

# Chapter 6

## Managing Your Network

This chapter describes how to perform network management tasks with your DG834GT 108 Mbps Super Wireless ADSL Router.

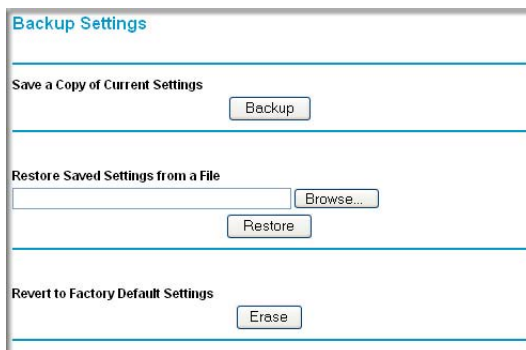
### Backing Up, Restoring, or Erasing Your Settings

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The configuration settings of the DG834GT Super Wireless ADSL Router are stored in a configuration file in the 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 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 router.
2. From the Maintenance heading of the Main Menu, select the Backup Settings menu as seen in [Figure 6-1](#).



**Figure 6-1: Backup Settings menu**

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 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 router.
2. From the Maintenance heading of the Main Menu, select the Settings Backup menu as seen in [Figure 6-1](#).
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 router.
5. The router will then reboot automatically.

## How to Erase the Configuration

It is sometimes desirable to restore the 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 router will then reboot automatically.

After an erase, the router's password will be **password**, the LAN IP address will be 192.168.0.1, and the 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 router. See [“DG834GT Rear Panel” on page 2-9](#).

## Upgrading the Router's Firmware

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The software of the DG834GT Super Wireless ADSL 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 router.

## How to Upgrade the 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 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 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 router.
3. From the Main Menu of the browser interface, under the Maintenance heading, select the **Router Upgrade** heading to display the menu shown in [Figure 6-2](#).



**Figure 6-2: Router Upgrade menu**

4. In the Router Upgrade menu, click the **Browse** to locate the binary (.BIN or.IMG) upgrade file.
5. Click **Upload**.



**Note:** When uploading software to the 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 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 router after upgrading.

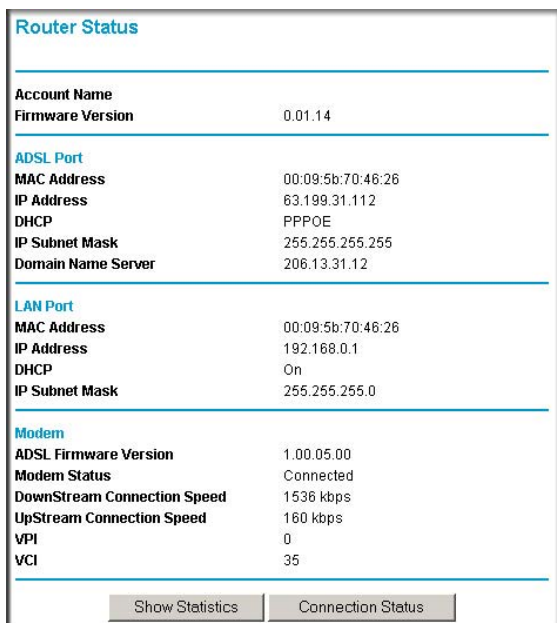
## Network Management Information

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The DG834GT provides a variety of status and usage information which is discussed below.

### Viewing Router Status and Usage Statistics

From the Main Menu, under Maintenance, select Router Status to view the screen in [Figure 6-3](#).



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

Router Status	
<hr/>	
<b>Account Name</b>	
<b>Firmware Version</b>	0.01.14
<hr/>	
<b>ADSL Port</b>	
<b>MAC Address</b>	00:09:5b:70:46:26
<b>IP Address</b>	63.199.31.112
<b>DHCP</b>	PPPOE
<b>IP Subnet Mask</b>	255.255.255.255
<b>Domain Name Server</b>	206.13.31.12
<hr/>	
<b>LAN Port</b>	
<b>MAC Address</b>	00:09:5b:70:46:26
<b>IP Address</b>	192.168.0.1
<b>DHCP</b>	On
<b>IP Subnet Mask</b>	255.255.255.0
<hr/>	
<b>Modem</b>	
<b>ADSL Firmware Version</b>	1.00.05.00
<b>Modem Status</b>	Connected
<b>DownStream Connection Speed</b>	1536 kbps
<b>UpStream Connection Speed</b>	160 kbps
<b>VPI</b>	0
<b>VCI</b>	35
<hr/>	
Show Statistics      Connection Status	

**Figure 6-3: Router Status screen**

The Router Status menu provides status and usage information.

