

Chapter 5

Managing Your Network

This chapter describes how to perform network management tasks with your DG834PN 108 Mbps RangeMax™ ADSL Modem Wireless Router.

Backing Up, Restoring, or Erasing Your Settings

The configuration settings of the DG834PN RangeMax ADSL Modem Wireless Router are stored in a configuration file in the ADSL modem wireless router. This file can be backed up to your computer, restored, or reverted to factory default settings. The procedures below explain how to do these tasks.

How to Back Up the Configuration to a File

1. Log in to the ADSL modem wireless router at its default LAN address of <http://192.168.0.1> with its default User Name of **admin**, default password of **password**, or using whatever User Name, Password and LAN address you have chosen for the ADSL modem wireless router.
2. From the Maintenance heading of the Main Menu, select the Backup Settings menu as seen in [Figure 5-1](#).

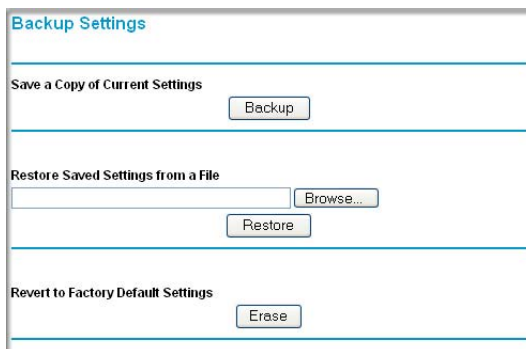


Figure 5-1

3. Click Backup to save a copy of the current settings.

4. Store the `.cfg` file on a computer on your network.

How to Restore the Configuration from a File

1. Log in to the ADSL modem wireless router at its default LAN address of `http://192.168.0.1` with its default User Name of **admin**, default password of **password**, or using whatever User Name, Password and LAN address you have chosen for the ADSL modem wireless router.
2. From the Maintenance heading of the Main Menu, select the Settings Backup menu as seen in [Figure 5-1](#).
3. Enter the full path to the file on your network or click the Browse button to locate the file.
4. When you have located the `.cfg` file, click the Restore button to upload the file to the ADSL modem wireless router.
5. The ADSL modem wireless router will then reboot automatically.

How to Erase the Configuration

It is sometimes desirable to restore the ADSL modem wireless router to the factory default settings. This can be done by using the Erase function.

1. To erase the configuration, from the Maintenance menu Settings Backup link, click the Erase button on the screen.
2. The ADSL modem wireless router will then reboot automatically.

After an erase, the ADSL modem wireless router's password will be **password**, the LAN IP address will be 192.168.0.1, and the ADSL modem wireless router's DHCP client will be enabled.



Note: To restore the factory default configuration settings without knowing the login password or IP address, you must use the Default Reset button on the rear panel of the ADSL modem wireless router. See [Figure 2-2](#).

Upgrading the ADSL Modem Wireless Router's Firmware

The software of the DG834PN RangeMax ADSL Modem Wireless Router is stored in FLASH memory, and can be upgraded as new software is released by NETGEAR.

Upgrade files can be downloaded from NETGEAR's Web site. If the upgrade file is compressed (.ZIP file), you must first extract the binary (.BIN or .IMG) file before uploading it to the ADSL modem wireless router.

How to Upgrade the ADSL Modem Wireless Router Firmware

Note: NETGEAR recommends that you back up your configuration before doing a firmware upgrade. After the upgrade is complete, you may need to restore your configuration settings.

1. Download and unzip the new software file from NETGEAR.

The Web browser used to upload new firmware into the ADSL modem wireless router must support HTTP uploads. NETGEAR recommends using Microsoft Internet Explorer 5.0 or above, or Netscape Navigator 4.7 or above.

2. Log in to the ADSL modem wireless router at its default LAN address of <http://192.168.0.1> with its default User Name of **admin**, default password of **password**, or using whatever User Name, Password and LAN address you have chosen for the ADSL modem wireless router.
3. From the Main Menu of the browser interface, under the Maintenance heading, select the **ADSL Modem Wireless Router Upgrade** heading to display the menu shown in [Figure 5-2](#).



Figure 5-2

4. In the ADSL Modem Wireless Router Upgrade menu, click the **Browse** to locate the binary (.BIN or .IMG) upgrade file.

