

Chapter 1

The Gateway WGR-250 Wireless-G Router



- Product features
- Safety
- Package contents
- Connectors and LEDs

Features

Your Gateway Wireless Router features:

- Compact, modern design
- High speed (55 Mbps in the 2.4 GHz band - 802.11g)
- Downward compatibility to the 802.11b wireless LAN standard (11 Mbps data rate)
- Remote administration and firmware upgrades through the Internet
- DHCP service to your network
- Sophisticated security features, including up to 128-Bit WEP encryption, Web and port filtering, WAN request blocking, and DMZ hosting
- Virtual Private Networking (VPN) over the Internet (with IPSec, L2TP, and PPTP pass-through)

Important safeguards

Warning



Do not attempt to remove the cover. There are no user-serviceable parts inside. Removing the cover voids the warranty.

Have your wireless router repaired by qualified service personnel only.

Precautions

- Do not place your wireless router in direct sunlight or near a heat source, as this may damage the housing or electronic components of the device.
- Do not open or try to repair the device yourself.
- Do not place your wireless router in a damp or excessively humid location, such as a bathroom.
- To avoid possible electrical damage due to lightning or power surges, use a shielded, anti-surge plug-strip.
- To avoid possible damage due to lightning, turn off and unplug the router during electrical storms.

Package contents

Along with your wireless router, the package also contains the following items:

- Power supply
- Ethernet cable
- CD containing *Gateway Wireless-G Access Point/Router Setup Wizard* and *Gateway WGR-250 Wireless-G Router* user guide
- *Gateway WGR-250 Wireless-G Router* setup poster

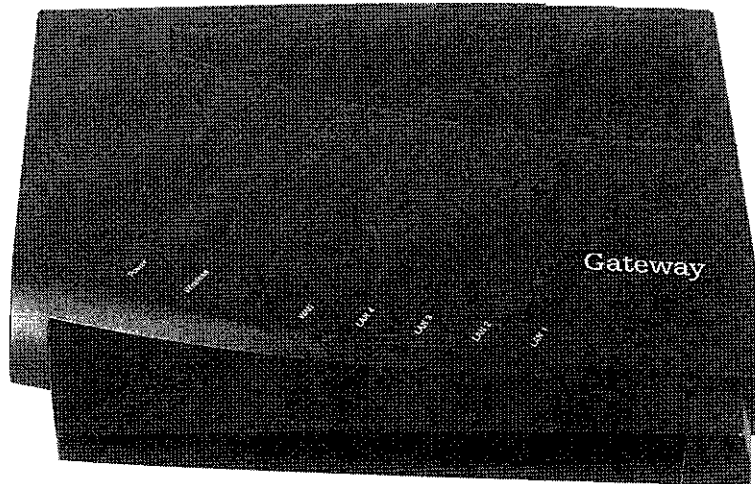
Parts and accessories

The following additional parts and accessories may be helpful in setting up your wireless network:

- Wireless Network Controller cards (for desktop computers or notebooks)
- RJ-45 (Cat-5) network cables (various lengths)

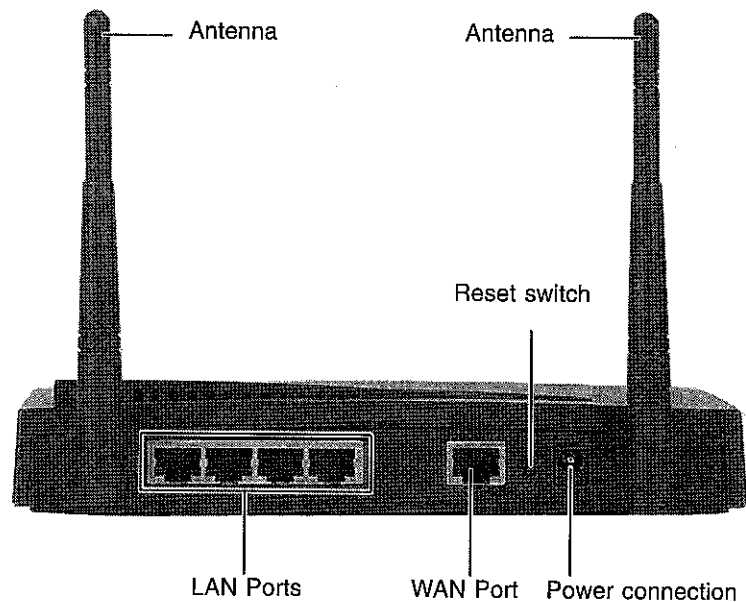
Contact Gateway for information on ordering these and other accessories.

Front



LED	Description
Power	Off - The router is turned off. On (red) - The router is turned on. Blink (red) - After a firmware upgrade this LED will blink after the first minute.
Wireless	Flashing (yellow) - The wireless connection is operating.
WAN	Flashing (orange) - Indicates activity on the Internet link.
LAN 4-1	Off - The connection does not have an Ethernet link. On (green) - An Ethernet link has been detected on the indicated connection. Flashing (green) - Data traffic on indicated connection.

Back



Connector/control	Description
Reset switch	Press and hold the reset button for 10 seconds to return all configuration settings to the default.
LAN ports	Connect a computer, hub, or switch to these RJ-45 Ethernet ports.
WAN port	Connect the DSL or cable modem to this RJ-45 Ethernet port.
Power connection	Plug the AC adapter into this connection. Use only the AC adapter that came with the wireless router. Use of any other AC adapter may damage your router and void the warranty.

Getting started

If you are a typical user that wants to set up and use the wireless router and adjust the basic security settings, go to "Initial Setup for Typical Users" on page 7.

If you are an advanced user that wants to set up and use the wireless router and adjust the advanced security settings or use advanced features such as router security schemes, access authentication, and port forwarding, go to "Initial Setup for Advanced Users" on page 13.

Chapter 2

Initial Setup for Typical Users



- Preparation
- Using the wizard
- Configuring your computer for wireless

Preparation

If you intend to use the router to connect your network to the Internet, you need a broadband Internet connection (DSL or cable). You also need the following information and equipment:

- A host computer (initially connected to the DSL or cable modem) that has a network interface card
- An RJ-45 Ethernet cable (Cat-5 or better)
- A DSL or cable modem (purchased or provided by your ISP)
- Host computer's IP address (assigned by your ISP, if a static IP address is required)
- Subnet mask (assigned by your ISP, if a static IP address is required)
- Default gateway (assigned by your ISP, if a static IP address is required)
- Primary DNS IP address (assigned by your ISP, if a static address is used)
- Host computer's name and workgroup (available through the Windows Control Panel under System information)

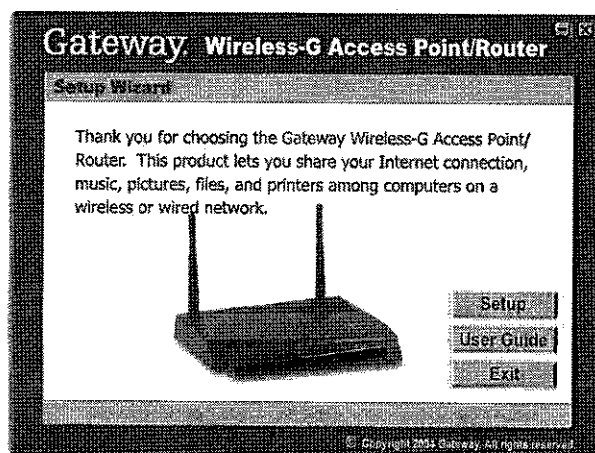
Before you begin

Before you begin the initial network setup, you will need an active broadband Internet connection. Connect the DSL or cable modem to your DSL or cable outlet and then connect the host computer to the modem. Follow any instructions provided by your Internet service provider (ISP) to activate your broadband service.

