

ADSL Modem

U S E R ' S M A N U A L

X4



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Contents

1: INSTALLATION INSTRUCTIONS	4
1.1 IMPORTANT! BEFORE YOU BEGIN	4
1.2 PACKAGE CONTENTS	5
1.3 QUICK START INSTRUCTIONS	6
1.4 IF YOU NEED HELP	14
2: ADVANCED SETUP OPTIONS	15
2.1 HOW TO USE THE ADVANCED OPTIONS	15
2.2 WAN SETTINGS	16
2.3 LAN SETTINGS	20
2.4 NAT FIREWALL	22
2.5 VIRTUAL SERVER	23
2.6 DMZ	26
2.7 DNS	28
2.8 ADSL CONFIGURATION	29
2.9 MISCELLANEOUS	30
3: SYSTEM ADMINISTRATION	32
3.1 MONITORING SYSTEM STATUS	32
3.2 MONITORING ADSL STATUS	33
3.3 PERFORMING SYSTEM ADMINISTRATION TASKS	35
3.4 RESETTING THE UNIT TO ITS DEFAULT SETTINGS	36
3.5 UPDATING THE UNIT'S FIRMWARE	37
4: REMOVING THE X4 MODEM	38
APPENDIX A: FRONT AND BACK PANEL INFORMATION	39
APPENDIX B: CONFIGURING YOUR BROWSER	41
APPENDIX C: WINDOWS 95, MACINTOSH, AND LINUX USERS: CONFIGURING YOUR TCP/IP SETTINGS	46
APPENDIX D: TROUBLESHOOTING	53
APPENDIX E: REGULATORY INFORMATION	55

1

Installation Instructions

1.1 Important! Before you Begin

Before installing your X4 ADSL modem, you must have DSL service enabled on your telephone line. To do this, you need to sign up with a DSL service provider. They will arrange to have DSL enabled, and provide you with a User Name and Password (if required) and the Communications Settings necessary to log on to their network.

You will need your User Name and Password to complete the installation, so please make sure you have them at hand.

User Name _____

Password _____

The following table lists some of DSL broadband communications settings. This table is intended for reference only. Typically you should not need to enter this information; it should be automatically supplied if needed as part of your service provider's installation procedure.

Service Provider	VPI	VCI	Protocol (Encapsulation)
France (1)	8	35	PPPoA LLCSNAP (RFC 2364)
France (2)	8	67	PPPoA (RFC 2516) or PPPoE (RFC 2364)
Portugal	0	35	PPPoE LLCSNAP (RFC 2516)
Spain—Wanadoo	8	32	Routed IP over ATM LLCSNAP (RFC 1483)
Spain—Telefonica	8	32	PPPoE LLCSNAP (RFC 2516)
Spain—Tiscali	1	32	PPPoA VCMUX (RFC 2364)
U.K. (1)	0	38	PPPoA VCMUX (RFC 2364)
U.K. (2)	0	38	PPPoE LLCSNAP (RFC 2516)
U.S.A.	0	35	PPPoE LLCSNAP (RFC 2516)
Venezuela—CANTV	0	33	Routed IP over ATM LLCSNAP (RFC 1483)

1.2 Package Contents

In addition to these installation instructions, your package includes the following items:

- X4 ADSL unit
- Power adapter and power cord
- Straight-through Ethernet cable
- USB cable
- RJ-11 phone cord
- RJ-11-to-wall-jack adapter (certain models only)
- CD-ROM, including installation software
- Warranty and Customer Support information (on CD-ROM)
- Phone filter(s) (certain models only).

If anything is missing or damaged, please contact your supplier.

You Will Also Need

- A Macintosh, Linux, or Windows 95/98/98SE/2000/NT/Me/XP computer equipped with a Network Interface Card (NIC) or a Windows 98/98SE/2000/Me/XP computer equipped with a USB port.
- A telephone wall jack to plug the X4 unit into. The associated phone line must be DSL enabled.

1.3 Quick Start Instructions

Your computer should be on. You can connect your X4 unit to your computer's Ethernet or USB port. Depending on your preference, follow the appropriate instructions below.

Note: Optionally, you can use both the X4's Ethernet jack and its USB jack. By connecting two computers individually to your X4 unit—one using the Ethernet jack and the other using the USB jack—it is possible to share Internet access.

To Connect via the Ethernet Option

1 Macintosh, Linux, Windows NT, and 95 Users:

You do not need to run the CD-ROM software.
Skip to Step 2 below.

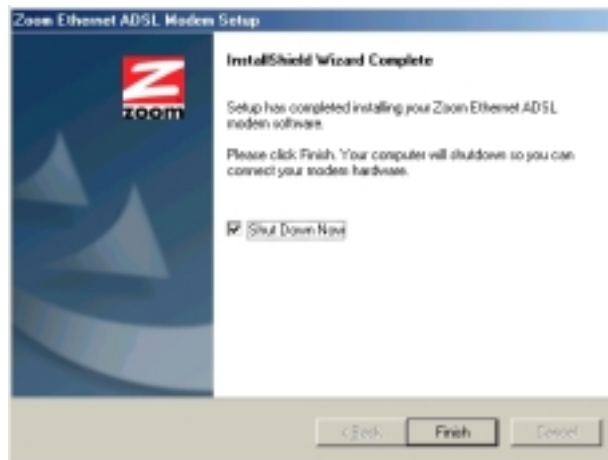
Windows 98/98SE, Me, 2000, and XP Users:

Install the software before connecting the hardware.

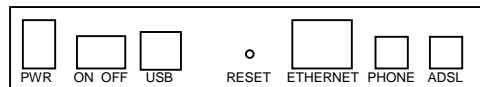
- a Insert the supplied CD-ROM into your computer. The CD starts automatically and the **Main Menu** opens:
(**Note:** If the CD does not start automatically, from the desktop, go to **Start | Run** and then type **D:\setup.exe**, where **D** is the letter of your CD-ROM drive.)



- b Click the **ADSL Modem Installation Wizard** button, and then click the **Ethernet** option. The software installation proceeds automatically.
- c When the process is complete, you will be prompted to click **Finish**. Your computer will shut down so you can connect the hardware.



2 All hardware connections originate from the modem's back panel.



(For reference, we have included a table that defines these back panel ports, or jacks; see page 39.)

- a Plug one end of the included power adapter into the unit's **PWR** jack and the other end into a power strip or wall receptacle.
- b Turn the unit on by pushing the **ON/OFF** toggle switch. The **PWR** light on the unit's front panel turns on.
- c Plug one end of the supplied phone cord into the unit's **ADSL** jack and the other end into the ADSL wall jack.
- d Plug one end of the straight-through Ethernet (10BaseT) cable into the modem's **ETHERNET** jack and plug the other end into your computer's corresponding Ethernet port.

Note: You can also attach the X4 to an access point or a network hub via its **ETHERNET** jack and thereby connect multiple computers.

—If your hub has an uplink or daisy chain port, you can use the supplied straight-through Ethernet cable to connect the two.

—If your hub has a numbered port or if you are using an access point, you need a crossover Ethernet cable (sold separately).

Throughout this manual, when we refer to an X4 Ethernet connection, it should be understood that this connection may be to a computer, access point, or hub.

- 3 Turn your computer back on.
- 4 The unit performs a startup sequence—the front panel **LINK** light blinks. (For reference, we have included a table on page 39 that defines the X4's front panel lights.) When the **LINK** light changes from blinking to solid, proceed to **Establishing Communication with the X4** (page 10).

To Connect via the USB Option

- 1 **You must install the requisite USB software on your Windows computer before connecting the hardware.**
 - a Insert the supplied CD-ROM into your computer. The CD starts automatically and the **Main Menu** opens:
(**Note:** If the CD does not start automatically, from the desktop, go to **Start | Run** and then type **D:\setup.exe**, where **D** is the letter of your CD-ROM drive.)



- b Click the **ADSL Modem Installation Wizard** button and, if prompted, the **USB** option. The software installation proceeds automatically. When the process is complete, the Main Menu minimizes for future use and a Zoom Web Console icon resides on your desktop.
- 2 Now connect the hardware. All connections originate from the X4's back panel.



