

Barricade™ Broadband Router

10/100 Mbps Broadband Router

- ◆ Internet access via –
 - 10/100 Mbps WAN port connection to xDSL/Cable modem, or
 - RS-232 console port connection to ISDN/PSTN modem
- ◆ Home networking via –
 - Four/Eight 10/100 Mbps Ethernet switch ports
- ◆ Built-in Print Server
- ◆ Automatic IP configuration with DHCP
- ◆ Firewall – client privileges, hacker prevention, NAT
- ◆ Multi-user access (up to 253), single-user account
- ◆ Virtual server with network address translation
- ◆ Virtual Private Network using PPTP, L2TP, IPSec



Barricade™ Broadband Router User Guide

From SMC's Barricade line of Broadband Routers

SMC®

Networks

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Irvine, CA 92618

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, 2^o, 4^a,
08970 - Sant Joan Despí,
Barcelona, Spain.

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

- RFI * Limit class B according to EN 55022:1998
- Emission: * Limit class 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

COMPLIANCES

- * 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: ± 1 kV, Data/Signal lines: ± 0.5 kV)
 - * Surge immunity test according to EN 61000-4-5:1995(AC/DC Line to Line: ± 1 kV, AC/DC Line to Earth: ± 2 kV)
 - * 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)

Industry Canada - Class B

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

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

Japan VCCI Class B

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取り扱い説明書に従って正しい取り扱いをして下さい。

Australia AS/NZS 3548 (1995) - Class B



ACN 069 351 613

SMC contact for products in Australia is:

SMC Communications Pty. Ltd.
Suite 18, 12 Tryon Road,
Lindfield NSW2070,
Phone: 61-2-94160437
Fax: 61-2-94160474

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 Flüssigoder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschlusßsteckdose 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.

COMPLIANCES

11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
13. Öffnen sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
 - a. Netzkabel oder Netzstecker sind beschädigt.
 - b. Flüssigkeit ist in das Gerät eingedrungen.
 - c. Das Gerät war Feuchtigkeit ausgesetzt.
 - d. Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
 - e. Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
 - f. Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
15. Stellen Sie sicher, daß die Stromversorgung dieses Gerätes nach der EN 60950 geprüft ist. Ausgangswerte der Stromversorgung sollten die Werte von AC 7,5-8V, 50-60Hz nicht über 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 the 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 on the Internet at the lowest possible cost, this Broadband Router provides a convenient and powerful solution.

About the Barricade

The Barricade provides Internet access to multiple users by sharing a single-user account. The most outstanding feature of the Barricade is the dual-port WAN interface which allows you to connect to an xDSL or Cable modem, ISDN TA or PSTN analog modem. The Barricade provides extensive firewall protection and Virtual Private Network (VPN) services. It also provides print services for any client attached to a LAN port.

The Barricade supports dial-on-demand for ISDN/PSTN service, automatically connecting to the Internet when there are requests and terminating the connection if no further requests occur. This dual-port design also supports fail-over Internet access through the secondary WAN port (i.e., the serial port can be used for primary or backup Internet access).

This new Barricade technology 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 xDSL or Cable modem via a 10/100 Mbps WAN port
- Internet connection to ISDN TA or PSTN modem via an RS-232 console port
- Local network connection via 10/100 Mbps Ethernet ports
- Built-in Print Server for any client attached to the LAN
- DHCP for dynamic IP configuration, and DNS for domain name mapping
- Firewall with client privileges, hacker prevention, 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, FTP, mail and Telnet)
- Virtual Private Network support using PPTP, L2TP or IPSec pass-through
- User-definable application sensing tunnel supports applications requiring multiple connections
- Supports CHAP authentication protocol for dial-up identification
- Supports PPP dial-out connection
- Easy setup through a Web browser on any operating system that supports TCP/IP
- Compatible with all popular Internet applications

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 an xDSL, Cable, ISDN or PSTN 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 provides Internet access for up to 253 users with a shared IP address. Using only one ISP account, multiple users on your network can browse the Web at the same time.

- **Virtual Server**

If you have a fixed 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 a constant IP address. Then, depending on the requested service (or port number), the Barricade can route the request to the appropriate server (at another internal IP address). This secures your network from direct attack by hackers, and provides more flexible management by allowing you to change internal IP addresses without affecting outside access to your network.

- **User-Definable Application Sensing Tunnel**

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

- **DMZ Host 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 can deny Internet access to specified users, or filter all requests for specific services the administrator does not want to serve. The Barricade's firewall can also 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.

- **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.

APPLICATIONS

CHAPTER 2

INSTALLATION

Before installing the Barricade™ Broadband Router, verify that you have all the items listed under “Package Contents.” If any of the items are missing or damaged, contact your local SMC distributor. Also be sure that you have all the necessary cabling before installing the Barricade. After installing the Barricade, refer to the Web-based configuration program in Chapter 4 for information on configuring the router.

Package Contents

After unpacking the Barricade Broadband Router, check the contents of the box to be sure you’ve received the following components:

- Barricade Broadband Router
- Power adapter
- One CAT-5 Ethernet cable
- Four rubber feet
- Installation CD with complete user guide
- Quick Installation Guide
- SMC Warranty Registration Card

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

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

Description of Hardware

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

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

Although access speed to the Internet 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 an LED display on the front panel for system power and port indications that simplifies installation and network troubleshooting. It also provides 4 RJ-45 LAN ports on the front panel, as well as one RJ-45 WAN port, one RS-232 serial port and one parallel printer port on the rear panel:

- 4 RJ-45 ports for connection to a 10BASE-T/100BASE-TX Ethernet Local Area Network (LAN). These ports can auto-negotiate the operating speed to 10/100 Mbps, the mode to half/full duplex, and the pin signals to MDI/MDI-X (i.e., allowing these ports to be connected to any network device with straight-through cable). These ports can be connected directly to a PC or to a server equipped with an Ethernet network interface card, or to a networking device such as an Ethernet hub or switch.
- One RJ-45 port for connection to an xDSL or Cable modem. This port is fixed at 10/100 Mbps, full duplex. This port only supports MDI-X pin signals, so you will have to use either straight-through or crossover cable depending on the port type used on the modem.
- One RS-232 serial port to connect to an ISDN Terminal Adapter (TA) or to a PSTN analog modem.
- One parallel printer port that can be connected to a printer. This printer can then be shared by any LAN users.

The following figure shows the components of the Barricade:

SMC7004ABR

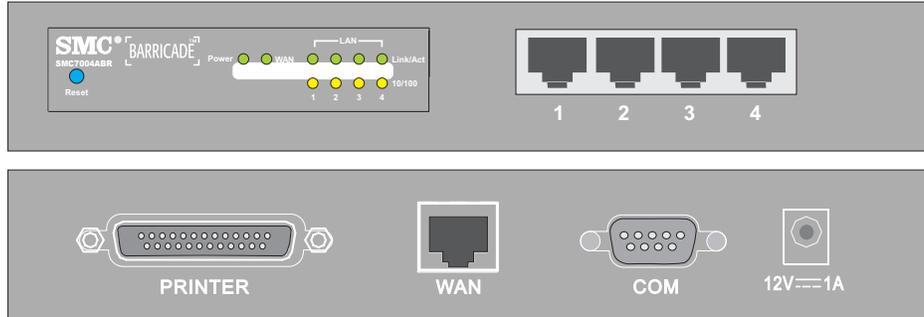


Figure 2-1. Front and Rear Panels

Item	Description
Reset Button	Use this button to reset the power and restore the default factory settings.
LEDs	Power, WAN and LAN port status indicators. (See Verify Port Status on page 2-10.)
LAN Ports	Fast Ethernet ports (RJ-45). Connect devices on your local area network to these ports (such as a PC, hub or switch).
Printer Port	Parallel port (25-pins, D-type, female). Connect the shared printer to this port.
WAN Port	WAN port (RJ-45). Connect your Cable modem, xDSL modem, or an Ethernet router to this port.
COM Port	Serial port (9-pins, D-type, male). Connect your ISDN TA or 56K analog modem to this port.
Power Inlet	Connect the included power adapter to this inlet. Warning: Using the wrong type of power adapter may cause damage.

System Requirements

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

- Internet access from your local telephone company or Internet Service Provider (ISP) using an xDSL modem, Cable modem, ISDN TA, or PSTN analog modem. You may also have access over the telephone system to an analog modem at another site.
- A PC using a fixed IP address or dynamic IP address assignment via DHCP, as well as a Gateway server address and DNS server address from your service provider.
- A computer equipped with a 10 Mbps, 100 Mbps, or 10/100 Mbps Fast Ethernet card, or a USB-to-Ethernet converter.
- TCP/IP network protocol installed on each PC that needs to access the Internet.
- A 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.

INSTALLATION

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

Basic Installation Procedure

1. **Connect the LAN:** You can connect the Barricade to your PC, or to a hub or switch. Run Ethernet cable from one of the LAN ports on the front of the Barricade to your computer's network adapter or to another network device.
2. **Connect the WAN:** Prepare an Ethernet cable for connecting the Barricade to a Cable/xDSL modem or Ethernet router. Prepare a serial cable for connecting the Barricade to an ISDN TA or PSTN modem.
3. **Connect your printer:** Use standard parallel printer cable to connect your printer to the printer port on the Barricade.
4. **Power on:** Connect the power adapter to the Barricade.

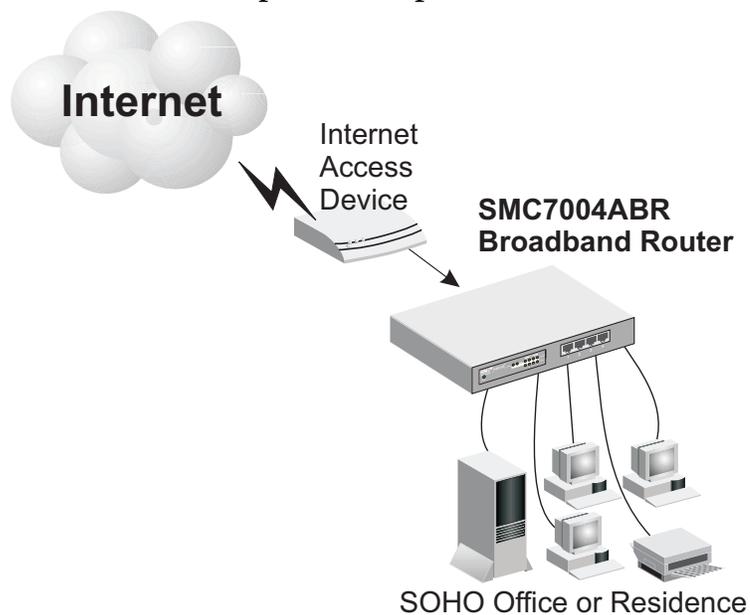


Figure 2-2. Connecting the Barricade

Attach to Your Network Using Ethernet Cabling

The 4 LAN ports on the Barricade can auto-negotiate the connection speed to 10 Mbps Ethernet or 100 Mbps Fast Ethernet, as well as the transmission mode to half-duplex or full-duplex. The LAN ports on SMC7004ABR support auto-configuration for pin signals (auto-MDI/MDI-X) that allows you to use straight-through cable for connecting the Barricade to any network device. (See Appendix B for details on wiring.)

Use twisted-pair cable to connect any of the 4 LAN ports on the Barricade to an Ethernet adapter on your PC. Otherwise, you can cascade any of 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 plug, be sure the tab on the plug clicks into position to ensure that it is properly seated.

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

Notes: 1. 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.

2. Make sure each twisted-pair cable does not exceed 100 meters (328 feet).

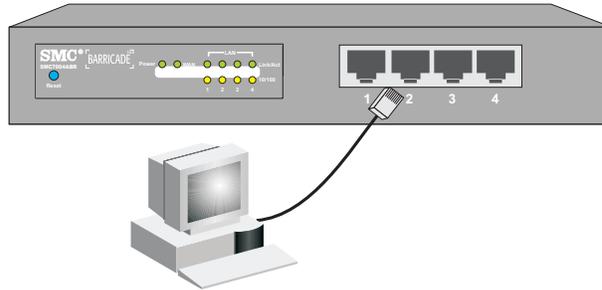


Figure 2-3. Making LAN Connections

Attach the Barricade to the Internet

If Internet services are provided through an xDSL or Cable modem, use unshielded or shielded twisted-pair Ethernet cable (Category 3 or greater) with RJ-45 plugs to connect the broadband modem directly to the WAN port on the Barricade. Use either straight-through or crossover cable depending on the port type provided by the modem (see Appendix B). For ISDN or PSTN service, attach the access device to the RS-232 serial port on the Barricade.

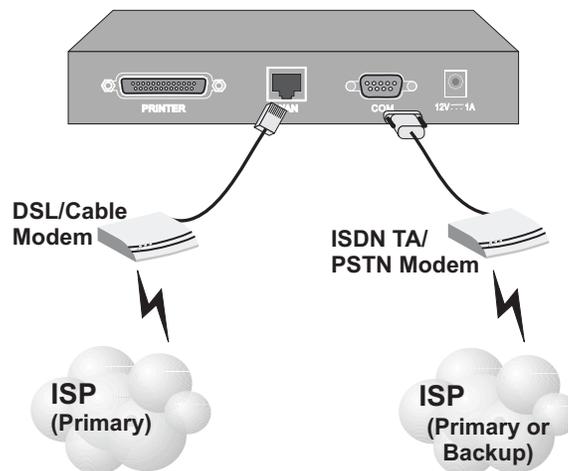


Figure 2-4. Making WAN Connections

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.

Connect a Printer

If you connect a printer to the Barricade, all the computer users connected to your LAN can have access to this printer. Connect a standard parallel printer cable to the Printer port on the Barricade, and configure the printer server as described on page 6-1.

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 does not light up, refer to Troubleshooting in Appendix A.

Verify Port Status

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

LED	Condition	Status
Power (Green)	On	Barricade is receiving power.
WAN (Green)	On	The WAN port has established a valid network connection.
	Flashing	The WAN port is transmitting or receiving traffic.
Link/Act (Green)	On	The indicated LAN port has established a valid network connection.
	Flashing	The indicated LAN port is transmitting or receiving traffic.
10/100 (Amber)	On	The indicated LAN port is operating at 100 Mbps.
	Off	The indicated LAN port is operating at 10 Mbps.

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 can be changed to fit 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 "Installing TCP/IP Protocol in Your PC" on page 5-1.

All PCs connected to the Barricade must be set to the same IP subnet as the Barricade. The default subnet address of the Barricade is 192.168.2.X (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 TCP/IP to Work with the Barricade" on page 5-3.

Printer Client Installation

If you need to provide print services for devices attached to the Barricade, then install the Port Monitor program from the Barricade CD (for Windows 95/98/ME/NT/2000), and configure the Barricade's print server on each network station. The Barricade printer server supports Windows 95/98/ME/NT/2000, and Unix platforms. Refer to Chapter 6: "Configuring Printer Services."

CHAPTER 4

CONFIGURING THE BARRICADE

After you have configured TCP/IP on a client computer, you can 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 can configure the Barricade and view statistics to monitor network activity.

