SMC® Networks

USER GUIDE

Barricade™ N
Draft 11n Wireless 4-port Broadband Router

SMCWBR14S-N

Wireless Broadband Router User's Guide

From SMC's line of award-winning connectivity solutions

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July 2007
R01 F/W 1.0

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COMPLIANCES

Federal Communication Commission Interference Statement

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

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

EC Declaration of Conformity CE!

SMC contact for these products in Europe is:

SMC Networks Europe,

Edificio Conata II,

Calle Fructuos Gelabert 6-8, 2o, 4a,

08970 - Sant Joan Despi,

Barcelona, Spain.

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

EN 300 328

EN 301 489

EN 60950-1

Countries of Operation & Conditions of Use in the European Community

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

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

- This device will automatically limit the allowable channels determined by the current country of operation. Incorrectly entering the country of operation may result in illegal operation and may cause harmful interference to other system. The user is obligated to ensure the device is operating according to the channel limitations, indoor/outdoor restrictions and license requirements for each European Community country as described in this document.
- This device may be operated *indoors or outdoors* in all countries of the European Community using the 2.4 GHz band: Channels 1 - 13.

Declaration of Conformity in Languages of the European Community

English	Hereby, SMC Networks, declares that this Radio LAN device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Finnish	Valmistaja SMC Networks vakuuttaa täten että Radio LAN device tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Dutch	Hierbij verklaart SMC Networks dat het toestel Radio LAN device in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG Bij deze SMC Networks dat deze Radio LAN device voldoet aan de essentiële eisen en aan de overige relevante bepalingen van Richtlijn 1999/5/EC.
French	Par la présente SMC Networks déclare que l'appareil Radio LAN device est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE
Swedish	Härmed intygar SMC Networks att denna Radio LAN device står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Danish	Undertegnede SMC Networks erklærer herved, at følgende udstyr Radio LAN device overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF
German	Hiermit erklärt SMC Networks, dass sich dieser/diese/dieses Radio LAN device in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet". (BMWi) Hiermit erklärt SMC Networks die Übereinstimmung des Gerätes Radio LAN device mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 1999/5/EG. (Wien)
Greek	Με την παρουσα smc networks δηλωνει οτι radio LAN device συμμορφωνεται προσ τισ ουσιωδεισ απαιτησεισ και τισ λοιπεσ σΧετικεσ διαταξεισ τησ οδηγιασ 1999/5/εκ

Italian	Con la presente SMC Networks dichiara che questo Radio LAN device è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Spanish	Por medio de la presente SMC Networks declara que el Radio LAN device cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE
Portuguese	SMC Networks declara que este Radio LAN device está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.

DGT Statement of Taiwan

注意！
依據 低功率電波輻射性電機管理辦法
第十二條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信規定作業之無線電信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Safety Compliance

Underwriters Laboratories Compliance Statement

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

Operating Voltage	Cord Set Specifications
120 Volts	UL Listed/CSA Certified Cord Set
	Minimum 18 AWG
	Type SVT or SJT three conductor cord
	Maximum length of 15 feet
	Parallel blade, grounding type attachment plug rated 15 A, 125 V
240 Volts (Europe only)	Cord Set with H05VV-F cord having three conductors with minimum diameter of 0.75 mm2
	IEC-320 receptacle
	Male plug rated 10 A, 250 V

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

Information for Power Source

This unit is to be used with a class 2 or level 3 external power adapter, approved suitable for use in North American equipment installation, having an output voltage rating of 12 V DC, and output current rating of 1.0 A or equivalent.

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

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

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CHAPTER 1
INTRODUCTION

Congratulations on your purchase of the Barricade™ N Draft 11n Wireless 4-port Broadband Router (SMCWBR14S-N). We are proud to provide you with a powerful yet simple communication device for connecting your local area network (LAN) to the Internet. For those who want to surf the Internet in the most secure way, this router provides a convenient and powerful solution.

About the Barricade

The Barricade provides Internet access to multiple users by sharing a single-user account. This new technology provides many secure and cost-effective functions. It is simple to configure and can be up and running in minutes.

The Barricade is compliant with the next generation IEEE 802.11n draft v2.0 specification while maintaining full backwards compatibility with the IEEE 802.11b/g standards. This next generation wireless networking standard utilizes advanced MIMO (multiple-in, multiple-out) technology to deliver incredible speed and range. With wireless speeds up to 300Mbps - five times faster than 802.11g, the SMCWBR14S-N provides sufficient bandwidth to stream HD video, listen to digital music, play online games, transfer large files, make VoIP calls and surf the Internet simultaneously.

Features and Benefits

- IEEE802.11n draft v2.0 compliant
- Wireless speeds up to 300 Mbps
- Increased speed and coverage - up to 5 times the speed of IEEE 802.11g
- Fully backwards compatible with 802.11b/g wireless networks
- Allows you to stream HD video, listen to digital music, play online games, transfer large files, make VoIP calls and surf the Internet simultaneously
- Wi-Fi Multimedia (WMM) for wireless quality-of-service
- Local network connection via a 10/100 Mbps Ethernet port
- DHCP for dynamic IP configuration, and DNS for domain name mapping
- Firewall with Stateful Packet Inspection, client privileges, intrusion detection, and NAT
- NAT also enables multi-user Internet access via a single user account, and virtual server functionality (providing protected access to Internet services such as web, FTP, email, and Telnet)
- VPN transparent pass-through (IPSec-ESP Tunnel mode, L2TP, PPTP)
- User-definable application sensing tunnel supports applications requiring multiple connections
- Easy setup through a web browser on any operating system that supports TCP/IP
- Compatible with all popular Internet applications

Applications

Many advanced networking features are provided by this Barricade:

- **Wired and Wireless LAN**

  The Barricade provides connectivity to 10/100 Mbps devices, and wireless connection speed up to 300 Mbps. This router is fully compliant with specifications defined in IEEE 802.11b, IEEE 802.11g and IEEE 802.11n draft v2.0 standards, making it easy to create a network in small offices or homes.

- **Internet Access**

  This device allows you to share your Cable/xDSL Internet connection. Since many ADSL providers use PPPoE to establish communications with end users, the Barricade includes a built-in client for this protocol, eliminating the need to install these services on your computer.

- **Shared IP Address**

  The Barricade provides Internet access for up to 253 users via a single 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 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.

- **DMZ Host Support**

  Allows a networked computer to be fully exposed to the Internet. This function is used when NAT and firewall security prevent an Internet application from functioning correctly.

- **Security**

  The Barricade supports security features that deny Internet access to specified users, or filter all requests for specific services that the administrator does not want to serve. The Barricade's firewall also blocks common hacker attacks, including IP Spoofing, Land Attack, Ping of Death, IP with zero length, Smurf Attack, UDP port loopback, Snork Attack, TCP null scan, and TCP SYN flooding. WPA/WPA2, IEEE802.1x, WEP, SSID, and MAC filtering provide security over the wireless network.

- **Virtual Private Network (VPN Pass-through)**

  The Barricade supports three of the most commonly used VPN protocols – PPTP, L2TP, and IPSec. These VPN protocols are transparent pass-through. The 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.
  - L2TP merges the best features of PPTP and L2F – Like PPTP, L2TP requires that the ISP's routers support the protocol.
  - IP Security – Provides IP network-layer encryption. IPSec can support large encryption networks (such as the Internet) by using digital certificates for device authentication.

