

Broadband Phone Adapter

USER GUIDE



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Chapter 1: Introduction

Welcome

Thank you for choosing Broadband Phone Service. The Broadband Phone Adapter Qwest has provided to you will allow your computers to share a broadband Internet connection as well as resources, including files and printers. And, after you have set up your Broadband Phone, you will be able to make phone calls using the Internet.

How does the Broadband Phone Adapter do all of this? By connecting your computers and peripherals, including phones, to the Broadband Phone Adapter and connecting the Broadband Phone Adapter to your broadband (DSL) or cable modem, the Broadband Phone Adapter can direct and control communications for your network. Each of the Broadband Phone Adapter's two telephone jacks can operate independently, with separate phone service and phone numbers, so you can have up to two Broadband Phone Service lines per Adapter.

But what does all of this mean?

Networks are useful tools for sharing Internet access and computer resources. Multiple computers can share Internet access, so you don't need more than one broadband connection. With Broadband Phone Service, your Internet access can now be shared by your phones as well. You will be able to make phone calls using the account you set up with Qwest, even while you're surfing the Internet. Plus, you can access one printer from different computers and access data located on another computer's hard drive. Networks are even used for playing multiplayer video games. So, networks not only are useful, but also can be fun.

network: a series of computers or devices connected for the purpose of data sharing, storage, and/or transmission between users.

ethernet: an IEEE standard network protocol that specifies how data is placed on and retrieved from a common transmission medium.

lan (local area network): the computers and networking products that make up the network in your home or office.

PCs on a wired network create a LAN, or Local Area Network. They are connected with Ethernet cables, which is why the network is called “wired.”

To create your network, install and set up the Broadband Phone Adapter. To guide you through the process, use the instructions in the Quick Installation Guide or this User Guide to help you. These instructions should be all you need to get the most out of the Broadband Phone Adapter.

What’s in this Guide?

This guide covers the basic steps for setting up a network with the Broadband Phone Adapter. After going through “Chapter 3: Getting to Know the Broadband Phone Adapter,” most users will only need to use the following chapters:

— Chapter 4: Getting Started

This chapter instructs you on how to connect and set up the Broadband Phone Adapter.

— Chapter 6: Using the Web-based Utility

This chapter explains how to configure the Broadband Phone Adapter using your web browser and the Broadband Phone Adapter’s Web-based Utility. You will configure the Broadband Phone Adapter using the settings provided by Qwest.

When you’re finished with the basic steps, then you are ready to connect to the Internet.

You also have other chapters available for reference:

— Chapter 1: Introduction

This chapter describes the Broadband Phone Adapter’s applications and this User Guide.

— Chapter 2: Networking Basics

This chapter briefly explains how a network functions.

— Chapter 5: Using the Interactive Voice Response Menu

This chapter explains how to configure the Broadband Phone Adapter's network settings when you use its Interactive Voice Response Menu.

— Appendix A: Troubleshooting

This appendix describes some possible problems and solutions, as well as frequently asked questions, regarding installation and use of the Broadband Phone Adapter.

— Appendix B: Finding the MAC Address and IP Address for Your Ethernet Adapter

This appendix instructs you on how to find the MAC address or Ethernet address of your PC's Ethernet network adapter.

— Appendix C: Windows Help

This appendix describes how you can use Windows Help for instructions about networking, such as installing the TCP/IP protocol.

— Appendix D: Glossary

This appendix gives a brief glossary of terms frequently used in networking.

— Appendix E: Specifications

This appendix provides the technical specifications for the Broadband Phone Adapter.

— Appendix F: Warranty Information

This appendix supplies the warranty information for the Broadband Phone Adapter.

— Appendix G: Regulatory Information

This appendix supplies the regulatory information regarding the Broadband Phone Adapter.

— Appendix H: Contact Information

This appendix provides contact information for a variety of Linksys resources and Qwest Technical Support.

Chapter 2: Networking Basics

An Introduction to Local Area Networks

Simply put, a router is a network device that connects two networks together.