This screen shows the following parameters:

**Table 6-1. Menu 3.2 - Router Status Fields**

Field	Description
Account Name	The Host Name assigned to the router in the Basic Settings menu.
Firmware Version	This field displays the router firmware version.
ADSL Port	These parameters apply to the Internet (ADSL) port of the router.
MAC Address	This field displays the Ethernet MAC address being used by the Internet (ADSL) port of the router.
IP Address	This field displays the IP address being used by the Internet (ADSL) port of the router. If no address is shown, the router cannot connect to the Internet.
DHCP	If None, the router will use a fixed IP address on the ADSL. If Client, the router will obtain an IP address dynamically from the ISP.
IP Subnet Mask	This field displays the IP Subnet Mask being used by the Internet (ADSL) port of the router.
Domain Name Server (DNS)	This field displays the DNS Server IP addresses being used by the router. These addresses are usually obtained dynamically from the ISP.
LAN Port	These parameters apply to the Local (ADSL) port of the router.
MAC Address	This field displays the Ethernet MAC address being used by the Local (LAN) port of the router.
IP Address	This field displays the IP address being used by the Local (LAN) port of the router. The default is 192.168.0.1.
DHCP	If OFF, the router will not assign IP addresses to PCs on the LAN. If ON, the 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 router. The default is 255.255.255.0.
Modem	These parameters apply to the Local (WAN) port of the router.
ADSL Firmware Version	The version of the firmware.
Modem Status	The connection status of the modem.
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.

Click the Show Statistics button to display router usage statistics, as shown in [Figure 6-3](#) below:

The screenshot shows the Router Statistics screen. At the top, it displays 'System Up Time 22:51:11'. Below this is a table with columns: Port, Status, TxPkts, RxPkts, Collisions, Tx B/s, Rx B/s, and Up Time. The WAN port is shown with status ADSL, 105159 TxPkts, 179491 RxPkts, 0 Collisions, 0 Tx B/s, 0 Rx B/s, and 22:51:11 Up Time. The LAN port is shown with status 10M/100M, 236651 TxPkts, 249474 RxPkts, 0 Collisions, 12 Tx B/s, 12 Rx B/s, and 22:51:11 Up Time. Below the table, there is a 'Poll Interval:' label, a text input field containing '5', '(secs)' text, a 'Set Interval' button, and a 'Stop' button.

Port	Status	TxPkts	RxPkts	Collisions	Tx B/s	Rx B/s	Up Time
WAN	ADSL	105159	179491	0	0	0	22:51:11
LAN	10M/100M	236651	249474	0	12	12	22:51:11

Poll Interval:  (secs)

**Figure 6-4: Router Statistics screen**

This screen shows the following statistics:

**Table 6-1. 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.
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 router connection status, as shown in [Figure 6-5](#) and [Figure 6-6](#).

Connection Status	
IP Address	192.168.2.54
Subnet Mask	255.255.255.0
Default Gateway	192.168.2.1
DHCP Server	192.168.2.54
DNS Server	66.125.125.214
Lease Obtained	2003-08-27 08:09:58
Lease Expires	2003-08-26 23:37:32