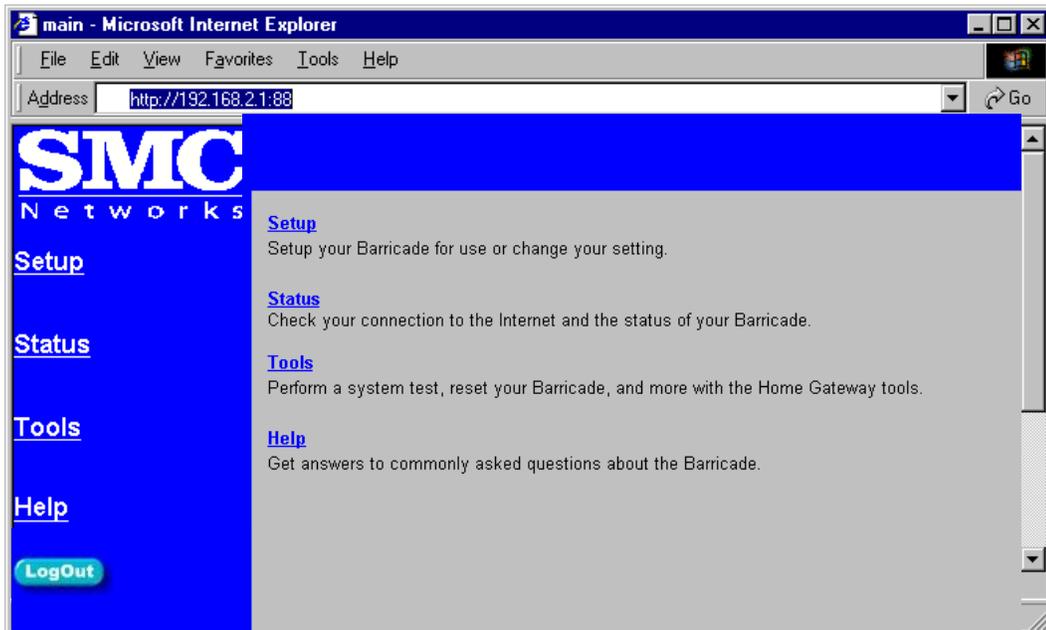
To access the Barricade's management interface, enter the IP address of the Barricade in your Web browser `http://192.168.2.1`

Then login the Barricade system with no password (by default, there is no password).

Note: For some browsers it may be necessary to include “:88” after the management IP address. For example,
`http://192.168.2.1:88`



The home page displays the Main Menu on the left-hand side of the screen and descriptive information on the right-hand side. The Main Menu links are used to navigate to other menus that display configuration parameters and statistics.



Navigating the Web Browser Interface

The Barricade's management interface includes four key menus – Status, Help, Tools, and Setup. The Status and Help menus provide general information on the current settings and how to configure the Barricade. The Setup menu is used to configure the LAN and WAN interface, as well as other advanced functions. While the Tools menu is used to reset the Barricade, restore the factory settings, or upgrade firmware.

Setting a Password

If this is your first time to access the Barricade, you should define a new password, record it and put it in a safe place. From the Main Menu, select "Setup" and click on "Change Password" and follow the instructions on the screen (see page 4-7). Note that passwords can consist of 3 to 12 alphanumeric characters and are case sensitive.

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 “Enter” button at the bottom of the page to confirm 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.”

Main Menu

Using the Web management interface, you can define system parameters, manage and control the Barricade and its ports, or monitor network conditions. The following table briefly describes the selections available from this program.

Menu	Description
<i>Setup Menu</i>	Configures TCP/IP settings and client services.
Change Password	Sets the password for administrator access.
Set Time Zone	Sets the local time zone.
LAN	Sets the TCP/IP configuration for the Barricade LAN interface and all DHCP clients.
WAN	Specifies the Internet connection type: (1) DHCP host configuration, (2) fixed IP and gateway address, (3) PPPoE configuration, or (4) dial-up modem.
DNS	Specifies DNS servers to use for domain name resolution.
Advanced Settings	Configures a variety of packet filtering and specialized functions, including: <ul style="list-style-type: none"> Firewall Virtual Server Special Application Client Filtering Misc
<i>Status Menu</i>	Displays WAN/LAN connection status, as well as firmware and hardware version numbers.
INTERNET	Displays WAN connection type and status.
GATEWAY	Displays system IP settings, as well as DHCP, NAT, Firewall and Printer 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 any illegal attempts to access your network.

Menu	Description
DHCP Client Log	Displays information on all DHCP clients attached to your network.
<i>Tools Menu</i>	Contains options to reset the system, restore configuration settings, or update system firmware.
Reset Barricade	Reboots the system and retains all of your configuration settings.
Restore Factory Settings	Restores all configuration settings to the factory defaults
Update Firmware	Upgrades the system with the latest firmware obtained from SMC's website at www.smc.com
<i>Help Menu</i>	Contains information for product support, troubleshooting, and network terminology.
<i>Logout Button</i>	Exit the Barricade system.

Networking and Client Services

Use the Setup menu to configure the LAN interface (including TCP/IP parameters for the Barricade's gateway address, DHCP address pool for dynamic client address allocation), the WAN connection options, DNS domain name mapping, and other advanced services.

SMC
Networks

[Main](#) [Setup](#) [Status](#) [Tools](#) [Help](#)

[Change Password](#)

[Set Time Zone](#)

LAN

WAN
[DHCP](#)
[Fixed IP](#)
[PPPoE](#)
[Modem](#)

DNS

Advanced Settings
[Firewall](#)
[NAT](#)
[Virtual Server](#)
[Special Application](#)
[Virtual DMZ Host](#)
[Remote Management](#)
[Client Filtering](#)

Setup

The Barricade setup will allow you to configure your Barricade for use with the 56K modem, ISDN TA, or a cable or DSL modem. Click on the navigation menu on the left to change individual settings.

Be sure to click ENTER after you have completed your settings on each page.

Click ENTER to continue. **ENTER**

You can use the Setup Wizard by clicking the “Enter” button at the bottom of the page and changing the required settings, or you can select the specific items you need to change from the Setup menu on the left side of the screen.

Change Password

Setup | Change Password

To change your administrative password, enter your existing password and then enter the new password twice. If you do not require a password, leave blank.
(The unit ships without a set password)

Current Password

New Password
 (3-12 Characters)

Re-Enter Password for Verification

Click ENTER to save settings and continue. 

Use this menu to restrict management access based on a specific password. Anyone can access the Status and Help menus, but you must enter a password to access the configuration options provided by the Setup and Tools menus. By default, there is no password, so please assign a password to the Barricade as soon as possible, and store it in a safe place.

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

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

Set Time Zone

Setup | Set Time Zone

Please choose your local time zone. This will only be required during your initial setup.

Enter Time Zone : (GMT-12:00) Enewetak, Kwajalein

Click ENTER to save settings and continue. **ENTER**

Set the time zone for the Barricade. This information is used for log entries and client filtering.

LAN Gateway and DHCP Settings

Setup | LAN

IP address : 192 . 168 . 2 . 1

IP Subnet Mask : 255.255.255.0

DHCP Server : Enabled Disabled

Lease Time (sec) : Forever

IP address pool

Start IP : 192 . 168 . 2 . 2

End IP : 192 . 168 . 2 . 40

Domain Name :

Click ENTER to save settings and continue. **ENTER**

Configure the gateway address of the Barricade. To dynamically assign the IP address for client PCs, enable the DHCP Server, set the lease time, and then specify the address range. Also remember to configure all of your client PCs for dynamic address allocation.

Valid IP addresses consist of four numbers, and are separated by periods. The first three fields are the network portion, and can be from 0–255, while the last field is the host portion and can be from 1–254. However, remember not to include the gateway address of

the Barricade in the client address pool.

WAN Configuration

Specify the WAN connection type required by your Internet Service Provider, then click “More Configuration” to provide detailed configuration parameters for the selected connection type.

Setup | WAN

Choose Internet Connection Type

Type	Usage
<input checked="" type="radio"/> Dynamic IP Address	Obtain an IP address automatically.
<input type="radio"/> Static IP Address	ISP assigns you a static IP address.
<input type="radio"/> PPP over Ethernet	Some ISPs require the use of PPPoE to connect to their services.
<input type="radio"/> Dial-up on Demand	Use an external modem to connect to the Internet.

Specify one of the first three options to configure a WAN connection through the RJ-45 port (i.e., a connection to an xDSL modem or Cable modem). Specify the “Dial-up on Demand” option to configure a WAN connection through the serial port (i.e., a connection to an ISDN TA or PSTN modem).

Note: If WAN connections are configured for both the RJ-45 and serial port, the serial port will be used as a backup Internet connection if the primary RJ-45 WAN connection fails.

Dynamic IP Address – DHCP

Setup | WAN | DHCP

Host Name

MAC Address - - - - -

Click ENTER to save settings and continue.

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. You can use the “Clone MAC Address” button to copy the MAC address of the Ethernet Card installed by your ISP (in your PC) and replace the WAN MAC address with this MAC address.

Static IP Address – Fixed IP

Setup | WAN | Fixed IP

Has your Internet Service Provider given you an IP address and Gateway address?

IP address assigned by your ISP . . .

Subnet Mask . . .

ISP Gateway Address . . .

Click ENTER to save settings and continue.

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

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

PPP over Ethernet – PPPoE

Setup | WAN | PPPoE

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

Use PPPoE Authentication

User Name

Password

Please retype your password

Service Name

Maximum Idle Time (seconds) Auto-reconnect

Click ENTER to save settings and continue.

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

Dial-up on Demand – Modem

[Setup](#) | [WAN](#) | [Dial-up Modem](#)

Enter in your Internet Service Provider settings and click the ENTER button.

Check if you only use a dial-up modem to connect to the Internet.

Auto backup : Enabled Disabled

Primary Dial-up Secondary Dial-up

Dial-Up Service Phone Number
(enter the number exactly as it should be dialed)

Dial-Up Account Information:

User Name

Password

Password Verification
(please retype your password)

Modem Initialization string

Maximum Idle time (seconds) Auto-reconnect

Has your Internet Service Provider given you an IP address?
 NO YES

(fill in information below)

IP address assigned by your ISP

Subnet Mask

Click ENTER to save settings and continue.

If you are accessing the Internet via an ISDN TA or PSTN modem attached to the serial port on the Barricade, then you must specify your account information on this screen as described below.

Check if you only use a dial-up modem to connect to the Internet.
– If the serial port is used for primary Internet access, then mark this item. If not marked, then this connection will only be used for backup access if the primary WAN link fails.

Dial-Up Service Phone Number – Enter the phone number your service provider has given to you for Internet access.

Dial-Up Account Information – Enter your ISP account user name and password.

Modem Initialization string – Enter the initialization string provided by your modem manufacturer. The following is a sample initialization string: “ATQ1S0=1&D0&K0&W” as defined below:

- Q1 : Inhibit result codes to DTE
- S0=1 : Auto answer on first ring
- D0 : Don’t care DTR
- K0 : Disables DTE/DCE flow control
- W : Write command to modem memory

Maximum Idle time – Enter the maximum idle time for the Barricade (in second).

Has your Internet Service Provider given you an IP address? – If you are assigned a dynamic IP address every time you dial up, mark “No” for this item. However, if your ISP has assigned a fixed IP address for you to use, mark “Yes” for this item and enter the IP address and subnet mask.

Note: If your ISP has given you a secondary phone number, or if you have a secondary Internet service account, then fill in the relevant fields under “Secondary Dial-up.”

DNS Configuration

Setup | DNS

Has your Internet service provider given you a DNS address?

Domain Name Server (DNS) Address

. . .

Secondary DNS Address (optional)

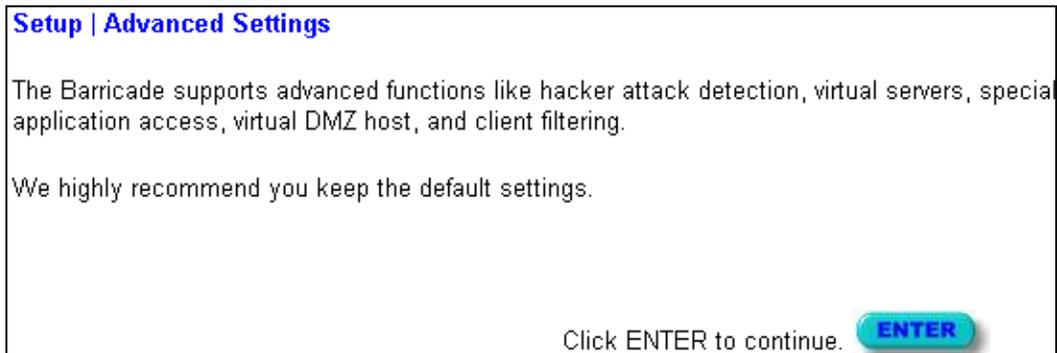
. . .

Click ENTER to save settings and continue. 

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

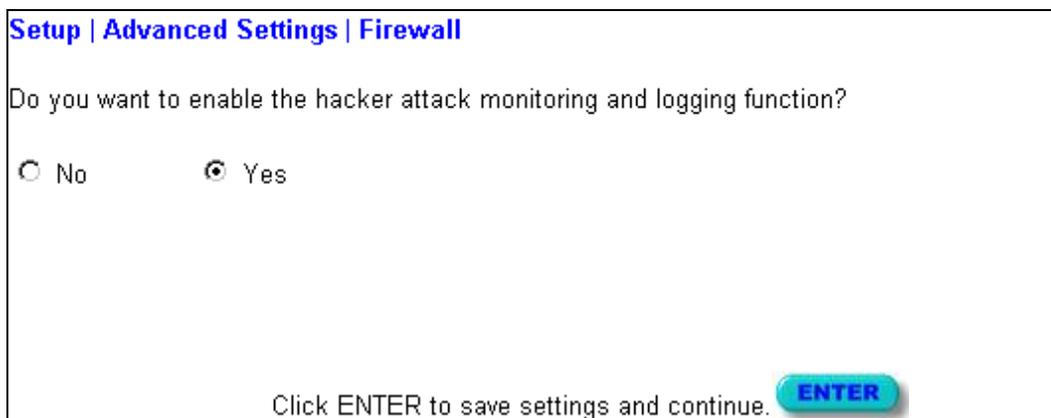
Configuring Client Services

The Barricade includes a broad range of client services, including firewall protection, network address translation, virtual server, connection support for special applications, and restricted Internet access for specified clients. You can configure these functions using the Setup Wizard by clicking “Enter” at the bottom of the Advanced Settings screen, or by selecting specific items from the menu on the left of the screen.



Firewall Protection

The Barricade’s firewall can 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.



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 server (located at another internal IP address).

Setup | [Advanced Settings](#) | [Virtual Server](#)

	Private IP	Private Port	Type	Public Port
1.	192.168.2. <input type="text" value="2"/>	<input type="text" value="80"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text" value="80"/>
2.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
3.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
4.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
5.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
6.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
7.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
8.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
9.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
10.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
11.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
12.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
13.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
14.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
15.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
16.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
17.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
18.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
19.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>
20.	192.168.2. <input type="text"/>	<input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="text"/>

Click ENTER to save settings and continue. 

The WAN interface must have a fixed IP address to utilize this function. For example, if you set Type/Public Port to TCP/80 (HTTP or Web) and the Private IP/Port to 192.168.2.2/80, then all

HTTP request from outside users will be transferred to 192.168.2.2. Therefore, by just entering the IP Address provided by the ISP, Internet users can access the service they need at the local address to which you redirect them.

Some of the more common TCP service ports include:

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

Enabling Special Applications

Some applications require multiple connections, such as Internet gaming, videoconferencing, Internet telephony and others. These applications may not work when Network Address Translation (NAT) is 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.

Setup | Advanced Settings | Special Application

Enter the information you want.

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

Click ENTER to save settings and continue. 

Specify the port normally associated with an application in the “Trigger Port” field, select the protocol type as TCP or UDP, then enter the public ports associated with the trigger port to open them for inbound traffic.

Note: If an application still cannot function correctly after enabling multiple ports via the Special Application screen, you may have to open the client PC for full Internet access using the DMZ Host option.

Client Filtering

You can filter Internet access for local clients based on IP address, application type (i.e., HTTP port), and time of day.

