Barricade™ Broadband Router

Broadband Router with 4-Port Switch

- Multi-User Internet Access via Single User Account
- EZ 3-Click Installation Wizard
- Configurable Parental Control
- Stateful Packet Inspection and DoS Support
- Supports a Wide Variety of Internet Applications
- Virtual Private Network Using PPTP, L2TP, IPSec Pass-Through

SMC® Networks

User Guide

SMC7004VBR

Barricade™ Broadband Router User Guide

From SMC's Barricade line of Broadband Routers

SMC® Networks

September 2002
Part Number: 150200009800A
Revision Number: EU 01

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

EC Conformance Declaration - Class B

SMC contact for these products in Europe is:

SMC Networks Europe,
Edificio Conata II,
Calle Fructuós Gelabert 6-8, 2º, 4ª,
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 Emission:	*	Limit class B according to EN 55022:1998
	*	Limit class A 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: ±4 kV, Air Discharge: ±8 kV)
	*	Radio-frequency electromagnetic field according to EN 61000-4-3: 1996 (80 - 1000MHz with 1kHz AM 80% Modulation: 3V/m)

* Electrical fast transient/burst according to EN 61000-4-4:1995(AC/DC power supply: ±1kV, Data/Signal lines: ±0.5kV)
* Surge immunity test according to EN 61000-4-5:1995(AC/DC Line to Line: ±1kV, AC/DC Line to Earth: ±2kV)
* Immunity to conducted disturbances, Induced by radio-frequency fields: EN 61000-4-6:1996(0.15 - 80MHz with 1kHz AM 80% Modulation: 3V/m)
* Power frequency magnetic field immunity test according to EN 61000-4-8:1993(1A/m at frequency 50Hz)
* Voltage dips, short interruptions and voltage variations immunity test according to EN 61000-4-11:1994(>95% Reduction @10ms, 30% Reduction @500ms, >95% Reduction @5000ms)

LVD: * EN60950(A1/1992; A2/1993; A3/1993; A4/1995; A11/1997)

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 15A, 125V
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 10A, 250V

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 Flüssi-goder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschlu ßsteckdose 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 authorisiertem 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, da? die Stromversorgung dieses Ger‰tes nach der EN 60950 gepr¸ft ist. Ausgangswerte der Stromversorgung sollten die Werte von AC 7,5-8V, 50-60Hz nicht ¸ber oder unterschreiten sowie den minimalen Strom von 1A nicht unterschreiten..

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

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CHAPTER 1
INTRODUCTION

Congratulations on your purchase of a Barricade™ 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. For those who want to surf the Internet at the lowest possible cost, the Barricade™ Broadband Router is the convenient, easy solution.

About the Barricade

The Barricade provides Internet access to multiple users by sharing a single-user account. The Barricade features a WAN interface that allows you to connect either a DSL or cable modem. The Barricade provides extensive firewall protection and Virtual Private Network (VPN) services.

The Barricade provides many cost-effective functions and management benefits. It is simple to configure and can be up and running in minutes.

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 switch ports
- 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)
- Virtual Private Network support using PPTP, L2TP, or IPSec pass-through
- User-definable application sensing tunnel supports applications requiring multiple connections
- Parental controls allows the user to limit certain web sites
- Email alerts when the users network is being compromise
- Easy setup through a web browser on any operating system that supports TCP/IP
- Compatible with all popular Internet applications

Applications

Many advanced applications are provided by the Barricade, such as:

- **LAN Access**

  The Barricade provides connectivity to 10/100 Mbps devices, making it easy to create a network in small offices or homes.

- **Internet Access**

  This device supports Internet access through a DSL or cable connection. Since many DSL providers use PPPoE to establish communications with end users, the Barricade includes a built-in client for this protocol, eliminating the need to install this service on your computer.

- **Shared IP Address**

  The Barricade shares a single IP address with up to 253 users. Using only one ISP account, multiple users on your network can simultaneously browse the Internet.

- **Virtual Server**

  If you have a static IP address, you can set up the Barricade to act as a virtual host for network address translation. Remote users access various services at your site using the static IP address. Then, depending on the requested service (or port number), the Barricade routes the request to the appropriate server (at an internal network IP address). This secures your network from direct attack by hackers, and provides more flexible management by allowing you to change internal network IP addresses without affecting outside access to your network.

- **User-Definable Application Sensing Tunnel**

  You may define special applications that require multiple connections such as Internet gaming, video conferencing, and Internet telephony. The Barricade will then sense the application type and open a multi-port tunnel for it.

- **DMZ Hosts Support**

  Allows a networked computer to be fully exposed to the Internet. This function is used when the special application sensing tunnel feature is insufficient to allow an application to function correctly.

- **Security**

  The Barricade supports security features that deny Internet access to specified users, or drop requests for specific services. The Barricade's firewall also blocks 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.

- **Virtual Private Network**

  The Barricade supports three of the most commonly used VPN protocols – PPTP, L2TP, and IPSec. These protocols allow remote users to establish a secure connection to their corporate network. If your service provider supports VPNs, then any of these protocols can be used to create an authenticated and encrypted tunnel for passing secure data over the Internet (i.e., a traditionally shared data network). The VPN protocols supported by the Barricade are briefly described below.

- Point-to-Point Tunneling Protocol – Provides a secure tunnel for remote client access to a PPTP security gateway. PPTP includes provisions for call origination and flow control required by ISPs.
- Layer Two Tunneling Protocol – Includes most of the features provided by PPTP, but has less overhead and is more suited for managed networks.
- IP Security – Provides IP network-layer encryption. IPSec can support large encryption networks (such as the Internet) by using digital certificates for device authentication.

CHAPTER 2
INSTALLATION

Before installing the Barricade™ Broadband Router, verify that you have the items listed under "Package Contents." Also be sure that you have the necessary cabling.

Package Contents

If any of the items are missing or damaged, contact your local SMC distributor.

- Barricade Broadband Router
- Power adapter
- One CAT-5 Ethernet cable
- Four rubber feet
- CD with User Guide and EZ 3-Click Installation Wizard
- Quick Installation Guide
- SMC Warranty Registration Card

If possible, retain the carton and original packing materials in case there is a need to return the product.

Please fill out and return the Warranty Registration Card to SMC, or register on SMC's web site at www.smc.com or www.smc-europe.com. The Barricade Broadband Router is covered by a limited lifetime warranty.

Hardware Description

The Barricade Broadband Router may be connected to the Internet or to a remote site using its RJ-45 WAN port. It may be connected directly to your PC or to a local area network using any of the four 10/100 autosensing switch ports.

These RJ-45 ports auto-negotiate the operating speed (10/100 Mbps) and the duplex mode (half/full duplex).

Access speed to the Internet depends on your service type. Full-rate Asymmetric Digital Subscriber Line (ADSL) provides 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 provide up to 36 Mbps downstream and 2 Mbps upstream. 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 Barricade, data passing between devices connected to your local area network can run up to 100 Mbps over the Fast Ethernet ports.

The Barricade includes LED indicators on the front panel that simplify installation and network troubleshooting.

Front Panel

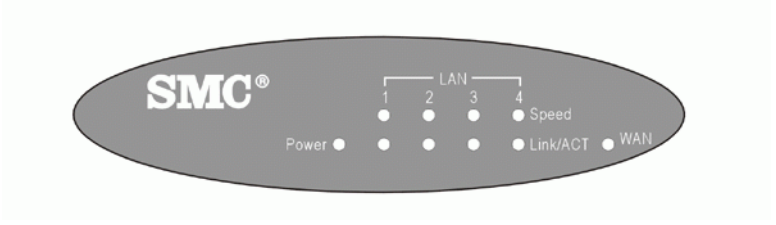


Figure 2-1. Front Panel

LED Indicators

The Barricade includes LED indicators on the front panel that simplify installation and network troubleshooting.

Check the power and port indicators as shown in the following table.

LED	Condition	Status
Power	On	The Barricade is receiving power.
	Flashing	The SMC7004VBR is initializing or upgrading firmware.
WAN	On	The WAN port has established a valid network connection.
	Flashing	The WAN port is transmitting or receiving traffic.
Link / ACT	On	The indicated LAN port has established a valid network connection.
	Flashing	The indicated LAN port is transmitting or receiving traffic.
Speed	On	The indicated LAN port is operating at 100 Mbps.
	Off	The indicated LAN port is operating at 10 Mbps.

Rear Panel

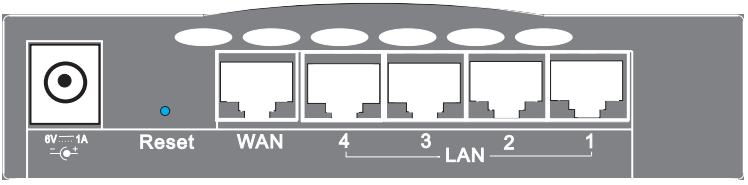


Figure 2-2. Rear Panel

Item	Description
6V 1A	Connect the included power adapter to this port. **Warning**: Using the wrong type of power adapter may cause damage.
Reset	Use this button to reset the power or restore the default factory settings. Reboot by pushing 1 second. Return all settings to the factory defaults by pushing 5 seconds.
WAN	WAN port (RJ-45). Connect a cable modem, DSL modem, or an Ethernet router to this port.
LAN	Four 10/100 Autosensing switch ports (RJ-45). Connect devices on your local area network to these ports (such as a PC, hub, or switch).

System Requirements

You must meet 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 a 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 protocols installed on each PC that will 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 Barricade.

Connect the System

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

Basic Installation Procedure

1. **Connect the LAN**: Run an Ethernet cable from one of the LAN ports on the front of the Barricade to your computer's network adapter or to a hub/switch or other network device.
2. **Connect the WAN**: Prepare an Ethernet cable for connecting the Barricade to a cable/DSL modem or Ethernet router.
3. **Power on**: Connect the power adapter to the Barricade.

Attach to Your Network Using Ethernet Cabling

The four LAN ports on the Barricade auto-negotiate the connection speed (10 Mbps Ethernet or 100 Mbps Fast Ethernet), as well as the transmission mode to half duplex or full duplex.

Use twisted-pair cable to connect any of the LAN ports on the Barricade to an Ethernet adapter on your PC. Otherwise, you may cascade any of the LAN ports on the Barricade 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 connector, be sure the tab on the connector clicks into position.

Warning: Do not plug a phone jack connector into any RJ-45 port. This may damage the Barricade. Use only twisted-pair cables with RJ-45 connectors that conform to FCC standards.

Notes: Use 100-ohm shielded or unshielded twisted-pair cable with RJ-45 connectors for all connections. Use Category 3, 4, or 5 for connections that operate at 10 Mbps, and Category 5 for connections that operate at 100 Mbps. Ensure that each twisted-pair cable does not exceed 100 meters (328 feet).

Connect to the Internet

If Internet services are provided through a DSL 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 Barricade. Use either straight-through or crossover cable depending on the port type provided by the modem (see Appendix B).

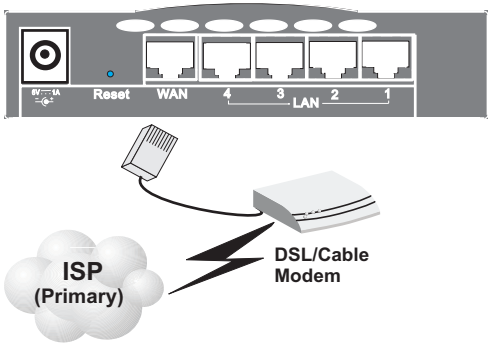


Figure 2-3. Making WAN Connections

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 Barricade, and the other end into a power outlet. Check the indicator marked “Power” on the front panel to be sure it is on. If the Power indicator is not lit, refer to Troubleshooting in Appendix A.

CHAPTER 3
CONFIGURING CLIENT PCS

TCP/IP Configuration

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

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 Chapter 5 to access the Barricade's web configuration interface. (See Chapter 4 for information on configuring the Barricade.)

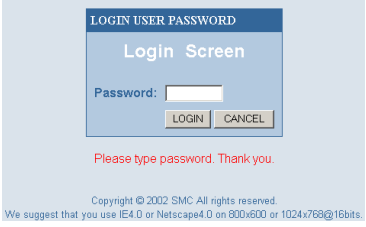
If you have not previously configured TCP/IP for your computer, refer to "Configuring Client TCP/IP" on page 5-1.

All PCs connected to the Barricade must be in the same IP subnet as the Barricade. The default IP address of the Barricade is 192.168.2.1 (where x means 2–254) and the subnet mask is 255.255.255.0. You can set the IP address for client PCs either by automatically obtaining an IP address from the Barricade's DHCP service or by manual configuration. See "Setting Up TCP/IP to Work with the Barricade" on page 5-5.

CHAPTER 4
CONFIGURING THE BARRICADE

After you have configured TCP/IP on a client computer, use a web browser to configure the Barricade™ Broadband Router. The Barricade can be configured by any Java-supported browser including Internet Explorer 4.0 or above, or Netscape Navigator 4.0 or above. Using the web management interface, you may configure the Barricade and view statistics to monitor network activity.

To access the Barricade's management interface, enter the IP address of the Barricade in your web browser http://192.168.2.1 (the Barricade automatically switches to Port 88 for management access). Then click "LOGIN" (by default, there is no password).



Navigating the Web Browser Interface

The Barricade's management interface features a Setup Wizard and an Advanced Setup section. Use the Setup Wizard if you want to quickly setup the 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, as well as other advanced functions.

Making Configuration Changes

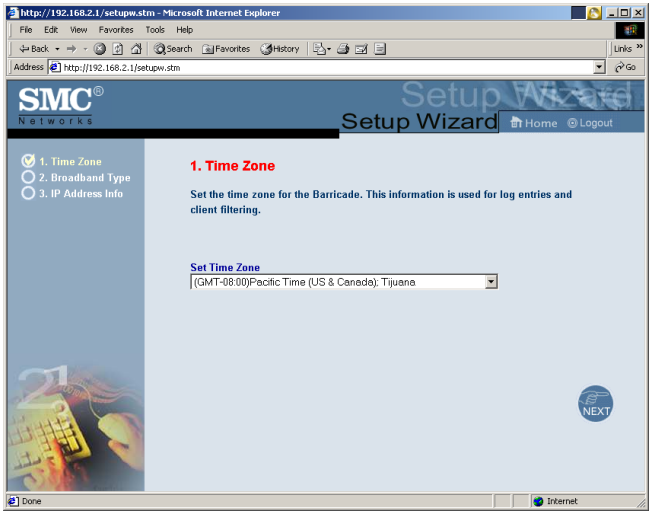
Configurable parameters have a dialog box or a drop-down list. Once a configuration change has been made on a page, be sure to click the "Apply" or "Next" button at the bottom of the page to enable the new setting.

Note: To ensure proper screen refresh after a command entry, be sure 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 3-step Setup Wizard is Time Zone setup.

