

**2.4GHz 11 Mbps Wireless Cable/DSL  
Broadband Router with Print Server**

**User Guide**

**SMC7004AWBR**





# **Barricade™ 2.4 GHz 11 Mbps Wireless Cable/DSL Broadband Router with Print Server User Guide**

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From SMC's Barricade line of Broadband Routers

**SMC**®

**Networks**

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# COMPLIANCES

## FCC - Class B

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 instructions, may cause harmful interference to radio communications. However, there is no guarantee that the 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 or more of the following measures:

- Reorient 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
- 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.

## Industry Canada - Class B

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of the Department of Communications.

## Compliances

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques," NMB-003 édictée par le ministère des Communications.

### EC Conformance Declaration - Class B

SMC contact for these products in Europe is:

SMC Networks Europe,  
Edificio Conata II,  
Calle Frutuós Gelabert 6-8, 2<sup>o</sup>, 4<sup>a</sup>,  
08970 - Sant Joan Despí,  
Barcelona, Spain.

This information technology equipment complies with the requirements of the Council Directive 89/336/EEC on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility and 73/23/EEC for electrical equipment used within certain voltage limits and the Amendment Directive 93/68/EEC. For the evaluation of the compliance with these Directives, the following standards were applied:

- RFI \* Limit class B according to EN 55022:1998
- Emission: \* Limit class B for harmonic current emission according to EN 61000-3-2/1995
  - \* Limitation of voltage fluctuation and flicker in low-voltage supply system according to EN 61000-3-3/1995
- Immunity: \* Product family standard according to EN 55024:1998
  - \* Electrostatic Discharge according to EN 61000-4-2:1995 (Contact Discharge:  $\pm 4$  kV, Air Discharge:  $\pm 8$  kV)
  - \* Radio-frequency electromagnetic field according to EN 61000-4-3: 1996 (80 - 1000 MHz with 1 kHz AM 80% Modulation: 3 V/m)
  - \* Electrical fast transient/burst according to EN 61000-4-4:1995(AC/DC power supply:  $\pm 1$  kV, Data/Signal lines:  $\pm 0.5$  kV)
  - \* Surge immunity test according to EN 61000-4-5:1995(AC/DC Line to Line:  $\pm 1$  kV, AC/DC Line to Earth:  $\pm 2$  kV)
  - \* Immunity to conducted disturbances, Induced by radio-frequency fields: EN 61000-4-6:1996(0.15 - 80 MHz with 1 kHz AM 80% Modulation: 3 V/m)
  - \* Power frequency magnetic field immunity test according to EN 61000-4-8:1993(1 A/m at frequency 50 Hz)
  - \* Voltage dips, short interruptions and voltage variations immunity test according to EN 61000-4-11:1994(>95% Reduction @10 ms, 30% Reduction @500 ms, >95% Reduction @5000 ms)
- LVD: \* EN60950(A1/1992; A2/1993; A3/1993; A4/1995; A11/1997)

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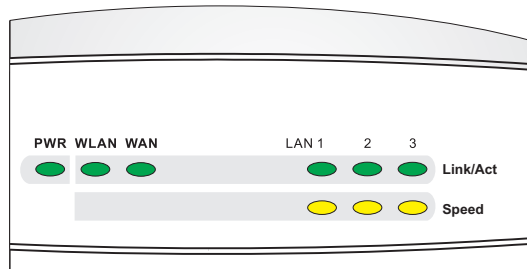


# ABOUT THE WIRELESS BARRICADE ROUTER

Congratulations on your purchase of the Barricade™ Wireless Cable/DSL Broadband Router. SMC 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 SMC7004AWBR includes status LED indicators, as described in the following figure and table.



| LED             | Condition | Status  |
|-----------------|-----------|---|
| PWR<br>(Green)  | On        | Wireless Barricade is receiving power.                              |
| WLAN<br>(Green) | On        | The Wireless Barricade has established a valid wireless connection. |
| WAN<br>(Green)  | On        | The WAN port has established a valid network connection.            |

## About the Wireless Barricade Router

| LED                 | Condition | Status   |
|---------------------|-----------|--|
| LAN                 |           |  |
| Link/Act<br>(Green) | On        | The indicated LAN port has established a valid network connection. |
|                     | Flashing  | The indicated LAN port is transmitting or receiving traffic.       |
| Speed<br>(Amber)    | On        | The port is transmitting or receiving traffic at 100 Mbps.         |
|                     | Off       | The port is transmitting or receiving traffic at 10 Mbps.          |

## Features and Benefits

- Internet connection to xDSL or Cable modem via a 10/100 Mbps WAN port
- Internet connection to ISDN TA or PSTN modem via an RS-232 serial port
- Local network connection via 10/100 Mbps Ethernet ports or 11 Mbps wireless interface (supporting up to 128 mobile users)
- 802.11b Compliant – interoperable with multiple vendors
- Provides seamless roaming within an 802.11b WLAN environment
- Supports 64-bit and 128-bit WEP (Wired Equivalent Privacy)
- Built-in Print Server allows direct connection of a printer
- DHCP for dynamic IP configuration, and DNS for domain name mapping

## *Features and Benefits*

- Firewall with client privileges, hacker prevention, and NAT (Network Address Translation)
- NAT also enables multi-user access with a single-user account, and virtual server functionality (providing protected access to Internet services such as Web, FTP, mail and Telnet)
- Virtual Private Network support using PPTP, L2TP or IPSec pass-through
- User-definable application sensing tunnel supports applications requiring multiple connections
- Supports CHAP authentication protocol for dial-up identification
- Supports PPP dial-out connection
- Easy setup through a Web browser on any operating system that supports TCP/IP
- Compatible with all popular Internet applications

# INSTALLING THE WIRELESS BARRICADE

Before installing the Wireless Barricade, verify that you have all the items listed under “Package Contents.” If any of the items are missing or damaged, contact your local SMC distributor. Also be sure that you have all the necessary cabling before installing the Wireless Barricade. After installing the Wireless Barricade, refer to the Web-based configuration program in “Configuring the Wireless Barricade” on page 25 for information on configuring the router.

## Package Contents

After unpacking the Wireless Barricade check the contents of the box to be sure you have received the following components:

- Barricade Broadband Wireless 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.

Please register on SMC’s Web site at [www.smc.com](http://www.smc.com).

## **Hardware Description**

The Wireless Barricade may be connected to the Internet or to a remote site using its RJ-45 WAN port or RS-232 serial port. It can be connected directly to your PC or to a local area network using any of the three Fast Ethernet LAN ports or through the wireless interface. It also functions as a print server.

Access speed to the Internet depends on your service type. Full-rate ADSL provides up to 8 Mbps downstream and 640 Mbps upstream. G.lite (or splitterless) ADSL provides up to 1.5 Mbps downstream and 512 Kbps upstream. Cable modems provide up to 36 Mbps downstream and 2 Mbps upstream. ISDN provides up to 128 Kbps when using two bearer channels. And 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.

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

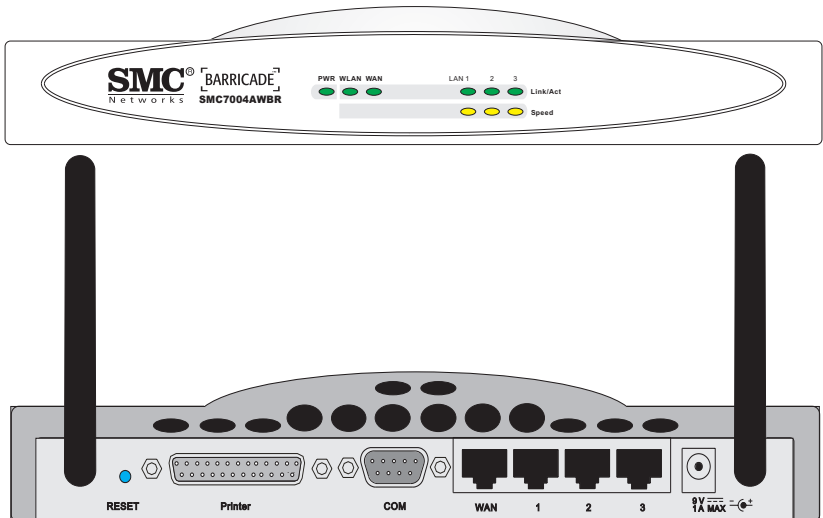
The Wireless Barricade includes an LED display on the front panel for system power and port indications that simplifies installation and network troubleshooting.

