X6

USER MANUAL

zoom

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Contents

Overview

This User Manual provides instructions for setting up your X6, connecting the X6 to wired and wireless computers or other devices on a network, and securing your network. There are also instructions for setting up the X6 for gaming.

For most customers, Chapter 1 covers what you need to get connected to the Internet. Chapter 2 applies if you want to set up a network. Chapters 3 and 4 help you set up and secure your X6 wireless network., and Chapter 5 provides what you need for online gaming.

Chapters 6-9 provide advanced information that is primarily for System Administrators. These chapters explain how to use advanced features of the X6 such as adding extra security with firewall filtering, backing up and restoring the X6 configuration, updating the X6 firmware, creating a fixed IP address, monitoring status, and management and diagnostic features of your X6.

1

Installation Instructions

This chapter covers the basic instructions needed to install your X6 and connect to the Internet. These instructions can be used by those with a Windows®, Macintosh®, or Linuxr operating system.

*If you already installed and connected your X6 (by, for instance, using the separate Quick Start provided for Windows users), you can skip this chapter and begin with **Chapter 2: Setting up a Network** on page 16.*

Package Contents

Your package contains the following items:

- Zoom X6 ADSL modem

- Ethernet cable

- Phone cord

- Power cube

- CD

The CD contains the installation software, documentation, warranty, and Customer Support information.

If anything is missing or damaged, please contact Zoom Customer Support or whoever sold you the modem.

In addition, the package may include:

- A splitter to enable you to use a single ADSL wall jack for both an Internet connection and for telephone service (certain countries only)

- Phone-jack adapter to adapt the phone cord to a particular phone jack (certain countries only)
- ADSL line filter(s) (certain models only)

Before You Begin

Before you begin installing the X6 modem using this manual, you must have the following available to you:

- ADSL service enabled on your telephone line. To do this, you need to sign up with an ADSL service provider. Once this service is enabled, you should have an ADSL-enabled telephone wall jack to plug the X6 modem into. (Your service provider may refer to ADSL service as DSL service).

- At least one computer for setting up the X6. The X6 supports Macintosh, Linux, and Windows operating systems.

You may also want to have these available to you:

- Any computer or other device that you want to connect without wires to your network. These must have built-in wireless capabilities or be equipped with a wireless adapter . The X6 works with 802.11b, 802.11g, and 802.11n compatible adapters.

- Any computer or other device that you want to physically connect to your X6 ETHERNET port. The X6 has four ETHERNET ports to which you can connect devices. The computer or other device must have an Ethernet port to make these connections.

- Additional Ethernet cables. If you plan to connect more than one computer directly to the modem, you will need additional Ethernet cables to make the connection. The modem supports up to four direct connections with its four ETHERNET ports.

Installing the X6

Important! The X6 should be installed near a phone jack with ADSL service. Ideally it should be located so that it's not too far from any wireless devices that will communicate with the X6. Sometimes it's helpful to set up the X6 at one location, and to then move it to a location that gives better wireless performance.

Important Safety Measures
- To reduce the risk of fire, use the supplied phone cord.
- Do not use this product near water — for example, in a wet basement or next to a swimming pool.

➢ Macintosh and Linux users: please go to page 10.

Windows Installation

Windows users can quickly install the software and hardware and configure the X6 using Zoom's multilingual **Install Assistant** on the CD, as described below. If you have already setup the X6, please go to **Chapter 2: Setting Up a Network** on page 18.

Note to Windows Users: In the unlikely event that you are unable to use the **Install Assistant** to setup the X6, follow the instructions starting on page 10.

1 Turn on the Windows computer that you will use for setup. This can be any Windows 7, Vista™, XP, 2000, Me or 98 computer with an available Ethernet port.
2 Close any open programs, including any antivirus software or pop-up blockers.
3 Insert the supplied CD into the CD drive of your computer. The CD should start automatically. (If the CD does not start automatically, click the Windows **Start** button, click **Run**, and then type **E:\setup.exe**, where **E** is the letter of your CD drive.)
Windows 7 or Vista: If the **AutoPlay** dialog box appears, click **Run Setup.exe**. If the **User Account Control** dialog box appears, click **Allow**.
4 Follow the on-screen prompts for the **Install Assistant.**

Windows 7 or Vista: If a message tells you that Windows can't verify the publisher of the driver software, select **Install this driver software anyway**.

If you are prompted to enter your ADSL provider user name and password, remember that these terms are case-sensitive.

Congratulations! You have established communication and your computer is now connected to the Internet.

If you want to connect other computers or other devices to the X6, continue with **Chapter 2: Setting Up a Network** on page 16.

Macintosh and Linux Installation (and Windows Installation for Windows users who cannot use the Install Assistant on the CD)

To set up your X6, start with bullet 1 below. After initial setup is complete, you can connect computers to the X6 using either a wired connection or a wireless connection. For a **wired connection,** connect an Ethernet cable between the Ethernet port of your computer or game station and any one of the X6's four Ethernet (LAN) ports. (If you want to connect a game station, please go to page 31 of this manual.) For a **wireless connection,** go to the next section, **Setting up a Wireless Connection**.

1 To set up your X6, first shut down the computer that you want to connect to the X6.

2 Plug an Ethernet cable into one of the X6's **ETHERNET** ports and then into the Ethernet port of the computer. Then power up the computer.

Back Panel Diagram

| DSL | ETH 1 | ETH 2 | ETH 3 | ETH 4 | RESET | POWER | SWITCH |
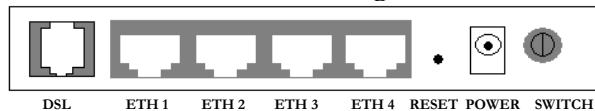
3 Connect the supplied phone cord between your modem's **DSL** jack and a phone jack with ADSL service.

Note: If you are using your ADSL modem on the same phone line where you're also using other equipment such as telephones or fax machines, you should put an ADSL filter between each phone and the wall jack where the phone was connected. This filter prevents interference between the modem and the phone or other equipment. Your modem may have come with a filter, and filters are also available from retailers of phones, modems, and other electronics. The filter simply plugs into the wall telephone jack, and the female PHONE end of the filter connects to your telephone, fax machine, or other equipment.

Phone

Filter   Wall telephone jack
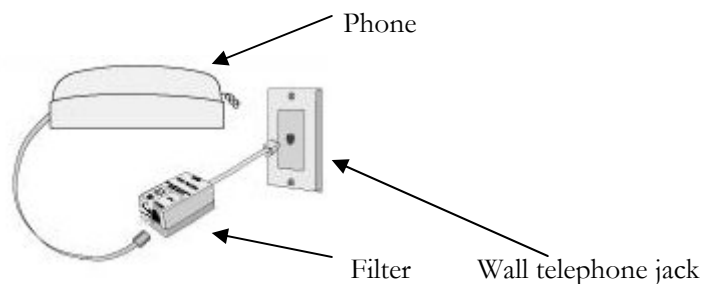
One form of filter is a splitter, which has one male plug and two female jacks. This lets you use the same phone jack for both an ADSL modem and a phone or other device. You plug the splitter into the phone jack, plug the modem into the jack that's typically marked ADSL, and plug the phone or other device into the jack marked PHONE. You may use the splitter as a filter; simply leave the ADSL jack open.

4 Plug the supplied power cube into the X6 modem, and then into a power outlet.
 Important: Use only the power cube shipped with your X6 modem. Other power cubes may damage the device.
 If the **POWER** LED does not light up, make sure the **Power** button is pressed in.

5 Turn on the computer. The **ETHERNET** LED on your modem's top panel corresponding to the Ethernet port your device is plugged into should turn on. After a few seconds, your **DSL** LED will begin blinking, then become solid. If it does not become solid, please refer to **Appendix D: Troubleshooting Tips** on page 72.

6 Now continue with the next section: **Establishing Communication**.

Establishing Communication

Important!
Macintosh and Linux users must make sure that the computer's TCP/IP settings are configured properly <u>BEFORE</u> starting this section. See **Macintosh TCP/IP Settings** on page 66 for instructions.

You must set up the X6 so that it can communicate with your Internet service provider. To do this, you use the **Zoom Configuration Manager**.

1 Close all programs including antivirus software and pop-up blockers.

2 Log into the **Zoom Configuration Manager**:

    a Open your Web browser and, in its address bar, type **http://192.168.1.1** and then press the **Enter** key on your keyboard.

       In the **Enter Network Password** dialog box, type the following user name and password in lowercase, then click **OK**. (The X6 **User Name** and **Password** you enter here are not the same as the User Name and Password that your Internet service provider may have given you.)

       User Name: **admin**
       Password: **zoomadsl**

       If you are not prompted for a **User Name** and **Password,** do the following in this order: Recheck all connections; restart the modem and computer; and reset the modem by inserting a paper clip into the **Reset** pinhole in the modem's back panel and pressing it for 5 seconds.

> **Important:**
> For security, you may want to choose your own X6 password after the setup is complete. See **Changing User Names and Passwords** on page **52**.

3 After you log in, use the **Basic Setup** page to configure the modem so it can connect with your Internet service provider.

- *To use Automatic Configuration* (recommended):

  a At **Configure my connection**, click **Start**.

  b In the "Settings successfully detected" message box, click **OK** to return to the Basic Setup page.

  c If the X6 finds a PPPoE or PPPoA connection, on the **Basic Setup** page enter the user name and password given to you by your Internet Service Provider. (Your provider should have given you a **User ID** or **User Name,** usually your email address or the characters preceding the @ sign in your email address, and a **Password**. These are **NOT** the User ID and Password that you used to get into the Basic Setup menu.)

  If the X6 finds a 1483 Bridged or 1483 Routed connection, you have the option of using either dynamic or static IP addressing. Depending on your situation, select the appropriate option button:

  - [MOST USERS] Ensure that **Obtain an IP address Automatically** is selected if you are using Dynamic Host Configuration Protocol (also known as DHCP or dynamic IP addressing). This option is selected by default because most Internet service providers use DHCP.
  - Select **Use the following IP Address** only if you are using a static IP address. (You should know if you are using static IP addressing. There is typically an extra charge for a static IP address and you usually have to make special arrangements with your Internet service provider to get one.)

Then **enter** the **IP Address**, **Subnet Mask**, **Default Gateway**, and **DNS** that you plan to use. Click **Save/Reboot**.

- *To configure your settings manually if Automatic Configuration does not work,* follow these instructions:

    a On the **Basic Setup** page, enter your **Protocol**, **Encapsulation**, **VPI**, and **VCI** settings in the appropriate boxes. Your service provider should supply these values. If you do not know these settings, refer to the tables starting on page 59.

    b **NAT** (Network Address Translation) is **Enabled** by default. This feature lets multiple users access the Internet sharing a single IP address. **Enabled** is typically the right setting. Select **Disable** in the unlikely event that you want to assign different public IP addresses to each network user.

    c Depending on the **Protocol** setting you selected the bottom half of the page will change so that you can enter additional information.

    - **If you selected PPPoA** or **PPPoE**, enter your **ADSL Username** and **Password** in the appropriate boxes. Your Internet service provider should have given this information to you. (Your Username is typically your email address or the characters preceding the @ sign in your email address. This is NOT the same Username and Password that you used earlier to open the **Zoom Configuration Manager**.)