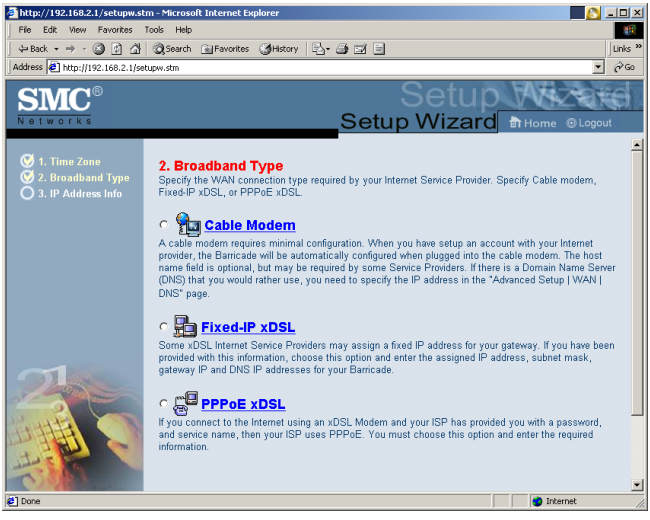


For accurate timing of client filtering and log events, you need to set the time zone. Select your time zone from the dropdown list.

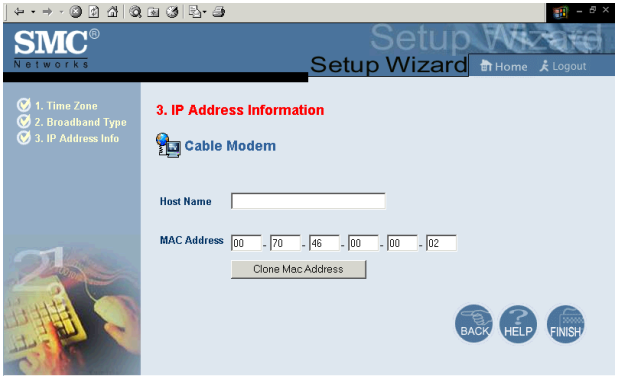
Click “Next.”

Broadband Type

Select the type of broadband connection you have.



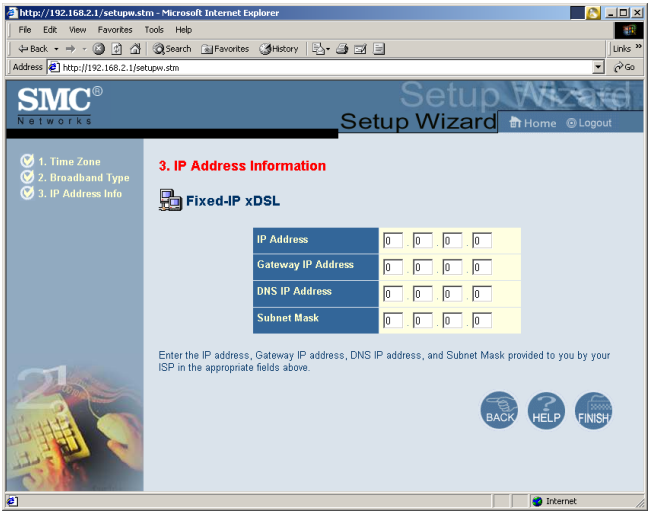
Cable Modem



Your ISP may have given you a host name. If so, enter it into this 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 4-35 for details.

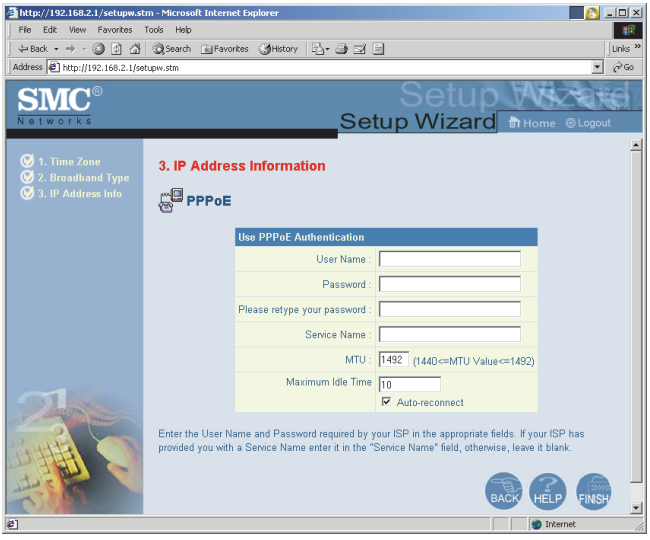
Fixed-IP xDSL



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

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 4-35 for details.

PPPoE



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) onthe default value (1492) 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. Enable the Auto-reconnect option to automatically re-establish the connection as soon as you attempt to access the Internet again.

Attention:
Please be aware that the setting "Maximum Idle Time" to "0" and/or " Auto-Reconnect" enabled can cause an increase of your telephone bill.

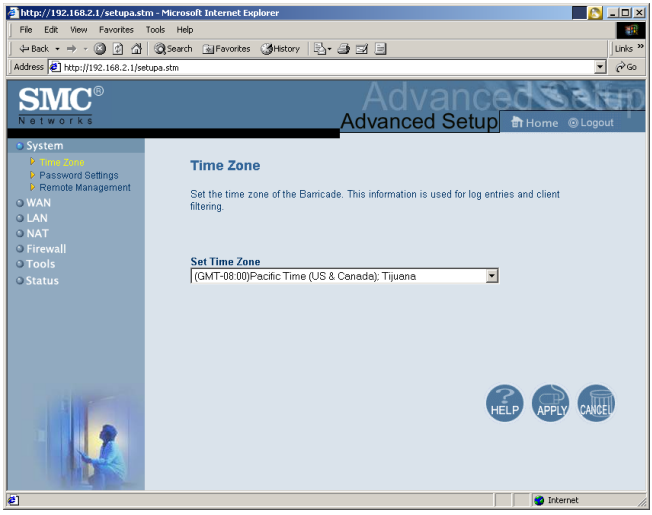
Advanced Setup

Use the web management interface to define system parameters, manage and control the Barricade 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, and the IP address of a PC that will be allowed to manage the Barricade remotely.
WAN	Specifies the Internet connection type: (1) Dynamic IP, (2) PPPoE, (3) Static IP address, or (4) Bridge.
LAN	Sets the TCP/ IP configuration for the Barricade LAN interface and DHCP clients.
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.
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	Provides WAN connection type and status, firmware and hardware version numbers, system IP settings, as well as DHCP, NAT, Firewall info.
	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.
	For information on UPnP and DDNS please visit www.smc-europe.com or contact the SMC support team.

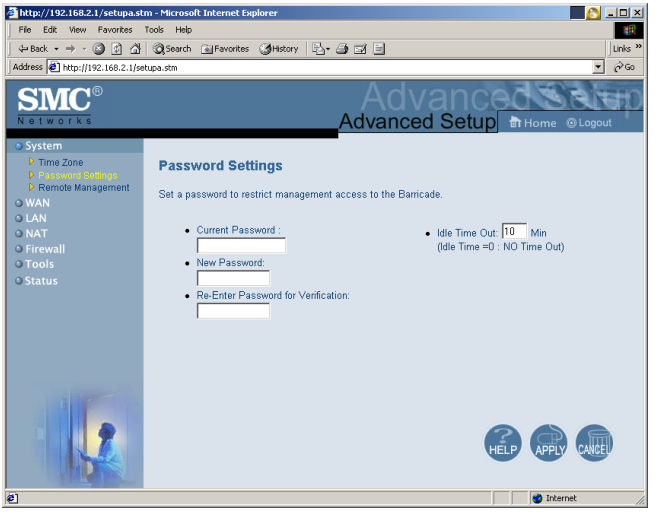
System

Time Zone



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

Password Settings

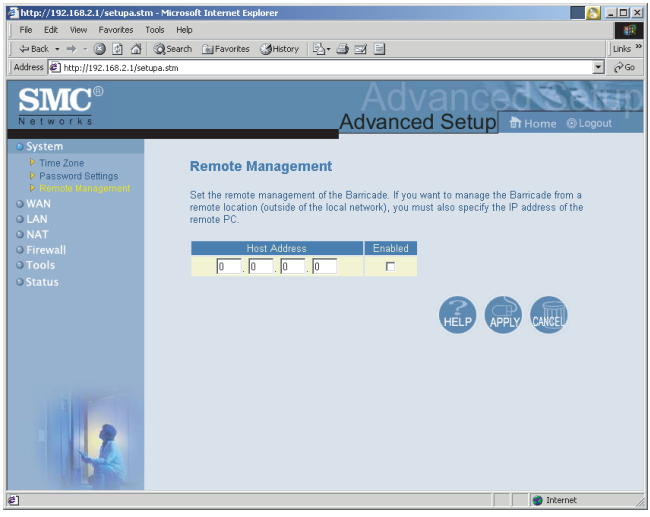


Use this menu to restrict access based on a password. By default, there is no password. For security you should assign one before exposing the Barricade to the Internet.

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

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 (default is no password).

Remote Management



Allows a remote PC to configure, manage, and monitor the Barricade using a standard web browser. Check "Enable" and enter the IP address of the remote host. Click "Apply."

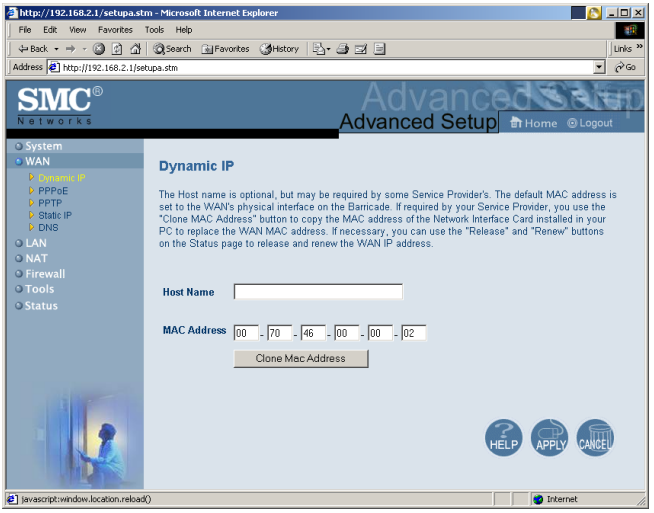
Note: If you specify an IP address of 0.0.0.0, any host can manage the Barricade.

In order to get access to your router enter the IP address of your router and " : 8080 " (without " ") in the address bar. Example: http://WAN_IP:8080

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.

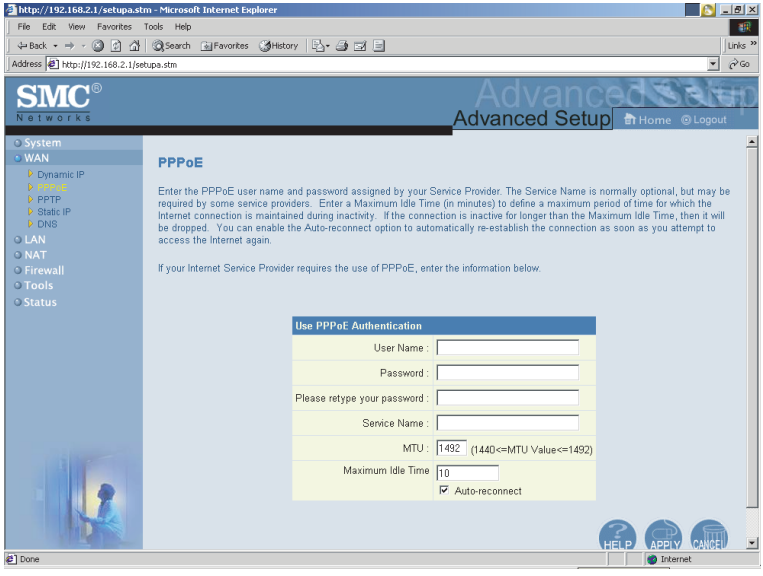
Dynamic IP



The 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 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, connect only the PC with the registered MAC address to the Barricade and click the “Clone MAC Address” button. This will replace the current 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 they register a new MAC address for your account. Register using the default Barricade MAC address.

PPPoE



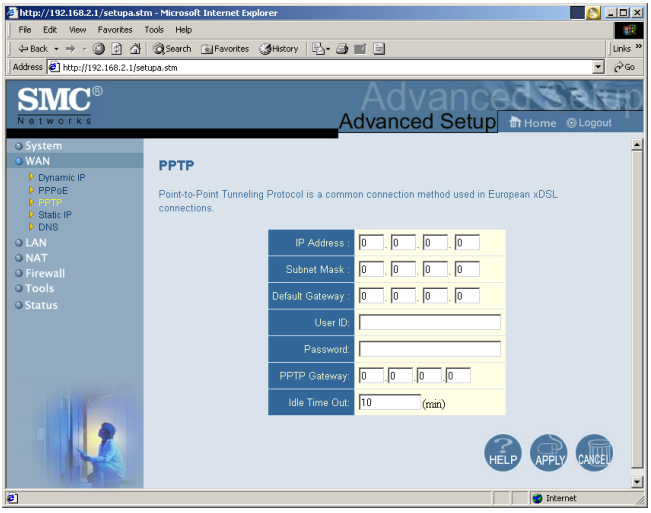
Enter the PPPoE user name and password assigned by your Service Provider. The Service Name is normally optional, but may be required by some service providers.

The MTU (Maximum Transmission Unit) governs the maximum size of the data packets. Leave this on the default value (1492) 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. Enable the Auto-reconnect option to automatically re-establish the connection when an application attempts to access the Internet again.

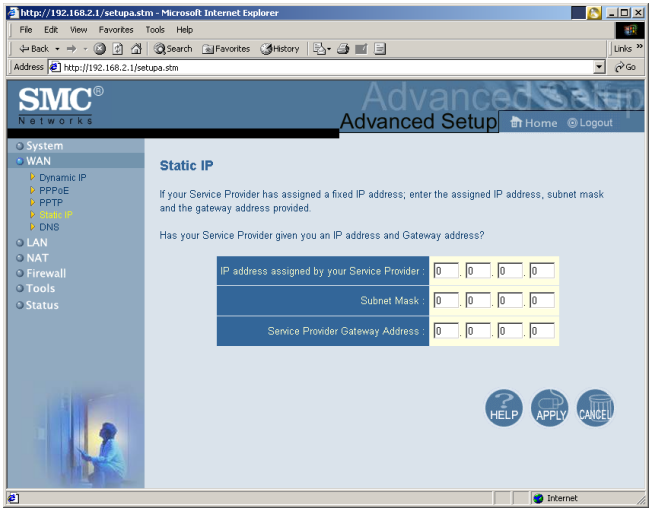
Note:
If you are not using a flaterate, please be aware that the setting "Maximum Idle Time" at " 0" and/or "Auto-Reconnect" enabled can cause an increase of your telephone bill.

