrude onto the network, and local computers try to access block URLs.	69
Firerwall > DMZ	• Configure a local client computer for unrestricted two-way Internet access by defining it as a Virtual DMZ host.	72
Tools	Provides the following submenus with utilities for performing the following activities:	
Tools > Configuration Tools	Back up and restore Gateway configuration settings locally and remotely over the WAN, and restore Gateway factory default settings.	73
Tools > Reboot	Reboot the Gateway.	79
Tools > Diagnostics	Perform trace route and ping diagnostic operations.	80
Status	Shows the RG status; current time and system uptime; Internet, Gateway, and wireless settings; network log; LAN client log; and cable modem system event log. The submenu lets you:	84
Status > Cable Status	• View cable initialization procedures, and cable downstream and upstream status.	86

System Settings Menu

Path: **System**

The System Settings menu lets you:

- Enable or disable all residential Gateway functions
- Define the router name and enable it for use at a command-line prompt
- Enable or disable UPnP and HNAP



System Settings

This page includes all the basic configuration tools for the SMC8014WN, such as password management and remote access management. Users can set up the router name in this page. If necessary, users can disable all the residential gateway function by checking the **Disable All Residential Gateway Functions** checkbox.

□ Disable All Residential Gateway Functions

Router Name :

□ Use router name for command line prompt

☑ Enable uPnP

☑ Enable HNAP

Figure 20. System Settings Menu

Table 6. System Settings Menu Option

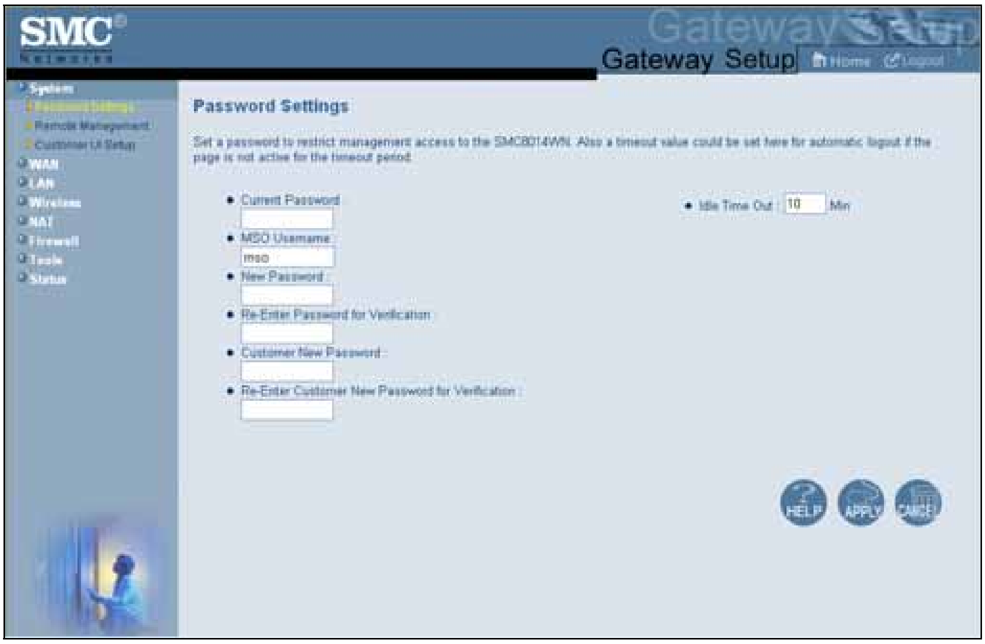
Option	Description
Disable All Residential Gateway Functions	Enables or disables all residential Gateway functions. • Checked = all residential Gateway functions are disabled. • Unchecked = all residential Gateway functions are enabled. (*default)*
Router Name	The name you want to assign to the Gateway. Assign a name so that this device will not be confused with other devices on your wireless network. We recommend you use a name that is meaningful to you so you can identify the Gateway easily.
Use router name for command line prompt	Determines whether the router name you specified appears in DOS command line prompts (for example, if you Telnet into the Gateway). • Checked = router name appears in command line prompts. • Unchecked = router name does not appear in command line prompts. (*default)*
Enable UPnP	Configures the Gateway as a Universal Plug and Play (UPnP) Internet gateway. UPnP allows for dynamic connectivity between devices on a network. A UPnP-enabled device like the Gateway can obtain an IP address, advertise its capabilities, learn about other connected UPnP devices and then communicate directly with those devices. The same device can end its connection cleanly when it wishes to leave the UPnP community. The intent of UPnP is to support zero-configuration, "invisible" networking of devices including intelligent appliances, PCs, printers, and other smart devices using standard protocols. • Checked = UPnP is enabled on the Gateway. (*default)* • Unchecked = UPnP is disabled on the Gateway.
Enable HNAP	Configures the Gateway as a Home Network Administration Protocol (HNAP) device. HNAP allows the Gateway to be configured and managed by remote entities, such as Network Magic or any software application that discovers and manages network devices. • Checked = HNAP is enabled on the Gateway. • Unchecked = HNAP is disabled on the Gateway. (*default)*

Password Settings Menu

Path: **System > Password Settings**

The Password Settings menu lets you change the following settings:

- Gateway default administrator username and password.
- Gateway default user’s password.
- Number of minutes of inactivity that can occur before your Web management session times out automatically. The default setting is 10 minutes.



Password Settings

Set a password to restrict management access to the SMC8014WN. Also a timeout value could be set here for automatic logout if the page is not active for the timeout period.

- Current Password
- MSO Username: mso
- New Password :
- Re-Enter Password for Verification
- Customer New Password :
- Re-Enter Customer New Password for Verification :
- Idle Time Out : 10 Min

Figure 21. Password Settings Menu

Table 7. Password Settings Menu Options

Option	Description
Current Password	Enter the current case-sensitive administrator password. For security purposes, every typed character is masked with a dot (•). The default password is not shown for security purposes.
MSO Username	Enter the current new case-sensitive administrator username.
New Password	Enter the new case-sensitive administrator password you want to use. A password can contain up to 32 alphanumeric characters. Spaces count as password characters. For security purposes, every typed character is masked with a dot (•).
Re-Enter Password for Verification	Enter the same case-sensitive administrator password you typed in the New Password field. For security purposes, every typed character is masked with a dot (•).
Customer New Password	Enter the new case-sensitive password your customers will use to log in to the Gateway Web management interface. A password can contain up to 32 alphanumeric characters. Spaces count as password characters. For security purposes, every typed character is masked with a dot (•). If you leave this field blank, the default user password will be password.
Re-Enter Customer New Password for Verification	Enter the same case-sensitive user password you typed in the Customer New Password field. For security purposes, every typed character is masked with a dot (•).
Idle Time Out	Your Web management interface sessions timeout after 10 minutes of idle time. To change this duration, enter a new timeout value.

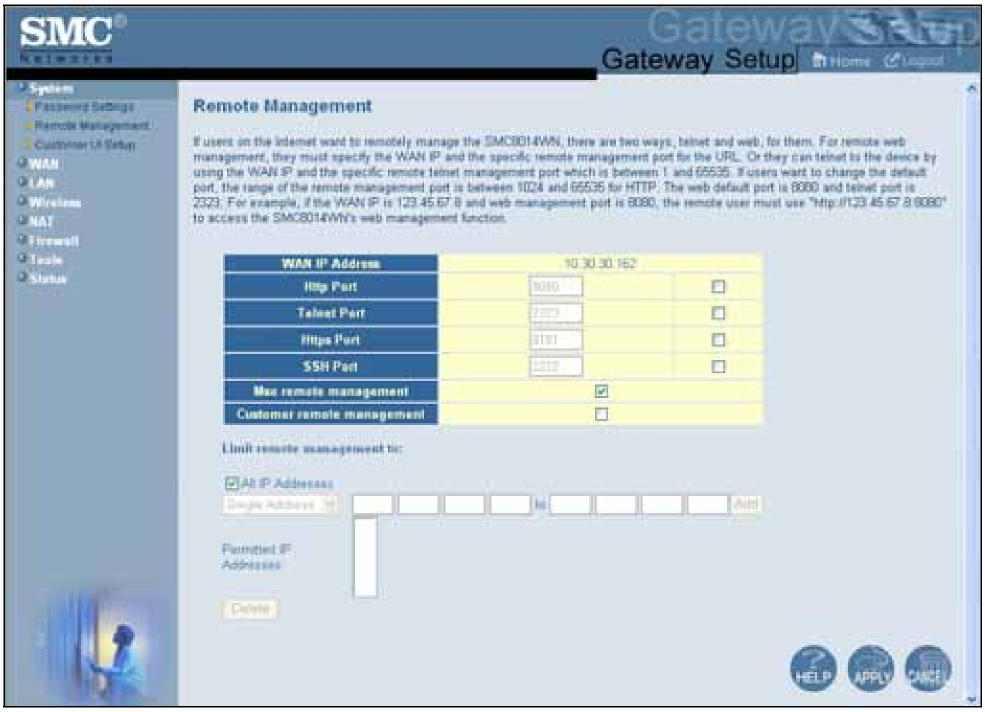
Remote Management Menu

Path: **System > Remote Management**

Administrative users can use the Gateway’s Web-based management or Telnet to manage the device remotely using the public Internet.

- To use Web-based management, users specify the WAN IP address and remote management port in the URL entered in the Browser’s address field.
- For Telnet, users specify the WAN IP address and the remote Telnet management port.

Using the Remote Management menu, you can enable HTTP, Telnet, HTTPS, and SSH and specify the port numbers for each of these settings. You can also limit remote management to specific IP addresses.



Remote Management

If users on the Internet want to remotely manage the SMC8014WN, there are two ways, telnet and web, for them. For remote web management, they must specify the WAN IP and the specific remote management port for the URL. Or they can telnet to the device by using the WAN IP and the specific remote telnet management port which is between 1 and 65535. If users want to change the default port, the range of the remote management port is between 1024 and 65535 for HTTP. The web default port is 8080 and telnet port is 2323. For example, if the WAN IP is 123.45.67.8 and web management port is 8080, the remote user must use "http://123.45.67.8:8080" to access the SMC8014WN's web management function.

WAN IP Address	10.30.30.162	
Http Port	8080	□
Telnet Port	2323	□
Https Port	8181	□
SSH Port	2222	□
Mso remote management	☑	
Customer remote management	□	

Limit remote management to:

☑ All IP Addresses

Single Address ▾ to Add

Permitted IP Addresses

Delete

Figure 22. Remote Management Menu

Table 8. Remote Management Settings Menu Options

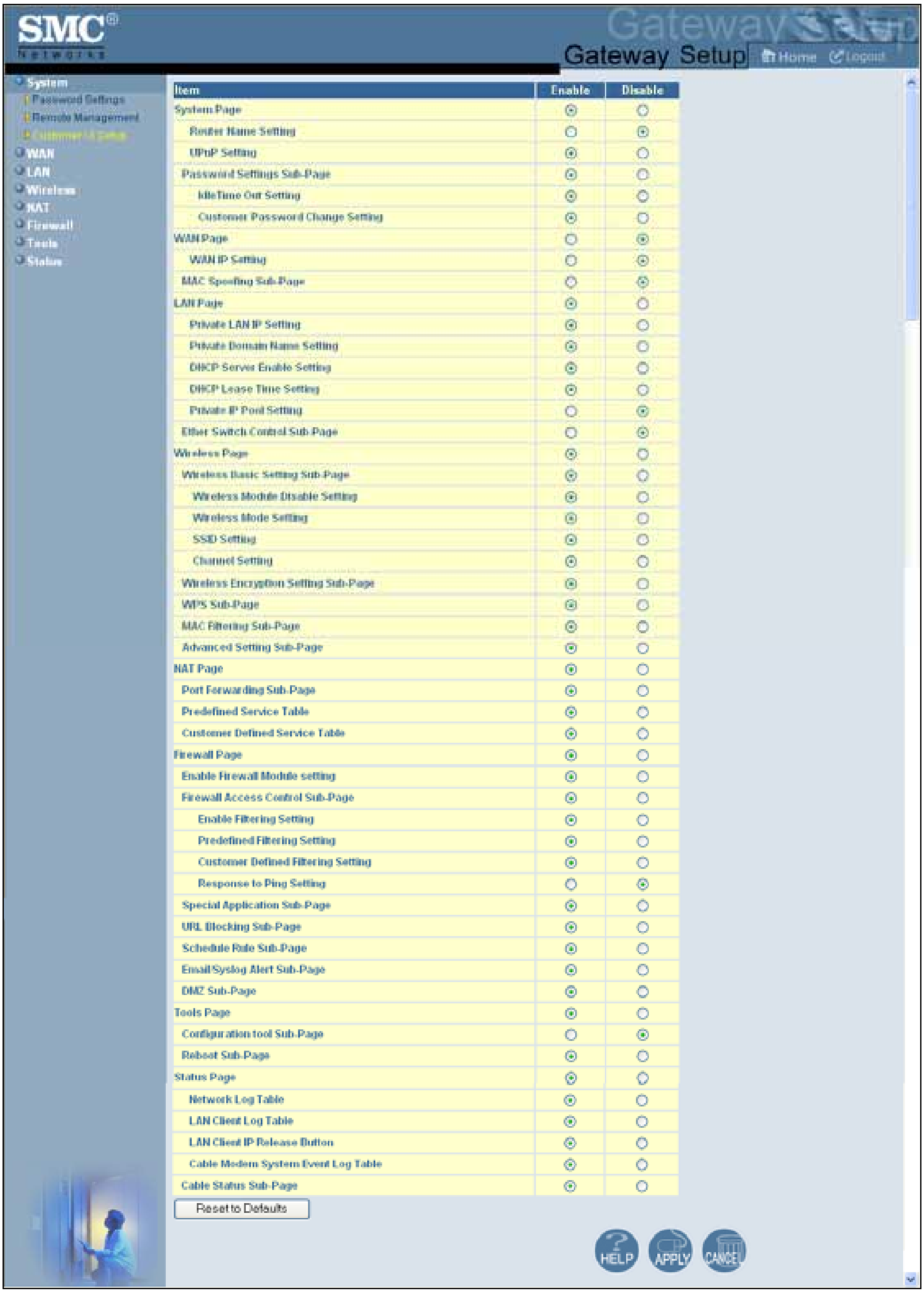
Option	Description
WAN IP Address	Read-only screen that shows the IP address used to access the Gateway's Web management interface via the Internet. For example, if the WAN IP address is 123.45.67.8 and the Web management port is 8080, remote users type http://123.45.67.8:8080 to access the Web management interface. To change the value shown, check the box to the right of this option and enter a new value.
Http Port	Port number used to access the Gateway's Web management interface. Range is from 1024 to 65535. Default is 8080. To change the value shown, check the box to the right of this option and enter a new value.
Telnet Port	Port number used to Telnet into the Gateway. Range is from 1 to 65535. Default is 2323. To change the value shown, check the box to the right of this option and enter a new value.
Https Port	Port number used to access the Gateway via a secure HTTPS connection. Default is 8181. To change the value shown, check the box to the right of this option and enter a new value.
SSH Port	Port number used to access the Gateway via a Secure Sockets Shell (SSH) connection. Default is 2222. To change the value shown, check the box to the right of this option and enter a new value. Note that SSH enables access to the Command Line Interface (CLI). For more information, refer to the CLI command documents provided separately.
Mso remote management	Enables or disables remote access to administrator configuration options. • Checked = administrator remote management is enabled. (*default*) • Unchecked = administrator remote management is disabled.
Customer remote management	Enables or disables remote access to user configuration options. • Checked = user remote management is enabled. • Unchecked = user remote management is disabled. (*default*)
Limit remote management to	By default, enabling remote management makes the device available to all IP addresses. To limit remote management to a subset of IP addresses, perform the following steps: • Uncheck All IP Addresses. • Select Single Address or Address Range from the drop-down list. • Enter the IP address or address range in the fields. • Click Add. The IP address pr address range appears in Permitted IP Addresses. To delete an IP address or address range, perform the following steps. No precautionary message appears before you delete an IP address. • Click the address in Permitted IP Addresses. • Click Delete.

Customer UI Setup Menu

Path: **System > Customer UI Setup**

The Customer UI Setup menu lets you select which menus, submenus, and configuration options are shown to (**Enable**) or hidden from (**Disable**) users. Using this menu, for example, you can hide options that, if changed by users, could adversely affect the Gateway. These settings do not affect the configuration options displayed for administrators.

A **Reset to Defaults** button at the bottom-left side of the menu lets you return the parameters on this menu to their factory default settings.