Setup | Advanced Settings | Client Filtering

	IP	Port	Type	Block Time	Day	Time	Enabled
1.	192.168.2. <input type="text" value="50"/> ~ <input type="text" value="99"/>	<input type="text" value="21"/> ~ <input type="text" value="21"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input checked="" type="radio"/> Always <input type="radio"/> Block	<input type="text"/> ~ <input type="text"/>	<input type="text"/> ~ <input type="text"/>	<input checked="" type="checkbox"/>
2.	192.168.2. <input type="text" value="110"/> ~ <input type="text" value="119"/>	<input type="text" value="80"/> ~ <input type="text" value="80"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input type="radio"/> Always <input checked="" type="radio"/> Block	<input type="text" value="MON"/> ~ <input type="text" value="FRI"/>	<input type="text" value="8:00am"/> ~ <input type="text" value="5:00pm"/>	<input checked="" type="checkbox"/>
3.	192.168.2. <input type="text"/> ~ <input type="text"/>	<input type="text"/> ~ <input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input checked="" type="radio"/> Always <input type="radio"/> Block	<input type="text"/> ~ <input type="text"/>	<input type="text"/> ~ <input type="text"/>	<input type="checkbox"/>
4.	192.168.2. <input type="text"/> ~ <input type="text"/>	<input type="text"/> ~ <input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input checked="" type="radio"/> Always <input type="radio"/> Block	<input type="text"/> ~ <input type="text"/>	<input type="text"/> ~ <input type="text"/>	<input type="checkbox"/>
5.	192.168.2. <input type="text"/> ~ <input type="text"/>	<input type="text"/> ~ <input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input checked="" type="radio"/> Always <input type="radio"/> Block	<input type="text"/> ~ <input type="text"/>	<input type="text"/> ~ <input type="text"/>	<input type="checkbox"/>
6.	192.168.2. <input type="text"/> ~ <input type="text"/>	<input type="text"/> ~ <input type="text"/>	<input checked="" type="radio"/> TCP <input type="radio"/> UDP	<input checked="" type="radio"/> Always <input type="radio"/> Block	<input type="text"/> ~ <input type="text"/>	<input type="text"/> ~ <input type="text"/>	<input type="checkbox"/>

Click ENTER to save settings and continue.

For example, this screen shows that clients in the address range 192.168.2.50-99 are permanently restricted from using FTP (Port 21), while clients in the address range 192.168.2.110-119 are blocked from browsing the Internet from Monday through Friday.

Misc

Setup | Advanced Settings | Miscellaneous

Item	Setting	Enabled
Administrator Time-out	<input type="text"/> minutes (0 to disable)	<input type="checkbox"/>
Discard PING from WAN side		<input type="checkbox"/>
Remote Management	<input type="text"/> . <input type="text"/> . <input type="text"/> . <input type="text"/>	<input type="checkbox"/>
IP Address of Virtual DMZ Host	192.168.123. <input type="text"/>	<input type="checkbox"/>

Click ENTER to save settings and continue. 

Administrator Time-out – Enter time-out setting in minute for administration protection.

Discard PING from WAN side – You can enhance your network security by preventing any host on the WAN to ping the Barricade.

Remote Management – By default, management access is only available to users on your local network. However, you can also manage the Barricade from a remote host by adding the IP address of an administrator to this screen.

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

Virtual DMZ Host – If you have a client PC that cannot run an Internet application properly from behind the firewall or after configuring the Special Applications function, 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.

Viewing Network and Device Status

You can use the following screen to display WAN/LAN connection status, firmware and hardware version numbers, any illegal attempts to access your network, as well as information on all DHCP clients connected to your network.

The screenshot shows a web-based interface for viewing network and device status. It is divided into several sections:

- Status**: A header for the main information section.
- INTERNET**: Shows 'Cable/DSL: DISCONNECTED'.
- GATEWAY**: Lists IP Address (192.168.2.1), Subnet Mask (255.255.255.0), DHCP Server (Enabled), Firewall (Enabled), and Printer Status (NOT READY).
- INFORMATION**: Lists Connected Clients (1), Runtime Code Version (V1.17E (Beta Test Only)), Boot Code Version (V1.10), LAN MAC Address (00-10-B5-DD-B1-56), WAN MAC Address (00-10-B5-DD-B1-57), Hardware Version, and Serial Num.
- Security Log**: A section with a description 'View any attempts that have been made to gain access to your network.' and an empty text area.
- DHCP Client Log**: A section with a description 'View the information of the LAN DHCP clients linking to the gateway now.' and a text area containing the entry: '. IP=192.168.2.14; MAC=0x00e0298f69f0; hos'.

At the bottom of the interface, there are buttons for 'Save', 'Clear', 'Release', and 'Renew'.

The following items are included in this screen:

Field	Description
INTERNET	Displays WAN connection type and status.
GATEWAY	Displays system IP settings, as well as DHCP, NAT, Firewall and Printer 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 any 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.
DHCP Client Log	Displays information on all DHCP clients on your network.
Release	Click on this button to confirm DHCP settings.
Renew	Click on this button to refresh DHCP settings.

Using System Tools

Tools

Use these tools to manage your Barricade.

[Reset Barricade](#) will reboot the Barricade and retain all of your configuration settings.

[Restore Factory Defaults](#) will remove all settings and place the Barricade in its original factory state.

[Update Firmware](#) will allow you to upgrade the firmware on your Barricade using a file from the SMC web site.

You can use the “Tools” menu to reboot the Barricade, restore factory settings, or update firmware.

The “Backup Settings” button allows you to save your Barricade’s configuration to a file named config.bin on your PC. You can then click on the “Restore Settings” button to restore the saved backup configuration file.

Note: If you use the Reset button on the front panel, the Barricade performs a power reset and restores the factory settings.

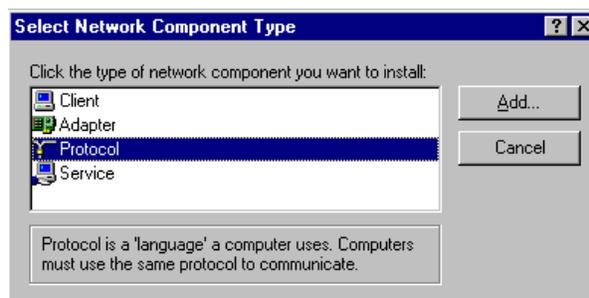
CHAPTER 5

CONFIGURING CLIENT TCP/IP

If you have not previously installed the TCP/IP protocol 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 TCP/IP to Work with the Barricade” on page 5-3.

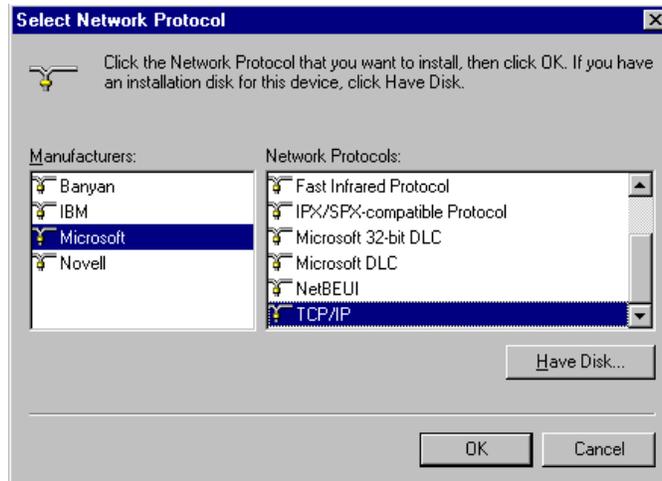
Installing TCP/IP Protocol in Your PC

1. Click the *Start* button and choose *Settings*, then click *Control Panel*.
2. Double click the *Network* icon and select the *Configuration* tab in the Network window.
3. Click the *Add* button to add the network component to your PC.
4. Double click *Protocol* to add the TCP/IP protocol.



INSTALLING TCP/IP PROTOCOL IN YOUR PC

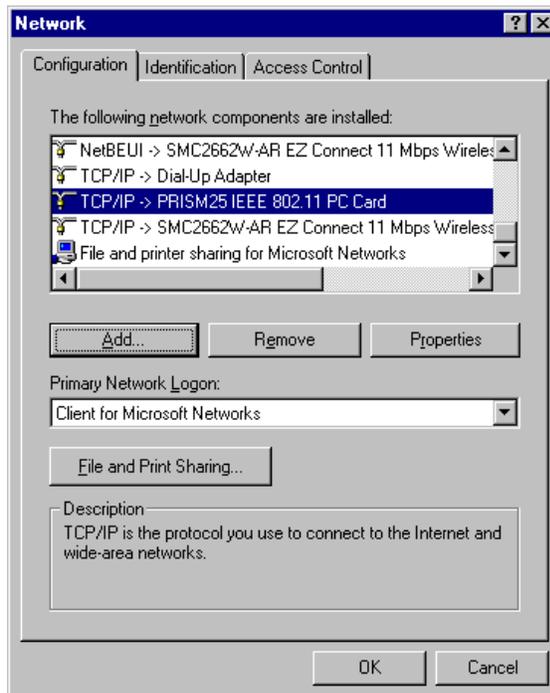
5. Select the *Microsoft* item in the manufacturers list. And choose *TCP/IP* in the Network Protocols. Click the *OK* button to return to the Network window.



6. The TCP/IP protocol will be listed in the Network window. Click *OK* to complete the install procedure and restart your PC to enable the TCP/IP protocol.

Setting TCP/IP to Work with the Barricade

1. Click the *Start* button and choose *Settings*, then click *Control Panel*.
2. Double click the *Network* icon. Select the TCP/IP line that has been assigned to your network card in the *Configuration* tab of the Network window.



3. Click the *Properties* button to set the TCP/IP protocol for the Barricade.
4. 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.)

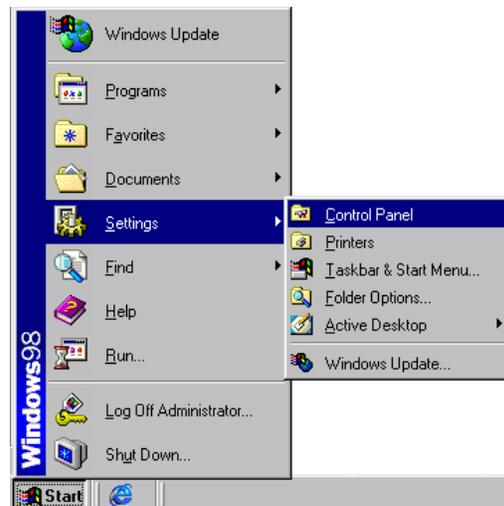
Configuring Your Computer with Windows 95/98/ME

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

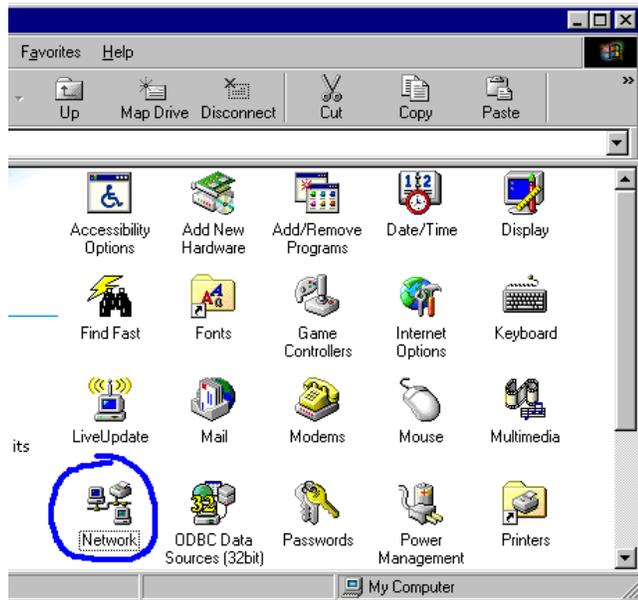
Step 1. Configure TCP/IP Settings

After you have completed the hardware setup by connecting your devices, you need to configure 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 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.

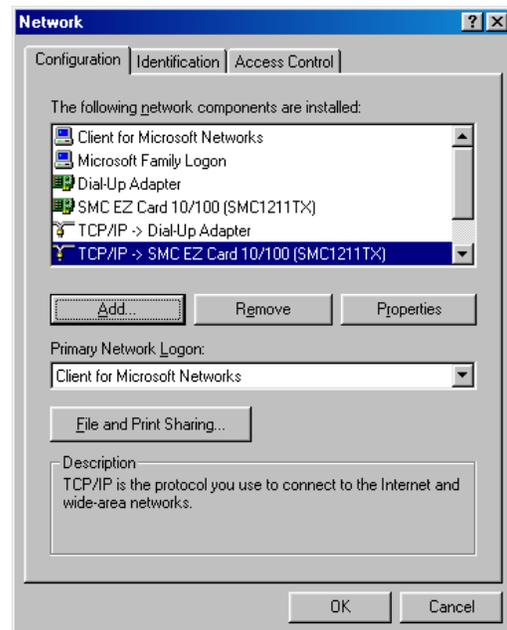
1. From the Windows desktop, click the "Start" button. Choose "Settings," then click "Control Panel."



- From "Control Panel," double-click the "Network" icon.



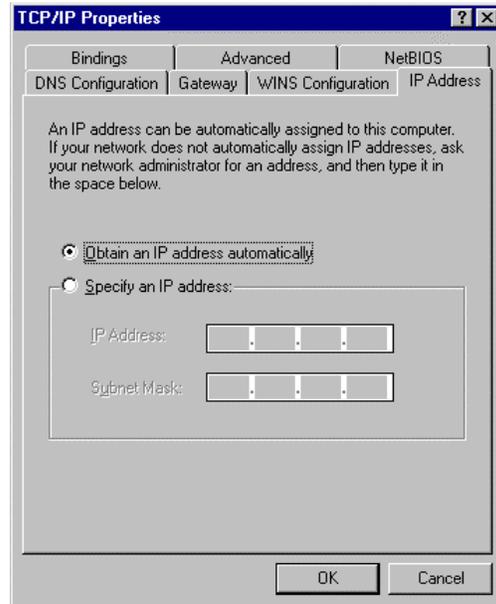
- In the "Network" window, under the "Configuration" tab, double-click the "TCP/IP" entry that is listed with your network card.



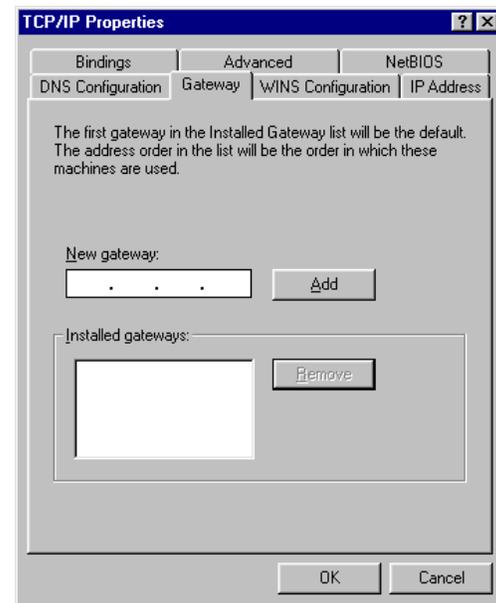
SETTING TCP/IP TO WORK WITH THE BARRICADE

4. Select the "IP Address" tab.

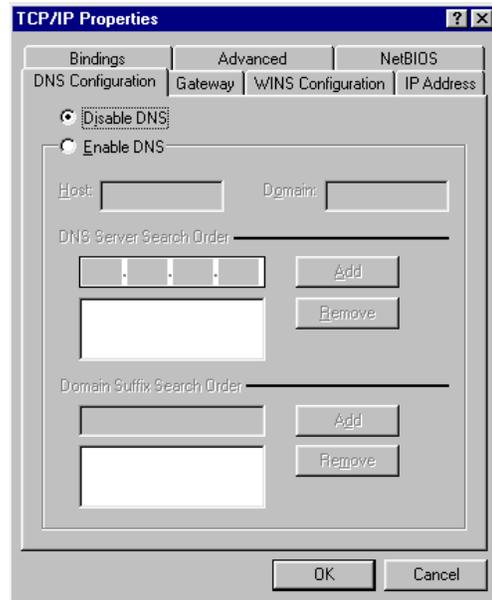
If "Obtain an IP address automatically" is already selected, your computer is already configured for DHCP. Click "Cancel" to close each window, and skip to Step 2 "Disable HTTP Proxy."



5. Locate your IP address and Subnet Mask. Record them in the spaces provided below.
6. Click the "Gateway" tab and record the numbers listed under "Installed gateways."