PPTP



Point-to-Point Tunneling Protocol (PPTP) allows the secure remote access over the Internet by simply dialing in a local point provided by an ISP. 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.

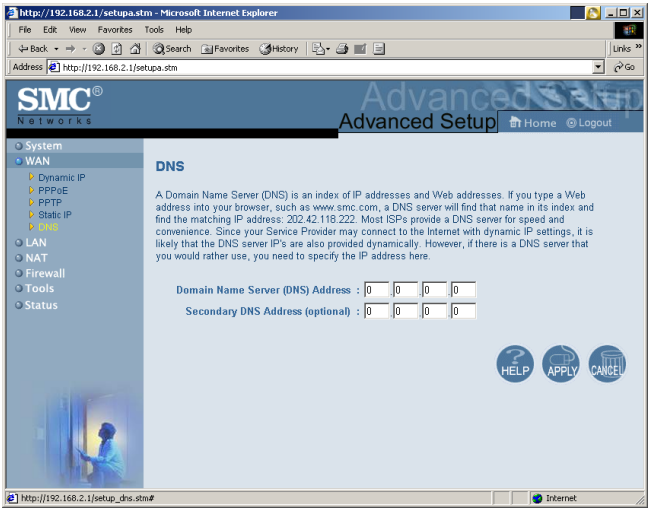
Static IP Address



If your Internet Service Provider has assigned a fixed IP address, enter the assigned address and subnet mask for the 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.

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 on this screen.

LAN

LAN IP

Use the LAN menu to configure the LAN IP address for the 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.

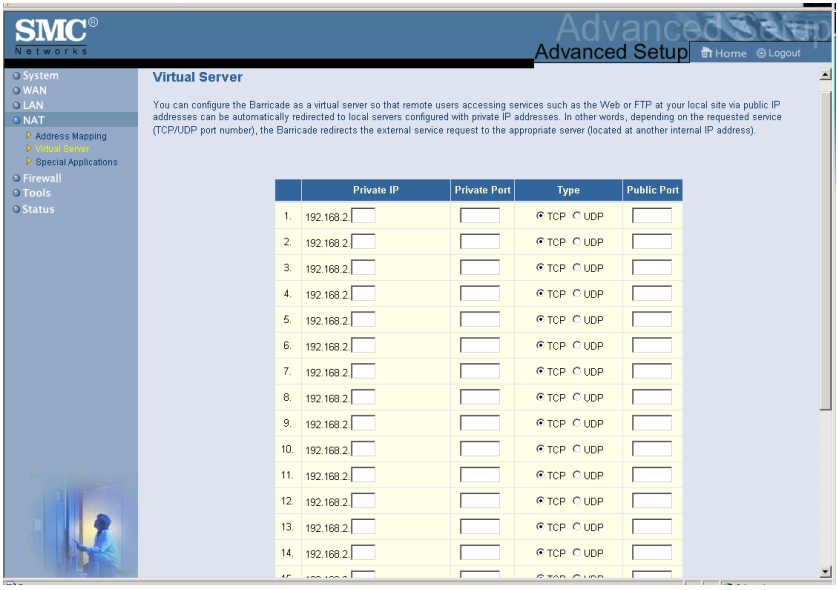
Remember not to include the address of the Barricade in the client address pool. Also remember to configure your client PCs for dynamic IP address allocation.

NAT

Address Mapping

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 into the “from” field.

Virtual Server



If you configure the 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. In other words, depending on the requested service (TCP/UDP port number), the Barricade redirects the external service request to the appropriate internal server and port.

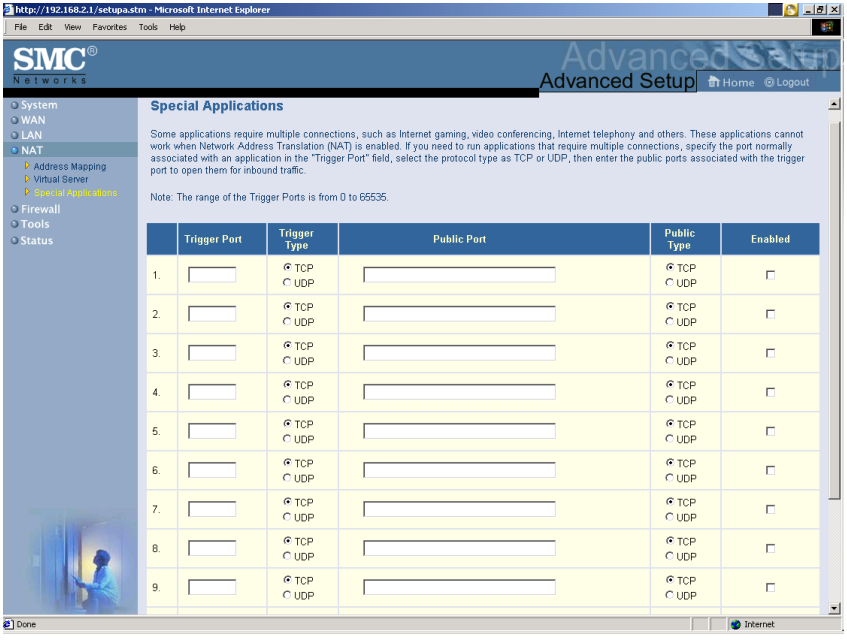
The WAN interface should have a fixed IP address to properly utilize this function. For example, if you set Type/Public Port to TCP/80 (HTTP or web) and the Private IP/Port to 192.168.2.2/8080, then all HTTP requests from outside users will be transferred to port 8080 on 192.168.2.2. Therefore, by just entering the IP Address provided by the ISP, Internet users can access the service you provide at the internal address and port to which the Barricade redirects them.

Some of the more common TCP service ports include:

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

Enabling Special Applications

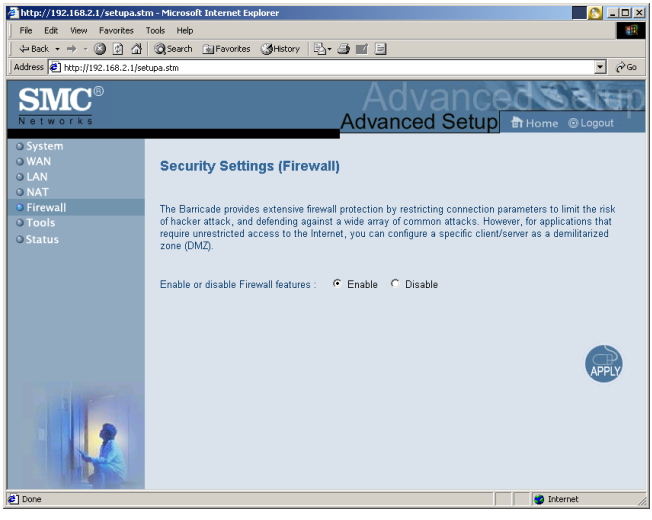
Some applications, such as Internet gaming, videoconferencing, Internet telephony and others, require multiple connections. These applications cannot work with Network Address Translation (NAT) enabled. If you need to run applications that require multiple connections, use the following screen to specify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



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.

Firewall

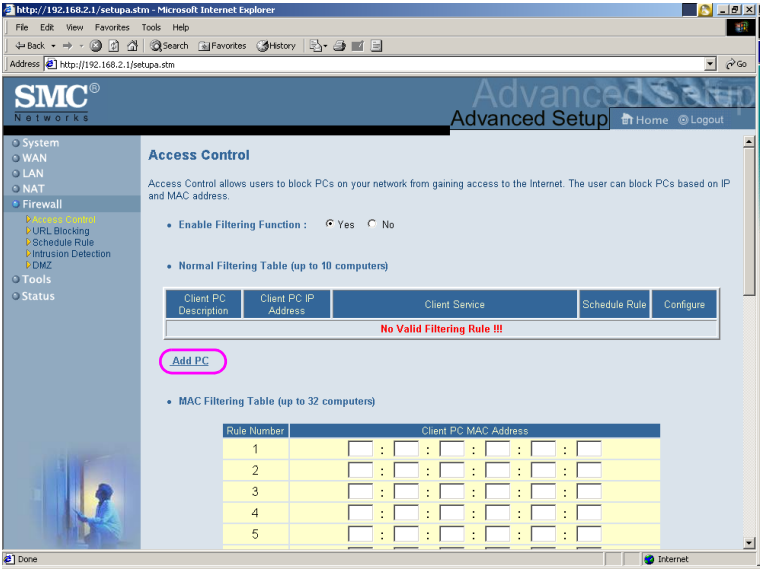
The firewall does not significantly affect system performance, so we advise enabling it to protect your network users. Select “Enable” and click the “Apply” button to open the Firewall submenus.



The Barricade Plus’ firewall can provide the 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.

Note: When you select the “Enable” radio button of the “Enable or disable Firewall module function” field, be sure press the “APPLY” button.

Access Control



Using this option allows you to specify different privileges for the client PCs.

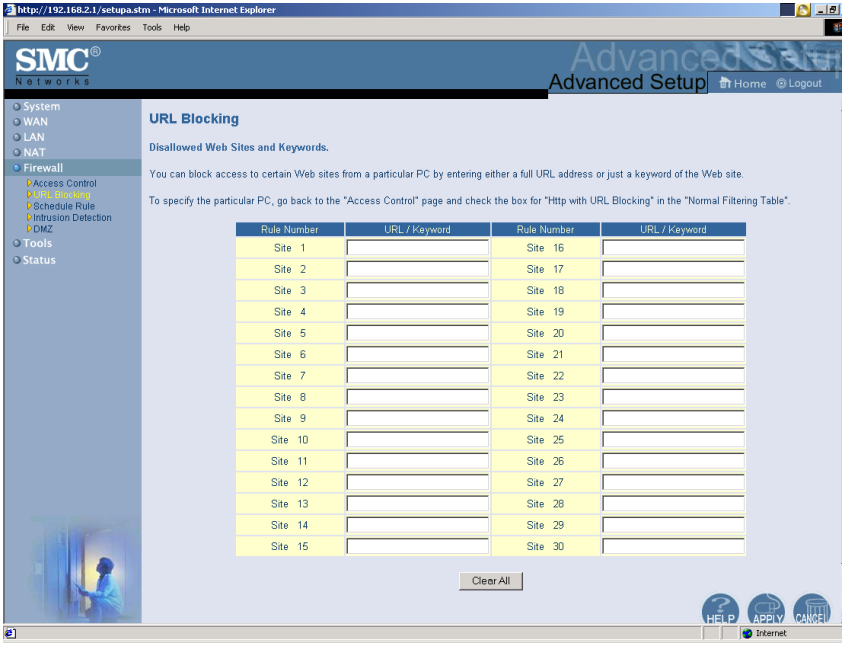
The following items are included in the “Access Control” screen:

Field	Description
Normal Filtering Table	Displays the IP address and filtering status of the connected client PC
MAC Filtering Table	Displays the MAC address of the client PC
Remote Management	Allows you to set the IP address of an administrator for a remote management

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

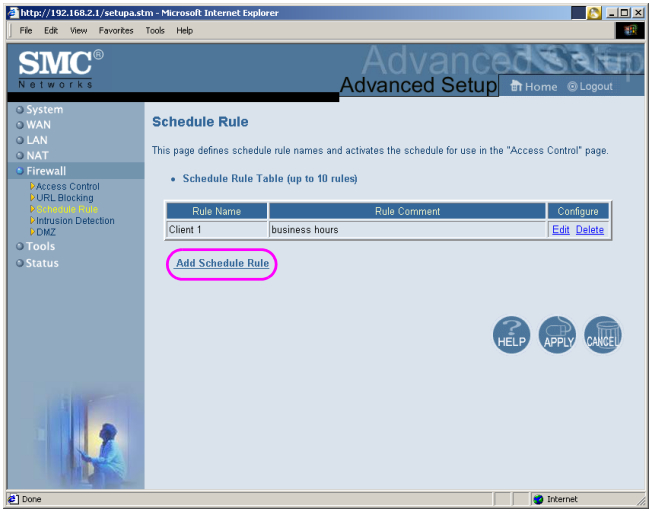
If "Add PC" is chosen the following screen is displayed:

URL Blocking Sites



Using the above screen to block access to the Web sites specified in the table.

Schedule Rule

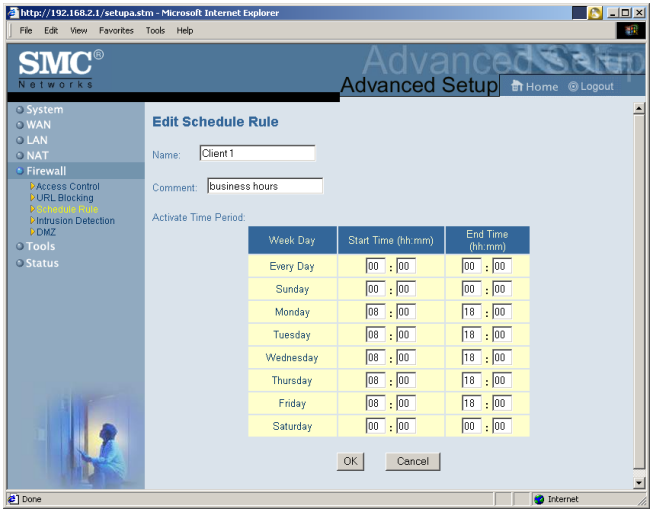


You can filter Internet access for local clients based on the “Rule Name,” and time of day.

1. Click on “Add Schedule Rule”

2. Define the appropriate settings for a schedule rule (as shown in the following screen).

3. Click “OK” and then the “APPLY” button to save your settings. (as shown on previous page)



Intrusion Detection

The Intrusion Detection feature of the Barricade limits the access of the incoming traffic from the WAN port. When the SPI feature is turned on, all the incoming packets will be blocked unless certain types of traffic types are checked by the users. When the user checkes certain types of traffic, only the particular type of traffic initiated from the Internal LAN will be allowed. For example, if the user only checks “FTP service” from the Stateful Packet Inspection page, all the incoming traffic will be blocked except the FTP connection initiated from the local LAN.

- *Stateful Packet Inspection*

This option allows you to select different application types that are using dynamic port numbers. If you need to use the Stateful Packet Inspection (SPI) for blocking packets, click on the “Yes” radio button in the “Enable SPI and Anti-DoS firewall protection” field and then check the inspection type that you need, such as Packet Fragmentation, TCP Connection, UDP Session, FTP Service, H.323 Service and TFTP Service.

- *Hacker Prevention Feature*

The Barricade firewall inspects packets at the application layer, and maintains TCP and UDP session information, including timeouts and number of active sessions, provides the ability to detect and prevent certain types of network attacks such as DoS attacks.

Network attacks that deny access to a network device are called denial-of-service (DoS) attacks. Denials of Service (DoS) attacks are aimed at devices and networks with a connection to the Internet. Their goal is not to steal information, but to disable a device or network so users no longer have access to network resource.