Item	Enable	Disable
System Page	●	○
Router Name Setting	○	●
UPnP Setting	●	○
Password Settings Sub-Page	●	○
IdleTime Out Setting	●	○
Customer Password Change Setting	●	○
WAN Page	○	●
WAN IP Setting	○	●
MAC Spoofing Sub-Page	○	●
LAN Page	●	○
Private LAN IP Setting	●	○
Private Domain Name Setting	●	○
DHCP Server Enable Setting	●	○
DHCP Lease Time Setting	●	○
Private IP Pool Setting	○	●
Ether Switch Control Sub-Page	○	●
Wireless Page	●	○
Wireless Basic Setting Sub-Page	●	○
Wireless Module Disable Setting	●	○
Wireless Mode Setting	●	○
SSID Setting	●	○
Channel Setting	●	○
Wireless Encryption Setting Sub-Page	●	○
WPS Sub-Page	●	○
MAC Filtering Sub-Page	●	○
Advanced Setting Sub-Page	●	○
NAT Page	●	○
Port Forwarding Sub-Page	●	○
Predefined Service Table	●	○
Customer Defined Service Table	●	○
Firewall Page	●	○
Enable Firewall Module setting	●	○
Firewall Access Control Sub-Page	●	○
Enable Filtering Setting	●	○
Predefined Filtering Setting	●	○
Customer Defined Filtering Setting	●	○
Response to Ping Setting	○	●
Special Application Sub-Page	●	○
URL Blocking Sub-Page	●	○
Schedule Rule Sub-Page	●	○
Email/Syslog Alert Sub-Page	●	○
DMZ Sub-Page	●	○
Tools Page	●	○
Configuration tool Sub-Page	○	●
Reboot Sub-Page	●	○
Status Page	●	○
Network Log Table	●	○
LAN Client Log Table	●	○
LAN Client IP Release Button	●	○
Cable Modem System Event Log Table	●	○
Cable Status Sub-Page	●	○

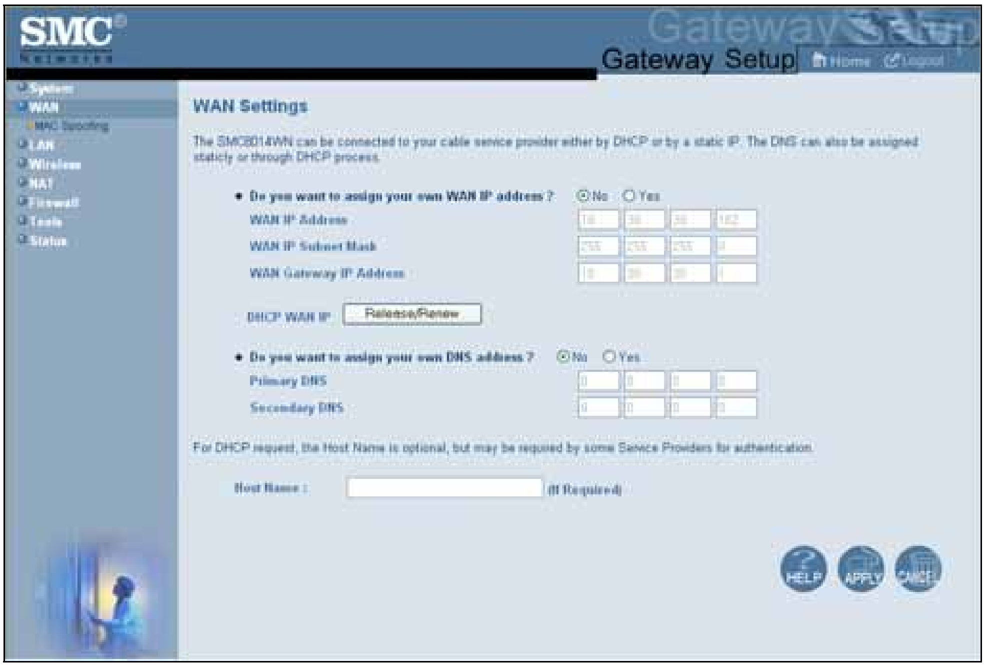
Reset to Defaults

Figure 23. Sample Customer UI Setup Menu

WAN Settings Menu

Path: **WAN**

The Gateway can connect to the cable service provider using either a static IP address or an IP address automatically assigned by a Dynamic Host Configuration Protocol (DHCP) server. Using the WAN Settings menu, you can assign your own static WAN IP and DNS addresses to the Gateway. By default, both options are disabled, allowing the Gateway to obtain these settings automatically from a DHCP server.



WAN Settings

The SMC8014WN can be connected to your cable service provider either by DHCP or by a static IP. The DNS can also be assigned staticly or through DHCP process.

- Do you want to assign your own WAN IP address ? ◉ No ○ Yes

WAN IP Address 10 . 30 . 30 . 162

WAN IP Subnet Mask 255 . 255 . 255 . 0

WAN Gateway IP Address 10 . 30 . 30 . 1

DHCP WAN IP [Release/Renew]

- Do you want to assign your own DNS address ? ◉ No ○ Yes

Primary DNS 0 . 0 . 0 . 0

Secondary DNS 0 . 0 . 0 . 0

For DHCP request, the Host Name is optional, but may be required by some Service Providers for authentication.

Host Name : (If Required)

Figure 24. WAN Settings Menu

Table 9. WAN Settings Menu Options

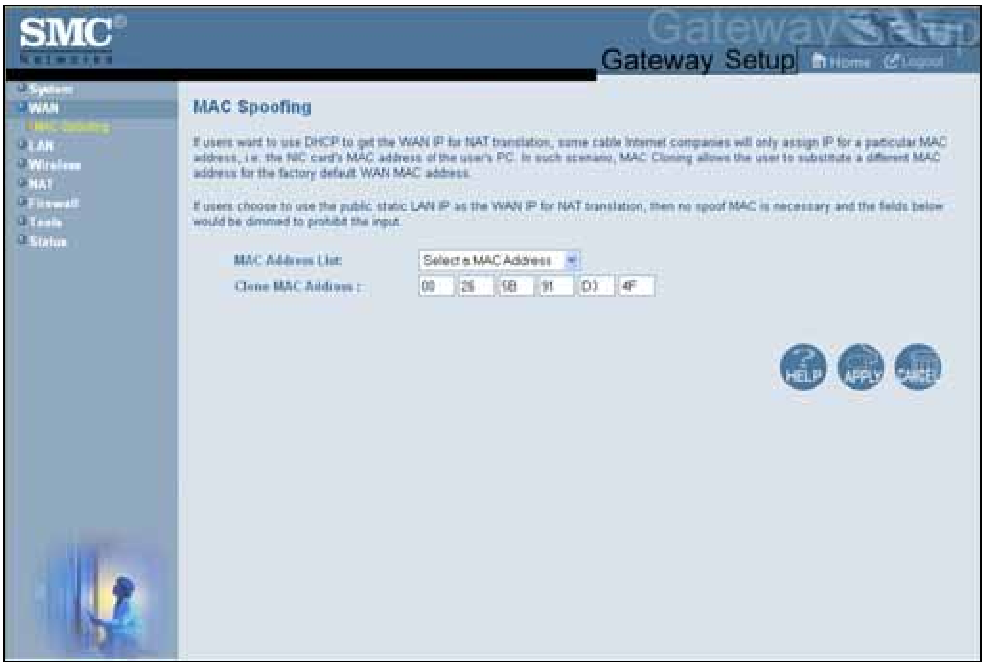
Option	Description
Do you want to assign your own WAN IP address?	By default, this option is set to No. Cable modem providers typically use dynamic assignment of IP addresses. To assign a static WAN IP address to the Gateway and make the WAN fields below this option available, click Yes.
WAN IP Address	Enter a unique static IP address the Gateway.
WAN IP Subnet Mask	Enter the subnet mask for the Gateway.
WAN Gateway IP Address	Enter the Gateway IP address.
DHCP WAN IP Release/Renew button	Click this button to release and then renew the Gateway's IP address. This button is available for DHCP only. It is unavailable when Do you want to assign your own WAN IP address is set to Yes.
Do you want to assign your own DNS address?	By default, this option is set to No. Cable modem providers typically use dynamic assignment of IP addresses. To assign your own IP addresses to primary and secondary DNS servers and make the DNS fields below this option available, click Yes.
Primary DNS	Enter a primary DNS server IP address.
Secondary DNS	Enter the secondary DNS server IP address.
Host Name	This setting is optional. If you will require a host name for DHCP requests, enter it here.

MAC Spoofing Menu

Path: **WAN > MAC Spoofing**

If you need to re-register your MAC address, use the MAC Spoofing menu to clone (or “spoof”) the Gateway’s registered MAC address as necessary.

If you use the public static LAN IP address as the WAN IP for NAT translation, no MAC spoofing is necessary.



MAC Spoofing

If users want to use DHCP to get the WAN IP for NAT translation, some cable Internet companies will only assign IP for a particular MAC address, i.e. the NIC card's MAC address of the user's PC. In such scenario, MAC Cloning allows the user to substitute a different MAC address for the factory default WAN MAC address.

If users choose to use the public static LAN IP as the WAN IP for NAT translation, then no spoof MAC is necessary and the fields below would be dimmed to prohibit the input.

MAC Address List: Select a MAC Address

Clone MAC Address : 00 26 5B 91 D3 4F

Figure 25. MAC Spoofing Menu

Table 10. MAC Spoofing Menu Options

Option	Description
MAC Address List	Select the MAC address you want to spoof.
Clone MAC Address	Clone the MAC address of the NIC communicating with the cable modem.

LAN Settings Menu

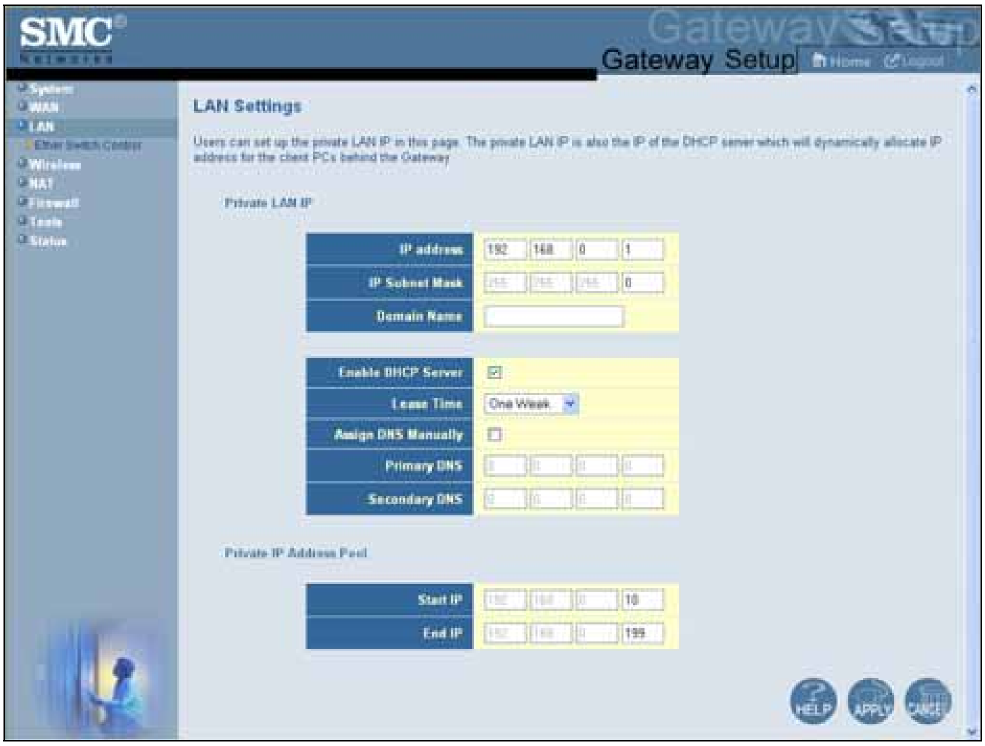
Path: **LAN**

IP addresses are close to being used up and thus very hard to get. One solution to this problem is "private" IP addresses. Private IP addresses are ranges of IP addresses set aside expressly for use by a company or other entity internally. Private IP addresses are non-routable and, therefore, cannot be used to connect directly to the Internet.

Some of the advantages of private IP addresses include:

- Increased security, since private IP addresses are not routable across the Internet
- You conserve the world-wide pool of IP addresses
- You do not have to register or pay for these IP addresses in any way

The LAN Settings menu lets you configure private LAN IP settings and private IP address pools for the Gateway.



LAN Settings

Users can set up the private LAN IP in this page. The private LAN IP is also the IP of the DHCP server which will dynamically allocate IP address for the client PCs behind the Gateway

Private LAN IP

IP address	192 . 168 . 0 . 1
IP Subnet Mask	255 . 255 . 255 . 0
Domain Name	
Enable DHCP Server	☑
Lease Time	One Week
Assign DNS Manually	□
Primary DNS	0 . 0 . 0 . 0
Secondary DNS	0 . 0 . 0 . 0

Private IP Address Pool

Start IP	192 . 168 . 0 . 10
End IP	192 . 168 . 0 . 199

Figure 26. LAN Settings Menu

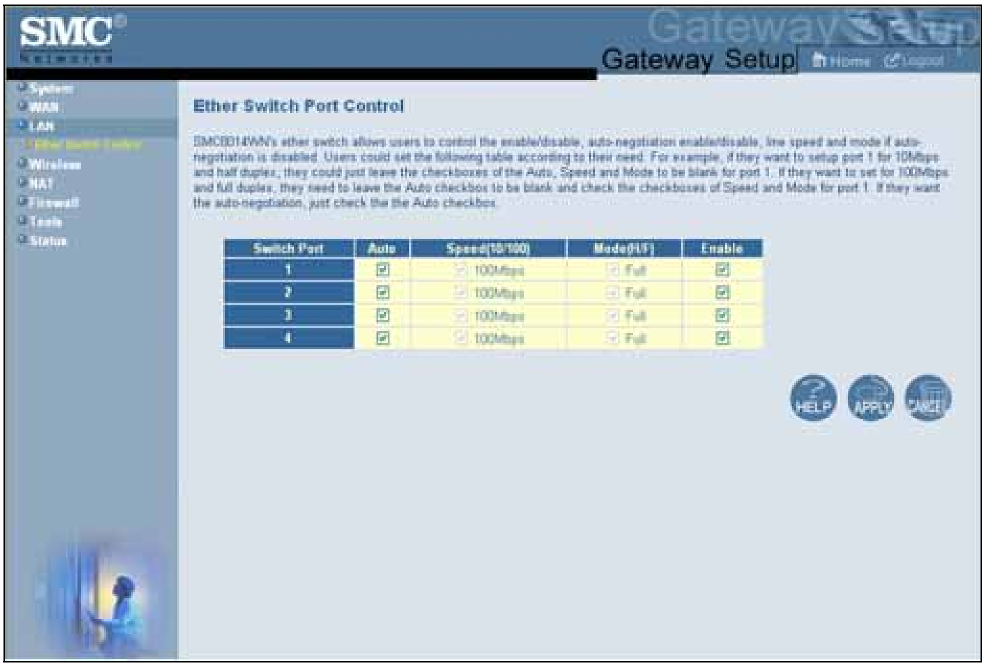
Table 11. LAN Settings Menu Options

Option	Description
Pubic LAN IP	
IP Address	IP address of the Gateway's private LAN settings. Default IP address is 192.168.0.1. if you change this setting, the Gateway reboots after displaying a message.
IP Subnet Mask	Subnet mask of the Gateway's private LAN settings. Default subnet mask is 255.255.255.0.
Domain Name	Domain name of the Gateway's private LAN settings.
Enable DHCP Server	Enables or disables the DHCP server to allow automatic allocation of IP addresses to LAN client PCs. • Checked = DHCP server is enabled. (*default*) • Unchecked = DHCP server is disabled.
Lease Time	Amount of time a DHCP network user is allowed connection to the Gateway with their current dynamic IP address. Default is One Week. This option is available when **Enable DHCP Server** is checked.
Assign DNS Manually	Enables or disables the DHCP server to allow automatic allocation of primary and secondary IP addresses for DSN servers on the LAN. • Checked = use static IP addresses for primary and secondary DNS servers. If checked, enter the IP addresses of the primary and secondary DNS server in the Primary DNS and Secondary DNS fields. • Unchecked = allocate IP addresses for primary and secondary DNS servers automatically. (*default*)
Primary DNS	Static IP address of the primary DNS server. This option is available when **Assign DNS Manually** is checked.
Secondary DNS	Static IP address of the secondary DNS server. This option is available when **Assign DNS Manually** is checked.
Private IP Address Pool	
Start IP	Starting IP address range for the pool of allocated for private IP addresses.
End IP	Ending IP address range for the pool of allocated for private IP addresses.

Ether Switch Port Control Menu

Path: **LAN > Ether Switch Control**

By default, the Gateway LAN ports are enabled to auto-negotiate the highest supported speed and appropriate duplex mode. If these settings prevent the Gateway from successfully connecting with other devices, you can use the Ether Switch Port Control menu to configure the Gateway to use fixed speed and duplex settings. The Ether Switch Port Control menu also let you disable the individual LAN ports. For your convenience, each port can be configured independently of the other LAN ports on the Gateway.