    - **If you selected 1483 Bridged** or **1483 Routed**, you have the option of using either dynamic or static IP addressing. Depending on your situation, select the appropriate option button:

        – [MOST USERS] Ensure that **Obtain an IP address Automatically** is selected if you are using Dynamic Host Configuration Protocol (also known as DHCP or dynamic IP addressing). This option is selected by default because most Internet service providers use DHCP.

– Select **Use the following IP Address** only if you are using a static IP address. (You should know if you are using static IP addressing. There is typically an extra charge for a static IP address and you usually have to make special arrangements with your Internet service provider to get one.)

Then **enter** the **IP Address**, **Subnet Mask**, **Default Gateway**, and **DNS** that you plan to use. Click **Save/Reboot**.

4 Verify that you Internet connection is working. Open your Web browser (for instance, Internet Explorer, Firefox, or Chrome) and try to connect to a familiar Web address. If you connect successfully, you are ready to set up the rest of your network.

(If you do not connect, see **Appendix D: Troubleshooting Tips** on page 72).

Tip!
If you configured the X6 using a notebook computer, you can keep it plugged in or you can disconnect it from the unit's ETHERNET port. As long as the X6 remains plugged into an ADSL wall jack and a power source, the X6 can function as a stand-alone device. You can then make the notebook part of your wireless network.

Congratulations! You have established communication and your computer is connected to the Internet. Now continue with **Chapter 2: Setting Up a Network** on page 16.

2

Setting Up a Network

Once a computer that is directly connected to the X6 modem is able to browse the Internet, you know for certain that your ADSL Internet connection is working. Now you can set up the rest of your network.

It is up to you whether you want to have some computers connected directly to the X6 and others connected wirelessly. The X6 supports both wired and wireless connections. You can have up to 253 connections, four of which can be wired directly through the X6's four **ETHERNET** ports. You can also plug a network device (such as a hub, switch, router, or Homeplug adapter) into one of the **ETHERNET** ports.

To set up your network, you can do any or all of the following, in any order that you choose:

- If you want to connect additional computers directly to the X6, see **To Connect Additional Wired Computers** below.

- If you want to connect a hub, switch, router or other device directly to the X6, see **To Connect a Network Device** on page 17.

- If you want to connect additional computers or other devices using a wireless network, see **Chapter 3**: **Setting Up Your Wireless Network** on page 18.

To Connect Additional Wired Computers

You can connect up to four computers that have Ethernet ports directly to the X6.

1 Shut down and power of the computer you want to connect to the X6. (This is important because the computer must locate the correct IP address for the modem. This is done when the computer is turned back on in step 3 below.)

2 Plug one end of an Ethernet cable into one of the modem's ETHERNET ports and plug the other end into the computer's Ethernet port.

3 Turn on the computer.

4 Verify that your Internet connection is working. Open your Web browser (for instance, Internet Explorer, Firefox, or Chrome) and try to connect to a familiar Web address.

5 Repeat steps 1–4 for each computer you want to add.

To Connect a Network Device

You can use one of the **ETHERNET** ports on the X6 to plug in a network device (for example, a hub, switch, router, or Homeplug adapter).

1 Plug one end of an Ethernet cable into one of the modem's **ETHERNET** ports and the other end into the network device's Ethernet port. (For a hub or a switch, this is typically called an **Uplink** or **Expansion port**. For a router, this is typically called a **WAN port**.)

2 Set up your network and/or device. Refer to the documentation provided with your particular network device for instructions on how to do this.

3 Once your network and/or device is set up, reboot any computer that is part of the network.

4 Verify that your Internet connection is working. Open the Web browser (for instance, Internet Explorer, Firefox, or Chrome) on each computer and try to connect to a familiar Web address.

Congratulations! You have set up your wired devices. If you have wireless devices that you want to add to your network, go to **Setting Up Your Wireless Network** on page 18.

3

Setting Up Your Wireless Network

This chapter discusses how to set up a wireless network using computers and/or other devices that have built-in wireless capabilities and/or a wireless adapter. Chapter 4 provides information about implementing wireless security.

Note that for **each** computer or other device added to your wireless network, you will need to take appropriate steps for setting up that computer or other device. To do that, select one of the possibilities for that computer or other device below:

➢ Some newer **Windows 7, Vista, and XP computers have built-in wireless networking** capabilities and do not require the installation of a wireless component. If this is the case, you should set up that computer's wireless connection using the Windows 7, Vista, or XP connect utility. See the sections below on connecting **Windows 7** (page 19) , **Vista** (page 19), or **XP** (page 21) computers with built-in wireless capabilities.

➢ Some **computers** may have **built-in wireless networking** capabilities, but do not use the Windows 7, Vista, or XP utility to configure their device. If this is so, set up your computer's wireless connection using the instructions on page 22 for **Connecting a Wireless-enabled Computer or Device to the X6.**

➢ If you have a non-computer **wireless device like an iPhone or other cellular phone, iPod Touch**, etc., see the instructions on page 22 for **Connecting a Wireless-enabled Computer or Device to the X6**.

➢ Some **computers** may need a **wireless network adapter installed**. This can be a USB adapter, PC Card adapter, or PCI adapter. When you install the adapter, make sure that it is set to **infrastructure** or **access point** mode (NOT **ad-hoc** or **peer-to-peer** mode). If you

need help installing your wireless adapter or setting its mode, refer to the documentation that came with it. After you install the adapter, see the instructions on page 22 for **Connecting a Computer with a wireless adapter to the X6**.

Connecting a Windows 7 Computer with Built-in Wireless Capabilities

1 From the taskbar, click on the wireless symbol.

2 In the wireless network options box, highlight **Zoom** and click **Connect**.

- If your desired network is secured, in the next dialog box enter the security key or password and click **Connect**.

- If your desired network is unsecured, in the message box select **Connect Anyway**.

> **Note**: We strongly recommend that you set up a secured network. For information on wireless security, see **Setting Wireless Security** on page 27.

If you have difficulty connecting, make sure you have entered the correct password. Then perform a power cycle on your computer and the X6 as described in **Appendix D: Troubleshooting Tips** on page 72.

3 In the **Successfully connected to [desired network]** dialog box, you have three options. You can:

- Select **Save the network** and **Start this connection automatically** if you always want to connect to the same network. Then click **Close**. The next time you start your computer you will automatically connect to the selected network.

- Select **Save the network** and clear the **Start this connection automatically** check box if you don't want to automatically connect to this network every time you start your computer but you will want to connect in the future. Click **Close** to display the **Select a location . . .** dialog box

where you choose a location. Windows Vista automatically applies the correct network security settings.

If the **User Account Control** dialog box appears, click **Continue**.

• Click **Close** to complete the connection procedure. Select this option if you are connecting to this network only one time.

To disconnect from the current network:

1 Right-click the wireless network icon in the notification area of the Windows taskbar.

2 Right-click **Zoom** and select **Disconnect**.

Connecting a Windows Vista Computer with Built-in Wireless Capabilities

1 From the **Start** menu select **Connect to**.

2 In the **Connect to a network** dialog box, highlight **Zoom** and click **Connect**.

• If your desired network is secured, in the next dialog box enter the security key or password and click **Connect**.

• If your desired network is unsecured, in the message box select **Connect Anyway**.

Note: We strongly recommend that you set up a secured network. For information on wireless security, see **Setting Wireless Security** on page 27.

If you have difficulty connecting, make sure you have entered the correct password. Then perform a power cycle on your computer and the X6 as described in **Appendix D: Troubleshooting Tips** on page 72.

3 In the **Successfully connected to [desired network]** dialog box, you have three options. You can:

- Select **Save the network** and **Start this connection automatically** if you always want to connect to the same network. Then click **Close**. The next time you start your computer you will automatically connect to the selected network.

- Select **Save the network** and clear the **Start this connection automatically** check box if you don't want to automatically connect to this network every time you start your computer but you will want to connect in the future. Click **Close** to display the **Select a location . . .** dialog box where you choose a location. Windows Vista automatically applies the correct network security settings.

  If the **User Account Control** dialog box appears, click **Continue**.

- Click **Close** to complete the connection procedure. Select this option if you are connecting to this network only one time.

To disconnect from the current network:

1 From the **Start** menu, select **Connect to**.

2 In the **Disconnect or Connect to another network** dialog box, select the current network and click **Disconnect**.

3 In the **Are You Sure?** message box, click **Disconnect** again.

4 In the next dialog box, you can connect to another network or click **Close** to complete the disconnect procedure.

Connecting a Windows XP Computer with Built-in Wireless Capabilities

1 On your Windows desktop, click the **Start** button then click **Settings➔Control Panel**.

2 **Double-click** the **Network Connections** icon.

3 **Right-click** the **Wireless Network Connection** icon, then select **Properties**.

4 On the **Wireless Network Connection Properties** dialog box, select the **Wireless Networks** tab. Windows will automatically scan for available wireless networks in your area. Any compatible networks within range will appear in the **Available networks** list. It should find the wireless network of the X6—named **Zoom**. (The scan is done automatically because the **Use Windows to configure my wireless network settings** check box is selected by default).

5 Select **Zoom** from the **Available networks** list, then click the **Configure** button to add it to the **Preferred networks** list. The notebook will try to connect to the Internet using the wireless networks listed here, in the order in which they appear. (If you already have networks listed here, we recommend you either remove them or use the **Move up** button to move **Zoom** to the top of the list.)

6 Click **OK**.

7 Test your wireless connection. From the computer or notebook that you set up, open your Web browser (for instance, Internet Explorer or Firefox) and try to connect to a familiar Web address.

   If you connect successfully, your notebook's wireless capability is configured and you are ready to browse the Web!

Important!

If you want to add security to your network, please see **Setting Wireless Security** on page 27.

To disconnect from the current network:

1 On your Windows desktop, click the **Start** button then click **Settings➔Control Panel**.

2 **Double-click** the **Network Connections** icon.

3 **Right-click** the **Wireless Network Connection** icon, then select **View Available Wireless Networks** and click **Zoom**. Click **Disconnect** in the wireless connection window.

4 Close the window by clicking on the X at the top of the window.

Connecting a Wireless-enabled Computer or Device (including the iPhone or other cellular phones, the iPod Touch, etc.) to the X6

1 Go to the wireless-enabled computer or device that you want to add to the network. The computer should have software that will let it perform a **site search** to scan for available wireless networks in your area. You may have to click on something like **Settings** and then **Wi-Fi**. When the **SSID** (Service Set Identifier) of your X6 wireless network appears in the list—the default SSID is **Zoom**—select it as the network you want to use to connect to the Internet.

> **Tip!**
> If you need help, refer to the documentation that came with your wireless device.

There are several site scan issues you should be aware of:

➢ More than one wireless network may appear in the list. These are other wireless networks that are within range of your network. Your neighbors, for instance, may be within range of your network. Each wireless network has a channel associated with it. We recommend there be at least a five-channel difference between your network and those of your neighbors. Having less than a five-channel difference may result in interference with your connection. By default, the X6 uses channel 10. If you need to change this channel, you must do so using the **Wireless Setup** page of the **Zoom Configuration Manager**. For instructions on how to log in to the **Zoom Configuration Manager**, see page 12.

➢ If you want to secure your wireless network so it won't be accessible by others, you should specify security settings. To learn how, see **Setting Wireless Security** on page 27. (By default, the wireless connections provided by the X6 do not have any security applied.)