Using the wizard

▶ To configure the router using the wizard:

- 1 Insert the CD into the disc drive on the computer attached to your broadband modem. If the *Gateway Wireless-G Access Point/Router Setup Wizard* opens, go to Step 5.
- OR -
If the wizard does not start automatically, go to Step 2.
- 2 Click **Start**, then click **Run**. The *Run* dialog box opens.
- 3 In the **Open** text box, type **d:\WGR250.exe** (where **d** is the drive letter of your disc drive).
- 4 Click **OK**. The *Gateway Wireless-G Access Point/Router Setup Wizard* opens.



- 5 Click **Setup**. Read and follow the instructions on each wizard screen. When you have completed using the wizard, you are ready to use your network.



Important



For more information about using the Gateway Wireless-G Access Point/Router Setup Wizard, see the *Gateway WGR-250 Wireless Router* setup poster.

Wireless operation

After the initial configuration is done, you can operate your network in wired or wireless mode. To operate in wireless mode, each computer in your network must have a wireless network interface card and the same SSID.

Tips & Tricks



For additional information on setting up your wireless network interface card, see the documentation that came with your wireless network card.

Configuring WEP security in Windows XP

Windows XP does not automatically configure the wireless adapter to use the encryption key generated when a WEP passphrase is entered. After the WEP encryption key is generated on a Windows XP computer, you must manually enter the key so the computer can communicate with the router.



To manually enter the WEP encryption key in Windows XP:

- 1 Click **Start**, then click **Control Panel**. If your Control Panel is in Category View, click **Network and Internet Connections**.
- 2 Click/Double-click **Network Connections**. The *Network Connections* dialog box opens.
- 3 Double-click the **Wireless Network Connection** icon for your wireless network interface card. If more than one is shown, click the one that connects to your wireless network.
- 4 When the *Wireless Network Connection Status* window opens, click **Properties**. The *Wireless Network Connection Properties* window opens.
- 5 Click the **Wireless Networks** tab.
- 6 If the correct wireless network (check the SSID) is shown in the Preferred Networks area, double-click the connection and continue to Step 7.

- OR -

Click the connection in the Available Networks area, then click **Configure**. The Wireless Networks Properties window opens.

- 7 Click to select the **Data encryption (WEP enabled)** check box and click to clear the **The key is provided for me automatically** check box.

- 8 In the **Network key** box, type the WEP encryption key that was generated when you configured the router.

Important



The WEP encryption key must be entered exactly as generated. All 10 (64-bit encryption) or 26 (128-bit encryption) hexadecimal digits must be entered.

- 9 Make sure that the **Key format** box indicates hexadecimal digits and that the **Key length** box indicates the correct length key (10 or 26 digits).
- 10 Click **OK** to accept the settings.
- 11 Click **OK** repeatedly until you return to the Windows XP desktop.
- 12 Close all applications and reboot the computer.
- 13 Repeat Step 1 through Step 12 for each computer on your network running Windows XP.



Configuring WEP security in Windows 98, Windows 2000, or Windows Me

To configure WEP security in Windows 98, Windows 2000, and Windows Me, you must use a client manager. For instructions on using a client manager, see the documentation that came with your wireless Ethernet PC card or PCI card, USB adapter, or with your wireless enabled device.

Chapter 2: Initial Setup for Typical Users

Chapter 3

Initial Setup for Advanced Users



- Making connections
- Configuring the computers
- Contacting and configuring the router
- Configuring your computer for wireless

Important



If you are not comfortable with the procedures covered in this chapter, use the Gateway Wireless-G Access Point/Router Setup Wizard. For more information, see "Initial Setup for Typical Users" on page 7.

Making connections

Preparation

If you intend to use the router to connect your network to the Internet, you need a broadband Internet connection (DSL or cable). You also need the following information and equipment:

- A host computer (initially connected to router to enter configuration information) that has a network interface card
- An RJ-45 Ethernet cable (Cat-5 or better)
- A DSL or cable modem (purchased or provided by your ISP)
- Host computer's IP address (assigned by your ISP, if a static IP address is required)
- Subnet mask (assigned by your ISP, if a static IP address is required)
- Default gateway (assigned by your ISP, if a static IP address is required)
- Primary DNS IP address (assigned by your ISP, if a static address is used)
- Host computer's name and workgroup (available through the Windows Control Panel under System information)

Connecting the hardware



To connect the hardware:

- 1** Turn off and unplug the host computer, the DSL or cable modem, and the router.
- 2** Using an RJ-45 Ethernet cable (Cat-5 or better), connect the Ethernet port of the host computer to the LAN 1 connection on the back of the router. You can also connect as many as three additional computers to the router if you plan to use the router in wired mode. To connect more than four computers to your network in wired mode, connect them to a hub or switch, then connect the hub or switch to one of the LAN ports on the router. This is not required in wireless mode.
- 3** Using an RJ-45 Ethernet cable (Cat-5 or better), connect the Ethernet port of your DSL or cable modem to the WAN connection on the back of router.

- 4 Plug the AC adapter into an electrical outlet. Connect the other end of the adapter to the power connector on the back of the router. For more information, see the illustration on page 5.
 - The red Power LED turns on
 - The Wireless LED starts blinking

Warning



Use only the AC adapter and power cord provided with the router. Use of any other adapter or power cord may damage your router and void your warranty.

- 5 Turn on the DSL or cable modem. Check the LEDs on the modem to make sure that the modem is connected and operating normally. The WAN LED on the router lights when the modem is connected correctly to the router.
- 6 Turn on the host computer. The LAN LED corresponding to the RJ-45 jack used for the LAN connection on the router lights to when the computer is connected correctly to the router.



Configuring the computers

Now that you have the hardware connected, you need to configure the computers you want to include in your network to let them obtain an IP address automatically. An IP address lets the computers communicate with and operate on your new network. Use the configuration procedure specific to your computer's operating system.



To configure computers using Windows XP:

- 1 Click the Network Setup Wizard icon  on the Windows XP taskbar. The *Network Setup Wizard* opens.

