

**2.4 GHZ 54 MBPS
IEEE 802.11G WIRELESS ROUTER**

Trademarks:

Other product and company names are trademarks or registered trademarks of their respective holders.

COMPLIANCES

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

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

FCC Caution: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices) any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE: FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters (8 inches) between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

U.S. Robotics declared that USR5462 is limited in CH1~11 by specified firmware □ controlled in USA.

Industry Canada - Class B

Operation is subject to the following two conditions: □

- 1) this device may not cause interference and □
- 2) this device must accept any interference, including interference that may □ cause undesired operation of the device

To prevent radio interference to the licensed service, this device is intended to be □ operated indoors and away from □

windows to provide maximum shielding. □

(Equipment (or its transmit antenna) that is installed outdoors is subject to licensing).

EC Conformance Declaration C€0560ⓘ

Marking by the above symbol indicates compliance with the Essential Requirements of the R&TTE Directive of the European Union (1999/5/EC). This equipment meets the following conformance standards:

- EN 60950 (IEC 60950) - Product Safety
- EN 300 328 - Technical requirements for 2.4 GHz radio equipment
- EN 301 489-1 / EN 301 489-17 - EMC requirements for radio equipment

Countries of Operation & Conditions of Use in the European Community

This device is intended to be operated in all countries of the European Community. Requirements for indoor vs. outdoor operation, license requirements and allowed channels of operation apply in some countries as described below:

Note: The user must use the configuration utility provided with this product to ensure the channels of operation are in conformance with the spectrum usage rules for European Community countries as described below.

- This device requires that the user or installer properly enter the current country of operation in the command line interface as described in the user guide, before operating this device.
- This device will automatically limit the allowable channels determined by the current country of operation. Incorrectly entering the country of operation may result in illegal operation and may cause harmful interference to other system. The user is obligated to ensure the device is operating according to the channel limitations, indoor/outdoor restrictions and license requirements for each European Community country as described in this document.

- This device may be operated *indoors or outdoors* in all countries of the European Community using the 2.4 GHz band: Channels 1 - 13, except where noted below.
 - In Italy the end-user must apply for a license from the national spectrum authority to operate this device outdoors.
 - In France outdoor operation is only permitted using the 2.4 - 2.454 GHz band: Channels 1 - 7.

Declaration of Conformity in Languages of the European Community

English	Hereby, SMC Networks, declares that this Radio LAN device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Finnish	Valmistaja SMC Networks vakuuttaa täten että Radio LAN device tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Dutch	Hierbij verklaart SMC Networks dat het toestel Radio LAN device in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG Bij deze SMC Networks dat deze Radio LAN device voldoet aan de essentiële eisen en aan de overige relevante bepalingen van Richtlijn 1999/5/EC.
French	Par la présente SMC Networks déclare que l'appareil Radio LAN device est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE
Swedish	Härmed intygar SMC Networks att denna Radio LAN device står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Danish	Undertegnede SMC Networks erklærer herved, at følgende udstyr Radio LAN device overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF

Compliances

German	Hiermit erklärt SMC Networks, dass sich dieser/diese/dieses Radio LAN device in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet". (BMW) Hiermit erklärt SMC Networks die Übereinstimmung des Gerätes Radio LAN device mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 1999/5/EG. (Wien)
Greek	Με την παρούσα smc networks δηλώνει ότι radio LAN device συμμορφώνεται προς τις ουσιαστικές απαιτήσεις και τις λοιπές σχετικές διατάξεις της οδηγίας 1999/5/ΕΚ
Italian	Con la presente SMC Networks dichiara che questo Radio LAN device è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Spanish	Por medio de la presente SMC Networks declara que el Radio LAN device cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE
Portuguese	SMC Networks declara que este Radio LAN device está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

Australia AS/NZS 3548 (1995) - Class B



ACN 069 351 613

Safety Compliance

Underwriters Laboratories Compliance Statement

Important! Before making connections, make sure you have the correct cord set. Check it (read the label on the cable) against the following:

Operating Voltage	Cord Set Specifications
120 Volts	UL Listed/CSA Certified Cord Set
	Minimum 18 AWG
	Type SVT or SJT three conductor cord
	Maximum length of 15 feet
	Parallel blade, grounding type attachment plug rated 15 A, 125 V
240 Volts (Europe only)	Cord Set with H05VV-F cord having three conductors with minimum diameter of 0.75 mm ²
	IEC-320 receptacle
	Male plug rated 10 A, 250 V

The unit automatically matches the connected input voltage. Therefore, no additional adjustments are necessary when connecting it to any input voltage within the range marked on the rear panel.

Wichtige Sicherheitshinweise (Germany)

1. Bitte lesen Sie diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie keine Flüssigoder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschußsteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Beschädigungen hervorrufen.
7. Die Belüftungsöffnungen dienen der Luftzirkulation, die das Gerät vor Überhitzung schützt. Sorgen Sie dafür, daß diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.
9. Verlegen Sie die Netzanschlußleitung so, daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen, die sich am Gerät befinden, sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
13. Öffnen sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
 - a. Netzkabel oder Netzstecker sind beschädigt.
 - b. Flüssigkeit ist in das Gerät eingedrungen.
 - c. Das Gerät war Feuchtigkeit ausgesetzt.
 - d. Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
 - e. Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
 - f. Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
15. Stellen Sie sicher, daß die Stromversorgung dieses Gerätes nach der EN 60950 geprüft ist. Ausgangswerte der Stromversorgung sollten die Werte von AC 7,5-8 V, 50-60 Hz nicht über oder unterschreiten sowie den minimalen Strom von 1 A nicht unterschreiten.

Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70 dB(A) oder weniger.

TABLE OF CONTENTS

About the Wireless 11g Router	1
LED Indicators	1
Features and Benefits	2
Installing the Wireless 11g Router	4
Package Contents	4
Hardware Description	5
System Requirements	7
Connect the System	8
Basic Installation Procedure	8
Configuring Client TCP/IP	14
Installing TCP/IP	14
Windows 95/98/Me	14
Windows 2000	15
Setting Up TCP/IP	17
Configuring Your Computer in Windows 95/98/Me	17
Configuring Your Computer in Windows NT 4.0	20
Configuring Your Computer in Windows 2000	22
Configuring Your Computer in Windows XP	23
Configuring a Macintosh Computer	24
Manual IP Configuration (for all Windows OS)	25
Verifying Your TCP/IP Connection	27
Configuring the Wireless 11g Router	28
Browser Configuration	28
Disable Proxy Connection	28
Navigating the Web Browser Interface	29
Making Configuration Changes	31
Setup Wizard	32
Time Zone	32
Broadband Type	33
Advanced Setup	38
System	39
WAN	44

TABLE OF CONTENTS

- LAN 50
- Wireless 51
- WDS (Wireless Distribution System) 58
- NAT - Network Address Translation 60
- Firewall 64
- DDNS (Dynamic DNS) Settings 72
- UPnP (Universal Plug and Play) Setting 74
- Tools 75
- Status 78
- Troubleshooting80**
 - Maximum Distance Table 84
- Specifications85**

ABOUT THE WIRELESS 11G ROUTER

Congratulations on your purchase of the Wireless 11g Router. It is proud to provide you with a powerful yet simple communication device for connecting your local area network (LAN) to the Internet.

LED Indicators

The Wireless 11g Router includes status LED indicators, as described in the following figure and table.



LED	Status	Description
PWR (Green)	On	The Wireless 11g Router is receiving power.
WLAN (Green)	On	The Wireless 11g Router has established a valid wireless connection.
	Flashing	The WLAN port is transmitting or receiving traffic.
WAN 100 (Green)	On	The WAN port has established a valid 100 Mbps network connection.
	Flashing	The WAN port is transmitting or receiving traffic.
WAN 10 (Yellow)	On	The WAN port has established a valid 10 Mbps network connection.
	Flashing	The WAN port is transmitting or receiving traffic.
LAN1-4 100 (Green)	On	The indicated LAN port has established a valid 100 Mbps network connection.
	Flashing	The indicated LAN port is transmitting or receiving traffic.

About the Wireless 11g Router

LED	Status	Description
LAN1-4 10 (Yellow)	On	The indicated LAN port has established a valid 10 Mbps network connection.
	Flashing	The indicated LAN port is transmitting or receiving traffic.

Features and Benefits

- Internet connection to DSL or cable modem via a 10/100 Mbps WAN port
- Local network connection via 10/100 Mbps Ethernet ports or 54 Mbps wireless interface (supporting up to 253 mobile users)
- 802.11g – interoperable with multiple vendors and 802.11b clients
- Advanced security through 64/128-bit WEP encryption, 802.1x, WPA (Wi-Fi Protected Access), SSID broadcast disabled, and MAC address filtering features to protect your sensitive data and authenticate only authorized users to your network
- Provides seamless roaming within an 802.11g WLAN environment
- DHCP for dynamic IP configuration, and DNS for domain name mapping
- Firewall with Stateful Packet Inspection, client privileges, hacker prevention, DoS, and NAT
- NAT also enables multi-user access with a single-user account, and virtual server functionality (providing protected access to Internet services such as web, mail, FTP, and Telnet)

Features and Benefits

- Virtual Private Network support using PPTP, L2TP, or IPSec pass-through
- User-definable application sensing tunnel supports applications requiring multiple connections
- Parental controls allow the user to restrict web browsing
- Automatic email alerts when the network is being attacked
- Easy setup through a web browser on any operating system that supports TCP/IP
- Compatible with all popular Internet applications

INSTALLING THE WIRELESS 11G ROUTER

Before installing the Wireless 11g Router, verify that you have all the items listed under “Package Contents.” If any of the items are missing or damaged, contact your local distributor. Also be sure that you have all the necessary cabling before installing the Wireless 11g Router. After installing the Wireless 11g Router, refer to the web-based configuration program in “Configuring the Wireless 11g Router” on page 28 for information on configuring the Wireless 11g Router.

Package Contents

After unpacking the Wireless 11g Router, check the contents of the box to be sure you have received the following components:

- Wireless 11g Router
- Power adapter
- One CAT-5 Ethernet cable
- Four rubber feet
- Installation CD containing this User Guide and EZ 3-Click Installation Wizard
- Quick Installation Guide

Immediately inform your dealer in the event of any incorrect, missing or damaged parts. If possible, please retain the carton and original packing materials in case there is a need to return the product.

Hardware Description

The Wireless 11g Router can be connected to the Internet or to a remote site using its RJ-45 WAN port. It can be connected directly to your PC or to a local area network using any of the Fast Ethernet LAN ports or wireless interface.

Access speed to the Internet depends on your service type. Full-rate ADSL can provide up to 8 Mbps downstream and 640 Kbps upstream. G.lite (or splitterless) ADSL provides up to 1.5 Mbps downstream and 512 Kbps upstream. Cable modems can provide up to 36 Mbps downstream and 2 Mbps upstream. ISDN can provide up to 128 Kbps when using two bearer channels. PSTN analog connections can now run up to 56 Kbps. However, you should note that the actual rate provided by specific service providers may vary dramatically from these upper limits.

Although access speed to the Internet is determined by the modem type connected to the Wireless 11g Router, data passing between devices connected to your local area network can run up to 100 Mbps over the Fast Ethernet ports.

The Wireless 11g Router includes an LED display on the front panel for system power and port indications that simplifies installation and network troubleshooting. It also provides four RJ-45 LAN ports and one RJ-45 WAN port on the rear panel.

- 4 RJ-45 ports for connection to a 10BASE-T/100BASE-TX Ethernet Local Area Network (LAN). These ports can auto-negotiate the operating speed to 10/100 Mbps, the mode to half/full duplex, and the pin signals to MDI/MDI-X (i.e., allowing these ports to be connected to any network device with straight-through cable). These ports can be connected directly to a PC or to a server equipped with an Ethernet network interface card, or to a networking device such as an Ethernet hub or switch.

Installing the Wireless 11g Router

- One RJ-45 port for connection to a DSL or cable modem (WAN). This port also auto-negotiates operating speed to 10/100 Mbps, the mode to half/full duplex, and the pin signals to MDI/MDI-X.

The following figure shows the components of the Wireless 11g Router:



Figure 1. Front and Rear Panels

Item	Description
LEDs	Power, WLAN, WAN and LAN port status indicators. (See “LED Indicators” on page 1.)
Power Inlet	Connect the included power adapter to this inlet. Warning: Using the wrong type of power adapter may damage your router.

Item	Description
WAN Port	WAN port (RJ-45). Connect your cable modem, DSL modem, or an Ethernet router to this port.
Reset Button	Use this button to reset the power and restore the default factory settings.
LAN Ports	Fast Ethernet ports (RJ-45). Connect devices (such as a PC, hub or switch) on your local area network to these ports.

System Requirements

You must have an ISP that meets the following minimum requirements:

- Internet access from your local telephone company or Internet Service Provider (ISP) using a DSL modem or cable modem.
- A PC using a fixed IP address or dynamic IP address assigned via DHCP, as well as a gateway server address and DNS server address from your service provider.
- A computer equipped with a 10 Mbps, 100 Mbps, or 10/100 Mbps Fast Ethernet card, or a USB-to-Ethernet converter.
- TCP/IP network protocol installed on each PC that needs to access the Internet.
- A web browser, such as Microsoft Internet Explorer 5.0 or above installed on one PC at your site for configuring the Wireless 11g Router.

Connect the System

The Wireless 11g Router can be positioned at any convenient location in your office or home. No special wiring or cooling requirements are needed. You should, however comply with the following guidelines:

- Keep the Wireless 11g Router away from any heating devices.
- Do not place the Wireless 11g Router in a dusty or wet environment.

You should also remember to turn off the power, remove the power cord from the outlet, and keep your hands dry when you install the Wireless 11g Router.

