

Chapter 4

Managing Your Network

This chapter describes how to perform network management tasks with your DG834 ADSL Modem Router.

Backing Up, Restoring, or Erasing Your Settings

The configuration settings of the DG834 ADSL Modem Router are stored in a configuration file in the modem 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 modem 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 modem router.
2. From the Maintenance heading of the Main Menu, select the Backup Settings menu as seen in [Figure 4-1](#).

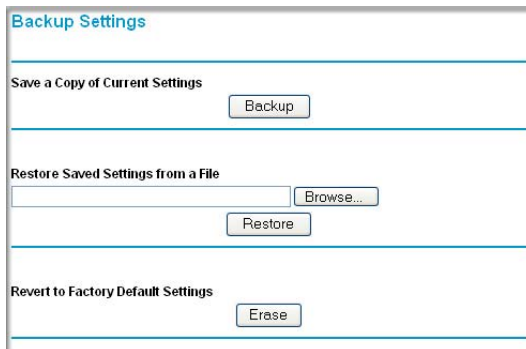


Figure 4-1

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 modem 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 modem router.
2. From the Maintenance heading of the Main Menu, select the Settings Backup menu as seen in [Figure 4-1](#).
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 modem router.
5. The modem router will then reboot automatically.

How to Erase the Configuration

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

After an erase, the modem router's password will be **password**, the LAN IP address will be 192.168.0.1, and the modem 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 modem router. See [Figure 2-2 on page 2-8](#).

Upgrading the Modem Router's Firmware

The software of the DG834 ADSL Modem 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 modem router.

How to Upgrade the Modem 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 modem 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 modem 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 modem router.
3. From the Main Menu of the browser interface, under the Maintenance heading, select the **Modem Router Upgrade** heading to display the menu shown in [Figure 4-2](#).

Figure 4-2

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



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

Network Management Information

The DG834 provides a variety of status and usage information which is discussed below.

Viewing Modem Router Status and Usage Statistics

From the Main Menu, under Maintenance, select Modem Router Status to view the screen in [Figure 4-3](#).

Router Status

Account Name	
Firmware Version	0.01.14

ADSL Port	
MAC Address	00:09:5b:70:46:26
IP Address	63.199.31.112
Network Type	PPPOE
IP Subnet Mask	255.255.255.255
Domain Name Server	206.13.31.12

LAN Port	
MAC Address	00:09:5b:70:46:26
IP Address	192.168.0.1
DHCP	On
IP Subnet Mask	255.255.255.0

Modem	
ADSL Firmware Version	1.00.05.00
Modem Status	Connected
DownStream Connection Speed	1536 kbps
UpStream Connection Speed	160 kbps
VPI	0
VCI	35

Show Statistics	Connection Status
-----------------	-------------------

Figure 4-3

The Modem Router Status menu provides status and usage information.

This screen shows the following parameters:

Table 4-1. Menu 3.2 - Modem Router Status Fields

Field	Description
Account Name	The Host Name assigned to the modem router in the Basic Settings menu.
Firmware Version	Displays the modem router firmware version.
ADSL Port	These parameters apply to the Internet (ADSL) port of the modem router.
MAC Address	Displays the Ethernet MAC address being used by the Internet (ADSL) port of the modem router.
IP Address	Displays the IP address being used by the Internet (ADSL) port of the modem router. If no address is shown, the modem router cannot connect to the Internet.
Network Type	The network type depends on your ISP.
IP Subnet Mask	This field displays the IP Subnet Mask being used by the Internet (ADSL) port of the modem router.
Domain Name Server (DNS)	Displays the DNS Server IP addresses being used by the modem router. These addresses are usually obtained dynamically from the ISP.
LAN Port	These parameters apply to the Local (ADSL) port of the modem router.
MAC Address	Displays the Ethernet MAC address being used by the Local (LAN) port of the modem router.
IP Address	Displays the IP address being used by the Local (LAN) port of the modem router. The default is 192.168.0.1.
DHCP	If OFF, the modem router will not assign IP addresses to PCs on the LAN. If ON, the modem router will assign IP addresses to PCs on the LAN.
IP Subnet Mask	Displays the IP Subnet Mask being used by the Local (LAN) port of the modem router. The default is 255.255.255.0.
Modem	These parameters apply to the Local (WAN) port of the modem 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 modem router usage statistics, as shown in [Figure 4-3](#) below:

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

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 4-4

This screen shows the following statistics:

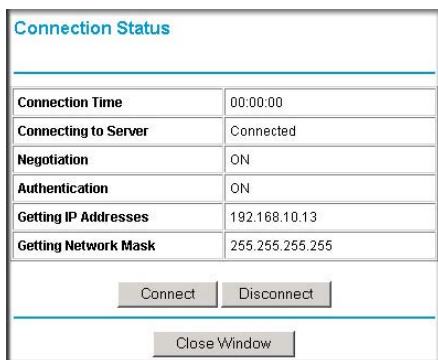
Table 4-1. Router Statistics Fields

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.
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.