7. Click the "DNS Configuration" tab. Locate the DNS servers listed under "DNS Server Search Order." Record the listed addresses.
8. After writing down your settings, check to make sure you have recorded them correctly. Click the "IP Address" tab and then click "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 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 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

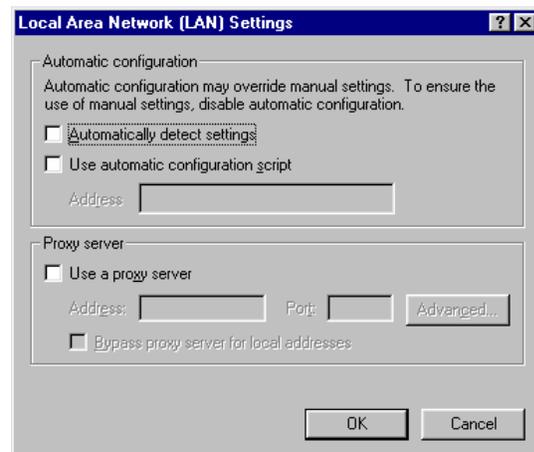
1. Open Internet Explorer and click the stop button. Click "Tools," then "Internet Options."



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



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

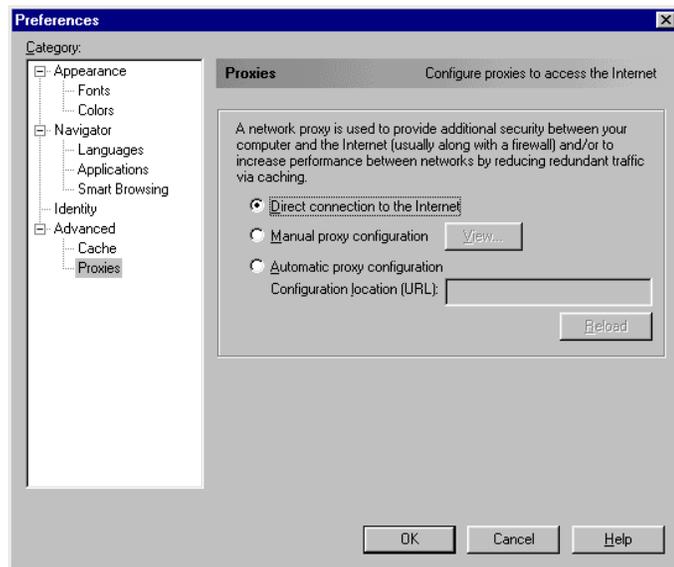


Netscape

1. Open Netscape and click the stop button. 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."



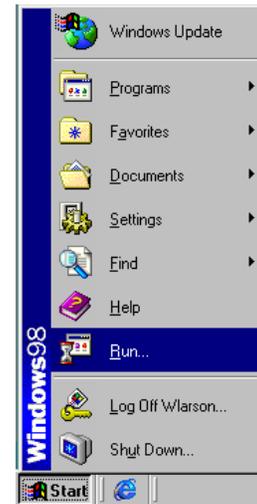
3. Repeat these steps for each Windows 95/98/Me computer connected to your Barricade.

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 any old IP settings and renewing them with settings from your Barricade, you will also verify that you have configured your computer correctly.

SETTING TCP/IP TO WORK WITH THE BARRICADE

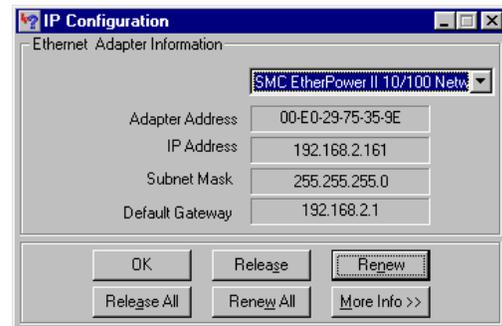
1. Click "Start," then "Run..."



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



3. From the drop-down menu, select your network card. Click "Release" and then "Renew." Verify that your IP address is now 192.168.2.xxx, your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168. 2.1. These values confirm that your Barricade is functioning. Click "OK" to close the "IP Configuration" window.



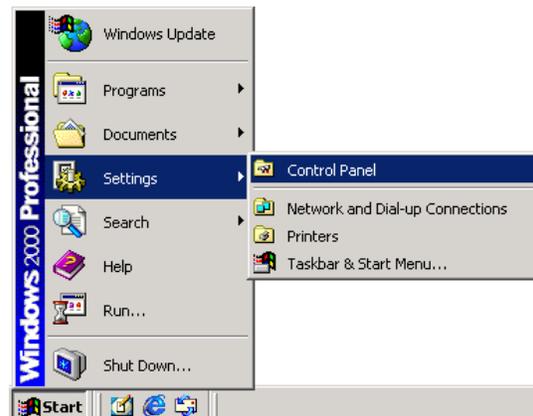
Configuring Your Computer with Windows 2000

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 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.

Here is what to do:

1. From the Windows desktop, click the "Start" button. Choose "Settings," then click "Control Panel."

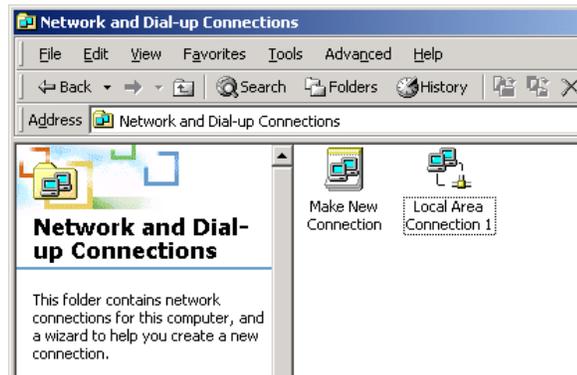


SETTING TCP/IP TO WORK WITH THE BARRICADE

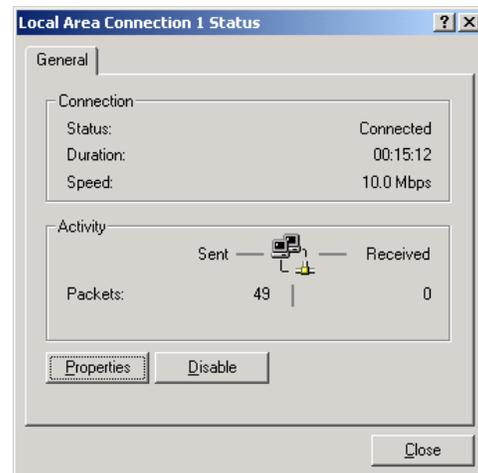
2. Double-click the "Network & Dial-Up Connections" icon.



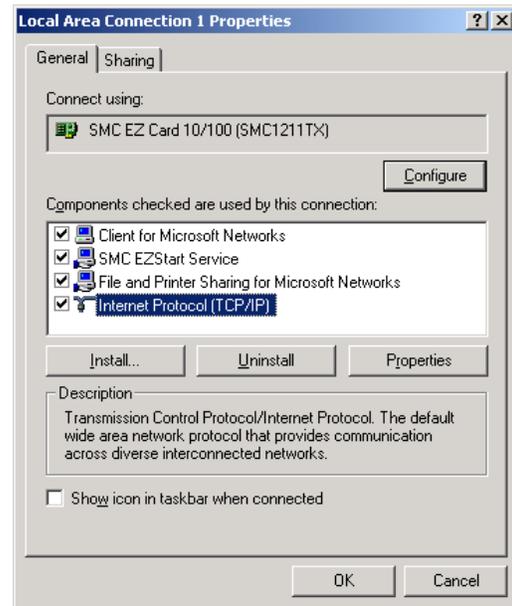
3. Double-click the icon that corresponds to the connection to your Barricade.



4. Click "Properties."

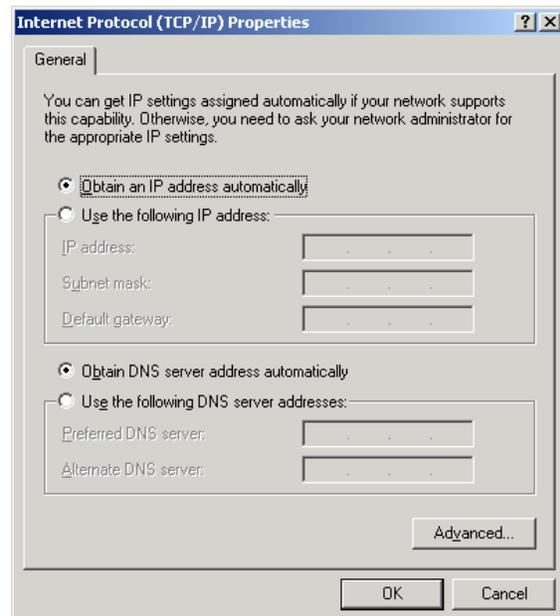


5. Double-click "Internet Protocol (TCP/IP)."



6. All the information that you need to record is on the "Internet Protocol (TCP/IP) Properties" 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."



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.

SETTING TCP/IP TO WORK WITH THE BARRICADE

TCP/IP Configuration Setting

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

Step 2. Disable HTTP Proxy

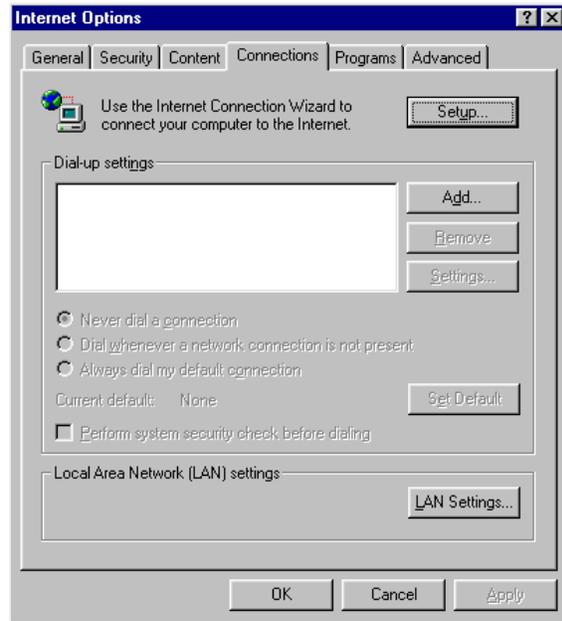
You will need to verify that the "HTTP Proxy" feature of your Web browser is disabled. This is so that your Web browser will be able to view the configuration pages inside your Barricade. The following steps are for Internet Explorer and for Netscape. Determine which browser you use and follow the appropriate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

Internet Explorer

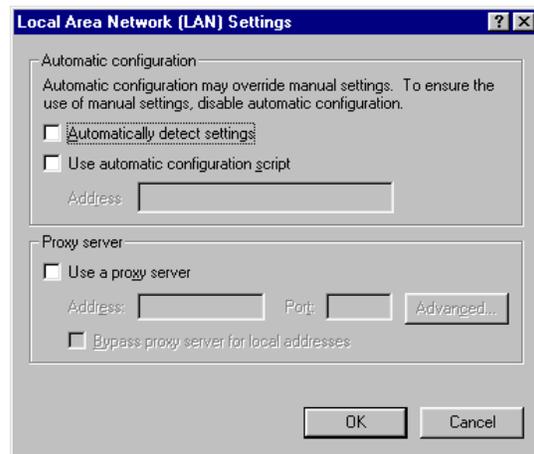
1. Open Internet Explorer and click the stop button. Click "Tools," then "Internet Options."



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

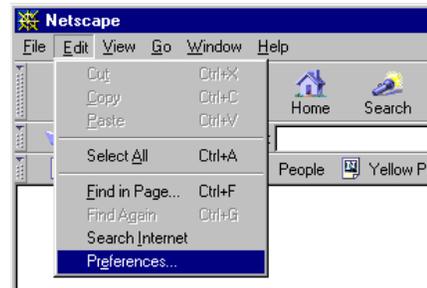


- Clear all the checkboxes.
- Click "OK," and then click "OK" again to close the "Internet Options" window.



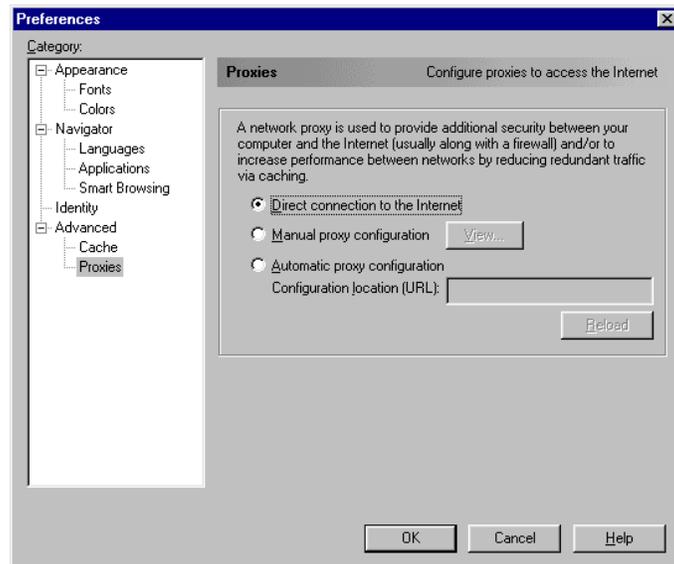
Netscape

- Open Netscape and click the stop button. Click "Edit," then click "Preferences..."



SETTING TCP/IP TO WORK WITH THE BARRICADE

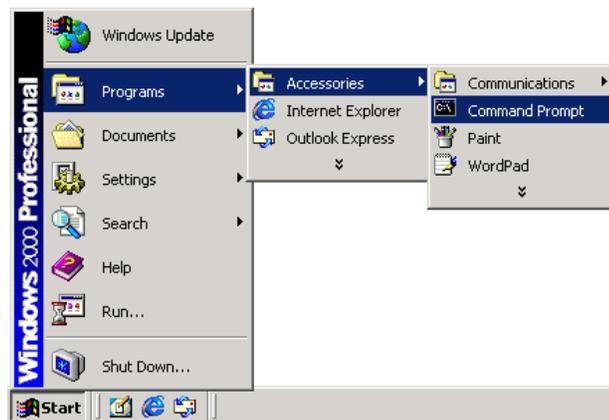
2. In the "Preferences" window, under "Category" double-click "Advanced," then click "Proxies." Select "Direct connection to the Internet." Click "OK."



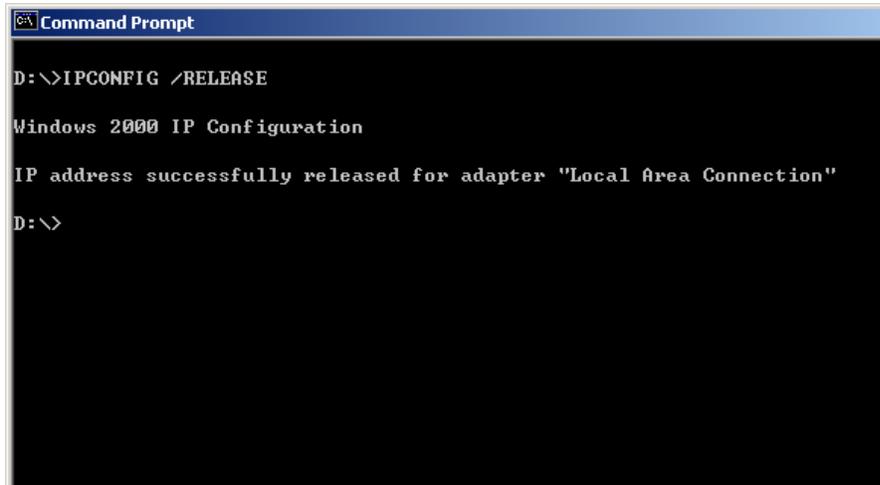
Step 3. Obtain IP Settings From Your Barricade

Now that you have configured your computer to connect to your Barricade, it needs to obtain new network settings. By releasing 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."