(For reference, we have included a table that defines these back panel ports, or jacks; see page 39.)

- a Plug one end of the included power adapter into the unit's **PWR** jack and the other end into a power strip or wall receptacle.

- b Turn the unit on by pushing the **ON/OFF** toggle switch. The **PWR** light on the unit's front panel turns on.
 - c Plug one end of the supplied phone cord into the unit's **ADSL** jack and the other end into the ADSL wall jack.
 - d Plug one end of the USB cable into the modem's **USB** jack and plug the other end into your computer's corresponding USB port.
- 3 The unit performs a startup sequence—the front panel **LINK** light blinks. (For reference, we have included a table on page 39 that explains the meaning of the X4's front panel lights.)

Note: You may see a **Found New Hardware** box indicating the progression of the installation; typically no user action is necessary. If you are using Windows XP, however, you may be required to click **Next**.

- 4 Depending on your operating system, you may see a **Hardware Installation** disclaimer box or a **Digital Signature Not Found** dialog box. You can safely ignore these messages and click **Yes** or **Continue Anyway**.

Windows XP Users: If prompted to do so, click **Finish**.

When the startup sequence is complete, the **LINK** light will change from blinking to solid. Continue below with **Establishing Communication with the X4**.

Establishing Communication with the X4

- 1 Depending on your computer's operating system, you may have a Zoom Web Console icon on your desktop.



- If you do, double-click it to display the **Network Password** dialog box.
- If you do not have a Zoom Web Console icon on your desktop, open your Web browser, type **http://10.0.0.2** and press Enter to display the **Network Password** box.

Note: If your web browser doesn't open properly, it may be that your Internet settings need adjustment. Turn to page 41 for instructions.



Note: This User Name and Network Password are different from the ones that your service provider gave you. They provide an added level of security that protects your ADSL unit's settings.

Type the X4's default User Name and Password.

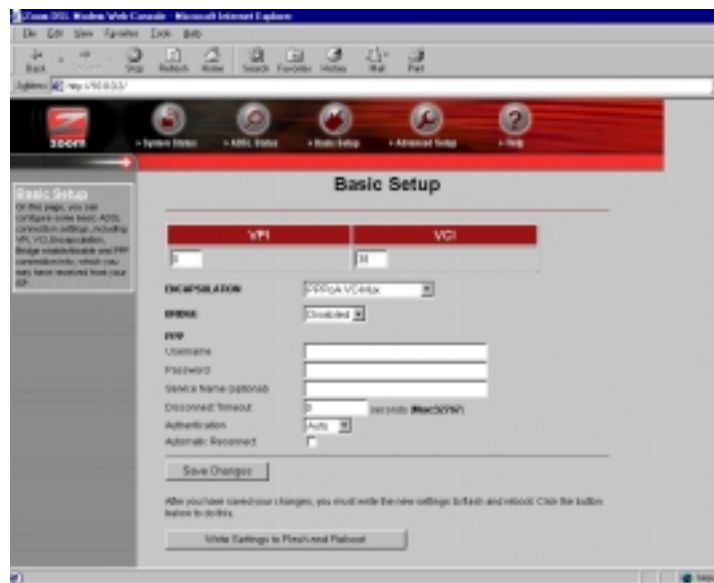
- **User Name=admin**
- **Password=zoomadsl**

Remember: The **User Name** and **Password** are case-sensitive.

Tip: If the **Network Password** box doesn't display, perform the following in this order:

- a Recheck all connections.
- b Restart the modem and computer.
- c Perform a "hard" reset. (See page 36.)

- 2 The **Basic Setup** page displays. You are now communicating with your X4. This page provides details about your Internet connection and includes information that the X4 uses to automatically connect to your service provider.



- Check that the VPI, VCI, and Encapsulation settings match those supplied by your service provider. (Refer to the table on page 5 if necessary or consult your provider.)
- Enter the **User Name** and **Password** supplied by your service provider.
- Optional: Enter a **Service Name** if your service provider has given you one.
- Click **Save Changes** and then click **Write Settings to Flash and Reboot**. Once the reboot is complete and the unit has reset itself (when the front panel's **LINK** light remains on steady again), your X4 is ready to use. You can open another Web browser or use the one that is already open to access the Internet.

IMPORTANT:

Every time you make changes to the Basic Setup page, you must click the **Save Changes** button and then the **Write Settings to Flash and Reboot** button. A **Confirm** page displays; click the button to complete the process. If not, any changes will be lost when you navigate to another page.



Using Phone Filters

You should use a filter with each device—phone, fax machine, analog modem, etc.—that is sharing the DSL-enabled line, because this prevents the device from receiving noise when the DSL modem is on. Your X4 modem includes an onboard filter, so you can plug a phone or other device directly into the X4's **PHONE** jack if you like. Plugging a device into this jack is optional, not required. **Tip:** If your package includes a two-jack filter, you should plug your telephone into the filter's **PHONE** end, rather than the X4's **PHONE** jack.

For other devices on the DSL-enabled line, plug the device's phone cord into the filter's **PHONE** end, and plug the filter's **LINE** end into the wall jack. Some X4 models come with filters, and more can be purchased from a retailer or service provider.

Now that your modem is installed and appropriate filters are attached, you're done. Enjoy using the X4.

The remainder of this manual contains information intended for those users looking for expanded capabilities or for future reference—for example, there are chapters on **Advanced Setup Options** and **System Administration**. Refer to the Table of Contents for guidance.

1.4 If You Need Help

- If you have hardware installation problems, our Technical Support Staff will be happy to assist you.
Windows Users: Please see the Customer Support portion of the CD for contact information. You may also want to refer to the Frequently Asked Questions on the CD.
Macintosh and Linux Users: You will find Customer Support information and Documentation in Adobe PDF format in the appropriately named folders in the CD-ROM's directory.
- If you have DSL service problems, you should contact your DSL service provider.

2

Advanced Setup Options

In addition to its basic setup options, the X4 unit includes options for specialized, or advanced, settings. If you are like most users, you will not need these options. The X4 is designed so that the basic setup settings are sufficient for most users. This chapter is applicable only if you need to perform sophisticated tasks.

2.1 How To Use the Advanced Options

All the Advanced Configuration settings are accessible from the **Advanced Setup** page. Click its icon at the top of the X4's main interface page. (If you have exited from the X4 and have forgotten how to establish communication with it, refer to page 10.)



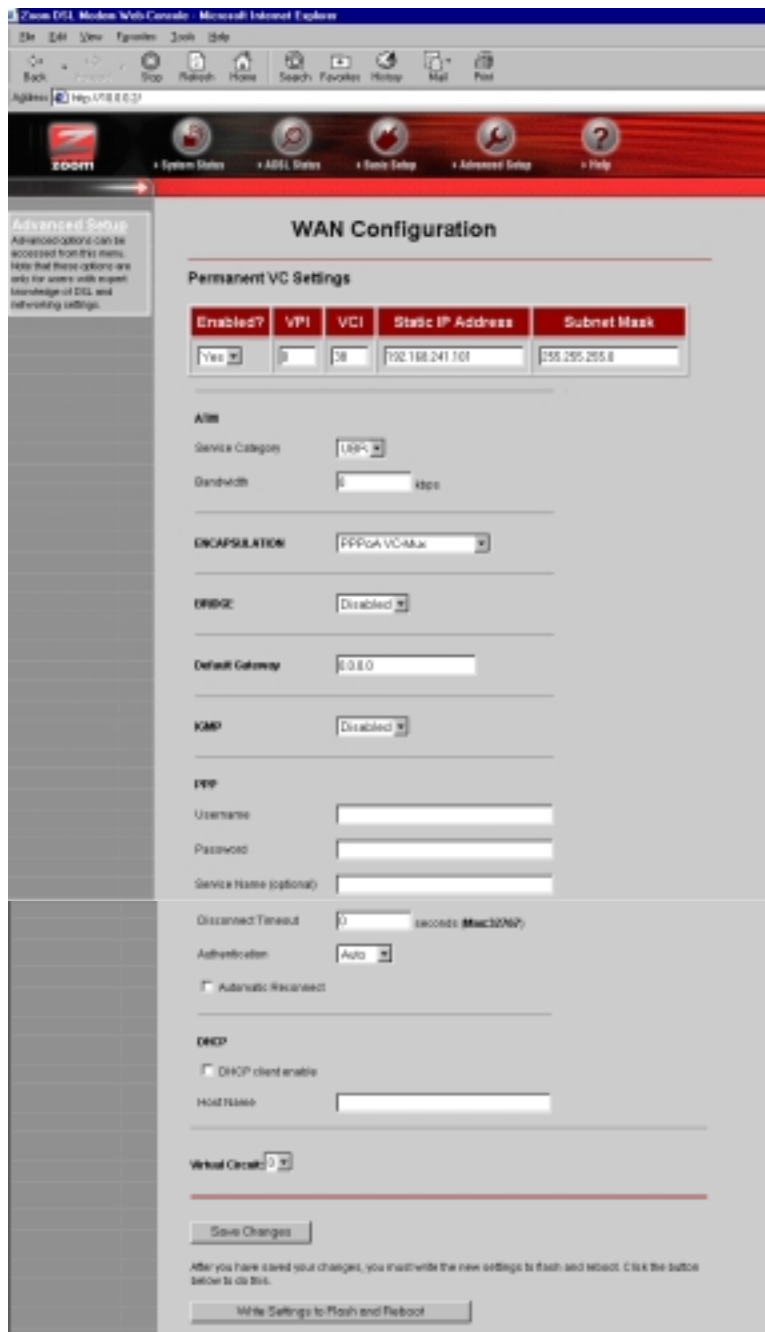
IMPORTANT:

Every time you make changes to an Advanced Setup page, you must click the **Save Changes** button and then the **Write Settings to Flash and Reboot** button. A **Confirm** page displays; click the button to complete the process. If not, any changes will be lost when you navigate to another page.



2.2 WAN Settings

The WAN Settings page contains information pertaining to your Wide Area Network (WAN) ADSL setup and how you access the Internet. From the **Advanced Setup** page, click the **WAN Settings** button. A screen displays with several fields to fill in. For each field or category, we have included a table for reference.



Permanent VC (Virtual Circuit) Settings

Your service provider will supply the Permanent Virtual Circuit (PVC) setting for your basic Internet connection. You can define additional PVCs for services such as telephony or to connect to a managed Virtual Private Network (VPN) if available in your area. Consult your service provider.

Enabled?	Enabled by default.
VPI	Supplied by your service provider (reference table appears on page 5).
VCI	Supplied by your service provider (reference table appears on page 5).
Static IP Address	Most providers use dynamic IP addressing; only providers using Bridged or Routed IP Encapsulation can use static IP addresses. If your provider has given you a static IP address, enter it here.
Subnet Mask	For static IP address users only (see above): Enter the subnet mask of the static IP address given to you by your service provider.
Virtual Circuits	No. of virtual circuits that can be set up: 1-7.

After filling out these fields, scroll down to the **Virtual Circuit** field and select a number from the dropdown list to identify this PVC. **Note:** The number 0 is reserved for the Basic Setup settings preconfigured for your provider. Be sure to click **Save Changes** and then **Write Settings to Flash and Reboot**.

Once you have set up multiple PVCs, you can switch between them by selecting a different number from the **Virtual Circuit** dropdown list and clicking **Save Changes** and **Writing Settings to Flash and Reboot**.

ATM

ATM, or Asynchronous Transfer Mode, allows you to change the way in which your data is sent over the Internet.

ATM Service Category	Default is UBR (Unspecified Bit Rate). CBR (Constant Bit Rate) is optional. You can only use CBR if you have arranged to do so with your provider.
Bandwidth	Default is 0 (which equals UBR). Specifying bandwidth is only possible with CBR.

Encapsulation

The **Encapsulation Mode** is related to the VPI and VCI numbers, which are specified by your service provider (see **Permanent VC Settings**, page 18).

Mode	Supplied by your service provider (reference table appears on page 5).
-------------	--

Bridge

Your **Bridge** choices are related to the **Encapsulation Mode** (see above). **Note:** You must enable Bridge if your service provider is using Bridged IP LLC or VCMUX (RFC 1483) Encapsulation.

IGMP (Internet Group Management Protocol)

IGMP is the Internet standard for IP multicasting, or broadcasting a message to many recipients simultaneously. Your choices are **enabled** or **disabled**; the default is **disabled**.

IMPORTANT:

Before enabling IGMP, navigate to the Advanced Setup page, click **Misc Configuration**, select **Enabled** in the **IGMP Proxy** dropdown list, and click **Save Changes** and **Write Settings to Flash and Reboot**. If you don't perform this step first, enabling IGMP on this page will not have any effect.

Default Gateway

Normally, you would not enter anything into the **Default Gateway** field. You would do so only if you want to connect your modem to the Internet via a different Gateway Router, or if your service provider has instructed you to change it.

PPP (Point-to-Point Protocol)

PPP is the most widely used protocol for authenticating your connection to the Internet. Should you change service providers, you may need to change the data in these fields. **Note:** These settings also appear on your **Basic Settings** page.

User Name	Supplied by your service provider.
Password	Supplied by your service provider.
Service Name	Optional; supplied by your service provider.
Disconnect Time	ADSL connection will be dropped after the ADSL line is idle for a certain amount of time (measured in seconds). Select 0 to ensure that you won't be disconnected.
Authentication	PPP user authentication method. Default is Auto ; you can specify CHAP or PAP only.
Automatic Reconnect	Disabled by default. Check this box if you want to be reconnected automatically if the ADSL connection is terminated unexpectedly.

DHCP (Dynamic Host Configuration Protocol)

Typically, you should not need to change your DHCP setting. The only case when you might want to change it is if your provider is using Bridged or Routed IP Encapsulation. Your service provider will instruct you.

DHCP client enable	Check this box only if instructed to by your service provider.
Host Name	If necessary, supplied by your service provider.

2.3 LAN Settings

By modifying your LAN ADSL setup and DHCP settings, you can control the number of computers that can connect to the X4. The default address range allows 12 computers to join the network. To change your settings, from the **Advanced Setup** page click the **LAN Settings** button.

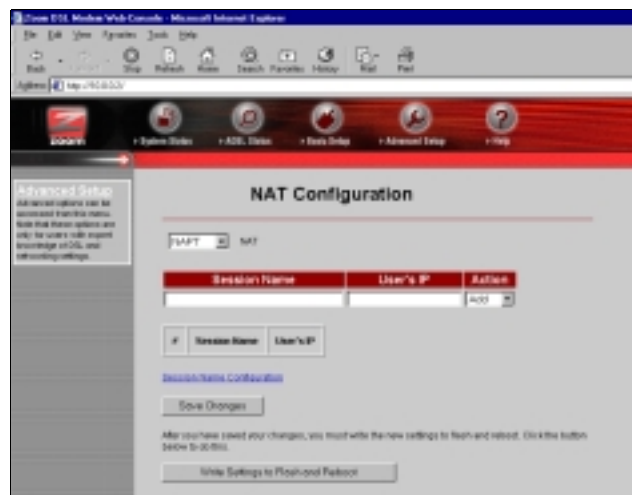


IP Address	X4's IP address. Default is 10.0.0.2.
Subnet Mask	X4's subnet mask address. Default is 255.255.255.0.
DHCP Server	Enabled by default.
DHCP Address Pool Selection	The DHCP Address Pool is based on the X4's IP address plus 12 IP addresses; for ex., the X4's default IP address is 10.0.0.2; so the DHCP Address Pool is 10.0.0.3-10.0.0.14. Default is System Allocated. A pool of 253 (max.) User-Defined addresses is optional.
User Defined Start Address	Starting address of IP address pool.
User Defined End Address	Ending address of IP address pool.
Lease Time	Measured in days, hours, minutes, and seconds. Default is 0—lease time will never run out.
User Mode	Default is Multi-User.