Basic Installation Procedure

1. **Connect the LAN:** Connect the Wireless 11g Router to your PC, or to a hub or switch. Run Ethernet cable from one of the LAN ports on the rear of the Wireless 11g Router to your computer's network adapter or to another network device.

You may also connect the Wireless 11g Router to your PC (using a wireless client adapter) via radio signals. Position both antennas on the back of the Wireless 11g Router into the desired positions. For more effective coverage, position the antennas along different axes. For example, try positioning the antennas around 45 to 90 degrees apart. **(The antennas emit signals along the toroidal plane – and thus provide more effective coverage when positioned along different axes.)**

2. **Connect the WAN:** Prepare an Ethernet cable for connecting the Wireless 11g Router to a cable/xDSL modem or Ethernet router.

- 3. Power on:** Connect the power adapter to the Wireless 11g Router.

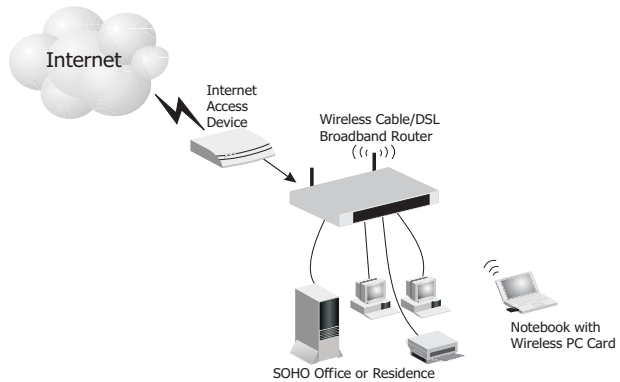


Figure 2. Connecting the Wireless 11g Router

Installing the Wireless 11g Router

Attach to Your Network Using Ethernet Cabling

The four LAN ports on the Wireless 11g Router auto-negotiate the connection speed to 10 Mbps Ethernet or 100 Mbps Fast Ethernet, and the transmission mode to half duplex or full duplex.

Use twisted-pair cable to connect any of the four LAN ports on the Wireless 11g Router to an Ethernet adapter on your PC. Otherwise, you can cascade any of the LAN ports on the Wireless 11g Router to an Ethernet hub or switch, and then connect your PC or other network equipment to the hub or switch. When inserting an RJ-45 plug, be sure the tab on the plug clicks into position to ensure that it is properly seated.

Warning: Do not plug a phone jack connector into any RJ-45 port. This may damage the Wireless 11g Router. Instead, use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.



Figure 3. Making the LAN Connections

Attach to Your Network Using Radio Signals

Install a wireless network adapter in each computer that will be connected to the Internet or your local network via radio signals.

Rotate both antennas on the back of the Wireless 11g Router to the desired position. For more effective coverage, position the antennas around 45 to 90 degrees apart. Try to place the Wireless 11g Router in a position that is located in the center of your wireless network. Normally, the higher you place the antenna, the better the performance. Ensure that the Wireless 11g Router's location provides optimal reception throughout your home or office.

Computers equipped with a wireless adapter can communicate with each other as an independent wireless LAN by configuring each computer to the same radio channel. However, the Wireless 11g Router can provide access to your wired/wireless LAN or to the Internet for all wireless workstations. Each wireless PC in this network infrastructure can talk to any computer in the wireless group via a radio link, or access other computers or network resources in the wired LAN infrastructure or over the Internet via the Wireless 11g Router.

The wireless infrastructure configuration not only extends the accessibility of wireless PCs to the wired LAN, but also increases the effective wireless transmission range for wireless PCs by retransmitting incoming radio signals through the Wireless 11g Router.

Installing the Wireless 11g Router

A wireless infrastructure can be used for access to a central database, or for connection between mobile workers, as shown in the following figure:

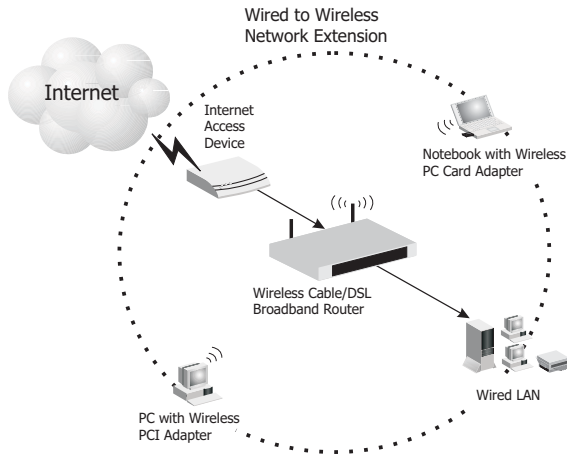


Figure 4. Making the WLAN Connections

Attach the Wireless 11g Router to the Internet

If Internet services are provided through an xDSL or cable modem, use unshielded or shielded twisted-pair Ethernet cable (Category 3 or greater) with RJ-45 plugs to connect the broadband modem directly to the WAN port on the Wireless 11g Router.

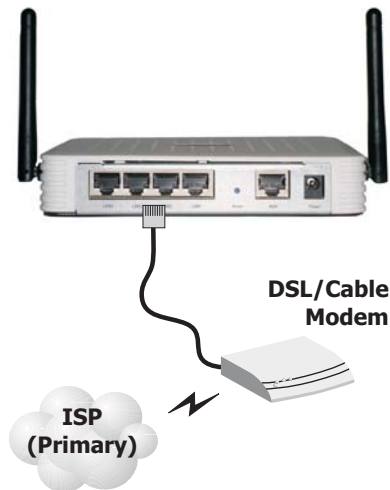


Figure 5. Making the WAN Connection

Note: When connecting to the WAN port, use 100-ohm Category 3, 4, or 5 shielded or unshielded twisted-pair cable with RJ-45 connectors at both ends for all connections.

Connecting the Power Adapter

Plug the power adapter into the power socket on the Wireless 11g Router, and the other end into a power outlet. Check the indicator marked “PWR” on the front panel to be sure it is on. If the power indicator does not light, refer to “Troubleshooting” on page 80.

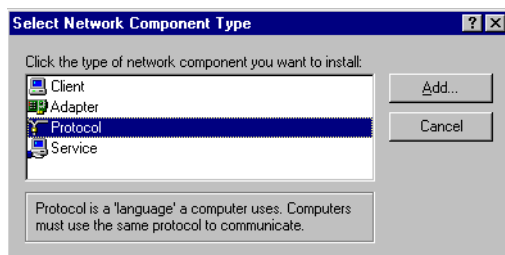
CONFIGURING CLIENT TCP/IP

If you have not previously installed the TCP/IP protocols on your client PCs, refer to the following section. If you need information on how to configure a TCP/IP address on a PC, refer to “Setting Up TCP/IP” on page 17.

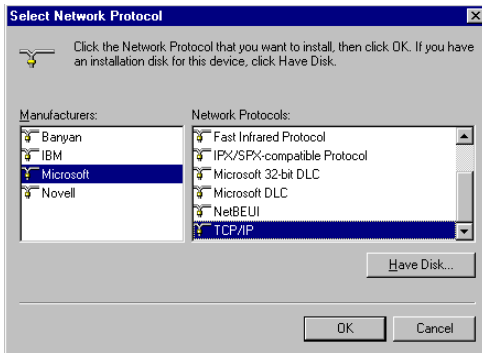
Installing TCP/IP

Windows 95/98/Me

1. Click Start/Settings/Control Panel.
2. Double-click the Network icon and select the Configuration tab in the Network window.
3. Click the Add button.
4. Double-click Protocol.



5. Select Microsoft in the manufacturers list. Select TCP/IP in the Network Protocols list. Click the OK button to return to the Network window.



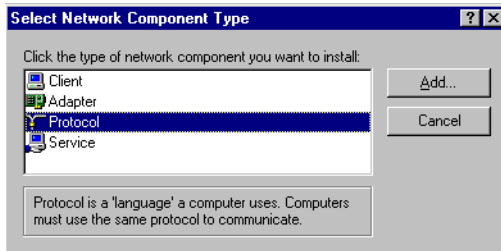
6. The TCP/IP protocol will be listed in the Network window. Click OK. The operating system may prompt you to restart your system. Click Yes and the computer will shut down and restart.

Windows 2000

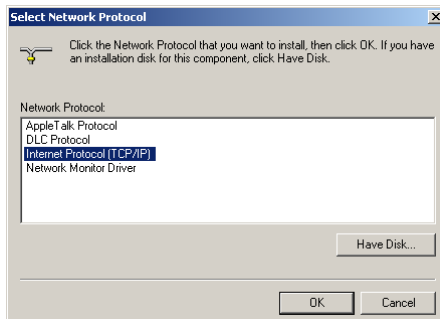
1. Click the Start button and choose Settings, then click the Network and Dial-up Connections icon.
2. Double-click the Local Area Connection icon, and click the Properties button on the General tab.
3. Click the install... button.

Configuring Client TCP/IP

4. Double-click Protocol.



5. Choose Internet Protocol (TCP/IP). Click the OK button to return to the Network window.



6. The TCP/IP protocol will be listed in the Network window. Click OK to complete the installation procedure.

Setting Up TCP/IP

To access the Internet through the Wireless 11g Router, you must configure the network settings of the computers on your LAN to use the same IP subnet as the Wireless 11g Router. The default network settings for the Wireless 11g Router are:

Gateway IP Address: 192.168.2.1

Subnet Mask: 255.255.255.0

Note: These settings may be changed to suit your network requirements, but you must first configure at least one computer as described in this chapter to access the Wireless 11g Router's web configuration interface. See "Configuring the Wireless 11g Router" on page 28 for information on configuring the Wireless 11g Router.

If you have not previously configured TCP/IP for your computer, refer to "Configuring Client TCP/IP" on page 14. The IP address of the connected client PC should be 192.168.2.x (where x means 2–254). You can set the IP address for client PCs either by automatically obtaining an IP address from the Wireless 11g Router's DHCP service or by manual configuration.

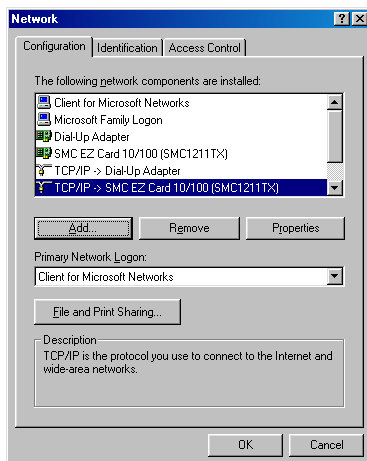
Configuring Your Computer in Windows 95/98/Me

You may find that the instructions here do not exactly match your version of Windows. This is because these steps and screen shots were created in Windows 98. Windows 95 and Windows Millennium Edition are very similar, but not identical, to Windows 98.

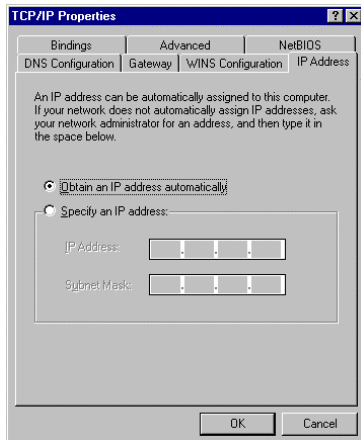
1. From the Windows desktop, click Start/Settings/Control Panel.
2. In the Control Panel, locate and double-click the Network icon.

Configuring Client TCP/IP

3. On the Network window Configuration tab, double-click the TCP/IP entry for your network card.



4. Click the IP Address tab.



5. Click the "Obtain an IP address" option.
6. Next click on the Gateway tab and verify the Gateway field is blank. If there are IP addresses listed in the Gateway section, highlight each one and click Remove until the section is empty.
7. Click the OK button to close the TCP/IP Properties window.

Setting Up TCP/IP

- On the Network Properties Window, click the OK button to save these new settings.

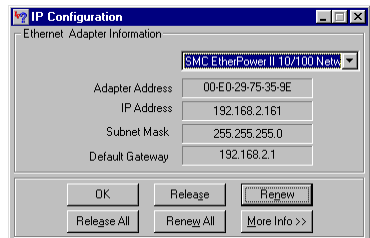
Note: Windows may ask you for the original Windows installation disk or additional files. Check for the files at c:\windows\options\cabs, or insert your Windows CD-ROM into your CD-ROM drive and check the correct file location, e.g., D:\win98, D:\win9x. (if D is the letter of your CD-ROM drive).

- Windows may prompt you to restart the PC. If so, click the Yes button. If Windows does not prompt you to restart your computer, do so to ensure your settings.

Obtain IP Settings from Your Wireless 11g Router

Now that you have configured your computer to connect to your Wireless 11g Router, it needs to obtain new network settings. By releasing old IP settings and renewing them with settings from your Wireless 11g Router, you will also verify that you have configured your computer correctly.

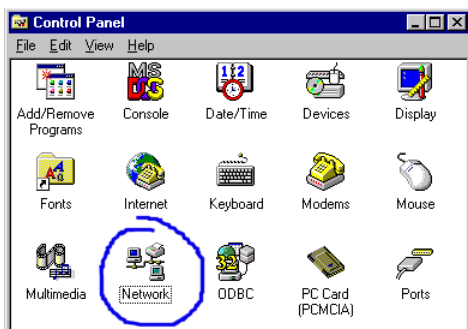
- Click Start/Run.
- Type WINIPCFG and click OK.
- From the drop-down menu, select your network card. Click Release and then Renew. Verify that your IP address is now 192.168.2.xxx, your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168.2.1. These values confirm that the Wireless 11g Router is functioning. Click OK to close the IP Configuration window.