-OR-

Click **Start, All Programs, Accessories, Communications**, then click **Network Setup Wizard**. The *Network Setup Wizard* opens.

- 2 Complete the *Network Setup Wizard* making sure that you click **This computer connects to the Internet through another computer on my network or through a residential gateway** on the *Select a connection method* screen.



 To configure computers using Windows 2000:

- 1 Click **Start**, **Settings**, then click **Control Panel**.
- 2 Double-click the **Network and Dial-up Connections** icon to open the *Network* dialog box.
- 3 Double-click the **Local Area Connection** icon for your network interface card. If you see more than one icon, select the one that connects to your local network. The *Local Area Connection Status* dialog box opens. Click **Properties**.
- 4 In the **Components checked are used by this connection** list, click **Internet Protocol (TCP/IP)**, then click **Properties**.
- 5 Check **Obtain an IP address automatically**, and make sure that **Obtain DNS server address automatically** is selected.
- 6 Click **OK** to accept the settings.
- 7 Click **OK** again to exit.
- 8 Repeat Step 1 through Step 7 for each computer on your network running Windows 2000.



 To configure computers using Windows 98SE or Me:

- 1 Click **Start**, **Settings**, then **Control Panel**.
- 2 Double-click the **Network** icon to open the *Network* dialog box.
- 3 Click the **Configuration** tab, then click the TCP/IP protocol line for your network interface card, then click **Properties**. If you do not see TCP/IP, you need to install the TCP/IP protocol. See the documentation that came with your network interface card for information on installing the TCP/IP protocol.
- 4 Click to select the **Obtain an IP address automatically** check box, then click the Gateway tab and make sure that the **Installed gateways** box is not selected.
- 5 Click **OK** to accept the settings.
- 6 Click **OK** again to exit. Follow any on-screen instructions.
- 7 Reboot your system.
- 8 Repeat Step 1 through Step 7 for each computer on your network running Windows 98SE or Me.



Contacting and configuring the router

Now that all the hardware connections have been made, you must configure the router to operate on your network and to connect to the Internet through an ISP.

Important



If you are not comfortable with the procedures covered in this section, use the Gateway Wireless-G Access Point/Router Setup Wizard. For more information, see "Initial Setup for Typical Users" on page 7.

Initial configurations vary somewhat, depending on your ISP. Contact your ISP, before you configure your router, and determine the following:

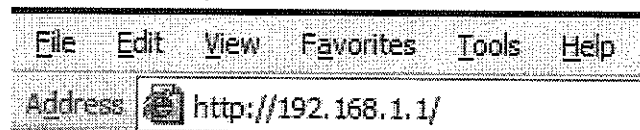
- If your ISP assigns a static IP address or provides one automatically (DHCP) each time you connect to the ISP
- For an automatic IP address, the Host Name (if required) and the Domain Name (if required)
- For a static IP address, the IP address, subnet mask, default gateway, and DNS address (at least one)
- If you are connected with a DSL modem using Point-to-Point Protocol over Ethernet (PPPoE), or if your ISP requires a user name and password, the user name and password you need to use
- If your ISP uses RAS (Singapore) or PPTP (Europe), instructions for setup

Contacting the router



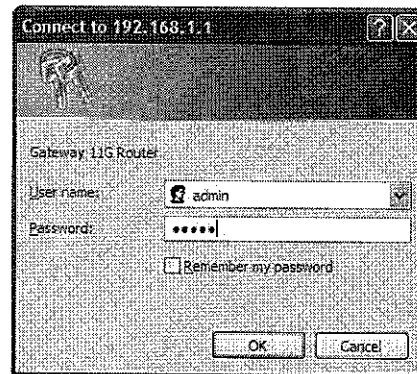
To contact the router:

- 1 Open your Web browser on the host computer.

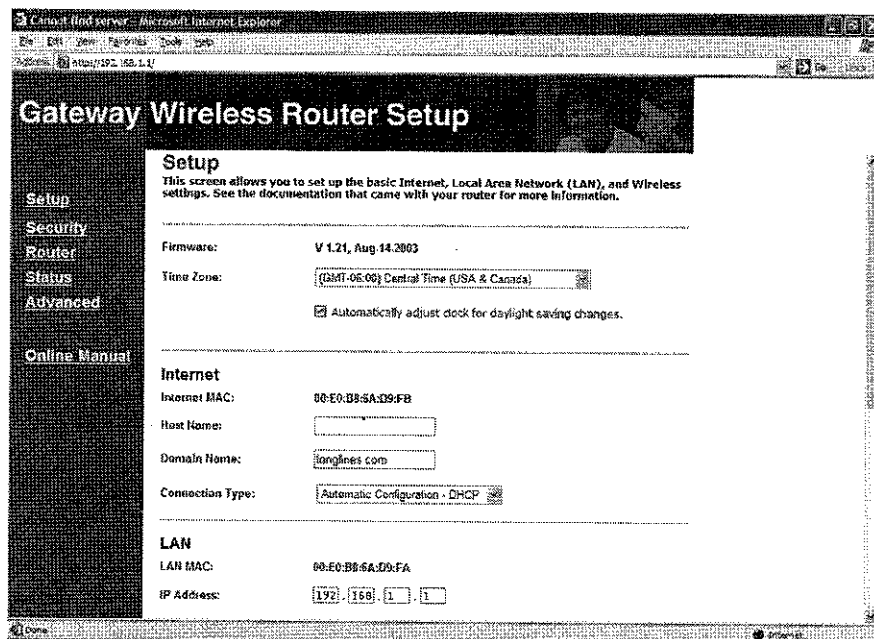


Chapter 3: Initial Setup for Advanced Users

- 2 In the address field, type **192.168.1.1**, then press **ENTER**. The *Connect to* dialog box opens.



- 3 Type **admin** in the **User name** box.
- 4 Type **admin** in the **Password** box, then click **OK**. The *Setup* page opens.



- 5 Go to "Configuring the router" on page 19.

Configuring the router



To configure the router:

- 1 On the *Setup* page, click the arrow to open the **Time Zone** list, then click your time zone. If your location uses Daylight Savings Time, click to select the **Automatically adjust clock for daylight savings changes** check box.
- 2 In the Internet area, type the **Host Name** and the **Domain Name** if your ISP requires those entries (contact your ISP if you have a question about this).
- 3 Click the arrow to open the **Select your Connection Type** list, then click one of the following:

Automatic Configuration - DHCP - If your ISP does not require a static IP address.

Static IP - If your ISP requires a static IP address (get the IP Address, the subnet mask, the default gateway, and the DNS from your ISP). Type the information in the appropriate boxes.

PPPoE - If your ISP uses this type of DSL connection, or if you normally sign on to the Internet with a user name and password. Type the information in the appropriate spaces. Also, select either **Connect on Demand** (which disconnects your network from the Internet after a specified Max Idle Time), or **Keep Alive** (which keeps you connected to the Internet, even when there is no activity).