By using the above inspected information and timeout/threshold critieria, the Barricade provides the following DoS attack preventions: Ping of Death (Ping flood) attack, SYN flood attack, IP fragment attack (Teardrop Attack), Brute-force attack, Land Attack, IP Spoofing attack, IP with zero length, TCP null scan (Port Scan Attack), UDP port loopback, Snork Attack etc..

Note: The firewall does not significantly affect system performance, so we advise enabling the prevention features to protect your network users.

- *When hackers attempt to enter your network, we can alert you by e-mail*

  Enter your E-mail address for alerting hacker access.

  Specify your E-mail servers, user name and password.

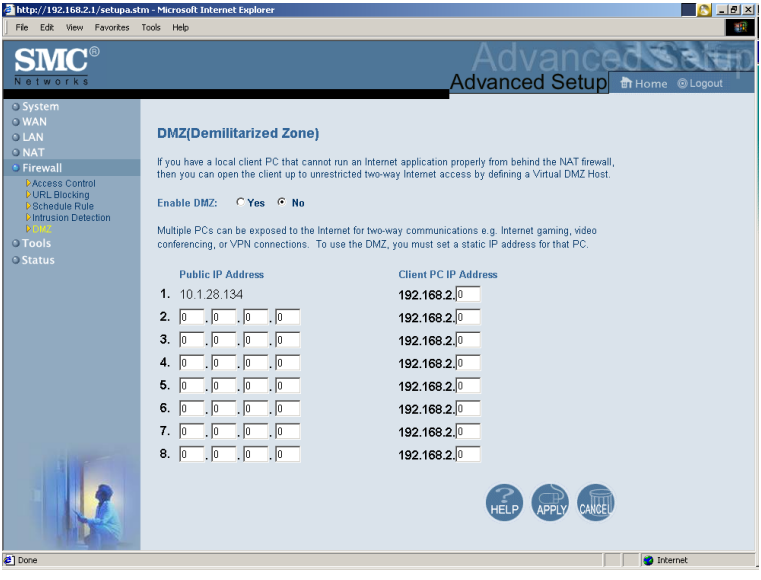
- *Connection Policy*

  Enter the appropriate values for TCP/UDP sessions

- *DoS Criteria* and *Port Scan Criteria*

  Setup DoS and port scan criteria in the spaces provided.

DMZ (Demilitarized Zone)

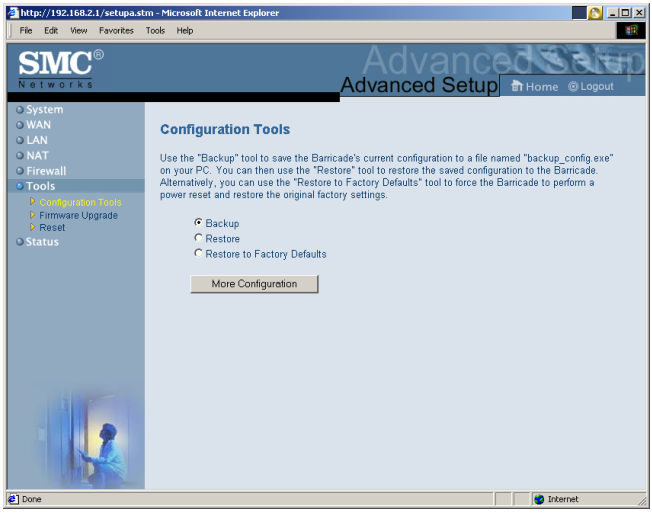


If you have a client PC that cannot run an Internet application properly from behind the firewall, then you can open the client up to unrestricted two-way Internet access. Enter the IP address of a DMZ host to this screen. Adding a client to the DMZ (Demilitarized Zone) may expose your local network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

Tools

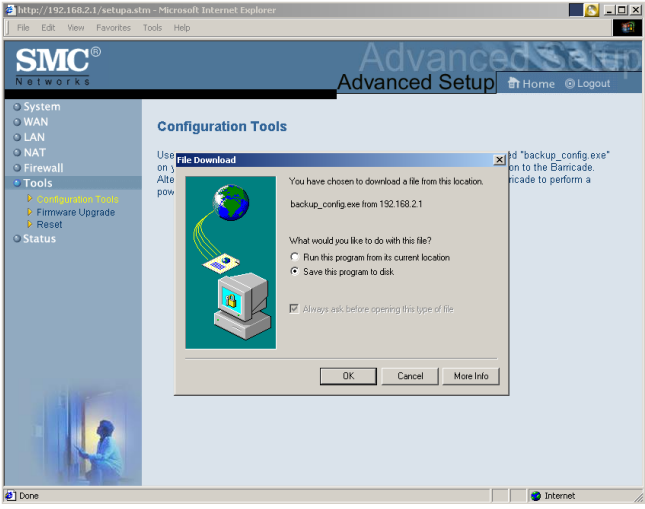
Use the “Tools” menu to backup the current configuration, restore a previously saved configuration, restore factory settings, update firmware, and reset the Barricade.

Configuration Tools



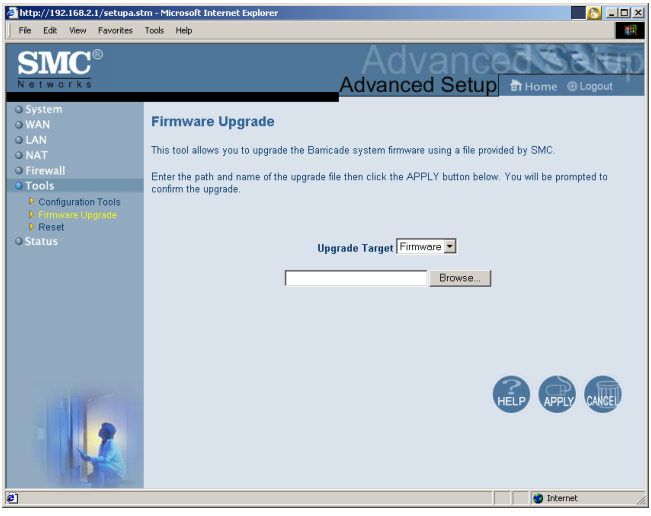
Choose a function and click “More Configuration.”

Backup



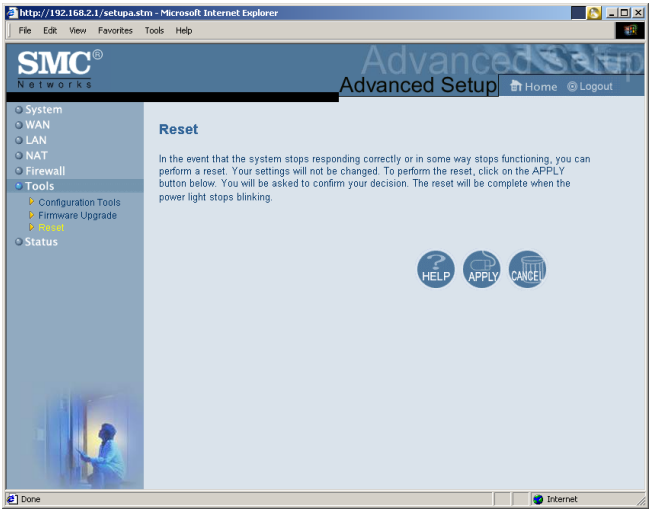
Backup allows you to save the Barricade's configuration to a file. You can then check "Restore" to restore the saved backup configuration file. "Restore to factory defaults" resets the Baricade to the original settings.

Firmware Upgrade



This tool permits easy downloading of the latest Firmware. Download the upgrade file from the SMC website (www.smc.com) and save it to your hard drive. Browse for the file and then click “Apply”. Check the Status page Information section to confirm that the upgrade process was successful.

Reset

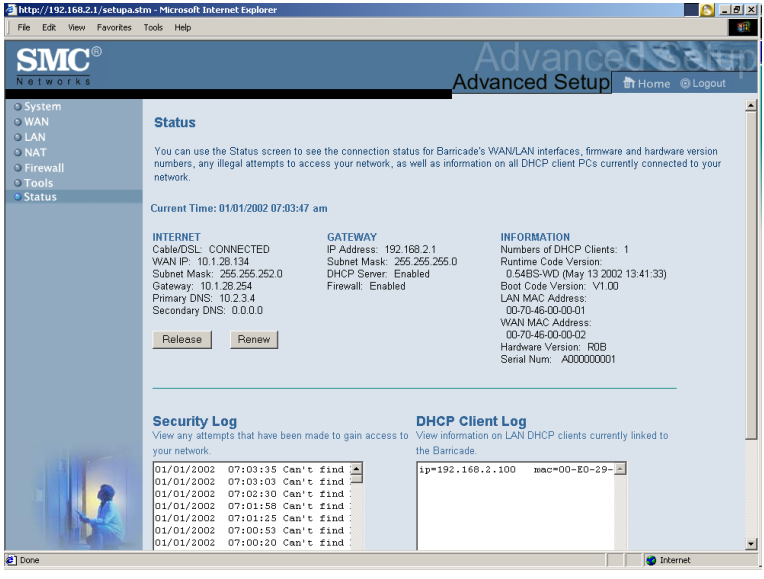


Click “Apply” to reset the Barricade. The reset will be complete when the power LED stops blinking.

Note: If you use the Reset button on the rear panel, the Barricade performs a power reset. If the button is held depressed for over 5 seconds, all the LEDs will illuminate and the factory settings will be restored.

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.
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.
Security Log	Displays illegal attempts to access your network.
Save	Click on this button to save a 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.
Release	Click on this button to confirm Dynamic settings.
Renew	Click on this button to refresh Dynamic settings.

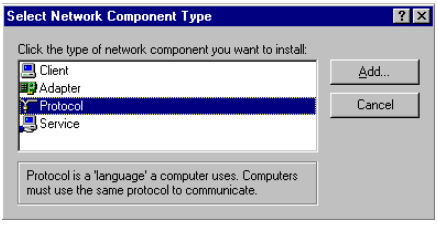
CHAPTER 5
CONFIGURING CLIENT TCP/IP

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 to Work with the Barricade" on page 5-5.

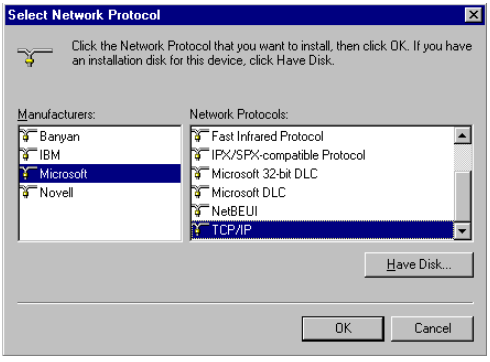
Installing TCP/IP

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” to complete the installation procedure and restart your PC to enable the TCP/IP protocols. The operating system may prompt you to restart your system. Click “Yes” and the computer will shut down and restart.

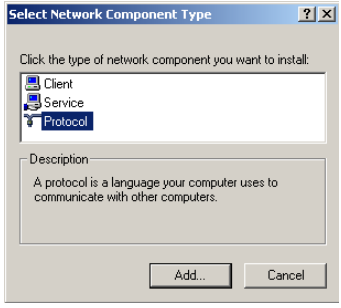
Windows 2000

1. Click the “Start” button and choose “Settings,” then click “Control Panel.”

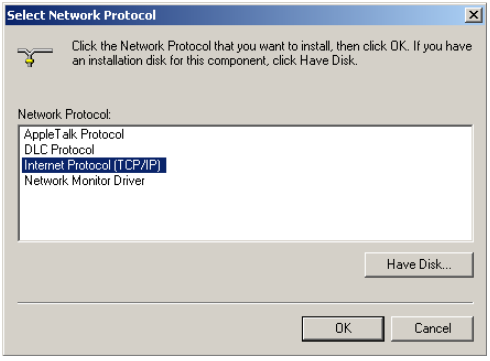
2. Double click the “Network and Dial-up Connections” icon, then “Local Area Connection” icon, and press the “Properties” button in the “General” tab.

3. Click the “install...” button to add the network component to your PC.

4. Double click on “Protocol” to add the TCP/IP protocol.



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



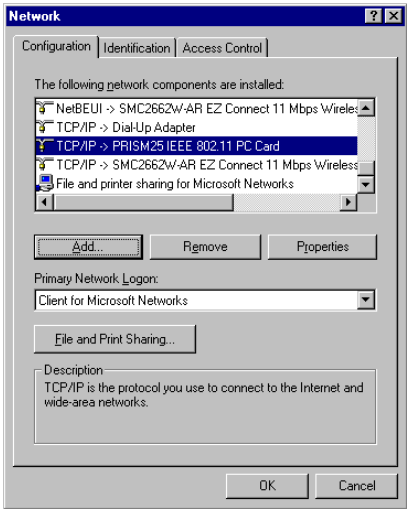
6. The TCP/IP protocol will be listed in the Network window. Click “OK” to complete the install procedure.

Setting Up TCP/IP to Work with the Barricade

Windows 95/98/ME

1. Click "Start/Settings/Control Panel."

2. Double-click the Network icon. Highlight the TCP/IP line that has been assigned to your network card on the "Configuration" tab of the Network window.



3. Click the "Properties" button.

4. You may dynamically assign TCP/IP address settings to a client, or you can manually configure a client with address settings to meet your specific network requirements. (Note that the default IP address of the Barricade is 192.168.2.1.)

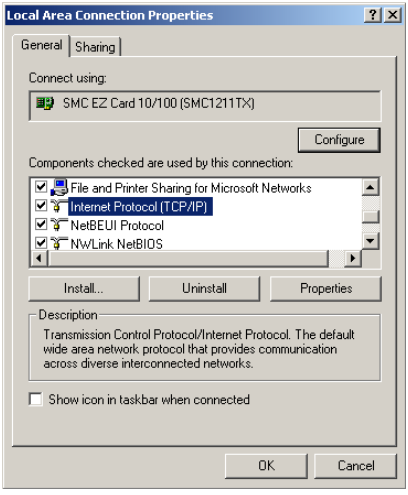
Windows 2000

1. Click the “Start” button and choose “Settings,” then click “Control Panel.”

2. Double click the “Network and Dial-up Connections” icon, then “Local Area Connection” icon, and press the “Properties” button in the “General” tab.

3. Select the TCP/IP line that has been assigned to your network card in the “Local Area Connection Properties” window.

4. Click the “Properties” button to set the TCP/IP protocol for the Barricade.



5. You can dynamically assign TCP/IP address settings to a client, or you can manually configure a client with address settings to meet your specific network requirements. (Note that the default IP address of the Barricade is 192.168.2.1.)