2 Test your wireless connections. From each computer or device that you set up, open your Web browser (for instance, Internet Explorer, Firefox, or Chrome) and try to connect to a familiar Web address.

If you connect successfully, you are ready to browse the Web!

Important!

To add security to your network, see **Setting Wireless Security** on page 27.

To disconnect from the current network:

1 On your wireless device or computer, find the wireless network connection option (similar to the process of adding your device or computer to the network).

2 Click or highlight **Zoom**.

3 Select or click on **Disconnect** or similarly-named button.

Connecting a Computer with a Wireless adapter to the X6

1 Go to the computer that is set up with a wireless adapter that you want to add to the network. The computer should have software that will let it perform a **site search** to scan for available wireless networks in your area. When the **SSID** (Service Set Identifier) of your X6 wireless network appears in the list—the SSID is **Zoom**—select it as the network you want to use to connect to the Internet.

Tip!

For most wireless adapters, you will use its wireless configuration manager software and click a **Scan** button or select a **Site Scan**, **Scan Networks**, or other similarly named tab to do a site search. If you need help, refer to the documentation that came with your wireless adapter.

There are several site scan issues you should be aware of:

➢ **Windows 7, XP, and Vista users:** If you installed a wireless adapter on a Windows 7, XP, or Vista computer, Windows may try to automatically configure the adapter (rather than let you use the software provided with the wireless adapter). You will know this is happening because you will be prompted with a message about one or more wireless networks being available. You will also be able to click a link to open the **Wireless Network Connection Properties** dialog box. If this happens, click the link, clear the **Use Windows to configure my wireless network settings** check box, and then click **OK**. You can then use the software provided with your wireless adapter without interruption from Windows.

➢ More than one wireless network may appear in the list. These are other wireless networks that are within range of your network. Your neighbors, for instance, may be within range of your network. Each wireless network has a channel associated with it. We recommend there be at least a five-channel difference between your network and those of your neighbors. Having less than a five-channel difference may result in interference with your connection. By default, the X6 uses channel 10. If you need to change this channel, you must do so using the **Wireless Setup** page of the **Zoom Configuration Manager**. For instructions on how to log in to the **Zoom Configuration Manager**, see page 12.

➢ If you want to secure your wireless network so it won't be accessible by others, you should specify security settings. To learn how, see **Setting Wireless Security** on page 27. (By default, the wireless connections provided by the X6 do not have any security applied.)

2 Test your wireless connections. From each desktop or notebook computer that you set up, open your Web browser (for instance, Internet Explorer or Firefox) and try to connect to a familiar Web address.

If you connect successfully, you are ready to browse the Web!

> **Important!**
> To add security to your network, see **Setting Wireless Security** on page 27.

To disconnect from the current network:

1 On your computer that has a wireless adapter, find the wireless network connection option (similar to the process of adding your computer to the network).

2 Click or highlight **Zoom**.

3 Select or click on **Disconnect** or similarly-named button.

Checking Your Settings

If you ever need to check your wireless settings, you can do so from the **Wireless Setup** page. This page is available in the **Zoom Configuration Manager** by clicking **Wireless** from the left-side menu. For instructions on how to log in to the **Zoom Configuration Manager**, go to page 12.

The table below explains the settings:

This setting…	Lets you specify…
Wireless Basic	A check mark in the **Enable Wireless** check box shows that your wireless network is up. If there is no check mark next to the **Enable Wireless** check box, this indicates your Wireless is not enabled.
Hide SSID	Click in the check box if you do not want to broadcast the SSID of your network.
SSID	The Service Set Identifier for your wireless network. By default, the SSID for the X6 is **Zoom**. You can change the SSID to any name that you want.
Channel	Indicates the channel your wireless connection uses by default for your wireless connection. The X6 comes set for channel **10**.
Country	Select your country from the drop-down menu.

4

Setting Wireless Security

When you first set up your X6 wireless network, security is turned off by default. This means that your wireless signal is not encrypted and that anyone with compatible wireless technology can access your computer network and the Internet using your wireless connection. This chapter explains how to set up wireless security to protect your network and Internet connection.

Overview

To set up wireless security, you will create and enter a unique passphrase or an alphanumeric key. Once entered, only devices with the proper key or passphrase will be allowed to establish a connection to the network.

There are two basic ways to configure and implement a passphrase or key. They are **WPA2/WPA** and **WEP**. The X6 supports **WPA2/WPA mixed mode** which lets you connect with devices that support either standard. We recommend you use this setting unless you know that you have a device that only supports WEP.

You can check to see if all other clients that you plan to put on the network support WPA2 or WPA. You can do this by checking the manual that came with each device or by checking the configuration software for the installed device. Look under **Security** or **Encryption** or **Setup** or **Advanced Features**. If all the clients support WPA2 or WPA, proceed with **Setting Up Security Using WPA2/WPA**. If they do not, skip to **Setting Up Security Using WEP**.

Setting Up Security Using Mixed WPA2 / WPA mode

WPA2 and WPA use a **passphrase** that you choose and enter on the X6 and other wireless devices on the network (clients) to set up security. To use Mixed WPA2 /WPA, **all** of the wireless devices on your network must support either encryption method. If you know that all your devices support the more secure WPA2 you can select WPA2 instead of mixed WPA2/WPA.

1 Check to see that all other clients that you plan to put on the network support WPA2 or WPA**.** If they do not, skip to **Setting Up Security Using WEP**.

2 Open the Zoom Configuration Manager by typing the following in your Web browser's address bar: **http://192.168.1.1**

3 In the **Enter Network Password** dialog box, type the following User Name and Password in lower case, then click **OK**..

> User Name: **admin**
> Password: **zoomadsl**

(The User Name and Password entered here are not the same as the user name and password that your Internet service provider may have given you.)

4 Click **Wireless** on the left-side menu.

5 Then click **Security** on the left-side menu and from the drop-down menu for Select SSID, select Zoom.

6 From the **Network Authentication** drop-down menu, select Mixed **WPA2 / WPA**.

7 In the **WPA Pre-Shared Key** text box, enter a passphrase of your choice.

8 Write down this passphrase and put it where you can find it – on the bottom of the X6 case, for instance.

9 Click **Save/Apply**.

10 Now you need to set up each of your wireless devices with the SSID and passphrase.

a First, make sure that the device's wireless capability is switched on. (Many notebooks have a switch for wireless, for instance.)

b Next go to the device's area for configuring a wireless network connection.

For a Windows computer, click the **Wireless Networking** icon at the lower right corner of the screen.

c Select the **Site Survey** or **Scan** option to see a list of the access points in your area. That list should include the SSID Zoom.

d Select **Zoom** and enter the WPA2 key that you just wrote down in Step 8.

e Save your settings.

That's it! Your security setup is now complete!

Setting Up Security Using WEP

If **all** of your network devices DO NOT support WPA2 or WPA, you can use WEP to configure network security. WEP can be configured two ways: 64-bit and 128-bit. 128-bit WEP provides a bit more security than 64-bit, but 128-bit WEP also tends to diminish network performance. We recommend that most people configure their WEP for 64-bit security.

1 **Click** the **Wireless** icon in the **Zoom Configuration Manager**. This will open the **Wireless Setup** page. Go to **Network Authentication** (which should say None) and select **WEP Open** and then select **WEP-64 bit** (**or WEP-128** bit for more security, but diminished network performance) from the drop-down menu. Six new boxes open directly below the **Network Authentication** box.

2 For **Network Key 1**, enter 13 ASCII characters or 26 hexadecimal digits for 128-bit encryption keys. Enter 5 ASCII characters or 10 heaxadecimal digits for 64-bit encryption keys.

3 Click **Save/Apply**.

Every wireless network client needs to be set individually. Open the software that came with the device, which should be running on the computer where the device is installed. Find the configuration menu for security, choose **WEP**, and enter the **Network Key**, exactly as you entered it on the X6 **Wireless Setup** page.

Your security setup configuration is now complete!

5

Online Gaming

If you are using your router for gaming, you may need to make changes to the router's firewall setting for the game to work. This is done by setting up a DMZ or virtual server, or using port triggering so that the modem's firewall won't block the other players from your system during your gaming. The main difference between the three methods is the amount of access someone has to your system.

A virtual server will allow access to your computer or gaming station on certain ports. A port is a channel that is used by applications (such as games) for communication. For example, the directions for the game you want to play over the Internet might tell you to open up port 6000.

Port triggering works by sensing when data is sent out on the predetermined outgoing port and then automatically opening up the corresponding incoming port(s). It will automatically forward the traffic on the incoming port to the computer that accessed the outgoing port. If your game uses one port to send outgoing data and a different port (or ports) for incoming data, you may want to use port triggering. The advantage of port triggering is that it is more secure than setting up a virtual server since the incoming port is only open when you are using it, and since it tracks which computer sent the outgoing data. Port triggering can also be easier to set up because you do not need to know the IP address of your gaming station. The disadvantage of port triggering is that only 1 host can be accessing the port at one time, so if you have two computers or game stations playing the same game on your network you will need to use a virtual server or DMZ.

A DMZ differs from a virtual server in that it allows access on all ports of the computer. Because of this, DMZ's are less secure and should be used with caution on your computer. However DMZ's work well with your gaming stations since security is not as much

of an issue for gaming stations as it is for computers.

Once you've decided what type of security to use for gaming, you can set up that security using the appropriate section of this manual:

- **Virtual Server:** For instructions on how to set up a virtual server, please refer to page 42.

- **DMZ:** For instructions on how to set up a DMZ, please refer to page 44.

- **Port Triggering:** For instructions on how to set up port triggering, please refer to page 44.

6

Status Monitoring

This chapter discusses how to check the status of your modem and its ADSL connection.

Most users can skip this chapter, as it is primarily for advanced users and for those who are instructed by their Internet service provider or Zoom Technical Support to verify settings, usually for troubleshooting. If you skip this section, you should go to Chapter 7.

Why Monitor Status?

The X6 provides easy-to-read screens for you to review the status of the modem and its ADSL connection.

While most users will probably never need to check the status, there are some cases in which it would be helpful. For example, you may need to know the IP address assigned to you by your Internet service provider.

For advanced users with special configuration needs, the status information is useful for overall system maintenance.

Monitoring ADSL Status

If you want to check the status of your ADSL connection, click on the **Status** link on the left pane in the **Zoom Configuration Manager**. (If you forgot how to log in to the **Zoom Configuration Manager**, see page .)

The **Status** page provides information about your ADSL connection. For example, you can verify whether your ADSL connection is active or not. You can also monitor related ADSL parameters—for example, how fast the X6 is transferring data

(**Downstream Speed** and **Upstream Speed**), your WAN settings, your LAN settings, and so forth.

> **Note:**
> The **Status** page does not provide a way to change any of these settings—see **Chapter 7: Advanced Setup Options**, if you need to make changes to these settings.

7

Advanced X6 Setup Options

Advanced Setup is primarily for technically advanced users. For most people, the options that are set by default when the X6 is installed are sufficient.