Ether Switch Port Control

SMC8014WN's ether switch allows users to control the enable/disable, auto-negtiation enable/disable, line speed and mode if auto-negotiation is disabled. Users could set the following table according to their need. For example, if they want to setup port 1 for 10Mbps and half duplex, they could just leave the checkboxes of the Auto, Speed and Mode to be blank for port 1. If they want to set for 100Mbps and full duplex, they need to leave the Auto checkbox to be blank and check the checkboxes of Speed and Mode for port 1. If they want the auto-negotiation, just check the the Auto checkbox.

Switch Port	Auto	Speed(10/100)	Mode(H/F)	Enable
1	☑	☑ 100Mbps	☑ Full	☑
2	☑	☑ 100Mbps	☑ Full	☑
3	☑	☑ 100Mbps	☑ Full	☑
4	☑	☑ 100Mbps	☑ Full	☑

Figure 27. Ether Switch Port Control Menu

The following procedure describes how to change the settings in the Ether Switch Port Control menu.

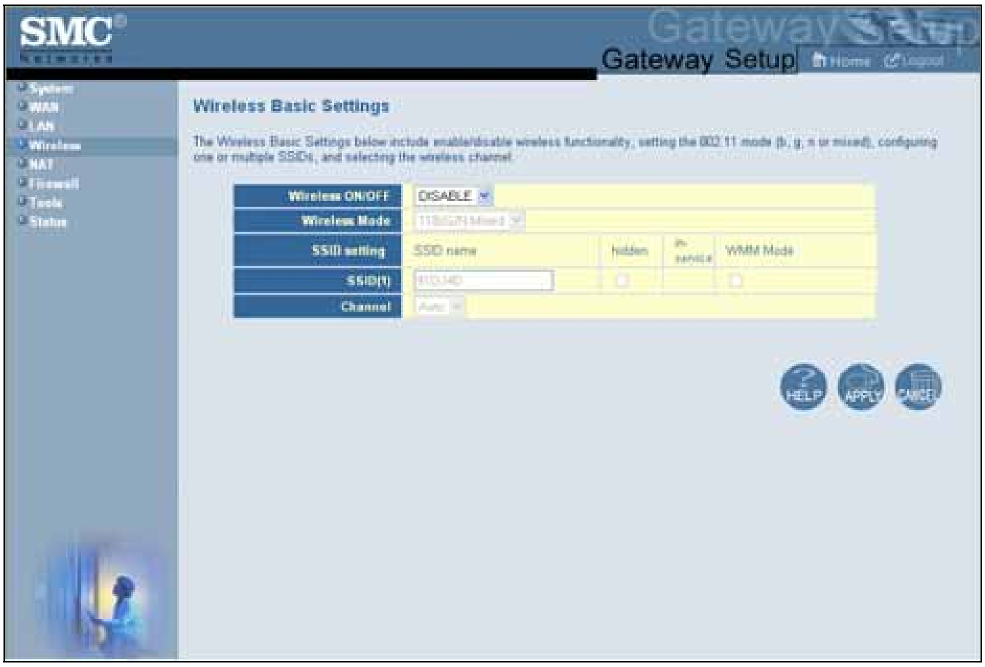
1. To change a port from auto-negotiation to a fixed speed and duplex setting:
   a. Uncheck the **Auto** check box for the port.
   b. Under **Speed (10/100)**, click the radio button that corresponds to the fixed speed you want to use for that port.
   c. Under the **Mode H/F** column, leave the check mark for full-duplex mode or uncheck it for half-duplex mode.
2. To disable a port, regardless of the auto-negotiation and duplex settings, uncheck **Enable** for the port.
3. Click **Apply**.

Wireless Basic Settings Menu

Path: **Wireless**

The Wireless Basic Settings menu lets you configure basic wireless settings, such as:

- Enabling or disabling the Gateway’s wireless operation
- Selecting an 802.11 wireless mode
- Configuring primary and multiple SSIDs
- Configuring channel settings



Wireless Basic Settings

The Wireless Basic Settings below include enable/disable wireless functionality, setting the 802.11 mode (b, g, n or mixed), configuring one or multiple SSIDs, and selecting the wireless channel.

Wireless ON/OFF	DISABLE			
Wireless Mode	11B/G/N Mixed			
SSID setting	SSID name	hidden	in-service	WMM Mode
SSID(1)	810340	□		□
Channel	Auto			

Figure 28. Wireless Basic Settings Menu

Table 12. Wireless Basic Settings Menu Options

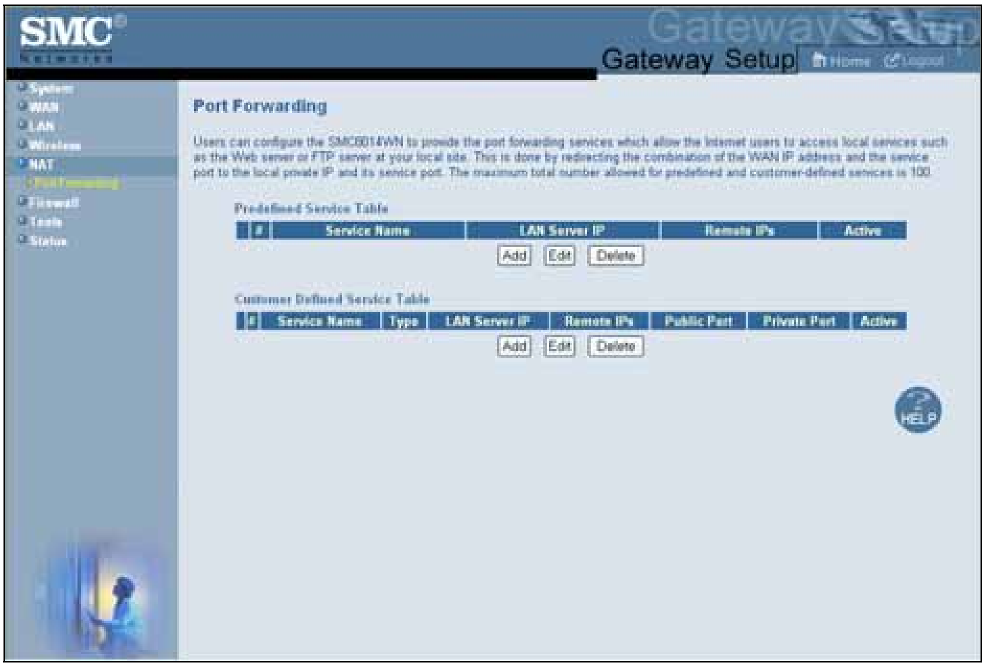
Option	Description
Wireless ON/OFF	Enables or disables the Gateway's wireless operation. • ENABLE = Gateway's wireless operation is active. Selecting this option activates the options in this menu. Clicking **Apply** displays the submenus below the Wireless menu. • DISABLE = Gateway's wireless operation is not active. Selecting this option deactivates the options in this menu. Clicking **Apply** hides the submenus below the Wireless menu. (*default*)
Wireless Mode	If wireless operation is enabled for the Gateway, this option selects the 802.11 wireless mode to be used by the Gateway. Choices are: • 11B/G Mixed = use this setting if you have a combination of IEEE 802.11b and IEEE 802.11g devices on your network. • 11B Only = use this setting if you have only IEEE 802.11b devices on your network or want to limit your network to IEEE 802.11b devices. • 11G Only = use this setting if you have only IEEE 802.11g devices on your network or want to limit your network to IEEE 802.11g devices. • 11N Only = use this setting if you have only IEEE 802.11n devices on your network or want to limit your network to IEEE 802.11n devices. • 11G/N Mixed = use this setting if you have a combination of IEEE 802.11g and IEEE 802.11n devices on your network. • 11B/G/N Mixed = use this setting if you have a combination of IEEE 802.11b, IEEE 802.11g, and IEEE 802.11n devices on your network. (*default*)
SSID setting	SSID is the network name shared among all devices in a wireless network. The SSID must be identical for all devices in the wireless network. It is case-sensitive and must not exceed 32 alpha-numeric characters, which may be any keyboard character. Be sure these settings are the same for all devices in your wireless network. • Hidden = when checked, hides the SSID. Use this setting to block illegal connections. Users cannot reconnect automatically or manually to a wireless network that uses a hidden SSID. The wireless network that uses a hidden SSID does not appear in the Microsoft Windows Wireless Network Connection window. • In-service = when checked, broadcasts the Gateway's SSID. • WMM Mode = when checked, enables WMM functionality. Enabling WMM can help control latency and jitter when transmitting multimedia content over a wireless connection.
Channel	Select the appropriate channel from the list provided to correspond with your network settings, between 1 and 11 (in North America). Default is **Auto**, which selects the appropriate channel automatically. All devices in your wireless network must use the same channel to work properly.

Port Forwarding Menu

Path: **NAT > Port Forwarding**

Using the Port Forwarding menu, you can configure the Gateway to provide port-forwarding services that let Internet users access predefined services.

Note: If you change this setting, the Gateway reboots automatically.



Port Forwarding

Users can configure the SMC8014WN to provide the port forwarding services which allow the Internet users to access local services such as the Web server or FTP server at your local site. This is done by redirecting the combination of the WAN IP address and the service port to the local private IP and its service port. The maximum total number allowed for predefined and customer-defined services is 100.

Predefined Service Table

#	Service Name	LAN Server IP	Remote IPs	Active

Customer Defined Service Table

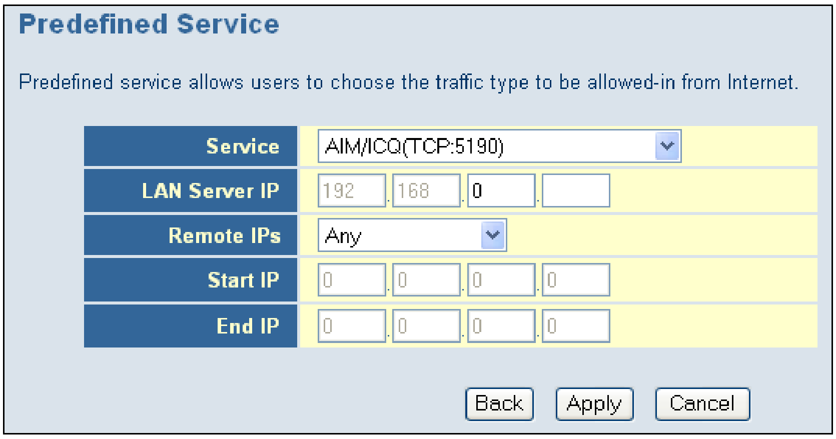
#	Service Name	Type	LAN Server IP	Remote IPs	Public Port	Private Port	Active

Figure 29. Port Forwarding Menu

Adding Predefined Services

Using the following procedure, you can select well-known services and specify the LAN host IP address(es) that will provide the service to the Internet.

1. In the Port Forwarding menu, click the **Add** button below the **Predefined Service Table**. The Predefined Service menu appears (see Figure 30).
2. Complete the fields in the Predefined Service menu (see Table 13).
3. Click **Apply**. (Or click **Back** to return to the Port Forwarding menu or **Cancel** to cancel any selections you made.) If you clicked **Apply**, the predefined service is added to the **Predefined Service Table** on the Port Forwarding menu.
4. To configure additional predefined services (up to 100, including customer-defined services), repeat steps 1 through 3.
5. To change the settings for a predefined service, click the radio button to the left of the service in the **Predefined Service Table** and click the **Edit** button. When the Predefined Service menu appears, edit the settings as necessary (see Table 13) and click **Apply**.
6. To delete a predefined service, click the radio button to the left of the service in the **Customer Defined Service Table** and click the **Delete** button. No precautionary message appears before you delete a predefined service.



Predefined Service

Predefined service allows users to choose the traffic type to be allowed-in from Internet.

Service	AIM/ICQ(TCP:5190)
LAN Server IP	192 . 168 . 0 .
Remote IPs	Any
Start IP	0 . 0 . 0 . 0
End IP	0 . 0 . 0 . 0

Figure 30. Predefined Service Menu

Table 13. Predefined Service Menu Options

Option	Description
Service	List of predefined services from which you can choose.
LAN Server IP	Enter the last two octets of the IP address of the LAN PC or server running the service.
Remote IPs	Select any remote IP address, a single remote IP address, or a range of remote IP addresses for the defined service.
Start IP	If Remote IPs is set to Single address or Address Range, enter the starting IP address of the service.
End IP	If Remote IPs is set to Address Range, enter the last octet in the ending IP address of the service.

Adding Customer-Defined Services

Using the following procedure, you can define special application services you want to provide to the Internet. The following example shows how to set port forwarding for a Web server on an Internet connection, where port 80 is blocked from the WAN side, but port 8000 is available.

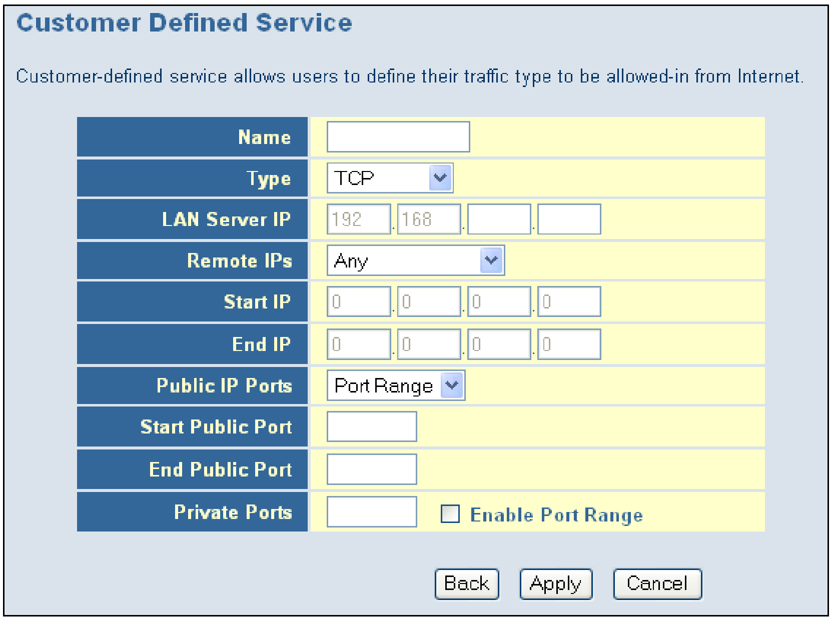
Name:	Web Server
Type:	TCP
LAN Server IP:	192.168.0.100
Remote IPs:	Any (allow access to any public IP)
Public Port:	8000
Private Port:	80

With this configuration, all HTTP (Web) TCP traffic on port 8000 from any IP address on the WAN side is redirected through the firewall to the Internal Server with the IP address 192.168.0.100 on port 80.

To create your own customized services:

1. In the Port Forwarding menu, click the **Add** button below the **Customer Defined Service Table**. The Customer Defined Service page appears (see Figure 31).
2. Complete the fields in the Customer Defined Service page (see Table 14).
3. Click **Apply**. (Or click **Back** to return to the Port Forwarding menu or **Cancel** to cancel any selections you made.) If you clicked **Apply**, the customer-defined service is added to the **Customer Defined Service Table** on the Port Forwarding menu.
4. To configure additional customer-defined services (up to 100, including predefined services), repeat steps 1 through 3.
5. To change the settings for a customer-defined service, click the radio button to the left of the service in the **Customer Defined Service Table** and click the **Edit** button. When the Customer Defined Service page appears, edit the settings as necessary (see Table 14) and click **Apply**.

6. To delete a customer-defined service, click the radio button to the left of the service in the **Customer Defined Service Table** and click the **Delete** button. No precautionary message appears before you delete a customized service.



Customer Defined Service

Customer-defined service allows users to define their traffic type to be allowed-in from Internet.

Name	
Type	TCP
LAN Server IP	192 . 168 . .
Remote IPs	Any
Start IP	0 . 0 . 0 . 0
End IP	0 . 0 . 0 . 0
Public IP Ports	Port Range
Start Public Port	
End Public Port	
Private Ports	□ Enable Port Range

Figure 31. Customer Defined Service Page

Table 14. Customer Defined Service Page Options

Option	Description
Name	Name for identifying the custom service. The name is for reference purposes only and should let you identify this service from others you may define.
Type	Type of protocol. Choices are: • TCP (*default*) • UDP • TCP/UDP
LAN Server IP	Enter the last two octets of the IP address of the LAN PC or server running the service.
Remote IPs	Select any remote IP address, a single remote IP address, or a range of remote IP addresses for the defined service.
Start IP	If Remote IPs is set to Single address or Address Range, enter the starting IP address of the service.
End IP	If Remote IPs is set to Address Range, enter the last octet in the ending IP address of the service.
Public IP Ports	A single public IP port or a range of public IP ports on which the service is provided. If necessary, contact the application vendor for this information.
Start Public Port	Starting number of the port on which the service is provided.
End Public Port	If Start Public Port is set to Port Range, enter the ending number of the port on which the service is provided.
Private Ports	Numbers of the ports whose traffic the Gateway forwards to the LAN. If there is a range of ports, enter the starting private port here and check Enable Port Range. The Gateway automatically calculates the end private port. The LAN PC server listens for traffic/data on this port (or these ports).