Windows XP

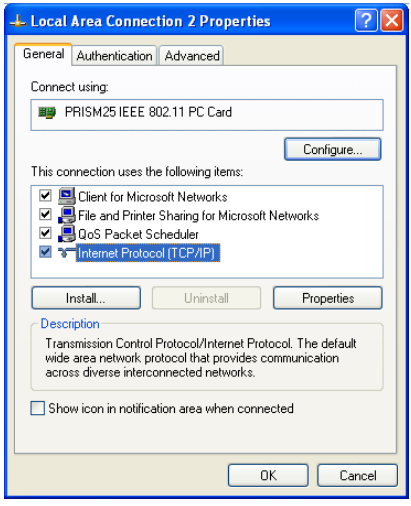
1. Click the “start” button and choose “Control Panel.”

2. Select the “Network and Internet Connections” icon, then click the “Network Connections” icon, and double click on the “LAN or High-Speed Internet.”

3. Press the “Properties” button in the “General” tab.

4. Select the TCP/IP line that has been assigned to your network card in the “Local Area Connection Properties” window.

5. Click the “Properties” button to set the TCP/IP protocol for the Barricade.



6. You can dynamically assign TCP/IP address settings to a client, or you can manually configure a client with address settings to meet your specific network requirements. (Note that the default IP address of the Barricade is 192.168.2.1.)

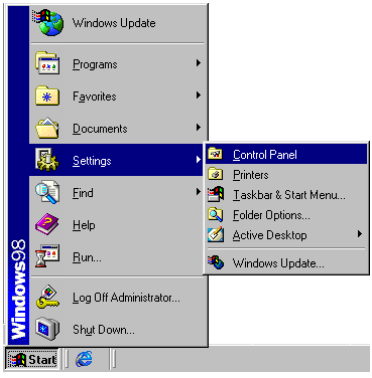
Configuring Your Computer with Windows 95/98/ME

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

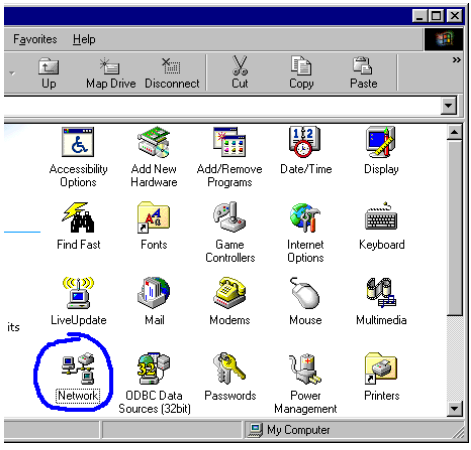
Step 1. Configure TCP/IP Settings

After you have completed the hardware setup by connecting your devices, you need to configure the computer to connect to the Barricade. You need to determine how your ISP issues your IP address. Many ISPs issue these numbers automatically using a networking technology known as Dynamic Host Control Protocol, or DHCP. Other ISPs will specify your IP address and associated numbers, which you must enter manually. This is also known as a static IP address. How your ISP assigns your IP address determines how you will configure your computer.

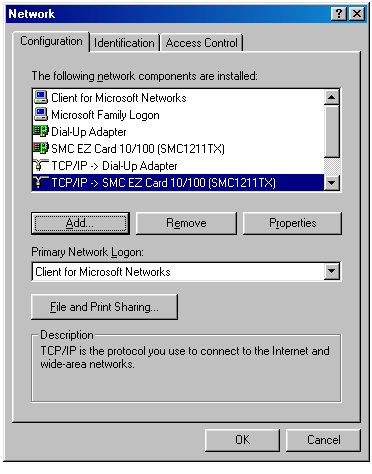
1. From the Windows desktop, click "Start/Settings/Control Panel."



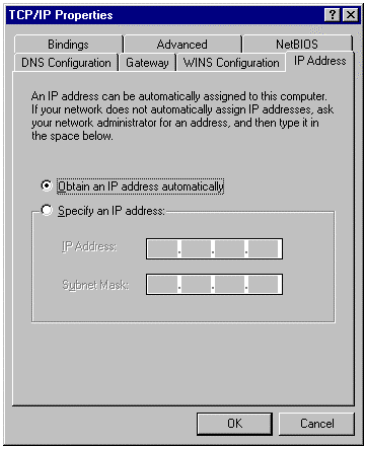
2. Double-click the "Network" icon.



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

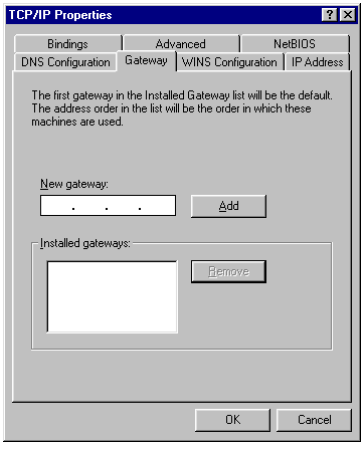


4. Click the “IP Address” tab. If “Obtain an IP address automatically” is already checked, your computer is already configured for DHCP. Click “Cancel” to close each window, and skip to “Step 2. Disable HTTP Proxy” on page 5-12.



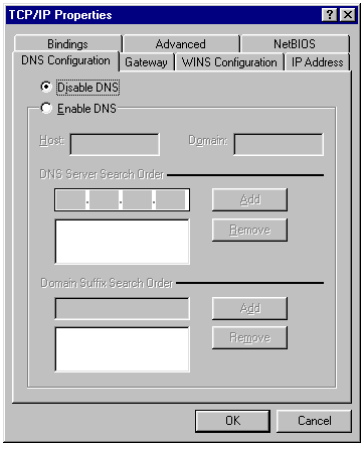
5. Make a note of the current IP Address and Subnet Mask (a space is provided on the next page).

6. Click the “Gateway” tab and record the numbers listed under “Installed gateways.”



7. Click the “DNS Configuration” tab. Record the DNS servers listed under “DNS Server Search Order.”

8. Click the “IP Address” tab and then check “Obtain an IP address automatically.” Click “OK.”



9. Windows may need your Windows 95/98/ME CD to copy some files. After it finishes copying, it will then prompt you to restart your system. Click “Yes” and the computer will shut down and restart.

TCP/IP Configuration Setting

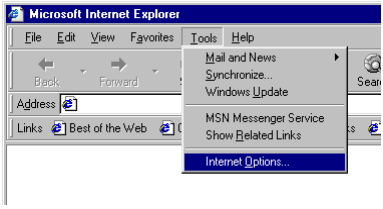
IP Address	____.____.____.____
Subnet Mask	____.____.____.____
Primary DNS Server	____.____.____.____
Secondary DNS Server	____.____.____.____
Default Gateway	____.____.____.____

Step 2. Disable HTTP Proxy

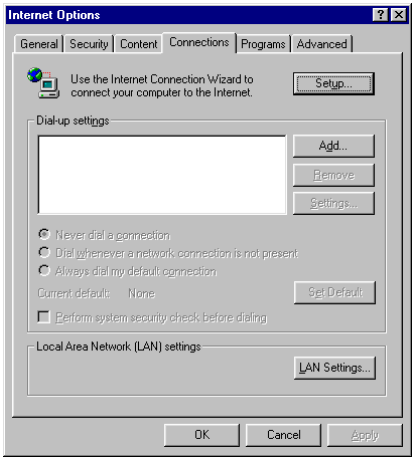
You will need to verify that the "HTTP Proxy" feature of your web browser is disabled. This is so that your web browser will be able to view the configuration pages inside your Barricade. The following steps are for Internet Explorer and for Netscape. Determine which browser you use and follow the appropriate steps.

Internet Explorer

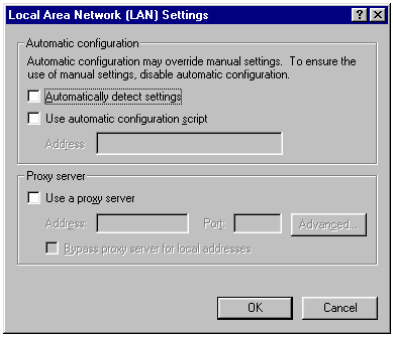
1. Open Internet Explorer. Click "Tools / Internet Options."



2. In the "Internet Options" window, click the "Connections" tab. Click the "LAN Settings" button.



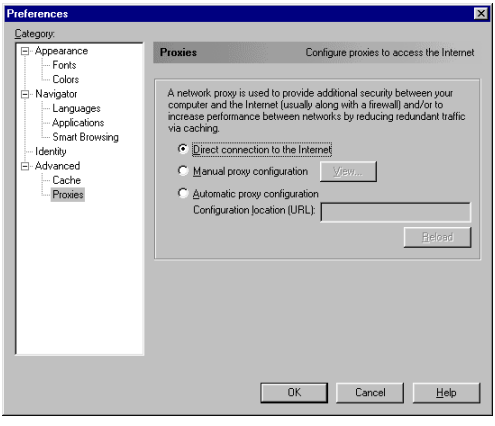
3. Clear all the check boxes and click “OK”. Click “OK” again to close the “Internet Options” window.



Netscape

1. Open Netscape. Click “Edit,” then click “Preferences.”

2. In the “Preferences” window, under “Category,” double-click “Advanced,” then click “Proxies.” Check “Direct connection to the Internet.” Click “OK”.



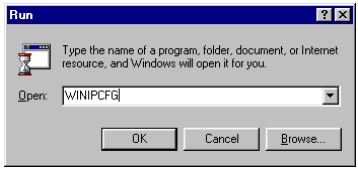
3. Repeat these steps for each Windows 95/98/ME computer connected to your Barricade.

Step 3. Obtain IP Settings from Your Barricade

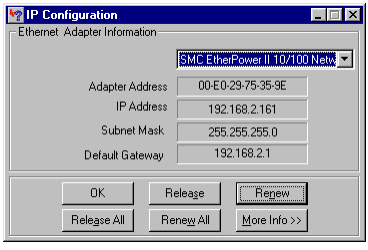
Now that you have configured your computer to connect to your Barricade, it needs to obtain new network settings. By releasing old IP settings and renewing them with settings from your Barricade, you will also verify that you have configured your computer correctly.

1. Click "Start/Run."

2. Type "WINIPCFG" and click "OK." It may take a minute or two for the "IP Configuration" window to appear.



3. From the dropdown 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 Barricade is functioning. Click "OK" to close the "IP Configuration" window.



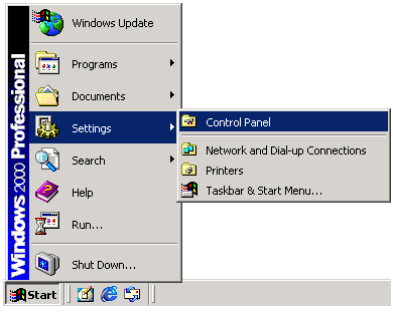
Configuring Your Computer in Windows 2000

Step 1. Configure TCP/IP Settings

After you have completed the hardware setup, you need to configure your computer to connect to the Barricade. You also need to determine how your ISP issues your IP address. Many ISPs issue these addresses automatically, using a networking technology known as Dynamic Host Configuration Protocol, or DHCP. Other ISPs will specify your IP address and associated numbers, which you must enter manually. This is also known as a static IP address. How your ISP assigns your IP address determines how you will configure your computer.

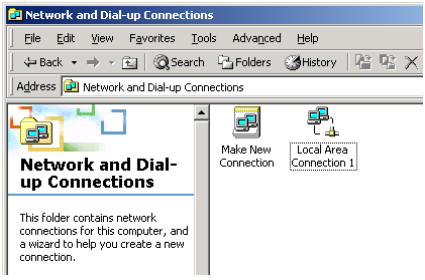
Here is what to do:

1. From the Windows desktop, click "Start/Settings/Control Panel."

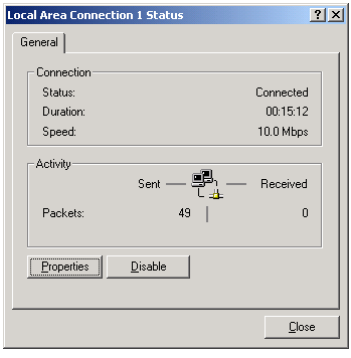


2. Double-click the "Network and Dial-up Connections" icon.

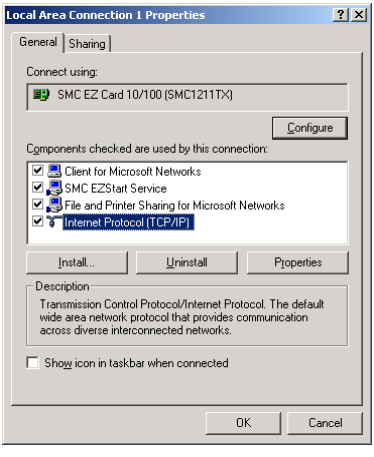
3. Double-click the icon that corresponds to the connection to your Barricade.



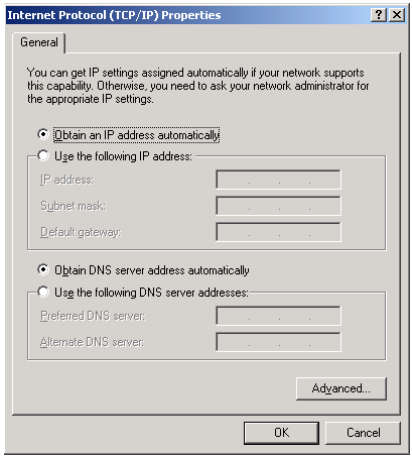
4. Click "Properties."



5. Double-click "Internet Protocol (TCP/IP)."



6. All the information that you need to record is on the “Internet Protocol (TCP/IP) Properties” screen. Use the table on the next page to record the information.



If “Obtain an IP address automatically” and “Obtain DNS server address automatically” are already checked, your computer is already configured for DHCP. Click “Cancel” to close each window, and skip to “Step 2. Disable HTTP Proxy” on page 5-18.

7. Check “Obtain an IP address automatically” and check “Obtain DNS server address automatically.” Click “OK.” Click “OK” or “Close” to close each window.

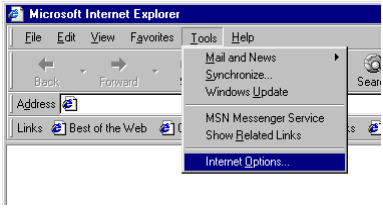
TCP/IP Configuration Setting	
IP Address	_____._____._____._____
Subnet Mask	_____._____._____._____
Primary DNS Server	_____._____._____._____
Secondary DNS Server	_____._____._____._____
Default Gateway	_____._____._____._____

Step 2. Disable HTTP Proxy

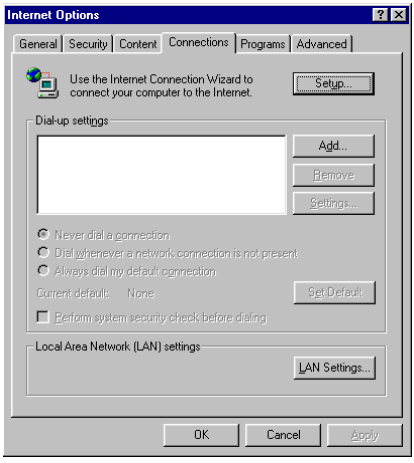
You will need to verify that the "HTTP Proxy" feature of your web browser is disabled. This is so that your web browser will be able to view the configuration pages inside the Barricade. The following steps are for Internet Explorer and for Netscape. Determine which browser you use and follow the appropriate steps.