PPTP (Europe only) - If your ISP uses this type of connection (obtain the WAN IP Address, the subnet mask, the VPN Server IP, the VPN user name, and the VPN Password from your ISP). Enter the information in the appropriate spaces. Also, select either **Connect on Demand** (which disconnects your network from the Internet after a specified Max Idle Time), or **Keep Alive** (which keeps you connected to the Internet, even when there is no activity).

- 4 In the LAN area, accept the default settings unless you have a specific reason to change them (for example, two routers with the same address on your LAN). If you need to change these settings, type the IP Address and subnet mask of the router (as it will be seen by your local network).

Cannot find server - Microsoft Internet Explorer

http://192.168.1.1/

Gateway Wireless Router Setup

- Setup
- Security
- Router
- Status
- Advanced
- Online Manual

LAN

LAN MAC: 00-E0-B8-6A-D9-FA

IP Address: 192.168.1.1

Subnet Mask: 255.255.255.0

Wireless

Wireless MAC: 00-E0-B8-6A-D9-F9

Mode: Mixed

Channel: 6 - 2.437GHz

SSID: GatewaySSID

SSID Broadcast: Enable

WEP: ☒ Enable ☐ Disable [Edit Security Settings](#)

DHCP

[DHCP Server Setting](#)

[Apply](#) [Cancel](#)

- 5 In the Wireless area, click **Mode**, then click **Mixed**, **G-Only**, or **Disable**. Select **Mixed** if you are using both 802.11b and 802.11g wireless devices on your network. Select **G-Only** if you are using only 802.11g devices on your network. Select **Disable** if you are not using the wireless mode to communicate with the router (wired mode only).

Channel - Select from channels 1 through 11 (each with a different frequency). Use the same channel for all devices on your network. If you have more than one network at your location, you may want to use different channels for each so the networks do not communicate with each other.

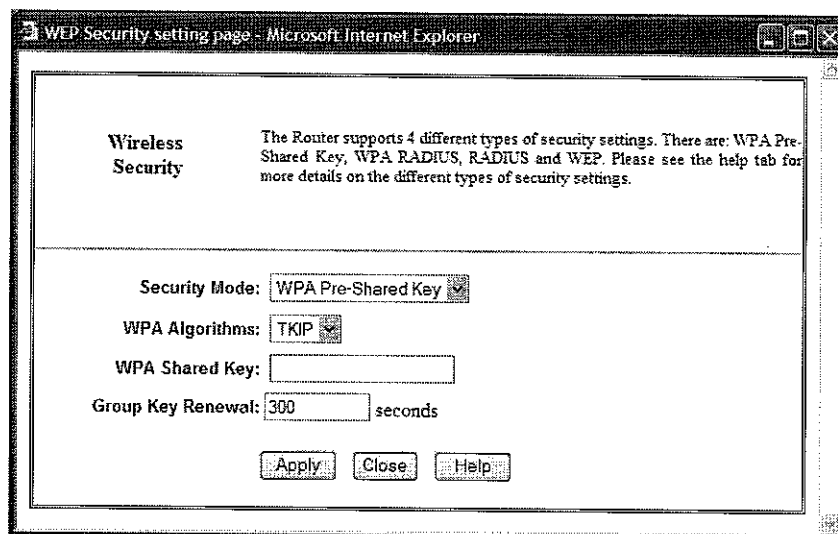
SSID (service set identifier) - Type the name of your local network. This must be consistent for your entire local network. It is case sensitive and can be up to 32 alphanumeric characters in length.

SSID Broadcast - Click the arrow to open the list, then click **Enable** or **Disable**. Enabling SSID broadcast allows users outside your LAN to see your wireless network. Disabling SSID broadcast prevents your wireless LAN from being seen by users outside your wireless LAN, which adds an additional level of security to your network.

WEP (Wired Equivalent Privacy) - Wireless security settings designed to prevent unauthorized access to your network. Select either **Enable** or **Disable**. If you choose to turn on WEP, click **Edit Security Settings**, then click one of four different types of wireless security. Type settings for the type of security you selected. If any of your computers use Windows XP, see "Configuring WEP security in Windows XP" on page 26. If any of your computers use Windows 98, Windows 2000, or Windows Me, see "Configuring WEP security in Windows 98, Windows 2000, or Windows Me" on page 27

WEP

Default Transmit Key	The router uses the selected key when it sends data. The receiver must use the same key to let data pass.
WEP Encryption	Select the level of encryption to use: either 64-bit or 128-bit. The higher level offers more security but may slow network speed.
Passphrase	You can type a passphrase (up to 16 alphanumeric characters - case sensitive) and click Generate to automatically generate encryption Keys 1-4, instead of typing the keys manually.
Keys 1-4	If you type the encryption keys manually, they must contain exactly 10 hex characters (64-bit) or 26 hex characters (128-bit). Valid hex characters are 0-9 and A through F. Blank fields and all zeros are not valid.



WPA (Wi-Fi Protected Access) Pre-Shared key

WPA Algorithms	Select an algorithm method: either TKIP (Temporal Key Integrity Protocol) or AES (Advanced Encryption Standard).
WPA Shared Key	Type a pre-shared key of from 8 to 63 alphanumeric characters.
Group Key Renewal	Type the length of time until the key is renewed. The default is 300 seconds.

Wireless Security

The Router supports 4 different types of security settings. There are: WPA Pre-Shared Key, WPA RADIUS, RADIUS and WEP. Please see the help tab for more details on the different types of security settings.

Security Mode:

WPA Algorithms:

RADIUS Server Address:

RADIUS Server Port:

WPA Shared Key:

Group Key Renewal: seconds

WPA RADIUS (Remote Authentication Dial-in User Service)

WPA Algorithms	Select an algorithm method: either TKIP (Temporal Key Integrity Protocol) or AES (Advanced Encryption Standard).
RADIUS Server Address	Type the IP address of the RADIUS server.
RADIUS Server Port	Type the authentication port used by the RADIUS server. The default authentication port is 1812.
WPA Shared Key	Type a text string that will be used as a password between the RADIUS server, proxy, and client.
Group Key Renewal	Type the length of time until the key is renewed. The default is 300 seconds.

Wireless Security

The Router supports 4 different types of security settings. There are: WPA, Pre-Shared Key, WPA RADIUS, RADIUS and WEP. Please see the help tab for more details on the different types of security settings.

Security Mode: **RADIUS**

RADIUS Server Address: 0 . 0 . 0 . 0

RADIUS Port:

Shared Key:

Default Transmit Key: ① ② ③ ④

WEP Encryption: 64 bits/10 hex digits

Passphrase:

Key 1:

Key 2:

Key 3:

Key 4:

RADIUS (Remote Authentication Dial-In User Service)

RADIUS Server Address Type the IP address of the RADIUS server.