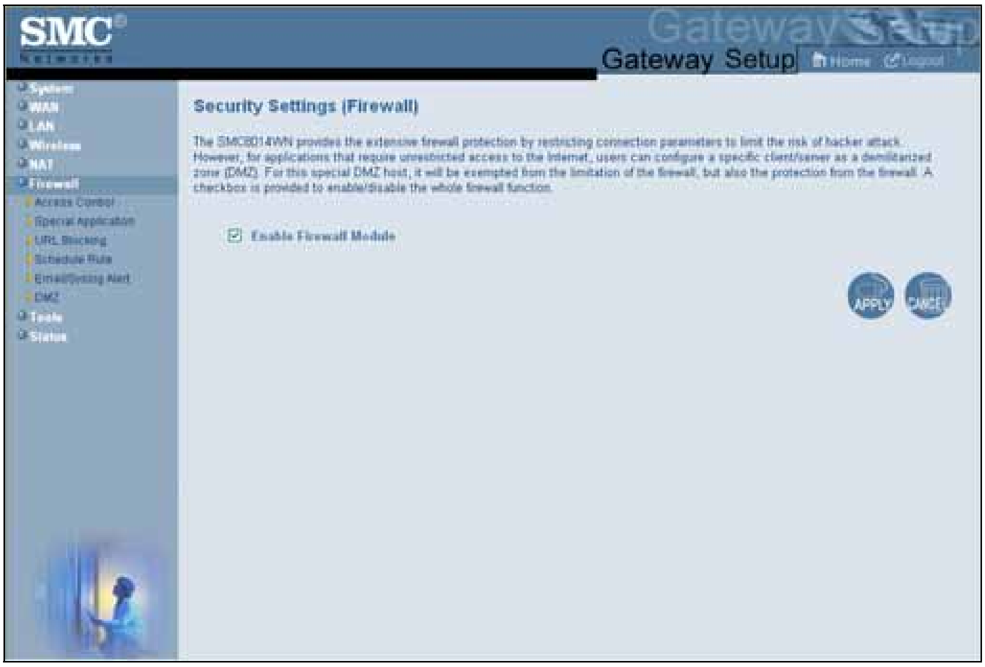
Security Settings (Firewall) Menu

Path: **Firewall**

The Security Settings (Firewall) menu lets you enable or disable the Gateway's firewall. By default, the Gateway's firewall settings are enabled. To disable the firewall, uncheck **Enable Firewall Module** and click **Apply**.

If you enable the Gateway firewall module, the following submenus appear in the menu bar:

- **Access Control** — see page 58
- **Special Application** — see page 62
- **URL Blocking** — see page 65
- **Schedule Rule** — see page 68
- **Email/Syslog Alert** — see page 69
- **DMZ** — see page 72



Security Settings (Firewall)

The SMC8014WN provides the extensive firewall protection by restricting connection parameters to limit the risk of hacker attack. However, for applications that require unrestricted access to the Internet, users can configure a specific client/server as a demilitarized zone (DMZ). For this special DMZ host, it will be exempted from the limitation of the firewall, but also the protection from the firewall. A checkbox is provided to enable/disable the whole firewall function.

☑ Enable Firewall Module

Figure 32. Security Settings (Firewall) Menu

Access Control Menu

Path: **Firewall > Access Control**

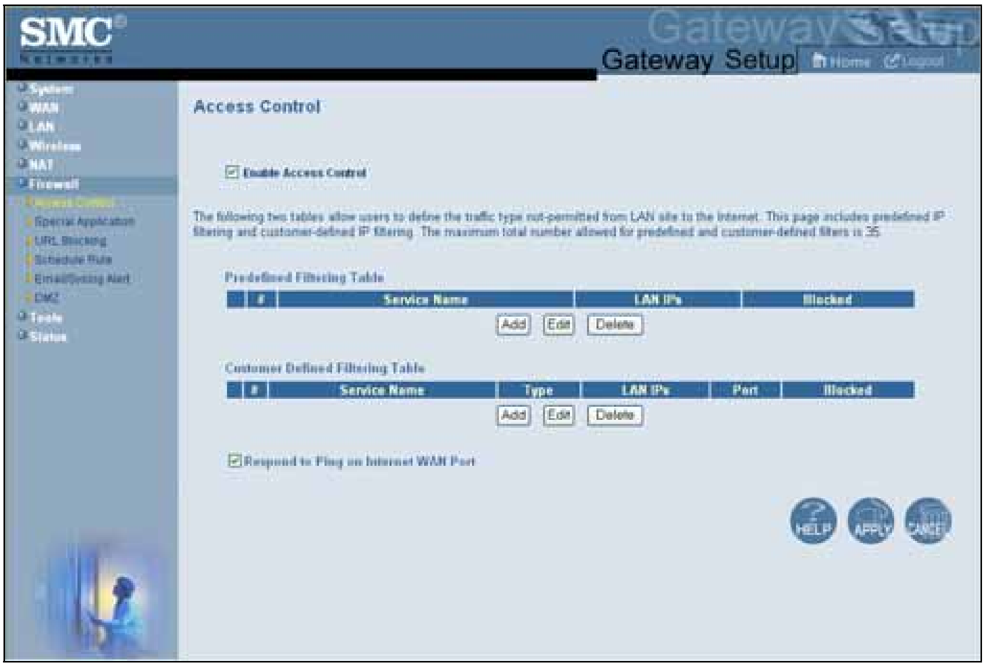
The Access Control menu lets you enable access control to block traffic at the Gateway's LAN interfaces from accessing the Internet.

Note: The **Access Control** submenu is not available in the menu bar if **Enable Firewall Module** is disabled in the Security Settings (Firewall) menu (see page 57).

By default, the Gateway does not block attempts to access the LAN from the Internet. To enable access control, check **Enable Access Control** if it is unchecked and click **Apply**. When Access Control is enabled, you can define up to:

- 35 filters for traffic types not permitted from the LAN to the Internet.
- 35 predefined and customer-defined access rules for well-known services, or for other services if you know the protocol and port number for the application.

A check box at the bottom of the menu lets you configure the Gateway to listen for or ignore ping requests on the Gateway’s Internet WAN port.



Access Control

☑ Enable Access Control

The following two tables allow users to define the traffic type not-permitted from LAN site to the Internet. This page includes predefined IP filtering and customer-defined IP filtering. The maximum total number allowed for predefined and customer-defined filters is 35.

Predefined Filtering Table

	#	Service Name	LAN IPs	Blocked

Add Edit Delete

Customer Defined Filtering Table

	#	Service Name	Type	LAN IPs	Port	Blocked

Add Edit Delete

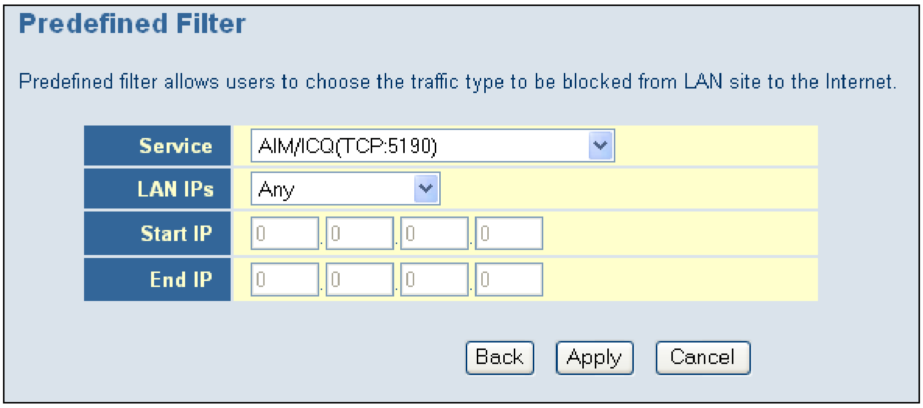
☑ Respond to Ping on Internet WAN Port

Figure 33. Access Control Menu

Adding Predefined Filters

The Gateway lets you select traffic you want to block from the LAN to the Internet.

1. In the Access Control menu, check **Enable Access Control** if it is not checked and click the **Apply** button. The remaining fields in the menu become available.
2. Under **Predefined Filtering Table**, click the **Add** button. The Predefined Filter menu appears (see Figure 34).
3. Complete the fields in the Predefined Filter menu (see Table 15).
4. Click **Apply**. (Or click **Back** to return to the Access Control menu or **Cancel** to cancel any selections you made.) If you clicked **Apply**, the predefined filter is added to the **Predefined Filtering Table** on the Access Control menu.
5. To define additional filters for access control (up to 35, including customer-defined filters), repeat steps 1 through 4. When you finish, click **Apply** in the Access Control menu to save your settings.
6. To change the settings for a predefined filter, click the radio button to the left of the service in the **Predefined Filtering Table** and click the **Edit** button. When the Predefined Filter menu appears, edit the settings as necessary (see Table 15) and click **Apply**. Click **Apply** in the Access Control menu to save your settings.
7. To delete a predefined filter, click the radio button to the left of the filter in the **Predefined Filtering Table** and click the **Delete** button. No precautionary message appears before you delete a predefined filter. Click **Apply** in the Access Control menu to save your settings.



Predefined Filter

Predefined filter allows users to choose the traffic type to be blocked from LAN site to the Internet.

Service	AIM/ICQ(TCP:5190)
LAN IPs	Any
Start IP	0 . 0 . 0 . 0
End IP	0 . 0 . 0 . 0

Figure 34. Predefined Filter Menu

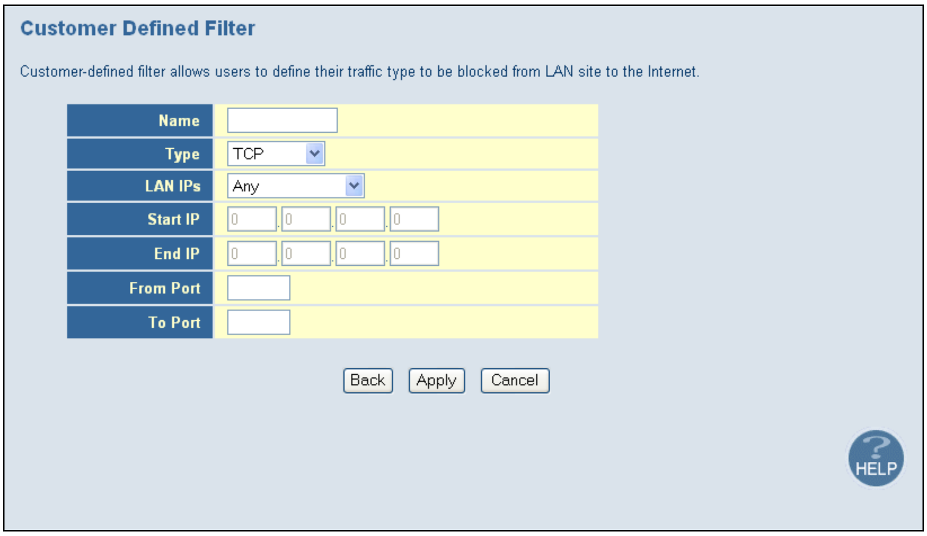
Table 15. Predefined Filter Menu Options

Option	Description
Service	List of predefined services you can choose.
LAN IPs	Select whether you want to apply the predefined filter to any LAN IP address, a single LAN IP address, or a range of LAN IP addresses.
Start IP	If LAN IPs is set to Single address or Address Range, enter the starting local IP address.
End IP	If LAN IPs is set to Address Range, enter the last two octets in the ending local IP address.

Adding Customer-Defined Filters

The Gateway lets you add customer-defined filters that block certain types of traffic from the LAN side of the Gateway to the Internet side of the Gateway.

1. In the Access Control menu, check **Enable Access Control** if it is not checked and click the **Apply** button. The remaining fields in the menu become available.
2. Under **Customer Defined Filtering Table**, click the **Add** button. The Customer Defined Filter menu appears (see Figure 35).
3. Complete the fields in the Customer Defined Filter menu (see Table 16).
4. Click **Apply**. (Or click **Back** to return to the Access Control menu or **Cancel** to cancel any selections you made.) If you clicked **Apply**, the customer-defined filter is added to the **Customer Defined Filtering Table** on the Access Control menu.
5. To define additional filters for access control (up to 35, including predefined filters), repeat steps 1 through 4. When you finish, click **Apply** in the Access Control menu to save your settings.
6. To change the settings for a customer-defined filter, click the radio button to the left of the filter in the **Customer Defined Filtering Table** and click the **Edit** button. When the Customer Defined Filter menu appears, edit the settings as necessary (see Table 16) and click **Apply**. Click **Apply** in the Access Control menu to save your settings.
7. To delete a customer-defined filter, click the radio button to the left of the filter in the **Customer Defined Filtering Table** and click the **Delete** button. No precautionary message appears before you delete a customer-defined filter. Click **Apply** in the Access Control menu to save your settings.



Customer Defined Filter

Customer-defined filter allows users to define their traffic type to be blocked from LAN site to the Internet.

Name	
Type	TCP
LAN IPs	Any
Start IP	0 . 0 . 0 . 0
End IP	0 . 0 . 0 . 0
From Port	
To Port	

Figure 35. Customer Defined Filter Menu

Table 16. Customer Defined Filter Menu Options

Option	Description
Name	Name for identifying the custom filter. The name is for reference purposes only and should let you identify this filter from others you may define.
Type	The type of protocol you want to filter. Choices are TCP, UDP, and TCP/UDP. Default is TCP.
LAN IPs	Select whether you want to apply the customer-defined filter to any LAN IP address, a single LAN IP address, or a range of LAN IP addresses.
Start IP	If LAN IPs is set to Single address or Address Range, enter the starting local IP address.
End IP	If LAN IPs is set to Address Range, enter the last two octets in the ending local IP address.
From Port	Enter the starting port number of the application you want to block. If necessary, obtain this from the application vendor.
To Port	Enter the ending port number of the application you want to block. If necessary, obtain this from the application vendor.

Responding to or Ignoring WAN Port Pings

The bottom of the Access Control menu has a **Respond to Ping on Internet WAN Port** check box.

- Checking this check box and clicking **Apply** configures the Gateway to respond to ping requests on its Internet WAN port.
- Unchecking this check box and clicking **Apply** configures the Gateway to ignore ping requests on its Internet WAN port.

Special Application Menu

Path: **Firewall > Special Application**

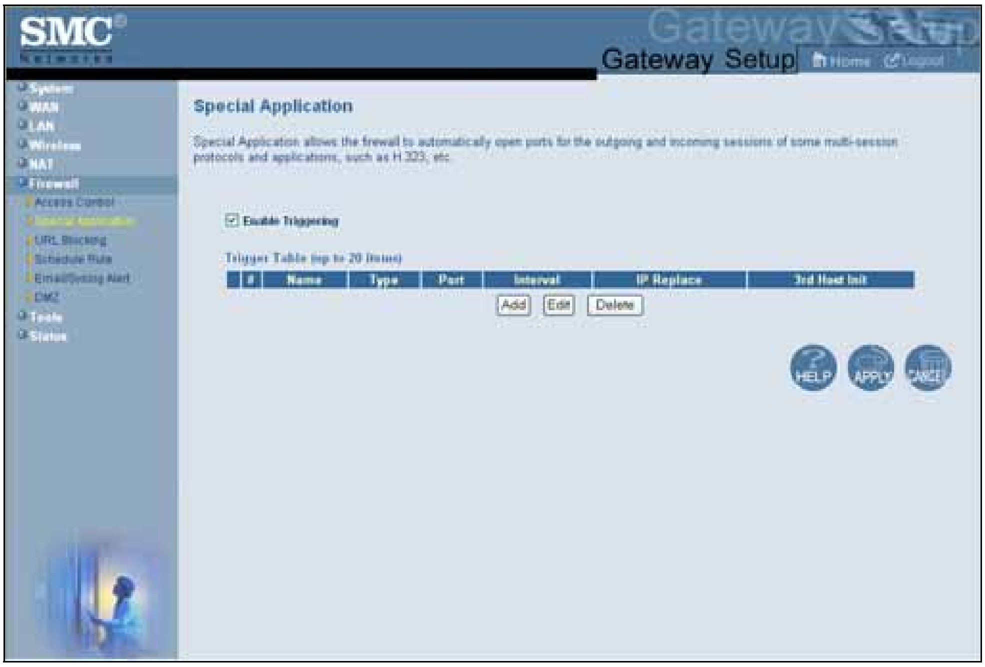
Using the Special Application menu, you can configure the Gateway to detect multiple-session applications and allow them to pass through the firewall.