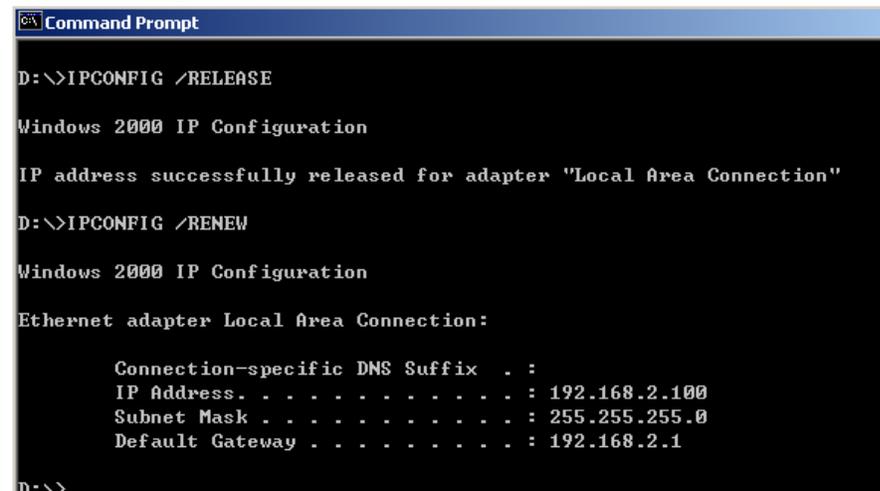


2. In the "Command Prompt" window, type "IPCONFIG /RELEASE" and press the <ENTER> key.



```
Command Prompt
D:\>IPCONFIG /RELEASE
Windows 2000 IP Configuration
IP address successfully released for adapter "Local Area Connection"
D:\>
```

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.



```
Command Prompt
D:\>IPCONFIG /RELEASE
Windows 2000 IP Configuration
IP address successfully released for adapter "Local Area Connection"
D:\>IPCONFIG /RENEW
Windows 2000 IP Configuration
Ethernet adapter Local Area Connection:

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

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

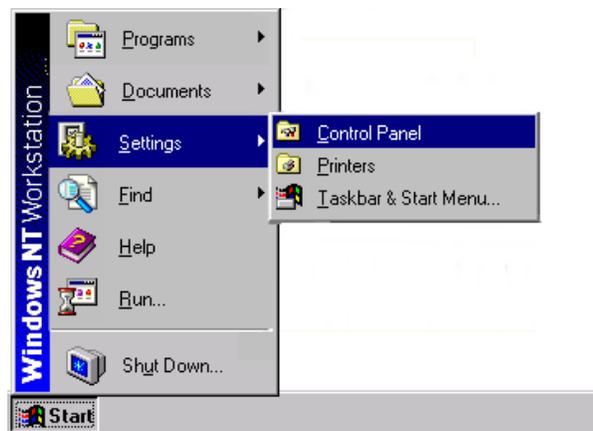
Configuring Your Computer with Windows NT 4.0

Step 1. Configure TCP/IP Settings

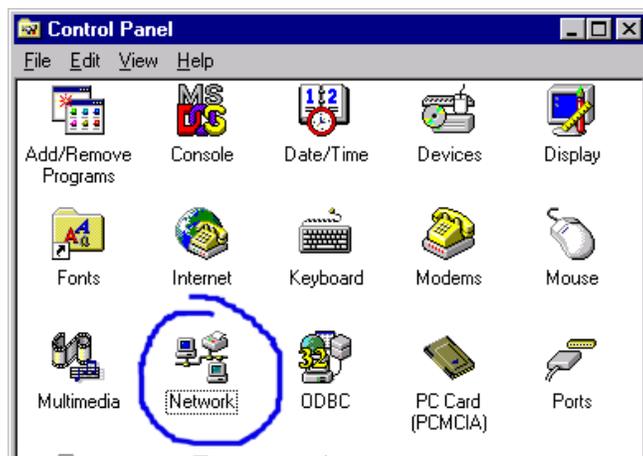
After you have completed the hardware setup, you need to configure your computer to connect to your Barricade. You need to determine how your ISP issues your IP address. Many ISPs issue these numbers automatically using a networking technology known as Dynamic Host Control Protocol, or DHCP. Other ISPs 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.

Here is what to do:

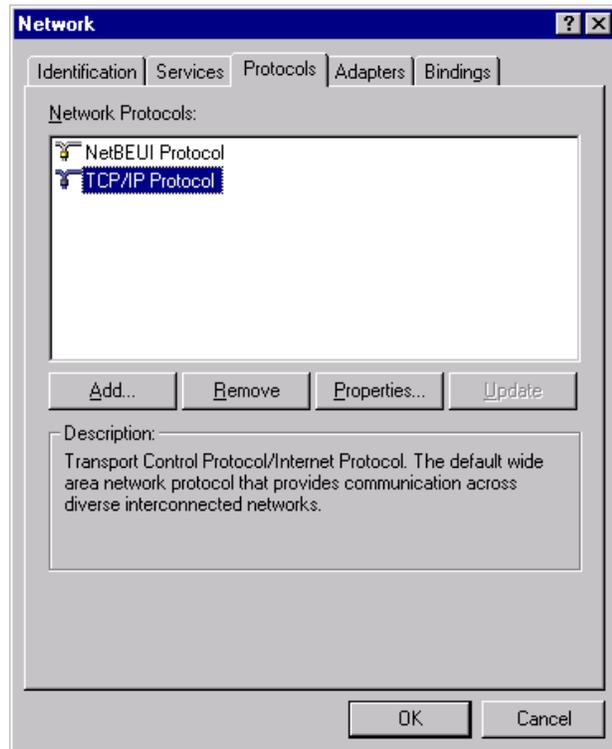
1. From the Windows desktop click "Start," then "Settings," and click "Control Panel."



2. Double-click the "Network" icon.

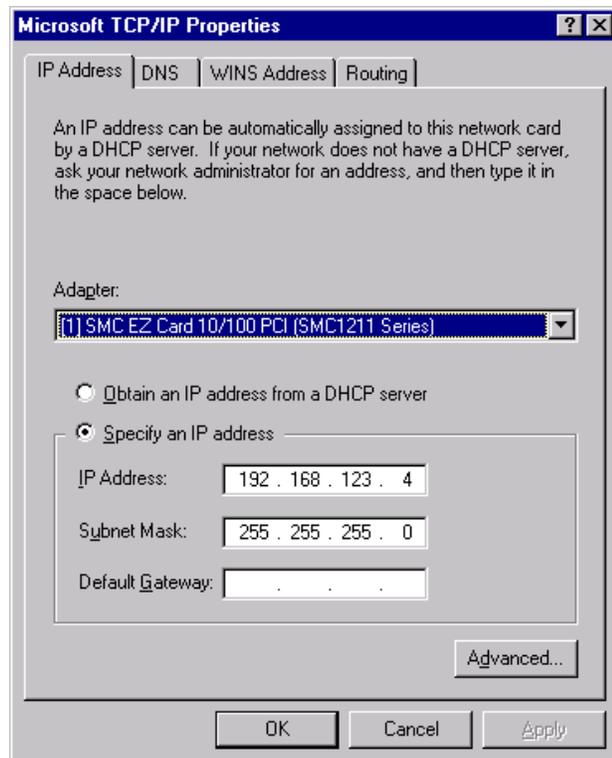


3. Select the "Protocols" tab.
4. Double-click "TCP/IP Protocol."



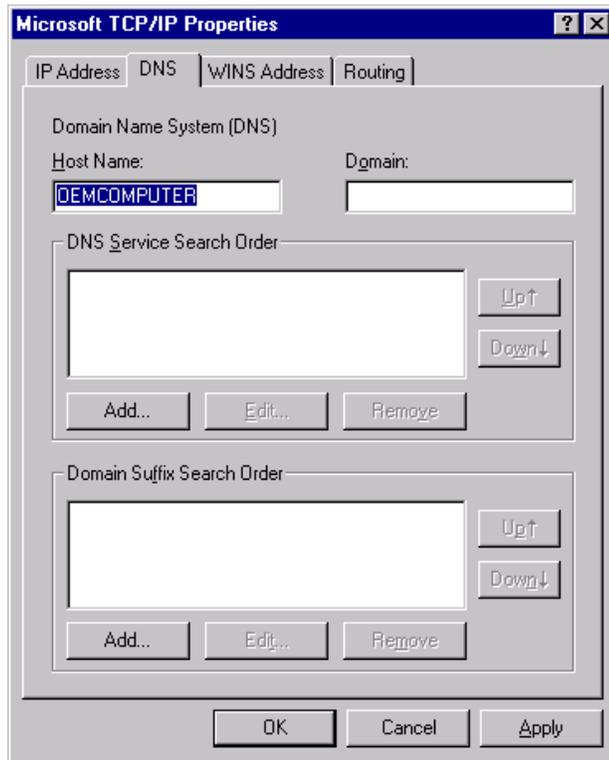
5. Select the "IP Address" tab.
6. In the "Adapter" drop-down list, be sure your Ethernet adapter is selected.

If "Obtain an IP address automatically" is already selected, your computer is already configured for DHCP. Click "Cancel" to close each window, and skip to Step 2 "Disable HTTP Proxy."



SETTING TCP/IP TO WORK WITH THE BARRICADE

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



TCP/IP Configuration Setting

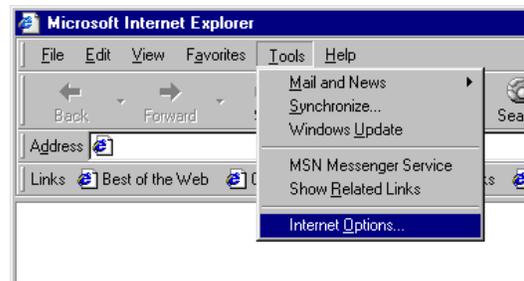
IP Address _____ : _____ : _____ : _____
Subnet Mask _____ : _____ : _____ : _____
Primary DNS Server _____ : _____ : _____ : _____
Secondary DNS Server _____ : _____ : _____ : _____
Default Gateway _____ : _____ : _____ : _____

Step 2. Disable HTTP Proxy

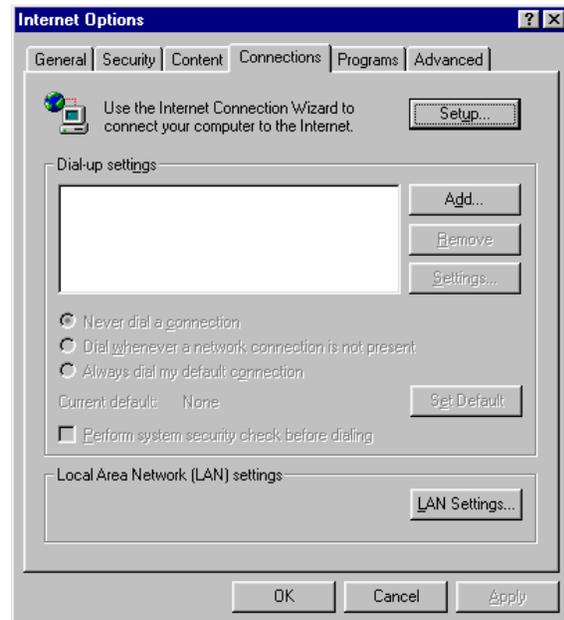
You will need to verify that the "HTTP Proxy" feature of your Web browser is disabled. This is so that your Web browser will be able to view the configuration pages inside your Barricade. The following steps are for Internet Explorer and for Netscape. Determine which browser you use and follow the appropriate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

Internet Explorer

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

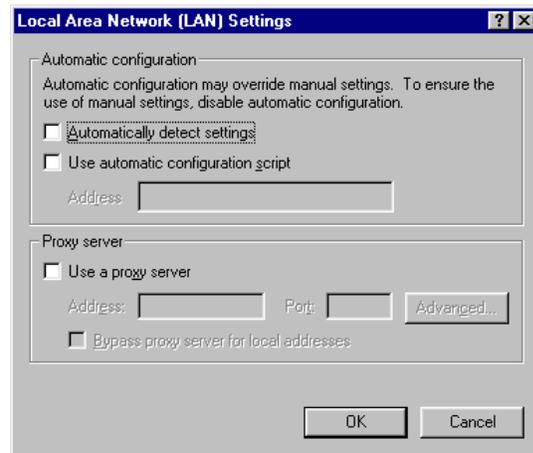


2. In the "Internet Options" window click the "Connections" tab. Next, click the "LAN Settings..." button.



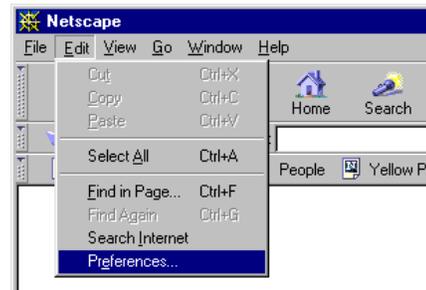
SETTING TCP/IP TO WORK WITH THE BARRICADE

3. Clear all the checkboxes.
4. Click "OK," and then click "OK" again to close the "Internet Options" window.

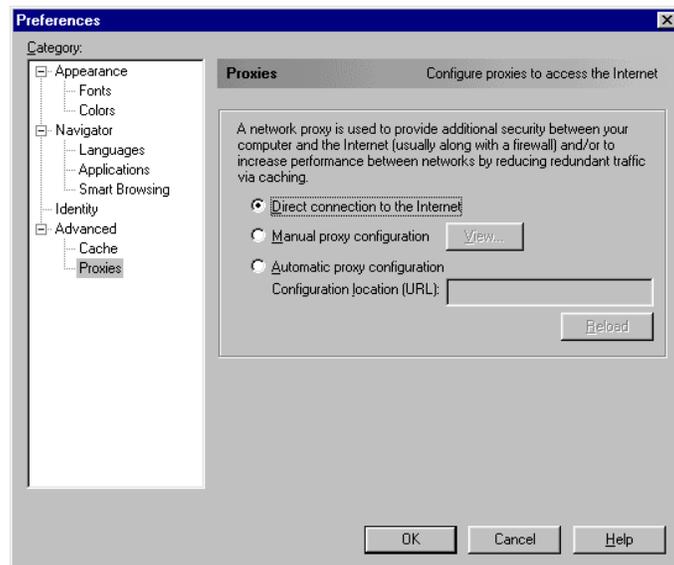


Netscape

1. Open Netscape and click the stop button. Click "Edit," then click "Preferences..."



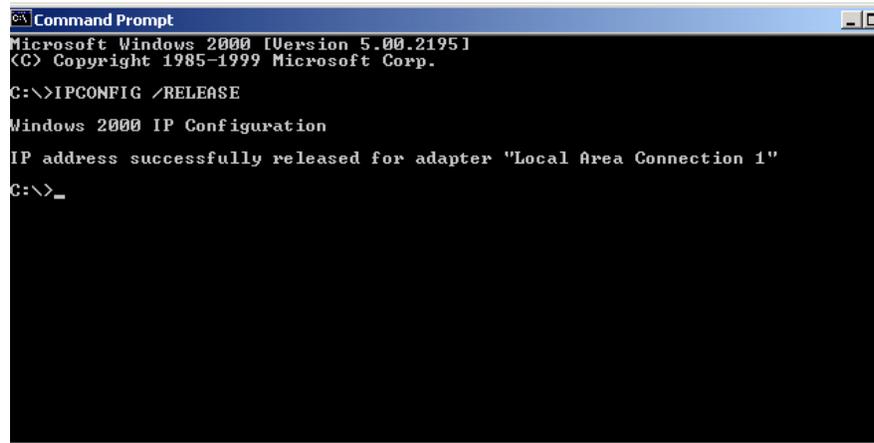
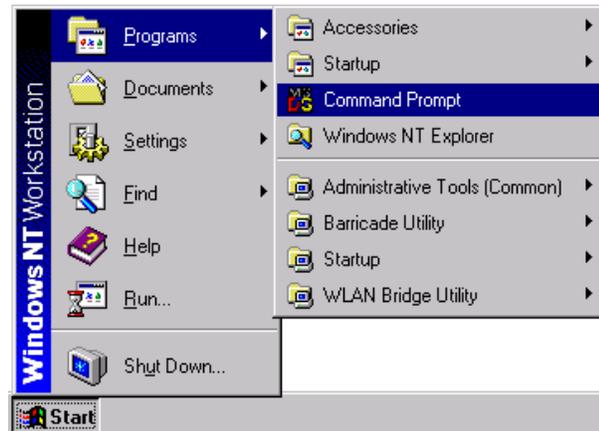
2. In the "Preferences" window, under "Category" double-click "Advanced," then click "Proxies." Select "Direct connection to the Internet." Click "OK."



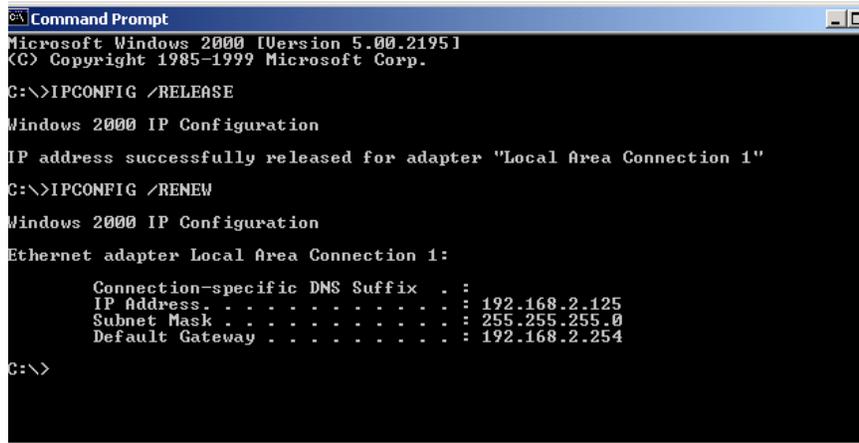
Step 3. Obtain IP Settings From Your Barricade

Now that you have configured your computer to connect to your Barricade, it needs to obtain new network settings. By releasing 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," and then select "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 your Barricade is functioning.



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

C:\>IPCONFIG /RELEASE

Windows 2000 IP Configuration

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

C:\>IPCONFIG /RENEW

Windows 2000 IP Configuration

Ethernet adapter Local Area Connection 1:

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

C:\>
```