5. Click **Upload**.



Note: When uploading software to the ADSL modem wireless router, it is important not to interrupt the Web browser by closing the window, clicking a link, or loading a new page. If the browser is interrupted, it may corrupt the software. When the upload is complete, your ADSL modem wireless router will automatically restart. The upgrade process will typically take about one minute. In some cases, you may need to clear the configuration and reconfigure the ADSL modem wireless router after upgrading.

Network Management Information

The DG834PN provides a variety of status and usage information which is discussed below.

Viewing ADSL Modem Wireless Router Status and Usage Statistics

From the Main Menu, under Maintenance, select ADSL Modem Wireless Router Status to view the screen in [Figure 5-3](#).

The screenshot shows the 'Router Status' page with the following information:

Router Status	
Account Name	
Firmware Version	V1.03.18
ADSL Port	
MAC Address	00:0F:B5:D0:FC:93
IP Address	69.110.231.81
Network Type	PPPoE
IP Subnet Mask	255.255.255.255
Gateway IP Address	69.110.231.254
Domain Name Server	206.13.31.12 206.13.28.12
LAN Port	
MAC Address	00:0F:B5:D0:FC:92
IP Address	192.168.0.1
DHCP	On
IP Subnet Mask	255.255.255.0
Modem	
ADSL Firmware Version	A2pB018e.d16f
Modem Status	Connected
DownStream Connection Speed	3008 kbps
UpStream Connection Speed	512 kbps
VPI	0
VCI	35
Wireless Port	
Name (SSID)	NETGEAR
Region	USA
Channel	11
Wireless AP	Disabled
Broadcast Name	Disabled

At the bottom of the page, there are two buttons: 'Show Statistics' and 'Connection Status'.

Figure 5-3

The ADSL Modem Wireless Router Status menu provides status and usage information.

This screen shows the following parameters:

Table 5-1. Menu 3.2 - ADSL Modem Wireless Router Status Fields

Field	Description
Account Name	The Host Name assigned to the ADSL modem wireless router in the Basic Settings menu.
Firmware Version	This field displays the ADSL modem wireless router firmware version.
ADSL Port	These parameters apply to the Internet (ADSL) port of the ADSL modem wireless router.
MAC Address	This field displays the Ethernet MAC address being used by the Internet (ADSL) port of the ADSL modem wireless router.
IP Address	This field displays the IP address being used by the Internet (ADSL) port of the ADSL modem wireless router. If no address is shown, the ADSL modem wireless router cannot connect to the Internet.
Network Type	The network type will depend upon your ISP.
IP Subnet Mask	This field displays the IP Subnet Mask being used by the Internet (ADSL) port of the ADSL modem wireless router.
Gateway IP Address	IP address used as a gateway to the internet for computers configured to use DHCP
Domain Name Server (DNS)	This field displays the DNS Server IP addresses being used by the ADSL modem wireless router. These addresses are usually obtained dynamically from the ISP.
LAN Port	These parameters apply to the Local (ADSL) port of the ADSL modem wireless router.
MAC Address	This field displays the Ethernet MAC address being used by the Local (LAN) port of the ADSL modem wireless router.
IP Address	This field displays the IP address being used by the Local (LAN) port of the ADSL modem wireless router. The default is 192.168.0.1.
DHCP	If OFF, the ADSL modem wireless router will not assign IP addresses to PCs on the LAN. If ON, the ADSL modem wireless router will assign IP addresses to PCs on the LAN.
IP Subnet Mask	This field displays the IP Subnet Mask being used by the Local (LAN) port of the ADSL modem wireless router. The default is 255.255.255.0.
Modem	These parameters apply to the Local (WAN) port of the ADSL modem wireless router.
ADSL Firmware Version	The version of the firmware.
Modem Status	The connection status of the modem.

Table 5-1. Menu 3.2 - ADSL Modem Wireless Router Status Fields (continued)

Field	Description
Downstream Speed	The speed at which the modem is receiving data from the ADSL line.
Upstream Speed	The speed at which the modem is transmitting data to the ADSL line.
VPI	The Virtual Path Identifier setting.
VCI	The Virtual Channel Identifier setting.
Wireless Port	These are the settings as set in the Wireless Settings page; see “Understanding Wireless Settings” in Chapter 3 for details.
Name (SSID)	The Service Set ID, also known as the wireless network name.
Region	The country where the unit is set up for use.
Channel	The current channel, which determines the operating frequency.
Wireless AP	Indicates if the Access Point feature is disabled or not. If not enabled, the Wireless LED on the front panel will be off.
Broadcast Name	Indicates if the DG834PN is configured to broadcast its SSID.