For special applications, besides the initial communication session, there are multiple related sessions created during the protocol communications. Normally, a normal treats the triggered sessions as independent sessions and blocks them. However, the Gateway can co-relate the triggered sessions with the initial session and group them together in the NAT session table. As a result, you need only specify which protocol type and port number you want to track, as well as some other related parameters. In this way, the Gateway can pass the special applications according to the supplied information.

Assume, for example, that to use H.323 in a Net Meeting application, a local client starts a session A to a remote host. The remote host uses session A to communicate with the local host, but it also could initiate another session B back to the local host. Since there is only session A recorded in the NAT session table when the local host starts the communication, session B is treated as an illegal access from the outside and is blocked. Using the Special Application menu, you can configure the Gateway to co-relate sessions A and B and automatically open the port for the incoming session B.

The maximum allowed triggers is 50. To enable the special application function, check the **Enable Triggering** checkbox and click **Apply**. To disable it, uncheck the **Enable Triggering** checkbox and click **Apply**.

Note: The **Special Application** submenu is not available in the menu bar if **Enable Firewall Module** is disabled in the Security Settings (Firewall) menu (see page 57).



Special Application

Special Application allows the firewall to automatically open ports for the outgoing and incoming sessions of some multi-session protocols and applications, such as H.323, etc.

☑ Enable Triggering

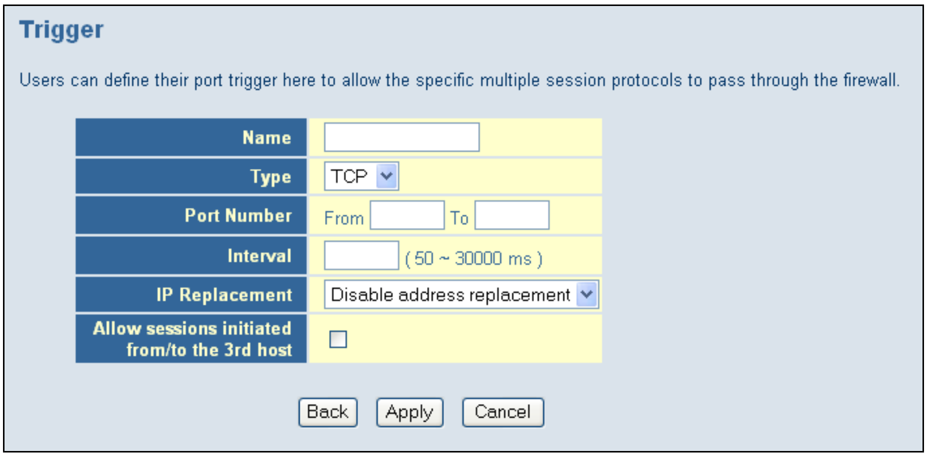
Trigger Table (up to 20 items)

	#	Name	Type	Port	Interval	IP Replace	3rd Host Init

Figure 36. Special Application Menu

To enable port triggering:

1. In the Special Application menu, check **Enable Triggering** if it is unchecked and click the **Apply** button. The Trigger Table becomes available.
2. Click the **Add** button below **Trigger Table**. The Trigger menu appears (see Figure 37).
3. Complete the fields in the Trigger menu (see Table 17).
4. Click **Apply**. (Or click **Back** to return to the Trigger menu or **Cancel** to cancel any selections you made.) If you clicked **Apply**, the trigger is added to the **Trigger Table** on the Special Application menu.
5. To configure additional triggers (up to 20), repeat steps 1 through 4. When you finish, click **Apply** in the Special Application menu to save your settings.
6. To change the settings for a trigger, click the radio button to the left of the trigger in the **Trigger Table** and click the **Edit** button. When the Trigger menu appears, edit the settings as necessary (see Table 17) and click **Apply**. Click **Apply** in the Special Application menu to save your settings.
7. To delete a trigger, click the radio button to the left of the trigger in the **Trigger Table** and click the **Delete** button. No precautionary message appears before you delete a trigger. Click **Apply** in the Special Application menu to save your settings.



Trigger

Users can define their port trigger here to allow the specific multiple session protocols to pass through the firewall.

Name	
Type	TCP
Port Number	From To
Interval	(50 ~ 30000 ms)
IP Replacement	Disable address replacement
Allow sessions initiated from/to the 3rd host	□

Figure 37. Trigger Menu

Table 17. Trigger Menu Options

Option	Description
Name	Name for identifying the trigger. The name is for reference purposes only and should let you identify this trigger from others you may define..
Type	The type of protocol you want to use with the trigger. For example, to track the H.323 protocol, the protocol type should be TCP. Choices are: • TCP (*default*) • UDP
Port Number	From and To port ranges of the special application. For example, to track the H.323 protocol, the From and To ports should be 1720.
Target Port	From and To port ranges for the target port listening for the special application.
Interval	Interval between 50 and 30000 between two continuous sessions. If the interval exceeds this time interval setting, the sessions are considered to be unrelated.
IP Replacement	Select the IP replacement according to the application. Some applications embed the source host's IP in the datagram that prevent NATs from translating the IP address in the datagram. To make sure the network address translation is complete, IP replacement is necessary for these special applications, such as H.323.
Allow sessions initiated from/to the 3rd host	Enable (check) or disable (uncheck) sessions to be initiated from or to a third host. To prevent hacker attacks from a third host, this feature usually is disabled (not checked). However, some special applications, such as MGCP in a VOIP application, permit a session initiated from a third host. For example, assume Client A is trying to make a phone call to host B. Client A tries to communicate with the Media Gateway Controller (MGC) first and provides host B's number to MGC. The MGC checks its own database to find B and communicates with B to provide B the information about A. B uses this information to communicate directly to A. So initially, A is talking to MGC, but the final step has B initiating a session to A. If the third-party host-initiated session is not allowed in this example, the whole communication fails.

URL Blocking Menu

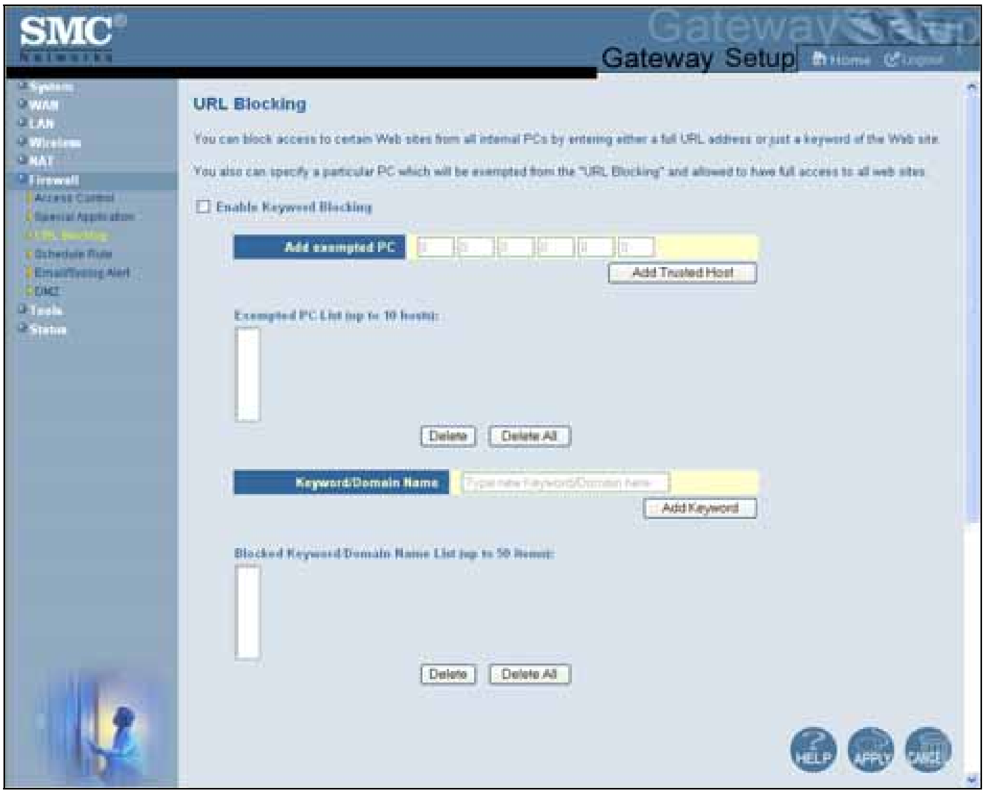
Path: **Firewall > URL Blocking**

Using the URL Blocking menu, you can configure the Gateway to block access to certain Web sites from local computers by entering either a full URL address or keywords of the Web site. The Gateway examines all the HTTP packets to block the access to those particular sites. This feature can be used to protect children from accessing inappropriate Web sites. You can block up to 50 sites.

Using URL blocking, you can also make up to 10 computers exempt from URL blocking and have full access to all Web sites at any time.

Note: The **URL Blocking** submenu is not available in the menu bar if **Enable Firewall Module** is disabled in the Security Settings (Firewall) menu (see page 57).

Tip: The Gateway provides a Schedule Rules feature that lets you configure URL blocking for certain days, if desired. For more information, see “Schedule Rule” on page 68.



URL Blocking

You can block access to certain Web sites from all internal PCs by entering either a full URL address or just a keyword of the Web site.

You also can specify a particular PC which will be exempted from the "URL Blocking" and allowed to have full access to all web sites.

☐ Enable Keyword Blocking

Add exempted PC: 0 : 0 : 0 : 0 : 0 : 0

[Add Trusted Host]

Exempted PC List (up to 10 hosts):

[Delete] [Delete All]

Keyword/Domain Name: Type new Keyword/Domain here

[Add Keyword]

Blocked Keyword/Domain Name List (up to 50 items):

[Delete] [Delete All]

Figure 38. URL Blocking Menu

Enabling URL Blocking

To enable URL blocking:

1. In the URL Blocking menu, check **Enable Keyword Blocking** if it is not checked and click **Apply**.
2. To exempt a computer from URL blocking, enter the computer's MAC address in the **Add exempted PC** field and click the **Add Trusted Host** button. The MAC address you entered appears in the **Exempted PC List**.
3. Repeat step 2 for each additional computer (up to 10) you want to exempt from URL blocking.
4. To remove a computer from being exempted, click it in the **Exempted PC List** and click **Delete**. A precautionary message does not appear before the deletion.
5. To remove all computers from being exempted, click **Delete All**. A precautionary message does not appear before the deletion.
6. Click **Apply**.
7. To define the days and times when URL blocking is enforced, see "Schedule Rule" on page 68.

Blocking Sites

To block a site:

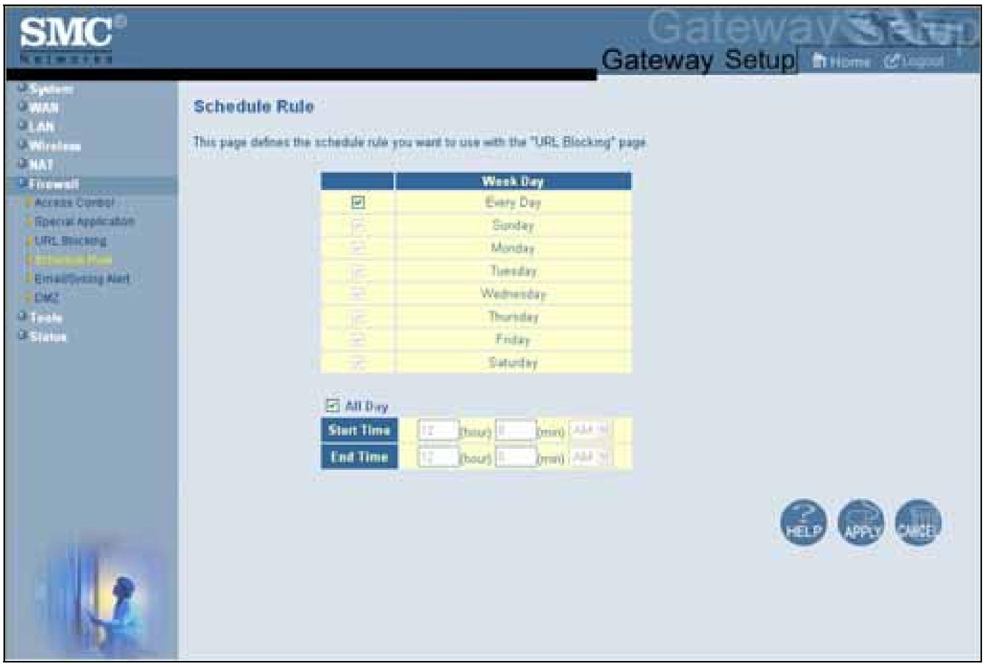
1. Click in the **Keyword/Domain Name** field, enter a keyword or the domain name of the site you want to block, and click **Add Keyword**. The keyword or domain name appears in **Blocked Keyword/Domain List**.
2. Repeat step 2 for each additional keyword or domain (up to 50) you want to make exempt from URL blocking.
3. To remove one keyword or domain from being blocked, click it in the **Blocked Keyword/Domain List** and click **Delete**. A precautionary message does not appear before the deletion.
4. To remove all keywords and domains from being blocked, click **Delete All**. A precautionary message does not appear before the deletion.
5. Click **Apply**.
6. To define the days and times when URL blocking is enforced, see “Schedule Rule” on page 68.

Schedule Rule Menu

Path: **Firewall > Schedule Rule**

Schedule rules work with the Gateway's URL blocking feature (described on page 65) to tell the Gateway when to perform URL blocking.

Note: The **Schedule Rule** submenu is not available in the menu bar if **Enable Firewall Module** is disabled in the Security Settings (Firewall) menu (see page 57).



Schedule Rule

This page defines the schedule rule you want to use with the "URL Blocking" page.

	Week Day
☑	Every Day
□	Sunday
□	Monday
□	Tuesday
□	Wednesday
□	Thursday
□	Friday
□	Saturday

☑ All Day

Start Time	12	(hour)	0	(min)	AM
End Time	12	(hour)	0	(min)	AM

Figure 39. Schedule Rule Menu

By default, the Gateway is configured to apply URL blocking 24 hours every day. To change this setting:

1. To change the days when URL blocking is in force, uncheck **Every Day** under **Week Day**. Then check the days when you want to apply schedule rules to URL blocking.
2. To change the hours when URL blocking is in force, uncheck **All Day**. Then specify the start and end times when you want to apply schedule rules to URL blocking. Select **AM** or **PM**, where AM refers to times from Midnight to Noon and PM refers to times from Noon to Midnight.
3. Click **Apply**.

Email/Syslog Alert Menu

Path: **Firewall > Email/Syslog Alert**

The Gateway inspects packets at the application layer, and stores TCP and UDP session information, including timeouts and number of active sessions. This information is helpful when detecting and preventing Denial of Service (DoS) and other network attacks.

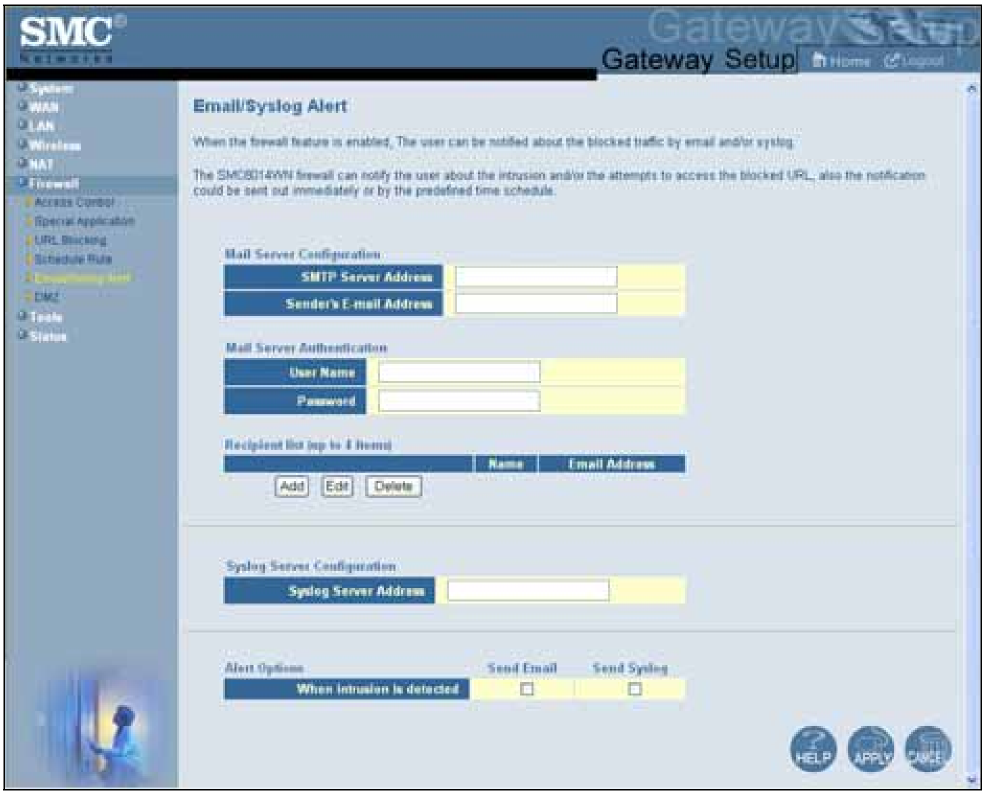
If you enabled the Gateway's firewall or content-filtering feature, you can use the Email/Syslog Alert menu to have the Gateway send email notifications and/or add entries to the syslog when:

- Traffic is blocked
- Attempts are made to intrude onto the network
- Local computers try to access block URLs

The Email/Syslog Alert menu has three sections for specifying email and syslog settings:

- The top section lets you define the email settings.
- The middle section lets you specify the address of the syslog server.
- The bottom section lets you enable or disable email alerts and/or add syslog entries.