## *Installing the Wireless Barricade*

On the rear panel, the Wireless Barricade provides:

- Three 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 RJ-45 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.
- One RJ-45 port for connection to an xDSL or Cable modem. This is a 10/100 Mbps, full duplex port, Use a Category 3 or higher cable to connect this WAN port to a xDSL or Cable modem.
- One RS-232 serial port to connect to an ISDN Terminal Adapter (TA) or to a PSTN analog modem.
- One parallel printer port that can be connected to a printer. This printer can then be shared by any LAN/WLAN users.
- Two external antennas (dipole, omni-directional).

The following figure shows the components of the Wireless Barricade:



**Figure 1. Front and Rear Panels**

## Installing the Wireless Barricade

| Item              | Description  |
|-------------------|--|
| LEDs              | Power, WLAN, WAN and LAN port status indicators. (See "LED Indicators" on page 1.)   |
| Wireless Antennas | Dual antennas provide optimal reception by dynamically choosing the best antenna for each client.  |
| Reset Button      | Use this button to reset the power and restore the default factory settings.   |
| Printer Port      | Parallel port (25-pin, D-type, female). Connect the shared printer to this port.   |
| COM Port          | Serial port (9-pin, D-type, male). Connect your ISDN TA or 56K analog modem to this port.  |
| WAN Port          | WAN port (RJ-45). Connect your Cable modem, xDSL modem, or an Ethernet router to this port.  |
| LAN Ports         | Fast Ethernet ports (RJ-45). Connect devices on your local area network to these ports (such as a PC, hub, or switch).   |
| Power Inlet       | Connect the included power adapter to this inlet.<br><b>Warning:</b> The included power adapter is DC 9 V/1 A. Using the wrong type of power adapter may cause damage. |

## System Requirements

You should meet the following minimum requirements.

- Internet access from your local telephone company or ISP using an xDSL modem, Cable modem, ISDN TA, or PSTN analog modem. You may also have access over the telephone system to an analog modem at another site.
- A PC using a fixed IP address or dynamic IP address assignment via DHCP, as well as a Gateway server address and DNS server address from your service provider.



- For wired LAN connection, you need a computer equipped with a 10 Mbps, 100 Mbps, or 10/100 Mbps Fast Ethernet card, or a USB-to-Ethernet converter. For wireless LAN connections, each computer must have an IEEE 802.11b compatible wireless adapter.
- TCP/IP network protocols installed on each PC that needs to access the Internet.
- A Java-enabled Web browser, such as Microsoft Internet Explorer 5.0 or above, or Netscape Communicator 4.0 or above installed on one PC at your site for configuring the Wireless Barricade.

## **Connect the System**

The Wireless Barricade 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 Barricade away from any heating devices.
- Do not place the Wireless Barricade 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 Barricade.

### **Basic Installation Procedure**

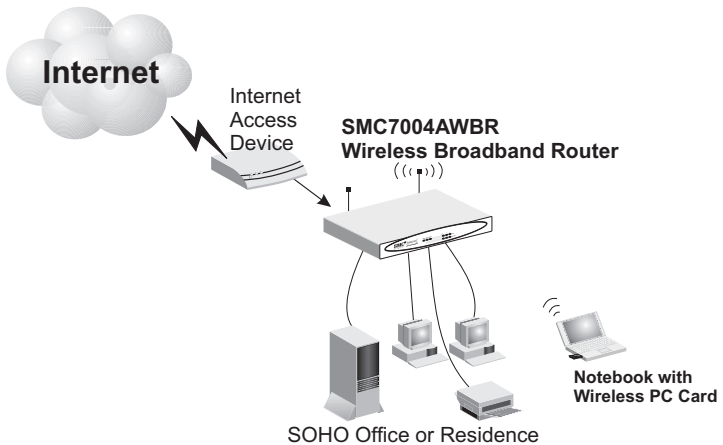
1. **Connect the LAN:** You can connect the Wireless Barricade to your PC, or to a hub or switch. Run Ethernet cable from one of the LAN ports of the Wireless Barricade to your computer's network adapter or to another network device.

## Installing the Wireless Barricade

You may also connect the Wireless Barricade to your PC (using a wireless client adapter) via radio signals. Position both antennas on the back of the Wireless Barricade into the desired positions.

For more effective coverage, you may want to position one antenna along the vertical axis and the other antenna along the horizontal axis. **(The antennas emit signals along the toroidal plane – and thus provide more effective coverage when positioned along alternate axes.)**

2. Connect the WAN: Prepare an Ethernet cable for connecting the Wireless Barricade to a cable/DSL modem or Ethernet router. Prepare a serial cable for connecting the Wireless Barricade to an ISDN TA or PSTN modem.
3. Connect your printer: Use standard parallel printer cable to connect your printer to the printer port on the Wireless Barricade.
4. Power on: Connect the power adapter to the Wireless Barricade.



**Figure 2. Connecting the Wireless Barricade**

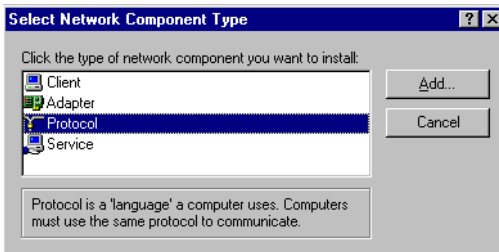
# CONFIGURING CLIENT TCP/IP

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 13.

## Installing TCP/IP

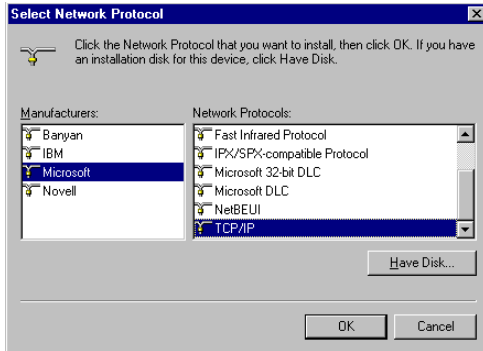
### Windows 95/98/Me

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.



## Configuring Client TCP/IP

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.

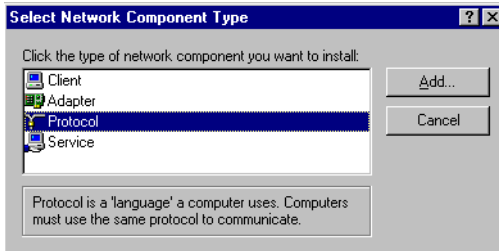


6. The TCP/IP protocol will be listed in the Network window. Click OK. The operating system may prompt you to restart your system. Click Yes and the computer will shut down and restart.

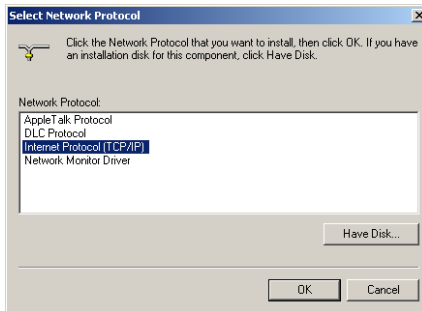
## Windows 2000

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.