*However, those who want or need to change the X6 settings can do so using the **Advanced Setup** page in the **Zoom Configuration Manager**. This chapter explains the advanced options and features of the X6 modem and how to apply them to your network.*

The information in this chapter applies to you if:

- *Your Internet service provider instructs you to enable, disable, or change the default settings for your X6*

- *You need to change your Wide Area Network settings*

- *You want to change the default firewall settings to block particular IP addresses and intrusive hosts*

- *You want to change your ADSL password*

- *You have customized your configuration and want to back it up for future use or apply it to additional modems*

- *You want to set up fixed IP addresses for your computer(s)*

Viewing the Advanced Setup Options

For **Advanced Setup** options, click **Advanced Setup** from the left-side menu of the **Zoom Configuration Manager**.

This link…	Opens a page that lets you…
WAN	Specify how the Wide Area Network (WAN) ADSL setup is configured. Some of the values need to be supplied by your ISP/DSL provider.
LAN	Specify the settings that control the connection between the X6 modem and your computer. Set a fixed IP address for your computer.
NAT	**Virtual Servers Setup page:** To direct incoming traffic from the WAN side. A maximum of 32 entries can be configured.
	Port Triggering: To dynamically open up ports in the firewall when an application on the LAN initiates a TCP/UDP connection to the remote application using a 'Triggering Port'. A maximum of 32 entries can be configured.
	DMZ Host: To forward IP packets from the WAN that do not belong to any of the applications configured in the Virtual Servers table to the DMZ host computer.
Security→ IP Filtering	**Outgoing:** To block selected IP traffic by setting up filters.
	Incoming: To accept selected IP traffic by setting up filters (when the firewall is enabled).
Parental	To choose particular URLs to be excluded or

Control→ URL Filter	included by setting up a URL list. A maximum of 100 entries can be configured.
QoS (Quality of Service)	This lets you assure better performance for gaming and VoIP. **Queue Management Configuration:** Allows you to automatically mark incoming traffic without reference to a particular classifier. **Queue Configuration:** Allows you to configure a maximum of 24 entries. **QoS Class:** Allows you to configure network traffic classes.
Routing	**Default Gateway:** Set up the routes on which you want the X6 to send data that it receives on a particular interface, such as a LAN or Ethernet interface. **Static Route:** Routes specify the IP address of the next device, interface, or Internet destination to forward data to, based on the ultimate destination of the data. A maximum of 32 routes can be configured.
DNS	**DNS Server:** Allows you to specify multiple DNS servers. Typically, most users do not need to enter a DNS server unless instructed by their ISP. **Dynamic DNS:** Allows you to alias a dynamic IP address to a static hostname in any of the many domains, allowing your DSL router to be more easily accessed from various locations on the Internet.
DSL	To set DSL settings. Modulation and capability can be selected from lists on this page. DSL Advanced Settings can also be found on this page.
Interface Group	To create mapping groups with appropriate LAN and WAN interfaces to set up groups that perform as independent networks (utilizing multiple ports to PVC and bridging

	groups).
IPSec	To add, edit, or remove IPSec tunnel mode connections.
Certificate	**Local:** To add, view, or remove local certificates used by peers to verify your identity. A maximum of 4 certificates can be stored.
	Trusted CA (Certificate Authority): Add, view, or remove CA certificates used by you to verify peers' certificates. A maximum of 4 certificates can be stored.

Changing Your WAN Settings

Use the **WAN Configuration** page of the X6 Configuration Manager to change your Wide Area Network (WAN) settings. To open this page, click the **WAN** link under **Advanced Setup** on the left-side menu.

To Edit a Previous Configuration:
If you already created a configuration (from the Basic Setup page or from the WAN page at an earlier time), you can click **Edit** to make changes to that configuration. Then use the **Next** and **Back** buttons to navigate through a series of pages where you can make changes to advanced parameters such as the ATM Traffic Class and Encapsulation Mode, and enabling NAT settings, IGMP Multicast, and WAN Service.

To Add a New Configuration:
If you want to add a new configuration from this page, start by clicking **Add**. Then use the **Next** and **Back** buttons to navigate through a series of pages where you can make changes to advanced parameters such as the ATM Traffic Class and Encapsulation Mode, and enabling NAT settings, IGMP Multicast, and WAN Service.

Once you have made the changes you want on the first section, click on **Next** to proceed to the following section. Repeat this

until you reach the **WAN Setup – Summary** page. Then click the **Save/Reboot** button.

The following table describes the settings on the **WAN Configuration** pages and the values that you can enter. The settings displayed on the page will vary according to the protocol you are using.

Setting	Description
PVC	Displays the value (PVC0 through PVC3) of the selected Permanent Virtual Circuit (PVC). You can set the PVC value by entering it in the text box.
VPI	**V**irtual **P**ath **I**dentifier ranges from 0 – 256. Your DSL provider supplies the VPI when you sign up for ADSL service.
VCI	**V**irtual **C**ircuit **I**dentifier ranges from 0 – 65536. Your DSL provider supplies the VCI when you sign up for ADSL service.
ATM Traffic Class	These settings allow you to give priority to data that is sent over the network. **Important!** You must make arrangements with your DSL provider to use anything except UBR (**U**nspecified **B**it **R**ate) in the Traffic Class setting. Your service provider will also supply you with the Cell, Burst, and Tolerance Rates.
Connection Type	Your Internet Service Provider supplies this value. If your service provider instructs you to use 1483 Bridged mode, select **1483 Bridged + NAT** to take advantage of your modem's advanced routing and firewall features.

Encapsulation Mode	The encapsulation value should match your DSL provider's encapsulation. The value refers to the way that data is passed over the Internet. An example value is LLC (**L**ogical **L**ink **C**ontrol). Your DSL provider supplies this value when you sign up for ADSL service.
Username	Your DSL provider supplies this PPP username when you sign up for ADSL service.
Password	Your DSL provider supplies this PPP password when you sign up for ADSL service.
MTU	Maximum Transmission Unit. Largest physical packet size, measured in bytes, that the modem can send. Any messages larger than the MTU have to be fragmented before being sent.
NAT	Network Address Translation. By default, this setting is **Enabled**. NAT keeps a table of individual private IP addresses in your network and refers to the table when incoming requests are made. If no matches are found, the incoming data cannot come into your network. An **Enabled** setting keeps your IP addresses hidden from outside users.
Service Name	This is an optional value that your service provider may ask you to enter.

After you enter your values, click **Save.**

Changing Your LAN Settings

When would I need to change my LAN settings?

DHCP (**D**ynamic **H**ost **C**onfiguration **P**rotocol) is a protocol that enables your modem to manage the assignment of IP addresses to computers and devices on your Ethernet (LAN) network. Enabling DHCP on your modem allows it to assign temporary IP addresses to your computers whenever they connect to your network. You can control the amount of time that lapses before a new address is issued or renewed. You can extend the range of IP addresses that are assigned to your network devices should you add new devices to your network. You can also change the default LAN IP address for your modem.

The following table shows you the values to enter. After you enter the values, click **Save/Reboot**.

Setting	Description
IP Address	The IP address of your modem.
Subnet Mask	The modem's subnet mask address.
Leased Time (hour)	The maximum amount of time, in hours, that a device in your network will have the IP address before a new one is issued by the modem's DHCP server.
Start IP Address	The first IP address of a range that you specify using the Start and End IP Address settings. Your modem's DHCP server will assign the IP addresses in this range at random to the computers and devices in your network.
End IP Address	The last IP address of a range that you specify using the Start and End IP Address settings. Your modem's DHCP server will assign numbers from this range at random to the computers and devices in your network.

Configuring Fixed DHCP Mapping

Fixed DHCP mapping is used when you want the modem to always assign the same IP address to a computer or gaming device. You would want to do this if you were setting up a virtual server or DMZ using this device.

To set up a device with Fixed DHCP Mapping:

1   **Click Advanced Setup➔ LAN** to open the LAN page.

2   Under Fixed IP Mapping click on **Add Entries.**

3   Enter the **MAC Address** of the computer or gaming station that you wish to assign a fixed IP address to.

   Tip: To find the MAC address of your device go to **STATUS➔ DHCP**. This page shows you a list of all devices connected to your router as well as their MAC addresses.

4   Enter the IP address that you always want assigned to your computer or gaming station. This address can be the one already given to it on the **DHCP Status** page or can be an unused IP address. For example if none of the devices on the **DHCP Status** page have been assigned 192.168.1.25 you can use that as the IP address.

5   Click **Save/Apply** to store your settings.

Creating a Virtual Server or a DMZ

Do I need to create a virtual server or DMZ?

By default, your modem uses NAT to hide your computers from users on the Internet; however, there may be times when you want to allow access by outside users to a computer or gaming station on your network. For instance, you would want to allow access if a computer in your network is hosting Internet games or running a web server. If you wish to set up your X6 for online gaming you

should refer to **Chapter 5: Online Gaming** to help you decide if a Virtual Server, DMZ or Port Triggering is right for you.

Creating a Virtual Server

Before starting this section, you should set up a fixed DHCP address for the computer or gaming station that you want to use the virtual server with to prevent the IP address from changing in the future

1   Click **Advanced Setup➔ NAT➔ Virtual Servers➔ Add** to open the **Add Virtual Servers** page.

2   For the server name check the list of predefined games and applications to see if yours is on the list. If it is, go ahead and select it. You will need to enter the IP address of your computer or gaming station in the **Server IP Address** field but the rest of the information will be filled out for you.

3   Click **Save/Apply** to save your new virtual server.

4   If your game or application was not on the list continue to step 5 to create a custom Virtual Server.

5   Enter a **Custom Server** name for your virtual server.

6   Enter the IP address on the computer or game station that you want to use the virtual server with in the **Server IP Address** field.

7   For each range of ports you need to open up enter the Starting and Ending **External Ports** and the **Protocol** used. Your game documentation should provide you with this information.

8   If you only need to open one port, enter that port number in both the Start and End **External Port** fields.

9   Once you enter the External Ports, the Internal Port fields will automatically be set to the same values. The Internal ports cannot be changed.

10 If you know the **Remote IP address** of the device you are connecting to, enter it under the Remote IP field.   If you don't know it you can leave this field blank.

11 Click **Save/Apply** to save your new virtual server.

DMZ

Use this page to designate a computer or gaming station on the Local Area Network as a DMZ (**De**militarized **Z**one). When you set up a DMZ, all ports on that computer are opened up to all Internet traffic – the computer is no longer protected by the X6's NAT firewall. Caution should be used when setting up a computer with a DMZ. A game station does not have the same security issues as your computer so setting up a DMZ works well with your game station.

You may want to create a DMZ if a computer in your network is acting as a web server or hosting Internet games.

You need to manually assign an IP address to the DMZ.

DMZ Host IP Address: Enter the IP address of the computer or gaming station designated as a DMZ.

Note: You need to give your LAN PC clients a fixed/static IP address for DMZ to work properly. To do this, go to <u>**Configuring Fixed DHCP Mapping**</u> on page 42.

Click **Save/Apply**.

Port Triggering

Port triggering allows a host machine to dynamically forward a specific port back to itself and is a way to automate port forwarding. When traffic is seen on an outgoing port any traffic received on the corresponding incoming port will be forwarded to your computer or gaming station.
To set up port triggering, follow the instructions below.

1   Click **Advanced Setup➔ NAT➔ Port Triggering**.

2 Click **Add** to add a new Port Triggering rule.

3 Check the drop down list next to **Server Name** (check that this is called server name). If your game or application is listed, go ahead and select it.