Note: The **Email/Syslog Alert** submenu is not available in the menu bar if **Enable Firewall Module** is disabled in the Security Settings (Firewall) menu (see page 57).



Email/Syslog Alert

When the firewall feature is enabled, The user can be notified about the blocked traffic by email and/or syslog.

The SMC8014WN firewall can notify the user about the intrusion and/or the attempts to access the blocked URL, also the notification could be sent out immediately or by the predefined time schedule.

Mail Server Configuration

SMTP Server Address	
Sender's E-mail Address	

Mail Server Authentication

User Name	
Password	

Recipient list (up to 4 items)

	Name	Email Address

Add Edit Delete

Syslog Server Configuration

Syslog Server Address	

Alert Options	Send Email	Send Syslog
When intrusion is detected	□	□

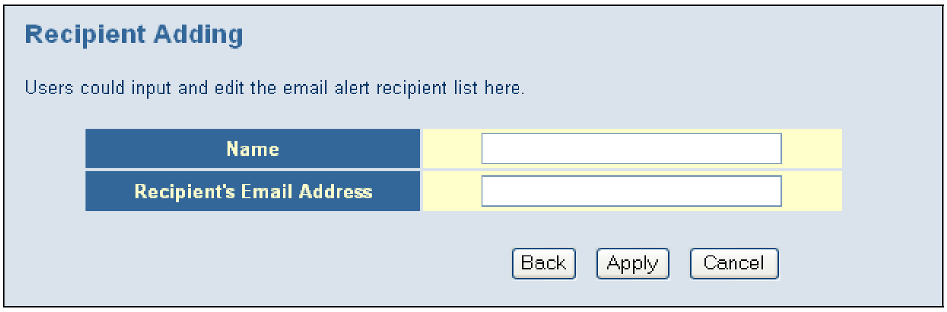
Figure 40. Email/Syslog Alert Menu

Configuring Email Alerts

The following procedure describes how to configure the Gateway to send email notifications when it detects intrusion attempts. This procedure assumes that your mail server is working properly.

1. In the Email/Syslog Alert menu, under **Mail Server Configuration**, enter the following information:
   - **SMTP Server Address** = IP address of the SMTP server that will forward the email notification to recipients.
   - **Sender's Email Address** = name that will appear as the sender in the email notifications.
2. Under **Mail Server Authentication**, enter the following information:
   - **User Name** = your email name.
   - **Password** = your email password. For security, each typed character is masked with a dot (•).

3. Under **Recipient list**, click **Add**. When the Recipient Adding menu appears (see Figure 41), enter the name of the person who will receive email notifications and the person's email address, and then click **Apply**. (Or click **Back** to return to the Email/Syslog Alert menu or **Cancel** to cancel any selections you made.) If you clicked **Apply**, the email account is added to the **Recipient list** on the Email/Syslog Alert menu. To send email to additional email accounts (up to 4), repeat this step.
4. To change the settings for an email recipient, click the radio button to the left of the recipient in the **Recipient list** and click the **Edit** button. When the Recipient Adding menu appears, edit the settings as necessary and click **Apply**.
5. To delete an email recipient, click the radio button to the left of the recipient and click **Delete**. No precautionary message appears before you delete the email recipient.
6. Click **Apply**.



Recipient Adding

Users could input and edit the email alert recipient list here.

Name	
Recipient's Email Address	

Figure 41. Recipient Adding Menu

Configuring Syslog Entries

To configure the Gateway to add syslog entries when it detects intrusion attempts:

1. In the Email/Syslog Alert menu, under **Syslog Server Configuration**, enter the syslog server address in the **Syslog Server Address** field.
2. Click **Apply**.

Configuring Alert Options

After configuring email notifications and/or syslog entries, use the check boxes under **Alert Options** to enable email notifications and/or syslog entries.

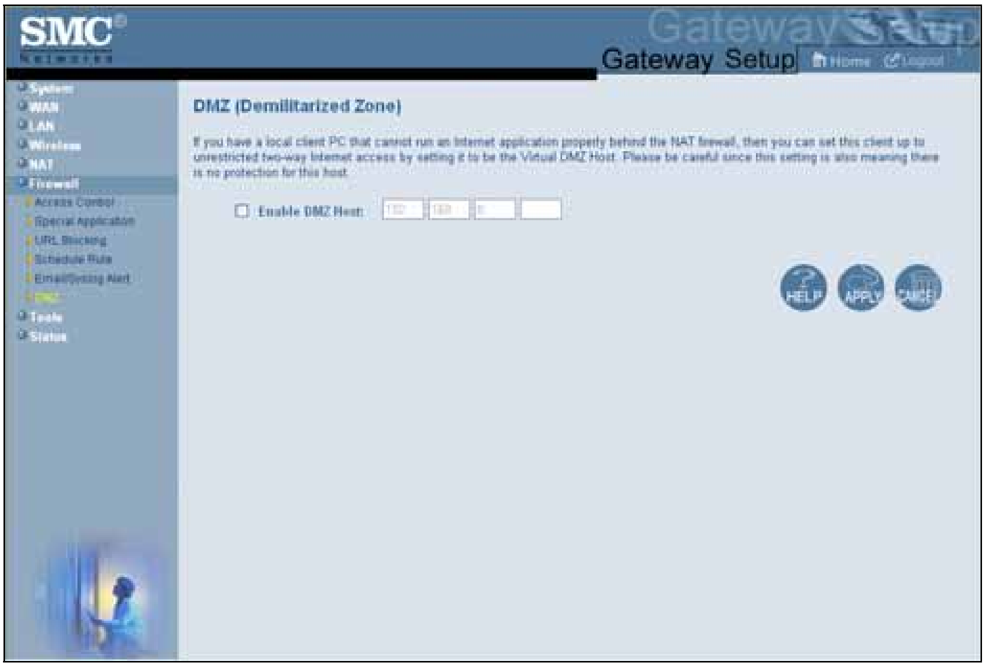
1. To enable email notifications, check **Send Email** next to **When intrusion is detected**.
2. To enable syslog entries, check **Send Syslog** next to **When intrusion is detected**.
3. Click **Apply**.

DMZ (Demilitarized Zone) Menu

Path: **Firewall > DMZ**

If you have a local client computer that cannot run an Internet application properly behind the NAT firewall, configure it for unrestricted two-way Internet access by defining it as a Virtual Demilitarized Zone (DMZ) host in the DMZ (Demilitarized Zone) menu. Adding a client to the DMZ may expose your local network to security risks because the client in the DMZ is not protected by the firewall.

Note: The **DMZ** submenu is not available in the menu bar if **Enable Firewall Module** is disabled in the Security Settings (Firewall) menu (see page 57).



DMZ (Demilitarized Zone)

If you have a local client PC that cannot run an Internet application properly behind the NAT firewall, then you can set this client up to unrestricted two-way Internet access by setting it to be the Virtual DMZ Host. Please be careful since this setting is also meaning there is no protection for this host.

□ Enable DMZ Host: 192 . 168 . 0 .

Figure 42. DMZ (Demilitarized Zone) Menu

To configure DMZ settings:

1. In the DMZ (Demilitarized Zone) menu, check **Enable DMZ Host**. The 2 rightmost fields next to this option become available.
2. Enter the last two octets in the IP address of the computer to be used as the DMZ server.
3. Click **Apply**.

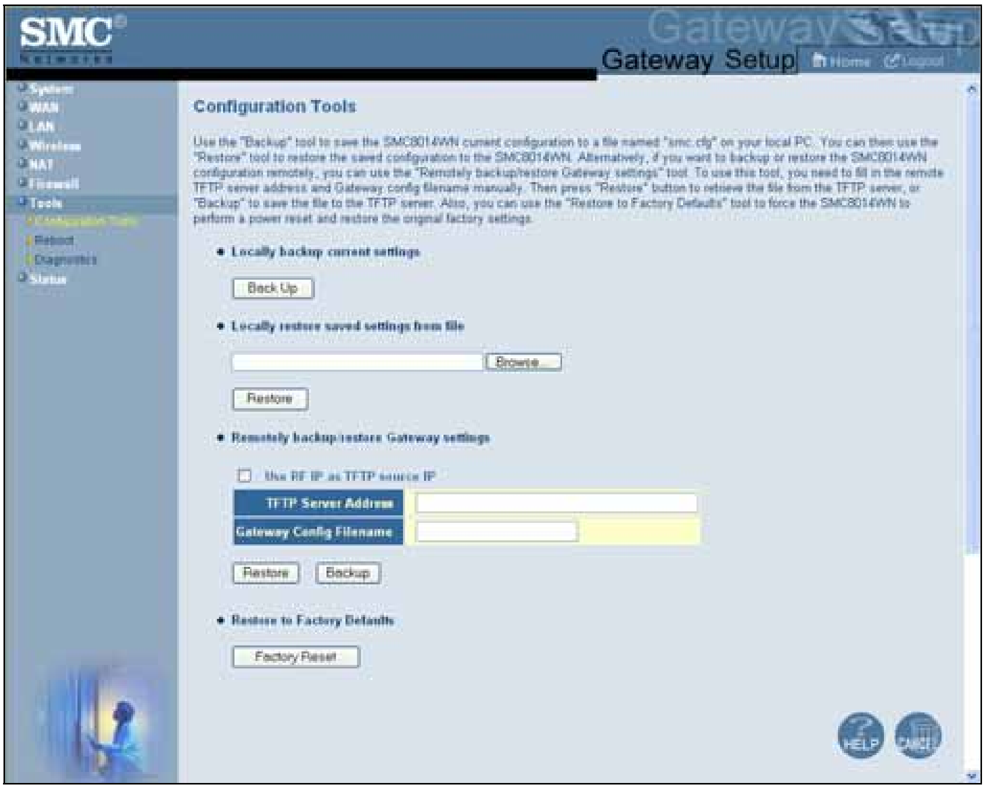
Configuration Tools Menu

Path: **Tools > Configuration Tools**

Gateways often get upgraded or swapped out for a number of reasons. There also times when a Gateway might fail. In such cases, having a backup file containing your configuration settings allows you to restore a configuration by importing the configuration settings back into the Gateway.

Using the **Configuration Tools** menu, you can:

- Back up the Gateway's current configuration settings locally. See page 74.
- Restore the configuration settings locally from a back-up copy. See page 75.
- Remotely back up the current configuration settings over the WAN. See page 76.
- Remotely restore the configuration settings from a backup copy over the WAN. See page 76.
- Restore the Gateway's factory default settings. See page 77.



Configuration Tools

Use the "Backup" tool to save the SMC8014WN current configuration to a file named "smc.cfg" on your local PC. You can then use the "Restore" tool to restore the saved configuration to the SMC8014WN. Alternatively, if you want to backup or restore the SMC8014WN configuration remotely, you can use the "Remotely backup/restore Gateway settings" tool. To use this tool, you need to fill in the remote TFTP server address and Gateway config filename manually. Then press "Restore" button to retrieve the file from the TFTP server, or "Backup" to save the file to the TFTP server. Also, you can use the "Restore to Factory Defaults" tool to force the SMC8014WN to perform a power reset and restore the original factory settings.

- Locally backup current settings

Back Up

- Locally restore saved settings from file

Browse...

Restore

- Remotely backup/restore Gateway settings

☐ Use RF IP as TFTP source IP

TFTP Server Address	
Gateway Config Filename	

Restore Backup

- Restore to Factory Defaults

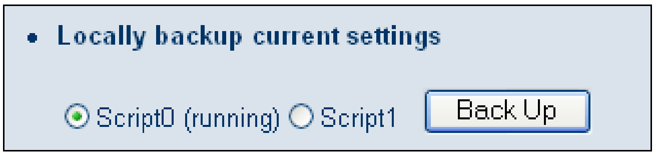
Factory Reset

Figure 43. Configuration Tools Menu

Backing Up the Gateway's Current Configuration Locally

To back up the Gateway's current configuration locally:

1. If one or more scripts appear to the left of the **Back Up** button under **Locally backup current settings**, click the script you want to back up. **(running)** appears next to the script that is currently running.
2. Click the **Back Up** button.

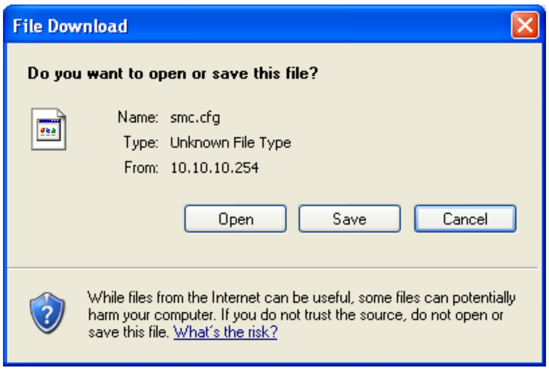


- Locally backup current settings

● Script0 (running) ○ Script1

3. When the File Download dialog box appears (see Figure 44), click **Save**. (Or click **Open** to view the file prior to saving it. If you open the file, you will have to repeat steps 1 and 2 to save it.)
4. When the Save As dialog box appears, go to the location where you want to save the configuration file and click the **Save** button. The file is saved as `smc.cfg`.
5. When the save operation is complete, the Download complete dialog box appears (see Figure 45). Click **Open** to open the configuration file, **Open Folder** to open the folder containing the configuration file, or **Close** to close the dialog box.

Tip: If you click **Open** and a message tells you that an application could not be found to open the configuration file, open the file in a text editor such as WordPad.



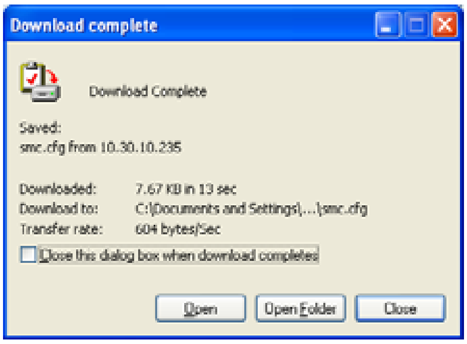
File Download

Do you want to open or save this file?

Name: smc.cfg
Type: Unknown File Type
From: 10.10.10.254

While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not open or save this file. What's the risk?

Figure 44. File Download Dialog Box


Download complete

Download Complete

Saved:
smc.cfg from 10.30.10.235

Downloaded: 7.67 KB in 13 sec
Download to: C:\Documents and Settings\...\smc.cfg
Transfer rate: 604 bytes/Sec

□ Close this dialog box when download completes

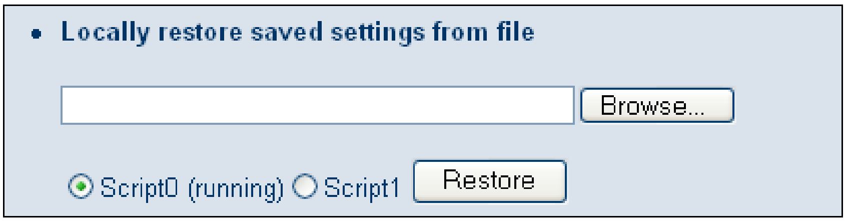
Figure 45. Download Complete Dialog Box

Restoring the Gateway's Current Configuration Locally

If you backed up the Gateway's configuration settings locally, use the following procedure to restore the settings locally.

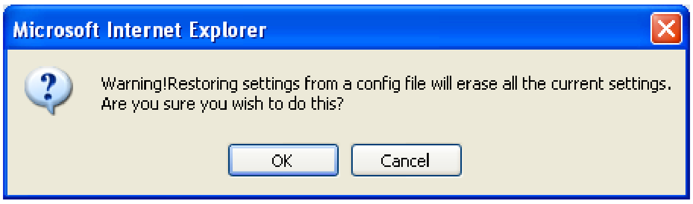
Note: Restoring the Gateway's settings from a configuration file erases all of the Gateway's current settings.

1. If one or more scripts appear to the left of the **Restore** button under **Locally restore saved settings from file**, click the script you want to restore. **(running)** appears next to the script that is currently running.
2. Click the **Browse** button.


- Locally restore saved settings from file

● Script0 (running) ○ Script1

3. When the Choose File dialog box appears, go to the location where you saved the `smc.cfg` file. Then either double-click the file, or click it and click the **Open** button. The file path and name appear to the left of the **Browse** button.
4. Click the **Restore** button. The message in Figure 46 appears.
5. Click **OK** to override the Gateway's current configuration with the one in the configuration file or click **Cancel** to not restore the configuration from the file.