The Broadband Phone Adapter connects your local area network (LAN), or a group of PCs in your home, to the Internet. The Broadband Phone Adapter processes and regulates the data that travels between these two networks.

The Use of IP Addresses

IP stands for Internet Protocol. Every device in an IP-based network, including PCs, print servers, and routers, requires an IP address to identify its location, or address, on the network. This applies to both the Internet and LAN connections.

There are two ways of assigning IP addresses to your network devices.

A static IP address is a fixed IP address that you assign manually to a PC or other device on the network. Since a static IP address remains valid until you disable it, static IP addressing ensures that the device assigned it will always have that same IP address until you change it. Static IP addresses are commonly used with network devices such as server PCs or print servers.

If you use the Broadband Phone Adapter to share your broadband or cable Internet connection, contact your ISP to find out if they have assigned a static IP address to your account. If so, you will need that static IP address when configuring the Broadband Phone Adapter.

ip (internet protocol): a protocol used to send data over a network.

ip address: the address used to identify a computer or device on a network.

static ip address: a fixed address assigned to a computer or device that is connected to a network.

A dynamic IP address is automatically assigned to a device on the network. These IP addresses are called dynamic because they are only temporarily assigned to the PC or other device. After a certain time period, they expire and may change. If a PC logs onto the network (or the Internet) and its dynamic IP address has expired, the DHCP server will assign it a new dynamic IP address.

A DHCP server can either be a designated PC on the network or another network device, such as the Broadband Phone Adapter. By default, the Broadband Phone Adapter's Internet Connection Type is DHCP (obtain an IP address automatically).

The PC or network device obtaining an IP address is called the DHCP client. DHCP frees you from having to assign IP addresses manually every time a new user is added to your network.

PPPoE

Devices that connect to Qwest® Broadband Subscriber Service do not use PPPoE. Do not use the steps described below if you are connecting your Broadband Phone Service to Qwest Broadband Subscriber Service.

For broadband (DSL) users, many ISPs may require you to log on with a user name and password to gain access to the Internet. This is a dedicated, broadband connection type called Point to Point Protocol over Ethernet (PPPoE). PPPoE is similar to a dial-up connection, but PPPoE does not dial a phone number when establishing a connection. It also will provide the Broadband Phone Adapter with a dynamic IP address to establish a connection to the Internet.

Note: By default, a DHCP server (on the LAN side) is enabled on the Phone Adapter. You should only run one DHCP server on your network. If you run more than one DHCP server on your network, you will experience network errors, such as conflicting IP addresses. To disable DHCP on the Phone Adapter, see the Router - LAN Setup section in "Chapter 5: Using the Web-based Utility."

***dynamic ip address:** a temporary IP address assigned by a DHCP server.*

***dhcp (dynamic host configuration protocol):** a protocol that lets one device on a local network, known as a DHCP server, assign temporary IP addresses to the other network devices, typically computers.*

Chapter 3: Getting to Know the Broadband Phone Adapter

The Back Panel

The Broadband Phone Adapter's ports are located on the back panel.

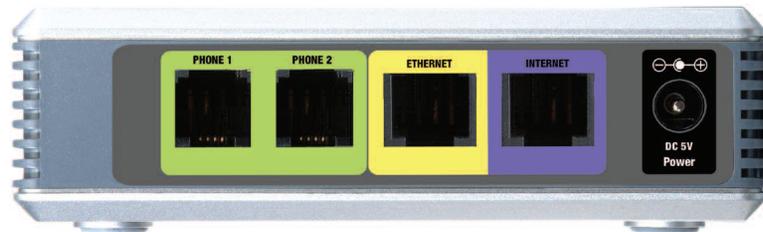


Figure 3-1: Back Panel

- PHONE 1/2** Use this port to connect an analog phone with an RJ-11 telephone cable.
- ETHERNET** The **ETHERNET** port connects to a network device, such as a PC or a switch, with an Ethernet network cable.
- INTERNET** The **INTERNET** port connects to your broadband (DSL) or cable modem.
- Power** The **Power** port is where you will connect the power adapter.