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

Configuring Your Macintosh Computer

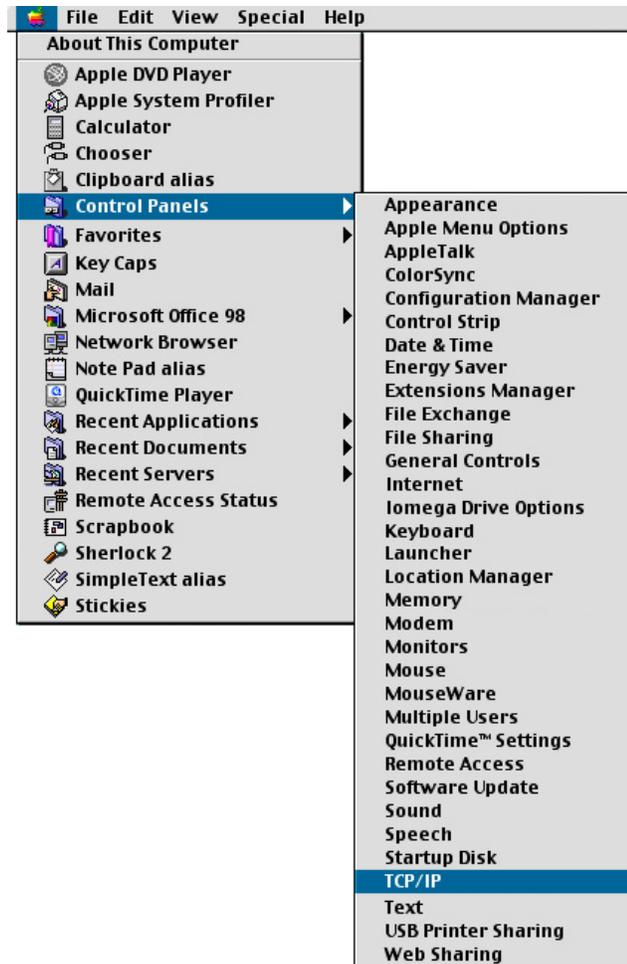
You may find that the instructions here do not exactly match your screen. This is because these steps and screenshots were created using Mac OS 8.5. Mac OS 7.x and above are all very similar, but may not be identical to Mac OS 8.5.

Step 1. Configure TCP/IP Settings

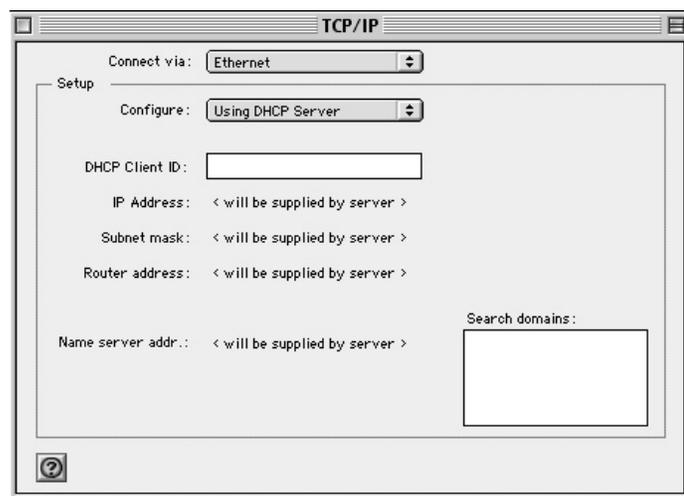
After you have completed the hardware setup, you need to configure your computer to connect to your Barricade. You need to determine how your ISP issues your IP address. Many ISPs issue these numbers automatically using a networking technology known as Dynamic Host Control Protocol, or DHCP. Other ISPs 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.

Here is what to do:

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



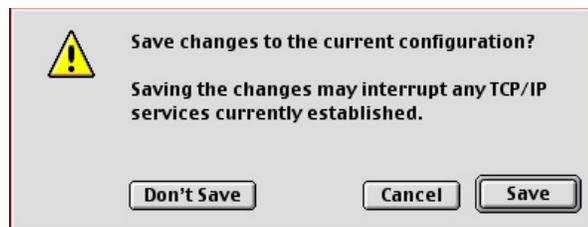
2. In the TCP/IP dialog box, make sure that "Ethernet" is selected in the "Connect Via:" field.



SETTING TCP/IP TO WORK WITH THE BARRICADE

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."

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

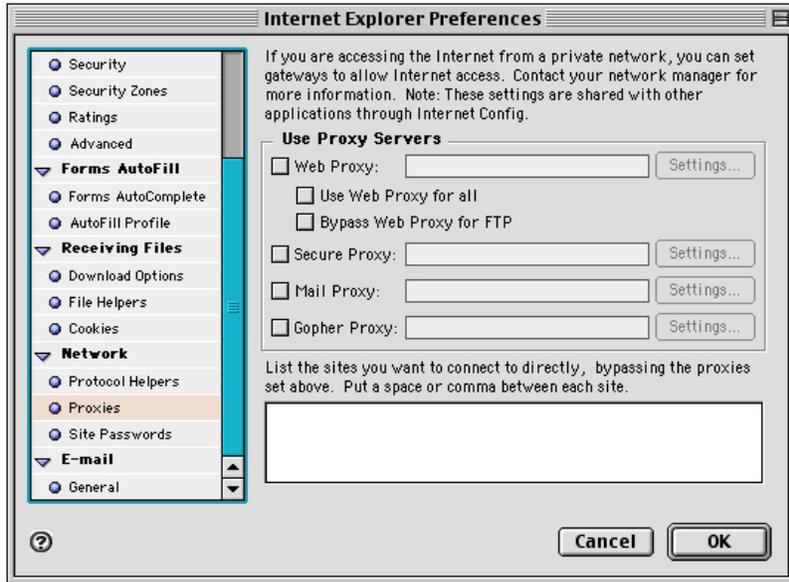
You will need to verify that the "HTTP Proxy" feature of your Web browser is disabled. This is so that your Web browser will be able to view the configuration pages inside your Barricade. The following steps are for Internet Explorer and for Netscape. Determine which browser you use and follow the appropriate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

Internet Explorer

1. Open Internet Explorer and click the stop button. Click "Edit" and select "Preferences."



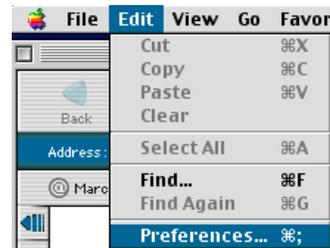
2. In the Internet Explorer Preferences window, under Network, select Proxies.



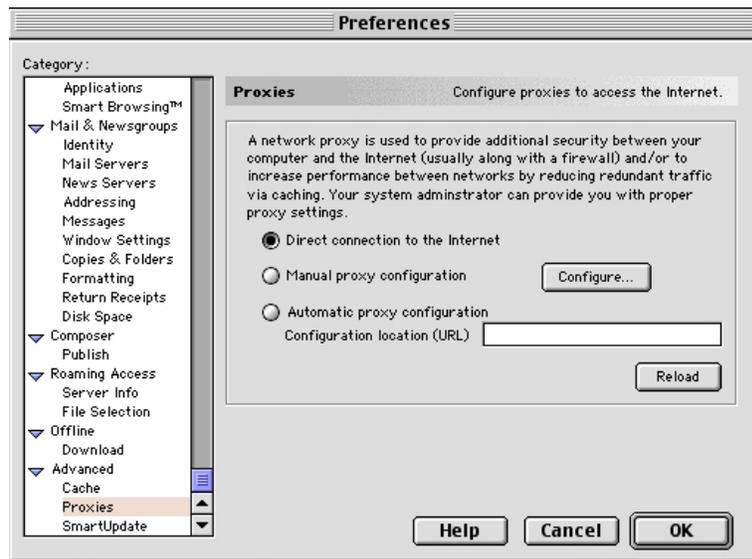
3. Uncheck all checkboxes and click OK.

Netscape

1. Open Netscape and click the stop button. Click "Edit" and select "Preferences."



2. In the "Preferences" dialog box, in the left-hand column labeled "Category," select "Advanced." Under the "Advanced" category, select "Proxies."

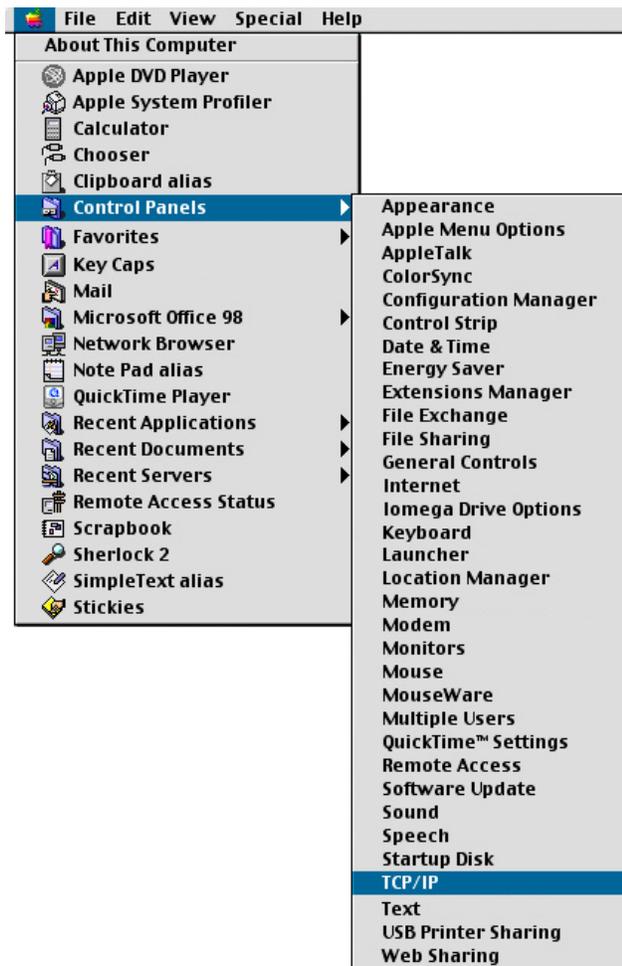


3. Select "Direct Connection to the Internet" and click OK.

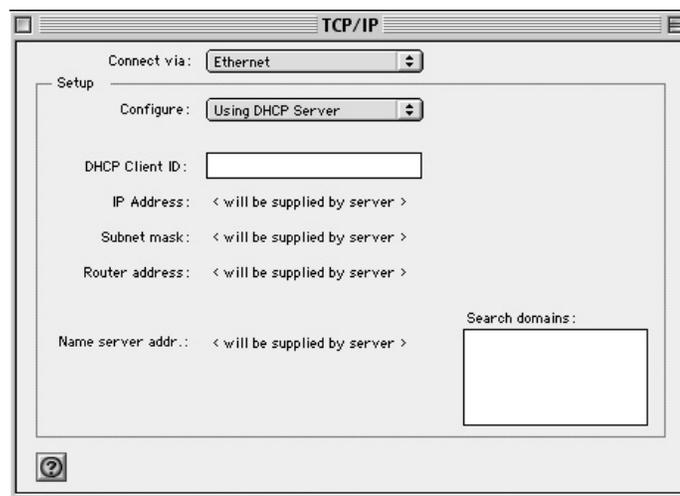
Step 3. Obtain IP Settings From Your Barricade

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

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



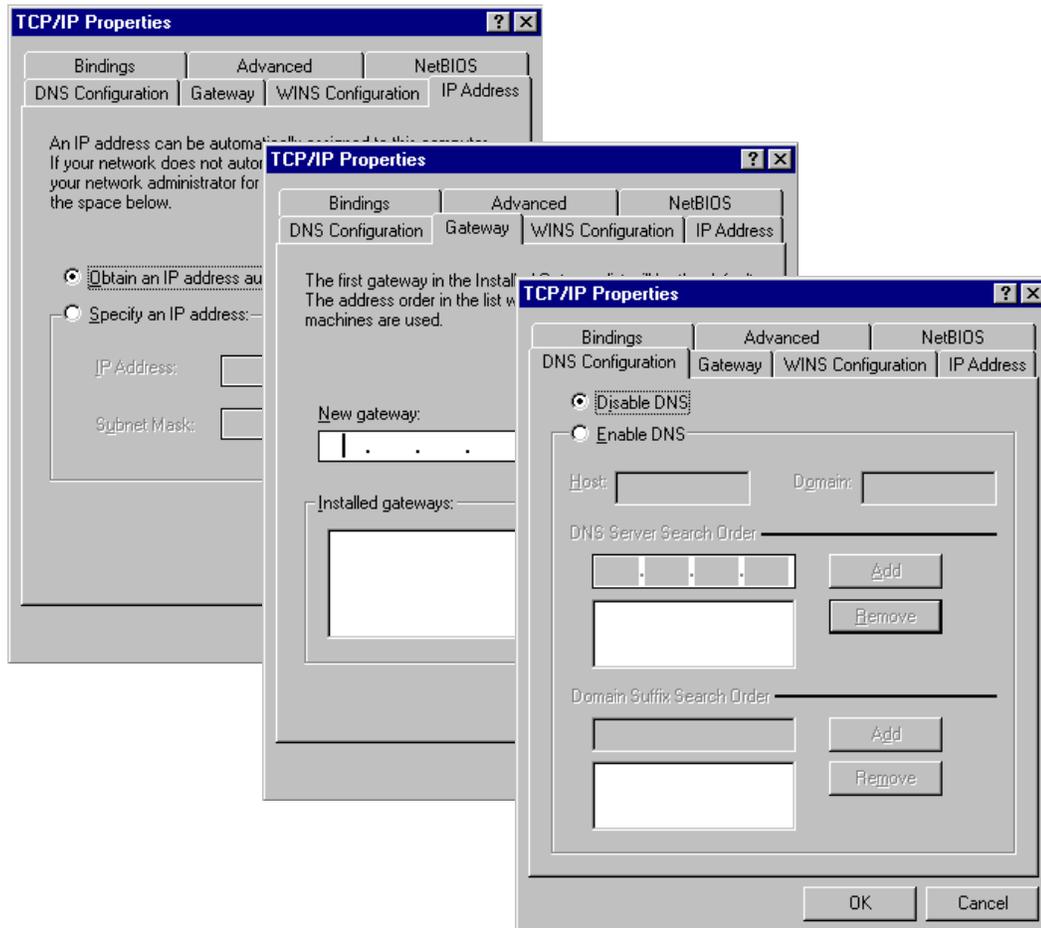
2. In the TCP/IP window, your new settings will be shown. Verify that your IP address is now 192.168.2.xxx, your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168.2.1. These values confirm that your Barricade is functioning.