Click the Show Statistics button to display ADSL modem wireless router usage statistics, as shown in [Figure 5-3](#) below:

The screenshot displays the router's status page. At the top, it shows 'System Up Time 16:54:13'. Below this is a table with 8 columns: Port, Status, TxPkts, RxPkts, Collisions, Tx B/s, Rx B/s, and Up Time. The rows are for WAN (PPPoE), LAN (10M/100M), and WLAN (11M/54M). Below the port table is another table for ADSL Link performance, with columns for ADSL Link, Downstream, and Upstream. The rows are for Connection Speed, Line Attenuation, and Noise Margin. At the bottom, there is a 'Poll Interval' field set to 10 (secs), and buttons for 'Set Interval' and 'Stop'.

System Up Time 16:54:13							
Port	Status	TxPkts	RxPkts	Collisions	Tx B/s	Rx B/s	Up Time
WAN	PPPoE	1272	1642	0	12	81	04:26:50
LAN	10M/100M	24630	18474	0	72	24	16:54:11
WLAN	11M/54M	0	0	0	0	0	00:00:00

ADSL Link	Downstream	Upstream
Connection Speed	3008 kbps	512 kbps
Line Attenuation	50.0 db	28.5 db
Noise Margin	9.2 db	20.0 db

Poll Interval: (secs)

Figure 5-4

This screen shows the following statistics:.

Table 5-2. Router Statistics Fields

Field	Description
WAN, LAN, or Serial Port	The statistics for the WAN (Internet), LAN (local), and Serial ports. For each port, the screen displays:
Status	The link status of the port.
TxPkts	The number of packets transmitted on this port since reset or manual clear.
RxPkts	The number of packets received on this port since reset or manual clear.
Collisions	The number of collisions on this port since reset or manual clear.
Tx B/s	The current line utilization—percentage of current bandwidth used on this port.
Rx B/s	The average line utilization for this port.
Up Time	The time elapsed since the last power cycle or reset.
ADSL Link Downstream or Upstream	The statistics for the upstream and downstream ADSL link. These statistics will be of interest to your technical support representative if you are having problems obtaining or maintaining a connection.
Connection Speed	Typically, the downstream speed is faster than the upstream speed.
Line Attenuation	The line attenuation will increase the further you are physically located from your ISP's facilities.
Noise Margin	This is the signal-to-noise ratio and is a measure of the quality of the signal on the line.
Poll Interval	Specifies the interval at which the statistics are updated in this window. Click Stop to freeze the display.

Click the Connection Status button to display ADSL modem wireless router connection status, as shown in [Figure 5-5](#) below:

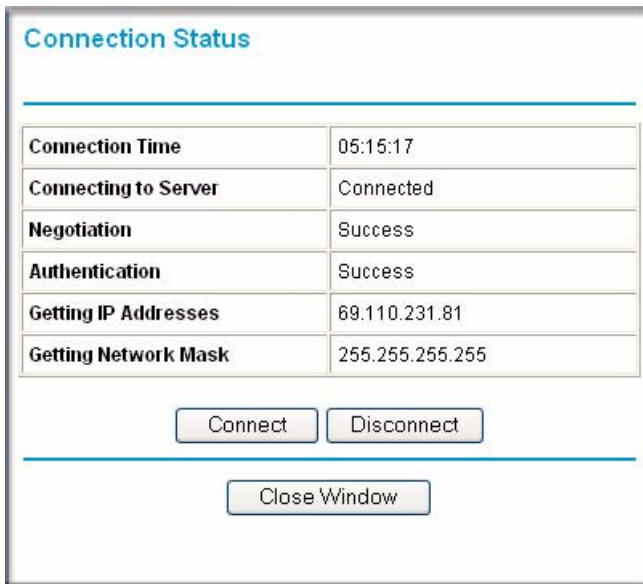


Figure 5-5

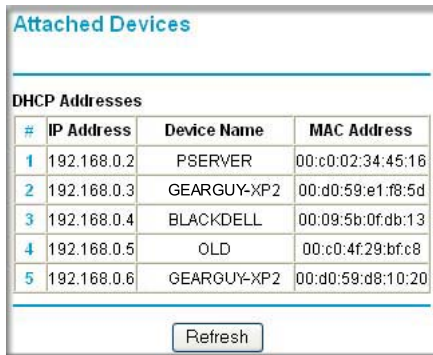
This screen shows the following statistics:

Table 5-3. Connection Status Fields (PPPoE Network Type Example)

Field	Description
Connection Time	The time elapsed since the last connection to the Internet via the ADSL port.
Connecting to Sender	The connection status.
Negotiation	Success or Failed
Authentication	Success or Failed
IP Address	The IP Address assigned to the WAN port by the ADSL Internet Service Provider.
Network Mask	The Network Mask assigned to the WAN port by the ADSL Internet Service Provider.