The Front Panel

The Broadband Phone Adapter's LEDs, which inform you about network activities, are located on the front panel.



Figure 3-2: Front Panel

Power

Green. The **Power** LED lights up when the Broadband Phone Adapter is powered on and connected to the Internet. It flashes when the Broadband Phone Adapter is not connected to the Internet. The LED also flashes when the Broadband Phone Adapter is booting up or upgrading its firmware.

The Power LED is red at “power on” for a short period of time while the device performs the power on self test. Once the device successfully completes the power on self test the Power LED changes to green.

INTERNET

Green. The **INTERNET** LED lights up when there is an active connection through the port. If the LED is flashing, then there is traffic moving through that port.

PHONE 1/2

Green. The **PHONE** LED is solidly lit when a telephone has an active or registered connection to your Broadband Phone Service through the corresponding port. It flashes when the phone is being used or is off the hook.

Proceed to “Chapter 4: Getting Started.”

Chapter 4: Getting Started

Before You Begin

Make sure you have the following:

- An active Internet connection
- An active Broadband Phone Service account and its settings
- Broadband (DSL) or cable modem
- One computer for configuration of the Broadband Phone Adapter
- Analog telephone with an RJ-11 phone cable

Connecting the Broadband Phone Adapter

1. Power off your network devices, including your modem and PC.
2. Connect the RJ-11 phone cable to the Broadband Phone Adapter's PHONE 1 port. Connect the other end to your analog telephone.



IMPORTANT: Do not connect the PHONE port to a telephone wall jack. Make sure you only connect a telephone to the PHONE port. Otherwise, the Broadband Phone Adapter or the telephone wiring in your home or office may be damaged.

3. Repeat step 2 with the Phone 2 port if you subscribed to two phone lines with your Broadband Phone Service.

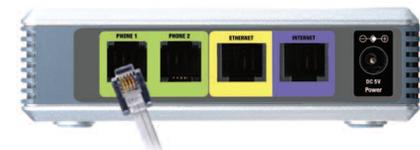


Figure 4-1: Connect a Telephone

4. Connect one end of an Ethernet network cable (included) to the ETHERNET port of the Broadband Phone Adapter. Connect the other end to the Ethernet port of your PC.
5. Connect one end of a different Ethernet network cable to the INTERNET port of the Broadband Phone Adapter. Connect the other end to your Broadband (DSL)/cable modem.
6. Power on the Broadband (DSL)/Cable modem.
7. Connect the included power adapter to the Broadband Phone Adapter's power port, and then plug the power adapter into an electrical outlet. The power LED on the front panel will light up as soon as the Broadband Phone Adapter powers on.
8. Power on your PC.



NOTE: Make sure your PC's Ethernet adapter is set to obtain an IP address automatically. For more information, refer to Windows Help.

Proceed to the next section.

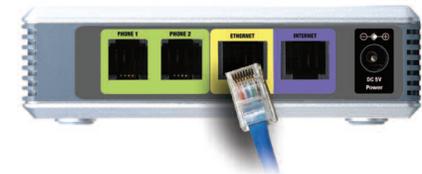


Figure 4-2: Connect to the Modem

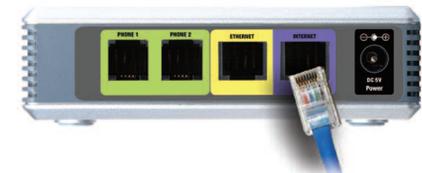


Figure 4-3: Connect a PC

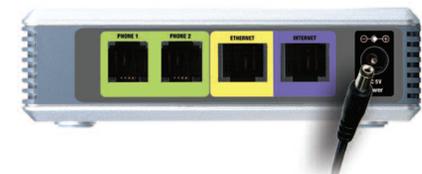


Figure 4-4: Connect Power

Configuring the Broadband Phone Adapter

1. Launch the web browser on the PC.
2. Enter **192.168.0.1/advanced** in the *Address* field (**192.168.0.1** is the default local IP address of the Broadband Phone Adapter). Then press the **Enter** key.
3. By default, there is no password set on the Broadband Phone Adapter