Microsoft Internet Explorer

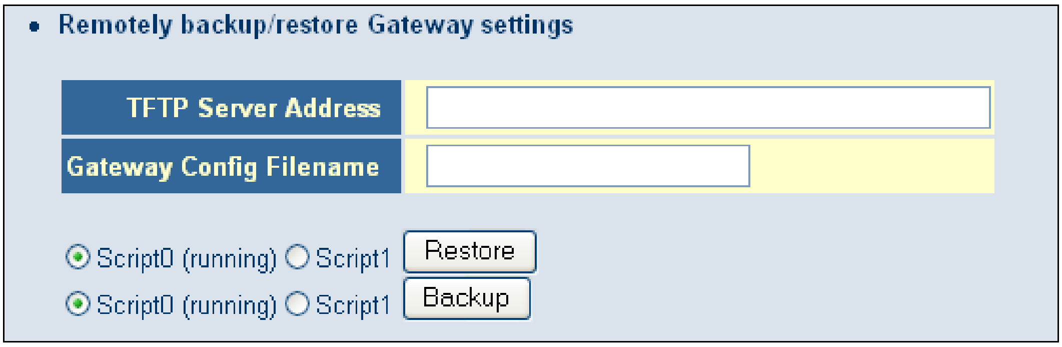
Warning!Restoring settings from a config file will erase all the current settings.
Are you sure you wish to do this?

Figure 46. Warning Message when Restoring from a Configuration File

Backing Up the Gateway's Current Configuration Remotely

You can back up the Gateway's current configuration remotely by uploading the `smc.cfg` file to a TFTP server.

1. Under **Remotely backup/restore Gateway settings**, enter the IP address of the TFTP server in the **TFTP Server Address** field.



- Remotely backup/restore Gateway settings

TFTP Server Address	
Gateway Config Filename	

● Script0 (running) ○ Script1 Restore

● Script0 (running) ○ Script1 Backup

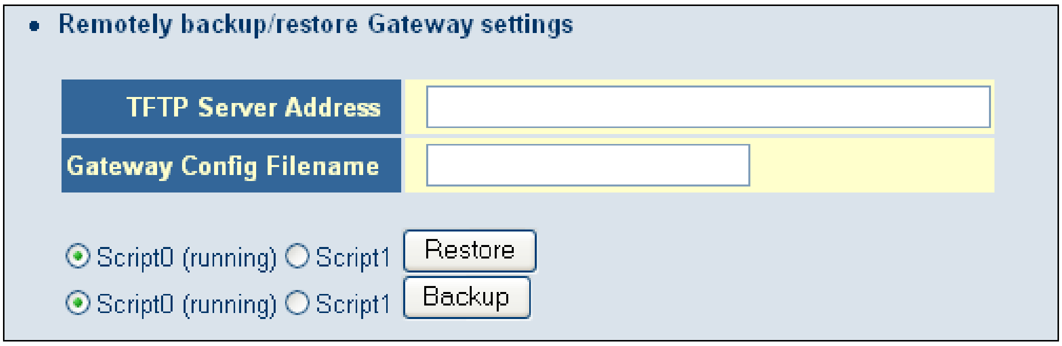
2. In the **Gateway Config Filename** field, enter the name of the configuration file.
3. If one or more scripts appear to the left of the **Backup** button, select the script you want to back up. **(running)** appears next to the script that is currently running.
4. Click the **Backup** button.

Restoring the Gateway's Current Configuration Remotely

If you backed up the Gateway's configuration settings to a TFTP server, use the following procedure to restore the settings remotely.

Note: Restoring the Gateway's settings from a configuration file erases all of the Gateway's current settings.

1. Under **Remotely backup/restore Gateway settings**, enter the IP address of the TFTP server in the **TFTP Server Address** field where the SMC configuration file you want to restore is located.



- Remotely backup/restore Gateway settings

TFTP Server Address	
Gateway Config Filename	

◉ Script0 (running) ○ Script1 Restore

◉ Script0 (running) ○ Script1 Backup

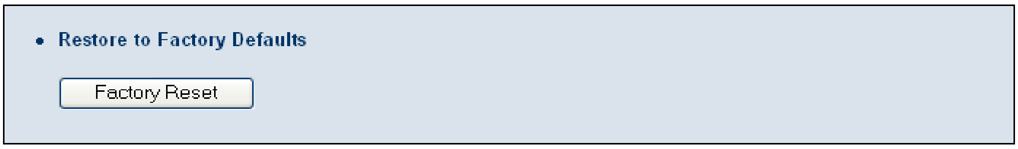
2. In the **Gateway Config Filename** field, enter the name of the configuration file.
3. If one or more scripts appear to the left of the **Restore** button, select the script you want to restore. **(running)** appears next to the script that is currently running.
4. Click the **Restore** button. The message in Figure 46 appears.
5. Click **OK** to override the Gateway's current configuration with the one in the configuration file or click **No** to not restore the configuration from the file.

Restoring Factory Defaults

One way to restore the Gateway's factory default settings is to use the Reset switch on the Gateway's rear panel (see "Restoring Factory Defaults" on page 15). Another way is to use the Configuration Tools menu to power-cycle the Gateway.

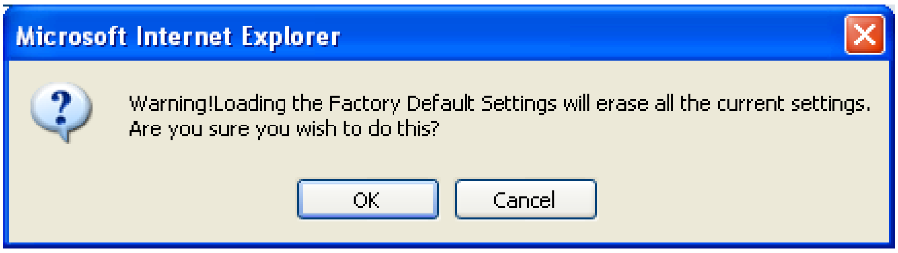
Note: Rebooting the Gateway removes any customized overrides you made to the default settings. To reboot the Gateway and retain any customized settings, use the Reboot menu (see "Reboot Menu" on page 79).

1. Under **Restore to Factory Defaults**, click **Factory Reset**. The warning message in Figure 47 appears.



- Restore to Factory Defaults

2. Click **OK** to restore the Gateway's factory default settings or click **Cancel** to retain the Gateway's current settings.



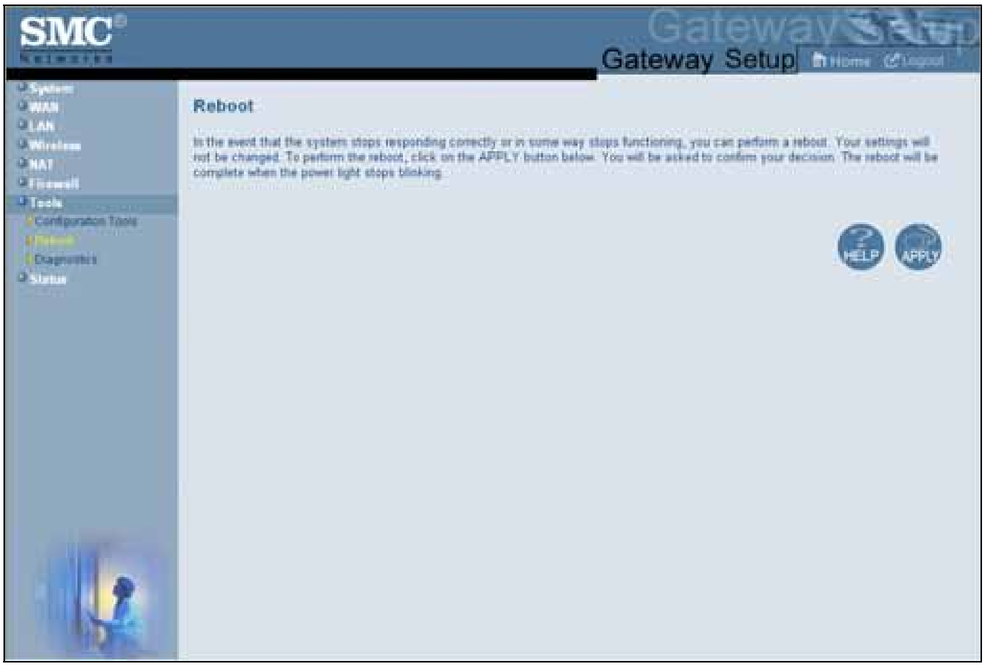
Warning!Loading the Factory Default Settings will erase all the current settings.
Are you sure you wish to do this?

Figure 47. Warning Message when Restoring Factory Defaults

Reboot Menu

Path: **Tools > Reboot**

Using the Reboot menu, you can reset the Gateway and retain all changes that have been made to the Gateway’s factory default settings.



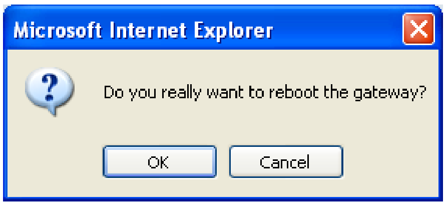
Reboot

In the event that the system stops responding correctly or in some way stops functioning, you can perform a reboot. Your settings will not be changed. To perform the reboot, click on the APPLY button below. You will be asked to confirm your decision. The reboot will be complete when the power light stops blinking.

Figure 48. Reboot Menu

To reboot the Gateway and retain all changes made to its factory default settings:

1. In the Reboot menu, click **Apply**. The precautionary message in Figure 49 appears.
2. Click **OK** to reboot the Gateway or click **Cancel** to not reboot it. If you clicked **OK**, the reboot is complete when the **Power** LED on the front panel of the Gateway stops blinking. You will need to log in to the Web interface again.



Do you really want to reboot the gateway?

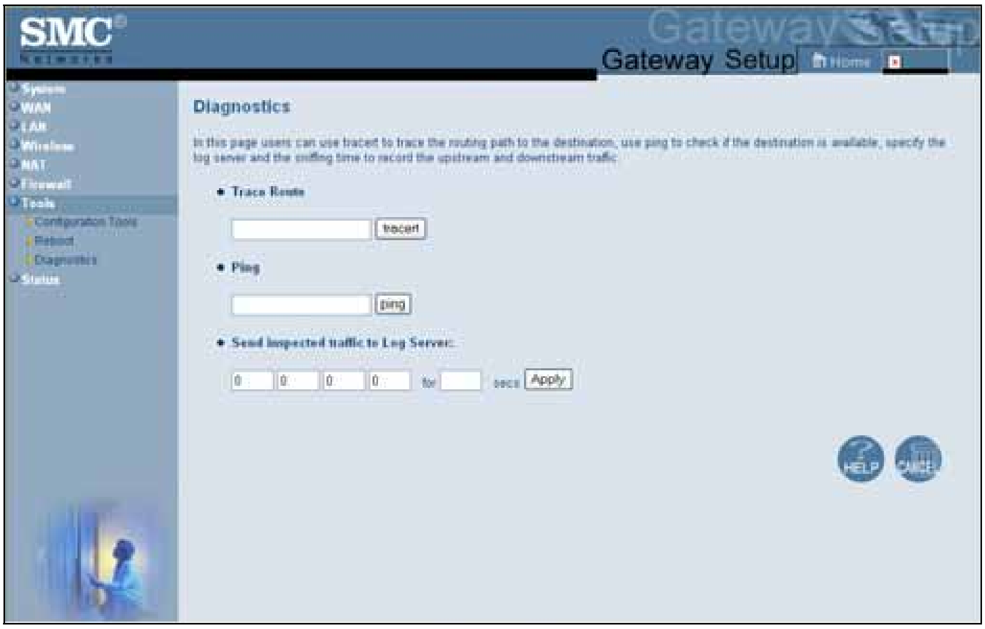
Figure 49. Precautionary Message When Rebooting the Gateway

Diagnostics Menu

Path: **Tools > Diagnostics**

The Diagnostics menu lets you perform three diagnostics to test the Gateway's connectivity.

- The **Trace Route** section lets you trace the routing path from the Gateway to the destination and router. See page 82.
- The **Ping** section lets you ascertain whether a destination is available. See page 81.
- The **Send inspected traffic to Log Server** lets you specify the IP address for a log server, and the sniffing time to record the upstream and downstream traffic. See page 83.



Diagnostics

In this page users can use tracert to trace the routing path to the destination, use ping to check if the destination is available, specify the log server and the sniffing time to record the upstream and downstream traffic

- Trace Route
- Ping
- Send inspected traffic to Log Server:

0 . 0 . 0 . 0 for secs

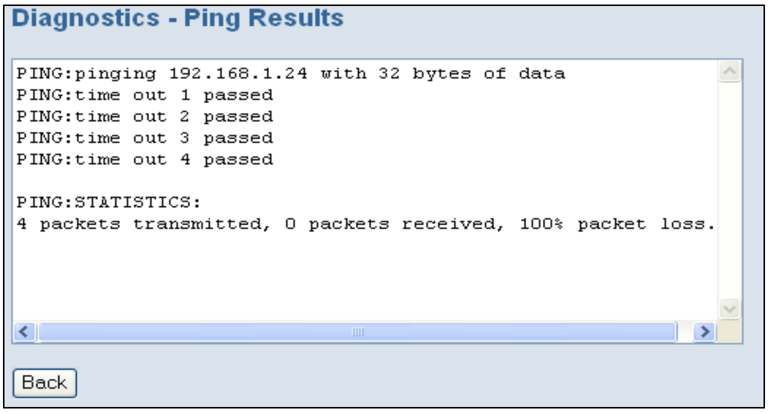
Figure 50. Diagnostics Menu

Using the Ping Tool

Using the ping tool, you can check the connectivity between the Gateway and another local or remote device. The Gateway provides a ping tool for conducting the ping with the default Gateway, across the RF interface, or across the WAN interface. This tool sends a small packet of data and then waits for a reply. When you ping a computer IP address and receive a reply, it confirms that the device is connected to the Gateway.

To perform ping activities, perform the following procedure under **Ping** on the Diagnostics menu.

1. In the **Ping** field, enter the IP address or domain name of a target host.
2. Click the **ping** button. The results appear in the Diagnostics – Ping Results screen (see Figure 51). The results screen may flash as the contents refresh during the ping.
3. To close the results screen, click the **Back** button.



Diagnostics - Ping Results

```
PING:pinging 192.168.1.24 with 32 bytes of data
PING:time out 1 passed
PING:time out 2 passed
PING:time out 3 passed
PING:time out 4 passed

PING:STATISTICS:
4 packets transmitted, 0 packets received, 100% packet loss.
```

Figure 51. Sample Results for a Ping

Using the Trace Route Tool

The Gateway provides a trace route tool for conducting the trace route with the default Gateway, across the RF interface, or across the WAN interface. This tool provides a supplemental role to the ping tool. While the ping tool confirms IP network reachability, you cannot pinpoint and improve some isolated problems.

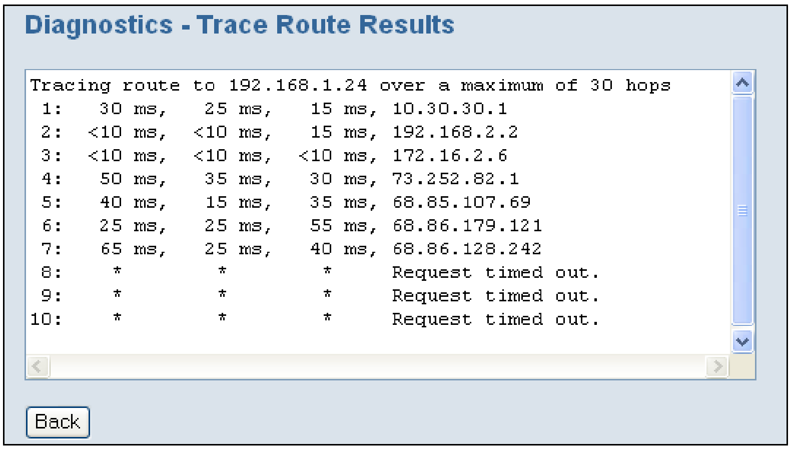
Consider the following situations:

- When there are many hops (for example, gateways or routes) between the Gateway and the destination, and there is a problem somewhere along the path. The destination system may have a problem, but you need to know where a packet is actually lost.
- The ping tools do not tell you the reasons for a lost packet.

The trace route tool can tell you where the packet is located and why the route is lost. Using this tool, you can map a network path in real time from the Gateway to a local or public host.

To perform trace route activities, use the following procedure under **Trace Route** on the Diagnostics menu.