CHAPTER 2
INSTALLATION

Before installing the Barricade, verify that you have all the items listed under "Package Contents." If any of the items are missing or damaged, contact your local distributor. Also be sure that you have all the necessary cabling before installing the Barricade. After installing the Barricade, refer to "Configuring the Barricade" on page 4-1.

Package Contents

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

- Barricade™ N Draft 11n Wireless 4-port Broadband Router (SMCWBR14S-N)
- Power adapter
- One CAT-5 Ethernet cable (RJ-45)
- One documentation CD
- Quick Install Guide
- Warranty Information 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.

System Requirements

You must meet the following minimum requirements:

- Broadband (Cable/xDSL) Internet service and Modem with Ethernet connection
- 2.4GHz 802.11n draft wireless adapter or 2.4GHz 802.11b/g wireless adapter installed on each PC. Alternatively an Ethernet adapter can be used.
- An up to date web browser: Internet Explorer 5.5 or above, Netscape 4.7 or above, Mozilla Firefox 1.0 or above.

Hardware Description

The Barricade connects to a cable or xDSL modem with Ethernet connection using it's RJ-45 WAN port. It can be connected directly to your PC or to a local area network using the Fast Ethernet LAN ports.

Data passing between devices connected to your local area network can run at up to 100 Mbps over the Fast Ethernet port and up to 300 Mbps over the built-in wireless access point.

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

The following figures show the top and rear panels of the Barricade.

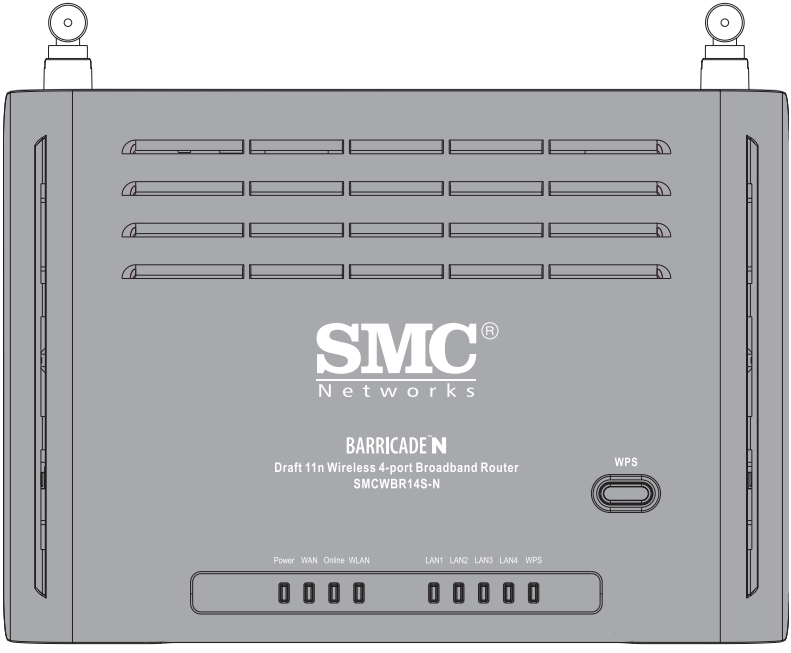


Figure 2-1. Top Panel

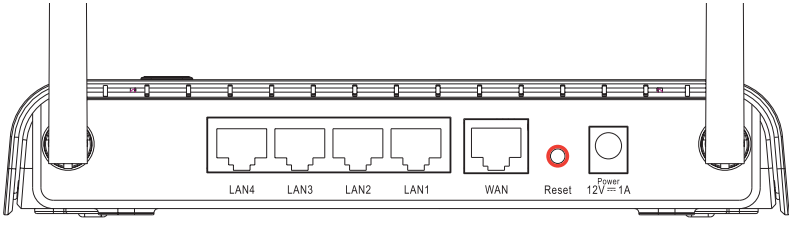


Figure 2-2. Rear Panel

The power and port LED indicators on the top panel are illustrated by the following table.

LED	Status	Description
Power	On	The Barricade is receiving power. Normal operation.
	Off	Power off or failure.
WAN	On	WAN link.
	Off	No WAN link.
Online	On	Internet connection is functioning correctly.
	Flashing	The Barricade is establishing an Internet link.
	Off	No Internet link.
WLAN	On	WLAN link.
	Flashing	The Barricade is sending or receiving data via WLAN.
	Off	No WLAN link.
LAN 1~4	On	Ethernet link.
	Flashing	The LAN port is sending or receiving data.
	Off	No Ethernet link.
WPS (Wi-Fi Protected Setup)	On	WPS link is successfully established.
	Off	• This LED will be on for 300 seconds after WPS connection is successfully established, then go off. • The WPS is disabled.
	Slow Flashing	WPS association is establishing between the Barricade and clients.
	Quick Flashing	WPS access failed.

The Barricade contains the following ports and buttons:

Item	Description
LAN Ports	Fast Ethernet ports (RJ-45). Connect devices on your local area network to these ports (i.e., a PC, hub, switch or IP set top box).
WAN Port	WAN port (RJ-45). Connect your cable/xDSL modem line to this port.
Reset Button	Use this button to reset the power and restore the default factory settings. To reset without losing configuration settings, see "Reset" on page 4-64.
Power Inlet	Connect the included power adapter to this inlet. **Warning**: Using the wrong type of power adapter may cause damage.
WPS Button (on top panel)	Press this button for over 4 seconds to start using the WPS.

ISP Settings

If you are not sure of your connection method, please contact your Internet Service Provider. There are several connection types to choose from: Static IP, DHCP, PPPoE, PPTP and L2TP.

Note: If using the PPPoE option, you will need to remove or disable any PPPoE client software on your computers.

Connect the System

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

- Keep the Barricade away from any heating devices.
- Do not place the Barricade in a dusty or wet environment.

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

Connect the Cable/xDSL Modem

Connect the cable/xDSL modem using a CAT-5 Ethernet cable (RJ-45) to the Barricade's WAN port. When inserting the RJ-45 plug, be sure the tab on the plug clicks into position to ensure it is properly seated.

Connecting the Barricade to your LAN

The four LAN ports on the Barricade 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.

Use RJ-45 cables to connect any of the four LAN ports on the Barricade to an Ethernet adapter on your PC. Otherwise, cascade any of the LAN ports on the Barricade to an Ethernet hub or switch, and then connect your PC or other network equipment to the hub or switch. When inserting an RJ-45 connector, be sure the tab on the connector clicks into position to ensure that it is properly seated.

Notes: 1. Use 100-ohm shielded or unshielded twisted-pair cable with RJ-45 connectors for all Ethernet ports. 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 length does not exceed 100 meters (328 feet).

Connect the Power Adapter

Plug the power adapter into the power socket on the back panel of the Barricade, and the other end into a power outlet.

Check the power indicator on the front panel is lit. If the power indicator is not lit, refer to "Troubleshooting" on page A-1.

In case of a power input failure, the Barricade will automatically restart and begin to operate once the input power is restored.

CHAPTER 3
CONFIGURING THE CLIENT PC

After completing hardware setup by connecting all your network devices, you need to configure your computer to connect to the Barricade. You can either configure your computer to automatically obtain IP settings (DHCP) or manually configure IP address settings (Static IP).

Depending on your operating system see:

"Windows 2000" on page 3-3,

"Windows XP" on page 3-9,

or

"Configuring Your Macintosh Computer" on page 3-15.