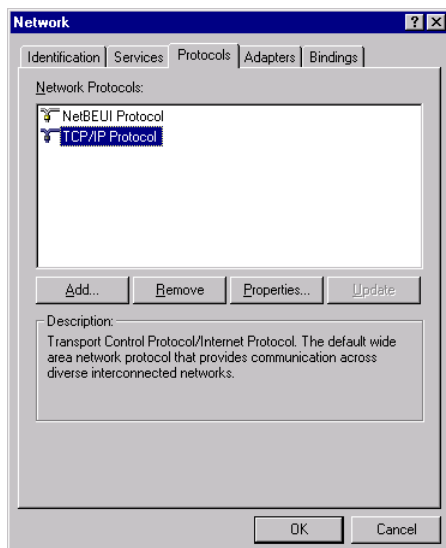
Configuring Client TCP/IP

Configuring Your Computer in Windows NT 4.0

1. From the Windows desktop click Start/Settings/Control Panel.
2. Double-click the Network icon.



3. Click on the Protocols tab.
4. Double-click TCP/IP Protocol.



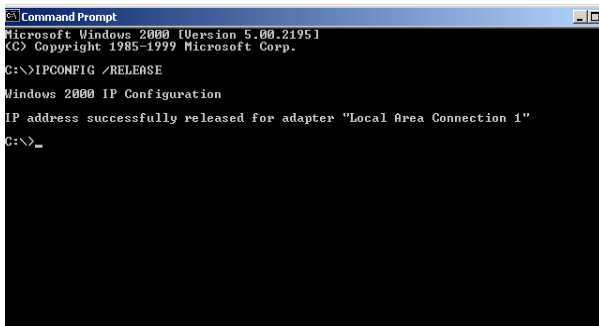
5. Click on the IP Address tab.
6. In the Adapter drop-down list, be sure your Ethernet adapter is selected.

7. Click on "Obtain an IP address from a DHCP server."
8. Click OK to close the window.
9. Windows may copy files and will then prompt you to restart your system. Click Yes and your computer will shut down and restart.

Obtain IP Settings From Your Wireless 11g Router

Now that you have configured your computer to connect to the Wireless 11g Router, it needs to obtain new network settings. By releasing old IP settings and renewing them with settings from the Wireless 11g Router, you will also verify that you have configured your computer correctly.

1. On the Windows desktop, click Start/Programs/Command Prompt.
2. In the Command Prompt window, type IPCONFIG /RELEASE and press the <ENTER> key.



```
Command Prompt
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-1999 Microsoft Corp.

C:\>IPCONFIG /RELEASE

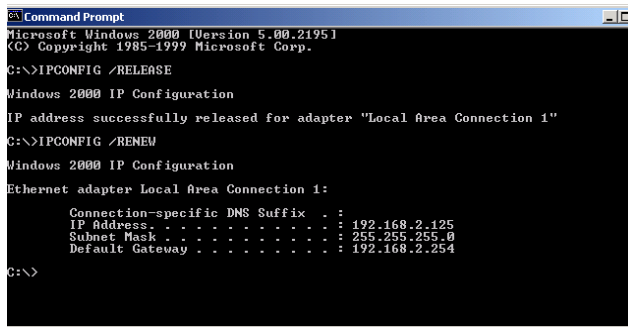
Windows 2000 IP Configuration

IP address successfully released for adapter "Local Area Connection 1"

C:\>_
```

Configuring Client TCP/IP

3. Type IPCONFIG /RENEW and press the <ENTER> key. Verify that your IP Address is now 192.168.2.xxx, your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168.2.1. These values confirm that the Wireless 11g Router is functioning



```
Command Prompt
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-1999 Microsoft Corp.

C:\>IPCONFIG /RELEASE

Windows 2000 IP Configuration

IP address successfully released for adapter "Local Area Connection 1"

C:\>IPCONFIG /RENEW

Windows 2000 IP Configuration

Ethernet adapter Local Area Connection 1:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . . : 192.168.2.125
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.2.254

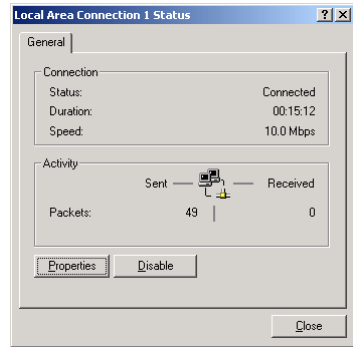
C:\>
```

4. Type EXIT and press <ENTER> to close the Command Prompt window.

Configuring Your Computer in Windows 2000

1. Access your Network settings by clicking Start, then choose Settings and then select Control Panel.
2. In the Control Panel, locate and double-click the Network and Dial-up Connections icon.

3. Locate and double-click the Local Area Connection icon for the Ethernet adapter that is connected to the Wireless 11g Router. When the Status dialog box window opens, click the Properties button.



4. In the Local Area Connection Properties box, verify the box next to Internet Protocol (TCP/IP) is checked. Then highlight the Internet Protocol (TCP/IP), and click the Properties button.
5. Select "Obtain an IP address automatically" to configure your computer for DHCP. Click the OK button to save this change and close the Properties window.
6. Click the OK button again to save these new changes.
7. Reboot your PC.
8. To obtain new network settings see "Obtain IP Settings from Your Wireless 11g Router" on page 19.

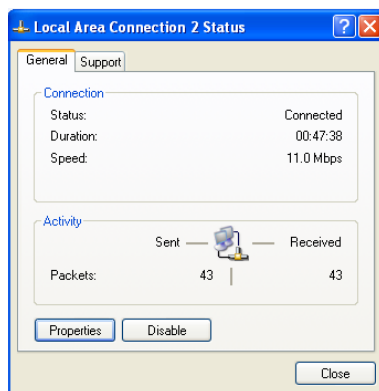
Configuring Your Computer in Windows XP

The following instructions assume you are running Windows XP with the default interface. If you are using the Classic interface (where the icons and menus look like previous Windows versions), please follow the instructions for Windows 2000 outlined above.

1. Access your Network settings by clicking Start, choose Control Panel, select Network and Internet Connections and then click on the Network Connections icon.

Configuring Client TCP/IP

2. Locate and double-click the Local Area Connection icon for the Ethernet adapter that is connected to the Wireless 11g Router. Next, click the Properties button.



3. In the Local Area Connection Properties box, verify the box next to Internet Protocol (TCP/IP) is checked. Then highlight the Internet Protocol (TCP/IP), and click the Properties button.
4. Select “Obtain an IP address automatically” to configure your computer for DHCP. Click the OK button to save this change and close the Properties window.
5. Click the OK button again to save these new changes.
6. Reboot your PC.

Configuring a Macintosh Computer

You may find that the instructions here do not exactly match your screen. This is because these steps and screen shots were created using Mac OS 10.2. Mac OS 7.x and above are all very similar, but may not be identical to Mac OS 10.2.

1. Pull down the Apple Menu. Click System Preferences and select Network.

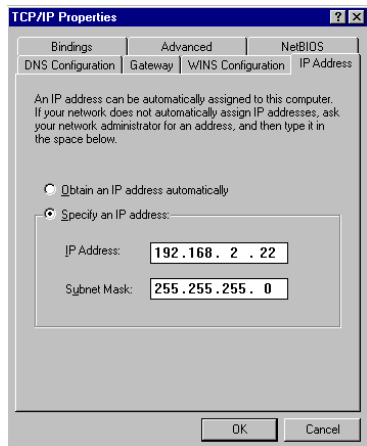
Setting Up TCP/IP

2. Make sure that Built-in Ethernet is selected in the Show field.
3. On the TCP/IP tab, select Using DHCP in the Configure field.
4. Close the TCP/IP dialog box.



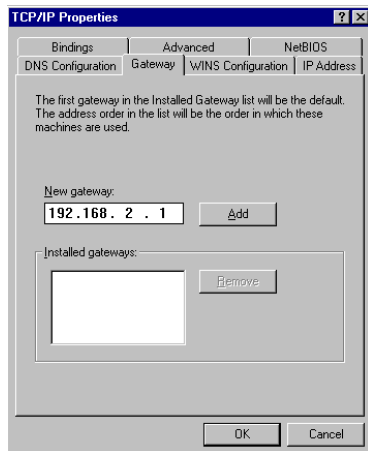
Manual IP Configuration (for all Windows OS)

1. Check Specify an IP address on the IP Address tab. Enter an IP address based on the default network 192.168.2.x (where x is between 2 and 254), and use 255.255.255.0 for the subnet mask.

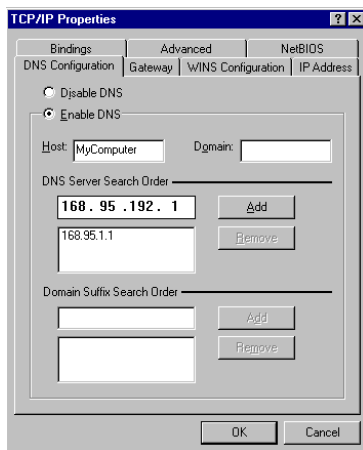


Configuring Client TCP/IP

2. In the Gateway tab, add the IP address of the Wireless 11g Router (default: 192.168.2.1) in the New gateway field and click Add.



3. On the DNS Configuration tab, add the IP address for the Wireless 11g Router and click Add. This automatically relays DNS requests to the DNS server(s) provided by your ISP. Otherwise, add specific DNS servers into the DNS Server Search Order field and click Add.
4. After finishing TCP/IP setup, click OK, and then reboot the computer. After that, set up other PCs on the LAN according to the procedures described above.



Verifying Your TCP/IP Connection

After installing the TCP/IP communication protocols and configuring an IP address in the same network as the Wireless 11g Router, use the ping command to check if your computer has successfully connected to the Wireless 11g Router. The following example shows how the ping procedure can be executed in an MS-DOS window. First, execute the ping command:

```
ping 192.168.2.1
```

If a message similar to the following appears:

```
Pinging 192.168.2.1 with 32 bytes of data:  
Reply from 192.168.2.1: bytes=32 time=2ms TTL=64  
a communication link between your computer and the Wireless  
11g Router has been successfully established.
```

If you get the following message,

```
Pinging 192.168.2.1 with 32 bytes of data:  
Request timed out.
```

there may be something wrong in your installation procedure.
Check the following items in sequence:

1. Is the Ethernet cable correctly connected between the Wireless 11g Router and the computer?
The LAN LED on the Wireless 11g Router and the Link LED of the network card on your computer must be on.
2. Is TCP/IP properly configured on your computer?
If the IP address of the Wireless 11g Router is 192.168.2.1, the IP address of your PC must be from 192.168.2.2 - 254 and the default gateway must be 192.168.2.1.

If you can successfully ping the Wireless 11g Router you are now ready to connect to the Internet!

CONFIGURING THE WIRELESS 11G ROUTER

The Wireless 11g Router can be configured by Internet Explorer 5.0 or above. Using the web management interface, you can configure the Wireless 11g Router and view statistics to monitor network activity.

Before you attempt to log into the web-based administration, please verify the following.

1. Your browser is configured properly (see below).
2. Disable any firewall or security software that may be running.
3. Confirm that you have a good link LED where your computer is plugged into the Wireless 11g Router. If you don't have a link light, then try another cable until you get a good link.

Browser Configuration

Confirm your browser is configured for a direct connection to the Internet using the Ethernet cable that is installed in the computer.

Disable Proxy Connection

You will also need to verify that the HTTP Proxy feature of your web browser is disabled. This is so that your web browser will be able to view the Wireless 11g Router configuration pages. The following steps are for Internet Explorer.

Internet Explorer 5 or above (For Windows)

1. Open Internet Explorer. Click Tools, and then select Internet Options.
2. In the Internet Options window, click the Connections tab.

Navigating the Web Browser Interface

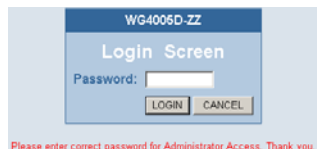
3. Click the LAN Settings button.
4. Clear all the check boxes and click OK to save these LAN settings changes.
5. Click OK again to close the Internet Options window.

Internet Explorer (For Macintosh)

1. Open Internet Explorer. Click Explorer/Preferences.
2. In the Internet Explorer Preferences window, under Network, select Proxies.
3. Uncheck all check boxes and click OK.

Navigating the Web Browser Interface

To access the Wireless 11g Router's management interface, enter the Wireless 11g Router IP address in your web browser <http://192.168.2.1>. Then enter the password and click LOGIN. (Default password: smcadmin)



Note: Passwords can contain from 3 to 12 alphanumeric characters and are case sensitive.

Configuring the Wireless 11g Router

The home page displays the Setup Wizard and Advanced Setup options.



The Wireless 11g Router's management interface features a Setup Wizard and an Advanced Setup section. Use the Setup Wizard if you want to quickly set up the Wireless 11g Router for use with a cable modem or DSL modem.

Advanced setup supports more advanced functions like hacker attack detection, IP and MAC address filtering, intrusion detection, virtual server setup, virtual DMZ hosts, and other advanced functions.

Making Configuration Changes

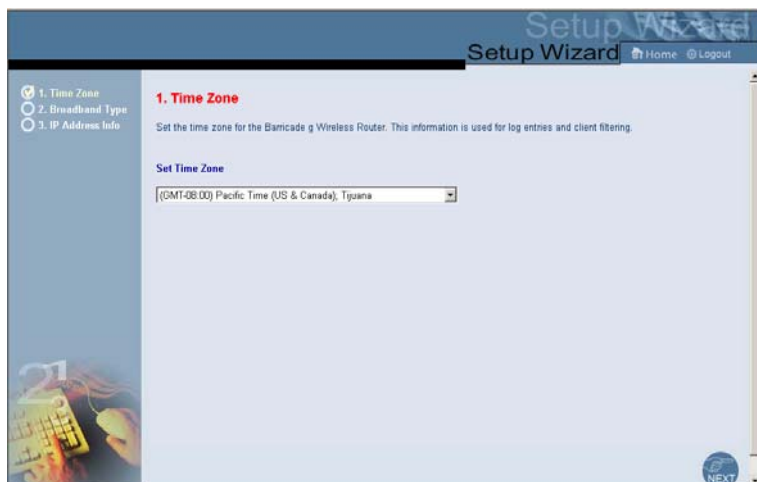
Configurable parameters have a dialog box or a drop-down list. Once a configuration change has been made on a page, be sure to click the APPLY or NEXT button at the bottom of the page to enable the new setting.