**Figure 6-5: Connection Status screen for Dynamic IP**

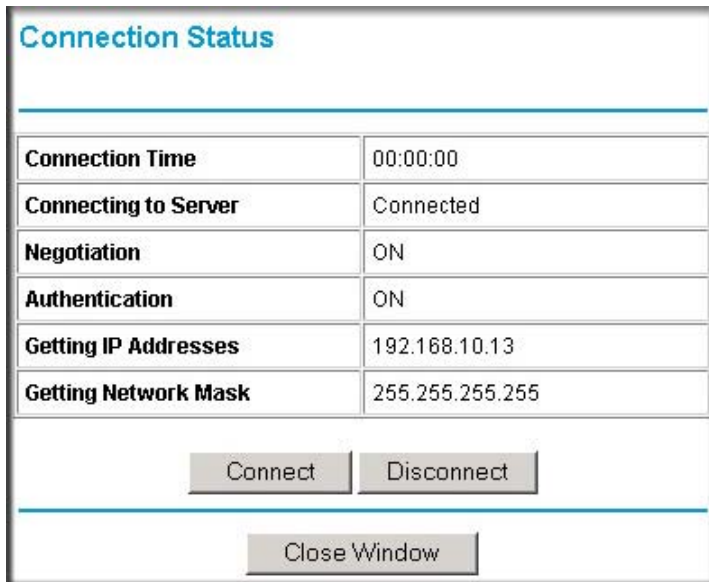
Clicking the Renew button updates the status information.

This screen shows the following statistics:

**Table 6-1. Connection Status Fields for Dynamic IP**

Field	Description
IP Address	The IP Address assigned to the WAN port by the ADSL Internet Service Provider.
Subnet Mask	The Network Mask assigned to the WAN port by the ADSL Internet Service Provider.
Default Gateway	The default gateway router assigned to the WAN port by the ADSL Internet Service Provider.
DHCP Server	The DHCP server's IP address.
DNS Server	The DNS server's IP address.
Lease Obtained	Date and time the lease was obtained.
Lease Expires	Date and time the lease expires.

An alternate view of the Connection Status screen is shown in [Figure 6-6](#) below:



**Figure 6-6: Connection Status screen for PPPoA**

Clicking the Renew button updates the status information.

This screen shows the following statistics:

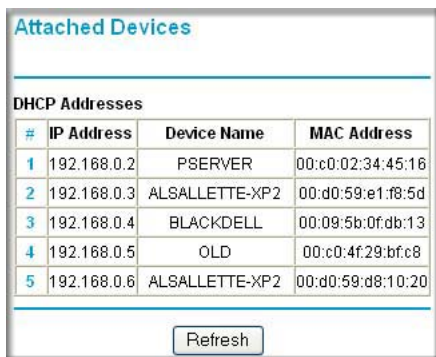
**Table 6-1. Connection Status Fields for PPPoA**

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	ON or OFF
Authentication	ON or OFF
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 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 6-7](#):



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	ALSALLETTE-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	ALSALLETTE-XP2	00:d0:59:d8:10:20

**Figure 6-7: Attached Devices menu**

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

## Viewing, Selecting, and Saving Logged Information

The 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.