RADIUS Port Type the authentication port used by the RADIUS server. The default authentication port is 1812.

Shared Key Type a text string that will be used as a password between the RADIUS server, proxy, and client.

- 6 In the DHCP area, click **DHCP Server Setting** to select the DHCP options for the router. The *DHCP Server setting* screen opens.

802.11G Wireless Router : DHCP - Microsoft Internet Explorer

Only disable this setting if you already have another router
or device serving as a DHCP server on your network.

DHCP Server: ☐ Enable ☒ Disable

Starting IP Address: 192 . 168 . 1 . 100

Maximum Number of DHCP Users: 50

Client Lease Time: 0 Minutes (0 means one day)

Static DNS 1: 0 . 0 . 0 . 0

2: 0 . 0 . 0 . 0

3: 0 . 0 . 0 . 0

WINS: 0 . 0 . 0 . 0

Currently Assigned:

DHCP Server - Click the arrow to open the list, then click **Enable** or **Disable**. Select **Disable** only if you have another router or DHCP server on your network. Select **Enable** if you want the router to provide DHCP service to your network (by assigning an IP address automatically to each computer on your network at sign-on).

Starting IP Address - The first IP address assigned by the router. Subsequent IP addresses increment by one until all addresses are assigned.

Maximum Number of DHCP Users - Enter the maximum number of IP addresses that you want assigned by the router.

Client Lease Time - Enter the amount of time you want to allow a network user to connect to the router with the current, assigned IP address.

Static DNS (1 - 3) - Type the IP address of alternate DNS (Domain Name System) servers (up to 3) in addition to the one provided by your ISP. The router uses these addresses for quicker access to alternate DNS Servers.

WINS - If you use a WINS (Windows Internet Naming Service) server, type its IP address in this field. If not, make no entry.

Currently Assigned - Click **DHCP Clients Table** to see the computers on your network and their assigned IP addresses.

When you are finished making entries in the above fields, click **Apply** to save your entries and exit, or click **Cancel** to exit without saving any changes. Click **Close** to close the window if you did not make any changes.

- 7 When you are finished making entries on the *Setup* page, click **Apply** to save your entries. Click **Cancel** to revert to the previous settings.
- 8 To exit the router setup utility, either close your browser or enter a different IP address in the address field and press **ENTER**.



Wireless operation

After the initial configuration is done, you can operate your network in wired or wireless mode. To operate in wireless mode, each computer in your network must have a wireless network interface card and the same SSID.

Tips & Tricks



For additional information on setting up your wireless network interface card, see the documentation that came with your wireless network card.

Configuring WEP security in Windows XP

Windows XP does not automatically configure the wireless adapter to use the encryption key generated when a WEP passphrase is entered. After the WEP encryption key is generated (see “Configuring the router” on page 19) on a Windows XP computer, you must manually enter the key so the computer can communicate with the router.



To manually enter the WEP encryption key in Windows XP:

- 1 Click **Start**, then click **Control Panel**. If your Control Panel is in Category View, click **Network and Internet Connections**.
- 2 Click/Double-click **Network Connections**. The *Network Connections* dialog box opens.
- 3 Double-click the **Wireless Network Connection** icon for your wireless network interface card. If more than one is shown, click the one that connects to your wireless network.
- 4 When the *Wireless Network Connection Status* window opens, click **Properties**. The *Wireless Network Connection Properties* window opens.
- 5 Click the **Wireless Networks** tab.

- 6 If the correct wireless network (check the SSID) is shown in the Preferred Networks area, double-click the connection and continue to Step 7.

- OR -

Click the connection in the Available Networks area, then click **Configure**. The Wireless Networks Properties window opens.

- 7 Click to select the **Data encryption (WEP enabled)** check box and click to clear the **The key is provided for me automatically** check box.

- 8 In the **Network key** box, type the WEP encryption key that was generated when you configured the router.

Important



The WEP encryption key must be entered exactly as generated. All 10 (64-bit encryption) or 26 (128-bit encryption) hexadecimal digits must be entered.

- 9 Make sure that the **Key format** box indicates hexadecimal digits and that the **Key length** box indicates the correct length key (10 or 26 digits).
- 10 Click **OK** to accept the settings.
- 11 Click **OK** repeatedly until you return to the Windows XP desktop.
- 12 Close all applications and reboot the computer.
- 13 Repeat Step 1 through Step 12 for each computer on your network running Windows XP.



Configuring WEP security in Windows 98, Windows 2000, or Windows Me

To configure WEP security in Windows 98, Windows 2000, and Windows Me, you must use a client manager. For instructions on using a client manager, see the documentation that came with your wireless Ethernet PC card or PCI card, USB adapter, or with your wireless enabled device.

Chapter 4

Routine Router Settings and Status



- Restore the router's default settings
- Upgrade the firmware
- Change default router settings
- Check router status

Using router settings and features

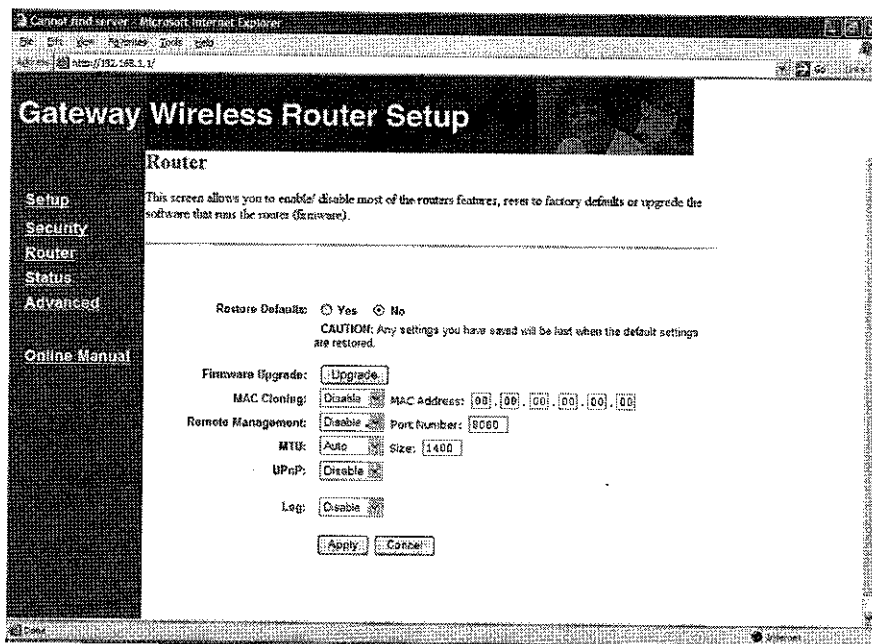
From the *Router* window in the Gateway Wireless Router Setup utility, you can turn many of the router's features on and off. You can also restore the router's settings to the defaults and upgrade the firmware to the latest version.