Note: To ensure proper screen refresh after a command entry, ensure that Internet Explorer 5.0 is configured as follows: Under the menu Tools/Internet Options/General/Temporary Internet Files/Settings, the setting for “Check for newer versions of stored pages” should be “Every visit to the page.”

Setup Wizard

Time Zone

Click on the Setup Wizard picture. The first item in the Setup Wizard is Time Zone setup.



For accurate timing of client filtering and log events, you need to set the time zone. Select your time zone from the drop-down list, and click NEXT.

Broadband Type

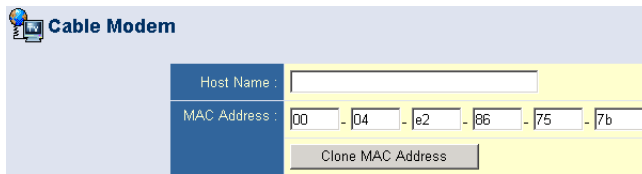
Select the type of broadband connection you have.

For a cable modem connection see the following page. For a Fixed-IP xDSL connection see “Fixed-IP xDSL” on page 34, for a PPPoE xDSL connection, see “PPPoE xDSL” on page 35, for a PPTP connection, see “Point-to-Point Tunneling Protocol (PPTP)” on page 36, and for BigPond connection, see “BigPond” on page 37.



Configuring the Wireless 11g Router

Cable Modem

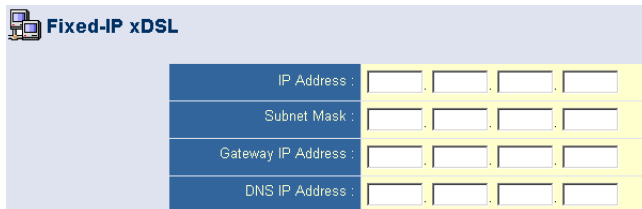


Host Name :	
MAC Address :	00 - 04 - e2 - 86 - 75 - 7b
Clone MAC Address	

Your Internet Service Provider may have given you a host name. If so, enter it into the field.

Click Finish to complete the setup. The Status page will open to allow you to view the connection status, as well as other information. See “Status” on page 78 for details.

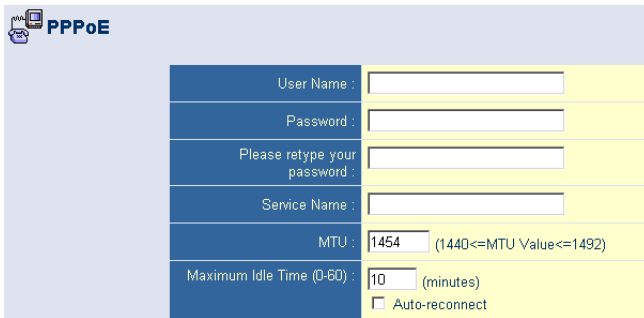
Fixed-IP xDSL



IP Address :				
Subnet Mask :				
Gateway IP Address :				
DNS IP Address :				

Some xDSL Internet Service Providers may assign a fixed (static) IP address. If you have been provided with this information, choose this option and enter the assigned IP address, gateway IP address, DNS IP addresses, and subnet mask. Click FINISH to complete the setup.

PPPoE xDSL



The screenshot shows a web-based setup wizard for PPPoE xDSL. The interface has a light blue header with the PPPoE logo. Below the header, there is a table with six rows for input fields. The first five rows have blue labels and yellow input boxes. The sixth row has a blue label and a yellow input box with a range constraint. The last row has a blue label and a yellow input box with a unit and a checkbox.

User Name :	
Password :	
Please retype your password :	
Service Name :	
MTU :	1454 (1440<=MTU Value<=1492)
Maximum Idle Time (0-60) :	10 (minutes) ☐ Auto-reconnect

Enter the PPPoE User Name and Password assigned by your Service Provider. The Service Name is normally optional, but may be required by some service providers.

Leave the Maximum Transmission Unit (MTU) at the default value (1454) unless you have a particular reason to change it.

Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, it will be dropped. (Default: 10)

Enable the Auto-reconnect option to automatically re-establish the connection as soon as you attempt to access the Internet again. Click FINISH to complete the setup.

Configuring the Wireless 11g Router

Point-to-Point Tunneling Protocol (PPTP)

 **PPTP** Point-to-Point Tunneling Protocol is a common connection method used in European xDSL connections.

PPTP Account :	
PPTP Password :	
Please retype your password :	
Host Name :	
Service IP Address :	0.0.0.0
My IP Address :	0.0.0.0
My Subnet Mask :	0.0.0.0
MTU (1400-1460) :	1460
Maximum Idle Time (0-60) :	0 minutes
Auto-reconnect :	☐

Point-to-Point Tunneling Protocol is a common connection method used for xDSL connections in Europe. It can be used to join different physical networks using the Internet as an intermediary.

If you have been provided with the information as shown on the screen, enter the PPTP Account name and password, Host Name, Service IP Address, the assigned IP Address, and Subnet Mask.

Leave the Maximum Transmission Unit (MTU) at the default value (1460) unless you have a particular reason to change it.

Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, it will be dropped. (Default: 10)

Enable the Auto-reconnect option to automatically re-establish the connection as soon as you attempt to access the Internet again. Click FINISH to complete the setup.

BigPond

 **BigPond**

In this section you can configure the built-in client for the BigPond Internet service available in Australia.

User Name :	
Password :	
Please retype your password :	
Authentication Service Name :	

If you use the BigPond Internet Service which is available in Australia, enter the the User Name, Password and Authentication Service Name for BigPond authentication. Click FINISH to complete the setup.

Advanced Setup

Use the web management interface to define system parameters, manage and control the Wireless 11g Router and its ports, or monitor network conditions. The following table outlines the selections available from this program.

Menu	Description
System	• Sets the local time zone, the password for administrator access, the Internet security of ZoneAlarm Pro (optional), system log server, and the IP address of a PC that will be allowed to manage the Wireless 11g Router remotely. • Sets enhanced security policy for the network using Zone Labs, Inc "ZoneAlarm Pro."
WAN	• Specifies the Internet connection type: (1) Dynamic IP host configuration and the physical MAC address of each media interface, (2) PPPoE configuration, (3) PPTP, (4) Static IP and ISP gateway address, or (5) BigPond (Internet service available in Australia). • Specifies DNS servers to use for domain name resolution.
LAN	Sets the TCP/IP configuration of the Wireless 11g Router's LAN interface and all DHCP clients.
Wireless	Configures the radio frequency, SSID, WPA/WEK encryption, and 802.1x for wireless communications.
NAT	Shares a single ISP account with multiple users, sets up virtual servers.
Firewall	Configures a variety of security and specialized functions, including: Access Control, Hacker Prevention, and DMZ.
DDNS	Dynamic DNS provides users on the Internet with a method to tie their domain name to a computer or server.
UPnP	With Universal Plug and Play, a device can automatically join a network, obtain an IP address, communicate its capabilities, and learn about the presence and capabilities of other devices. Devices can then directly communicate with each other. This further enables peer-to-peer networking.
Tools	Contains options to back up and restore the current configuration, restore all configuration settings to the factory defaults, update system firmware, or reset the system.

Menu	Description
Status	Provides WAN connection type and status, firmware and hardware version numbers, system IP settings, as well as DHCP, NAT, and Firewall information. Displays the number of attached clients, the firmware versions, the physical MAC address for each media interface, and the hardware version and serial number. Shows the security and DHCP client log.

System

Time Zone

Time Zone

Use the section below to configure the Barricade g Wireless Router's system time. Select your timezone and configure the daylight savings option based on your location. This information is used for the timelate parental rules you can configure with the Barricade g Wireless Router's Advanced Firewall. This information is also used for your network logging.

Once you set your time zone, you can automatically update the Barricade g Wireless Router's internal clock by synchronizing with a public time server over the Internet. To configure this setting, choose one of the options below - each option allows a different method of updating.

Set your Local Timezone Settings

Time Zone :

Daylight Savings : ☐ - Enable Auto Update feature

Starts on :

Ends on :

Get Date and Time by online Time Servers (NTP)

Pre-set Servers :

Custom Server :

Set Date and Time using PC's Date and Time

Computer Time/Date :

Set Date and Time manually

Date : Year Month Day

Time : Hour (0-23) Minute (0-59) Second (0-59)

Set the time zone and time server for the Wireless 11g Router. This information is used for log entries and client access control.

- Set your local time zone settings

Select your time zone from the drop-down list, and set the start and end dates if your area requires daylight savings.

Configuring the Wireless 11g Router

To automatically update the Wireless 11g Router's internal clock by synchronizing with a public time server over the Internet, choose one of the methods below.

- Get date and time from online time servers (Network Time Protocol)

Choose the online standard time server for your area from the drop-down menu, or enter the IP address of the time server on your network.

- Set date and time using the PC's date and time

Click on the radio button for synchronizing the Wireless 11g Router's internal clock with the host PC.

- Set date and time manually

For manually setting the date and time, configure the date by selecting the options from the drop-down list, and enter the digits for the time.

Password Settings

The screenshot shows the 'Advanced Setup' interface with a sidebar menu on the left containing: System, Time Zone, Password Settings (highlighted), Remote Management, Syslog Server, WAN, LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. The main content area is titled 'Password Settings' and includes a descriptive text: 'Set a password to secure access to the Bannicade g Wireless Router Web Management. You can also configure the amount of time that into the Bannicade g Wireless Router using the idle time settings.' Below this text are two sections: 'Password Options' with three input fields for 'Current Password', 'New Password', and 'Confirm New Password'; and 'Idle Time Out Settings' with a single input field for 'Idle Time Out' set to '9' minutes, with a note '(Idle Time =0 : NO Time Out)'.

Password Options	
Current Password	
New Password	
Confirm New Password	

Idle Time Out Settings	
Idle Time Out	9 Mins (Idle Time =0 : NO Time Out)

Use this menu to restrict access based on a password. For security you should assign your own password before exposing the Wireless 11g Router to the Internet. (Default: smcadmin)

Passwords can contain from 3 to 12 alphanumeric characters and are case sensitive.

Note: If your password is lost, or you cannot gain access to the user interface, press the Reset button on the rear panel (holding it down for at least five seconds) to restore the factory defaults.

Enter a maximum Idle Time Out (in minutes) to define a maximum period of time for which the login session is maintained during inactivity. If the connection is inactive for longer than the maximum idle time, it will perform system logout, and you have to log into the web management system again. (Default: 9 minutes)

Configuring the Wireless 11g Router

Remote Management

The screenshot shows the 'Advanced Setup' page of the Baramcade g Wireless Router. On the left is a navigation menu with categories: System (Time Zone, Password Settings, Remote Management, Syslog Server), WAN, LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. The 'Remote Management' section is selected. The main content area has a title 'Remote Management' and a description: 'Set the remote management of the Baramcade g Wireless Router. If you want to manage the Baramcade g Wireless Router from a remote local network, you must also specify the IP address of the remote PC.' Below this is a configuration table:

Remote Management	☐ Enable ☒ Disable
Allow Access to:	☒ Any IP Address ☐ Single IP: ☐ IP Range: ~
Remote Management Port	8080

Remote Management allows a remote PC to configure, manage, and monitor the Wireless 11g Router using a standard web browser. Check Enable and set the IP address (range) of the remote host. Click APPLY. (Default: Disable)

Note: If you select Any IP Address in the Allow Access to field, any host can manage the Wireless 11g Router.

Syslog Server

The screenshot shows the 'Syslog Server' configuration page. On the left is a navigation menu with the following items: System (expanded), Time Zone, Password Settings, Remote Management, Syslog Server (highlighted), WAN, LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. The main content area is titled 'Syslog Server' and contains the following text: 'Using third party syslog software, this Syslog Server tool will automatically download the Barricade g Wireless Router log to the server IP below.' Below this text are two input fields: 'Syslog Server' with radio buttons for 'Enabled' and 'Disabled' (where 'Disabled' is selected), and 'Server LAN IP Address' with an empty text box.

Syslog Server	☐ Enabled ☒ Disabled
Server LAN IP Address	

The Syslog Server downloads the Wireless 11g Router's log file to the server with the IP address specified on this screen.
(Default: Disabled)

Configuring the Wireless 11g Router

WAN

Specify the WAN connection type provided by your Internet Service Provider, then click More Configuration to enter detailed configuration parameters for the selected connection type.

Dynamic IP

The screenshot shows the 'Advanced Setup' page for a Wireless 11g Router, specifically the 'Dynamic IP' configuration section. The left sidebar contains a navigation menu with options: System, WAN (selected), Dynamic IP, PPPoE, PPTP, Static IP, Digipond, DNS, LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. The main content area is titled 'Dynamic IP' and includes the following text: 'The Host name is optional, but may be required by some Service Provider's. The default MAC address is set to the WAN's physical interface g Wireless Router.' Below this, it states: 'If required by your Service Provider, you use the "Clone MAC Address" button to copy the MAC address of the Network Interface Card into replace the WAN MAC address.' At the bottom, it says: 'If necessary, you can use the "Release" and "Renew" buttons on the Status page to release and renew the WAN IP address.' The configuration form has two rows: 'Host Name' with an empty text input field, and 'MAC Address' with a field containing '00 - 1e - 6a - d0 - 16 - d7'. Below the MAC Address field is a button labeled 'Clone MAC Address'. A 'HELP' icon is visible in the bottom right corner.