3. Close the TCP/IP window.

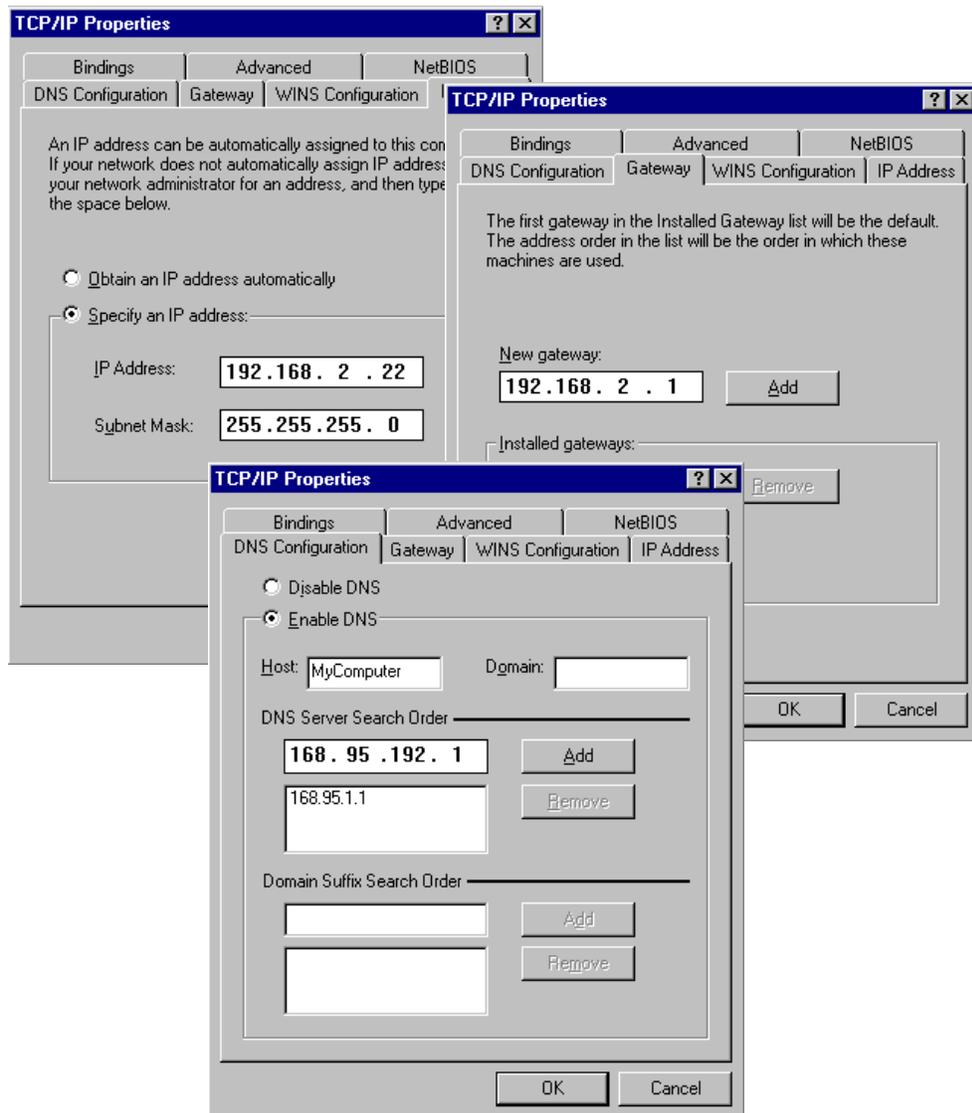
Dynamic IP Allocation via a DHCP Server

Select *Obtain an IP address automatically* in the IP Address tab. Do not input any values under the *Gateway* tab, and choose *Disable DNS* in 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. Select *Specify an IP address* in the *IP Address* tab. Select 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. In the *Gateway* tab, add the IP address of the Barricade (default: 192.168.2.1) in the *New gateway* field and click *Add*.
3. In 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 protocol and configuring an IP address in the same network with the Barricade, you can use the *Ping* command to check if your computer is 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 the following messages appear:

```
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.

Otherwise, if you get the following messages,

```
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 your 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.

CONFIGURING CLIENT TCP/IP

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

SETTING TCP/IP TO WORK WITH THE BARRICADE

CHAPTER 6

CONFIGURING PRINTER SERVICES

If you want to use the print server built into the Barricade, then you must first install the Port Monitor program as described in the following section for Windows 95/98/ME/NT/2000.

To configure the Barricade Print Server for Windows 95/98/ME/NT/2000, or Unix, see “Configure the Print Server” on page 6-4.

Install the Printer Port Monitor

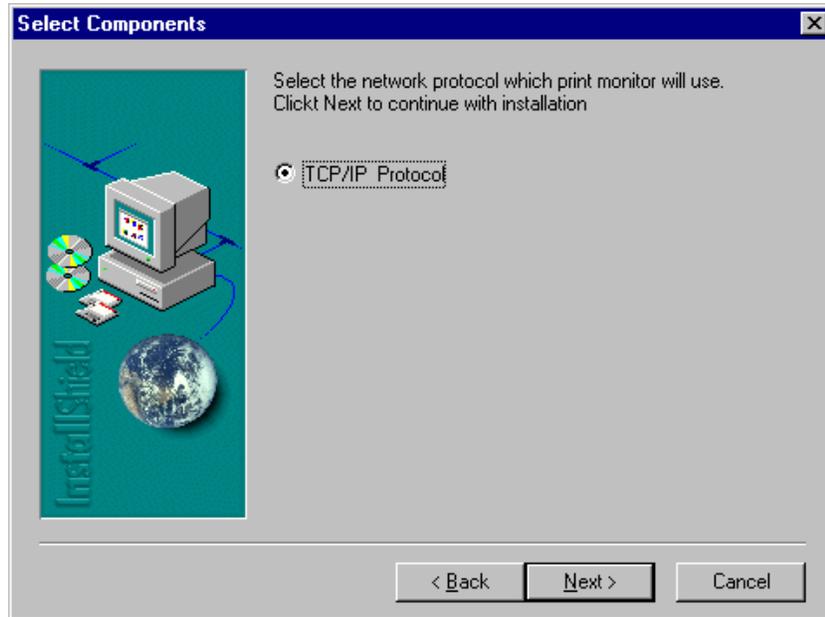
Skip this section if you are using Unix.

For Windows 95/98/ME/NT/2000 clients, you need to install the port monitor program as described in this section.

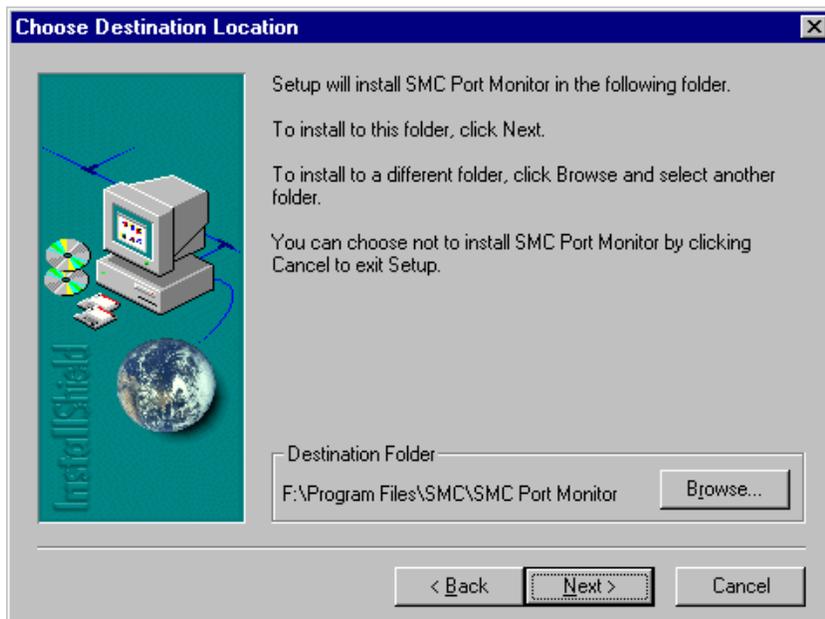
1. Insert the installation CD-ROM into your CD-ROM drive. Under the PrintSvr directory, run the “setup.exe” program. The SMC Port Monitor installation program advises you to close all other Windows programs currently running on your computer. Click “Next” to continue.

INSTALL THE PRINTER PORT MONITOR

2. The next screen indicates that the print client uses TCP/IP network protocol to monitor print requests. Click “Next.”



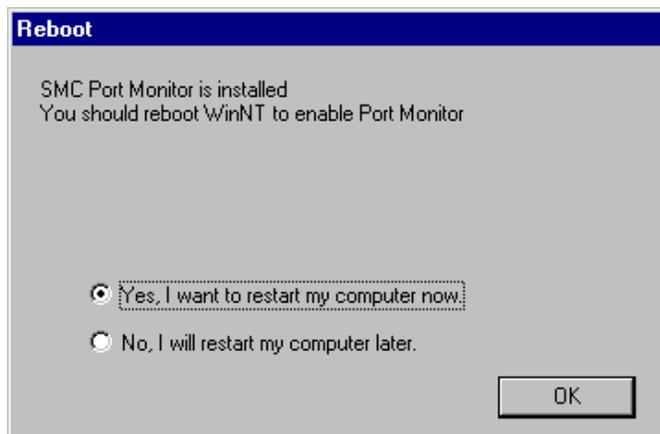
3. Select the destination folder and click on the “Next” button. The setup program will then begin to install the programs into the destination folder.



4. Select the Program Folder that will contain the program icon for uninstalling the port monitor, and then click “Next.”
5. Enter the printer port name that will be used to identify the port monitor in your system, and press “Next.”



6. When the setup program finishes installing the port monitor, select the item to restart your computer and then click “OK.”



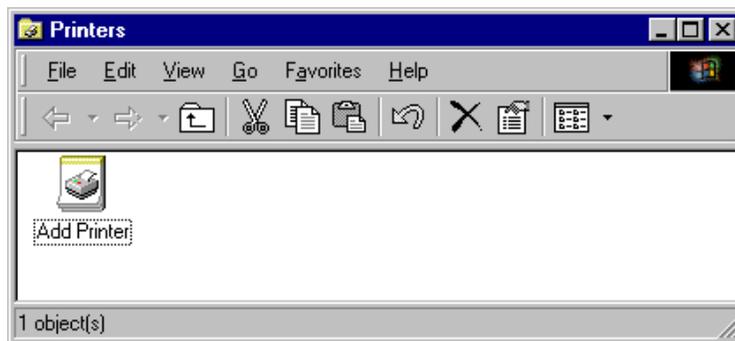
7. After rebooting your computer, add the Barricade print server to your system as described in the following section.

Configure the Print Server

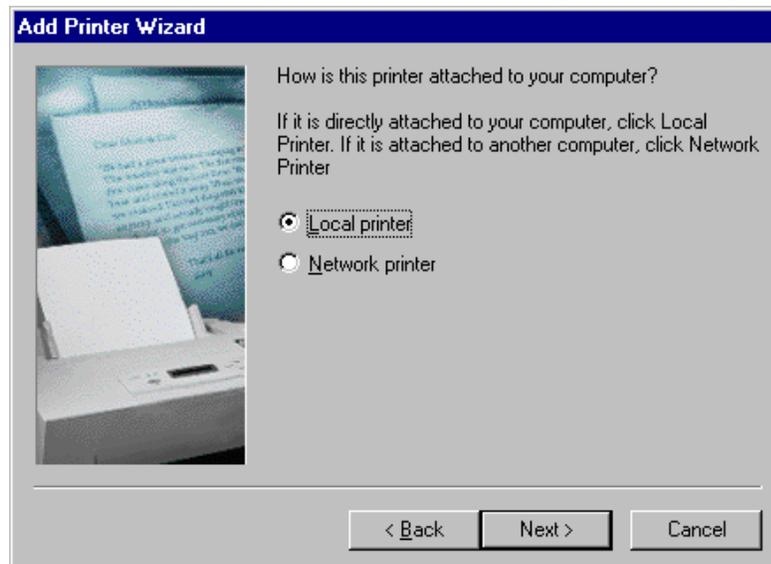
The Barricade's print server supports Microsoft Windows 95/98/ME/NT/2000, and Unix. If you are using Windows 95/98/ME/NT/2000, first install the port monitor as described in the previous section before adding the Barricade's print server to your operating system.

Configure the Network Printer in Windows 95/98/ME/2000

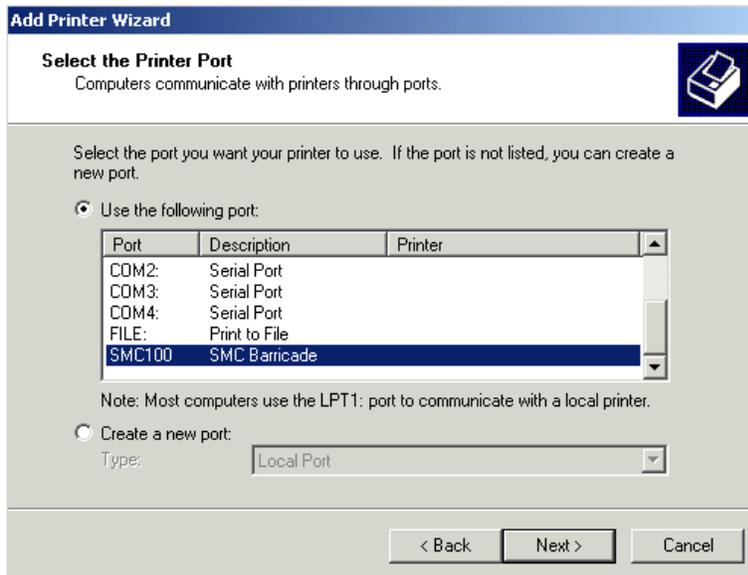
1. On a Windows 95/98/ME/2000 platform, open the Printers window in the "My Computer" menu, and double-click the "Add Printer" icon.



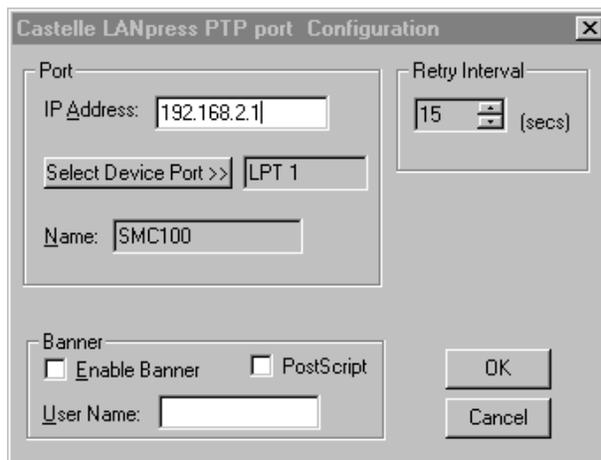
2. Follow the prompts to add a "Local printer" to your system.



3. Specify the printer type attached to the Barricade.
4. Select the monitored port (the default port name is “SMC100”) and then click the “Configure Port” button.