Restoring the router's default settings

The router comes with pre-set settings that lets it operate in most situations. If you have made changes to these settings and are having problems, you may want to return the settings to the defaults.

To return router settings to the defaults:

- 1 Open your Internet browser and go to the Gateway Wireless Router Setup utility. For more information, see "Contacting the router" on page 17.
- 2 Click **Router** on the left side of the window. The *Router* window opens.



- 3 Click the **Yes** check box to select **Router Defaults**, then click **Apply** at the bottom of the window. The router settings are returned to the defaults.

Caution



Any settings you have made and saved will be lost when the default settings are restored.

- 4 To exit the Gateway Wireless Router Setup utility, close your browser or enter another address in the browser's address field.



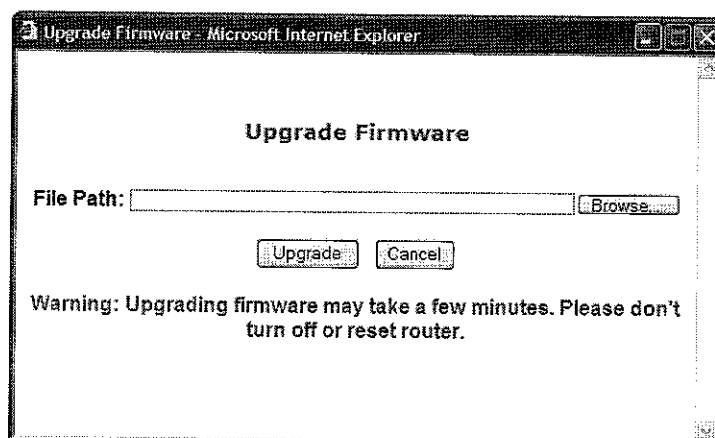
Upgrading the firmware

New firmware for your router is made available periodically by Gateway. Firmware upgrades may provide enhanced features, increased compatibility, or an updated interface.

Check your firmware version and date (found on the *Setup* page) against the latest version on the Gateway Web site (www.gateway.com). If a new version is available, follow these instructions to download and install the update.

To upgrade the firmware:

- 1 Download the new firmware version (a .TRX file) from the Gateway Web site and note where the file is saved on your computer.
- 2 Open your Internet browser and go to the Gateway Wireless Router Setup utility. For more information, see "Contacting the router" on page 17.
- 3 Click **Router** on the left side of the window. The *Router* window opens.
- 4 Click the **Upgrade** button. The *Upgrade Firmware* dialog box opens.



- 5 Click **Browse** and locate the file you downloaded on your computer. Click the file, then click **Open**. The file name and path appear in the **File Path** box.
- 6 Click the **Upgrade** button and wait while the file is loaded into firmware.

Caution



Do not turn off or reset the router while the firmware is being upgraded. This may cause problems with the router.

- 7 Once the firmware upgrade is complete, return to the *Setup* page and make sure that the new firmware version and date are shown.
- 8 To exit the Gateway Wireless Router Setup utility, close your browser or type another address in the browser's address field and press **ENTER**.



Changing default router settings

The router comes with pre-set settings that lets it operate in most situations. You can make changes to these settings if you want to enable additional features on your router, or to set your router to conform to your ISP's requirements for Internet access.



To change default router settings:

- 1 Open your Internet browser and access the Gateway Wireless Router Setup utility. For more information, see "Contacting the router" on page 17.
- 2 Click **Router** on the left side of the window. The *Router* window opens.
- 3 To use MAC Cloning click the arrow to open the **MAC Cloning** list, click **Enable** (the default is disabled), then type the MAC address in the field provided.

A MAC address is a unique, 12-digit code assigned to networking hardware for identification purposes. Some ISPs require you to provide them with the MAC address of the network interface card that was connected to their DSL or cable modem during installation. MAC cloning lets you type the required MAC address.

- To determine your adapter's MAC address in Windows 2000 and Windows XP, click **Start**, then click **Run**. Type **cmd** in the *Run* dialog box, then click **OK**. At the command prompt, type **ipconfig/all**, then press **ENTER**. Write down the adapter's hardware address.
- To determine your adapter's MAC address in Windows 98SE and Windows Me, click **Start**, then click **Run**. Type **winipcfg** in the *Run* dialog box, then click **OK**. Click the adapter you are using, then click **More Info**. Write down the number.

- 4 To use Remote Management, click the arrow to open the **Remote Management** list, click **Enable** (factory default is disabled). We also encourage you to change the router's default password at this time, to provide increased security.

Remote Management lets you access and manage your router from a remote location through the Internet. To remotely manage your router, type the router's Internet IP address and port number (8080 is the default) in the address box of the remote browser (for example, <http://188.123.12.1:8080>), then press ENTER. When prompted, type the appropriate password to access the router.

- 5 To set the MTU (Maximum Transmission Unit) to manual, click the arrow to open the **MTU** list, click **Manual** from the drop-down menu, then type the unit size in the **Size** box (this value should be in the 1200 to 1500 range).

MTU lets the router automatically set the best transmission packet unit size for your Internet connection (the default) or you can set the unit size manually.

- 6 To turn on Universal Plug-and-Play, click **UPnP**.

Turning on this feature lets the router take advantage of Universal Plug and Play technology.

- 7 To create a permanent log of all incoming and outgoing traffic on your Internet connection, click the arrow to open the **Log** list, then click **Enable**.

- 8 To save the new settings, click **Apply** at the bottom of the page. To return all settings to default without saving, click **Cancel**.

- 9 To exit the Gateway Wireless Router Setup utility, close your browser or type another address in the browser's address field and press ENTER.