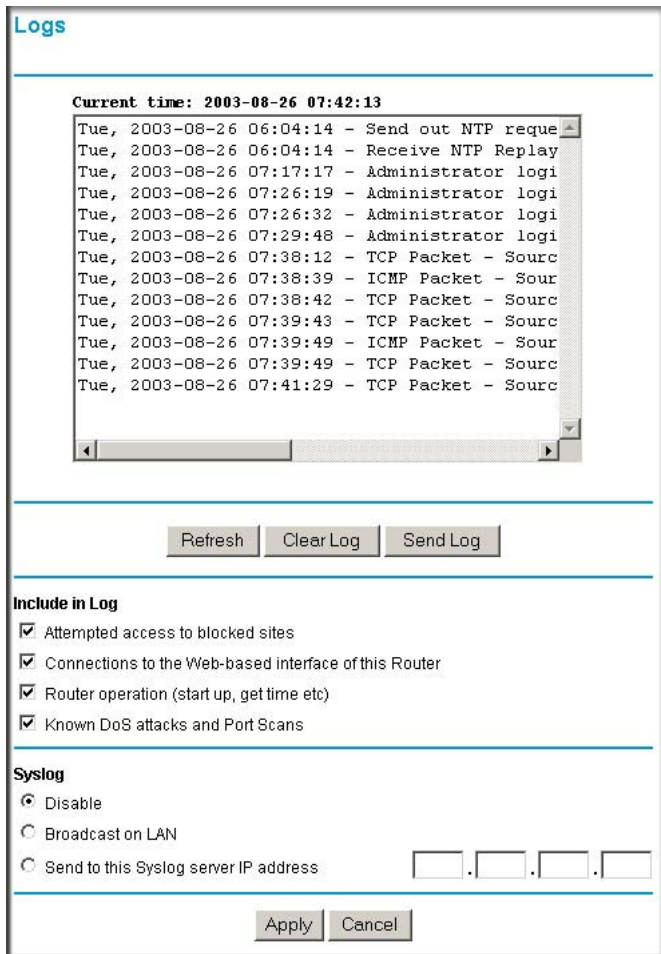


Figure 6-8: Security Logs menu

Log entries are described in [Table 6-1](#) below:

**Table 6-1. 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.
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 6-2](#) below:

**Table 6-2. 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 router
- 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]
```

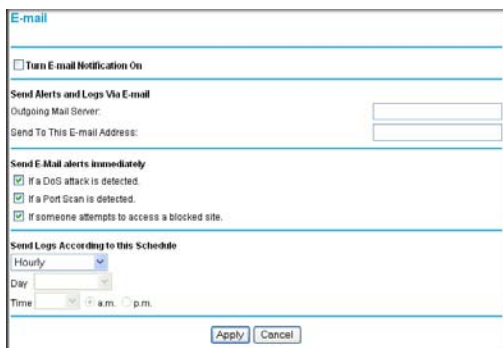
```
Sun, 2002-05-22 12:50:33 - UDP packet dropped - Source:64.12.47.28,10714,WAN -  
Destination:134.177.0.11,6970,LAN - [Inbound Default rule match]
```

```
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' which includes two input fields: 'Outgoing Mail Server' and 'Send To This E-mail Address:'. Underneath is a section 'Send E-Mail alerts immediately' with 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 has a dropdown menu set to 'Hourly', a 'Day' dropdown, and a 'Time' dropdown with radio buttons for 'a.m.' and 'p.m.'. 'Apply' and 'Cancel' buttons are at the bottom.

Figure 6-9: E-mail menu

- **Turn e-mail notification on.** Select this check box if you want to receive e-mail logs and alerts from the 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 router's memory. If the router cannot e-mail the log file, the log buffer may fill up. In this case, the router overwrites the log and discards its contents.

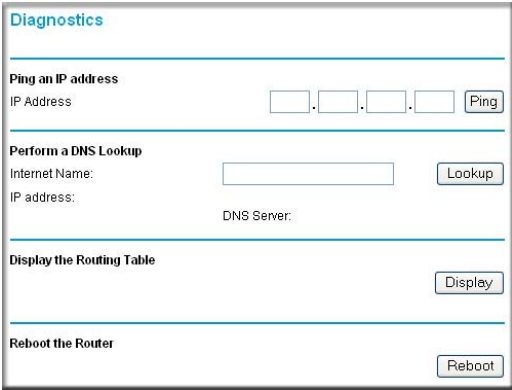
## Running Diagnostic Utilities and Rebooting the Router

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The DG834GT Super Wireless ADSL Router has a diagnostics feature. You can use the diagnostics menu to perform the following functions from the 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 routers the router is communicating with.
- Reboot the router to enable new network configurations to take effect or to clear problems with the router's network connection.

From the Main Menu of the browser interface, under the Maintenance heading, select the Router Diagnostics heading to display the menu shown in [Figure 6-10](#).



The screenshot shows a web interface titled "Diagnostics" with four main sections, each separated by a horizontal line. The first section, "Ping an IP address", has a label "IP Address" followed by four input boxes for IP octets and a "Ping" button. The second section, "Perform a DNS Lookup", has a label "Internet Name:" followed by an input box and a "Lookup" button, and a label "IP address:" followed by an input box and a "DNS Server:" label followed by an input box. The third section, "Display the Routing Table", has a "Display" button. The fourth section, "Reboot the Router", has a "Reboot" button.

**Figure 6-10: Diagnostics menu**

## Enabling Remote Management

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Using the Remote Management page, you can allow a user or users on the Internet to configure, upgrade and check the status of your DG834GT 108 Mbps Super Wireless ADSL Router.



**Note:** Be sure to change the 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 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 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 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 router from the Internet, you will type your 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.