TCP/IP Configuration

To access the Internet through the Barricade, 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:

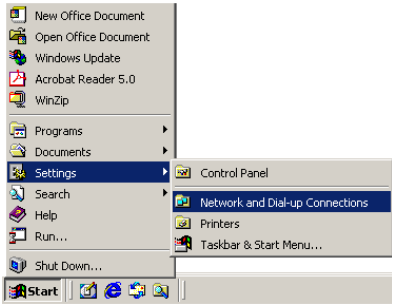
IP Address: 192.168.2.1
Subnet Mask: 255.255.255.0

Note: These settings can be changed to fit your network requirements, but you must first configure at least one computer to access the Barricade's web configuration interface in order to make the required changes. (See "Configuring the Barricade" on page 4-1 for instructions on configuring the Barricade.)

Windows 2000

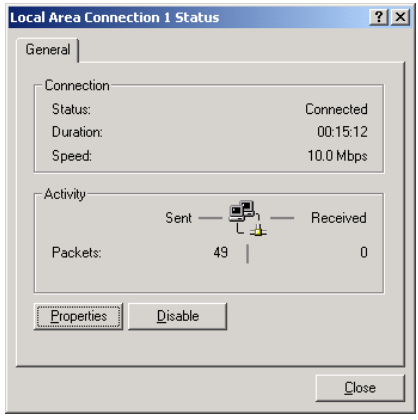
DHCP IP Configuration

1. On the Windows desktop, click **Start**/**Settings**/**Network and Dial-Up Connections**.

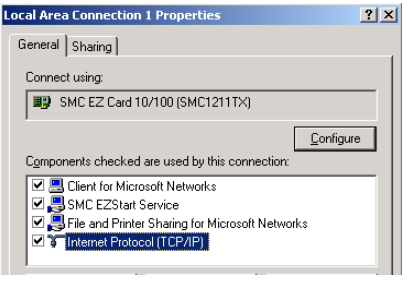


2. Click the icon that corresponds to the connection to your Barricade.

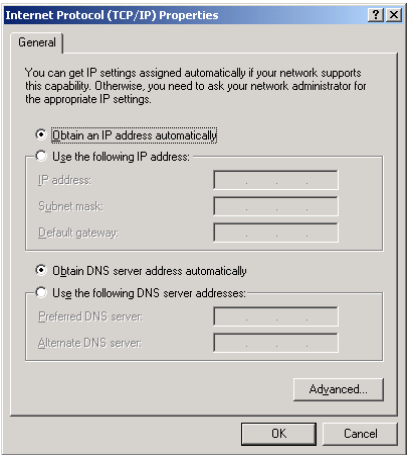
3. The connection status screen will open. Click **Properties**.



4. Double-click **Internet Protocol (TCP/IP)**.



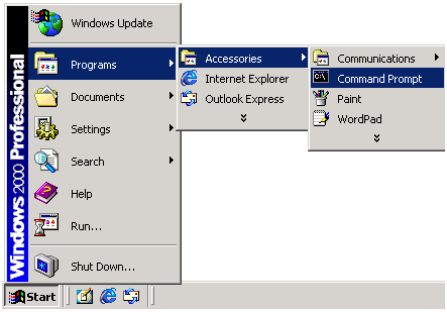
5. If **Obtain an IP address automatically** and **Obtain DNS server address automatically** are already selected, your computer is already configured for DHCP. If not, select these options now and click **OK**.



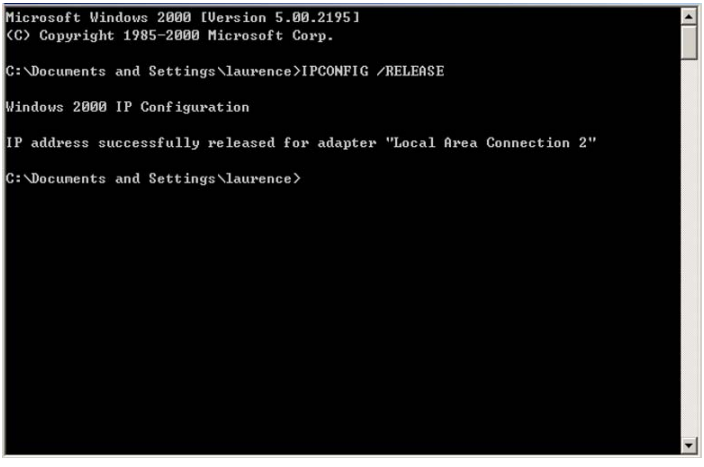
Obtain IP Settings From Your Barricade

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

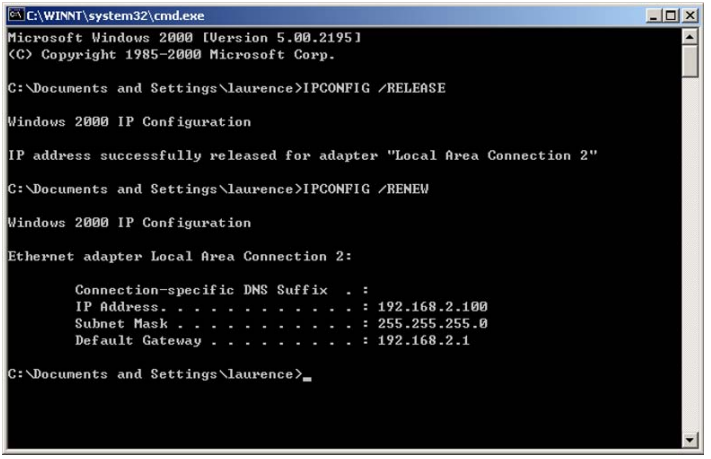
1. On the Windows desktop, click **Start**/**Programs**/**Accessories**/**Command Prompt**.



2. In the Command Prompt window, type "IPCONFIG /RELEASE" and press the **Enter** key.



3. Type "IPCONFIG /RENEW" and press the **Enter** key. Verify that your IP Address is now **192.168.2.xxx**, 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 correctly.

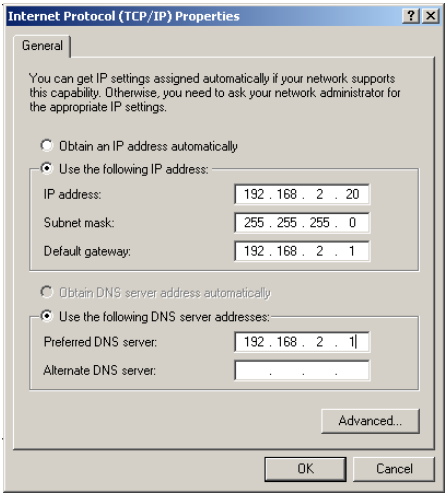


4. Type **EXIT** and press the **Enter** key to close the Command Prompt window.

Manual IP Configuration

1. Follow steps 1-4 in "DHCP IP Configuration" on page 3-3.

2. Select **Use the following IP address**. Enter an IP address based on the default network **192.168.2.x** (where x is between 2 and 254), and use **255.255.255.0** for the subnet mask. Use **192.168.2.1** for the Default gateway field.



3. Select **Use the following DNS server addresses**.

4. Enter the IP address for the Barricade in the Preferred DNS server field. This automatically relays DNS requests to the DNS server(s) provided by your ISP. Otherwise, add a specific DNS server into the Alternate DNS Server field and click **OK** to close the dialog boxes.