Viewing Attached Devices

The Attached Devices menu contains a table of all IP devices that the ADSL modem wireless router has discovered on the local network. From the Main Menu of the browser interface, under the Maintenance heading, select Attached Devices to view the table, shown in [Figure 5-6](#):



The screenshot shows a web interface titled "Attached Devices". Below the title is a table with the heading "DHCP Addresses". The table has four columns: "#", "IP Address", "Device Name", and "MAC Address". There are five rows of data. Below the table is a "Refresh" button.

#	IP Address	Device Name	MAC Address
1	192.168.0.2	PSEVER	00:c0:02:34:45:16
2	192.168.0.3	GEARGUY-XP2	00:d0:59:e1:f8:5d
3	192.168.0.4	BLACKDELL	00:09:5b:0f:db:13
4	192.168.0.5	OLD	00:c0:4f:29:bf:c8
5	192.168.0.6	GEARGUY-XP2	00:d0:59:d8:10:20

Figure 5-6

For each device, the table shows the IP address, Device Name if available, and the Ethernet MAC address. Note that if the ADSL modem wireless router is rebooted, the table data is lost until the ADSL modem wireless router rediscovers the devices. To force the ADSL modem wireless router to look for attached devices, click the Refresh button.

Viewing, Selecting, and Saving Logged Information

The ADSL modem wireless router will log security-related events such as denied incoming service requests, hacker probes, and administrator logins. If you enabled content filtering in the Block Sites menu, the Logs page can show you when someone on your network tries to access a blocked site. If you enabled e-mail notification, you will receive these logs in an e-mail message. If you do not have e-mail notification enabled, you can view the logs here.

An example of the logs file is shown below.

Logs

Current time: 2003-08-26 07:42:13

```

Tue, 2003-08-26 06:04:14 - Send out NTP request
Tue, 2003-08-26 06:04:14 - Receive NTP Reply
Tue, 2003-08-26 07:17:17 - Administrator login
Tue, 2003-08-26 07:26:19 - Administrator login
Tue, 2003-08-26 07:26:32 - Administrator login
Tue, 2003-08-26 07:29:48 - Administrator login
Tue, 2003-08-26 07:38:12 - TCP Packet - Source
Tue, 2003-08-26 07:38:39 - ICMP Packet - Source
Tue, 2003-08-26 07:38:42 - TCP Packet - Source
Tue, 2003-08-26 07:39:43 - TCP Packet - Source
Tue, 2003-08-26 07:39:49 - ICMP Packet - Source
Tue, 2003-08-26 07:39:49 - TCP Packet - Source
Tue, 2003-08-26 07:41:29 - TCP Packet - Source

```

Include in Log

Attempted access to blocked sites

Connections to the Web-based interface of this Router

Router operation (start up, get time etc)

Known DoS attacks and Port Scans

Syslog

Disable

Broadcast on LAN

Send to this Syslog server IP address

Figure 5-7

Log entries are described in [Table 5-4](#) below:

Table 5-4. Security Log entry descriptions

Field	Description
Date and Time	The date and time the log entry was recorded.
Description or Action	The type of event and what action was taken if any.

Table 5-4. Security Log entry descriptions

Field	Description
Source IP	The IP address of the initiating device for this log entry.
Source port and interface	The service port number of the initiating device, and whether it originated from the LAN or WAN
Destination	The name or IP address of the destination device or Web site.
Destination port and interface	The service port number of the destination device, and whether it's on the LAN or WAN.

Log action buttons are described in [Table 5-5](#) below:

Table 5-5. Security Log action buttons

Field	Description
Refresh	Refresh the log screen.
Clear Log	Clear the log entries.
Send Log	Email the log immediately.
Apply	Apply the current settings.
Cancel	Clear the current settings.