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 Barricade, you must configure the network settings of the computers on your LAN to use the same IP subnet as the Wireless Barricade. The default network settings for the Wireless Barricade are:

IP Address: 192.168.2.1

## *Configuring Client TCP/IP*

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 Barricade's Web configuration interface. See "Configuring the Wireless Barricade" on page 25 for information on configuring the Wireless Barricade.)

If you have not previously configured TCP/IP for your computer, refer to "Configuring Client TCP/IP" on page 11. 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 Barricade's DHCP service or by manual configuration.

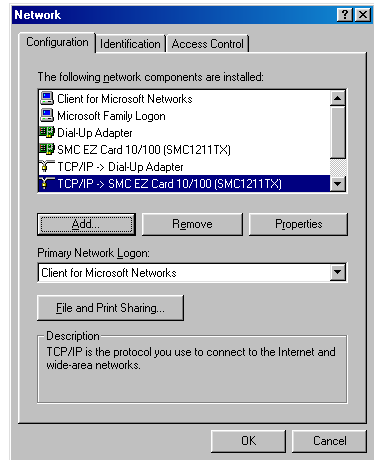
### **Configuring Your Computer in Windows 95/98/2000/Me**

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

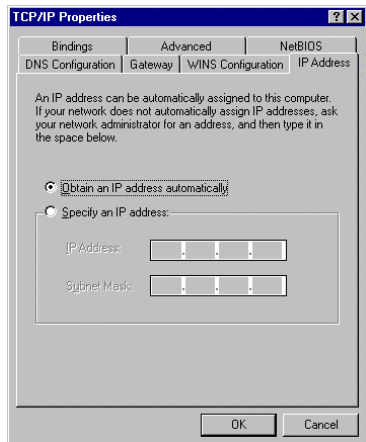
1. From the Windows desktop, click Start/Settings/Control Panel.
2. In the Control Panel, locate and double click the Network icon.

## Setting Up 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.

## Configuring Client TCP/IP

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

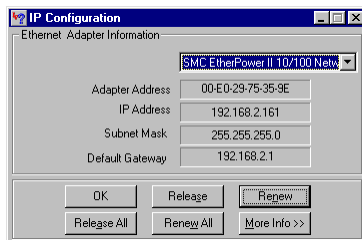
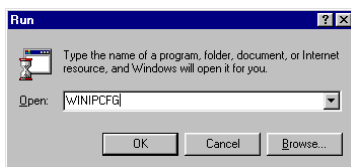
**Note:** Windows may ask you for the original Windows installation disk or additional files. Check for the files at c:\windows\options\cabs, or insert your Windows CD-ROM into your CDROM drive and check the correct file location, e.g., D:\win98, D:\win9x. (if D is the letter of your CD-ROM drive).

9. 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 insure your settings.

### Obtain IP Settings from Your Wireless Barricade

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

1. Click Start/Run.
2. Type WINIPCFG and click OK.
3. 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

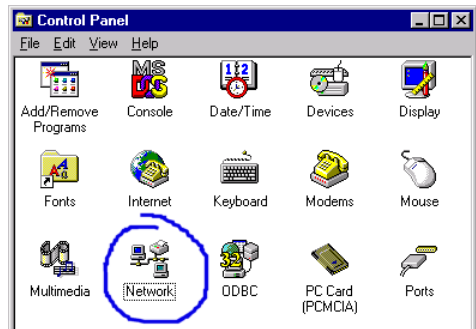




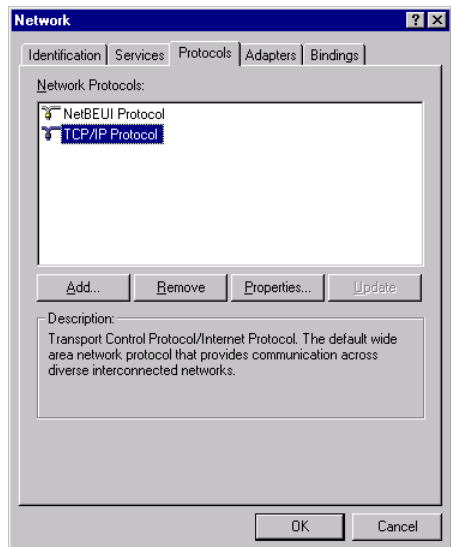
192.168. 2.1. These values confirm that your Wireless Barricade is functioning. Click OK to close the IP Configuration window.

### 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.



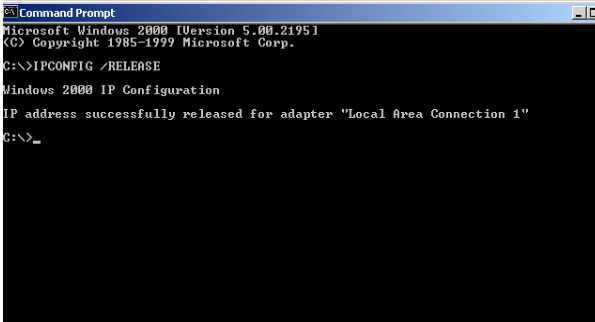
## Configuring Client TCP/IP

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 Barricade

Now that you have configured your computer to connect to the Wireless Barricade, it needs to obtain new network settings. By releasing old IP settings and renewing them with settings from the Wireless Barricade, 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.



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

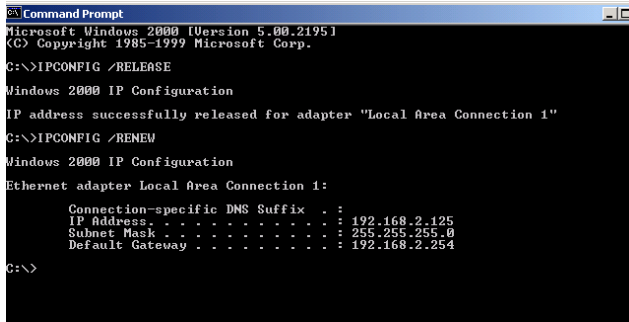
C:\>IPCONFIG /RELEASE

Windows 2000 IP Configuration

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

C:\>_
```

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 Barricade 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:\>
```

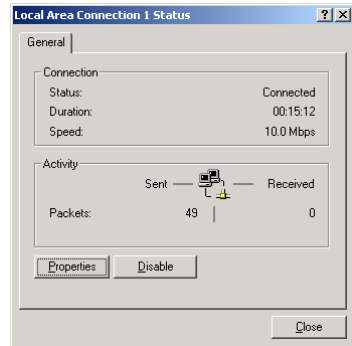
4. Type EXIT and press <ENTER> to close the Command Prompt window.

### 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.

## Configuring Client TCP/IP

3. Locate and double-click the Local Area Connection icon for the Ethernet adapter that is connected to the Wireless Barricade. 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 Barricade” on page 16.

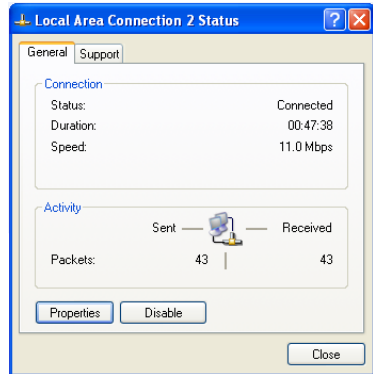
### Configuring Your Computer in Windows XP

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.

## Setting Up TCP/IP

2. Locate and double-click the Local Area Connection icon for the Ethernet adapter that is connected to the Wireless Barricade. 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.

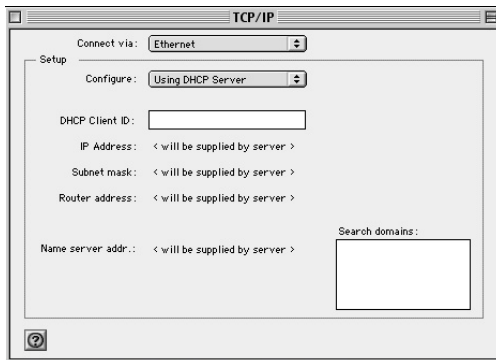
### Configuring a Macintosh Computer

You may find that the instructions here do not exactly match your screen. This is because these steps and screenshots were created using Mac OS 8.5. Mac OS 7.x and above are all very similar, but may not be identical to Mac OS 8.5.