4 Click **Save/Apply.**

If your game or application is not listed, enter a **Custom Name** for your port triggering rule and go to step 5.

5 Enter the Start and End **Trigger Ports** in the text fields. Your games documentation should supply you with this information.

6 Select the **Protocol** for the Trigger Protocol from the drop-down menu.

7 Enter the Start and End **Open Ports** in the text fields.

8 Select the **Open Protocol** from the drop-down menu.

9 Repeat steps 5-8 for each range of ports you want to trigger open ports with. When you are finished go to step 10.

10 Click **Save/Apply**.

Note: To delete a previously created Trigger Port, click the checkbox of the Trigger Port in the Trigger Port list and click **Delete**. Then click **Apply** to save your settings.

Setting Up a Static Routing Table

Do I need static routing?

Most users do not need to set up static routes. The default route used in your modem will forward all packets correctly. However, if you set up your network with different subnets, you can use static routing to ensure your packets are handled correctly.

You can manually create a static route to tell the modem how to reach a specific IP network. The route entry specifies a destination network (or single host), together with a mask to indicate what range of addresses the network covers, and a next-hop gateway

address or interface. If there is a choice of routes for a destination, the route with the most specific mask is chosen.

To route to a destination that is not on any local network, a route may be added via a gateway, for instance another router. The gateway IP address must be on the same subnet as one of the router's interfaces.

Click **Routing** from the left-side menu of the Zoom Configuration Manager. Click **Static Route.** Click **Add**.

The following table describes Routing Table settings.

Setting	Description
Destination Network Address	Enter the Destination Network Address.
Subnet Mask	Enter the **subnet IP address** of the destination.
Gateway IP Address	Enter the **Gateway IP address** of your destination's subnet. The HOP gateway must be on the same subnet as the modem.
Use Interface	If you select this check box, make a selection from the drop-down menu.

If you change any of the settings, click **Save/Apply**.

If you want to remove any of the settings, click the check box next to **Remove** and then click the **Remove** button.

Using IP Filters

Use the **IP Filter Configuration** page to set up IP filters to **block outgoing** or **allow incoming** traffic into your computer from the Internet. To open this page, click **Advanced Setup → Security**. Then click on **IP Filtering**. Select **Outgoing** or **Incoming** depending on which type of filter you want to set up.

Outgoing IP Filtering Setup:

By default, all outgoing IP traffic from LAN is allowed, but some IP traffic can be blocked by setting up filters. Choose **Add** or **Remove** to configure outgoing IP filters. Once you have set up the IP filters you want, click the **Save/Apply** button.

Incoming IP Filtering Setup:
By default, all incoming IP traffic from the WAN is blocked when the firewall is enabled. However, some IP traffic can be accepted by setting up filters.

To filter Internet traffic, you must define one or more rules (that is, criteria you want the information to meet before it can proceed). As information comes in from the Internet, the X6 examines it and—if it meets the rule—the information moves forward to its destination on your computer or network. If it does not, it is discarded.

The rule can be based on many characteristics, including the network or Internet protocol it carries, the source IP address, the port that the traffic is coming in on, and so forth.

Choose **Add** or **Remove** to configure incoming IP filters. Once you have set up the IP filters you want, click the **Save/Apply** button.

Adding a DNS Server Name

Do I need to add a DNS server name?

Typically you should not need to enter a DNS server name as it is assigned automatically when your connection is established. However, your ISP may instruct you to enter an **IP address** for a **DNS server name**. To do this, follow the instructions below:

1   Un-check the box **Enable Automatic Assigned DNS**.

2   Two text boxes should appear: **Primary DNS Server** and **Secondary DNS Server**. Enter the IP addresses of the DNS servers that your ISP instructed you to enter.

3   Click **Save/Reboot**.

Using the ADSL Settings

Do I need to change my ADSL settings?

Typically you should not need to change your ADSL settings; however, you may be instructed to do so by your service provider. Or, if you are having problems establishing a physical layer connection, you may want to change a couple of the settings on the **DSL** page.

Click **DSL** under **Advanced Setup** from the left-side menu of the Zoom Configuration Manager.

The following table shows you the values to enter. After you enter the values, click **Save/Apply**.

Setting	Description
BitSwap	Enables or disables bit swapping in both upstream and downstream directions. If you experience frequent connection drops, it may help to change the bit swap settings.

Enabling or Disabling UPnP

Universal **P**lug a**n**d **P**lay (UPnP) with **I**nternet **G**ateway **D**evice (IGD) protocol is installed in X6 units when they are shipped by Zoom. This means that other devices plugged into your computer or network (for example, a gaming application, router, or stand-alone firewall) that use UPnP should automatically detect the X6 and make the needed configurations for them to work together. There is no setup for you to do. Change this setting only if you have a good reason to do so.

To change the status of Universal Plug and Play, go to the **LAN**

page under the **Advanced Setup** link.

Setting	Description
Enable UPnP	Select this check box to enable or disable **U**niversal **P**lug a**n**d **P**lay. By default UPnP is enabled.

Click **Save/Reboot**.

8

Wireless Options

To configure wireless features, click **Wireless** from the left-side menu of the **Zoom Configuration Manager**.

This link…	Opens a page that lets you…
Basic	Configure basic features of the wireless LAN interface. See **Chapter 3: Setting Up Your Wireless Network** on page 18.
Security	Configure security features of the wireless LAN interface. See **Chapter 4: Setting Wireless Security** on page 27.
MAC Filtering	Configure wireless MAC filtering to block Internet access.
WDS	Configure the WDS (Wireless Distribution System) feature of the wireless LAN interface.
Advanced	Configure the advanced features of the wireless LAN interface.
Client Info	Shows authenticated wireless clients and their status.

Wireless MAC Filtering

Most users will not need this feature.

However, if there is a PC or other device on the X6 network that you don't want using the Internet, you can use MAC address filtering to deny the device Internet access. (That computer or device will still be able to communicate with other devices on the LAN, such as printers.) Otherwise, as an added layer of security

you can set the X6 up to only allow the MAC address of your wireless devices to access the internet.

To block Internet access, click **Advanced Setup** on the left-side menu of the Zoom Configuration Manager. Click **Wireless**. Then click **MAC Filtering**. Follow the instructions below:

1 From the **Select SSID** drop-down menu, select the name associated with the MAC address.

2 For the **MAC Restrict Mode**, select **Disabled, Allow,** or **Deny**.

3 Click **Add**.

4 Click **Save/Apply** changes after you finish adding or removing information.

5 If you want to remove any of the settings, click the check box next to **Remove** and then click the **Remove** button.

WDS

You can select WDS (also known as Wireless Bridge) to disable access point functionality. Selecting Access Point enables access point functionality. WDS functionality will still be available and wireless stations will be able to associate to the AP.

Select **Disabled** in Bridge Restrict to disable Wireless Bridge restriction. Any wireless bridge will be granted access.

Select **Enabled or Enabled (Scan)** to enable wireless bridge restriction. Only those bridges selected in Remote Bridges will be granted access.

Click **Refresh** to update the remote bridges. Wait for a few seconds to update.

Click **Save/Apply** to configure the wireless bridge options.

9

Management and Diagnostics

Please read this chapter if you want to perform modem management functions, as discussed below, or if you want to run diagnostics to diagnose a modem problem. If you don't want to do either of these things, your modem is probably set up and ready to go. You may want to read **Appendix B: Top and Back Panels**, for details about the modem's lights and back panel jacks.

Management Buttons

The buttons in the **Management** group of the Zoom Configuration Manager are typically used for administrative tasks, such as upgrading firmware, changing your **Zoom Configuration Manager** password, etc.

The following table lists each button in the **Management** group and gives a brief description of the settings you can specify.

Open page from…	This button…	Opens a page that lets you…
Management➔ Settings	Backup	Save your current configuration settings to a file so that they may be restored at a later time.
	Update	Upload your previously saved settings.
	Restore Default	Restore the X6 settings to the factory defaults.
Management	**System Log**	By default the System Log is disabled. You must Enable it and then click View System Log.
		View data generated or acquired by

		routine system communication with other devices. This information does not necessarily represent unexpected or improper functioning and is not captured by the system traps that create alarms. You can save the system log to a file.
Management	SNMP Agent	Access the SNMP – configuration page. Simple Network Management Protocol (SNMP) allows a management application to retrieve statistics and status from the SNMP agent in this device.
Management	TR-069 Client	Access to a page that allow an Auto-Configuration Server (ACS) to perform auto-configuration, provision, collection, and diagnostics to the ADSL modem. Select the desired values and click **Save** to configure the TR-069 client options.
Management	Internet Time	Access to a page that allows you to set up the X6 to automatically synchronize with Internet time servers.
Management➔ Access Control	Services	A Service Control List ("SCL") enables or disables router services (for LAN / WAN such as FTP, HTTP, ICMP, and TELNET) from being used.
Management➔ Access Control	IP Addresses	The IP Address Access Control mode, if enabled, permits access to local management services from IP address contained in the Access Control List. This mode is disabled by default.
Management➔ Access Control	Passwords	Manage the User IDs and passwords that can access the **Zoom Configuration Manager**. This is where you can change the default password supplied to you with the X6.
Management	Update Software	Specify the path to the upgrade file you

		need to update your firmware. Use the **Browse** button on this page to navigate to the file, then click the **Update Software** button to perform the firmware update.
Management	**Save / Reboot**	Click the **Save / Reboot** button on the Save / Reboot page to reboot the modem.
Management	**Tools**	Access a page from which you can use ping and trace route.

Remote Access to Your Modem Configuration Settings

If you want to be able to access your modem Configuration Manager to change or view your configuration settings remotely:

1 Click on **Management**. Click on **Access Control**, and then select the enable check box for **Http WAN** to allow access from a remote PC. Click **Save/Apply** and wait several seconds for the settings to be saved.

2 Click on **Status** from the left pane of the **Zoom Configuration Manager**. Click on **WAN**. Write down the public **IP address** displayed under **WAN Info**.

3 Type this public **IP address** into the browser of your remote PC.

4 At the log in prompt, enter the user name and password shown below:
  User name: **support**
  Password: **support**

5 You can now view or make changes to your modem's configuration from your remote PC.

TR-069

The TR-069 option of the X6 Configuration Manager opens a page where you can allow an **A**ccess **C**ontrol **S**erver (ACS) to control and configure your X6.

This feature must be supported by your service provider and should be used only if the provider instructs you to enable it.

1   Click **Management** from the left-side menu of the Zoom Configuration Manager.

2   Then click **TR-069 Client**.

3   After you make changes on the **TR-069 client – config** page, click **Save**.

Changing User Names and Passwords

Use the **Passwords** page to manage the user names and passwords that can access the **Zoom Configuration Manager**. To open this page, click **Management → Access Control → Passwords.**

When you installed the X6 and tried to open the **Zoom Configuration Manager**, you were prompted for a User Name and Password in order to gain access. (The default user name and password were supplied to you in the section **Establishing Communication**.)

If you want, you can change the default password. **<u>Changing the password is not required</u>, but as a good security measure, we recommend it.**

To change the default password

Access to your DSL modem is controlled through three user accounts: admin, support, and user.

1 Select the **User name** for which you want to change the password from the drop-down menu of the Passwords page of the Configuration Manager.