The Host Name is optional, but may be required by some ISPs. The default MAC address is set to the WAN's physical interface on the Wireless 11g Router. Use this address when registering for Internet service, and do not change it unless required by your ISP. If your ISP used the MAC address of an Ethernet card as an identifier when first setting up your broadband account, only connect the PC with the registered MAC address to the Wireless 11g Router and click the Clone MAC Address button. This will replace the current Wireless 11g Router MAC address with the already registered Ethernet card MAC address. If you are unsure

of which PC was originally set up by the broadband technician, call your ISP and request that they register a new MAC address for your account. Register the default MAC address of the Wireless 11g Router.

Point-to-Point Over Ethernet (PPPoE)

The screenshot shows the 'Advanced Setup' interface with a sidebar on the left containing a tree view: System, WAN (selected), Dynamic IP, PPPoE (selected), Static IP, BigPond, DNS, LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. The main content area is titled 'PPPoE' and contains the following text: 'Enter the PPPoE user name and password assigned by your Service Provider. The Service Name is normally optional, but may be required by providers. Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, then it will be dropped. You can enable the Auto-reconnect option to attempt the connection as soon as you attempt to access the Internet again.' Below this is a note: 'If your Internet Service Provider requires the use of PPPoE, enter the information below.' The form fields are: 'User Name' (text box), 'Password' (text box), 'Please retype your password' (text box), 'Service Name' (text box), 'MTU' (text box with value '1454' and a note '(576 <= MTU Value <= 1452)'), and 'Maximum Idle Time (3-60)' (text box with value '10' and a note '(minutes)'). There is also an 'Auto-reconnect' checkbox which is currently unchecked. A 'HELP' icon is visible in the bottom right corner.

Enter the PPPoE User Name and Password assigned by your Service Provider. The Service Name is normally optional, but may be required by some service providers.

The MTU (Maximum Transmission Unit) governs the maximum size of the data packets. Leave this on the default value (1454) unless you have a particular reason to change it.

Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, it will be dropped. (Default: 10 minutes)

Configuring the Wireless 11g Router

Enable the Auto-reconnect option to automatically re-establish the connection as soon as you attempt to access the Internet again.

Point-to-Point Tunneling Protocol (PPTP)

The screenshot shows the 'Advanced Setup' interface for configuring the PPTP (Point-to-Point Tunneling Protocol) connection. The left sidebar contains a navigation menu with options: System, WAN, LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. The 'WAN' section is selected, and the 'PPTP' option is highlighted. The main content area is titled 'PPTP' and includes a descriptive text: 'Point-to-Point Tunneling Protocol is a common connection method used in European xDSL connections.' Below this text is a form with the following fields: 'PPTP Account' (text input), 'PPTP Password' (password input), 'Please retype your password' (password input), 'Host Name' (text input), 'Service IP Address' (IP address input, default 0.0.0.0), 'My IP Address' (IP address input, default 0.0.0.0), 'My Subnet Mask' (IP address input, default 0.0.0.0), 'MTU (576-1460)' (text input, default 1460), 'Maximum Idle Time (0-60)' (text input, default 10 minutes), and 'Auto-reconnect' (checkbox, currently unchecked). A red note at the bottom states: '* If you have an ISP that charges by the time, change your idle time out value to 1 minute.' A 'HELP' icon is visible in the bottom right corner.

PPTP Account	
PPTP Password	
Please retype your password	
Host Name	
Service IP Address	0.0.0.0
My IP Address	0.0.0.0
My Subnet Mask	0.0.0.0
MTU (576-1460)	1460
Maximum Idle Time (0-60)	10 minutes
Auto-reconnect	☐

* If you have an ISP that charges by the time, change your idle time out value to 1 minute.

Point-to-Point Tunneling Protocol (PPTP) can be used to join different physical networks using the Internet as an intermediary. Using the above screen allows client PCs to establish a normal PPTP session and provides hassle-free configuration of the PPTP client on each client PC.

Enter the PPTP Account, Password, Host Name, and then Service IP Address (usually supplied by your ISP), the assigned IP address, and subnet mask.

Leave the Maximum Transmission Unit (MTU) at the default value (1460) unless you have a particular reason to change it.

Enter a maximum Idle Time Out (in minutes) to define a maximum period of time for which the PPTP connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, it will be dropped.
(Default: 0 minutes)

Static IP



The screenshot shows the 'Advanced Setup' window with the 'Static IP' tab selected. The left sidebar contains a tree view with 'System' expanded, showing 'WAN' (selected), 'Dynamic IP', 'PPPoE', 'PPTP', 'Static IP', 'BigPond', 'DNS', 'LAN', 'Wireless', 'NAT', 'Firewall', 'DDNS', 'UPnP', 'Tools', and 'Status'. The main content area is titled 'Static IP' and contains the following text: 'If your Service Provider has assigned a fixed IP address, enter the assigned IP address, subnet mask and the gateway address provided.' and 'Has your Service Provider given you an IP address and Gateway address?'. Below this text are three input fields: 'IP address assigned by your Service Provider', 'Subnet Mask', and 'Service Provider Gateway Address'. Each field is a yellow box with a blue header and four input segments. A 'HELP' button is located in the bottom right corner.

IP address assigned by your Service Provider

Subnet Mask

Service Provider Gateway Address

If your Internet Service Provider has assigned a fixed IP address, enter the assigned address and subnet mask for the Wireless 11g Router, then enter the gateway address of your ISP.

You may need a fixed address if you want to provide Internet services, such as a web server or FTP server.

Configuring the Wireless 11g Router

BigPond

The screenshot shows the 'Advanced Setup' interface of a router. On the left is a navigation menu with categories: System, WAN, LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. Under 'WAN', several options are listed: Dynamic IP, PPPoE, PPTP, Static IP, BigPond (highlighted in yellow), and DNS. The main content area is titled 'BigPond' and contains the text: 'In this section you can configure the built-in client for the BigPond Internet service available in Australia.' Below this text is a form with four rows, each with a label and a text input field:

User Name	
Password	
Please retype your password	
Authentication Service Name	

At the bottom right of the interface is a circular 'HELP' button with a question mark icon.

BigPond is a service provider in Australia that uses a heartbeat system to maintain the Internet connection. Configure the built-in client with your user name, password and service name to get on line.

DNS

Advanced Setup

DNS

A Domain Name Server (DNS) is an index of IP addresses and Web addresses. If you type a Web address into your browser, a DNS server in its index and find the matching IP address. Most ISPs provide a DNS server for speed and convenience. Since your Service Provider may use Internet with dynamic IP settings, it is likely that the DNS server IP's are also provided dynamically. However, if there is a DNS server that you use, you need to specify the IP address here.

Domain Name Server (DNS) Address :				
Secondary DNS Address (optional) :				

[HELP](#)

Domain Name Servers map numerical IP addresses to the equivalent domain name (e.g., `www.xxx.com`). Your ISP should provide the IP address of one or more domain name servers. Enter those addresses in this screen.

Configuring the Wireless 11g Router

LAN

The screenshot shows the 'Advanced Setup' interface for a router. On the left is a navigation menu with options: System, WAN, LAN (selected), Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. The main content area is titled 'LAN Settings' and includes a sub-header 'LAN IP'. Below this, there is a text box explaining DHCP functionality. The 'LAN IP' section contains three rows of input fields: 'IP Address' (192, 168, 2, 1), 'IP Subnet Mask' (255, 255, 255, 0), and 'DHCP Server' (radio buttons for 'Enabled' and 'Disabled', with 'Enabled' selected). Below these is a 'Lease Time' dropdown menu set to 'One week'. The 'IP Address Pool' section follows, with 'Start IP' (192, 168, 2, 100), 'End IP' (192, 168, 2, 199), and a 'Domain Name' field with '(optional)' text. A 'HELP' icon is in the bottom right corner.

Advanced Setup

System
WAN
LAN
Wireless
NAT
Firewall
DDNS
UPnP
Tools
Status

LAN Settings

You can enable DHCP to dynamically allocate IP addresses to your client PCs, or configure filtering functions based on specific clients on the network. The Wireless Router must have an IP address for the local network.

LAN IP

IP Address : 192 168 2 1

IP Subnet Mask : 255 255 255 0

DHCP Server : ☒ Enabled ☐ Disabled

Lease Time : One week

IP Address Pool

Start IP : 192 168 2 100

End IP : 192 168 2 199

Domain Name : (optional)

HELP

- LAN IP – Use the LAN menu to configure the LAN IP address for the Wireless 11g Router and to enable the DHCP server for dynamic client address allocation.
- Set a period for the lease time if required. For home networks this may be set to Forever, which means there is no time limit on the IP address lease.
- IP Address Pool – A dynamic IP address range may be specified (192.168.2.2–254). IP addresses running from 192.168.2.100–199 are the default values. Once the IP addresses, e.g. 192.168.2.100–199, have been assigned, these IP addresses will be part of the dynamic IP address pool. IP addresses from 192.168.2.2–99, and 192.168.2.200–254 will be available as static IP addresses.

Remember not to include the address of the Wireless 11g Router in the client address pool. Also remember to configure your client PCs for dynamic IP address allocation.

Wireless

To configure the Wireless 11g Router as a wireless access point for wireless clients (either stationary or roaming), all you need to do is define the radio channel, the Service Set identifier (SSID), and encryption options.

Channel and SSID

SSID	SMC
SSID Broadcast	☒ Enable ☐ Disable
Wireless Mode	Long Range Mixed (11b+11g)
g Nitro	☒ Enable ☐ Disable
Transmission Rate	Auto
Channel	6

You must specify a common radio channel and SSID (Service Set ID) to be used by the Wireless 11g Router and all of your wireless clients. Be sure you configure all of your clients to the same values.

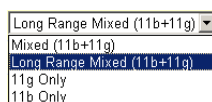
Configuring the Wireless 11g Router

SSID: The Service Set ID. This should be set to the same value as the other wireless devices in your network. (Default: ANY)

Note: The SSID is case sensitive and can consist of up to 32 alphanumeric characters.

SSID Broadcast: Broadcasting the SSID on the wireless network for easy connection with client PCs. For security reasons, disable SSID broadcast. (Default: Enable)

Wireless Mode: Set the communication mode for the Wireless 11g Router. (Default: Long Range Mixed (11b+11g))



The Long Range Mixed (11b+11g) is an enhanced operation mode. The 802.11g standards combines the IEEE 802.11a speed with 54 Mbps. It provides a long range wireless connectivity of 328 feet associated with the IEEE 802.11b standards by offering faster speeds and longer distances from a wireless access point to a wireless PC card.

g Nitro: In a crowded 2.4 MHz frequency, the connection speed is much lower than the promised 54 Mbps. The g Nitro implemented by Intersil's Prism Nitro technology dramatically enhances your wireless network speeds. It provides up to 50% more throughput in an 11g only environment, and improves network throughput by 3 times in mixed mode. (Default: Enable)

Transmission Rate: Set the rate of data transmitted from the Wireless 11g Router. The lower the data rate, the longer the transmission distance. (Default: Auto)



Channel: The radio channel through which the Wireless 11g Router communicates with PCs in its BSS. (Default: 6)

6	▼
Auto	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	

Note: The available channel settings are limited by local regulations.

Security



If you are transmitting sensitive data across wireless channels, you should enable Wi-Fi Protected Access (WPA) or Wired Equivalent Privacy (WEP) encryption. Encryption security requires you to use the same protocol set (WPA or WEP) and encryption/decryption keys for the Wireless 11g Router and all of your wireless clients.

For a more secure network, the Wireless 11g Router can implement one or a combination of the following security mechanisms:

Configuring the Wireless 11g Router

- Wi-Fi Protected Access (WPA) page 55
- Wired Equivalent Privacy (WEP) page 56

The security mechanisms that may be employed depend on the level of security required, the network and management resources available, and the software support provided on wireless clients. A summary of wireless security considerations is listed in the following table.

Security Mechanism	Client Support	Implementation Considerations
WEP	Built-in support on all 802.11b and 802.11g devices	• Provides only weak security • Requires manual key management
WPA mode	Requires WPA-enabled system and network card driver (native support provided in Windows XP)	• Provides good security in small networks • Requires configured RADIUS server, or manual management of pre-shared key
	<i>802.1x mode</i> Requires WPA-enabled system and network card driver (native support provided in Windows XP)	• Provides robust security in WPA-only mode (i.e., WPA clients only) • Requires configured RADIUS server • 802.1x Extensible Authentication Protocol (EAP) type may require management of digital certificates for clients and server

WPA Encryption Type

Disabled
Disabled
Enabled - Manual Pre-Shared Key
Enabled - Pre-Shared Passphrase
Enabled - 802.1X Mode

WPA is a stronger wireless security solution than WEP. It uses a combination of 802.1x authentication and broadcast/session keys.

- Pre-Shared Key/Passphrase

If there is no authentication server on your SOHO network, you can issue the Pre-Shared Key to the clients that connect to the Wireless 11g Router. Be sure to use the same key for the Wireless 11g Router and the connected clients.

Notes: 1. Manual Pre-Shared Key supports up to 64-Hex characters.

2. Type 8~63 Hex characters for the Pre-Shared Passphrase.
3. Do not use a key that is long and complex for your clients to type accurately.
4. A Hex (hexadecimal) digit is a number or letter in the range 0-9 or A-F.