1. Pull down the Apple Menu. Click Control Panel and select TCP/IP.

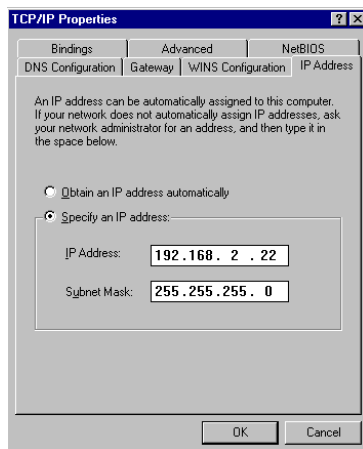
## Configuring Client TCP/IP

2. In the TCP/IP dialog box, make sure that Ethernet is selected in the Connect Via: field.
3. Select Using DHCP Server in the Configure field.



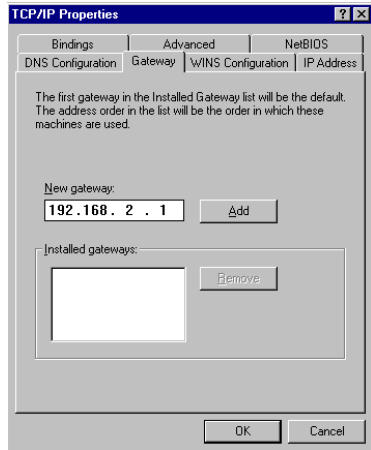
### Manual IP Configuration

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.

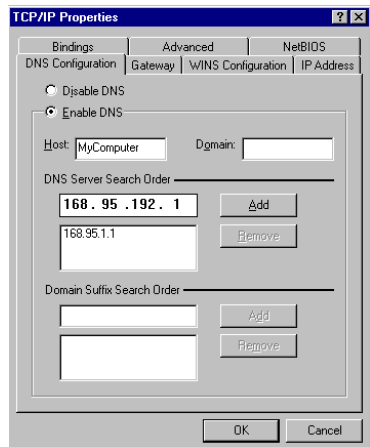


## Setting Up TCP/IP

2. In the Gateway tab, add the IP address of the Wireless Barricade (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 Barricade 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 Barricade, use the Ping command to check if your computer has successfully connected to the Wireless Barricade. 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 Barricade 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 Barricade and the computer?

The LAN LED on the Wireless Barricade 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 Barricade is 192.168.2.1, the IP address of your PC must be from 192.168.2.2 - 192.168.2.254 and the default gateway must be 192.168.2.1.

If you can successfully Ping the Wireless Barricade you are now ready to connect to the Internet!



# CONFIGURING THE WIRELESS BARRICADE

The Wireless Barricade can be configured by any Java-supported browser including Internet Explorer 4.0 or above, or Netscape Navigator 5.0 or above. Using the Web management interface, you can configure the Wireless Barricade and view statistics to monitor network activity.

**Note:** NOTE: Before you attempt to configure your router, if you have access to the Internet please visit [www.smc.com](http://www.smc.com) and download the latest firmware update to insure your router is running the latest firmware.

Before you attempt to log into the Wireless Barricade 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 Barricade. 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. This is configured through the options/preference section of your browser.

## **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 Barricade configuration pages. The following steps are for Internet Explorer and for Netscape.

Determine which browser you use and follow the appropriate steps.

### **Internet Explorer (5 or above)**

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

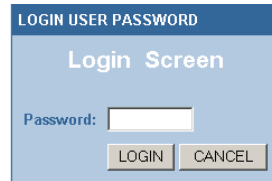
### **Internet Explorer (For Macintosh)**

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

## Netscape (4 or above)

1. Open Netscape. Click Edit, and then select Preferences.
2. In the Preferences window, under Category, double-click Advanced, then select the Proxies option.
3. Check “Direct connection to the Internet.”
4. Click the OK button to save the changes.

To access the Wireless Barricade’s management interface, enter the SMC Barricade Wireless Broadband Router IP address in your Web browser <http://192.168.2.1>. Then click LOGIN. (By default, there is no password.)



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



## **Navigating the Web Browser Interface**

The Wireless Barricade'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 Barricade 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.



The screenshot shows the SMC Networks Setup Wizard interface. The page title is "1. Time Zone". On the left, there is a navigation menu with three items: "1. Time Zone" (selected with a checkmark), "2. Broadband Type", and "3. IP Address Info". The main content area is titled "1. Time Zone" and contains the following sections:

- Set Time Zone:** A section with the instruction "Use this setting to insure the time-based client filtering feature and system log entries are based on the correct localized time." Below this is a drop-down menu currently set to "(GMT-08:00)Pacific Time (US & Canada); Tijuana".
- Configure Time Server (NTP):** A section with the instruction "You can automatically maintain the system time on your SMC Barricade by synchronizing with a public time server over the Internet." Below this is a checked checkbox labeled "Enable Automatic Time Server Maintenance".
- Primary Server:** A drop-down menu set to "132.163.4.102 - North America".
- Secondary Server:** A drop-down menu set to "192.5.41.41 - North America".

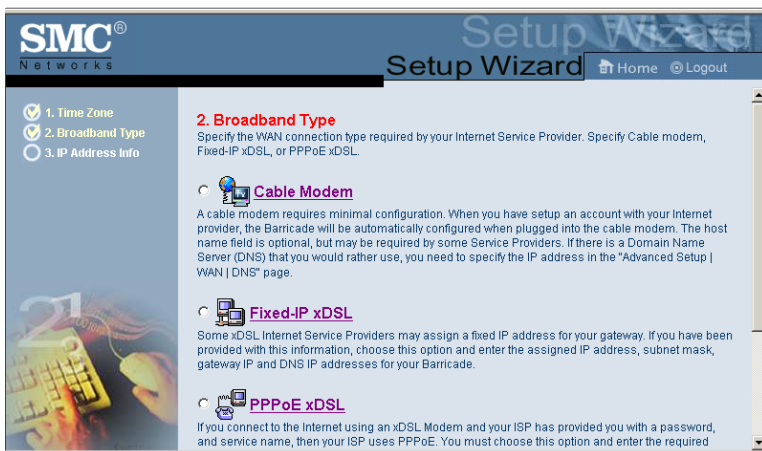
At the bottom right of the page, there is a circular button labeled "NEXT".

## 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 30, and for a PPPoE xDSL connection, see "PPPoE" on page 31.

## Configuring the Wireless Barricade



### Cable Modem

After selecting Cable Modem as the Broadband Type, a message will appear stating that your data has been successfully saved.

**Note:** Select Home to return to the home page, then select Advanced Settings/WAN to configure the required parameters. (See "WAN" on page 35.)