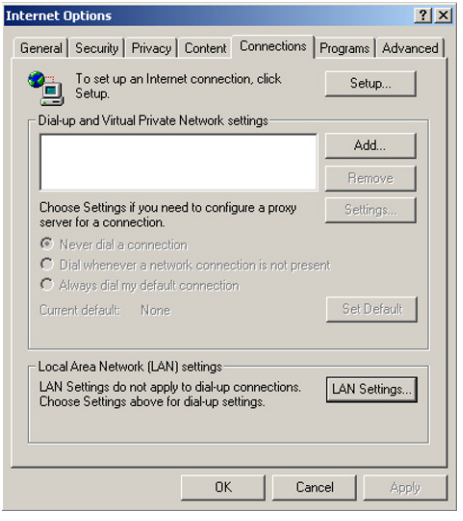
5. Record the configured information in the following table.

TCP/IP Configuration Setting	
IP Address	_____._____._____._____
Subnet Mask	_____._____._____._____
Preferred DNS Server	_____._____._____._____
Alternate DNS Server	_____._____._____._____
Default Gateway	_____._____._____._____

Disable HTTP Proxy

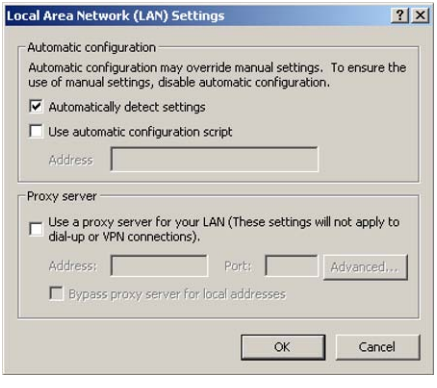
You need to verify that the "HTTP Proxy" feature of your web browser is disabled. This is so that your browser can view the Barricade's HTML configuration pages.

1. To disable the proxy in Internet Explorer, click **Tools**. Click **Internet Options...** and then the **Connections** tab, shown on the right. In the Local Area Network (LAN) settings section, click **LAN Settings...** to display the Local Area Network (LAN) Settings pop-up window below.



2. In the Proxy server section, ensure the **Use a proxy server for your LAN (These settings will not apply to dial-up or VPN connections)** check box is not ticked.

3. Click **OK**.



Windows XP

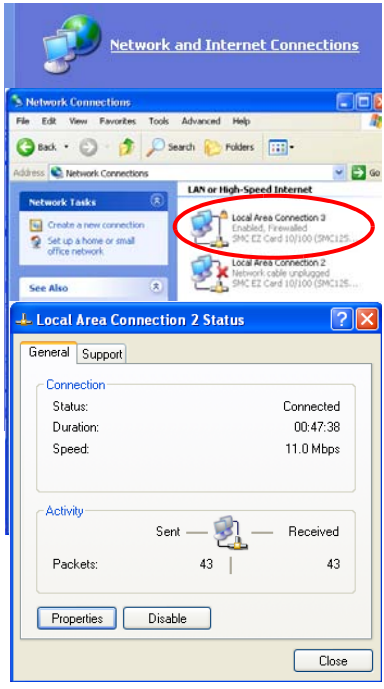
DHCP IP Configuration

1. On the Windows desktop, click **Start/Control Panel**.

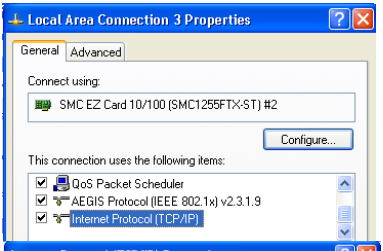
2. In the Control Panel window, click **Network and Internet Connections**.

3. The Network Connections window will open. Locate and double-click the **Local Area Connection** icon for the Ethernet adapter that is connected to the Barricade.

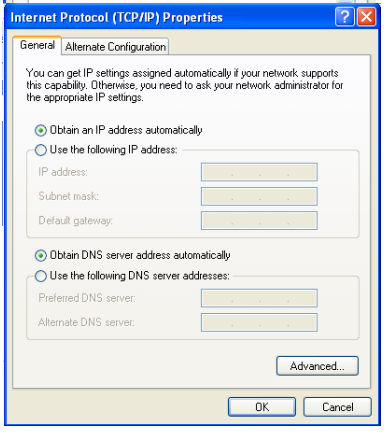
4. In the connection status screen, click **Properties**.



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



6. If **Obtain an IP address automatically** and **Obtain DNS server address automatically** are already selected, your computer is already configured for DHCP. If not, select these options now and click **OK**.

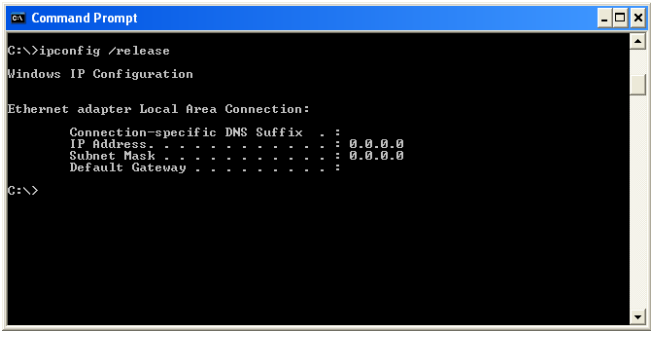


Obtain IP Settings From Your Barricade

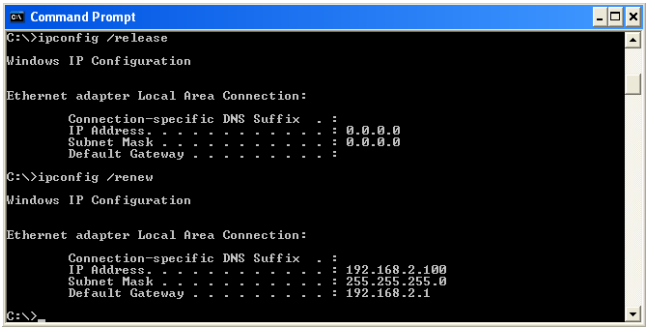
Now that you have configured your computer to connect to your Barricade, it needs to obtain new network settings. By releasing old DHCP IP settings and renewing them with settings from your Barricade, you can verify that you have configured your computer correctly.

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

2. In the Command Prompt window, type "IPCONFIG /RELEASE" and press the **Enter** key.



3. Type "IPCONFIG /RENEW" and press the **Enter** key. Verify that your IP Address is now **192.168.2.xxx**, 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 correctly.



4. Type **EXIT** and press the **Enter** key to close the Command Prompt window.

Your computer is now configured to connect to the Barricade.

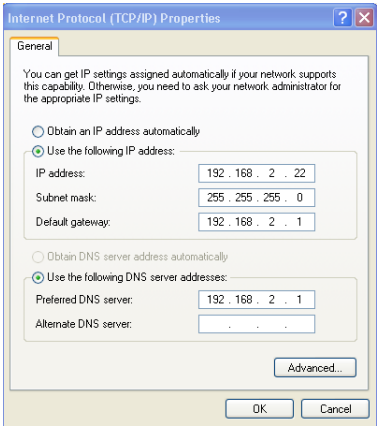
Manual IP Configuration

1. Follow steps 1-5 in "DHCP IP Configuration" on page 3-9.

2. Select **Use the following IP Address**.

3. Enter an IP address based on the default network **192.168.2.x** (where x is between 2 and 254), and use **255.255.255.0** for the subnet mask. Use **192.168.2.1** for the Default gateway field.

4. Select **Use the following DNS server addresses**.



5. Enter the IP address for the Barricade in the Preferred DNS server field. This automatically relays DNS requests to the DNS server(s) provided by your ISP. Otherwise, add a specific DNS server into the Alternate DNS Server field and click **OK** to close the dialog boxes.