2.4 NAT Firewall

The X4's built-in NAT (Network Address Translation) firewall provides a good, but not perfect, level of protection from unauthorized access. NAT keeps private a network's internal IP addresses and presents to the Internet a set of public IP addresses. NAT's more robust counterpart, NAPT (Network Address Port Translation), replaces a network's private IP addresses with a single public IP address. Both NAPT and NAT are transparent to end users.

Your X4's NAT firewall is enabled by default; the default setting is **dynamic NAPT**—everything is automatic. You shouldn't need to change this setting. However, if your service provider instructs you to disable it (or change it), go to the **Advanced Setup** page and click the **NAT** button.



NAT	Default is NAPT. Options are Disable and NAT. You should not need to change this setting, unless advised to do so by your provider. Note: If you select Disable, all your modem's firewall capabilities are turned off.
Session Name	Only applicable to NAT; user-definable name to differentiate between different NAT sessions, different PPP sessions, and different PVCs.
User's IP	IP address of the client computer you want to add.
Action	Choices are Add or Delete.

2.5 Virtual Server

To use certain special applications—some Internet games, videoconferencing, and Internet telephony, for example—you may have to use nonstandard ports. A port is an endpoint to a logical connection. The port number identifies the logical channel being used—for instance, port 21 is associated with FTP (File Transport Protocol). If you want to use an application that requires access to a port that the X4 would normally deny, you have to modify the X4's settings to accommodate it.

One way to do this is to implement a virtual server. In other cases, you might want to have multiple ports open and for this you need to set up a Demilitarized Zone (DMZ); see page 26 for instructions on configuring a DMZ.

Tip: We recommend that you visit this web site:
www.practicallynetworked.com/sharing/specialapps.htm.
This site contains easy-to-understand instructions about opening ports and accommodating special applications.

To set up a virtual server, from the **Advanced Setup** page, click the **Virtual Server** button.



ID	The ID number is a convenient way to refer to a particular computer.
Public Port	Outbound port.
Private Port	Inbound port.
Port Type	Default is TCP. UDP is optional.
Host IP Address	IP address from the LAN side of the computer.

An example will help to illustrate how to set up a virtual server. If you wanted to use your computer as an FTP server, for instance, you would follow these steps.

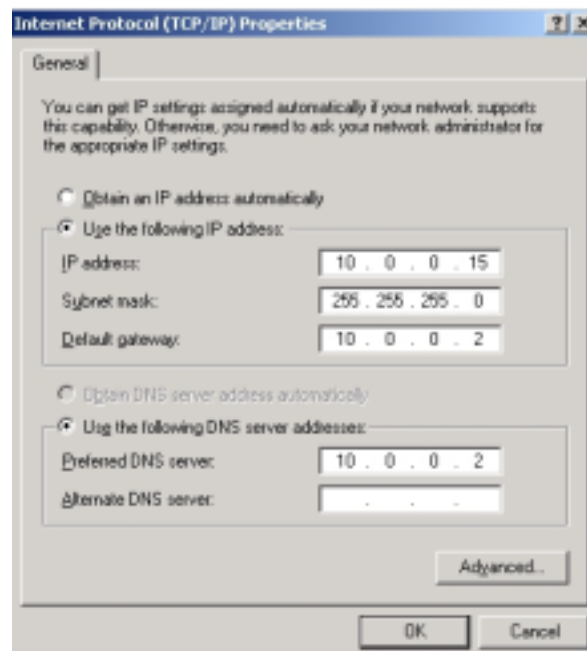
- 1** Select an ID number that you want to associate with this computer—1, for example. (You can set up multiple virtual servers.)
- 2** The inbound and outbound port numbers for FTP are the same: 21. Enter 21 in the **Public Port** and **Private Port** fields.
- 3** Select the **Port Type**. For FTP, it is **TCP**, which is the default.
- 4** Click **Add This Setting** (in this case, there is no **Save Changes** button), and then click **Write Settings to Flash and Reboot**.
- 5** You need to enter the **Host IP Address**.

To obtain this address, navigate to the **LAN Settings** page by returning to the **Advanced Setup** page and clicking **LAN**. You'll see the defined starting and ending IP address range; for example, 10.0.0.3 and 10.0.0.14. Your Host IP Address should be a static IP address outside of this range—say, 10.0.0.15.

To set this static IP address, go to **Start | Settings | Network and Dial-up Connections**. Right-click **Local Area Connection**, select **Properties**, highlight your NIC card's **TCP/IP** entry and click **Properties**. Click the radio buttons **Use the following IP address** and **Use the following DNS server addresses**, enter the following data, and click **OK**.

IP address	10.0.0.15
Subnet mask	255.255.255.0
Default gateway (X4's LAN IP address)	10.0.0.2
Preferred DNS server	10.0.0.2

Note: These TCP/IP instructions and screenshot are typical of a computer using Windows 2000 or XP; if you are using Windows 98 or Me, yours may differ slightly. If you are using Windows 95, or are a Macintosh or Linux user, and need help with your TCP/IP settings, turn to the Appendix on page 46. Otherwise, continue to Step 6.



- 6 Return to the **Virtual Server** page and enter the static IP address 10.0.0.15 in the **Host IP Address** field. Click **Add This Setting** and then click the **Write Settings to Flash and Reboot** button.

2.6 DMZ

In certain instances, you may want to give one computer on your LAN **unrestricted** Internet access. For example, you may want to use an application such as NetMeeting that uses dynamic ports. Or you may want to use the computer to play games over the Internet, and you want others to be able to initiate games with you. Without a DMZ, you would always have to be the one to initiate a game. A DMZ configuration allows the computer to accept *all* incoming packets that it has solicited.

CAUTION! Use the **DMZ** feature with the utmost care. It exposes the DMZ computer's entire contents to the Internet; there is no firewall protection whatsoever.

To enable the X4's DMZ feature, follow these steps.

- 1 From the **Advanced Setup** page, click the **DMZ** button.

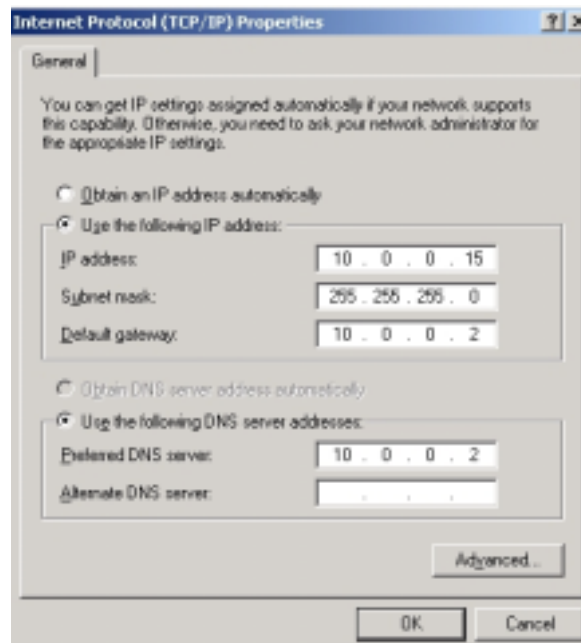


- 2 Select **Enable** from the **DMZ** dropdown list, then click **Save Changes** and **Write Settings to Flash and Reboot**.
- 3 You need to enter the **DMZ Host IP address**. To obtain this address, navigate to the **LAN Settings** page by returning to the **Advanced Setup** page and clicking the **LAN Settings** button. You'll see the defined starting and ending IP address range; for example, 10.0.0.3 and 10.0.0.14. Your DMZ Host IP Address should be a static IP address outside of this range—say, 10.0.0.15.

To set this static IP address, go to **Start | Settings | Network and Dial-up Connections**. Right-click **Local Area Connection** and select **Properties**. Click the **Install** button. Select the **Internet Protocol TCP/IP** option and click **Properties**. Click the radio buttons **Use the following IP address** and **Use the following DNS server addresses**, enter the following data, and click **OK**.

IP address	10.0.0.15
Subnet mask	255.255.255.0
Default gateway (X4's LAN IP address)	10.0.0.2
Preferred DNS server	10.0.0.2

Note: These TCP/IP instructions and screenshot are typical of a computer using Windows 2000 or XP; if you are using Windows 98 or Me, yours may differ slightly. If you are using Windows 95, or are a Macintosh or Linux user, and need help with your TCP/IP settings, turn to the Appendix on page 46. Otherwise, continue to Step 4.