Internet Explorer

1. Open Internet Explorer. Click "Tools / Internet Options."

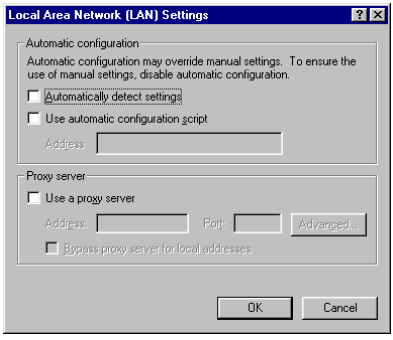


2. In the "Internet Options" window, click the "Connections" tab. Next, click the "LAN Settings" button.



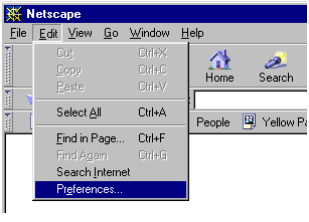
3. Clear all the checkboxes.

4. Click “OK,” and then click “OK” again to close the “Internet Options” window.

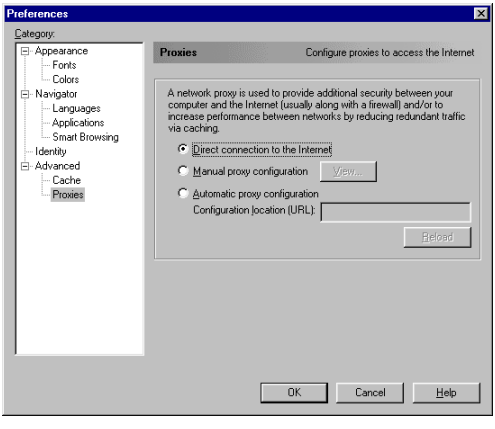


Netscape

1. Open Netscape. Click “Edit,” then click “Preferences.”



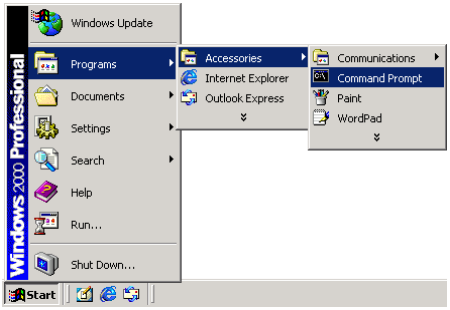
2. In the “Preferences” window, under “Category” double-click “Advanced,” then click “Proxies.” Select “Direct connection to the Internet.” Click “OK.”



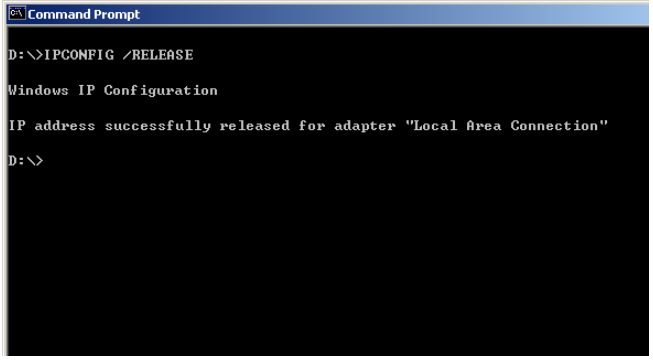
Step 3. Obtain IP Settings From Your Barricade

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

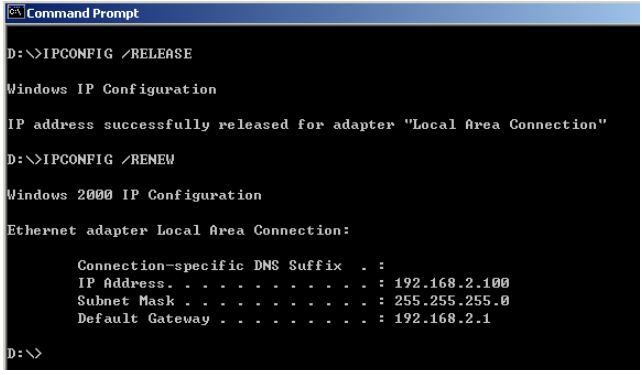
1. From the Windows desktop, click "Start/ Programs/ Accessories/ Command Prompt."



2. In the "Command Prompt" window, type "IPCONFIG /RELEASE" and press the <ENTER> key.



3. Type “IPCONFIG /RENEW” and press the <ENTER> key. Verify that your IP address is now 192.168.2.xxx (2-254), your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168.2.1. These values confirm that your Barricade is functioning.



4. Type “EXIT” and press <ENTER>.

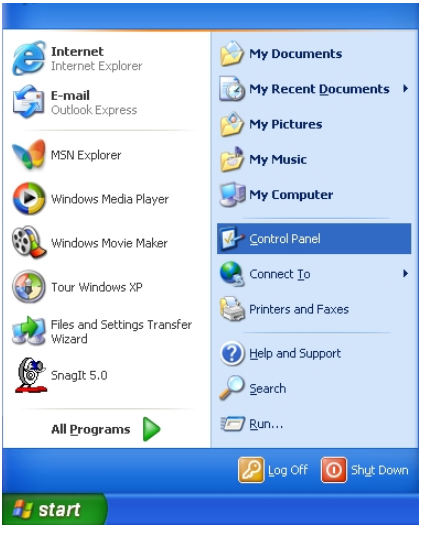
Configuring Your Computer with Windows XP

Step 1. Configure TCP/IP Settings

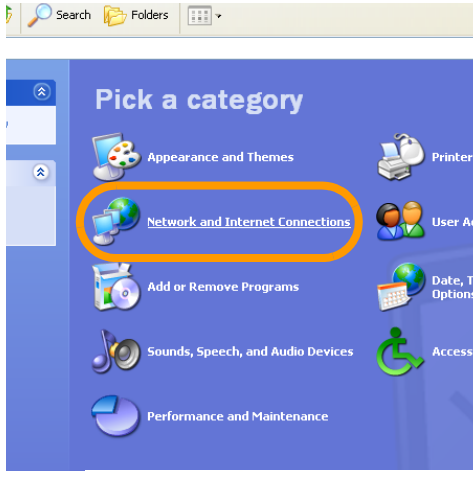
After you have completed the hardware setup, you need to configure your computer to connect to your Barricade. You also need to determine how your ISP issues your IP address. Many ISPs issue these numbers automatically, using a networking technology known as Dynamic Host Configuration Protocol, or DHCP. Other ISPs will specify your IP address and associated numbers, which you must enter manually. This is also known as a static IP address. How your ISP assigns your IP address determines how you will configure your computer.

Here is what to do:

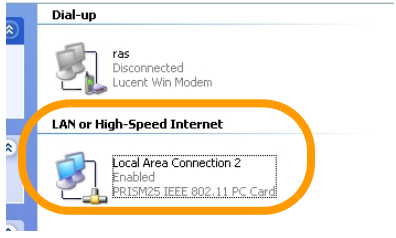
1. From the Windows desktop, click the "start" button. Choose "Control Panel."



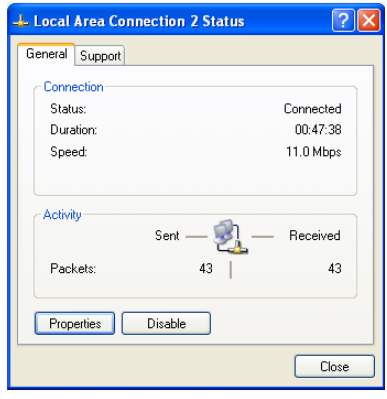
2. Select the “Network and Internet Connections” icon, then click the “Network Connections” icon.



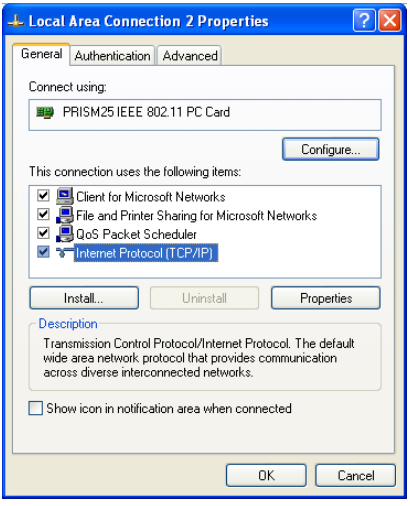
3. Double click on the “LAN or High-Speed Internet.”



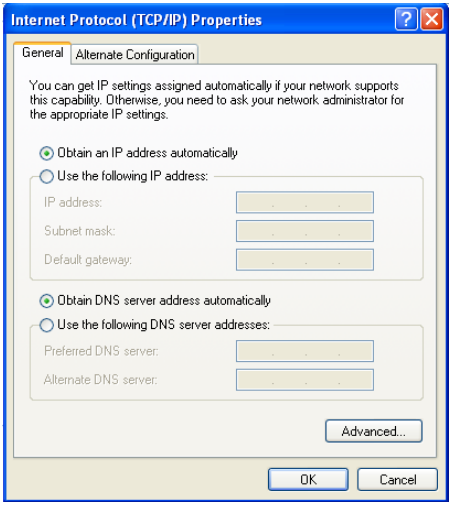
4. Click “Properties.”



5. Double-click “Internet Protocol (TCP/IP).”



6. All the information that you need to record is on the “Internet Protocol (TCP/IP) Properties” dialog box. Use the spaces below to record the information.



If “Obtain an IP address automatically” and “Obtain DNS server address automatically” are already selected, your computer is already configured for DHCP. Click “Cancel” to close each window, and skip to “Step 2. Disable HTTP Proxy” on page 5-25.

7. Select “Obtain an IP address automatically” and then select “Obtain DNS server address automatically.” Then click “OK.” Click “OK” or “Close” to close each window.

TCP/IP Configuration Setting	
IP Address	____.____.____.____
Subnet Mask	____.____.____.____
Primary DNS Server	____.____.____.____
Secondary DNS Server	____.____.____.____
Default Gateway	____.____.____.____

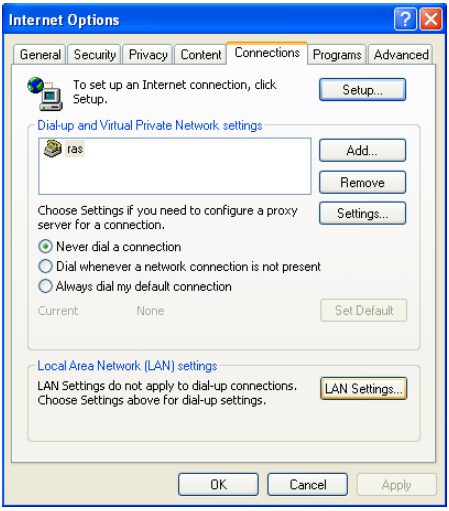
Step 2. Disable HTTP Proxy

You will 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 configuration pages inside your Barricade. The following steps are for Internet Explorer and for Netscape. Determine which browser you use and follow the appropriate steps.

Internet Explorer

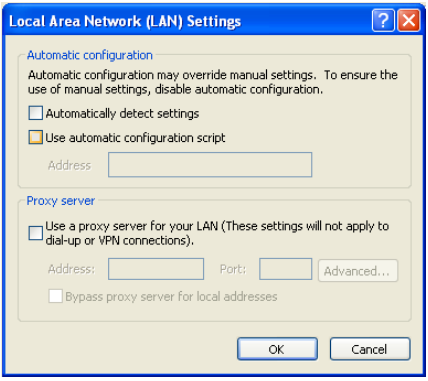
1. Open Internet Explorer and click the stop button. Click “Tools,” then “Internet Options.”

2. In the “Internet Options” window click the “Connections” tab. Next, click the “LAN Settings...” button.



3. Clear all the checkboxes.

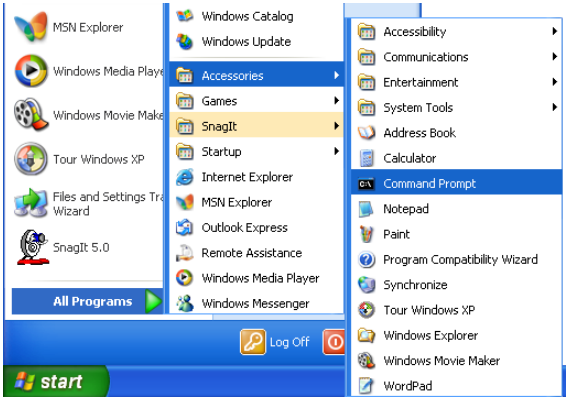
4. Click “OK,” and then click “OK” again to close the “Internet Options” window.



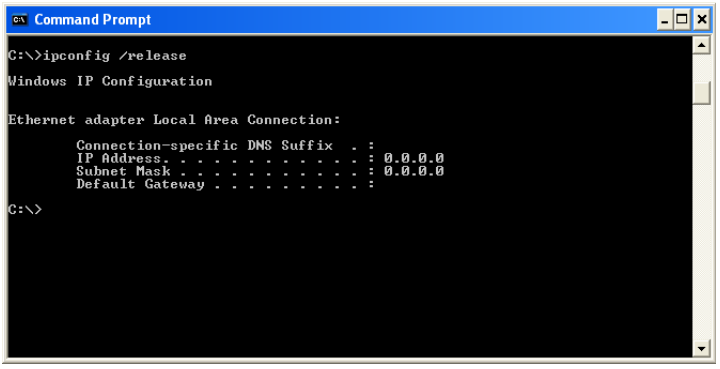
Step 3. Obtain IP Settings From Your Barricade

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

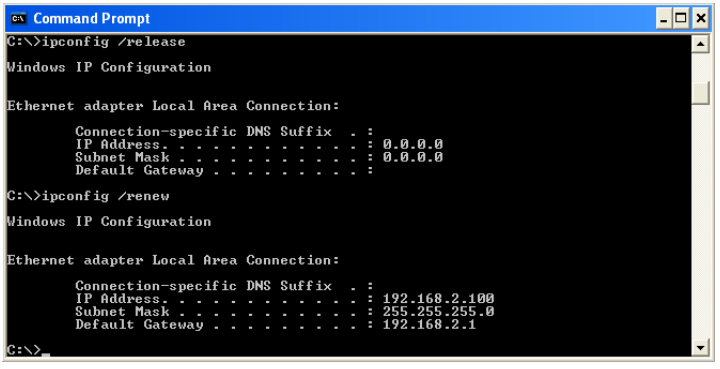
1. From the Windows desktop, click the "Start" button, then "Programs," then "Accessories," and then click "Command Prompt."