### Fixed-IP xDSL

|                    |   |   |   |   |
|--------------------|---|---|---|---|
| IP Address         | 0 | 0 | 0 | 0 |
| Gateway IP Address | 0 | 0 | 0 | 0 |
| DNS IP Address     | 0 | 0 | 0 | 0 |
| Subnet Mask        | 0 | 0 | 0 | 0 |

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

| Use PPPoE Authentication      |   |
|-------------------------------|---|
| User Name :                   | <input type="text"/>                                      |
| Password :                    | <input type="password"/>                                  |
| Please retype your password : | <input type="password"/>                                  |
| Service Name :                | <input type="text"/>                                      |
| MTU :                         | <input type="text" value="1454"/> (1440<=MTU Value<=1492) |
| Maximum Idle Time             | <input type="text" value="10"/>                           |
|                               | <input checked="" type="checkbox"/> 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

# Advanced Setup

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

| <b>Menu</b> | <b>Description</b>   |
|-------------|--|
| System      | Sets the local time zone, the password for administrator access, and the IP address of a PC that will be allowed to manage the Wireless Barricade remotely.  |
| WAN         | Specifies the Internet connection type:<br><br>Dynamic IP host configuration and the physical MAC address of each media interface<br><br>PPPoE configuration<br><br>PPTP<br><br>Static IP and ISP gateway address<br><br>BigPond<br><br>Specifies DNS servers to use for domain name resolution. |
| LAN         | Sets the TCP/IP configuration of the Wireless Barricade's LAN interface and all DHCP clients.  |
| Wireless    | Configures the radio frequency, domain, and encryption 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(s) to computers or servers.  |



| Menu   | Description   |
|--------|---|
| 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 backup & restore the current configuration, restore all configuration settings to the factory defaults, update system firmware, or reset the system.  |
| Status | <p>Provides WAN connection type and status, firmware and hardware version numbers, system IP settings, as well as DHCP, NAT, and Firewall information.</p> <p>Displays the number of attached clients, the firmware versions, the physical MAC address for each media interface, and the hardware version and serial number.</p> <p>Shows the security and DHCP client log.</p> |

## System

### Time Zone

**SMC**<sup>®</sup>  
NETWORKS

Setup Wizard  
Setup Wizard | Home | Logout

1. Time Zone  
 2. Broadband Type  
 3. IP Address Info

### 1. Time Zone

**Set Time Zone:**

Use this setting to insure the time-based client filtering feature and system log entries are based on the correct localized time.

(GMT-08:00)Pacific Time (US & Canada), Tijuana

**Configure Time Server (NTP):**  
You can automatically maintain the system time on your SMC Barricade by synchronizing with a public time server over the Internet.

Enable Automatic Time Server Maintenance

When you enable this option you will need to configure two different time servers, use the options below to set the primary and secondary NTP servers in your area.

Primary Server: 132.163.4.102 - North America

Secondary Server: 192.5.41.41 - North America

NEXT

## Configuring the Wireless Barricade

Sets the time zone for the Wireless Barricade. This information is used for log entries and client access control.

### Password Settings



Use this menu to restrict access based on a password. By default, there is no password. For security reasons you should assign one before exposing the Wireless Barricade to the Internet.

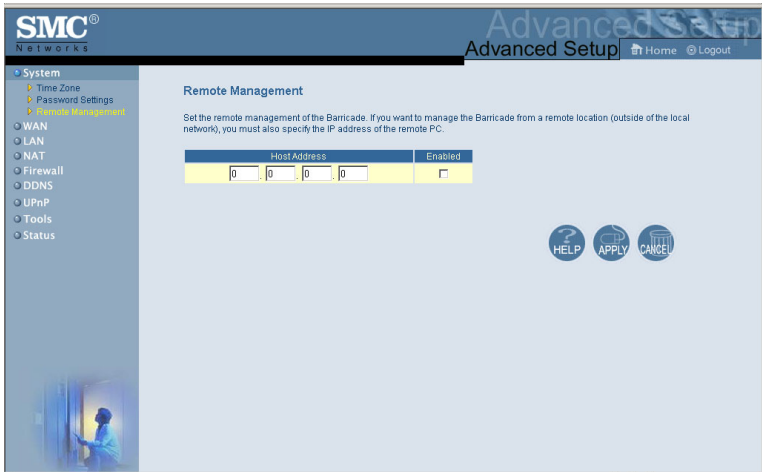
Passwords can contain from 3–12 alphanumeric characters and are not case sensitive.

**Note:** If your password is lost, or you cannot gain access to the user interface, press the Reset button on the front panel (holding it down for at least five seconds) to restore the factory defaults. (The default is no password.)

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 login to the Web management system again. (Default: 10 minutes)

### Remote Management



Remote Management allows a remote PC to configure, manage, and monitor the Wireless Barricade using a standard Web browser. Check Enable and enter the IP address of the remote host. Click APPLY.

**Note:** If you specify 0.0.0.0 as this IP address, any host can manage the Wireless Barricade.

### 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.

## Configuring the Wireless Barricade

### Dynamic IP

The screenshot shows the SMC Networks Advanced Setup interface. The left sidebar contains a navigation menu with the following items: System, WAN (selected), Dynamic IP, PPPoE, PPTP, Static IP, BigPond, DNS, Dial-up, LAN, Wireless, NAT, Firewall, DDNS, UPnP, Tools, and Status. The main content area is titled "Dynamic IP" and contains 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 on the Barricade." and "If required by your Service Provider, you can use the 'Clone MAC Address' button to copy the MAC address of the Network Interface Card installed in your PC to replace the WAN MAC address." Below this text are two input fields: "Host Name" (empty) and "MAC Address" (00 . 04 . E2 . 7B . 74 . B9). A "Clone MAC Address" button is located below the MAC Address field. At the bottom right of the page are three buttons: HELP, APPLY, and CANCEL. The status bar at the bottom shows "Done" and "Internet".

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 Barricade. 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 Barricade and click the Clone MAC Address button. This will replace the current Wireless Barricade 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 Barricade.

## Point-to-Point Over Ethernet (PPPoE)

The screenshot shows the SMC Networks Advanced Setup interface. The left sidebar contains a navigation menu with categories like System, WAN, 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 some service 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 automatically re-establish the connection as soon as you attempt to access the Internet again.

If your Internet Service Provider requires the use of PPPoE, enter the information below.

The configuration form is titled 'Use PPPoE Authentication' and includes the following fields and options:

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

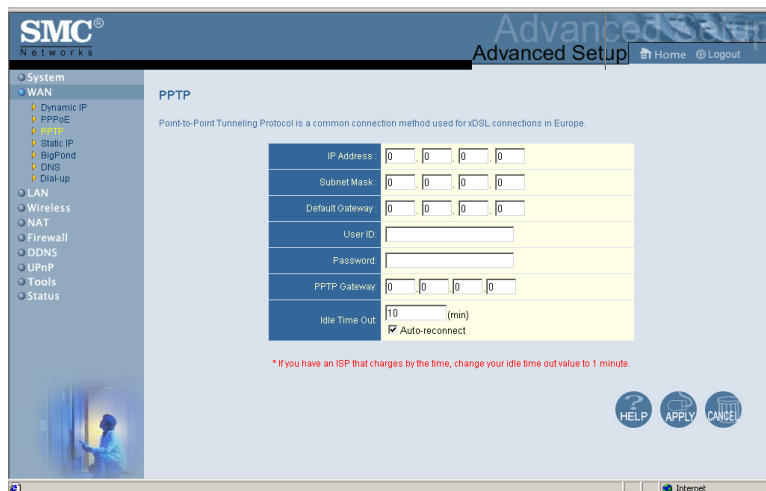
At the bottom right of the form are three buttons: HELP, APPLY, and CANCEL. The status bar at the bottom of the window shows 'Internet'.

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)

## Point-to-Point Tunneling Protocol (PPTP)

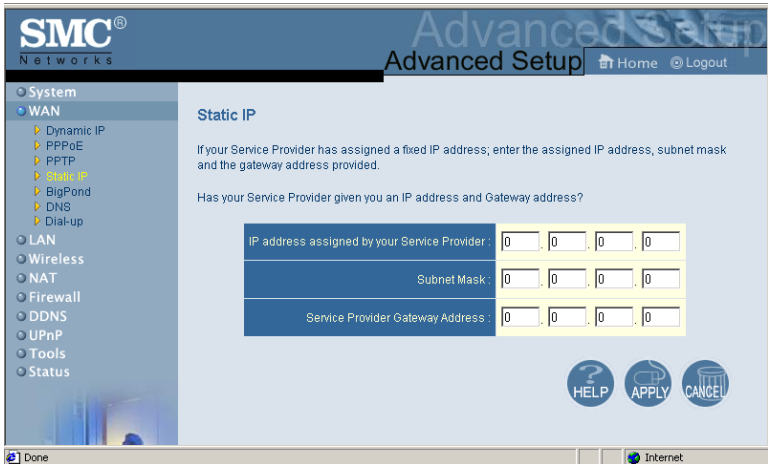


Point-to-Point Tunneling Protocol (PPTP) can be used to join different physical networks using the Internet as an intermediary. Using the above screen allows client PCs to establish a normal PPTP session and provides hassle-free configuration of the PPTP client on each client PC.