- 802.1X Mode

WPA (WiFi Protected Access)	
WPA Encryption Type	Enabled - 802.1X Mode
802.1X	
Re-Authentication Period	3600 Seconds (0 for no re-authentication)
Quiet Period	60 Seconds after authentication failed
RADIUS Server Parameters:	
Server IP	
Server Port	1812
Secret Key	
NAS-ID	

The Wireless 11g Router allows you to use 802.1x authentication for an enterprise network environment with a RADIUS server

installed. In 802.1x mode, access will be checked against the authentication database stored on the Wireless 11g Router. You must specify the authentication period, and the corresponding parameters in the RADIUS Server Parameters field for the remote authentication protocol.

Configuring the Wireless 11g Router

WEP Encryption Type

Disabled

Disabled

40bit/64 bit encryption

128bit encryption

You can choose between standard 40-bit/64-bit or the more robust 128-bit encryption.

You may manually enter the keys or automatically generate encryption keys. To manually configure the keys, enter five hexadecimal pairs for each 40/64-bit key, or enter 13 pairs for the single 128-bit key. For automatic 64-bit security, enter a passphrase and click Generate. Four keys will be generated (as shown below). Choose a key from the drop-down list or accept the default key. Automatic 128-bit security generates a single key.

Note: Active ASCII Keys must be exactly 5 characters for 40/64-bit WEP.
Active ASCII Keys must be exactly 13 characters for 128-bit WEP.

WEP (Wired Equivalent Privacy)

WEP Encryption Type40bit/64 bit encryption

Select key generation methodManual Hex Key

Manual Hex Keys:

Manual Hex Key

ASCII

Passphrase

Active Transmit Key

Key 1:0000000000000000

Key 2:0000000000000000

Key 3:0000000000000000

Key 4:0000000000000000

Valid characters for "Key 1" to "Key 4" are '0-9' and 'A-F'

WEP (Wired Equivalent Privacy)

WEP Encryption Type: 128bit encryption

Select key generation method: Manual Hex Key

Manual Keys:

								Active Transmit Key
Key 1:	00	00	00	00	00	00	00	☒
	00	00	00	00	00	00		
Key 2:	00	00	00	00	00	00	00	☐
	00	00	00	00	00	00		
Key 3:	00	00	00	00	00	00	00	☐
	00	00	00	00	00	00		
Key 4:	00	00	00	00	00	00	00	☐
	00	00	00	00	00	00		

Valid characters for "Key 1" to "Key 4" are '0-9' and 'A-F'

If you use encryption, configure the same keys used for the Wireless 11g Router on each of your wireless clients. Note that Wired Equivalent Privacy (WEP) protects data transmitted between wireless nodes, but does not protect any transmissions over your wired network or over the Internet.

Configuring the Wireless 11g Router

WDS (Wireless Distribution System)

The screenshot shows the 'Advanced Setup' page for a wireless router. On the left is a navigation menu with options: System, WAN, LAN, Wireless (selected), Channel and SSID, Security, WDS, NAT, Firewall, DDNS, UPnP, Tools, and Status. The main content area is titled 'WDS'. It contains a paragraph explaining that when the repeater is enabled, the router functions as a wireless repeater and can communicate with other wireless gateways via WDS links. Below this is a form with a blue header 'Enable Repeater:' and a checkbox. To the right of the checkbox is a yellow box with instructions: 'Check this box to enable this Barricade g Wireless Router to communicate directly with other APs or Wireless Gateways over WDS links.' Below the checkbox are six rows for 'AP MAC address' (1 through 6), each with a grid of input fields for the MAC address. A 'HELP' button is in the bottom right corner.

Advanced Setup

System
WAN
LAN
Wireless
Channel and SSID
Security
WDS
NAT
Firewall
DDNS
UPnP
Tools
Status

WDS

When repeater is enabled, this Barricade g Wireless Router functions as a wireless repeater and is able to wirelessly communicate with other Wireless Gateways via WDS (Wireless Distribution System) links. You can specify up to six WDS links, where each link is defined by the MAC address of the other repeater capable AP or Wireless Gateway. Note that for each repeater AP or Wireless Gateway specified on this page, you must specify that AP or Wireless Gateway to have a WDS link back to this Barricade g Wireless Router.

Enable Repeater: ☐

Check this box to enable this Barricade g Wireless Router to communicate directly with other APs or Wireless Gateways over WDS links.

AP MAC address 1:

AP MAC address 2:

AP MAC address 3:

AP MAC address 4:

AP MAC address 5:

AP MAC address 6:

HELP

The WDS provides a means to extend the range of a Wireless Local Area Network (WLAN). WDS allows an access point to establish a direct link to other access points, and stations to roam freely within the area covered by the WDS. (Default: Enable or disable WDS features - Disable)

- Notes:**
1. Be sure that all access points with the same WDS links should use the same operation “Mode” (802.11b or 802.11g) and radio “Channel” number.
 2. Choosing “Auto” of the communication channel is **not** suggested for using WDS. (See “Channel and SSID” on page 51.)

To establish a WDS connection between access points, follow the steps below.

1. Click on the Rescan button to scan and display all wireless devices within range.
2. Select one of them to connect to by clicking on an entry.
3. Click WIRELESS/Channel and SSID of the navigation menu for configuring the operation mode (11b or 11g) and radio channel on the Wireless 11g Router.

Configuring the Wireless 11g Router

NAT - Network Address Translation

From this section you can configure the Address Mapping, Virtual Server, and Special Application features that provide control over the TCP/UDP port openings in the router's firewall. This section can be used to support several Internet based applications such as web, email, FTP, and Telnet.

Address Mapping



The screenshot shows the 'Advanced Setup' page for a wireless router. On the left is a navigation menu with options: System, WAN, LAN, Wireless, NAT (selected), Virtual Server, Special Application, Firewall, DDNS, UPnP, Tools, and Status. The main content area is titled 'Address Mapping'. It includes a descriptive paragraph: 'Network Address Translation (NAT) allows IP addresses used in a private local network to be mapped to one or more addresses used in the Internet. This feature limits the number of public IP addresses required from the ISP and also maintains the privacy and security of the local network by mapping one or more than one public IP address to a pool of local addresses.' Below this is a table with 8 rows for configuring address mappings. Each row contains a 'Global IP' field, a 'Local IP' field, and a description. The 'Global IP' field is a dropdown menu with '192.168.2.1' selected. The 'Local IP' field is a text input with '192.168.2.1' entered. The description for each row is 'is transformed as multiple virtual IPs'.

Global IP	Local IP	Description
1. Global IP: 192.168.2.1	192.168.2.1	is transformed as multiple virtual IPs
2. Global IP: 192.168.2.1	192.168.2.1	is transformed as multiple virtual IPs
3. Global IP: 192.168.2.1	192.168.2.1	is transformed as multiple virtual IPs
4. Global IP: 192.168.2.1	192.168.2.1	is transformed as multiple virtual IPs
5. Global IP: 192.168.2.1	192.168.2.1	is transformed as multiple virtual IPs
6. Global IP: 192.168.2.1	192.168.2.1	is transformed as multiple virtual IPs
7. Global IP: 192.168.2.1	192.168.2.1	is transformed as multiple virtual IPs
8. Global IP: 192.168.2.1	192.168.2.1	is transformed as multiple virtual IPs

Allows one or more public IP addresses to be shared by multiple internal users. Enter the Public IP address you wish to share into the Global IP field. Enter a range of internal IPs that will share the global IP.

Virtual Server

Virtual Server

You can configure the Barricade g Wireless Router as a virtual server so that remote users accessing services such as the Web or FTP a public IP addresses can be automatically redirected to local servers configured with private IP addresses. In other words, depending on th (TCP/UDP port number), the Barricade g Wireless Router redirects the external service request to the appropriate server (located at anoth address).

	Private IP	Service Port	Type
1.	192.168.2.		TCP
2.	192.168.2.		TCP
3.	192.168.2.		TCP
4.	192.168.2.		TCP
5.	192.168.2.		TCP
6.	192.168.2.		TCP
7.	192.168.2.		TCP
8.	192.168.2.		TCP
9.	192.168.2.		TCP
10.	192.168.2.		TCP

HELP

If you configure the Wireless 11g Router as a virtual server, remote users accessing services such as web or FTP at your local site via public IP addresses can be automatically redirected to local servers configured with private IP addresses. In other words, depending on the requested service (TCP/UDP port number), the Wireless 11g Router redirects the external service request to the appropriate server (located at another internal IP address).

For example, if you set Type/Public Port to TCP/80 (HTTP or web) and the Private IP/Port to 192.168.2.2/80, then all HTTP requests from outside users will be transferred to 192.168.2.2 on port 80. Therefore, by just entering the IP address provided by the ISP, Internet users can access the service they need at the local address to which you redirect them.

Configuring the Wireless 11g Router

The more common TCP service ports include:
HTTP: 80, FTP: 21, Telnet: 23, and POP3: 110

Special Applications

Some applications, such as Internet gaming, videoconferencing, Internet telephony and others, require multiple connections. These applications cannot work with Network Address Translation (NAT) enabled. If you need to run applications that require multiple connections, use the following screen to specify the additional public ports to be opened for each application.

The screenshot shows the 'Advanced Setup' interface for a wireless router. On the left is a navigation menu with options: System, WAN, LAN, Wireless, NAT (selected), Address Mapping, Virtual Server, Special Application, Firewall, DDNS, UPnP, Tools, and Status. The main content area is titled 'Special Applications' and includes a descriptive paragraph about NAT and multiple connections. Below this is a table with 10 rows for configuring applications. Each row has columns for 'Trigger Ports' (with a range selector), 'Trigger Type' (a dropdown menu), 'Public Port' (a text input), and 'Public Type' (a dropdown menu). At the bottom, there is a 'Popular applications' dropdown menu, a 'Copy to' field with a value of '1', and a 'HELP' button.

	Trigger Ports	Trigger Type	Public Port	Public Type
1.	-	TCP		TCP
2.	-	TCP		TCP
3.	-	TCP		TCP
4.	-	TCP		TCP
5.	-	TCP		TCP
6.	-	TCP		TCP
7.	-	TCP		TCP
8.	-	TCP		TCP
9.	-	TCP		TCP
10.	-	TCP		TCP

Popular applications: -- select one --
-- select one --
Battle.net
DivX
ICU II
MSN Gaming Zone
PC-to-Phone

Copy to: 1

HELP

Specify the public port number normally associated with an application in the Trigger Port field. Set the protocol type to TCP or UDP, then enter the ports that the application requires.

Popular applications requiring multiple ports are listed in the Popular Applications field. From the drop-down list, choose the application and then choose a row number to copy this data into.

Note: Choosing a row that already contains data will overwrite the current settings.

Example:

ID	Trigger Port	Trigger Type	Public Port	Public Type	Comment
1	6112	UDP	6112	UDP	Battle.net
2	28800	TCP	2300-2400, 47624	TCP	MSN Game Zone

For a full list of ports and the services that run on them, see www.iana.org/assignments/port-numbers.

Configuring the Wireless 11g Router

Firewall

The Wireless 11g Router firewall can provide access control of connected client PCs, block common hacker attacks, including IP Spoofing, Land Attack, Ping of Death, IP with zero length, Smurf Attack, UDP port loopback, Snork Attack, TCP null scan, and TCP SYN flooding. The firewall does not significantly affect system performance, so we advise leaving it enabled to protect your network users.

Access Control

Advanced Setup Home Logout

System
WAN
LAN
Wireless
NAT
Firewall
Access Control
MAC Filter
URL Blocking
Schedule Rule
Intrusion Detection
DMZ
DDNS
UPnP
Tools
Status

Access Control

Access Control allows users to block PCs on your network from gaining access to the Internet. The user can block PCs based on IP address.

• Enable Filtering Function : ☐ Yes ☒ No

• Normal Filtering Table (up to 15 computers)

Client PC Description	Client PC IP Address	Client Service	Schedule Rule	Configure
normal	192.168.2.20 ~ 39	News Forums, MSN Messenger, AIM	Always Blocking	Edit Delete

[Add PC](#)

HELP APPLY CANCEL

Using this option allows you to specify different privileges based on IP address for the client PCs.

Note: Click on Add PC and define the appropriate settings for client PC services (as shown in the following screen).

Advanced Setup

Advanced Setup Home Logout

Access Control Add PC

This page allows users to define service limitations of client PCs, including IP address, service type and scheduling rule criteria. For the URL blocking function, you need to configure the URL address first on the "URL Blocking Site" page. For the scheduling function, you also need to configure the schedule rule first on the "Schedule Rule" page.

- Client PC Description:
- Client PC IP Address: 192.168.2.101 ~ 125
- Client PC Service:

Service Name	Detail Description	Blocking
WWW	HTTP, TCP Port 80, 3120, 8000, 8000, 8001	☒
WWW with URL Blocking	HTTP (Ref. URL Blocking Site Page)	☒
E-mail Sending	SMTP, TCP Port 25	☐
News Forums	NNTP, TCP Port 119	☐
E-mail Receiving	POP3, TCP Port 110	☐
Secure HTTP	HTTPS, TCP Port 443	☐
File Transfer	FTP, TCP Port 21	☒
MSN Messenger	TCP Port 1863	☐
Telnet Service	TCP Port 23	☐
AIM	AOL Instant Messenger, TCP Port 5190	☒
NetMeeting	H.323, TCP Port 1720	☐
DNS	UDP Port 53	☐
SNMP	UDP Port 161, 162	☐
VPN-PPTP	TCP Port 1723	☐
VPN-L2TP	UDP Port 1701	☐
TCP	All TCP Port	☐
UDP	All UDP Port	☐

User Define Service

Protocol: ☐ TCP ☒ UDP
 Port Range: - , - , - , - , -

- Scheduling Rule (Ref. Schedule Rule Page):

OK

Cancel

Configuring the Wireless 11g Router

MAC Filtering Table

System

WAN

LAN

Wireless

NAT

Firewall

Access Control

MAC Filter

URL Blocking

Schedule Rule

Intrusion Detection

DHCP

DHCP

UPnP

Tools

Status

Advanced Setup

Home

Logout

MAC Filtering Table

This section helps provides MAC Filter configuration. When enabled, only MAC addresses configured will have access to your network. All other client devices will get denied access. This security feature can support up to 32 devices and applies to clients.