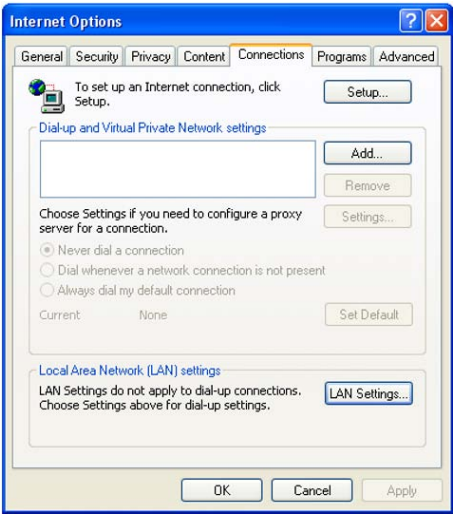
6. Record the configured information in the following table.

TCP/IP Configuration Setting	
IP Address	_____._____._____._____
Subnet Mask	_____._____._____._____
Preferred DNS Server	_____._____._____._____
Alternate DNS Server	_____._____._____._____
Default Gateway	_____._____._____._____

Disable HTTP Proxy

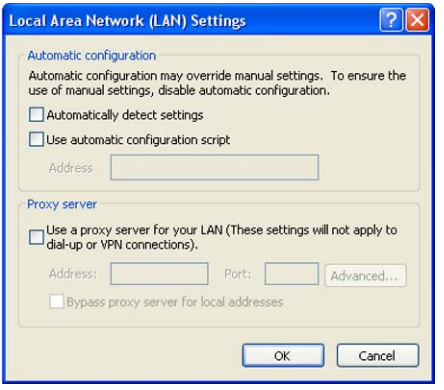
You need to verify that the "HTTP Proxy" feature of your web browser is disabled. This is so that your browser can view the Barricade's HTML configuration pages.

1. To disable the proxy in Internet Explorer, click **Tools**. Click **Internet Options...** and then the **Connections** tab, shown on the right. In the Local Area Network (LAN) settings section, click **LAN Settings...** to display the Local Area Network (LAN) Settings pop-up window below.



2. In the Proxy server section, ensure the **Use a proxy server for your LAN (These settings will not apply to dial-up or VPN connections)** check box is not ticked.

3. Click **OK**.



Configuring Your Macintosh Computer

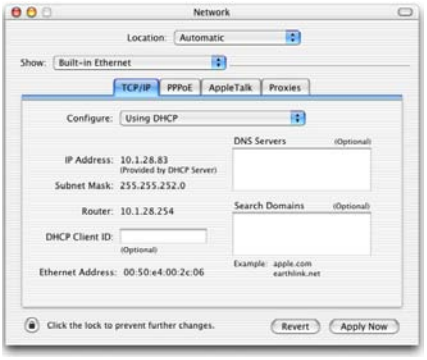
You may find that the instructions here do not exactly match your operating system. This is because these steps and screen shots were created using Mac OS 10.2. Mac OS 7.x and above are similar, but may not be identical to Mac OS 10.2.

Follow these instructions:

1. Pull down the **Apple Menu** . Click **System Preferences**.

2. Double-click the **Network** icon in the Systems Preferences window.

3. If **Using DHCP Server** is already selected in the Configure field, your computer is already configured for DHCP. If not, select this option.



4. Your new settings are shown in the TCP/IP tab. 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.

5. Close the Network window.

Now your computer is configured to connect to the Barricade.

Disable HTTP Proxy

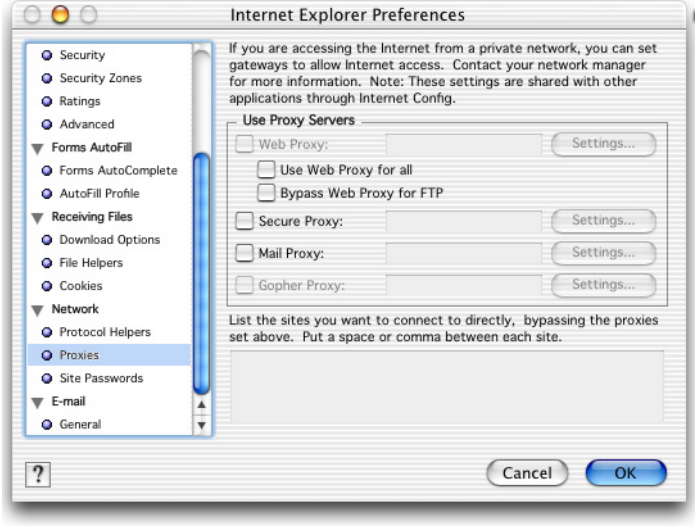
You need to verify that the "HTTP Proxy" feature of your web browser is disabled. This is so that your browser can view the Barricade's HTML configuration pages. The following steps are for Internet Explorer.

Internet Explorer

1. Open Internet Explorer and click the **Stop** button. Click **Explorer**/**Preferences**.

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

3. Uncheck all check boxes and click **OK**.



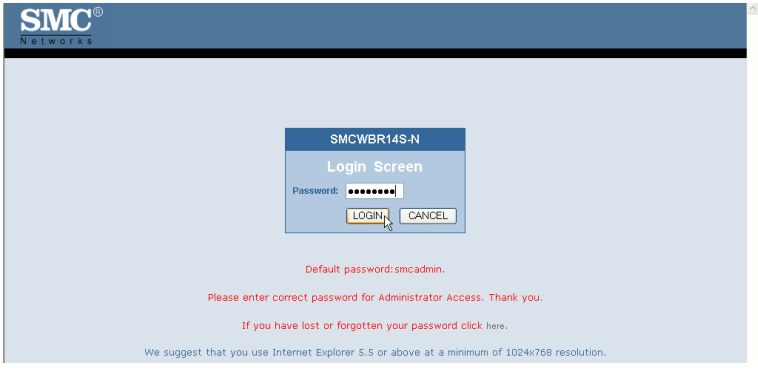
CHAPTER 4
CONFIGURING THE BARRICADE

After you have configured TCP/IP on a client computer, use a web browser to configure the Barricade. The Barricade can be configured by any Java-supported browser such as Internet Explorer 5.5 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

Enter the default password: **smcadmin**, and click **LOGIN**.

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



Navigating the Web Browser Interface

The Barricade's management interface consists of a Setup Wizard and an Advanced Settings section.

Setup Wizard: Use the Setup Wizard for quick and easy configuration of your Internet connection and basic LAN settings.

Advanced Settings: Advanced Settings supports more advanced functions like NAT, system maintenance, firewall and UPnP.

Making Configuration Changes

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

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

Setup Wizard

Time Zone

Click on **SETUP WIZARD** and **NEXT**, then you will see the Time Zone screen. Select your local time zone from the drop-down menu. This information is used for log entries and client filtering.

If you want to automatically synchronize the Barricade with a public time server, check the box to **Enable Automatic Time Server Maintenance**. Select the desired servers from the drop-down menus.

Click **NEXT** to continue.

Wireless Settings

This screen allows you to configure the SSID, wireless Mode and channel. Optionally you can disable broadcasting of SSID for added security. SSID is the name given to your wireless LAN. Wireless clients within the same network should be configured to use the same SSID.