- 4 Return to the **DMZ** page. Type the static IP address 10.0.0.15 in the **DMZ Host IP Address** field Click **Save Changes** and then click **Write Settings to Flash and Reboot**.

2.7 DNS

Typically, you should not need or want to change your DNS settings. Should your service provider instruct you to make changes, however, from the **Advanced Setup** page, click the **DNS** button.

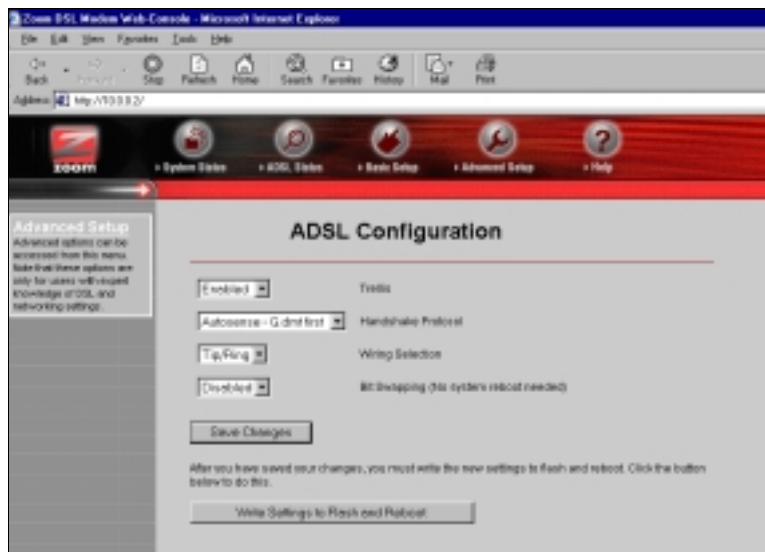


DNS Proxy Selection	Default is Use Auto Discovered DNS Servers Only. Options are: —Disable DNS Proxy —Use User-Configured DNS Servers Only —Auto Discovery + User Configured
User Configuration	IP address of the prime DNS server. IP address of the alternate DNS server.

- From the dropdown list, select the option you want using the table above for reference.
- If your provider instructed you to select **Use User-Configured DNS Servers Only** or **Auto Discovery + User Configured**, in the **User Configuration** field you need to type in the preferred and alternate DNS server IP addresses that your provider has given you.

2.8 ADSL Configuration

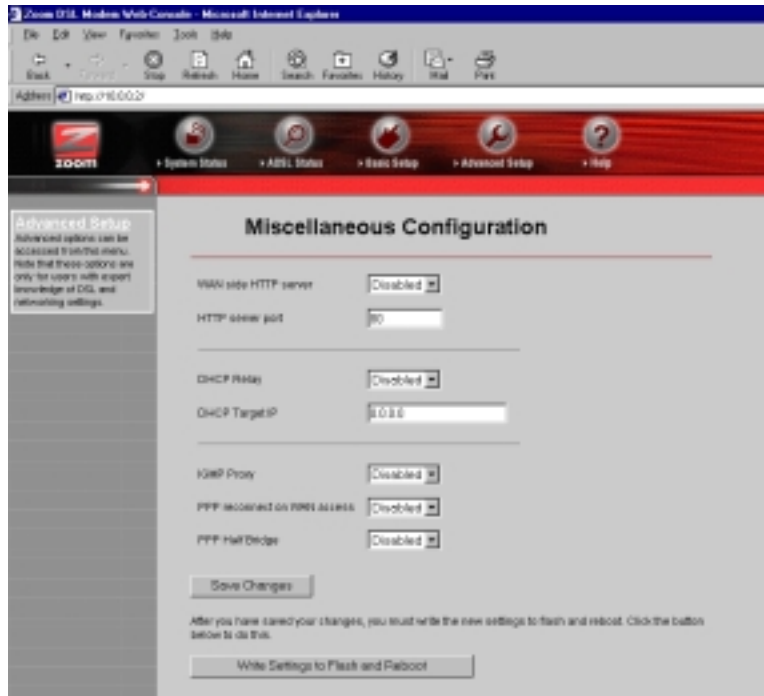
Normally, you should not need or want to change your ADSL configuration. Should your service provider instruct you to make changes, however, from the **Advanced Setup** page click the **ADSL Configuration** button to display the ADSL parameters.



Trellis	Enabled by default.
Handshake Protocol	Default is Autosense - G.dmt first.
Wiring Selection	Default is Tip/Ring.
Bit Swapping	Disabled by default.

2.9 Miscellaneous

From the **Advanced Setup** page, click the **Miscellaneous Configuration** button. This page allows you to change your X4 configuration and set up an IGMP proxy, for example, or enable the X4's PPP Half Bridge feature, for example.



WAN side HTTP server	Disabled by default.
HTTP server port	Port number with Web access; for ex., if you change it to 1001, the HTTP server address on the LAN side would be http://10.0.0.2:1001.
DHCP Relay	Disabled by default. Enabling this feature forces all local PCs' DHCP requests to be forwarded to the WAN DHCP server. Important: Be sure to disable the LAN DHCP server (navigate back to the Advanced Setup page and LAN Settings to do so; see page 20 for instructions).
IGMP Proxy	Disabled by default. Select enable, then navigate back to the Advanced Setup page and WAN Settings to set up your IGMP proxy. See page 19 for instructions.
PPP reconnect on WAN access	Disabled by default. Enabling this feature ensures that the PPP session is automatically established when a packet is ready to be transferred over the WAN.
PPP Half Bridge	Disabled by default. Enabling this feature forces the DHCP server to duplicate the X4's WAN IP address to the local client computer; thus, only one computer on the LAN can access the Internet at a time.

3

System Administration

Using a computer attached to the X4 and a Web-based browser such as Netscape Communicator or Internet Explorer, you can administer your X4 unit and monitor your ADSL connection.

Remember: If you are using an access point or a network hub, you can administer your X4 from any of the computers that are connected to the access point or hub.

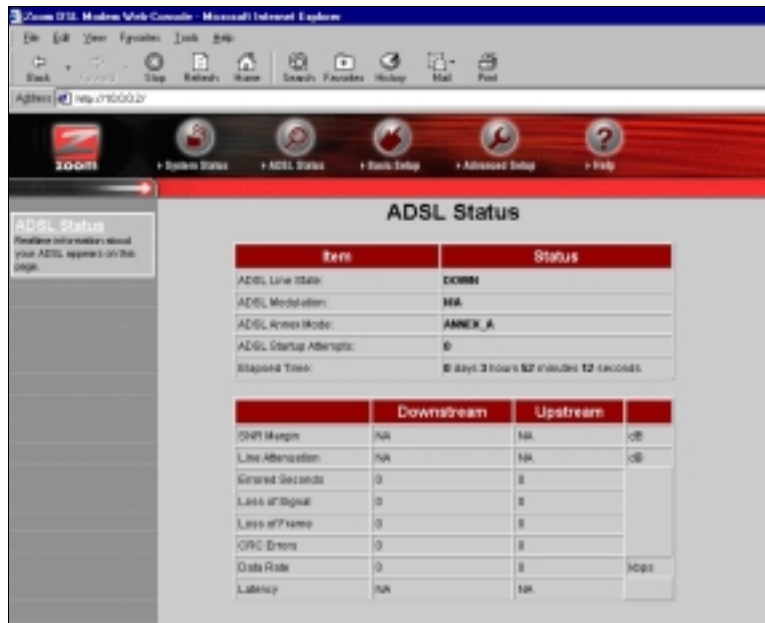
3.1 Monitoring System Status

If you want to check the overall system status, click the **System Status** icon at the top of the X4's main interface page. (If you have exited from the X4 and have forgotten how to establish communication with it, refer to page 10.)



3.2 Monitoring ADSL Status

If you want to check the status of your ADSL connection, click the **ADSL Status** icon at the top of the X4's main interface page.