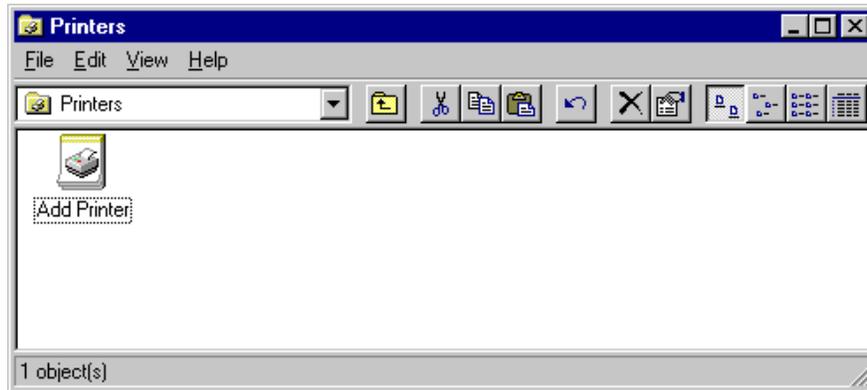
5. Enter the IP address of the Barricade and click “OK,” and then click “Next” in the Add Printer Wizard dialog box.



6. Continue following the prompts to finish installing the Barricade print server. The printer type you specified will now be added to your “Printers” menu.

Configure the Network Printer in Windows NT

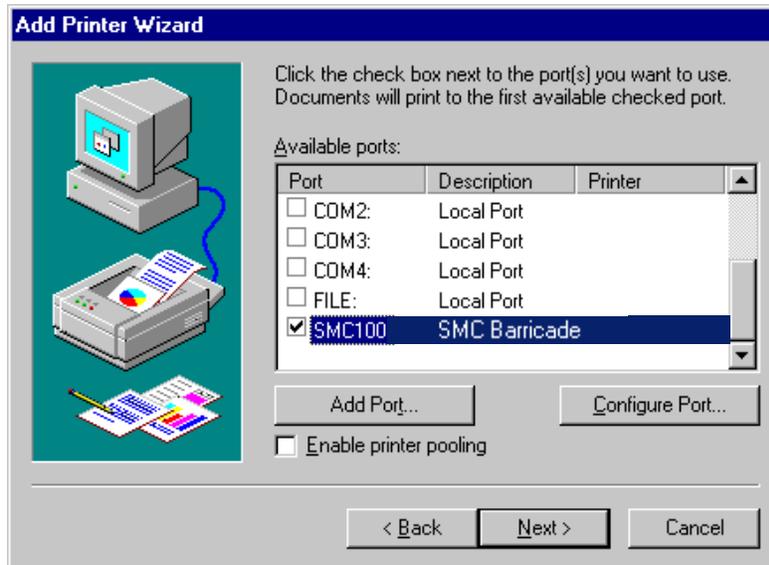
1. On a Windows NT platform, open the “Printers” window in the My Computer menu, and double-click the “Add Printer” icon.



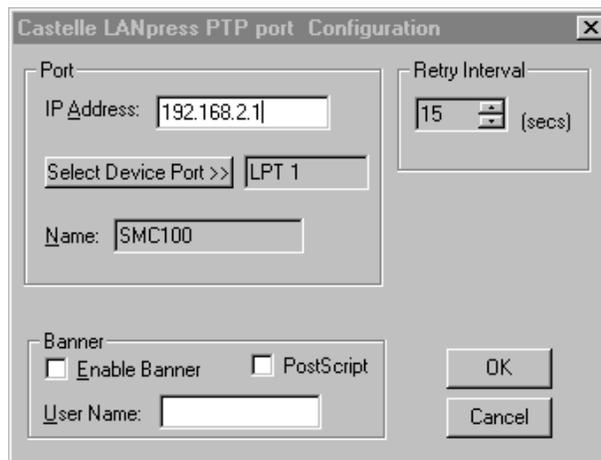
2. Follow the prompts to add a local printer to your system.



3. Select the monitored port. The default port name is “SMC100.” Then click the “Configure Port” button.



4. Enter the IP address of the Barricade and click “OK,” and then click “Next” in the Add Printer Wizard dialog box.



5. Specify the printer type attached to the Barricade.
6. Continue following the prompts to finish installing the Barricade print server. The printer type you specified will now be added to your “Printers” menu.

Configure the Network Printer in Unix Systems

Follow the traditional configuration procedure on Unix platforms to set up the Barricade print server. The printer name is “lpt1.”

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
<i>LED Indicators</i>	
Power LED is Off	<ul style="list-style-type: none">● 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 turn on when the power cord is plugged in, you may have a problem with the power outlet, power cord, or external power supply. <p>However, if the unit powers off after running for a while, check for loose power connections, power losses or surges at the power outlet.</p> <p>If you still cannot isolate the problem, then the external power supply may be defective. In this case, contact SMC Technical Support for assistance.</p>

Troubleshooting Chart	
Symptom	Action
<i>LED Indicators</i>	
Link LED is Off	<ul style="list-style-type: none"> ● 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.
<i>Network Connection Problems</i>	
Cannot Ping the Barricade from the attached LAN, or the Barricade cannot Ping any device on the attached LAN	<ul style="list-style-type: none"> ● 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 any host on the attached LAN. However, if you manually configure any 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 any attached LAN devices. ● Be sure the device you want to Ping (or from which you are Pinging) has been configured for TCP/IP.

Troubleshooting Chart	
Symptom	Action
<i>Management Problems</i>	
Cannot connect using the Web browser	<ul style="list-style-type: none"> ● 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	<ul style="list-style-type: none"> ● Press the Reset button on the front panel (holding it down for at least five seconds) to restore the factory defaults.
<i>Printer Server</i>	
The printer cannot print or prints garbage	<ul style="list-style-type: none"> ● Make sure the parallel cable between the Barricade and printer is connected and is in good condition

TROUBLESHOOTING

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 two 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. All RJ-45 ports, except for the WAN port, support automatic MDI/MDI-X configuration. This means that you can use straight-through cable to attach the LAN ports to any network device. However, when connecting the WAN port to a broadband modem, you will need to use either straight-through or crossover cable, depending on the port type used on the modem.

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.

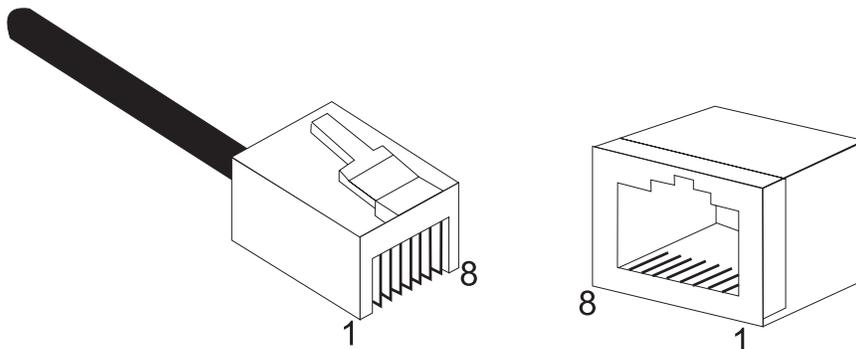


Figure B-1. RJ-45 Connector Pin Numbers

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

All LAN ports on the Barricade support automatic MDI/MDI-X configuration. This means that the pin signals in use will depend on whether the LAN port is operating in MDI or MDI-X mode. However, the WAN port is configured only for MDI-X mode.

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.

Serial Port Pin Assignments

The DB-9 serial port on the rear panel is used to connect the Barricade to an ISDN TA or PSTN modem. The pin assignments used to connect to this port are provided in the following tables.

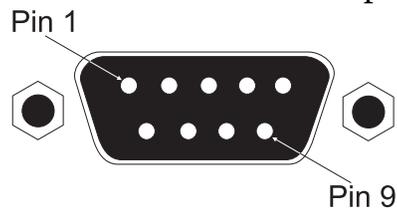


Figure B-2. DB-9 Serial Port Pin Numbers

DB-9 Port Pin Assignments

EIA Circuit	CCITT Signal	Description	Gateway's DB9 DTE Pin #	PC DB9 DTE Pin #	Modem DB25 DCE Pin #	Signal Direction DTE-DCE
CF	109	DCD (Data Carrier Detected)	1	1	8	<-----
BB	104	RxD (Received Data)	2	2	3	<-----
BA	103	TxD (Transmitted Data)	3	3	2	----->
CD	108.2	DTR (Data Terminal Ready)	4	4	20	----->
AB	102	SG (Signal Ground)	5	5	7	-----
CC	107	DSR (Data Set Ready)	6	6	6	<-----
CA	105	RTS (Request-to-Send)	7	7	4	----->
CB	106	CTS (Clear-to-Send)	8	8	5	<-----
CE	125	RI (Ring Indicator)	9	9	22	<-----

Serial Port to 9-Pin COM Port on PC

Barricade's 9-Pin Serial Port	CCITT Signal	PC's 9-Pin COM Port
1 DCD	----- DCD -----	1
2 RXD	<----- TXD -----	3
3 TXD	----- RXD ----->	2
4 DTR	----- DSR ----->	6
5 SGND	----- SGND -----	5
6 DSR	----- DTR -----	4
7 RTS	----- CTS ----->	8
8 CTS	<----- RTS -----	7
9 RI	----- RI -----	9

Serial Port to 25-Pin DCE Port on Modem

Barricade's 9-Pin Serial Port	CCITT Signal	Modem's 25-Pin DCE Port
1	<----- DCD -----	8
2	<----- RXD -----	3
3	----- TXD ----->	2
4	----- DTR ----->	20
5	----- SGND -----	7
6	<----- DSR -----	6
7	----- RTS ----->	4
8	<----- CTS -----	5
9	<----- RI -----	22

Serial Port to 25-Pin DTE Port on PC

Barricade's 9-Pin Serial Port	Null Modem	PC's 25-Pin DTE Port
1 DCD	1 _____ 1	8 DCD
2 RXD	2 _____ 3	3 TXD
3 TXD	3 _____ 2	2 RXD
4 DTR	4 _____ 8	20 DTR
5 SGND	5 _____ 20	7 SGND
6 DSR	6 _____ 7	6 DSR
7 RTS	7 _____ 4	4 RTS
8 CTS	9 _____ 5	5 CTS
9 RI	20 _____ 6	22 RI

Printer Port Pin Assignments

The DB-25 parallel port on the Barricade's rear panel is used to connect the Barricade to a printer. When a printer is attached to this port, any PCs attached to the Barricade's LAN ports can pass files to the printer. The pin assignments used to connect to the printer port are provided in the following table.

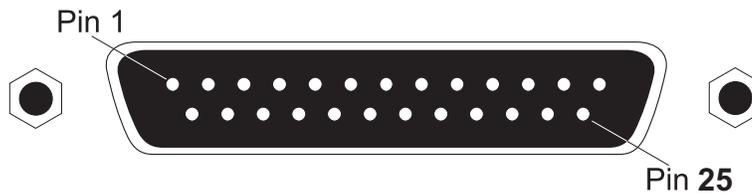


Figure B-3. DB-25 Printer Port Pin Numbers

DB-25 Printer Port Pin Assignments

Pin	Signal Name	Direction
1	-Strobe	To printer
2	+Data 0	To printer
3	+Data 1	To printer
4	+Data 2	To printer
5	+Data 3	To printer
6	+Data 4	To printer
7	+Data 5	To printer
8	+Data 6	To printer
9	+Data 7	To printer
10	- ACK	To print server
11	+ Busy	To print server
12	+ Paper End	To print server
13	+ Select	To print server
14	- Auto Feed	No connection
15	- Error	To print server
16	- Init	To printer
17	- Select	No connection
18-25	GND	Ground

APPENDIX C

SPECIFICATIONS

LAN Interface

10BASE-T/100BASE-TX
4 RJ-45 ports

WAN Interface

10BASE-T/100BASE-TX, 1 RJ-45 port
Serial, 1 RS-232 DB-9 connector

Printer Interface

Parallel
1 DB-25 printer port

Management

Web management

Advanced Features

Dynamic IP Address Configuration – DHCP, DNS
Firewall – Client privileges, hacker prevention and logging
Virtual Private Network – PPTP, L2TP, IPSec pass-through
Backup Internet Connection –
 Dial-on-demand via secondary WAN port
Print server

Indicator Panel

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

Dimensions

19.5 x 11.25 x 2.55 cm (7.68 x 4.43 x 1.00 in)

Weight

1.34 lbs (0.61 kg)

SPECIFICATIONS

Input Power

12V (1A)

Maximum Current

0.04A RMS max.@110V/240V

Power Consumption

5 Watts max. @ 100-240 VAC

Internet Standards

ARP (RFC 826), IP (RFC 791), ICMP (RFC 792), UDP (RFC 768), TCP (RFC 793), Telnet (RFC 854-859), MD5 (RFC 1321), BOOTP Extension (RFC 1497), PPP LCP Extension (RFC 1570), PPPoE (RFC 2516), NAT (RFC 1631), PPP (RFC 1661), HTML (RFC 1866), HTTP (RFC 1945), CHAP (RFC 1944), DHCP (RFC 2131), PPTP (RFC 2637)

Temperature

Operating 32 to 104°F (0 to 40°C)

Storage -40 to 158°F (-40 to 70°C)

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

UL 1950

EN60950 (TÜV)

CSA 22.2 No. 950

Warranty

Limited Lifetime

SPECIFICATIONS

APPENDIX D

ORDERING INFORMATION

Barricade Broadband Router Products	
SMC7004ABR	4-port Residential Gateway - WAN/LAN/Print Server
SMC7004AWBR	4-port Residential Gateway - WAN/LAN/WLAN/Print Server

ORDERING INFORMATION

FOR TECHNICAL SUPPORT, CALL:

From U.S.A. and Canada (24 hours a day, 7 days a week)
 (800) SMC-4-YOU; (949) 679-8000; Fax: (949) 679-1481
 From Europe (8:00 AM - 5:30 PM UK Time)
 44 (0) 118 974 8700; Fax: 44 (0) 118 974 8701

INTERNET

E-mail addresses:

techsupport@smc.com
 european.techsupport@smc-europe.com

Driver updates:

<http://www.smc.com/index.cfm?action=techsupportdriversdownloads>

World Wide Web:

<http://www.smc.com/>
<http://www.smc-europe.com/>

FOR LITERATURE OR ADVERTISING RESPONSE, CALL:

U.S.A. and Canada:	(800) SMC-4-YOU;	Fax (949) 679-1481
Spain:	34-93-477-4935;	Fax 34-93-477-3774
UK:	44 (0) 118 974 8700;	Fax 44 (0) 118 974 8701
France:	33 (0) 41 38 32 32;	Fax 33 (0) 41 38 01 58
Italy:	39 02 739 12 33;	Fax 39 02 739 14 17
Benelux:	31 33 455 72 88;	Fax 31 33 455 73 30
Central Europe:	49 (0) 89 92861-0;	Fax 49 (0) 89 92861-230
Switzerland:	41 (0) 1 9409971;	Fax 41 (0) 1 9409972
Nordic:	46 (0) 868 70700;	Fax 46 (0) 887 62 62
Northern Europe:	44 (0) 118 974 8700;	Fax 44 (0) 118 974 8701
Eastern Europe:	34 -93-477-4920;	Fax 34 93 477 3774
Sub Saharian Africa:	27-11 314 1133;	Fax 27-11 314 9133
North Africa:	34 93 477 4920;	Fax 34 93 477 3774
Russia:	7 (095) 290 29 96;	Fax 7 (095) 290 29 96
PRC:	86-10-6235-4958;	Fax 86-10-6235-4962
Taiwan:	886-2-2659-9669;	Fax 886-2-2659-9666
Asia Pacific:	(65) 238 6556;	Fax (65) 238 6466
Korea:	82-2-553-0860;	Fax 82-2-553-7202
Japan:	81-45-224-2332;	Fax 81-45-224-2331
Australia:	61-2-9416-0437;	Fax 61-2-9416-0474
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