Parameter	Description
Wireless Channel	The radio channel used by the wireless router and its clients to communicate with each other. This channel must be the same on the Barricade and all of its wireless clients. The Barricade will automatically assign itself a radio channel, or you may select one manually.
Extension Channel	Setting the Bandwith Mode as 20/40MHz allows you to use this extension channel as the secondary channel for doubling the bandwith of your wireless network.
SSID	Service Set ID. The SSID must be the same on the Barricade and all of its wireless clients. (Default: SMC)
Wireless Mode	This device supports 11n, 11g and 11b wireless networks. Make your selection depending on the type of wireless network that you have. SMC recommend using "Mixed 802.11n, 802.11g and 802.11b" to provide compatibility with 11n, 11g and 11b wireless clients.

Parameter	Description
Bandwidth	• 20MHz: Sets the operation bandwidth as 20 MHz. • 20/40MHz: Allows automatic detection of the operation bandwidth between 20 MHz and 40 MHz. Choosing the bandwidth mode as 20/40MHz allows you to use the extension channel.
Broadcast SSID	Enable or disable the broadcasting of the SSID. Disabling SSID broadcast will provide increased security by hiding the SSID of your wireless network.
Protected Mode	Enabling this function to ensure the best performance of your 11n throughput in case there is a lot of interference from the 11g and 11b devices in the wireless network.
802.11e/WMM QoS	Enable or disable the use of QoS. The QoS (Quality of Service) function allows you to differentiate WMM (Wi-Fi Multimedia) traffic and provide it with high-priority forwarding service

Click **NEXT** to continue.

Connection Type Setting

Specify the WAN connection type required by your Internet Service Provider. Specify Dynamic IP Address, PPPoE, PPTP, L2TP or Static IP Address.

Select your connection type to proceed. Click **BACK** to go back and change your settings.

Dynamic IP Address

If the ISP requires you to input a Host Name, type it in the **Host Name** field. Click on the **Clone the MAC Address** and the **MAC Address** of the current PC will be filled automatically.

Click **NEXT** to proceed, or **BACK** to change your settings.

PPPoE

Enter the User Name and Password required by your ISP in the appropriate fields. If your ISP has provided you with a Service Name enter it in the **Service Name** field, otherwise, leave it blank. Leave the Maximum Transmission Unit (MTU) at the default value (1454) unless you have a particular reason to change it. Enter the maximum idle time for the Internet connection. After this time has been exceeded the connection will be terminated. Check the **Auto-reconnect** check box to automatically re-establish the connection as soon as you attempt to access the Internet again.

Click **NEXT** to proceed, or **BACK** to change your settings.

Note: Clicking **NEXT** will not automatically connect the Barricade to the Internet. The Barricade will only connect when you explicitly request it to, for example, by launching your web browser.

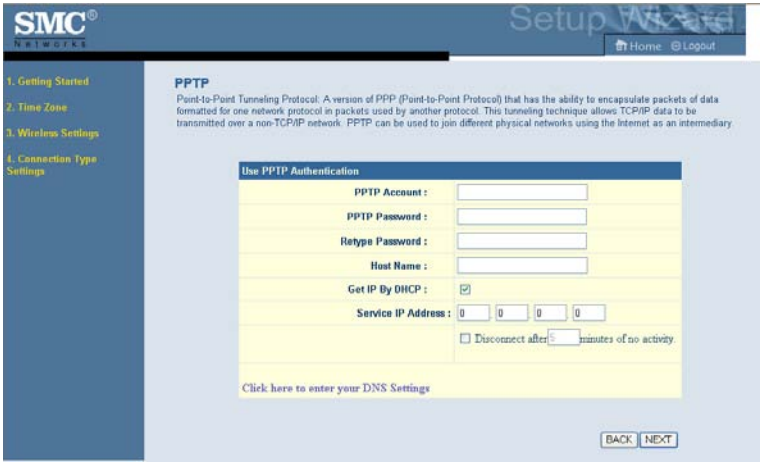
PPTP (Point-to-Point Tunneling Protocol)

The Barricade supports PPTP connection. The PPTP connection delivers user-level authentication VPN (virtual private network) for secure network path.

Enter the user account ID and password required by your ISP in the appropriate fields. If your ISP has provided you with a Host Name enter it in the **Host Name** field, otherwise, leave it blank. If your ISP uses DHCP service, enable the **Get IP by DHCP**. Then enter the **Service IP Address** provided by your ISP.

Click on the **Disconnect after x minutes of no activity** and then enter the idle time for the Internet connection. This is the period of time for which the connection to the Internet is maintained during inactivity. If your ISP charges you by the minute, you should change the idle time out to one minute.

Most ISPs provide a DNS server for speed and convenience. Since your Service Provider may connect to the Internet with dynamic IP settings, it is likely that the DNS server IP's are also provided dynamically. Clicking on the **Click here to enter your DNS Settings** for DNS configuration. See "DNS" on page 4-22.



Click **NEXT** to proceed, or **BACK** to change your settings.

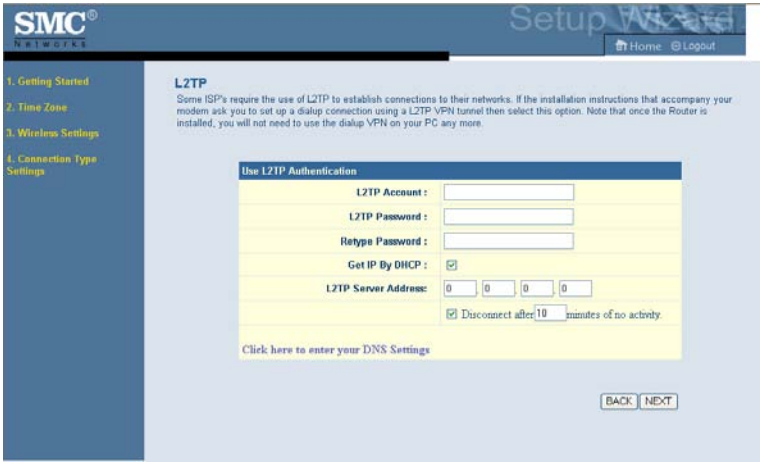
L2TP (Layer 2 Tunneling Protocol)

The Barricade supports L2TP connection. The L2TP connection delivers computer-level authentication VPN (virtual private network) for secure network path.

Enter the user account ID and password required by your ISP in the appropriate fields. If your ISP uses DHCP service, enable the **Get IP by DHCP**. Then enter the **L2TP Server Address** provided by your ISP.

Click on the **Disconnect after x minutes of no activity** and then enter the idle time for the Internet connection. This is the period of time for which the connection to the Internet is maintained during inactivity. If your ISP charges you by the minute, you should change the idle time out to one minute.

Most ISPs provide a DNS server for speed and convenience. Since your Service Provider may connect to the Internet with dynamic IP settings, it is likely that the DNS server IP's are also provided dynamically. Clicking on the **Click here to enter your DNS Settings** for DNS configuration. See "DNS" on page 4-22.



Click **NEXT** to proceed, or **BACK** to change your settings.