From here, you can verify whether your ADSL connection is active or not (**ADSL Line State Status** will read **SHOWTIME**). You can also monitor related ADSL parameters—for example, how fast the X4 is transferring data.

If you want to review other network settings, click the **Advanced Setup** icon at the top of the main interface page.



Under **Status**, you will see **WAN Status**, **ATM Status**, **PPP Status**, **TCP Status**, and **MAC Table Status** buttons. Clicking any of these buttons displays pertinent information. **Note:** You can't make changes to the ATM or TCP Status pages; you can make changes to the PPP and WAN Status pages.

If your provider is using Bridged or Routed IP Encapsulation, you may be instructed to perform a Release/Renew operation to gain a new, valid IP address. To do so, perform the following:

- Highlight **Release** in the pulldown menu, and then click **Save Changes**.
- Highlight **Renew** in the same pulldown menu, and then click **Save Changes**.



3.3 Performing System Administration Tasks

To change system administration-type settings, click the **Advanced Setup** icon at the top of the main user interface page. Under the **Administration** heading, you will see items such as **Admin Password** and **System Log**.

For example, you can

- Change the **Admin Password**:
Type the new password, then retype it for verification purposes. **Note:** The password must be at least 8 characters. If you change your password and then forget it, your only recourse is to reset it to the default by performing a hardware system reset (see page 36).
- View **System Log**.
Click this button to view a log of system activity.
- Perform a **Diagnostic Test**.

The X4's user interface uses a few basic buttons, which are listed in the table below.

BUTTON	FUNCTION
Save Changes	Clicking this button initiates new settings and changes.
Write Settings to Flash and Reboot	Clicking this button puts new settings and changes into effect—and restarts the unit. (Changes do not become effective until unit is restarted.)
Help	Clicking the Help icon at the top of any page displays context-sensitive help.

Note: We strongly recommend that you change the administrator password to safeguard the security of your network.

3.4 Resetting the Unit to Its Default Settings

If you have changed the system settings on your X4 unit and want to restore them to the factory default settings, you can do so in one of two ways: You can perform a software reset or a “hard” reset.

Note: The unit’s default IP address is **http://10.0.0.2**.

If you can open your Web browser and access your X4’s user interface, initiate a software reset:

- From the **Advanced Setup** page, under **Administration**, click **Reset to Default**. You will be prompted to click the **Write Settings to Flash and Reboot** button. Once this process is complete, your unit is reset to its factory settings. Click on any of the icons at the top of page to continue.



If you lose your link to the unit and cannot communicate with it via the Web browser, initiate a hard reset.

- Using a paper clip, press the **RESET** button on the unit’s back panel. While holding in this button, count to five, and then release the button. The unit’s **LINK** light will turn off and then it will blink slowly, about once per second. You are now guaranteed that all system settings are set to the unit’s factory defaults.

3.5 Updating the Unit's Firmware

To upgrade the X4's firmware, click the **Advanced Setup** icon at the top of the main interface page and then follow these steps.

- 1 You must first download the upgrade (for example, from our web site or a floppy disk). Save it under some filename.
- 2 Click the **Firmware Update** button.
- 3 Click **Browse** and select the file and upgrade's filename. Alternatively, you can type a pathname and filename of your choosing. The upgrade file should have a .DLF extension.
- 4 Click **Open, Upload**, and then **Reboot**. **Note:** The reboot process may take up to a minute.

VERY IMPORTANT!

Do not turn off the X4 or unplug it while you are upgrading the firmware.

- 5 The unit's **LINK** light will go off during the rebooting process. Then it will blink and finally remain on steady; the process is now complete. **Note:** This process may take up to a minute.
- 6 Close and re-open your Web browser and resume your Internet session.

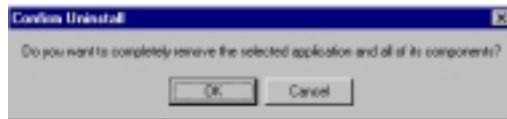
4

Removing the X4 Modem

If you ever want to remove your ADSL modem—for instance, if you move your computer to a location without ADSL service—you should remove the software before disconnecting the hardware. Follow the steps below.

1 From the desktop, select **Start | Programs | Zoom ADSL Modem | Uninstall**.

2 When prompted to confirm your choice, click **Yes**.



3 When the process is complete, you will be prompted to click **Finish**.



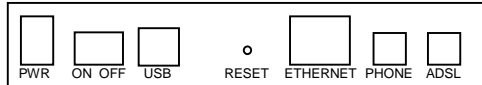
4 Unplug your modem hardware.

Appendix A

Front and Back Panel Information

Back Panel

The back panel of your unit looks like this.

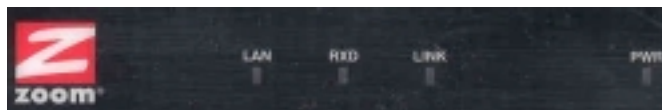


The table below defines the purpose of these ports, or jacks.

Port	Description
PWR	Port to connect the unit to the power adapter.
ON/OFF	Toggle switch to turn the unit on or off.
USB	Port to connect the unit to the USB port of a computer.
RESET	Button to reset the unit to its system default settings (necessary if communication link is lost).
ETHERNET	Port to connect the unit to an access point, a network hub, or the Ethernet (10BaseT) port of a computer.
PHONE	Port to connect a phone to the unit.
ADSL	Port to connect the unit to the ADSL telephone wall jack.

Front Panel

The front panel of your unit looks like this.



The table below defines these front panel lights and how to interpret them.

Light	Description
LAN	Lights when LAN connection is active.
RXD	Blinks when unit is transmitting or receiving data.
LINK	Blinks when unit is performing its startup sequence; stays on solid when unit is connected to the ADSL line.
PWR	Lights when power switch on back panel is turned on.

Appendix B

Configuring Your Browser

An Internet browser is a program used to find and display Web pages. To find a page, the browser must connect to the Internet. This Appendix describes how to configure some of the most common Internet browsers. If you are using another browser, please consult the documentation that came with it.

Internet Explorer 4.0

- 1 Start **Internet Explorer**.
- 2 Open the **View** menu and select **Internet Options**.
- 3 In the **Internet Properties** dialog box, click the **Connections** tab.
- 4 Click **Connect to the Internet using local area network**, and click **OK**.

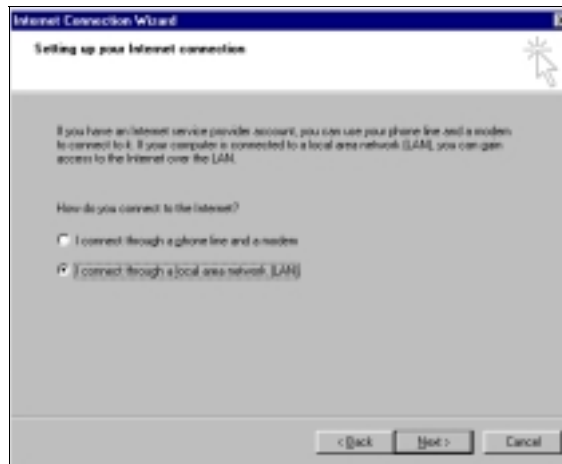
Internet Explorer 5.x or Later

- 1 On the desktop, click the **Internet Explorer** icon.
If you cannot access the Internet Explorer menu, follow these steps:
 - Click **Start | Settings | Control Panel**.
 - Click the **Internet Options** icon, and go to Step 3.
- 2 Click the **Tools** menu, and then **Internet Options**.
- 3 In the **Internet Properties** dialog box, click the **Connections** tab.
- 4 On the **Connections** tab, click the **Setup** button.