2 Enter the current password in the textbox **Old password**.

3 Choose the password you would like to replace it with (up to 16 characters without any spaces) and enter it in the textbox **New password**.

4 Retype the password in the textbox **Confirm password**.

5 Click on **Save/Apply**.

Backing Up Your Configuration

Users who change the Configuration Manager settings for the X6 may want to back up their settings. This will enable them to restore those settings at a later time, if needed.

This feature may be especially useful when you receive firmware updates from Zoom. Installing the update may overwrite your customized settings with default values. Before you update the firmware, backup your configuration. Then, after the firmware has been updated, restore your configuration.

> Note:
> You do not need to back up the default settings. This is because you can easily restore the defaults by clicking **Management → Settings → Restore Default**. For more information, see Resetting Default Settings on page 57.

To back up your current configuration

Use the **Backup** page of the Configuration Manager to save your modem's current configuration to a file on your computer.

1 Click on the **Management** link on the left pane of the window. Then click on the **Settings** link. Then click on the **Backup** link.

2 On the **Backup** page, click **Backup Settings** to download a configuration file from the X6 to a folder on your computer.

3 Be sure to note the name (backupsettings.conf) and location. You will need this information if you ever want to restore the X6 to this backed-up configuration. (You can change the name of the file and specify a location for it on your computer after it is downloaded.)

To restore a configuration

1 Click on the **Management** link on the left pane of the window in the Configuration Manager.

2 Then click on the **Settings** link.

3 Then click on the **Update** link.

4 On the **Update Settings** page, click **Browse** and navigate to the file containing the configuration to which you want the X6 restored.

5 Click **Update Settings**.

Resetting Default Settings

If you have changed the system settings on your X6 and for some reason 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**.

To reset using the X6's Web interface

If you can open your Web browser and access your X6's Configuration Manager, do the following to perform a software reset:

1 Log into the **Zoom Configuration Manager**. (See page 12 if you need help logging in.)

2 Click on the **Management** link on the left pane of the
window. Then click on the **Settings** link. Then click on the
Restore Default link.

3 Click the **Restore Default Settings** button.

To perform a hard reset

If you lose your link to the unit and cannot communicate with it
via the Web browser, do the following to perform a hard reset:

Insert a paper clip into the **RESET** pinhole in the center of the
modem's back panel and hold it there for five seconds.

You are now guaranteed that all system settings are restored to the
X6's factory defaults.

Diagnostics

You can use the **Diagnostics** page of the Configuration Manager
to run a series of diagnostic tests of your system software and
hardware connections.

Appendix A: ADSL Internet Settings Tables

These tables are for customers where ADSL settings were not automatically detected by the X6 Install Assistant, and whose service providers do not supply them with the ADSL settings to connect to the Internet. Many ADSL providers use different settings depending on the region in which they are operating, which is why there may be more than one setting for your service provider. We post updated tables on our Web site. If your country is not listed in the tables below, please consult **www.zoomtel.com**

Note to USA customers

If your ADSL service provider is not shown below, first use the settings for **Service Provider Not Shown** at the bottom of the table. If those settings do not work, use the settings for the company that provides local telephone service in your area.

Table A: USA

ISP	VPI	VCI	Encapsulation
All Tel (1)	0	35	PPPoE LLC
All Tel (2)	0	35	1483 Bridged IP LLC
AT&T (1)	0	35	PPPoE LLC
AT&T (2)	8	35	1483 Bridged IP LLC
AT&T (3)	0	35	1483 Bridged IP LLC
August.net (1)	8	35	1483 Bridged IP LLC
August.net (2)	0	35	1483 Bridged IP LLC
BellSouth	8	35	PPPoE LLC
Castle.Net	0	96	1483 Bridged IP LLC
CenturyTel (1)	8	35	PPPoE LLC
CenturyTel (2)	8	35	1483 Bridged IP LLC
Coqui.net	0	35	PPPoA LLC

Covad	0	35	PPPoE LLC
Crocker Communications	0	35	PPPoE LLC
Earthlink (1)	0	35	PPPoE LLC
Earthlink (2)	8	35	PPPoE LLC
Earthlink (3)	8	35	PPPoE VC-MUX
Earthlink (4)	0	32	PPPoA LLC
Eastex	0	100	PPPoA LLC
Embarq	8	35	1483 Bridged IP LLC
4DV.net	0	32	PPPoA VC-MUX
Frontier	0	35	PPPoE LLC
Grande Communications	1	34	PPPoE LLC
GWI	0	35	1483 Bridged IP LLC
Hotwire	0	35	1483 Bridged IP LLC
Internet Junction	0	35	1483 Bridged IP LLC
PVT	0	35	1483 Bridged IP LLC
Qwest (1)	0	32	PPPoA VC-MUX
Qwest (2)	0	32	PPPoA LLC
Qwest (3)	0	32	PPPoE LLC
Qwest (4)	0	32	1483 Bridged IP LLC
SBC (1)	0	35	PPPoE LLC
SBC (2)	0	35	1483 Bridged IP LLC
SBC (3)	8	35	1483 Bridged IP LLC
Socket (1)	8	35	1483 Bridged IP LLC
Socket (2)	0	35	1483 Bridged IP LLC
Socket (3)	0	35	PPPoE LLC
Sonic	0	35	1483 Bridged IP LLC
SouthWestern Bell	0	35	1483 Bridged IP LLC

Sprint (1)	0	35	PPPoA LLC
Sprint (2)	8	35	PPPoE LLC
SureWest Communications (1)	0	34	1483 Bridged LLC Snap
SureWest Communications (2)	0	32	PPPoE LLC
SureWest Communications (3)	0	32	PPPoA LLC
Toast.Net	0	35	PPPoE LLC
Uniserve	0	33	1483 Bridged IP LLC
US West	0	32	PPPoA VC-MUX
Verizon (1)	0	35	PPPoE LLC
Verizon (2)	0	35	1483 Bridged IP LLC

Table B: Countries Other Than The USA

ISP	VPI	VCI	Encapsulation
Australia - Telstra	8	35	PPPoA LLC
Argentina - Telecom	0	33	PPPoE LLC
Argentina - Telefonica	8	35	PPPoE LLC
Argentina	1	33	PPPoA VC-MUX
Belgium-ADSL Office	8	35	1483 Routed IP LLC
Belgium - Turboline	8	35	PPPoA LLC
Bolivia	0	34	1483 Routed IP LLC
Brazil - Brasil Telcom	0	35	PPPoE LLC
Brazil - Telefonica	8	35	PPPoE LLC
Brazil - Telmar	0	33	PPPoE LLC
Brazil - South Region	1	32	PPPoE LLC
Colombia - EMCALI	0	33	PPPoA VC-MUX
Columbia - ETB	0	33	PPPoE LLC
Costa Rica - ICE	1	50	1483 Routed IP LLC
Denmark-Cybercity, Tiscali	0	35	PPPoA VC-MUX
France (1)	8	35	PPPoE LLC
France (2)	8	67	PPPoE LLC
France (3)	8	35	PPPoA VC-MUX
Germany	1	32	PPPoE LLC
Hungary - Sci-Network	0	35	PPPoE LLC
Iceland - Islandssimi	0	35	PPPoA VC-MUX
Iceland - Siminn	8	48	PPPoA VC-MUX
Israel	8	35	PPPoA VC-MUX
Italy	8	35	PPPoA VC-MUX

Jamaica (1)	8	35	PPPoA VC-MUX
Jamaica (2)	0	35	PPPoA VC-MUX
Jamaica (3)	8	35	1483 Bridged IP LLC SNAP
Jamaica (4)	0	35	1483 Bridged IP LLC SNAP
Kazakhstan	0	33	PPPoA VC-MUX
Mexico	8	35	PPPoE LLC
Netherlands - BBNED	0	35	PPPoA VC-MUX
Netherlands - MX Stream	8	48	PPPoA VC-MUX
New Zealand - Slingshot	0	100	PPPoA VC-MUX
Portugal	0	35	PPPoE LLC
Puerto Rico - Coqui.net	0	35	PPPoA LLC
Saudi Arabia (1)	0	33	PPPoE LLC
Saudi Arabia (2)	0	35	PPPoE LLC
Saudi Arabia (3)	0	33	1483 Bridged IP LLC
Saudi Arabia (4)	0	33	1483 Routed IP LLC
Saudi Arabia (5)	0	35	1483 Bridged IP LLC
Saudi Arabia (6)	0	35	1483 Routed IP LLC
Spain - Albura, Tiscali	1	32	PPPoA VC-MUX
Spain - Colt Telecom, Ola Internet	0	35	PPPoA VC-MUX
Spain - EresMas, Retevision	8	35	PPPoA VC-MUX
Spain - Telefonica (1)	8	32	PPPoE LLC
Spain - Telefonica (2), Terra	8	32	1483 Routed IP LLC
Spain - Wanadoo (1)	8	35	PPPoA VC-MUX
Spain - Wanadoo (2)	8	32	PPPoE LLC
Spain - Wanadoo (3)	8	32	1483 Routed IP LLC

Sweden - Telenordia	8	35	PPPoE
Sweden - Telia	8	35	1483 Routed IP LLC
Switzerland	8	35	PPPoE LLC
Trinidad & Tobago - TSTT	0	35	PPPoA VC-MUX
Turkey (1)	8	35	PPPoE LLC
Turkey (2)	8	35	PPPoA VC-MUX
United Kingdom (1)	0	38	PPPoA VC-MUX
United Kingdom (2)	0	38	PPPoE LLC
United Kingdom - AOL	0	38	PPPoE VC-MUX
United Kingdom - Karoo	1	50	PPPoA LLC
Venezuela - CANTV	0	33	1483 Routed IP LLC
Vietnam	0	35	PPPoE LLC
Vietnam - VDC	8	35	PPPoE LLC
Vietnam - Viettel	8	35	PPPoE LLC
Vietnam - FPT	0	33	PPPoE LLC

Appendix B: Front and Back Panels

The following table describes each light on the **top panel**.

Light	Description
Power	Lights when the X6 is plugged into a power source.
DSL	Blinks when the X6 is performing its startup sequence. Stays on solid when the unit has synched up with its ADSL connection. **Note:** If the light fails to switch from blinking to steady after a minute or two, check with your ADSL provider that the ADSL connection is activated, or refer to **Appendix D: Troubleshooting Tips** on page 72.
Internet	Blinks when data is sent and received.
Ethernet [1-4]	Lights when the **Ethernet** port of the X6 is plugged into the Ethernet port of a powered-up device. Blinks when there is data activity.
WLAN	Lights when the Wireless Local Area Network is running and enabled. Blinks when data is sent.

The following table describes each item on the **back panel**.

Port	Description
DSL	Jack to connect the modem to the ADSL telephone wall jack.
Ethernet [1-4]	LAN ports that can connect the unit to access points, network hubs, or the Ethernet ports of a computer.
RESET	Button to reset the modem to its system default settings (necessary if communication link is lost).
Power	Port to connect the unit to the X6's power cube.
Switch	Button when pressed once turns the modem's power ON. When pressed again turns the modem's power OFF.

Appendix C: TCP/IP Network Settings

If you are using a Mac computer, you **must** ensure that your computer's TCP/IP network settings are configured properly. Otherwise, you will not be able to connect to the Internet.