Selecting What Information to Log

Besides the standard information listed above, you can choose to log additional information. Those optional selections are as follows:

- Attempted access to blocked site
- Connections to the Web-based interface of the ADSL modem wireless router
- ADSL Modem Wireless Router operation (start up, get time, etc.)
- Known DoS attacks and Port Scans

Saving Log Files on a Server

You can choose to write the logs to a computer running a syslog program. To activate this feature, select to Broadcast on Lan or enter the IP address of the server where the Syslog file will be written.

Examples of Log Messages

Following are examples of log messages. In all cases, the log entry shows the timestamp as: Day, Year-Month-Date Hour:Minute:Second

Activation and Administration

Tue, 2002-05-21 18:48:39 - NETGEAR activated

[This entry indicates a power-up or reboot with initial time entry.]

Tue, 2002-05-21 18:55:00 - Administrator login successful - IP:192.168.0.2

Thu, 2002-05-21 18:56:58 - Administrator logout - IP:192.168.0.2

[This entry shows an administrator logging in and out from IP address 192.168.0.2.]

Tue, 2002-05-21 19:00:06 - Login screen timed out - IP:192.168.0.2

[This entry shows a time-out of the administrator login.]

Wed, 2002-05-22 22:00:19 - Log emailed

[This entry shows when the log was emailed.]

Dropped Packets

Wed, 2002-05-22 07:15:15 - TCP packet dropped - Source:64.12.47.28,4787,WAN - Destination:134.177.0.11,21,LAN - [Inbound Default rule match]

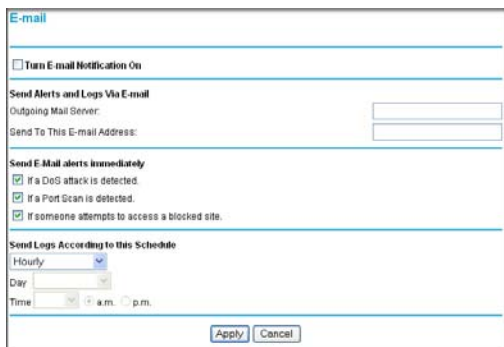
Sun, 2002-05-22 12:50:33 - UDP packet dropped - Source:64.12.47.28,10714,WAN - Destination:134.177.0.11,6970,LAN - [Inbound Default rule match]

Sun, 2002-05-22 21:02:53 - ICMP packet dropped - Source:64.12.47.28,0,WAN - Destination:134.177.0.11,0,LAN - [Inbound Default rule match]

[These entries show an inbound FTP (port 21) packet, User Datagram Protocol (UDP) packet (port 6970), and Internet Control Message Protocol (ICMP) packet (port 0) being dropped as a result of the default inbound rule, which states that all inbound packets are denied.]

Enabling Security Event E-mail Notification

In order to receive logs and alerts by e-mail, you must provide your e-mail information in the E-mail subheading:



The screenshot shows the 'E-mail' configuration page. At the top, there is a checkbox labeled 'Turn E-mail Notification On'. Below this is a section titled 'Send Alerts and Logs Via E-mail' containing two text input fields: 'Outgoing Mail Server:' and 'Send To This E-mail Address:'. The next section is 'Send E-Mail alerts immediately', which contains three checked checkboxes: 'If a DoS attack is detected.', 'If a Port Scan is detected.', and 'If someone attempts to access a blocked site.'. The final section is 'Send Logs According to this Schedule', which includes a dropdown menu set to 'Hourly', a 'Day' dropdown menu, and a 'Time' field with 'a.m.' and 'p.m.' radio buttons. At the bottom of the form are 'Apply' and 'Cancel' buttons.

Figure 5-8

- **Turn e-mail notification on.** Select this check box if you want to receive e-mail logs and alerts from the ADSL modem wireless router.
- **Send alerts and logs via email.** Enter the name or IP address of your ISP's outgoing (SMTP) mail server (such as mail.myISP.com). You may be able to find this information in the configuration menu of your e-mail program. Enter the e-mail address to which logs and alerts are sent. This e-mail address will also be used as the From address. If you leave this box blank, log and alert messages will not be sent via e-mail.
- **Send alert immediately.** Select the corresponding check box if you would like immediate notification of a significant security event, such as a known attack, port scan, or attempted access to a blocked site.
- **Send logs according to this schedule.** Specifies how often to send the logs: Hourly, Daily, Weekly, or When Full.
 - Day for sending log
Specifies which day of the week to send the log. Relevant when the log is sent weekly or daily.
 - Time for sending log
Specifies the time of day to send the log. Relevant when the log is sent daily or weekly.