MAC Address Control : ☐ Yes ☒ No

MAC Filtering Table (up to 32 computers)

ID	Client PC MAC Address
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	

The MAC Filtering feature of the Wireless 11g Router allows you to control access to your network for up to 32 clients based on the MAC (Media Access Control) address of the client machine. This ID is unique to each network adapter. If the MAC address is listed in the table, that client machine will have access to the network.

URL Blocking

To configure the URL Blocking feature, use the table below to specify the web sites (www.somesite.com) and/or keywords you want to filter on your network.

To complete this configuration, you will need to create or modify an access rule in “Access Control” on page 64. To modify an existing rule, click the Edit option next to the rule you want to modify. To create a new rule, click on the Add PC option.

From the Access Control Add PC section check the option for “WWW with URL Blocking” in the Client PC Service table to filter out the web sites and keywords specified below.

URL Blocking

Disabled Web Sites and Keywords.

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

To specify the particular PC, go back to the "Access Control" page and check the box for "Http with URL Blocking" in the "Normal Filtering Table".

Rule Number	URL / Keyword	Rule Number	URL / Keyword
Site 1		Site 16	
Site 2		Site 17	
Site 3		Site 18	
Site 4		Site 19	
Site 5		Site 20	
Site 6		Site 21	
Site 7		Site 22	
Site 8		Site 23	
Site 9		Site 24	
Site 10		Site 25	
Site 11		Site 26	
Site 12		Site 27	
Site 13		Site 28	
Site 14		Site 29	
Site 15		Site 30	

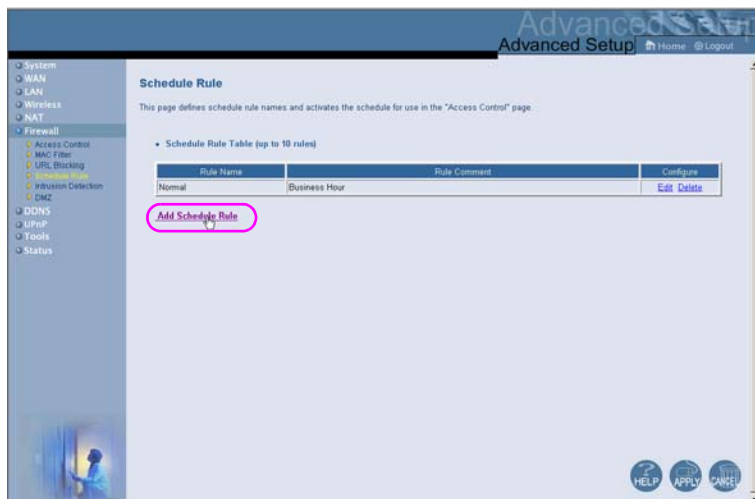
Clear All

Use the above screen to block access to web sites or to web URLs containing the keywords specified in the keyword table.

Configuring the Wireless 11g Router

Schedule Rule

The Schedule Rule feature allows you to configure specific rules based on time and date. These rules can then be used to configure more specific access control.



The screenshot shows the 'Advanced Setup' interface of a router. The left sidebar contains a navigation menu with categories: System, WAN, LAN, Wireless, NAT, Firewall, Access Control, MAC Filter, URL Blocking, Advanced Tools, Intrusion Detection, DMZ, DDNS, UPnP, Tools, and Status. The 'Firewall' category is expanded, showing 'Access Control' as the selected option. The main content area is titled 'Schedule Rule' and includes a description: 'This page defines schedule rule names and activates the schedule for use in the "Access Control" page.' Below this is a section for the 'Schedule Rule Table (up to 10 rules)'. A table with three columns is shown: 'Rule Name', 'Rule Comment', and 'Configure'. The first row has 'Normal' in the 'Rule Name' column and 'Business Hour' in the 'Rule Comment' column. The 'Configure' column contains 'Edit' and 'Delete' links. A red circle highlights the 'Add Schedule Rule' button located below the table. At the bottom right of the page are three buttons: 'HELP', 'APPLY', and 'CANCEL'.

Rule Name	Rule Comment	Configure
Normal	Business Hour	Edit Delete

[Add Schedule Rule](#)

Enable schedule-based Internet access control.

1. Click Add Schedule Rule.
2. Define the settings for the schedule rule (as shown on the following screen).
3. Click OK and then click the APPLY button to save your settings.

Edit Schedule Rule

Use this section to create your network schedule rules.

The times you set below are the times periods that you want the Access Control Rule to be active. For example, if you want to block Internet access (block WWW) from 9AM to 5PM during the week. Simply configure 9:00 AM as "Start Time" and 5:00 PM as "End Time" for each weekday - during that time period the user will be unable to access the internet.

Once the schedule rule is setup, you will need to configure or edit an Access Control rule, and select your Schedule Rule that you want to apply to that Access Control rule. You can set the schedule rule at the bottom of the Access Control Configuration page in the "Scheduling Rule" drop-down option.

Schedule Rule Name	Normal	
Schedule Rule Comment/Desc.	Business Hour (ex. 10:30AM - 7:45PM)	
Current Barricade g Wireless Router Time	1970/01/01 04:15:28 AM	

Week Day	Start Time (hh:mm)	End Time (hh:mm)
Every Day	: AM	: AM
Sunday	: AM	: AM
Monday	08 : 00 AM	5 : 00 PM
Tuesday	08 : 00 AM	5 : 00 PM
Wednesday	08 : 00 AM	5 : 00 PM
Thursday	08 : 00 AM	5 : 00 PM

Configuring the Wireless 11g Router

Intrusion Detection

The screenshot shows the 'Advanced Setup' page for 'Intrusion Detection'. On the left is a navigation menu with options: System, WAN, LAN, Wireless, NAT, Firewall (selected), Access Control, MAC Filter, URL Blocking, Schedule Rule, Intrusion Detection (highlighted), DMZ, DDNS, UPnP, Tools, and Status. The main content area is titled 'Intrusion Detection' and includes a descriptive paragraph about SPI. Below this are two configuration sections: 'FIREWALL CONFIGURATION' and 'E MAIL ALERT CONFIGURATION'. The firewall section has two rows, each with 'Enable' (selected) and 'Disable' radio buttons. The email alert section has four input fields for email address, SMTP server address, user name, and password. A 'HELP' icon is in the bottom right corner.

Intrusion Detection

When the SPI (Stateful Packet Inspection) firewall feature is enabled, all packets can be blocked. Stateful Packet Inspection (SPI) allows different application types that are using dynamic port numbers.

FIREWALL CONFIGURATION	
SPI and Anti-DoS firewall protection:	☒ Enable ☐ Disable
Discard Ping from WAN:	☒ Enable ☐ Disable

E MAIL ALERT CONFIGURATION	
Your E-mail Address	
SMTP Server Address	
User name	
Password	

- **SPI and Anti-DoS (Denial-of-Service) firewall protection (Default: Enable)** – The Intrusion Detection Feature limits access for incoming traffic at the WAN port. When the SPI (Stateful Packet Inspection) feature is turned on, all incoming packets will be blocked except for those types marked with a check in the Stateful Packet Inspection section.
- **Discard Ping from WAN (Default: Enable)** – Prevents the router from responding to any PING request on the WAN port.
- **E-mail Alert Configuration** – Enter your email address. Specify your SMTP and POP3 servers, user name, and password.

DMZ (Demilitarized Zone)

DMZ(Demilitarized Zone)

If you have a local client PC that cannot run an Internet application properly from behind the NAT firewall, then you can open the client up to unrestricted two-way Internet access by defining a Virtual DMZ Host.

Enable DMZ: ☐ Yes ☒ No

Multiple PCs can be exposed to the Internet for two-way communications e.g. Internet gaming, video conferencing, or VPN connections. You must set a static IP address for that PC.

	Public IP Address	Client PC IP Address
1.	0.0.0.0	192.168.2.0
2.		192.168.2.0
3.		192.168.2.0
4.		192.168.2.0
5.		192.168.2.0
6.		192.168.2.0
7.		192.168.2.0
8.		192.168.2.0

If you have a client PC that cannot run an Internet application properly from behind the firewall, then you can open the client up to unrestricted two-way Internet access. Enter the IP address of a DMZ host to this screen. Adding a client to the DMZ may expose your local network to a variety of security risks, so only use this option as a last resort.

Configuring the Wireless 11g Router

DDNS (Dynamic DNS) Settings

Advanced Setup

System
WAN
LAN
Wireless
NAT
Firewall
DDNS
UPnP
Tools
Status

DDNS (Dynamic DNS) Settings

Dynamic DNS provides users on the Internet a method to tie their domain name(s) to computers or servers. DDNS allows your domain name address automatically by having your DNS records changed when your IP address changes.

Dynamic DNS ☒ Enabled ☐ Disabled

Service Configuration

DNS Service:	DynDNS.org
Host Name:	No-IP.com
Username:	TZO.com
Password:	
Mail Exchanger (optional):	
Backup MX:	☐ Enabled ☒ Disabled
Wildcard:	☐ Enabled ☒ Disabled

HELP

Service Configuration

DDNS Service:	No-IP.com
Host Name:	
Email:	
Password:	

Service Configuration

DDNS Service:	DynDNS.com
Host Name:	
Username:	
Password:	

Service Configuration

DDNS Service:	TZO.com
Domain Name:	
Username / E-mail:	
Key:	

Server Configuration

Server IP:	192.168.2.	
Server Type:	Web Server:	(HTTP) Port 80 ☐ Port 8000 ☐
	FTP Server:	Port 20 ☐ Port 21 ☐
	Email Server:	(POP3) Port 110 ☐ (SMTP) Port 25 ☐

Dynamic DNS (DDNS) provides users on the Internet with a method to tie their domain name to the router or server. DDNS allows your domain name to follow your IP address automatically by having your DNS records changed when your IP address changes. (Default: Disabled)

The DDNS service dynamically updates DNS information to a static hostname, provided by the DDNS service provider, as clients' IP addresses change.

Note: Please visit the web sites of the DDNS providers for details.

DDNS Service Provider	Web Site
DynDNS.org	http://www.dyndns.org
No-IP.com	http://www.no-ip.com
TZO.com	http://www.tzo.com
DYNDNS.COM	http://www.dyndns.com

For using DDNS, click on the enable radio button, select the DDNS Service type, and then enter the user name, pass key (password), host name or server IP, and email address.

Mail Exchanger (MX) and Backup MX provides you with flexible email configurations. It allows you to control the delivery of your mail for a specified domain or a subdomain. The Wildcard keeps your hostname pointing to your IP address.

The TZO.com powered DNS allows you to host your own web site, email server, FTP site, and more at your own location even if you have a dynamic IP address. The Server Configuration section automatically opens the port options checked in the Virtual Server section.

Configuring the Wireless 11g Router

UPnP (Universal Plug and Play) Setting



Enable UPnP by checking ON in the screen above. UPnP allows the device to automatically:

- dynamically join local network
- obtain an IP address
- convey its capabilities and learn about the presence and capabilities of other devices.

Tools

Use the Tools menu to back up the current configuration, restore a previously saved configuration, restore factory settings, update firmware, and reset the Wireless 11g Router.

Tools - Configuration Tools



- Backup Router Settings – Saves the Wireless 11g Router's configuration to a file.
- Restore Router Settings – Restores settings from a saved backup configuration file.
 1. Select the saved file by clicking on the browse button
 2. Click the "Restore from config file."
- Restore to factory defaults – Restores the Wireless 11g Router settings back to the factory defaults.

Configuring the Wireless 11g Router

Tools - Firmware Upgrade



The screenshot shows the 'Advanced Setup' interface for a router. On the left is a navigation menu with options: System, WAN, LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools (selected), Configuration Tools, Firmware Upgrade (highlighted), Reset, and Status. The main content area is titled 'Firmware Upgrade'. It contains a paragraph: 'This tool allows you to upgrade the Barricade g Wireless Router system firmware using a file provided by manufacturer. Enter the path and name of the upgrade file then click the APPLY button below. You will be prompted to confirm the upgrade.' Below this text is a form with two rows. The first row is 'Current Firmware Version' with a value of '[V1.00.009 2004 06 07]'. The second row is 'Firmware File' with an empty text box and a 'Browse...' button. A mouse cursor is pointing at the 'Browse...' button. In the bottom right corner, there is a 'HELP' icon.

Advanced Setup

Firmware Upgrade

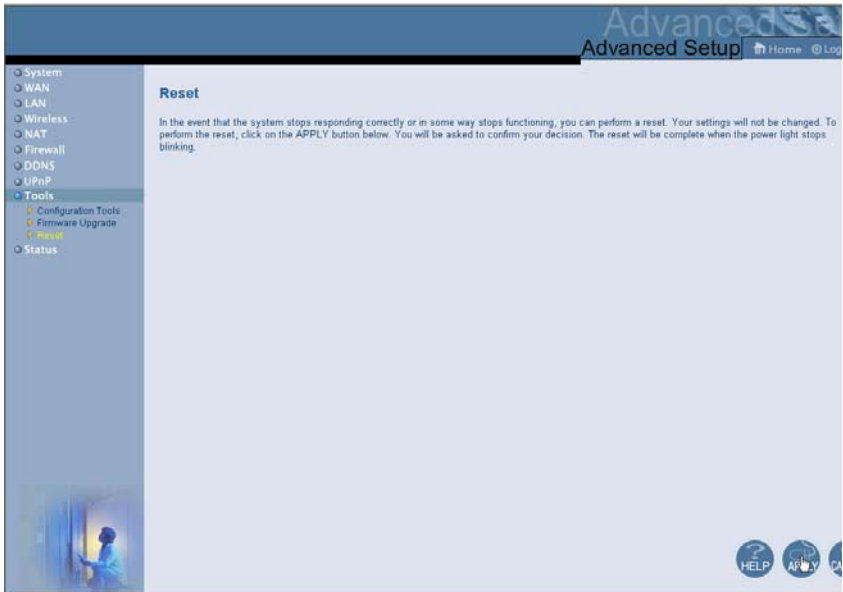
This tool allows you to upgrade the Barricade g Wireless Router system firmware using a file provided by manufacturer. Enter the path and name of the upgrade file then click the APPLY button below. You will be prompted to confirm the upgrade.