If you changed the password, you will see a login screen. In the *User Name* field, enter **user**, the default user name for user access (this cannot be changed). Then enter the user password.
4. The *Router - Status* screen will appear. Click the **WAN Setup** tab.
5. Proceed to the appropriate instructions for your Internet Connection Type.



Figure 4-5: Login Screen



Figure 4-6: Router - WAN Setup Screen



Figure 4-7: MAC Clone Settings

DHCP

- a. Select **DHCP** from the *Connection Type* drop-down menu.
- b. If you use a cable modem, you may need to configure the MAC Clone Settings. (Contact your ISP for more information.)

Enable MAC Clone Service. If your service uses a specific PC MAC address, then select **yes** from the *Enable MAC Clone Service* setting. Then enter the PC's MAC address in the *Cloned MAC Address* field.

- c. Click the **Submit All Changes** button.

Static IP

- a. The parameters for static IP settings were provided to you by your ISP.
- b. Select **Static IP** from the *Connection Type* drop-down menu.
- c. In the Static IP Settings section, enter the IP address in the *Static IP* field, the subnet mask in the *NetMask* field, and the default gateway IP address in the *Gateway* field.
- d. In the Optional Settings section, enter the DNS server address(es) in the *Primary DNS* and optional *Secondary DNS* fields.
- e. Click the **Submit All Changes** button.

PPPoE

- a. Select **PPPoE** from the *Connection Type* drop-down menu.
 - b. Enter the user name in the *PPPoE Login Name* field, and enter the password in the *PPPoE Login Password* field.
 - c. Click the **Submit All Changes** button.
6. Qwest pre-configures the Broadband Phone Adapter default voice settings. Refer to the documentation supplied by Qwest for more information. However, if you need to configure additional settings, refer to “Chapter 6: Using the Web-based Utility” for instructions.
7. Note: Broadband Service does not use PPPoE. Your Broadband Phone Adapter will obtain the IP address from your Qwest broadband (DSL) modem via DHCP which is a default setting for your Broadband Phone Adapter.

Proceed to the next section, “Placing the Broadband Phone Adapter.”



Figure 4-8: Static IP Settings

static ip address: a fixed address assigned to a computer or device connected to a network.

subnet mask: an address code that determines the size of the network.

default gateway: a device that forwards Internet traffic from your local area network.



Figure 4-9: PPPoE Settings

PPPoE: a type of broadband connection that provides authentication (username and password) in addition to data transport.

Placing the Broadband Phone Adapter

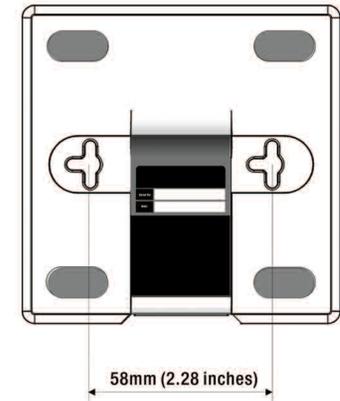
There are two ways to place the Broadband Phone Adapter. The first way is to place the Broadband Phone Adapter horizontally on a surface. The second way is to mount the Broadband Phone Adapter on a wall. The wall-mount option is explained in further detail below.

Wall-Mount Option

The Broadband Phone Adapter has two wall-mount slots on its back panel. The distance between the two slots is 58 mm (2.28 inches).

1. Determine where you want to mount the Broadband Phone Adapter.
2. Drill two holes into the wall. Make sure the holes are 58 mm (2.28 inches) apart.
3. Insert a screw into each hole, and leave 5 mm (0.2 inches) of its head exposed.
4. Maneuver the Broadband Phone Adapter so the wall-mount slots line up with the two screws.
5. Place the wall-mount slots over the screws and slide the Broadband Phone Adapter down until the screws fit snugly into the wall-mount slots.