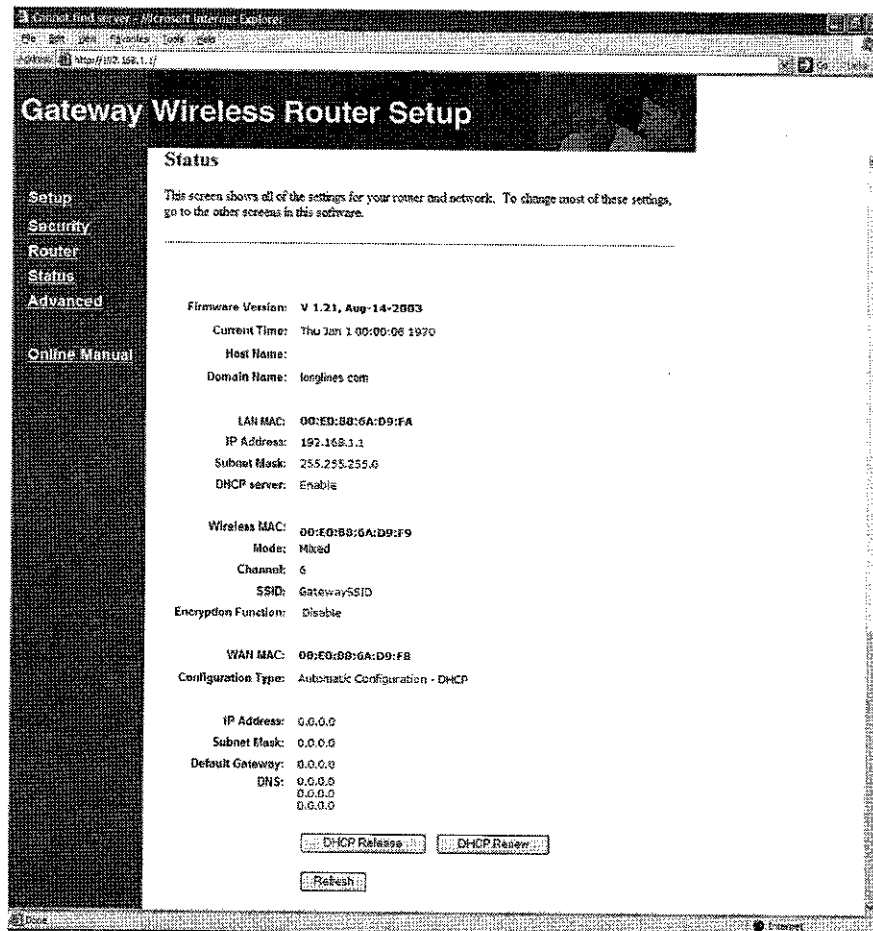
Router status

You can view the current router settings and status by accessing the *Status* page in the Gateway Wireless Router Setup utility. The information on this page is updated approximately every ten seconds. In addition to the firmware version and the current time, the host name and the domain name (if required) are shown, as well as information on the LAN settings, wireless settings, and WAN settings.

Chapter 4: Routine Router Settings and Status

▶ To release the router's current Internet IP address:

- 1 Click **Status** on the left side of the window. The *Status* window opens.



- 2 Click **DHCP Release**.

▶ To get a new Internet IP address:

- 1 Click **Status** on the left side of the window. The *Status* window opens.
- 2 Click **DHCP Renew**.

Chapter 5

Advanced Configuration and Settings



- Set up a security scheme
- Use filters
- Forward ports
- Set up routing (dynamic/static)

Setting up security

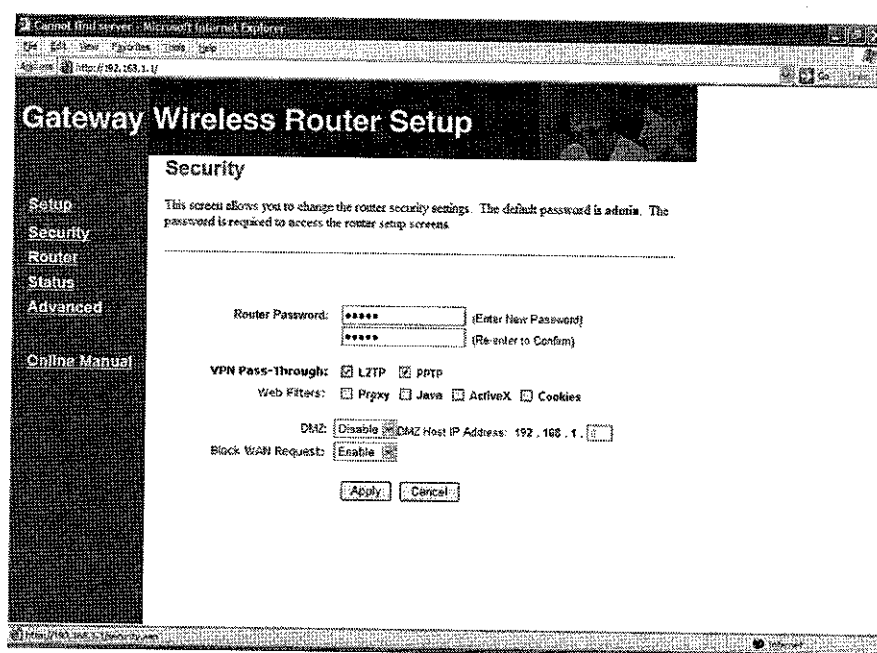
Network security is important for home networks to protect personal information, such as credit card numbers, Social Security numbers, tax records, and other private information. Network security is vital for business, corporate, or government networks, where the safety of the organization, and possibly the safety of the employees, may be at stake.

Establishing a router security scheme

Router security is your first line of defense whenever you are connected to the Internet. Take the time to set up a good router security scheme to prevent unauthorized access to your network.

To change router security settings:

- 1 Open your Internet browser and go to the Gateway Wireless Router Setup utility. For more information, see “Contacting the router” on page 17.
- 2 Click **Security** on the left side of the window. The *Security* window opens.



- 3 In the Router Password area, highlight the row of asterisks in the **Enter New Password** box and type a new router password.

- 4 Highlight the row of asterisks in the (Re-enter to Confirm) box and retype the new password to confirm your entry. This will be your password the next time you access the Gateway Wireless Router Setup utility.
- 5 If you do not use VPN, click to clear the check boxes for **L2TP** (Layer-2 Tunneling Protocol) and **PPTP** (Point-to-Point Tunneling Protocol) tunnels in the VPN Pass-Through area.
- 6 In the Web Filters area, click to select the check box for the type of Web filters you want to use. You can select:
 - **Proxy** - Turn on proxy filtering to keep your network from accessing WAN proxy servers, a potential source of network security compromise.
 - **Java** - Turn on Java filtering to keep your network from accessing Web sites that use the Java programming language.
 - **ActiveX** - Turn on ActiveX filtering to keep your network from accessing to Web sites that use the ActiveX programming language.
 - **Cookies** - Turn on cookie filtering to keep cookies (small data files containing information about your computer) from being stored on your computer.
- 7 In the DMZ (Demilitarized Zone) area, click the arrow to open the **DMZ** list, then click **Enable** or **Disable**.

DMZ hosting opens one computer on your network to the Internet for a specific purpose, such as Internet gaming or video conferencing. If you choose to enable this feature, you must disable the DHCP function on the subject computer, assign an IP address to the computer, and type the IP address of the computer in the box provided. Port Forwarding (see "Setting up port forwarding" on page 45) should be considered as an alternative to DMZ hosting as it provides better security because it only opens selected ports, instead of all ports on the subject computer.

- 8 Click **Apply** to implement your changes.

-OR-

Click **Cancel** to return the router's security settings to defaults.



Advanced settings

You can customize settings for security, data transmission, filters, port configuration, and routing. You can configure the router for any of the following:

- Specific types of access authentication
- Designated data transmission rates and notification
- Internet access policies and blocking lists
- Public services such as Web servers, ftp servers, and mail servers
- Various routing modes

Caution



We recommend that you do not change the default values on these pages unless you are an advanced user with a complete understanding of the settings you are changing and the purpose for those changes. These settings determine the way your router sends and receives data and may limit or expand access to the router and your network.