Current Firmware Version	[V1.00.009 2004 06 07]
Firmware File	Browse

HELP

Use this screen to update the firmware or user interface to the latest version. In the Firmware File field, click Browse to look for the downloaded file. Click APPLY. Check the Status page Information section to confirm that the upgrade process was successful.

Tools - Reset



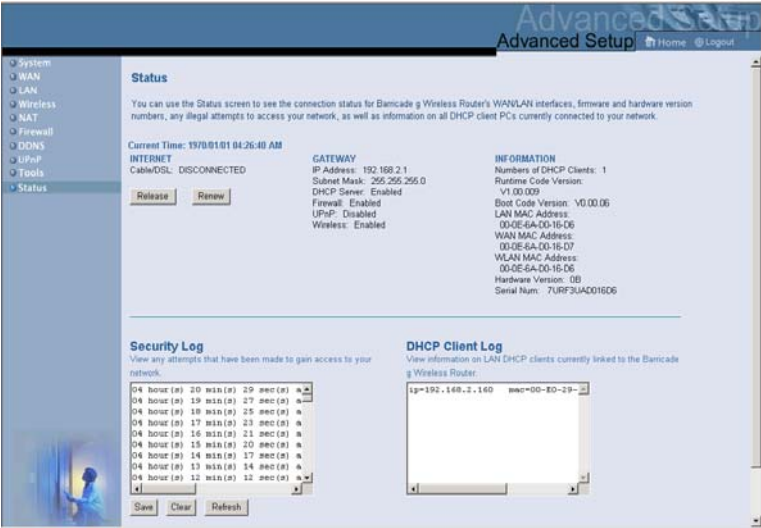
Click APPLY to reset the Wireless 11g Router. The reset will be complete when the power LED stops blinking.

Note: If you use the Reset button on the rear panel, the Wireless 11g Router performs a power reset. If the button is depressed for over five seconds, all the LEDs will illuminate and the factory settings will be restored.

Configuring the Wireless 11g Router

Status

The Status screen displays WAN/LAN connection status, firmware, and hardware version numbers, illegal attempts to access your network, as well as information on DHCP clients connected to your network.



The following items are included on this screen:

Section	Description
INTERNET	Displays WAN connection type and status.
Release	Click on this button to disconnect from the WAN.
Renew	Click on this button to establish a connection to the WAN.
GATEWAY	Displays system IP settings, as well as DHCP and Firewall status.
INFORMATION	Displays the number of attached clients, the firmware versions, the physical MAC address for each media interface, as well as the hardware version and serial number.

Section	Description
Security Log	Displays illegal attempts to access your network.
Save	Click on this button to save the security log file.
Clear	Click on this button to delete the access log.
Refresh	Click on this button to refresh the screen.
DHCP Client Log	Displays information on all DHCP clients on your network.

TROUBLESHOOTING

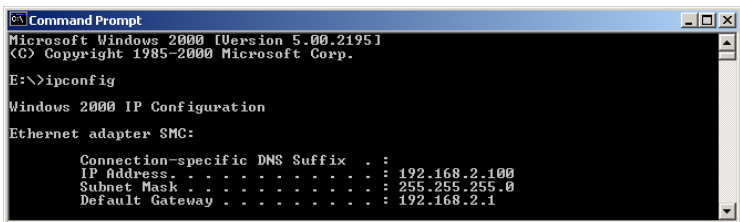
The information outlined in this section describes some useful steps for getting your computer and the Wireless 11g Router online.

A. Verify your connection to the Wireless 11g Router.

If you are unable to access the Wireless 11g Router's web-based administration pages, then you may not be properly connected or configured. The screen shots in this section were taken on a Windows 2000 machine, but the same steps will apply to Windows 95/98/Me/XP.

To determine your TCP/IP configuration status please follow the steps below:

1. Click Start then choose Run.
2. Type cmd or command to open a DOS prompt.
3. In the DOS window, type ipconfig and verify the information that is displayed.
4. If your computer is set up for DHCP, then your TCP/IP configuration should be similar to the information displayed:
 - IP Address: 192.168.2.x (x is number between 100 and 199 by default.)
 - Subnet: 255.255.255.0
 - Gateway: 192.168.2.1



```
Command Prompt
Microsoft Windows [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

E:\>ipconfig

Windows 2000 IP Configuration

Ethernet adapter SMC:

    Connection-specific DNS Suffix  . : 
    IP Address. . . . . : 192.168.2.100
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.2.1
```

If you have an IP address that starts with 169.254.xxx.xxx then see the next section.

If you have another IP address configured, then see section C.

B. I am getting an IP Address that starts with 169.254.xxx.xxx.

If you are getting this IP address, then you need to check that you are properly connected to the Wireless 11g Router.

Confirm that you have a good link light on the Wireless 11g Router for the port to which this computer is connected. If not, please try another cable.

If you have a good link light, please open up a DOS window as described in the previous section and type ipconfig/renew.

If you are still unable to get an IP address from the Wireless 11g Router, reinstall your network adapter. Please refer to your adapter manual for information on how to do this.

C. I have another IP Address displayed.

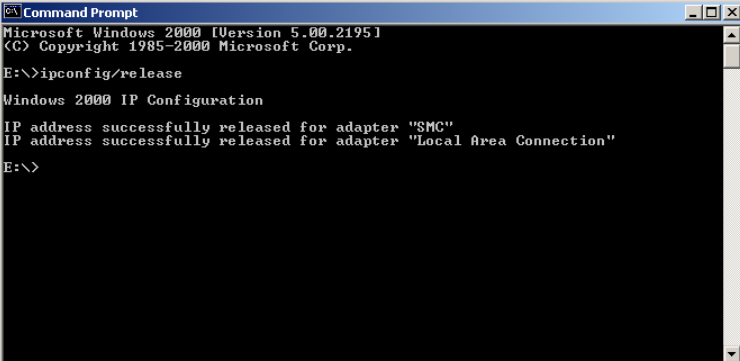
If you have another IP address listed then the PC may not be configured for a DHCP connection. Please refer to "Configuring Client TCP/IP" on page 14 for information.

Once you have confirmed that your computer is configured for DHCP, then please follow the steps below.

1. Open a DOS window as described above.

Troubleshooting

2. Type ipconfig/release.



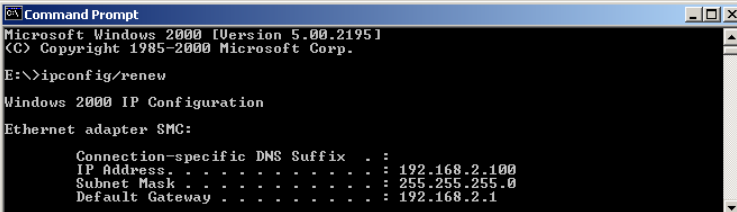
```
Command Prompt
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

E:\>ipconfig/release

Windows 2000 IP Configuration

IP address successfully released for adapter "SMC"
IP address successfully released for adapter "Local Area Connection"
E:\>
```

3. Then type ipconfig/renew.



```
Command Prompt
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

E:\>ipconfig/renew

Windows 2000 IP Configuration

Ethernet adapter SMC:

    Connection-specific DNS Suffix  . : 
    IP Address . . . . . : 192.168.2.100
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.2.1
```

D. The 10/100 LED does not light after a connection is made.

1. Check that the host computer and the Wireless 11g Router are both powered on.
2. Be sure the network cable is connected to both devices.
3. Verify that Category 5 cable is used if you are operating at 100 Mbps, and that the length of any cable does not exceed 100 m (328 ft).
4. Check the network card connections.
5. The 10BASE-T/100BASE-TX port, network card, or cable may be defective.

E. If wireless clients cannot access the network, check the following:

1. Be sure the Wireless 11g Router and the wireless clients are configured with the same Service Set ID (SSID).
2. If authentication or encryption are enabled, ensure that the wireless clients are properly configured with the appropriate authentication or encryption keys.
3. If authentication is being performed through a RADIUS server, ensure that the clients are properly configured on the RADIUS server.
4. If authentication is being performed through IEEE 802.1x, be sure the wireless users have installed and properly configured 802.1x client software.
5. If MAC address filtering is enabled, be sure the client's address is included in the local filtering database.
6. If the wireless clients are roaming between Wireless 11g Router, make sure that all the access points and wireless devices in the Extended Service Set (ESS) are configured to the same SSID, and authentication method.

F. If you forgot or lost the password:

Set the Wireless 11g Router to its default configuration by pressing the reset button on the back panel for 5 seconds or more. There is no password by default.

G. If all other recovery measures fail, and the Wireless 11g Router is still not functioning properly, take any of these steps:

1. Reset the Wireless 11g Router's hardware using the web interface, or through a power reset.

Troubleshooting

- 2. Reset the Wireless 11g Router to its default configuration by pressing the reset button on the back panel for 5 seconds or more. Then click LOGIN to access the management interface.

Maximum Distance Table

Important Notice

Maximum distances posted below are actual tested distance thresholds. However, there are many variables such as barrier composition and construction and local environmental interference that may impact your actual distances and cause you to experience distance thresholds far lower than those posted below.

802.11b Wireless Distance Table				
Speed and Distance Ranges				
Environment	11 Mbps	5.5 Mbps	2 Mbps	1 Mbps
Outdoors ¹	300 m 984 ft	465 m 1525 ft	500 m 1639 ft	515 m 1689 ft
Indoors ²	60 m 197 ft	70 m 230 ft	83 m 272 ft	85 m 279 ft

802.11g Wireless Distance Table										
Speed and Distance Ranges										
Environment	54 Mbps	48 Mbps	36 Mbps	24 Mbps	18 Mbps	12 Mbps	11 Mbps	5.5 Mbps	2 Mbps	1 Mbps
Outdoors ¹	82 m 269 ft	100 m 328 ft	300 m 984 ft	330 m 1082 ft	350 m 1148 ft	450 m 1475 ft	300 m 984 ft	465 m 1525 ft	500 m 1639 ft	515 m 1689 ft
Indoors ²	20 m 66 ft	25 m 82 ft	35 m 115 ft	43 m 141 ft	50 m 164 ft	57 m 187 ft	60 m 197 ft	70 m 230 ft	83 m 272 ft	85 m 279 ft

- Notes:** 1. Outdoor Environment: A line-of-sight environment with no interference or obstruction between the Wireless 11g Router and clients.
2. Indoor Environment: A typical office or home environment with floor to ceiling obstructions between the Wireless 11g Router and clients.

SPECIFICATIONS

Below is an outline of the technical specifications for the WG4005D-ZZ.

Standards

IEEE 802.3 10BASE-T Ethernet

IEEE 802.3u 100BASE-TX Fast Ethernet

IEEE 802.11b

IEEE 802.11g

WAN Interface

10BASE-T/100BASE-TX

LAN Interfaces

10BASE-T/100BASE-TX

4 RJ-45 ports: LAN data transfer rate is up to 10/20 Mbps (10BASE-T half/full duplex) or 100/200 Mbps (100BASE-TX half/full duplex)

Antenna

2 detachable antennas

Management

Browser-based management

Both DHCP Server and Client provided

Advanced Features

Dynamic IP Address Configuration – DHCP, DNS

Wireless Security – WPA, 802.1x, 40/64/128-bit WEP encryption, SSID broadcast disabled, MAC address filtering

Firewall – Access control, hacker prevention, logging

Virtual Server via NAT & NAPT

Virtual Private Network – PPTP, L2TP, IPSec pass-through

Intrusion Detection, email Alerts, Parental Control

Specifications

Indicator Panel

Power, WLAN, WAN (Link, Activity), LAN (Link/Activity,
Speed - 10/100 Mbps)

Dimensions

130 x 85 x 32 mm (5.12 x 3.35 x 1.26 in.)

Weight

370 g (13.05 oz)

Input Power

9 V, 1.25 A

Maximum Current

0.04 A_{RMS} max. @ 110 V/240 V

Power Consumption

5 Watts max. @ 100-240 VAC

Internet Standards

RFC 826 ARP, RFC 791 IP, RFC 792 ICMP, RFC 768 UDP, RFC 793 TCP, RFC 854-859 TELNET, RFC 1321 MD5, RFC 1497 BOOTP Extension, RFC 1570 PPP LCP Extension, RFC 1631 NAT, RFC1661 PPP, RFC 1700 Assigned Numbers, RFC 1866 HTML, RFC 1945 HTTP, RFC 1994 CHAP, RFC 2131 DHCP, RFC 2637 PPTP

Temperature

Operating 0 to 40 °C (32 to 104 °F)

Storage -40 to 70 °C (-40 to 158 °F)

Humidity

5% to 95% (non-condensing)

Compliances

CE Mark

Emissions

FCC Class B

VCCI Class B

Industry Canada Class B

EN55022 (CISPR 22) Class B

C-Tick - AS/NZS 3548 (1995) Class B

Immunity

EN 61000-3-2/3

EN 61000-4-2/3/4/5/6/8/11

Safety

CSA/NRTL (UL1950, CSA 22.2.950)

GS (EN60950)

CB (IEC60950)

Specifications

Model Number: WG4005D-ZZ
Revision Number E072004-R01 V.2 F 1.0