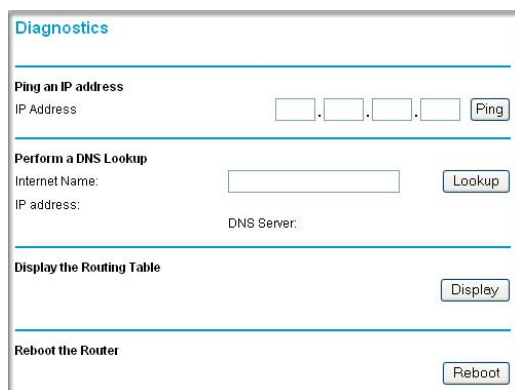
If the Weekly, Daily or Hourly option is selected and the log fills up before the specified period, the log is automatically e-mailed to the specified e-mail address. After the log is sent, it is cleared from the ADSL modem wireless router's memory. If the ADSL modem wireless router cannot e-mail the log file, the log buffer may fill up. In this case, the ADSL modem wireless router overwrites the log and discards its contents.

Running Diagnostic Utilities and Rebooting the ADSL Modem Wireless Router

The DG834PN RangeMax ADSL Modem Wireless Router has a diagnostics feature. You can use the diagnostics menu to perform the following functions from the ADSL modem wireless router:

- Ping an IP Address to test connectivity to see if you can reach a remote host.
- Perform a DNS Lookup to test if an Internet name resolves to an IP address to verify that the DNS server configuration is working.
- Display the Routing Table to identify what other ADSL modem wireless routers the ADSL modem wireless router is communicating with.
- Reboot the ADSL modem wireless router to enable new network configurations to take effect or to clear problems with the ADSL modem wireless router's network connection.

From the Main Menu of the browser interface, under the Maintenance heading, select the ADSL Modem Wireless Router Diagnostics heading to display the menu shown in [Figure 5-9](#).



The screenshot shows a web browser interface titled "Diagnostics". It contains four sections, each with a button to execute a function:

- Ping an IP address:** A form with "IP Address" and four input boxes for digits, followed by a "Ping" button.
- Perform a DNS Lookup:** A form with "Internet Name:" and a text input box, followed by a "Lookup" button. Below it are "IP address:" and "DNS Server:" labels with empty input boxes.
- Display the Routing Table:** A simple form with a "Display" button.
- Reboot the Router:** A simple form with a "Reboot" button.

Figure 5-9

Enabling Remote Management

Using the Remote Management page, you can allow a user or users on the Internet to configure, upgrade and check the status of your DG834PN 108 Mbps RangeMax™ ADSL Modem Wireless Router.



Note: Be sure to change the ADSL modem wireless router's default password to a very secure password. The ideal password should contain no dictionary words from any language, and should be a mixture of letters (both upper and lower case), numbers, and symbols. Your password can be up to 30 characters.

Configuring Remote Management

1. Log in to the ADSL modem wireless router at its default LAN address of <http://192.168.0.1> with its default User Name of **admin**, default password of **password**, or using whatever User Name, Password and LAN address you have chosen for the ADSL modem wireless router.
2. From the Advanced section of the main menu, select the Remote Management link.
3. Select the Turn Remote Management On check box.
4. Specify what external addresses will be allowed to access the ADSL modem wireless router's remote management.

For security, restrict access to as few external IP addresses as practical:

- To allow access from any IP address on the Internet, select Everyone.
 - To allow access from a range of IP addresses on the Internet, select IP address range. Enter a beginning and ending IP address to define the allowed range.
 - To allow access from a single IP address on the Internet, select Only this Computer. Enter the IP address that will be allowed access.
5. Specify the Port Number that will be used for accessing the management interface.
Web browser access normally uses the standard HTTP service port 80. For greater security, you can change the remote management Web interface to a custom port by entering that number in the box provided. Choose a number between 1024 and 65535, but do not use the number of any common service port. The default is 8080, which is a common alternate for HTTP.
 6. Click Apply to have your changes take effect.

When accessing your ADSL modem wireless router from the Internet, you will type your ADSL modem wireless router's WAN IP address in your browser's Address (in IE) or Location (in Netscape) box, followed by a colon (:) and the custom port number. For example, if your external address is 134.177.0.123 and you use port number 8080, enter in your browser:

`http://134.177.0.123:8080`



Note: In this case, the `http://` must be included in the address.