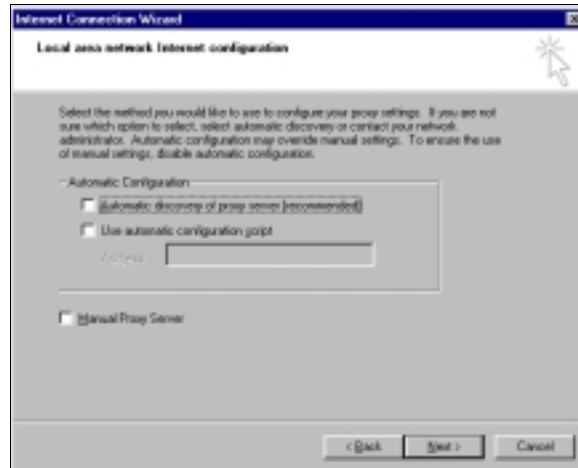
- 5 You will see the following dialog box. Make sure that **I want to set up my Internet connection manually, or I want to connect through a local area network (LAN)** is selected, and click **OK**.



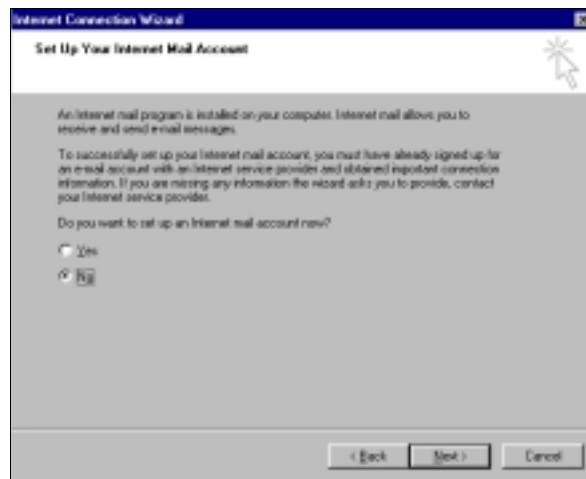
- 6 When the next dialog box appears, change the selection to **I connect through a local area network (LAN)** and click **Next**.



- 7 A dialog box describing your LAN Internet configuration displays. Uncheck the box **Automatic discovery of proxy server** and click **Next**.



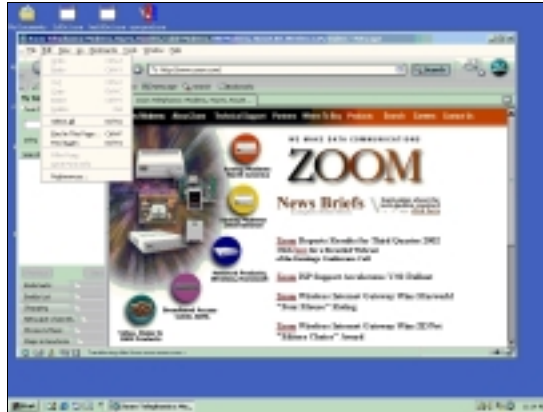
- 8 You will be prompted whether you want to set up an email account. Check **No** and click **Next**.



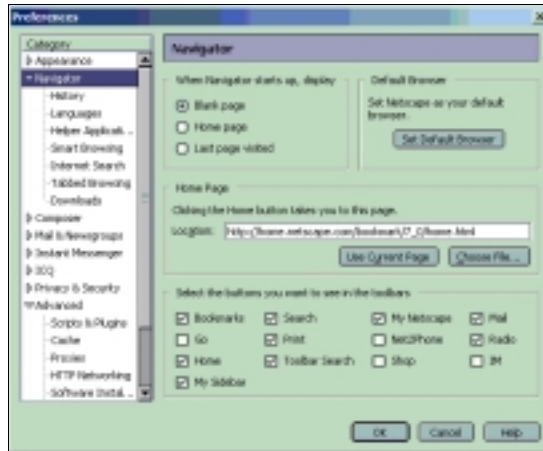
- 9 When the process is complete, when you will be prompted to click **Finish**.

Netscape Navigator

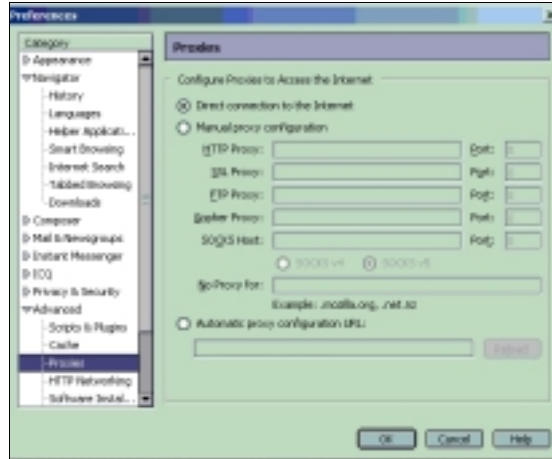
- 1 On the desktop, click the **Netscape Navigator** icon, and then from the **Edit** menu, select **Preferences**.



- 2 In the **Preferences** dialog box, click the **Advanced** option, and then click **Proxies**.



- 3 Select the option **Direct connection to the Internet** and click **OK**.



Appendix C

Windows 95, Macintosh, and Linux Users: Configuring Your TCP/IP Settings

If you are using the Windows 95 or Linux operating system, or if you are using a Macintosh computer, you must ensure that your computer's network, or TCP/IP, settings are configured correctly. Otherwise, you will not be able to connect to the Internet. Windows 98, 2000, Me, NT, and XP automatically configure your network settings, so you don't have to perform this additional task.

- **Windows 95 TCP/IP Settings**, below.
- **Macintosh TCP/IP Settings**, page 48.
- **Linux TCP/IP Settings**, page 51.

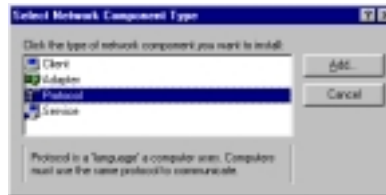
Windows 95 TCP/IP Settings

- 1 Click **Start** | **Settings** | **Control Panel** and then double-click the **Network** icon to display the **Network** dialog box.



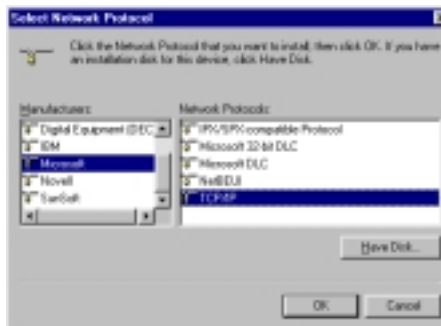
Click the **Configuration** tab. You will see a list of installed network components. If you see a line that includes **TCP/IP**, skip to Step 5. If you don't see the line, continue with Step 2.

- 2 If you don't see TCP/IP listed, click the **Add** button to display the **Select Network Component Type** dialog box.
- 3 Click to highlight **Protocol** and click **Add**.



The **Select Network Protocol** dialog box displays.

- 4 Click to highlight **Microsoft** and then click to highlight **TCP/IP** in the Network Protocols list. Then click **OK**.



The **Network** dialog box from Step 1 displays. There should now be an entry for **TCP/IP**. Click **No** if you are asked to restart your computer. Note: Don't click **OK** yet.

- 5 Click to highlight **TCP/IP** and click **Properties**. The **TCP/IP Properties** box displays. Make sure the **IP Address** tab is foremost, and that **Obtain an IP address automatically** is selected.

Note: If you want to use a static IP address—for example, when setting up a virtual server (page 23) or DMZ (page 26), click **Specify an IP address** and type the static IP address and subnet mask.

Then click the DNS configuration tab, enter the DNS server information, and click **OK**.



- 6 You will see the **Network** dialog box again. Click **OK** to enable your settings. If prompted to do so, insert your Windows 95 CD-ROM and click **OK**.

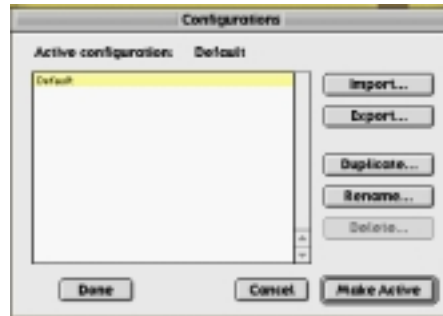
Macintosh TCP/IP Settings

Depending on your Mac OS, the directions to configure your Macintosh's network settings will differ. For OS X, follow the instructions on page 50. Otherwise, continue directly below.