Enter the assigned IP address, subnet mask and default gateway IP address (usually supplied by your ISP), and then the PPTP User ID, Password and PPPTP Gateway IP address.

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: 10 minutes)

## Static IP Address

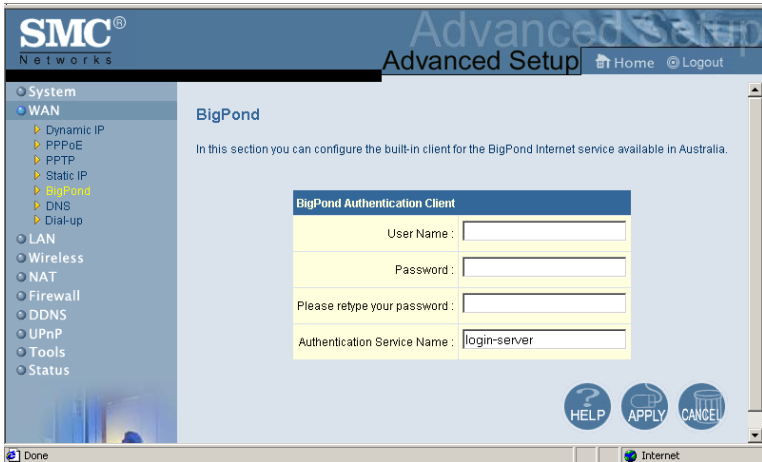


If your Internet Service Provider has assigned a fixed IP address, enter the assigned address and subnet mask for the Wireless Barricade, then enter the gateway address of your ISP.

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

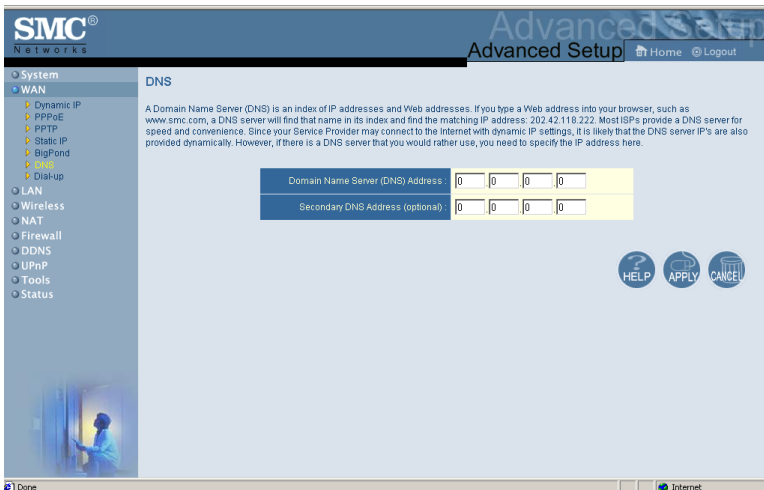
# Configuring the Wireless Barricade

## BigPond



Enter your User Name and Password to configure the built-in client for the BigPond Internet service available in Australia.

## DNS





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

## Dial-up

**SMC NETWORKS** Advanced Setup Home Logout

**System**  
WAN  
LAN  
Wireless  
NAT  
Firewall  
DDNS  
UPnP  
Tools  
Status

**Dial-up**

Enter the 2 sets of dial-up settings assigned by your Service Provider. The Modem Initialization String is normally optional, but may be required by some service providers and/or some modems. 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 automatically re-establish the connection as soon as you attempt to access the Internet again.

If you have a static IP assigned by your Service Provider, complete the Advanced Settings section.

**Dial-up Settings**

Check if Dial-up is your only connection:

Auto Backup/Failover:  Enable  Disabled

MTU Settings: 1454 (1440<=MTU Value<=1492)

Maximum Idle time: 1 Minutes

Auto-reconnect:  Enable

**Primary Phone Number**

Phone Number:  (enter the number exactly as it should be dialed)

**Secondary Phone Number**

Phone Number:  (enter the number exactly as it should be dialed)

User Name:

Password:

Confirm Password:

Modem Initialization String:

**Advance Settings**

Has your Internet Service Provider given you an IP address?  Yes  No

HELP APPLY CANCEL

Done Internet

If you are accessing the Internet via an ISDN TA or PSTN modem attached to the serial port on the Wireless Barricade,

## Configuring the Wireless Barricade

then you must specify your account information on this screen as described below.

**Note:** If not checked, then this connection will only be used for backup access if the primary WAN link fails

- Auto Backup/Failover – If this is enabled, then if the telephone connection goes down, the router will automatically redial.
- MTU – Leave the Maximum Transmission Unit (MTU) at the default value (1454) unless you have a particular reason to change it.
- Maximum Idle Time – Enter a maximum idle time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity (Default: 10). If the connection is inactive for longer than the Maximum Idle Time, it will be dropped. Enable the Auto-reconnect option to automatically re-establish the connection as soon as you attempt to access the Internet again.
- Phone Number – Enter the phone number your service provider has given to you for Internet access.
- User Name – Enter your ISP account user name.
- Password – Enter your ISP account password.
- Modem Initialization String – This is normally optional, but may be required by some service providers.
- Has your Internet Service Provider given you an IP address? – If you are assigned a dynamic IP address every time you dial up, select No for this item. However, if your ISP has assigned a fixed IP address for you to use, select Yes for this item and enter the IP address and subnet mask.

**Note:** If your ISP has given you a secondary phone number, or if you have a secondary Internet service account, then fill in the relevant fields under Secondary Phone Number.

## LAN

**SMC NETWORKS** Advanced Setup Home Logout

**LAN Settings**

You can enable DHCP to dynamically allocate IP addresses to your client PCs, or configure filtering functions based on specific clients or protocols. The Barricade 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: \_\_\_\_\_

HELP APPLY CANCEL


- **LAN IP** – Use the LAN menu to configure the LAN IP address for the Wireless Barricade 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 start address may be specified by the user, e.g. 192.168.2.100 (default value). Once this start IP address has been assigned, IP addresses running from 192.168.2.100 to 192.168.2.199 will be part of the dynamic IP address pool. IP addresses from 192.168.2.2 to 192.168.2.99, and 192.168.2.200 to 192.168.2.254 will be available as static IP addresses.

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

### Wireless Settings (Wireless)

To configure the Wireless Barricade as a wireless access point for wireless clients (either stationary or roaming), all you need to do is define the service set identifier (ESSID), the rates of transmission of data and of commands, the radio channel, and the encryption options. Note that the radio channel and the service set identifier must be set to the same value for the Wireless Barricade and for all wireless clients.

#### Channel and SSID



The screenshot shows the SMC Networks Advanced Setup web interface. The left sidebar contains a navigation menu with the following items: System, WAN, LAN, Wireless (selected), Channel and SSID (selected), Encryption, NAT, Firewall, DDNS, UPnP, Tools, and Status. The main content area is titled "Channel and SSID" and includes a descriptive paragraph: "This page allows you to define SSID, Transmission Rate, Basic Rate and Channel ID for wireless connection. In the wireless environment, the Barricade can also act as an wireless access point. These parameters are used for the mobile stations to connect to this access point." Below the text are four configuration fields: ESSID (text input with "SMC"), Transmission Rate (drop-down menu with "Fully Automatic"), Basic Rate (drop-down menu with "1, 2Mbps"), and Channel (drop-down menu with "6"). At the bottom right of the configuration area are three buttons: HELP, APPLY, and CANCEL. The browser's address bar shows "http://www.smc.com" and the status bar shows "Internet".