2. In the “Command Prompt” window, type “IPCONFIG /RELEASE” and press the <ENTER> key.



3. Type “IPCONFIG /RENEW” and press the <ENTER> key. Verify that your IP address is now 192.168.2.xxx (2-255), your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168.2.1. These values confirm that your Barricade is functioning.



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

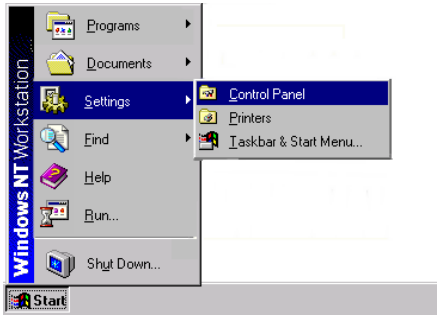
Configuring Your Computer with Windows NT 4.0

Step 1. Configure TCP/IP Settings

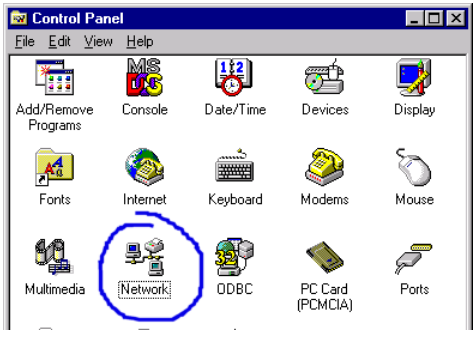
After you have completed the hardware setup, you need to configure your computer to connect to your Barricade. You need to determine how your ISP issues your IP address. Many ISPs issue these numbers automatically using a networking technology known as Dynamic Host Configuration Protocol, or DHCP. Other ISPs will specify your IP address and associated numbers, which you must enter manually. This is known as a static or fixed IP address. How your ISP assigns your IP address determines how you will configure your computer.

Here is what to do:

1. From the Windows desktop click "Start/Settings/Control Panel."

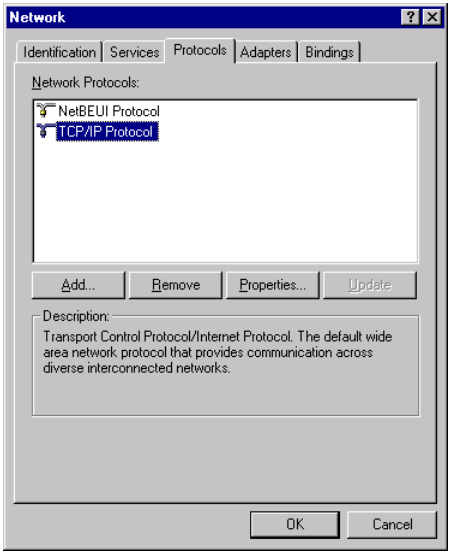


2. Double-click the "Network" icon.



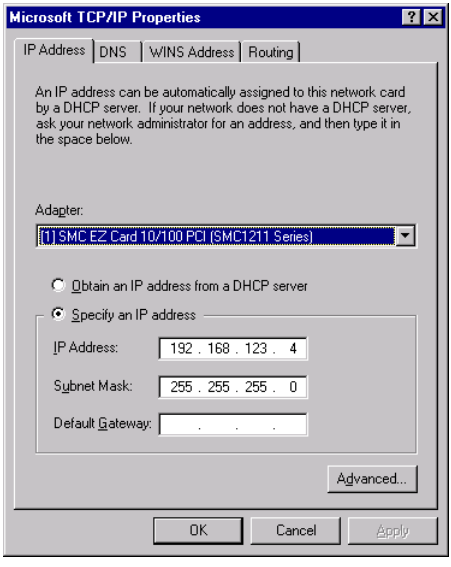
3. Click on the "Protocols" tab.

4. Double-click "TCP/IP Protocol."

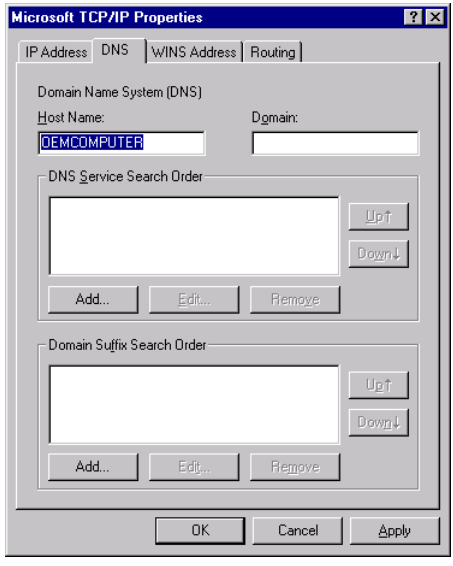


5. Click on the "IP Address" tab.

6. In the "Adapter" dropdown list, be sure your Ethernet adapter is selected.



7. If "Obtain an IP address automatically" is already checked, your computer is already configured for DHCP. Click "Cancel" to close each window, and skip to "Step 2. Disable HTTP Proxy" on page 5-32. In the "TCP/IP Properties" dialog box, click the IP address tab to locate your IP Address, Subnet Mask, and Default Gateway. Record these values in the space provided below.



8. Click the "DNS" tab to see the primary and secondary DNS servers. Record these values in the appropriate spaces below.
9. After writing down your IP settings, click the "IP address" tab. Check "Obtain IP address automatically" and click "OK." Click "OK" again to close the "Network" window.
10. Windows may copy files and will then prompt you to restart your system. Click "Yes" and your computer will shut down and restart.

TCP/IP Configuration Setting

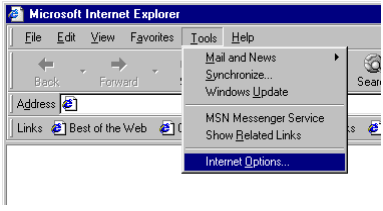
IP Address	____.____.____.____
Subnet Mask	____.____.____.____
Primary DNS Server	____.____.____.____
Secondary DNS Server	____.____.____.____
Default Gateway	____.____.____.____

Step 2. Disable HTTP Proxy

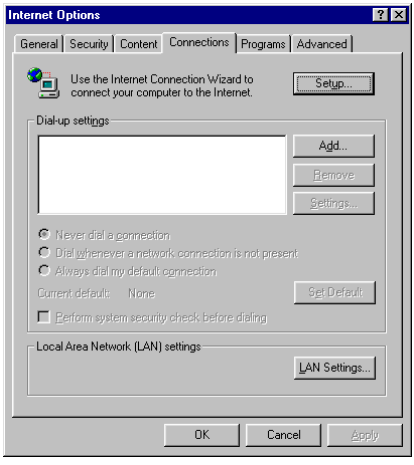
You will need to verify that the "HTTP Proxy" feature of your web browser is disabled. This is so that your web browser will be able to view the Barricade configuration pages. The following steps are for Internet Explorer and for Netscape. Determine which browser you use and follow the appropriate steps.

Internet Explorer

1. Open Internet Explorer. Click "Tools / Internet Options."

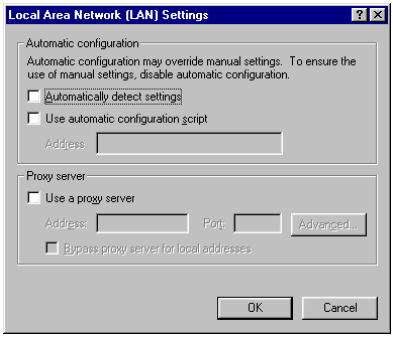


2. In the "Internet Options" window, click the "Connections" tab. Next, click "LAN Settings."



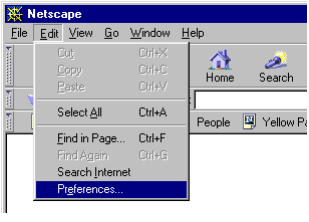
3. Clear all the checkboxes.

4. Click “OK,” and then click “OK” again to close the “Internet Options” window.

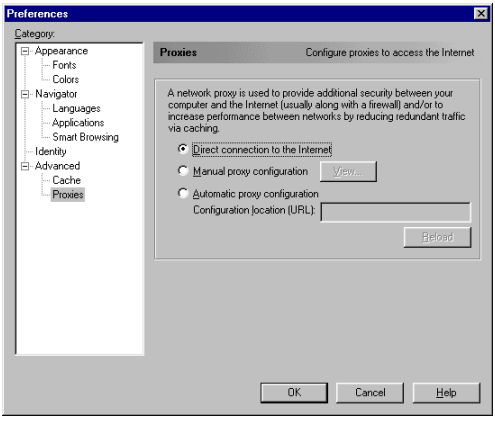


Netscape

1. Open Netscape. Click “Edit,” then click “Preferences...”



2. In the “Preferences” window, under “Category” double-click “Advanced,” then click “Proxies.” Check “Direct connection to the Internet.” Click “OK.”

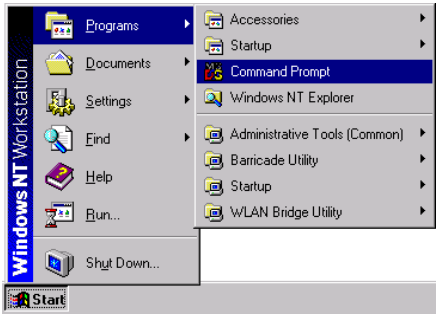


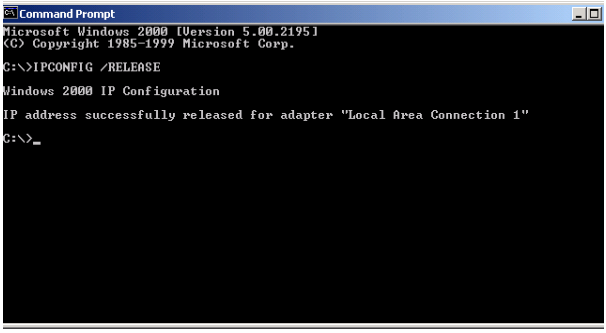
Step 3. Obtain IP Settings From Your Barricade

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

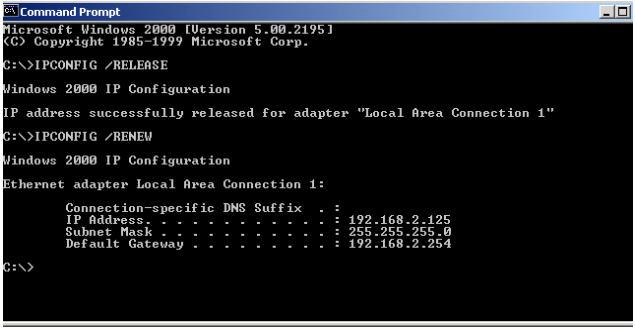
1. On the Windows desktop, click "Start/Programs/Command Prompt."

2. In the "Command Prompt" window, type "IPCONFIG /RELEASE" and press the <ENTER> key.





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 Barricade is functioning.



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

Configuring Your Macintosh Computer

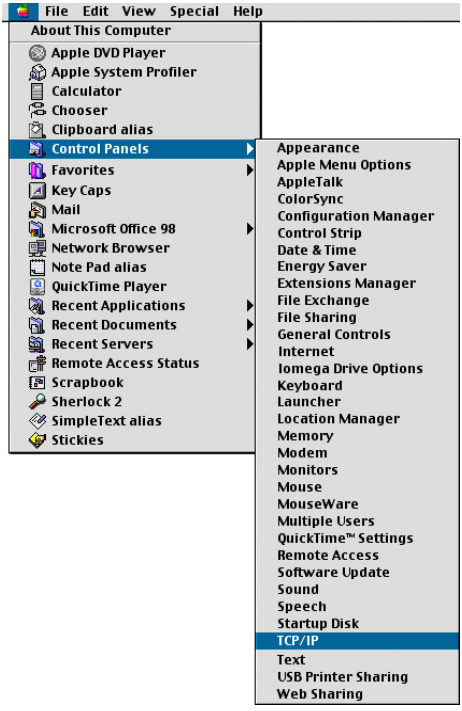
You may find that the instructions here do not exactly match your screen. This is because these steps and screenshots were created using Mac OS 8.5. Mac OS 7.x and above are all very similar, but may not be identical to Mac OS 8.5.

Step 1. Configure TCP/IP Settings

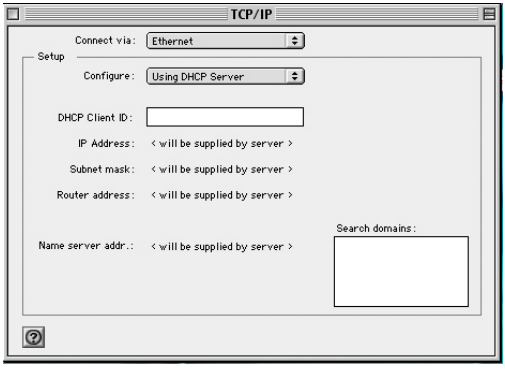
After you have completed the hardware setup, you need to configure your computer to connect to the Barricade. You need to determine how your ISP issues your IP address. Many ISPs issue these numbers automatically using a networking technology known as Dynamic Host Configuration Protocol, or DHCP. Other ISPs will specify your IP address and associated numbers, which you must enter manually. This is also known as a static IP address. How your ISP assigns your IP address determines how you will configure your computer.

Here is what to do:

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



2. In the TCP/IP dialog box, make sure that "Ethernet" is selected in the "Connect Via:" field.

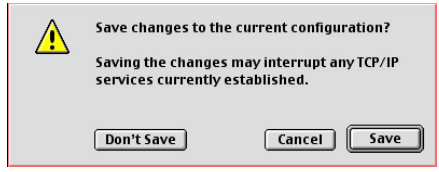


If “Using DHCP Server” is already selected in the “Configure” field, your computer is already configured for DHCP. Close the TCP/IP dialog box, and skip to Step 2 Disable HTTP Proxy (bottom of this page).

3. All the information that you need to record is on the “TCP/IP” dialog box. Use the space below to record the information.

4. After writing down your IP settings, select “Using DHCP Server” in the “Configure” field and close the window.

5. Another box will appear asking whether you want to save your TCP/IP settings. Click “Save”.

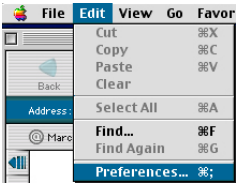


TCP/IP Configuration Setting	
IP Address	____.____.____.____
Subnet Mask	____.____.____.____
Router	____.____.____.____
Name Server	____.____.____.____

Step 2. Disable HTTP Proxy

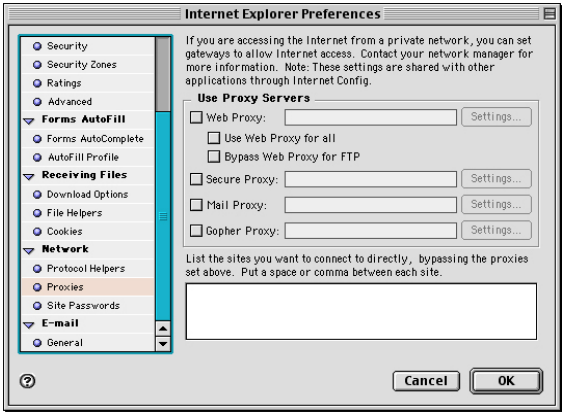
You will need to verify that the “HTTP Proxy” feature of your web browser is disabled. This is so that your web browser will be able to view the Barricade configuration pages. The following steps are for Internet Explorer and for Netscape. Determine which browser you use and follow the appropriate steps.