Congratulations! The installation of the Broadband Phone Adapter is complete.



**Figure 4-10: Router -
Measurement between
Wall-Mount Slots**

Chapter 5: Using the Interactive Voice Response Menu

Overview



NOTE: Qwest sent the Broadband Phone Adapter, pre-configured for you, and you do not need to change any settings. If you wish to make changes, follow the instructions in this chapter.

This chapter explains how to use the Interactive Voice Response Menu to configure the Broadband Phone Adapter's network settings. You will use the telephone's keypad to enter your commands and select choices, and the Broadband Phone Adapter will use voice responses.

For more advanced configuration, refer to "Chapter 6: Using the Web-based Utility."

Accessing the Interactive Voice Response Menu

1. Use a telephone connected to one of the Broadband Phone Adapter's PHONE ports. (You can only access the Interactive Voice Response Menu through an analog telephone, not any of the Internet phones.)
2. Press ******** (in other words, press the star key four times).
3. Wait until you hear "Linksys configuration menu. Please enter the option followed by the # (pound) key or hang up to exit."
4. Refer to the following table that lists actions, commands, menu choices, and descriptions. After you select an option, press the # (pound) key. To exit the menu, hang up the telephone.

Using the Interactive Voice Response Menu

While entering a value, such as an IP address, you may exit without entering any changes. Press the * (star) key twice within half a second. Otherwise, the * will be treated as a decimal point or dot.

After entering a value, such as an IP address, press the # (pound) key to indicate you have finished your selection. To save the new setting, press **1**. To review the new setting, press **2**. To re-enter the new setting, press **3**. To cancel your entry and return to the main menu, press * (star).

For example, to enter the IP address *191.168.1.105* by keypad, press these keys: **191*168*1*105**. Press the # (pound) key to indicate that you have finished entering the IP address. Then press **1** to save the IP address or press the * (star) key to cancel your entry and return to the main menu.

If the menu is inactive for more than one minute, the Broadband Phone Adapter will time out. You will need to re-enter the menu by pressing ****.

The settings you have saved will take effect after you have hung up the telephone. The Broadband Phone Adapter may reboot at this time.

Interactive Voice Response Menu

Action	Command (press these keys on the telephone)	Choices	Description
Enter Interactive Voice Response Menu	****		Use this command to enter the Interactive Voice Response Menu. Do not press any other keys until you hear, "Linksys configuration menu. Please enter the option followed by the # (pound) key or hang up to exit."
Check Internet Connection Type	100		Hear the Internet connection type of the Broadband Phone Adapter.
Check Internet IP Address	110		Hear the IP address assigned to the Broadband Phone Adapter's Internet (external) interface.
Check Network Mask (or Subnet Mask)	120		Hear the network or subnet mask assigned to the Broadband Phone Adapter.
Check Gateway IP Address	130		Hear the IP address of the Broadband Phone Adapter (usually the network router).

ip (internet protocol): a protocol used to send data over a network.

ip address: the address used to identify a computer or device on a network.

subnet mask: an address code that determines the size of the network.

gateway: a device that forwards Internet traffic from your local area network.

mac address: the unique address that a manufacturer assigns to each networking device.