Table 4-1. Router Statistics Fields (continued)

Field	Description
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 modem router connection status, as shown in [Figure 4-5](#) below:

**Figure 4-5**

Clicking the Renew button updates the status information.

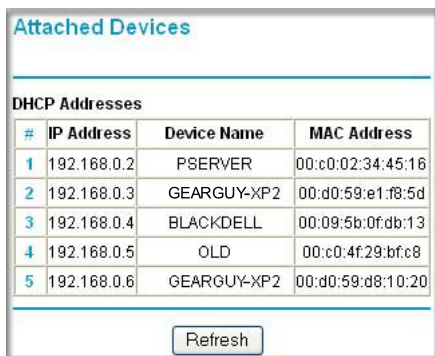
This screen shows the following statistics:

Table 4-1. 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 modem 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 4-6](#):



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 4-6

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

Viewing, Selecting, and Saving Logged Information

The modem 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 4-7

Log entries are described in [Table 4-1](#) below:

Table 4-1. 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 4-2](#) below:

Table 4-2. 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 modem router
- Modem 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 a web-based configuration page titled "E-mail". At the top, there is a section "E-mail" with a blue header. Below it, there is a checkbox labeled "Turn E-mail Notification On". Underneath, there is a section "Send Alerts and Logs Via E-mail" with a text input field for "Send To This E-mail Address" (highlighted in yellow), a text input field for "Outgoing Mail Server", and a checkbox for "My Mail Server requires authentication". Below this are two text input fields for "User Name" and "Password". The next section is "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" with a dropdown menu set to "Hourly", a "Day" dropdown menu, and a "Time" dropdown menu with radio buttons for "a.m." and "p.m.". At the bottom, there are "Apply" and "Cancel" buttons.

Figure 4-8

- **Turn e-mail notification on.** Select this check box if you want to receive e-mail logs and alerts from the modem router.
- **Send alerts and logs via email.**
 - **Send To This E-mail Address** Enter the e-mail address where you want to send the alerts and logs. Use a full e-mail address, such as ChrisXY@myISP.com.
 - **Outgoing Mail Server.** Enter the name or IP address of the outgoing SMTP mail server of your ISP (such as mail.myISP.com).

- Check **My Mail Server requires authentication** if you need to login to your SMTP server to send E-mail. If you check this box, you must enter the user name and password for the mail server.



Tip: If you cannot remember the above information from when you set up your e-mail account, check the settings in your e-mail program.

- **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 modem router's memory. If the modem router cannot e-mail the log file, the log buffer may fill up. In this case, the modem router overwrites the log and discards its contents.

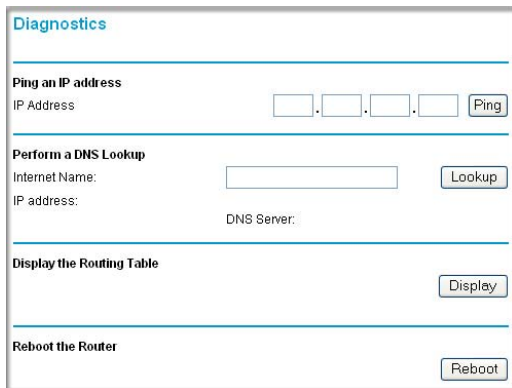
Running Diagnostic Utilities and Rebooting the Modem Router

The DG834 ADSL Modem Router has a diagnostics feature. You can use the diagnostics menu to perform the following functions from the modem 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 modem routers the modem router is communicating with.

- Reboot the modem router to enable new network configurations to take effect or to clear problems with the modem router's network connection.

From the Main Menu of the browser interface, under the Maintenance heading, select the Modem Router Diagnostics heading to display the menu shown in [Figure 4-9](#).



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

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

Figure 4-9

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 DG834 ADSL Modem Router.



Note: Be sure to change the modem 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 modem 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 modem router.
2. From the Advanced section of the main menu, select the Remote Management link.

Remote Management

Turn Remote Management On

Remote Management Address:

Allow Remote Access By:

Only This Computer: [] . [] . [] . []

IP Address Range: From [] . [] . [] . []
To [] . [] . [] . []

Everyone

Port Number: [8080]

Apply Cancel

Figure 4-10

3. Select the Turn Remote Management On check box.
4. Specify what external addresses will be allowed to access the modem 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 modem router from the Internet, you will type your modem 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.