Changing data transmission settings

On the *Advanced (Data)* page you can give or deny specific computers access to your wireless network. You can specify an authentication type and transmission rate for your network. You can also modify transmission rate, client message notification, and data flow.

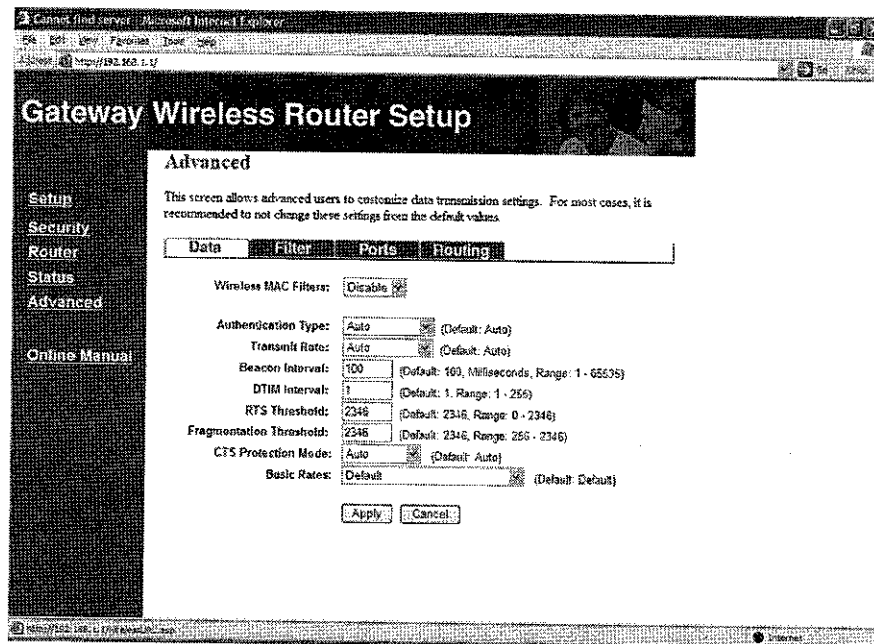
Caution



We recommend that you do not change the default values on these pages unless you are an advanced user with a complete understanding of the settings you are changing and the purpose for those changes. These settings determine the way your router sends and receives data and may limit or expand access to the router and your network.

 To change router security settings:

- 1 Open your Internet browser and go to the Gateway Wireless Router Setup utility. For more information, see “Contacting the router” on page 17.
- 2 Click **Advanced** on the left side of the window. The *Advanced (Data)* page opens.

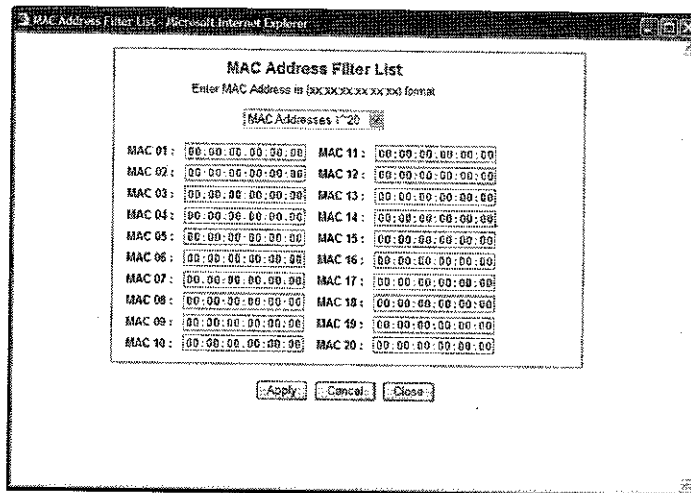


Chapter 5: Advanced Configuration and Settings

- 3 To turn on Wireless MAC Filter, click the arrow to open the **Wireless MAC Filters** list, then click **Enable**. Do the following:
 - a Click to select either the **Prevent the PC's listed from accessing the wireless network** check box.

-OR-

Click to select the **Permit the PC's listed to access the wireless network** check box.
 - b After you make your choice, click **Edit MAC Filter List**, then type the wireless MAC addresses of the computers you want to permit or prevent access to your wireless network. To determine an adapter's wireless MAC address, see "Changing default router settings" on page 32.



- c Click **Apply** to accept your settings.

-OR-

Click **Cancel** to remove your changes.
 - d Click **Close** to return to the *Advanced (Data)* page.
- 4 Click the arrow to open the **Authentication Type** list, then click **Auto** (the default), **Open System**, or **Shared Key**.
 - **Auto** - Authentication method automatically adjusts to client system's authentication.
 - **Open System** - No authentication required.
 - **Shared Key** - Authentication based on a shared key. This is only available if you selected WEP as your wireless security setting and established a key (Step 5 on page 20).

- 5 Click the arrow to open the **Transmit Rate** list, then click the data transmission rate you want to use in your wireless network. The setting should be based on the speed of your wireless network. The recommended setting is **Auto** (the default), which allows the router to use the fastest reliable transmission speed.
- 6 In the **Beacon Interval** field, type in the frequency interval of the router's network synchronization beacon between 20 and 1000. The default frequency of 100 is recommended.
- 7 In the **DTIM Interval** field, type the interval of the Delivery Traffic Indication Message. The DTIM lets client systems know when the next broadcast or multicast message will be sent. Available settings are 1 (default) to 255.
- 8 In the **RTS Threshold** field, type the threshold size of data packets which enables the Request to Send (RTS)/Clear to Send (CTS) mechanism. Available settings are 0 to 2346 (default). If you encounter inconsistent data flow at the default setting, only minor setting changes should be made.
- 9 In the **Fragmentation Threshold** field, type the threshold size of data packets which will be fragmented into smaller packets. Available settings are 256 to 2346 (default). If you encounter a high packet data error rate at the default setting, slightly decrease the threshold (only minor setting changes should be made). Setting the Fragmentation Threshold too low may result in poor network performance.
- 10 To disable Clear to Send (CTS) protection (the default is Auto) on your network, click the arrow to open the **CTS Protection Mode** list, then click **Disable**. If your wireless network consists of 802.11g equipment only, you can disable CTS Protection. However, if your network has both 802.11b and 802.11g adapters present, the setting should be left on Auto due to backward-compatibility issues.
- 11 Click the arrow to open the **Basic Rates** list, then click the setting you want your router to use:
 - **ALL** - (default - recommended) allows all data rates from 54Mbps down.
 - **1-2Mbps** - supported by all 802.11 standards.
 - **1,2,5,5,11 Mbps (for wifi-g)** - supported by the 802.11g and 802.11b standards.
 - **1,2,5,5,6,11,12,24 Mbps (for wifi-g)** - supported by the 802.11g standard.

- 12 Click **Apply** to save your changes

-OR-

Click **Cancel** to return the router's data settings to the defaults.