Static IP Address

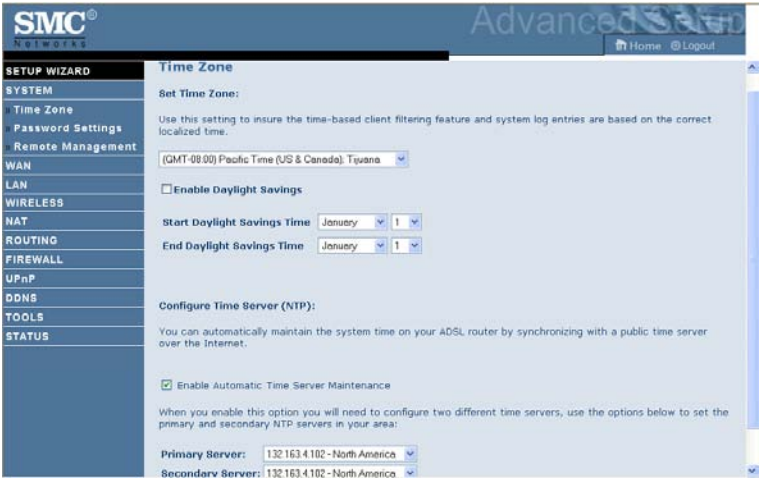
Enter the IP address, Subnet Mask and Gateway Address provided to you by your ISP in the appropriate fields below.

Click **NEXT** to proceed, or **BACK** to change your settings.

System

Time Zone

Select your local time zone from the drop-down list. This information is used for log entries and client filtering.



For accurate timing of log entries and system events, you need to set the time zone. Select your time zone from the drop-down list.

If daylight savings is used in your area, check the box to enable the function, and select the start/end dates.

If you want to automatically synchronize the Barricade with a public time server, check the box to Enable Automatic Time Server Maintenance. Select the desired servers from the drop-down menu.

Click **Save Settings**.

Password Settings

Use this screen to change the password for accessing the management interface.

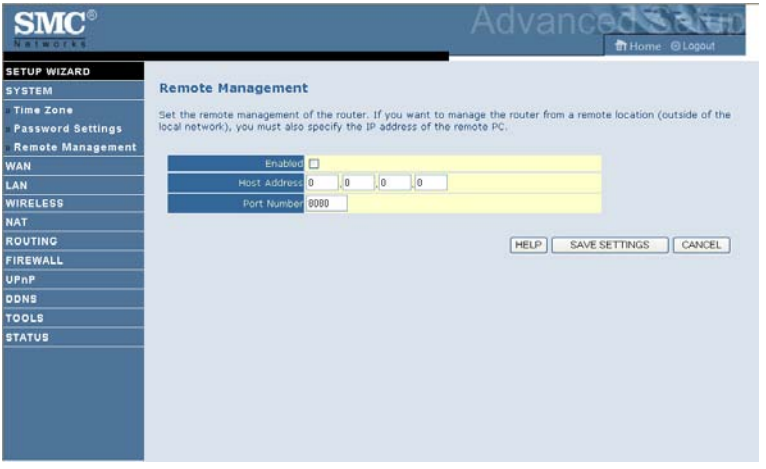
Passwords can contain from 3~12 alphanumeric characters and are case sensitive.

Note: If you lost the password, or you cannot gain access to the user interface, press the blue reset button on the rear panel, holding it down for at least 10 seconds to restore the factory defaults. The default password is **smcadmin**.

Enter a maximum Idle Time Out (in minutes) to define a maximum period of time for which the login session is maintained during inactivity. If the connection is inactive for longer than the maximum idle time, it will perform system logout, and you have to log in again to access the management interface. (Default: 10 minutes)

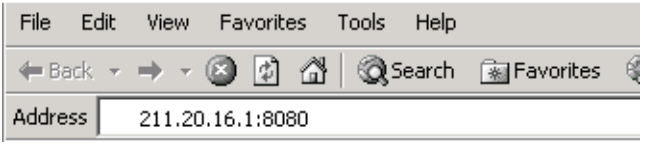
Remote Management

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 entering the IP address of a remote computer on this screen. Check the **Enabled** check box, and enter the IP address of the Host Address and click **Save Settings**.



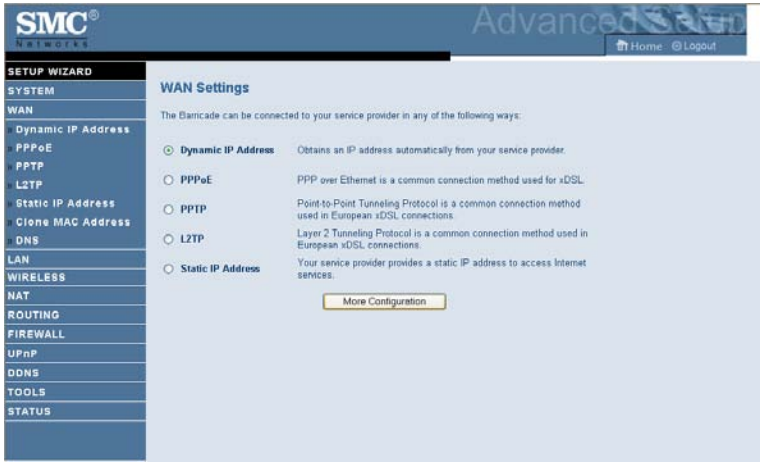
Note: If you check Enable and specify an IP address of 0.0.0.0, any remote host can manage the Barricade.

For remote management via WAN IP address you need to connect using port 8080. Simply enter WAN IP address followed by :8080, for example, 211.20.16.1:8080.



WAN Settings

Specify the WAN connection type required by your Internet Service Provider. Choose **Dynamic IP Address**, **PPPoE**, **PPTP**, **L2TP** or **Static IP Address** for your WAN link.



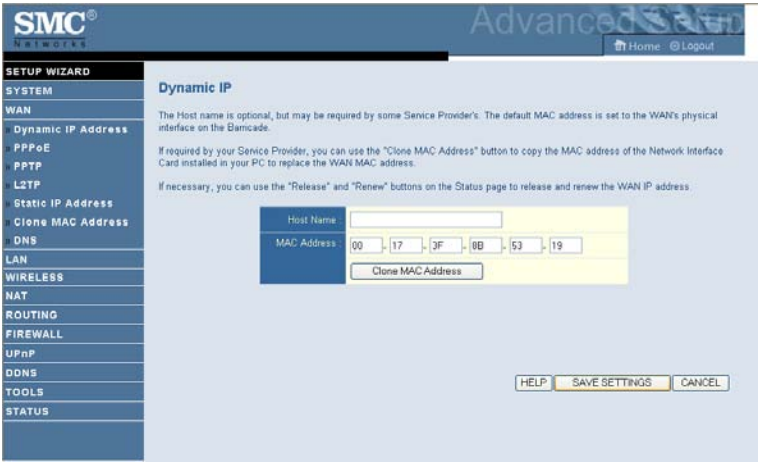
Select the connection type and click **More Configuration**.

Dynamic IP

The Host Name is optional, but may be required by some service provider's. The default MAC address is set to the WAN's physical interface on the Barricade.

If required by your service provider, you can use the **Clone MAC Address** button to copy the MAC address of the Network Interface Card (NIC) installed in your PC to replace the WAN MAC address.

If necessary, you can use the **Renew** button on the Status page to renew the WAN IP address.



Note: Make sure you record the MAC address that you clone, so that if you lose your settings you will be able to re-connect to the Internet.

Click **SAVE SETTINGS** to proceed, or **CANCEL** to change your settings.