1. In the **Trace Route** field, enter the IP address or domain name of a target host.
2. Click the **tracert** button. The trace route results appear in the Diagnostics – Trace Route Results screen, as the Gateway sends UDP packets to each device between the Gateway and the destination (see Figure 52). It starts with the nearest device and expands the search by one hop until the destination is reached or the trace route times out. The results screen may flash as the contents refresh during the trace route operation.
3. To close the screen, click the **Back** button.



Diagnostics - Trace Route Results

```
Tracing route to 192.168.1.24 over a maximum of 30 hops
 1:    30 ms,    25 ms,    15 ms, 10.30.30.1
 2:   <10 ms,   <10 ms,    15 ms, 192.168.2.2
 3:   <10 ms,   <10 ms,   <10 ms, 172.16.2.6
 4:    50 ms,    35 ms,    30 ms, 73.252.82.1
 5:    40 ms,    15 ms,    35 ms, 68.85.107.69
 6:    25 ms,    25 ms,    55 ms, 68.86.179.121
 7:    65 ms,    25 ms,    40 ms, 68.86.128.242
 8:     *         *         *     Request timed out.
 9:     *         *         *     Request timed out.
10:     *         *         *     Request timed out.
```

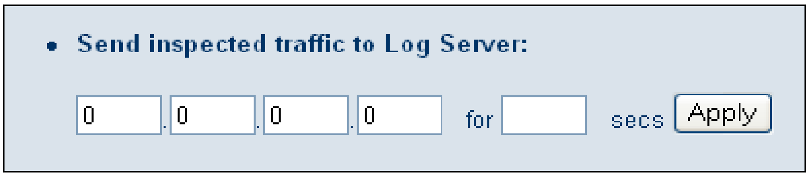
Figure 52. Example of Results for Trace Route

Sending Inspected Traffic to a Log Server

The Gateway can inspect upstream and downstream traffic, and log the results to the syslog server, where they can be further examined.

To send inspected traffic to a log server, perform the following procedure under **Send inspected traffic to Log Server** on the Diagnostics menu.

1. In the first four fields, enter the IP address of the log server.
2. In the **for** field, enter the number of seconds that inspected traffic is to be sent to the log server.

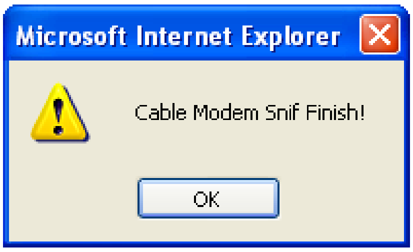


- Send inspected traffic to Log Server:

0 . 0 . 0 . 0 for secs

3. Click the **Apply** button. The Gateway sniffs the traffic, logs the traffic to the syslog, and displays the message in Figure 53 when the number of seconds elapses.
4. Click **OK** to close the message.

You can now examine the sniffed traffic using appropriate syslog daemons and applications.



Microsoft Internet Explorer

Cable Modem Snif Finish!

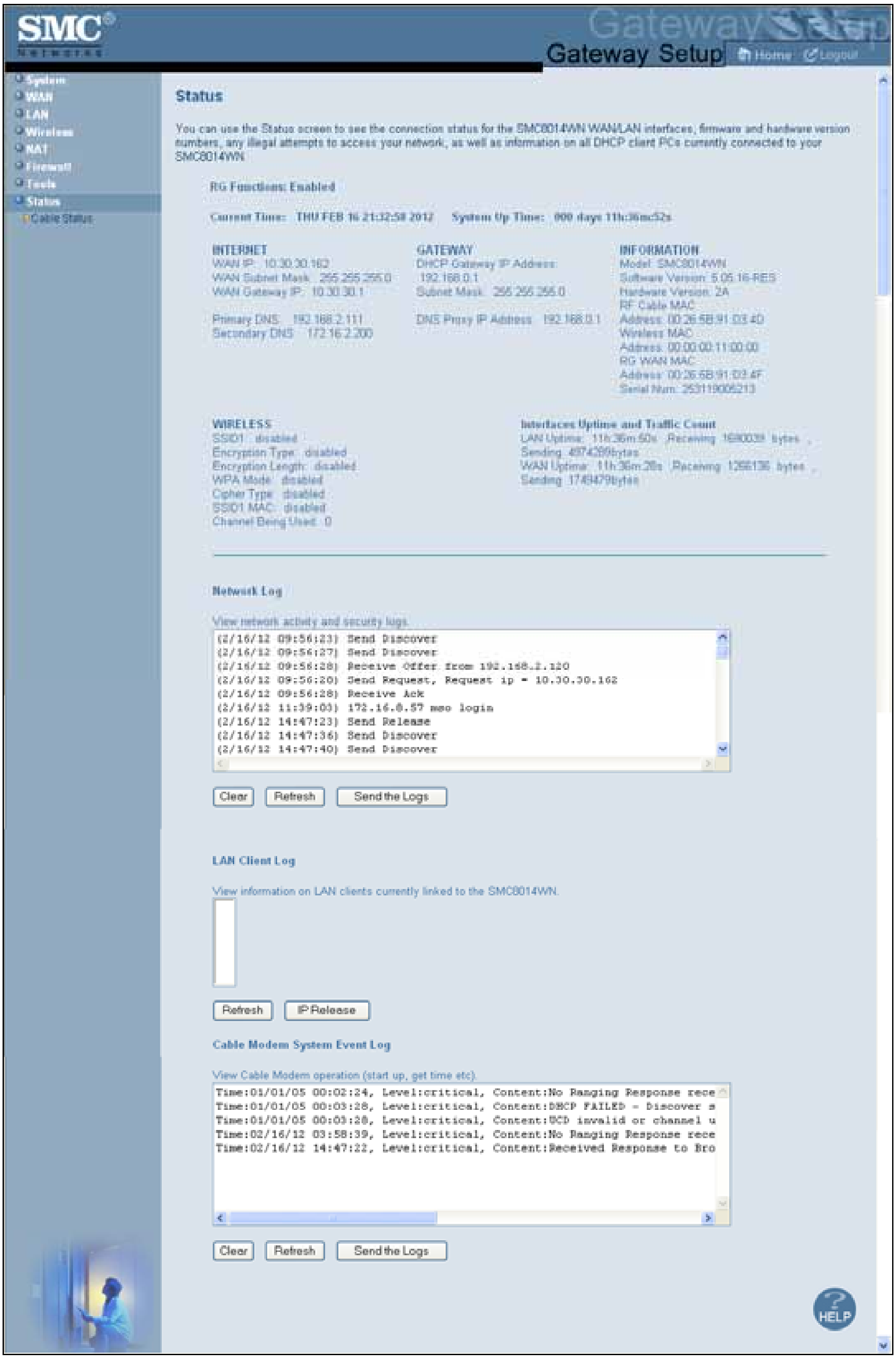
Figure 53. Sniffing Complete Message

Status Menu

Path: **Status**

The Status menu is a read-only page that shows:

- Whether Residential Gateway (RG) functions are enabled.
- Current time and system uptime
- Internet, Gateway, information, wireless, and interface uptime and traffic count data
- Network log. Buttons are provided for clearing, refreshing, and sending the log. To send the log, email/syslog notifications must be enabled (see page 69); if it isn’t, an error message appears if you click the **Send the Logs** button.
- The LAN client log, which shows information about LAN clients connected to the Gateway. Buttons are provided for refreshing the information shown and releasing IP addresses.
- Cable modem system event log, with information about the cable modem operation. Buttons are provided for clearing, refreshing, and sending the log. To send the log, email/syslog notifications must be enabled (see page 69); if it isn’t, an error message appears if you click the **Send the Logs** button.



Status

You can use the Status screen to see the connection status for the SMC8014WN WAN/LAN interfaces, firmware and hardware version numbers, any illegal attempts to access your network, as well as information on all DHCP client PCs currently connected to your SMC8014WN.

RG Functions: Enabled

Current Time: THU FEB 16 21:32:58 2012   System Up Time: 000 days 11h:36m:52s

INTERNET
WAN IP: 10.30.30.162
WAN Subnet Mask: 255.255.255.0
WAN Gateway IP: 10.30.30.1

Primary DNS: 192.168.2.111
Secondary DNS: 172.16.2.200

GATEWAY
DHCP Gateway IP Address:
192.168.0.1
Subnet Mask: 255.255.255.0

DNS Proxy IP Address: 192.168.0.1

INFORMATION
Model: SMC8014WN
Software Version: 5.05.16-RES
Hardware Version: 2A
RF Cable MAC
Address: 00:26:5B:91:D3:4D
Wireless MAC
Address: 00:00:00:11:00:00
RG WAN MAC
Address: 00:26:5B:91:D3:4F
Serial Num: 253119006213

WIRELESS
SSID1: disabled
Encryption Type: disabled
Encryption Length: disabled
WPA Mode: disabled
Cipher Type: disabled
SSID1 MAC: disabled
Channel Being Used: 0

Interfaces Uptime and Traffic Count
LAN Uptime: 11h:36m:50s ,Receiving: 1690039 bytes ,
Sending: 4974299bytes
WAN Uptime: 11h:36m:28s ,Receiving: 1266136 bytes ,
Sending: 1749479bytes

Network Log

View network activity and security logs.

```
(2/16/12 09:56:23) Send Discover
(2/16/12 09:56:27) Send Discover
(2/16/12 09:56:28) Receive Offer from 192.168.2.120
(2/16/12 09:56:28) Send Request, Request ip = 10.30.30.162
(2/16/12 09:56:28) Receive Ack
(2/16/12 11:39:03) 172.16.8.57 mso login
(2/16/12 14:47:23) Send Release
(2/16/12 14:47:36) Send Discover
(2/16/12 14:47:40) Send Discover
```

Clear Refresh Send the Logs

LAN Client Log

View information on LAN clients currently linked to the SMC8014WN.

Refresh IP Release

Cable Modem System Event Log

View Cable Modem operation (start up, get time etc).

```
Time:01/01/05 00:02:24, Level:critical, Content:No Ranging Response rece
Time:01/01/05 00:03:28, Level:critical, Content:DHCP FAILED - Discover s
Time:01/01/05 00:03:28, Level:critical, Content:UCD invalid or channel u
Time:02/16/12 03:58:39, Level:critical, Content:No Ranging Response rece
Time:02/16/12 14:47:22, Level:critical, Content:Received Response to Bro
```

Clear Refresh Send the Logs

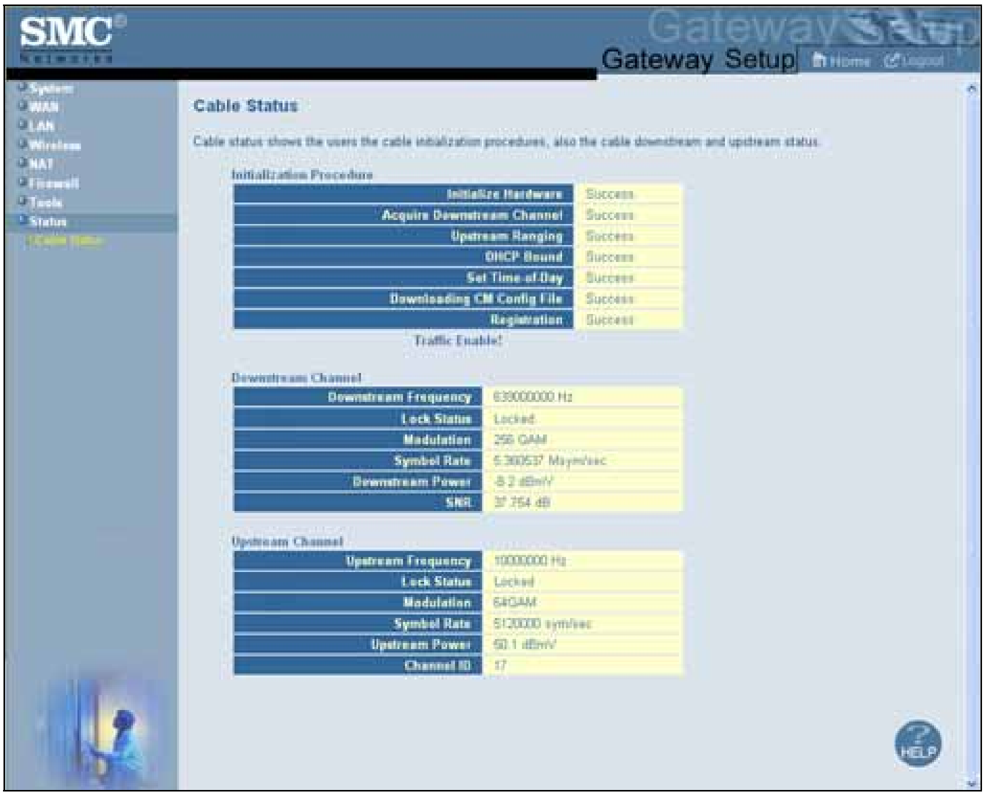
Figure 54. Example of Status Page

Cable Status Menu

Path: **Status > Cable Status**

The Cable Status menu is a read-only page that shows the:

- User’s cable initialization procedures
- Cable upstream status
- Cable downstream status



Cable Status

Cable status shows the users the cable initialization procedures, also the cable downstream and upstream status.

Initialization Procedure

Initialize Hardware	Success
Acquire Downstream Channel	Success
Upstream Ranging	Success
DHCP Bound	Success
Set Time-of-Day	Success
Downloading CM Config File	Success
Registration	Success

Traffic Enable!

Downstream Channel

Downstream Frequency	639000000 Hz
Lock Status	Locked
Modulation	256 QAM
Symbol Rate	5.360537 Msym/sec
Downstream Power	-8.2 dBmV
SNR	37.754 dB

Upstream Channel

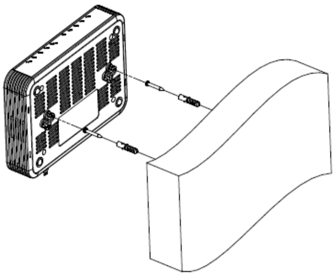
Upstream Frequency	10000000 Hz
Lock Status	Locked
Modulation	64QAM
Symbol Rate	5120000 sym/sec
Upstream Power	50.1 dBmV
Channel ID	17

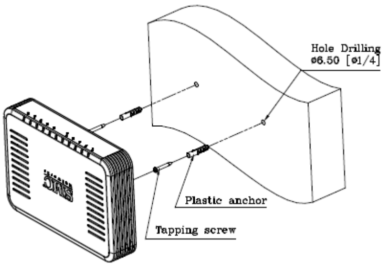
Figure 55. Example of Cable Status Page

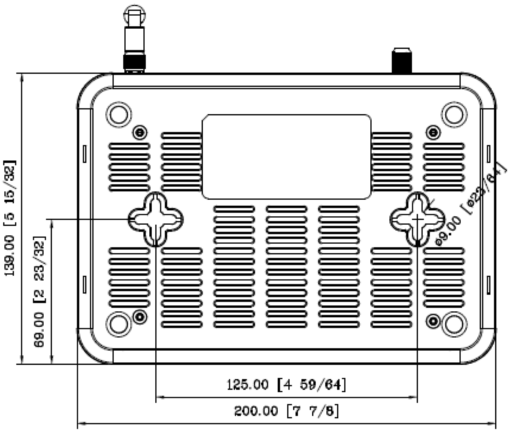
Appendix A - Wall Mounting the SMC8014WN

The SMC8014WN Gateway can be wall mounted if desired (the SMC8014WN2 cannot be wall mounted). To wall mount the SMC8014WN Gateway, perform the following procedure.

1. Locate the devices as specified by the local or national codes governing residential or business cable TV and communication services.
2. Follow all local standards for installing a network-interface unit/network interface device (NIU/NID).
3. Be sure the AC power plug is disconnected from all outlets and that all cables are removed from the back of the Gateway before starting the installation.
4. Decide whether you want to mount the Gateway horizontally or vertically.
5. Use M.35 x 38mm screws with a flat underside and maximum screw head diameter of 9.0 mm to mount the Gateway. See the screw-mounting dimension in the following figures to mount the Gateway properly. If possible, mount the Gateway on concrete, masonry, a wooden stud, or other solid wall materials. Use anchors if necessary.







Caution: Before drilling holes, check the structure for potential damage to water, gas, or electrical lines.

1. Drill the holes to a depth of at least 1 inch (25 mm). There must be 0.5 inches (10mm) between the wall and the underside of the screw head.
2. After mounting, reconnect the coaxial cable and re-plug the power cord.
3. Route the cables properly to avoid safety hazards.

Appendix B - Compliances

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against radio interference in a commercial environment. This equipment can generate, use and radiate radio frequency energy and, if not installed and used in accordance with the instructions in this manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures are necessary to correct the interference. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate this equipment.

IEEE 802.11b or 802.11g operation of this product in the U.S.A is firmware-limited to channels 1 through 11.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

Note to CATV System Installer - This reminder is provided to call to the CATV systems installer's attention Section 820-93 of the National Electric Code, which provides guideline for proper grounding and, in particular, specify that the Coaxial cable shield shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Index

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