Note:

If you are using a Windows computer, you do not have to configure the TCP/IP settings if you are using DHCP because your Windows computer will automatically configure them for you. If you are not using DHCP, you will need to set up the TCP/IP settings for your Windows computer. Windows users who are troubleshooting the X6 will need to verify the TCP/IP settings.

Depending on your operating system, follow the steps in the appropriate section to ensure your TCP/IP settings are correct.

- If you are using Macintosh, see **Macintosh TCP/IP Settings** on page 66.

- If you are using Windows, see **Windows TCP/IP Settings** on page 67.

Macintosh TCP/IP Settings

How you configure your Macintosh computer's network settings differs, depending on your Mac OS. For OS X, follow the instructions below. Otherwise, go to page 67.

Mac OS X 10.6 and 10.5 (Leopard)

1 From the **Dock** or **Apple menu**, select **System Preferences** and then **Network**.

2 Select your connection method, normally **Ethernet** for a wired connection.

3 On the right pane, select **Using DHCP** from the **Configure** drop-down menu. All of the text fields should be left blank.

4   Click **Apply**.

Mac OS X 10.4 and 10.3

1   From the **Dock** or **Apple menu**, select **System Preferences** and then **Network**.

2   Select your connection method, normally **Built-in Ethernet** for a wired connection.

3   Make sure the **TCP/IP** tab is selected, and then select **Using DHCP** from the **Configure IPv4** drop-down menu. All of the text fields should be left blank.

4   Click **Apply Now**.

Mac OS 7.6.1 - 9.2.2

1   From the **Apple** menu, choose **Control Panels** and then **TCP/IP** to display the **TCP/IP** Window.

2   Under Connect via:, select **Ethernet built-in**.

3   Under Configure:, select **Using DHCP Server**. Do not enter anything in the **DHCP Client ID** field.

4   Close the **TCP/IP** Window. You will be asked if you want to save the changes. Click **Save**.

5   Continue with **Establishing Communication** on page 12.

Windows TCP/IP Settings

How you configure your Windows computer's network settings differs, depending on your operating system.

Windows 7 Users:

1 From the desktop, click the **Start** button, select **Control Panel**.

2 Under **Network and Sharing Center**, select **Change adapter settings** from the menu on the left side of the screen.

3 Right-click on the **Local Area Connection** icon and select Properties.

4 In the **Local Area Connection Properties** dialog box, highlight **Internet Protocol Version 4 (TCP/Ipv4)** and click the **Properties** button.

5 Select **Use the following IP address** and enter **192.168.1.100** and **255.255.255.0** as the **IP address** and **Subnet mask**, respectively.

6 Click **OK** twice.

7 Re-enter 192.168.1.1 in your Web browser's address bar.

Windows Vista Users:

1 From the desktop, click the **Start** button, select **Control Panel**, and then double-click **Network and Sharing Center**.

2 In the **Network and Sharing Center** window, under **Tasks**, select **Manage Network Connections.**

3 In the **Network Connections** window, double-click the **Local Area Connection** option.

4 In the **Local Area Connection Status** dialog box, click the **Properties** button.

5 In the **Local Area Connection Properties** dialog box, highlight **Internet Protocol Version 4 (TCP/Ipv4)** and click the **Properties** button.

6 Select **Use the following IP address** and enter **192.168.1.100** and **255.255.255.0** as the **IP address** and **Subnet mask**, respectively.

7 Click **OK**, then click **Close.**

8 Re-enter 192.168.1.1 in your Web browser's address bar.

Windows XP

1 Open the **Internet Protocol (TCP/IP) Properties** dialog box.

    a From the desktop, click the **Start** button, point to **Control Panel**, and then click **Network and Internet Connections**.

    b Click **Network Connections**.

    c Right-click the **Local Area Connection** icon, and select **Properties**.

    d Select your NIC card's TCP/IP entry (it should include "TCP/IP" in it, but not "AOL," "Dial-up," or "Adapter") and click the **Properties** button.

2 Ensure the following is selected, depending on whether you are using dynamic (DHCP) or static IP addressing:

    ➢ If you are using DHCP (most users): Ensure that Obtain an IP address automatically is selected and that either Obtain a DNS server address automatically or Enable DNS is selected. All fields should be blank.

    ➢ If you are using a static IP address: Ensure that Use the following IP address and Use the following DNS server addresses are selected and that the correct IP address, Subnet mask, Default gateway, and Preferred DNS server values appear.

Windows 2000

1 Open the **Internet Protocol (TCP/IP) Properties** dialog box.

    a From the desktop, click the **Start** button, point to **Settings**, then **Network and Dial-up Connections**.

    b Right-click the **Local Area Connection** icon, and select **Properties**.

c Select your NIC card's TCP/IP entry (it should include "TCP/IP" in it, but not "AOL," "Dial-up," or "Adapter") and click the **Properties** button.

2 Ensure the following is selected, depending on whether you are using dynamic (DHCP) or static IP addressing:

➤ If you are using DHCP (most users): Ensure that Obtain an IP address automatically is selected and that either Obtain a DNS server address automatically or Enable DNS is selected. All fields should be blank.

➤ If you are using a static IP address: Ensure that Use the following IP address and Use the following DNS server addresses are selected and that the correct IP address, Subnet mask, Default gateway, and Preferred DNS server values appear.

Windows 98/Me

1 Open the **Internet Protocol (TCP/IP) Properties** dialog box.

a From the desktop, click the **Start** button, point to **Settings**, then **Control Panel**.

b Double-click the **Network** icon to display the **Network** dialog box.

c Select your NIC card's TCP/IP entry (it should include "TCP/IP" in it, but not "AOL," "Dial-up," or "Adapter") and click the **Properties** button and then click **OK**

2 Ensure the following is selected, depending on whether you are using dynamic (DHCP) or static IP addressing:

➤ If you are using DHCP (most users): Ensure that Obtain an IP address automatically is selected and that either Obtain a DNS server address automatically or Enable DNS is selected. All fields should be blank.

➤ **If you are using a static IP address:** Ensure that **Specify an IP address** is selected and that the correct **IP Address** and **Subnet Mask** values appear. On the **DNS Configuration** tab, ensure that **Enable DNS** is selected

and that something appears in the **Host** box. (If not, enter any name, word, or combination of letters and numbers.) Ensure that the **DNS Server Search Order** box contains 192.168.1.1

Appendix D: Troubleshooting Tips

The following are some problems you may experience and some possible solutions to remedy the situation.

Problem

My X6's **DSL** light continually blinks and does not stay solidly lit.

Solution

There are several issues that could cause this problem. Check these items:

- Ensure that the phone cord is firmly plugged into the wall jack and the **DSL** jack on the back of the X6.

- Verify that the jack the phone cord is connected to is enabled for ADSL service. Unless your service provider has enabled it, you cannot use a standard telephone jack for ADSL service.

- Your phone cord may be defective. Replace the phone cord with a known good one.

- You have installed phone filters on all the phones and fax machines using the same ADSL line as the X6. These devices can produce noise and interfere with your ADSL connection.

Problem

My X6's **DSL** light is solidly lit, but I cannot connect to the Internet.

Solution

There are several issues that could cause this problem. Check these items:

- Ensure that you are using the correct **VPI**, **VCI** and **Encapsulation** settings.

- If your **Encapsulation** begins with **PPP**, ensure that you have typed your ADSL Username and Password correctly. (Note

that this is NOT the username and password you used to log into the **Zoom Configuration Manager** on page 12.)

- Verify that your service provider's ADSL connection is functioning properly. (Place a call to your service provider's customer support department to verify this.)

- Windows users only: Verify that the Web browser on the computer on which you installed the software is configured for a **network connection** (this might be called a "Local Area Network" or "broadband" connection). If you need help configuring your Web browser, refer to **Appendix E: Configuring Your Web Browser** on page 76.

- Verify that your TCP/IP network settings are properly configured on your computer. To do this, refer to the appropriate section.

  ➢ If you are using Macintosh, see **Macintosh TCP/IP Settings** on page 66.

  ➢ If you are using Windows, see **Windows TCP/IP Settings** on page 67.

Problem

I cannot log into the **Zoom Configuration Manager**. I have typed **http://192.168.1.1** but I am not prompted for a User Name and Password.

Solution

There are several issues that could cause this problem. Check these items:

- If you are using a Macintosh computer, your TCP/IP settings may not be properly configured. See page 66 for more information.

- If you are using Mac OS X 10.3 and above, renew your IP address: Point to **System Preferences**, then choose **Network**. Click the **Configure** button and then the **Renew DHCP Lease** button.

- If you are using a Windows computer, perform a Release/Renew operation:

➢ **Windows 7/Vista/2000/XP:** From the desktop, click the **Start** button, then point to **All Programs** (for **Windows 2000** point to **Programs** instead of All Programs), point to **Accessories**, and then right-click on **Command Prompt** and select **Run as administrator**. Click **Yes** at the User Account Control box. Type **ipconfig /all** and press the **Enter** key on your keyboard. In the subsequent dialog box, make sure the NIC adapter is listed, type **ipconfig /release** and then **ipconfig /renew**. Then type **192.168.1.1** into your browser's address bar, and the **Network Password** box should display.

➢ **For Windows 95/98/Me:** From the desktop, click the **Start** button and the point to **Run**. Type **winipcfg**, and click **OK**. In the subsequent dialog box, make sure the NIC adapter is highlighted in the drop-down list, click **Release** and then click **Renew**. Then type **192.168.1.1** into your browser's address bar, and the **Network Password** box should display.

Problem

The computer on which I initially installed the X6 on is connected to the Web, but the computers <u>connected through my network device</u> cannot access the Internet.

Solution

The problem is most likely with your network device (such as a wireless access point, router, hub, or switch). Check these items:

- Try rebooting each computer on your network. For example, if you are using a router, reboot each computer that is connected to the router. This will allow for the computers to release and renew their IP addresses.

- If you are using a wireless access point or a router, verify that the device is using Dynamic Host Configuration Protocol (DHCP). This is also known as dynamic IP addressing. Depending on your device, this may be controlled by an **Obtain an IP address automatically** option. If you need help, refer to the documentation that came with your network device or contact its manufacturer.

- Refer to the documentation provided with your network device or contact its manufacturer for assistance.

Appendix E: Configuring Your Web Browser

Important!

This section is for Windows computers only. If you are using a Mac computer, your browser is already configured properly. However, you must ensure that your computer's TCP/IP settings are configured properly. See **Macintosh TCP/IP Settings** on page 66 for instructions on how to do this.

When using a Windows computer, the software that you use to make an Internet connection must be set for a **network connection**, <u>not</u> a **dial-up connection**. This configuration should have been done automatically when you installed the software.

If you find that you need to configure your Web browser, this section includes instructions for recent versions of two popular Web browsers: Internet Explorer Version 5.0 (or later) and Mozilla Firefox 3.x. The configuration is done on the same computer on which you installed the X6 software.

Depending on the browser you have on your Windows computer, follow the corresponding instructions in this section.

Tip:

If you are using an earlier version of one of these browsers, the configuration may be slightly different from below. In those cases—or if you are using another browser altogether—configure the browser to use a **network connection** (this might be called a "Local Area Network" or "broadband" connection).

Configuring Internet Explorer Version 8.0

The following instructions are for Internet Explorer Version 8.0. (If you do not have this version, you can get a free upgrade from Microsoft Corp. If you are not sure what version you have, open Internet Explorer and from the **Help** menu, choose **About Internet Explorer**. The version number is directly below the Microsoft Internet Explorer logo. You can ignore all the numbers after the period following the first digit.)