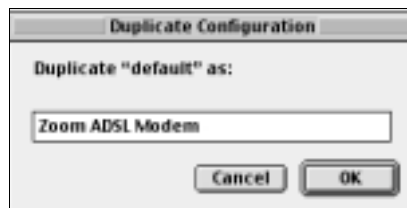
For Mac OS 7.6.1 - 9.2.2 and Above but not OS X

- 1 From the **Apple** menu, choose **Control Panels** and then **TCP/IP** to display the **TCP/IP** dialog box (you will use this dialog box in Step 6).
- 2 On the main toolbar, from the **File** menu, choose **Configurations**.

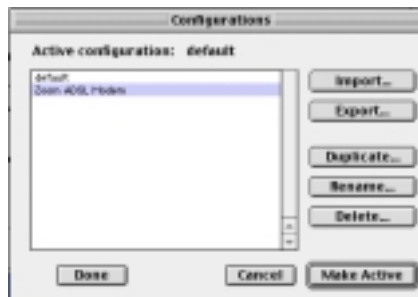
- 3 In the **Configurations** dialog box, click **Duplicate**.



- 4 The **Duplicate Configuration** dialog box appears. Type a name, such as “**Zoom ADSL Modem**,” and click **OK**.



- 5 The **Configurations** dialog box appears again. Highlight your new configuration—in our example, **Zoom ADSL Modem**—and click **Make Active**.



- 6 In the **TCP/IP** dialog box, under **Connect via:**, select **Ethernet**. Under **Configure:**, select **Using DHCP Server**. Do not enter anything in the **DHCP Client ID** field.

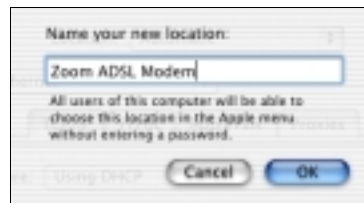
Note: If you want to use a static IP address—for example, if you were setting up a virtual server (page 23) or a DMZ (page 26)—you would highlight **Manually** from the **Configure:** list and then enter the static IP address, subnet mask, etc.



- 7 Close the **TCP/IP** dialog box. You will be asked if you want to save the changes. Click **Save**.

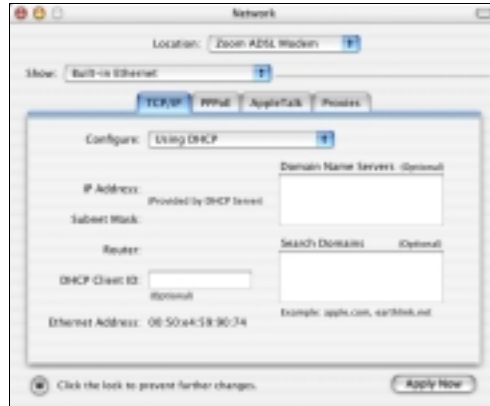
For Mac OS X

- 1 From the **Dock**, choose **System Preferences** and then **Network**. The **Network** pane appears.
- 2 From the **Location:** drop-down list box, select **New Location...** In the box, type a name of your choosing, such as “**Zoom ADSL Modem**,” and click **OK**.



- 3 Under the **Configure** drop-down tab, choose **Built-in Ethernet** or **Ethernet**.
- 4 Make sure that the **TCP/IP** tab is foremost.
Make sure that **Using DHCP** is highlighted in its **Configure:** dropdown list box. Do not enter anything into the **DHCP Client ID** field.

Note: If you want to use a static IP address—for example, if you were setting up a virtual server (page 23) or a DMZ (page 26)—you would highlight **Manually** in the **Configure:** menu and then enter the static IP address, subnet mask, etc.



- 5 Click **Save** and close the **Network** pane.

Linux TCP/IP Settings

The instructions for setting up boot-time DHCP vary dramatically by distribution, so you may want to refer to your particular version's documentation.

Note: If you have other network cards installed, you will need to pick distinct Ethernet identifiers for each (eth0, eth1, eth2, etc.). If you select an identifier other than eth0 for your ADSL modem, use that identifier throughout.

For RedHat

Edit or create `/etc/sysconfig/network-scripts/ifcfg-eth0` so that it contains the following three lines:

```
DEVICE=eth0  
ONBOOT=yes  
BOOTPROTO=dhcp
```

If you want to use a static IP address—for example, if you were setting up a virtual server (page 23) or a DMZ (page 26)—you would edit or create `/etc/sysconfig/network-scripts/ifcfg-eth0` so that it contains the following lines:

```
DEVICE=eth0  
ONBOOT=yes  
BOOTPROTO=static
```

BROADCAST=172.16.31.255
IPADDR=172.16.16.55
NETMASK=255.25.240.0
NETWORK=172.16.16.0

Note: If your computer won't always be on a network with working DNS at boot-time, set **ONBOOT=no**. If you don't, RedHat 6.2 (and possibly other versions) might hang. To activate the card by hand when you have attached your computer to the network, at root, run the command: **/sbin/ifup eth0**.

For SuSE

Edit the file **/etc/rc.config**; search for the variables **NETCONFIG**, **NETDEV_0**, and **IFCONFIG_0**.

Set them as follows (see the instructions in **rc.config**):

NETCONFIG="_0"
NETDEV_0="eth0"
IFCONFIG_0="dhcpcient"

Reboot with this command: **/sbin/shutdown -r now**.

If you want to use a static IP address—for example, when setting up a virtual server (page 23) or a DMZ (page 26)—consult the help file or documentation that came with your operating system.

For Debian

Add this line to the file **/etc/network/interfaces**: **iface eth0 inet dhcp**. Reboot with this command: **/sbin/shutdown -r now**.

If you want to use a static IP address—for example, when setting up a virtual server (page 23) or a DMZ (page 26)—consult the help file or documentation that came with your operating system.

Appendix D

Troubleshooting

*Our Technical Support staff is ready to help you with any questions you may have about your DSL modem or Internet connection options. You may, however, find an easy solution to your problem by referring to these troubleshooting tips. You should also refer to the Frequently Asked Questions (FAQs) on the CD (click on **Support**), and visit our web site for the latest tips: www.zoom.com.*

PROBLEM: I installed the software and connected the X4 modem to my phone line, but I cannot connect to the Internet.

SOLUTION: Make sure you've securely connected the RJ-11 phone cord from the wall jack to the DSL modem connector on the back of your computer.

SOLUTION: Make sure you've connected the RJ-11 phone cord to a DSL line, not a standard telephone jack. You cannot use a standard telephone jack for DSL service *unless* that phone line has been enabled for DSL by your phone service provider.

SOLUTION: If you are using the modem's USB option, make sure the unit's USB cord is securely plugged into your computer's USB port.

SOLUTION: Make sure, if you are using phone filters, that they are installed correctly (see page 13).

SOLUTION: Make sure you have typed your Username and Password correctly.

SOLUTION: Contact your service provider to ensure that the DSL connection is functioning properly.

PROBLEM: Why do I hear static or noise when I'm using my telephone?

SOLUTION: If that phone does not have its own filter, you may hear static or high-pitched noise if you make a phone call while your ADSL modem is on. A filter also prevents a phone from interfering with, or dropping, your DSL connection.

PROBLEM: I accidentally unplugged the USB cable while using my modem. This resulted in a general protection fault (GPF) error message. What should I do?

SOLUTION: You must plug the modem back in and restart your computer to rectify this problem.

Appendix E

Regulatory Information

Declaration of Conformity

The manufacturer declares under sole responsibility that this equipment is compliant to Directive 1999/5/EC (R&TTE Directive) via the following:

Directive	Standard	Test Report
73/23/EEC-Low Voltage	IEC 60950: 3 rd ed. 1999	electrical safety
89/336/EEC-EMC	EN 55024: 1998 ^{ed}	EMC-immunity
89/336/EEC-EMC	EN 55022 : 1998 ^{ed} ; EN 61000-3-2:1998 ^{ed} ; A1, A2; EN 61000-3-3: 1995 ^{ed}	EMC-emissions

This product is CE Marked.

Electrostatic Discharge Statement

The unit may require resetting after a severe electrostatic discharge event.

Additional compliance information is located on the CD.