**ESSID** – The Extended Service Set Identifier for the wireless network. Also known as the wireless service domain.

**Transmission Rate** – The rate of transmission of data, the selections from the drop-down menu are: Fully Automatic, 11 Mbps, Automatic 1 or 2 Mbps, 2 Mbps, or 1 Mbps.

If set to Fully Automatic, the data rate will be automatically selected. If set to Automatic 1 to 2 Mbps the data rate will automatically be selected between these values. If manually set to a specific value then the data rate is fixed at that value.

**Basic Rate** – The rate of transmission of commands.

**Channel** – The radio channel.

### Encryption

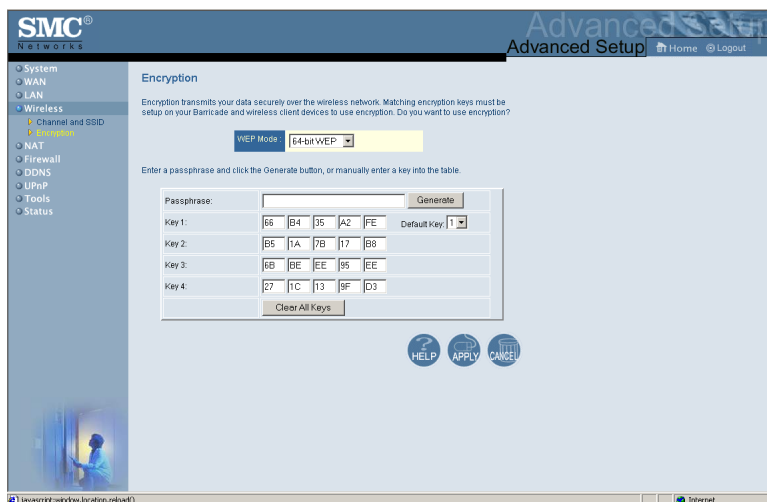
If you are transmitting sensitive data across wireless channels, you should enable encryption.



Encryption requires you to use the same set of encryption/decryption keys for the Wireless Barricade and your wireless clients. You can choose between standard 64-bit or the more robust 128-bit encryption keys. However, please be aware that the extra processing time required for encryption may affect the throughput for wireless communications.

## Configuring the Wireless Barricade

You can automatically generate encryption keys or you can manually enter the keys. For automatic 64-bit security, you enter a passphrase that is used to create four keys and click Generate (as shown below). A passphrase may consist of up to 32 alphanumeric digits. The automatic 128-bit security generates a single key by entering a passphrase. To manually configure the keys, enter five hexadecimal pairs for each 64-bit key, or enter 13 pairs for the single 128-bit key. (A hexadecimal digit is a number or letter in the range 0-9 or A-F.)



The screenshot shows the SMC Networks Advanced Setup interface. The left sidebar contains a navigation menu with options: System, WAN, LAN, Wireless (selected), Channel and SSID, NAT, Firewall, DDNS, UPnP, Tools, and Status. The main content area is titled "Encryption" and includes the following elements:

- A "WEP Mode" dropdown menu set to "64-bit WEP".
- Text: "Encryption transmits your data securely over the wireless network. Matching encryption keys must be setup on your Barricade and wireless client devices to use encryption. Do you want to use encryption?"
- Text: "Enter a passphrase and click the Generate button, or manually enter a key into the table."
- A "Passphrase:" input field with a "Generate" button.
- A table for manually entering keys:

|        |    |    |    |    |    |                |
|--------|----|----|----|----|----|----------------|
| Key 1: | 86 | B4 | 35 | A2 | FE | Default Key: 1 |
| Key 2: | B5 | 1A | 7B | 17 | B0 |                |
| Key 3: | 6B | BE | EE | 95 | EE |                |
| Key 4: | 27 | 1C | 13 | 9F | D3 |                |

Below the table is a "Clear All Keys" button. At the bottom right of the main content area are three circular icons: HELP, APPLY, and CANCEL. The status bar at the bottom shows "Internet" with a globe icon.

## Network Address Translation (NAT)

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

## Address Mapping

**SMC Networks** Advanced Setup Home Logout

System  
WAN  
LAN  
NAT  
Virtual Servers  
Special Applications  
Firewall  
DDNS  
UPnP  
Tools  
Status

### Address Mapping

Network Address Translation (NAT) allows IP addresses used in a private local network to be mapped to one or more addresses used in the public, global 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. We allow one or more than one public IP address to be mapped to a pool of local addresses.

| Address Mapping |   |  |
|-----------------|---|--|
| 1. Global IP:   | <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> | is transformed as multiple virtual IPs |
|                 | from 192.168.2. <input type="text" value="0"/> to 192.168.2. <input type="text" value="0"/>                                 |  |
| 2. Global IP:   | <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> | is transformed as multiple virtual IPs |
|                 | from 192.168.2. <input type="text" value="0"/> to 192.168.2. <input type="text" value="0"/>                                 |  |
| 3. Global IP:   | <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> | is transformed as multiple virtual IPs |
|                 | from 192.168.2. <input type="text" value="0"/> to 192.168.2. <input type="text" value="0"/>                                 |  |
| 4. Global IP:   | <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> | is transformed as multiple virtual IPs |
|                 | from 192.168.2. <input type="text" value="0"/> to 192.168.2. <input type="text" value="0"/>                                 |  |
| 5. Global IP:   | <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> | is transformed as multiple virtual IPs |
|                 | from 192.168.2. <input type="text" value="0"/> to 192.168.2. <input type="text" value="0"/>                                 |  |
| 6. Global IP:   | <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> | is transformed as multiple virtual IPs |
|                 | from 192.168.2. <input type="text" value="0"/> to 192.168.2. <input type="text" value="0"/>                                 |  |
| 7. Global IP:   | <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> <input type="text" value="0"/> | is transformed as multiple virtual IPs |
|                 | from 192.168.2. <input type="text" value="0"/> to 192.168.2. <input type="text" value="0"/>                                 |  |

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.

# Configuring the Wireless Barricade

## Virtual Server

The screenshot shows the SMC Networks Advanced Setup interface. The left sidebar contains a navigation menu with options: System, WAN, LAN, Wireless, NAT (selected), Address Mapping, Special Applications, Firewall, DDNS, UPnP, Tools, and Status. The main content area is titled 'Virtual Server' and contains the following text: 'You can configure the Barricade as a virtual server so that remote users accessing services such as the 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 Barricade redirects the external service request to the appropriate server (located at another internal IP address). This tool can support both port ranges, multiple ports, and combinations of the two.' Below this text, it says 'For example:' followed by a bulleted list: '• Port Range: ex. 100-150', '• Multiple Ports: ex. 25-110,80', and '• Combination: ex. 25-100,80'. At the bottom, there is a table with 12 rows and 8 columns: No., LAN IP Address, Protocol Type, LAN Port, Public Port, Enable, Add, and Clean. The first row is pre-filled with '1', '192.168.2.2', 'TCP', '100-150', '100-150', and the 'Enable' checkbox is checked. The remaining rows are empty for configuration.