Internet Explorer



1. Open Internet Explorer. Click "Edit/ Preferences."

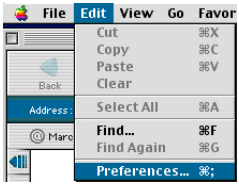
2. In the Internet Explorer "Preferences" window, under "Network," select "Proxies."



3. Uncheck all checkboxes and click "OK."

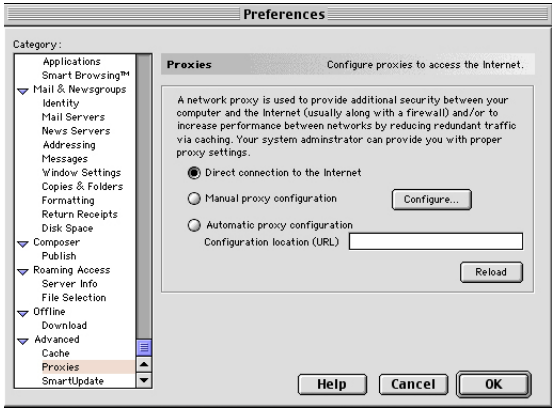
Netscape

1. Open Netscape. Click "Edit/Preferences."



2. In the column labeled "Category," select "Advanced." Under the "Advanced" category, select "Proxies."

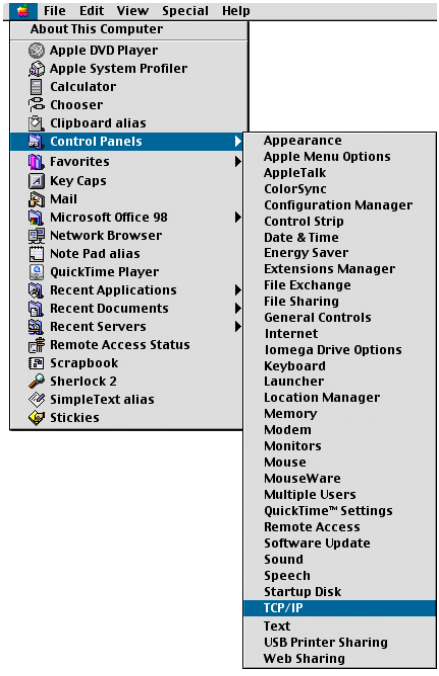
3. Select "Direct Connection to the Internet" and click "OK."



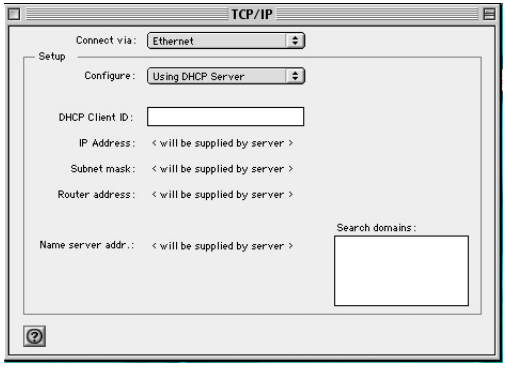
Step 3. Obtain IP Settings From Your Barricade

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

1. Pull down the Apple Menu. Click “Control Panels” and “TCP/IP.”



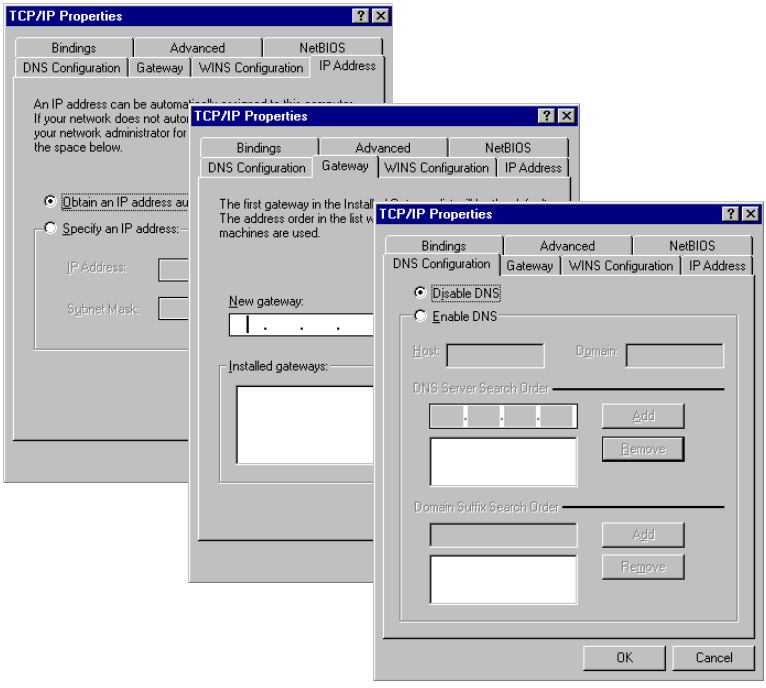
2. In the TCP/IP window, your new settings will be shown. Verify that your IP address is now 192.168.2.xxx, your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168.2.1. These values confirm that your Barricade is functioning.



3. Close the TCP/IP window.

Dynamic IP Allocation via a DHCP Server

Check “Obtain an IP address automatically” on the IP Address tab. Do not input any values under the Gateway tab, and check “Disable DNS” on the “DNS Configuration” tab. These settings will be automatically configured by the DHCP server. Click “OK” and reboot your system to implement the changes.

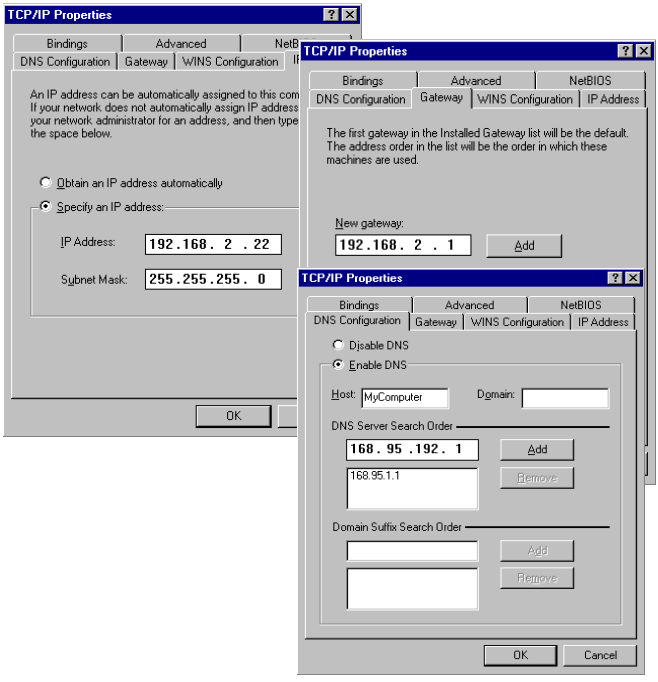


Manual IP Configuration

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.

2. On the “Gateway” tab, add the IP address of the 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 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 Barricade, use the "Ping" command to check if your computer has successfully connected to the 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 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 Barricade and the computer?

   The LAN LED on the 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 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 Barricade you are now ready to connect to the Internet!

APPENDIX A
TROUBLESHOOTING

This appendix describes common problems you may encounter and possible solutions to them. The Barricade can be easily monitored through panel indicators to identify problems. If you cannot resolve any connection problems after checking the indicators, then refer to the other sections in the following table.

Troubleshooting Chart	
Symptom	**Action**
LED Indicators	
Power LED is OFF	• External power supply has failed or is disconnected. • Check connections between the Barricade, the external power supply, and the wall outlet. • If the power indicator does not light when the power cord is plugged in, you may have a problem with the power outlet, power cord, or external power supply. If the unit powers off after running for a while, check for loose power connections, power losses, or surges at the power outlet. If you cannot isolate the problem, then the external power supply may be defective. In this case, contact SMC Technical Support for assistance.

Troubleshooting Chart	
Symptom	**Action**
LED Indicators	
Link LED is OFF	• Verify that the Barricade and attached device are powered on. • Be sure the cable is plugged into both the Barricade and the corresponding device. • Verify that the proper cable type is used and that its length does not exceed the specified limits. • Be sure that the network interface on the attached device is configured for the proper communication speed and duplex mode. • Check the adapter on the attached device and cable connections for possible defects. Replace any defective adapter or cable if necessary.
Network Connection Problems	
Cannot Ping the Barricade from the attached LAN, or the Barricade cannot Ping any device on the attached LAN	• Verify that the IP addresses are properly configured. For most applications, you should use the Barricade's DHCP function to dynamically assign IP addresses to clients on the LAN. However, if you manually configure IP addresses on the LAN, verify that the same network address (network component of the IP address) and subnet mask are used for both the Barricade and the LAN devices. • Be sure the device you want to Ping (and the device from which you are Pinging) have been configured for TCP/IP.

Troubleshooting Chart	
Symptom	**Action**
Management Problems	
Cannot connect using the web browser	• Be sure to have configured the Barricade with a valid IP address, subnet mask, and default gateway. • Check that you have a valid network connection to the Barricade and that the port you are using has not been disabled. • Check the network cabling between the management station and the Barricade.
Forgot or lost the password	• Press the Reset button on the front panel (holding it down for at least five seconds) to restore the factory defaults.

APPENDIX B
CABLES

Ethernet Cable

Specifications

Cable Types and Specifications			
Cable	**Type**	**Max. Length**	**Connector**
10BASE-T	Cat. 3, 4, 5 100-ohm UTP	100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	100 m (328 ft)	RJ-45

Twisted-pair Cable

Caution: Do NOT plug a phone jack connector into any RJ-45 port. Use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.

For 10BASE-T/100BASE-TX connections, a twisted-pair cable must have two pairs of wires. Each wire pair is identified by different colors. For example, one wire might be red and the other, red with white stripes. Also, an RJ-45 connector must be attached to both ends of the cable.

Figure B-1 illustrates how the pins on the RJ-45 connector are numbered. Be sure to hold the connectors in the same orientation when attaching the wires to the pins.

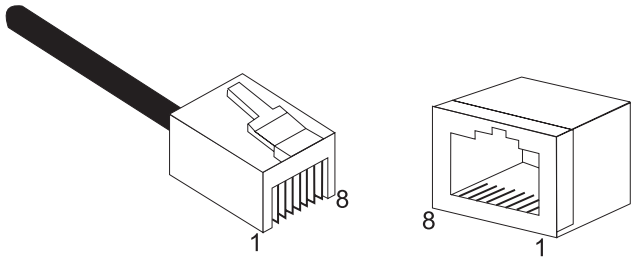


Figure B-1. RJ-45 Connector Pin Numbers

Straight-through Cable

Straight-Through RJ-45 Pin Assignments	
End 1	End 2
1 (TD+)	1 (TD+)
2 (TD-)	2 (TD-)
3 (RD+)	3 (RD+)
6 (RD-)	6 (RD-)

Pins 4, 5, 7, and 8 are not connected.

Crossover Cable

Crossover RJ-45 Pin Assignments	
End 1	End 2
1 (TD+)	3 (RD+)
2 (TD-)	6 (RD-)
3 (RD+)	1 (TD+)
6 (RD-)	2 (TD-)

Pins 4, 5, 7, and 8 are not connected.

RJ-45 Port Pin Assignments

Pin	MDI Signal Name*	MDI-X Signal Name*
1	Transmit Data (TD+)	Receive Data (RD+)
2	Transmit Data (TD-)	Receive Data (RD-)
3	Receive Data (RD+)	Transmit Data (TD+)
6	Receive Data (RD-)	Transmit Data (RD-)

Pins 4, 5, 7, and 8 are not connected.

* The "+" and "-" signs represent the polarity of the wires that make up each wire pair.

APPENDIX C
SPECIFICATIONS

Standards

IEEE 802.3 10BaseT Ethernet
IEEE 802.3u 100BaseTX FastEthernet

WAN Interface

10BASE-T/100BASE-TX RJ-45 port

LAN Interfaces

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

Management

Browser-based management
Both DHCP Server and Client provided

Advanced Features

Dynamic IP Address Configuration – DHCP, DNS
Firewall – Client privileges, hacker prevention, logging
Virtual Server via NAT & NAPT
Virtual Private Network – PPTP, L2TP, IPSec pass-through
Instrusion Detection, Email Alerting, Parental Control

Indicator Panel

LAN (Link, Activity), WAN (Link, Activity), Power

Dimensions

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

Weight

370 g (4.73 oz)

Input Power

6 V 1A

Maximum Current

0.04A RMS max.@110V/240V

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 (-40 to 158°F)

Humidity

5% to 95% (noncondensing)

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)

Warranty

Limited Lifetime

LIMITED WARRANTY

SMC's Limited Warranty Statement

Limited Warranty Statement: SMC Networks Europe ("SMC") warrants its products to be free from defects in workmanship and materials, under normal use and service, for the applicable warranty term. All SMC products carry a standard 2 year limited warranty from the date of purchase from SMC or its Authorized Reseller. SMC may, at its own discretion, repair or replace any product not operating as warranted with a similar or functionally equivalent product, during the applicable warranty term. SMC will endeavour to repair or replace any product returned under warranty within 30 days of receipt of the product. As new technologies emerge, older technologies become obsolete and SMC will, at its discretion, replace an older product in its product line with one that incorporates these newer technologies

The standard limited warranty can be upgraded to a 5 year Limited Lifetime * warranty by registering new products within 30 days of purchase from SMC or its Authorized Reseller. Registration can be accomplished via the enclosed product registration card or online via the SMC web site. Failure to register will not affect the standard limited warranty. The Limited Lifetime warranty covers a product during the Life of that Product, which is defined as a period of 5 years from the date of purchase of the product from SMC or its authorized reseller.

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* Under the limited lifetime warranty, internal and external power supplies, fans, and cables are covered by a standard one-year warranty from date of purchase.

Full Installation Manual
Full installation manuals are provided on the Installation CD-Rom. Manuals in other languages than those included on the CD-Rom are provided on www.smc-europe.com (section support).

Firmware and Drivers
For latest driver, technical information and bug-fixes please visit www.smc-europe.com (section support).

Contact SMC
Contact details for your relevant countries are available on www.smc-europe.com and www.smc.com.

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