Note: If you are using **Windows 7**, you do not need to do anything since it will be configured automatically.

Internet Explorer can be configured to use a specific connection but by default will use the correct default active connection.

However, if you want to manually setup a different connection:

1 On the desktop, double-click the **Internet Explorer** icon.

> **Tip:**
> If you cannot access Internet Explorer in this way, open your computer's **Control Panel** (click the **Start** button and then, depending on your computer, either click **Control Panel**, or click **Settings** and then **Control Panel**). In the **Control Panel**, double-click the **Internet Options** icon. If this icon does not appear, double-click the **Network and Internet Options** icon and then double-click the **Internet Options** icon.

2 Once open, select **Tools → Internet Options** and then click on the **Connections** tab.

3 Select **Setup** to setup an Internet connection.

If the wired Ethernet is correctly setup then a popup message "You Are Already Connected To The Internet" will display. You do not need to proceed further. The browser is already setup successfully using the wired Ethernet connection.

If you select **Set up a new connection anyway** you will be displayed options to setup a different connection type that your PC supports (PPPoE connection and a Wireless connection). Since the X6 device is not wireless and will not

work with a PPPoE connection type by default then you do not need to setup either of these and can use the existing wired connection successfully.

Configuring Internet Explorer Version 7.0

The following instructions are for Internet Explorer Version 8.0. (If you are not sure what version you have, open Internet Explorer and from the **Help** menu, choose **About Internet Explorer**. The version number is directly below the Microsoft Internet Explorer logo. You can ignore all the numbers after the period following the first digit.)

Note: If you are using **Windows 7**, you do not need to do anything since it will be configured automatically.

Internet Explorer can be configured to use a specific connection but by default will use the correct default active connection.

However, if you want to manually setup a different connection:

1 On the desktop, double-click the **Internet Explorer** icon.

> **Tip:**
> If you cannot access Internet Explorer in this way, open your computer's **Control Panel** (click the **Start** button and then, depending on your computer, either click **Control Panel**, or click **Settings** and then **Control Panel**). In the **Control Panel**, double-click the **Internet Options** icon. If this icon does not appear, double-click the **Network and Internet Options** icon and then double-click the **Internet Options** icon.

2 Once open, select **Tools → Internet Options** and then click on the **Connections** tab.

3 Select **Setup** to setup an Internet connection which will open the **New Connection Wizard** screen.

4 Click **Next**.

5 Select the type of connection desired. Select **Connect to the Internet**. to access the modem's HTTP Server. Click **Next**.

6 Select **Set up my connection manually**. Click **Next**.

7 Select **Connect using a broadband connection that is always on**. Click **Next**.

8 Select **Finish**.

Configuring Internet Explorer 5.0 or 6.0

The following instructions are for Internet Explorer Version 5.0 and 6.0. (If you are not sure what version you have, open Internet Explorer and from the **Help** menu, choose **About Internet Explorer**. The version number is directly below the Microsoft Internet Explorer logo. You can ignore all the numbers after the period following the first digit.)

1 On the desktop, right-click the **Internet Explorer** icon, and select **Properties**.

> **Tip:**
> If you cannot access Internet Explorer in this way, open your computer's **Control Panel** (click the **Start** button and then, depending on your computer, either click **Control Panel**, or click **Settings** and then **Control Panel**). In the **Control Panel**, double-click the **Internet Options** icon. If this icon does not appear, double-click the **Network and Internet Options** icon and then double-click the **Internet Options** icon.

2 On the **Internet Properties** dialog box, select the **Connections** tab, then click the **Setup** button.

3 The setup process will proceed differently, depending on your operating system. The following table details the process for your Windows computer.

Note: If you are using **Windows 7**, you do not need to do anything since it will be configured automatically.

Windows XP	Windows 98/Me/2000
a. On the **Welcome to the New Connection Wizard** dialog box, click **Next**. (If you see a **Location Information** dialog box, click **Cancel** and then when asked if you are sure you want to cancel, click **Yes** to return to the **Welcome** dialog box.)	a. On the **Internet Connection Wizard** dialog box, select **I want to set up my Internet connection manually, or I want to connect through a local area network (LAN)**, then click **Next**.
b. On the **Network Connection Type** dialog box, select **Connect to the Internet**, then click **Next**.	b. On the **Setting up your Internet connection** dialog box, select **I connect through a local area network (LAN)**, then click **Next**.
c. On the **Getting Ready** dialog box, select **Set up my connection manually**, then click **Next**.	c. On the **Local area network Internet configuration** dialog box, uncheck the **Automatic discovery of proxy server** check box, then click **Next**.
d. On the **Internet Connection** dialog box, select **Connect using a broadband connection that is always on**, then click **Next**.	d. On the **Set Up Your Internet Mail Account** dialog box select **No**, then click **Next**.
e. On the **Completing the New Connection Wizard** dialog box, click **Finish**.	e. On the **Completing the New Connection Wizard** dialog box, uncheck the **To connect to the Internet immediately, select this box…** check box (if it appears) and click **Finish**.

4 If you accessed Internet Explorer's settings from the **Control Panel** (as explained in the "Tip" following step 1), the **Control Panel** window will still be open. Close it before continuing.

Configuring Mozilla Firefox

No setup is necessary since Mozilla Firefox will use the active connection. Unlike IE, Firefox cannot be configured to use a specific connection type; it will use whatever is available and active at the time.

Configuring Google Chrome

No setup is necessary since Google Chrome will use the active connection. Unlike IE, Google Chrome cannot be configured to use a specific connection type; it will use whatever is available and active at the time.

Appendix F: Wireless Channels by Country

For most countries channels 1-13 are normal for private wireless networks. The following table shows countries known to use channels other than 1-13 for private wireless networks.

Country	Channels
France	10-13
Israel	4-9
Japan	1-13 14 (802.11b only)
Taiwan	1-11
USA	1-11

Appendix G: Getting Help

Zoom has many Technical Support services available to its customers.

- **To Register Your Product Or Get Assistance**
  We can support you best if you register your product at **www.zoomtel.com/register**

  We have many ways to assist you, and you can see them at **www.zoomtel.com/techsupport**
  From here, you can send email to our technical support experts and/or do a smart search through our intelligent database by using **SmartFacts™**.

  > **Tip:**
  > From time to time, Zoom may release improved firmware. This is also available at **www.zoomtel.com**, along with upgrade instructions. We recommend that you check our Web site periodically for updates.

You can reach Technical Support by calling these numbers:

In the United States, call **(617) 753-0961**.

In the UK, call
London: **+44 2033180660** or
Manchester: **+44 1618840074**

- Some retailers of Zoom products provide support or can recommend a convenient support center.

Appendix H: Regulatory Information

Declaration of Conformity
Declaración de conformidad

Manufacturer/Fabricantet	Zoom Telephonics, Inc.
	207 South Street
	Boston, MA 02111 USA
	617-423-1072
	www.zoomtel.com
Brand/Marca	Zoom X6 ADSL2/2+ WL Router
Type/Tipo	Series 1084, Models 569XYZ, 559XUV, Where
	X=0,1,2,3,4,5,6,7,8,9 or nothing
	Y=A thru Z or nothing
	Z=A thru Z or nothing
	U=J thru Z or nothing
	V=G thru Z or nothing)

The manufacturer declares under sole responsibility that this equipment is compliant to Directive 1999/5/EC via the following. This product is CE marked.
El fabricante declara bajo su exclusiva responsabilidad que este equipo satisface la Directiva 1999/5/EC por medio de lo siguiente. Este producto tiene marca CE.

73/23/EEC – LVD	EN60950-1:2006 + A11:2009, IEC60950-1:2005	
89/336/EEC – EMC/EMF	EN301 489-1 V1.8.1:2008-04; EN301 489-17 V1.3.2:2008-04; EN55022:2006, Class B	C€
1999/5/EC	EN300 328 v1.7.1:2006-10	

Paul Prohodski
30 August 2010
1084/TF, Boston, MA, USA

Director, Hardware Engineering/
Director, Ingeniería de apoyo

Additional regulatory and compliance information can be found on the included CD.
La información reguladora y de la conformidad adicional se puede encontrar en el CD incluido.
Puede que la unidad requiera ser reseteada después de una descarga electrostática severa.

U.S. FCC Part 68 Statement

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. The unit bears a label on the back which contains among other information a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

This equipment uses the following standard jack types for network connection: RJ11C.

This equipment contains an FCC compliant modular jack. It is designed to be connected to the telephone network or premises wiring using compatible modular plugs and cabling which comply with the requirements of FCC Part 68 rules.

The Ringer Equivalence Number, or REN, is used to determine the number of devices which may be connected to the telephone line. An excessive REN may cause the equipment to not ring in response to an incoming call. In most areas, the sum of the RENs of all equipment on a line should not exceed five (5.0).

In the unlikely event that this equipment causes harm to the telephone network, the telephone company can temporarily disconnect your service. The telephone company will try to warn you in advance of any such disconnection, but if advance notice isn't practical, it may disconnect the service first and notify you as soon as possible afterwards. In the event such a disconnection is deemed necessary, you will be advised of your right to file a complaint with the FCC.

From time to time, the telephone company may make changes in its facilities, equipment, or operations which could affect the operation of this equipment. If this occurs, the telephone company is required to provide you with advance notice so you can make the modifications necessary to obtain uninterrupted service.

There are no user serviceable components within this equipment. See Warranty flyer for repair or warranty information.

It shall be unlawful for any person within the United States to use a computer or other electronic device to send any message via a telephone facsimile unless such message clearly contains, in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time it is sent and an identification of the business, other entity, or individual sending the message and the telephone number of the sending machine or of such business, other entity, or individual. The telephone number provided may not be a 900 number or any other number for which charges exceed local or long distance transmission charges. Telephone facsimile machines manufactured on and after December 20, 1992, must clearly mark such identifying information on each transmitted message. Facsimile modem boards manufactured on and after December 13, 1995, must comply with the requirements of this section.

This equipment cannot be used on public coin phone service provided by the telephone company. Connection to Party Line Service is subject to state tariffs. Contact your state public utility commission, public service commission, or corporation commission for more information.

U.S. FCC Part 15 Emissions 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 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 or more 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.

Appendix H: Regulatory Information

- Consult the dealer or an experienced radio/TV technician for help.

Industry Canada Emissions Statement

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations. Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Industry Canada CS03 Statement

Notice: The Industry Canada label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing the equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of concern. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas. Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

Notice: The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

European 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. This product is CE Marked.

Directive	Standard	Test Report
73/23/EEC-Low Voltage	EN60950-1:2006 + A11:2009, IEC60950-1:2005	Electrical safety
89/336/EEC-EMC	EN 301 489-1 v1.6.1 :2005-09; EN 301 489-17 1.2.1 :2002; EN 55022 : 2006, Class B	EMC-immunity EMC-emissions

Electrostatic Discharge Statement

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

Note: If you do not use the supplied phone cord, use an equivalent of minimum AWG 26 line cord.

CAUTION: To reduce the risk of fire, use only No. 26 AWG or larger UL Listed or CSA Certified Telecommunication Line Cord

Additional compliance information is located on the CD.