| No. | LAN IP Address | Protocol Type | LAN Port | Public Port | Enable                              | Add | Clean |
|-----|----------------|---------------|----------|-------------|-------------------------------------|-----|-------|
| 1   | 192.168.2.2    | TCP           | 100-150  | 100-150     | <input checked="" type="checkbox"/> | Add | Clean |
| 2   | 192.168.2.     | TCP           |          |             | <input type="checkbox"/>            | Add | Clean |
| 3   | 192.168.2.     | TCP           |          |             | <input type="checkbox"/>            | Add | Clean |
| 4   | 192.168.2.     | TCP           |          |             | <input type="checkbox"/>            | Add | Clean |
| 5   | 192.168.2.     | TCP           |          |             | <input type="checkbox"/>            | Add | Clean |
| 6   | 192.168.2.     | TCP           |          |             | <input type="checkbox"/>            | Add | Clean |
| 7   | 192.168.2.     | TCP           |          |             | <input type="checkbox"/>            | Add | Clean |
| 8   | 192.168.2.     | TCP           |          |             | <input type="checkbox"/>            | Add | Clean |
| 9   | 192.168.2.     | TCP           |          |             | <input type="checkbox"/>            | Add | Clean |
| 10  | 192.168.2.     | TCP           |          |             | <input type="checkbox"/>            | Add | Clean |
| 11  | 192.168.2.     | TCP           |          |             | <input type="checkbox"/>            | Add | Clean |
| 12  | 192.168.2.     | TCP           |          |             | <input type="checkbox"/>            | Add | Clean |

If you configure the Wireless Barricade 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 (LAN IP Addresses). In other words, depending on the requested service (TCP/UDP port number), the Wireless Barricade redirects the external service request to the appropriate server (located at another internal IP address).

For example, if you set Protocol Type /Public Port to TCP/80 (HTTP or Web) and the LAN IP Address/LAN 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.



The more common TCP service ports include:

HTTP: 80, FTP: 21, Telnet: 23, and POP3: 110.

**Note:** This tool can support both port ranges, multiple ports, and combinations of the two.

For example:

Port Ranges:100-150

Multiple Ports: 25,110,80

Combination: 25-50,80

## 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.

**SMC NETWORKS** Advanced Setup | Home | Logout

**Special Applications**

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications cannot work when Network Address Translation (NAT) is enabled. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger Port" field, select the protocol type as TCP or UDP, then enter the public ports associated with the trigger port to open them for inbound traffic.

Note: The range of the Trigger Ports is from 0 to 65535.

|    | Trigger Port         | Trigger Type   | Public Port          | Public Type  | Enabled                  |
|----|----------------------|--|----------------------|--|--------------------------|
| 1. | <input type="text"/> | <input type="radio"/> TCP<br><input type="radio"/> UDP | <input type="text"/> | <input type="radio"/> TCP<br><input type="radio"/> UDP | <input type="checkbox"/> |
| 2. | <input type="text"/> | <input type="radio"/> TCP<br><input type="radio"/> UDP | <input type="text"/> | <input type="radio"/> TCP<br><input type="radio"/> UDP | <input type="checkbox"/> |
| 3. | <input type="text"/> | <input type="radio"/> TCP<br><input type="radio"/> UDP | <input type="text"/> | <input type="radio"/> TCP<br><input type="radio"/> UDP | <input type="checkbox"/> |
| 4. | <input type="text"/> | <input type="radio"/> TCP<br><input type="radio"/> UDP | <input type="text"/> | <input type="radio"/> TCP<br><input type="radio"/> UDP | <input type="checkbox"/> |
| 5. | <input type="text"/> | <input type="radio"/> TCP<br><input type="radio"/> UDP | <input type="text"/> | <input type="radio"/> TCP<br><input type="radio"/> UDP | <input type="checkbox"/> |
| 6. | <input type="text"/> | <input type="radio"/> TCP<br><input type="radio"/> UDP | <input type="text"/> | <input type="radio"/> TCP<br><input type="radio"/> UDP | <input type="checkbox"/> |
| 7. | <input type="text"/> | <input type="radio"/> TCP<br><input type="radio"/> UDP | <input type="text"/> | <input type="radio"/> TCP<br><input type="radio"/> UDP | <input type="checkbox"/> |
| 8. | <input type="text"/> | <input type="radio"/> TCP<br><input type="radio"/> UDP | <input type="text"/> | <input type="radio"/> TCP<br><input type="radio"/> UDP | <input type="checkbox"/> |
| -  | <input type="text"/> | <input type="radio"/> TCP                              | <input type="text"/> | <input type="radio"/> TCP                              | <input type="checkbox"/> |

## *Configuring the Wireless Barricade*

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. The ports may be in the format 7, 11, 57, or in a range, e.g., 72-96, or a combination of both, e.g., 7, 11, 57, 72-96.

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.

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

## **Firewall**

The Wireless Barricade 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. To access the firewall menu, select Enable and click on Apply.

## Access Control

**SMC<sup>®</sup> Networks** Advanced Setup [Home](#) [Logout](#)

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

### Access Control

Access Control allows users to define the traffic type permitted or not-permitted to WAN port service. This page includes IP address filtering and MAC address filtering.

- Enable Filtering Function:  Yes  No
- Normal Filtering Table (up to 10 computers)

| Client PC Description              | Client PC IP Address | Client Service | Schedule Rule | Configure |
|------------------------------------|----------------------|----------------|---------------|-----------|
| <b>No Valid Filtering Rule !!!</b> |                      |                |               |           |

[Add PC](#)

[HELP](#) [APPLY](#) [CANCEL](#)

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

## Configuring the Wireless Barricade

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

The screenshot shows the 'Access Control Add PC' configuration page in the SMC Networks Advanced Setup interface. The page includes a sidebar with navigation options like System, WAN, LAN, NAT, Firewall, DDNS, UPnP, Tools, and Status. The main content area contains the following configuration options:

- Client PC Descriptions: [Text Input Field]
- Client PC IP Address: 192.168.2. [IP Input Field] - [IP Input Field]
- Client PC Services: A table with columns for Service Name, Detail Description, and Blocking.

| Service Name          | Detail Description                        | Blocking                 |
|-----------------------|---|--------------------------|
| WWW                   | HTTP, TCP Port 80, 3128, 8080, 8001, 8080 | <input type="checkbox"/> |
| WWW with URL Blocking | HTTP (Ref: URL Blocking Site Page)        | <input type="checkbox"/> |
| E-mail Sending        | SMTP, TCP Port 25                         | <input type="checkbox"/> |
| News Forums           | NNTP, TCP Port 119                        | <input type="checkbox"/> |
| E-mail Receiving      | POP3, TCP Port 110                        | <input type="checkbox"/> |
| Secure HTTP           | HTTPS, TCP Port 443                       | <input type="checkbox"/> |
| File Transfer         | FTP, TCP Port 21                          | <input type="checkbox"/> |
| MSN Messenger         | TCP Port 1883                             | <input type="checkbox"/> |
| Telnet Service        | TCP Port 23                               | <input type="checkbox"/> |
| AIM                   | AOL Instant Messenger, TCP Port 5190      | <input type="checkbox"/> |
| NetMeeting            | H.323, TCP Port 1720, 1503                | <input type="checkbox"/> |
| DNS                   | UDP Port 53                               | <input type="checkbox"/> |
| SNMP                  | UDP Port 161, 162                         | <input type="checkbox"/> |
| VPN-PPTP              | TCP Port 1723                             | <input type="checkbox"/> |
| VPN-L2TP              | UDP Port 1701                             | <input type="checkbox"/> |

## MAC Filtering Table

The screenshot shows the 'MAC Filtering Table' configuration page in the SMC Networks Advanced Setup interface. The page includes a sidebar with navigation options like System, WAN, LAN, NAT, Firewall, DDNS, UPnP, Tools, and Status. The main content area contains the following configuration options:

- MAC Address Control:  Yes  No
- MAC Filtering Table (up to 32 computers): A table with columns for ID and MAC Address.

| ID | MAC Address   |
|----|---------------|
| 1  | [ : : : : : ] |
| 2  | [ : : : : : ] |
| 3  | [ : : : : : ] |
| 4  | [ : : : : : ] |
| 5  | [ : : : : : ] |