PPPoE

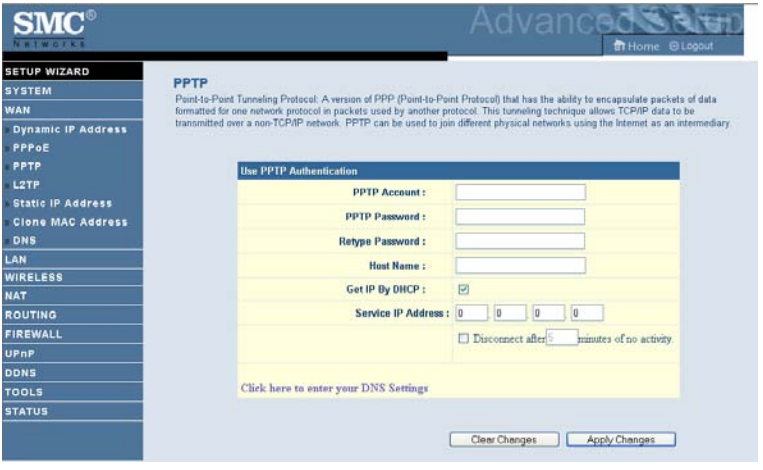
Enter the PPPoE user name and password assigned by your Service Provider. The Service Name is normally optional, but may be required by some service providers. Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, then it will be dropped. You can enable the **Auto-reconnect** option to automatically re-establish the connection as soon as you attempt to access the Internet again.

Click **SAVE SETTINGS** to proceed, or **CANCEL** to change your settings.

PPTP

Enter the Account ID and Password, and Host Name assigned by your ISP in the appropriate fields. If your ISP uses DHCP service, enable the **Get IP by DHCP**. Then enter the **Service IP Address** provided by your ISP. Click on the **Disconnect after x minutes of no activity** and then enter the idle time for the Internet connection. This is the period of time for which the connection to the Internet is maintained during inactivity. If your ISP charges you by the minute, you should change the idle time out to one minute.

Most ISPs provide a DNS server for speed and convenience. Since your Service Provider may connect to the Internet with dynamic IP settings, it is likely that the DNS server IP's are also provided dynamically. Clicking on the **Click here to enter your DNS Settings** for DNS configuration. See "DNS" on page 4-22.

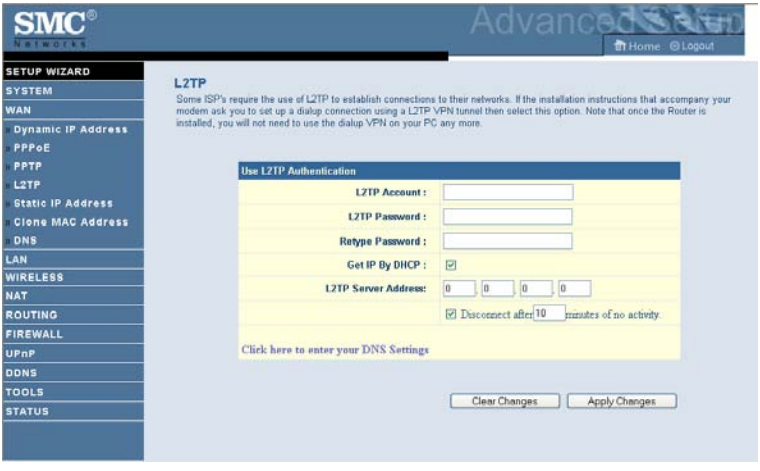


Click **Apply Changes** to proceed, or **Clear Changes** to change your settings.

L2TP

Enter the L2TP Account ID and Password assigned by your ISP in the appropriate fields. If your ISP uses DHCP service, enable the **Get IP by DHCP**. Then enter the **L2TP Server Address** provided by your ISP. Click on the **Disconnect after x minutes of no activity** and then enter the idle time for the Internet connection. This is the period of time for which the connection to the Internet is maintained during inactivity. If your ISP charges you by the minute, you should change the idle time out to one minute.

Most ISPs provide a DNS server for speed and convenience. Since your Service Provider may connect to the Internet with dynamic IP settings, it is likely that the DNS server IP's are also provided dynamically. Clicking on the **Click here to enter your DNS Settings** for DNS configuration. See "DNS" on page 4-22.



Click **Apply Changes** to proceed, or **Clear Changes** to change your settings.

Static IP

If your Service Provider has assigned a fixed IP address, enter the assigned IP address, subnet mask and the gateway address on this screen.

Click **SAVE SETTINGS** to proceed, or **CANCEL** to change your settings.

Clone MAC Address

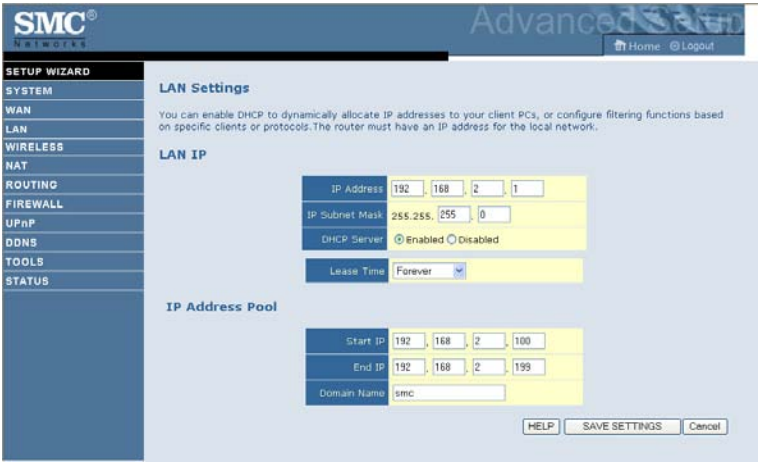
Some ISPs require you to register your MAC address with them. If this is the case, and you have previously registered the MAC address of another device, the MAC address of the Barricade must be changed to the MAC address that you have registered with your ISP.

DNS

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

LAN Settings

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



The LAN Settings parameters are listed below.

Parameter	Description
LAN IP	
IP Address	The IP address of the Barricade.
IP Subnet Mask	The IP subnet mask.
DHCP Server	DHCP allows individual computers to obtain the TCP/IP configuration at startup from a centralized DHCP server. To dynamically assign an IP address to a client PC, enable the DHCP (Dynamic Host Configuration Protocol) function.

Parameter	Description
Lease Time	The length of time the DHCP server will reserve the IP address for each computer. Setting lease times for shorter intervals such as one day or one hour frees IP addresses after the specified period of time. This also means that a particular computer's IP address may change over time. If you have set any advanced features such as DMZ, this is dependent on the IP address. For this reason, you will not want the IP address to change.
IP Address Pool	The DHCP IP Address Pool is the range of IP addresses set aside for dynamic assignment to the computers on your network.
Start IP	This field indicates the first of the contiguous IP addresses in the IP address pool.
End IP	This field indicates the last of the contiguous IP addresses in the IP address pool.
Domain Name	The domain name is the name you assign to your network.

Wireless

The Barricade also operates as a wireless access point, allowing wireless computers to communicate with each other. To configure this function, all you need to do is to enable the wireless function, define the radio channel, the SSID, and the security options.

Check **Enable** and click **SAVE SETTINGS**.

Channel and SSID

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

Parameter	Description
Wireless Channel	The radio channel used by the wireless router and its clients to communicate with each other. This channel must be the same on the Barricade and all of its wireless clients. The Barricade will automatically assign itself a radio channel, or you may select one manually.
Extension Channel	Setting the Bandwith Mode as 20/40MHz allows you to use this extension channel as the secondary channel for doubling the bandwith of your wireless network.
SSID	Service Set ID. The SSID must be the same on the Barricade and all of its wireless clients. (Default: SMC)
Wireless Mode	This device supports 11n, 11g and 11b wireless networks. Make your selection depending on the type of wireless network that you have. SMC recommend using "Mixed 802.11n, 802.11g and 802.11b" to provide compatibility with 11n, 11g and 11b wireless clients.