Interactive Voice Response Menu

Action	Command (press these keys on the telephone)	Choices	Description
Check MAC Address	140		Hear the MAC address of the Broadband Phone Adapter in hexadecimal string format.
Check Firmware Version	150		Hear the version number of the firmware currently running on the Broadband Phone Adapter.
Check Primary DNS Server IP Address	160		Hear the IP address of the primary DNS (Domain Name Service) server.
Check Internet Web Server Port	170		Hear the port number of the Internet Web server used for the Web-based Utility.
Check Local IP Address	210		Hear the local IP address of the Broadband Phone Adapter.
Set Internet Connection Type	101	Press 0 to use DHCP. Press 1 to use a static IP address. Press 2 to use PPPoE.	Select the type of Internet connection you are using. Refer to the documentation supplied by your Internet Service Provider (ISP).

firmware: the programming code that runs a networking device.

dhcp (dynamic host configuration protocol): a protocol that lets one device on a local network, known as a DHCP server, assign temporary IP addresses to the other network devices, typically computers.

static ip address: a fixed address assigned to a computer or device that is connected to a network.

PPPoE: a type of broadband connection that provides authentication (username and password) in addition to data transport.

Interactive Voice Response Menu

Action	Command (press these keys on the telephone)	Choices	Description
Set Static IP Address	111	Enter the IP address using numbers on the telephone keypad. Use the ★ (star) key when entering a decimal point.	First, set the Internet Connection Type to static IP address; otherwise, you will hear, "Invalid Option," if you try to set the static IP address.
Set Network (or Subnet) Mask	121	Enter the network or subnet mask using numbers on the telephone keypad. Use the ★ (star) key when entering a decimal point.	First, set the Internet Connection Type to static IP address; otherwise, you will hear, "Invalid Option," if you try to set the network or subnet mask.
Set Gateway IP Address	131	Enter the IP address using numbers on the telephone keypad. Use the ★ (star) key when entering a decimal point.	First, set the Internet Connection Type to static IP address; otherwise, you will hear, "Invalid Option," if you try to set the gateway IP address.
Set Primary DNS Server IP Address	161	Enter the IP address using numbers on the telephone keypad. Use the ★ (star) key when entering a decimal point.	First, set the Internet Connection Type to static IP address; otherwise, you will hear, "Invalid Option," if you try to set the IP address of the primary DNS server.

Interactive Voice Response Menu

Action	Command (press these keys on the telephone)	Choices	Description
Set the Mode	201	Press 0 to select the router/NAT mode. Press 1 to select the bridge/switch mode.	If the Broadband Phone Adapter acts as the router for your network, use the router/NAT mode. If your network already has a router, use the bridge/switch mode.
Enable/Disable WAN Access to the Web-based Utility	7932	Press 0 to select the router/NAT mode. Press 1 to select the bridge/switch mode.	Use this setting to enable or disable WAN access to the Web-based Utility. (This Utility lets you configure the Broadband Phone Adapter.)
Manual Reboot	732668	Press 1 to enable. Press 0 to disable.	After you hear, "Option successful," hang up the phone. The Broadband Phone Adapter will automatically reboot.
User Factory Reset	877778	Press 1 to confirm. Press * (star) to cancel.	The Broadband Phone Adapter will request confirmation; enter 1 to confirm. You will hear, "Option successful." Hang up the phone. The Broadband Phone Adapter will reboot and all user-configurable settings will be reset to their factory default settings.

Entering a Password

You may be prompted to enter a password when you want to change the Broadband Phone Adapter settings. To enter the password, use the phone's keypad, and follow the appropriate instructions.

- To enter A, B, C, a, b, or c — press **2**.
- To enter D, E, F, d, e, or f — press **3**.
- To enter G, H, I, g, h, or i — press **4**.
- To enter J, K, L, j, k, or l — press **5**.
- To enter M, N, O, m, n, or o — press **6**.
- To enter P, Q, R, S, p, q, r, or s — press **7**.
- To enter T, U, V, t, u, or v — press **8**.
- To enter W, X, Y, Z, w, x, y, or z — press **9**.
- To enter all other characters, press **0**.



NOTE: Make sure your PC's Ethernet adapter is set to obtain an IP address automatically. For more information, refer to Windows Help.

For example, to enter the password *phone@321* by keypad, press these keys: **746630321**. Then press the # (pound) key to indicate that you have finished entering the password. To cancel your entry and return to the main menu, press * (star).

Configuring the Settings for Your Broadband Phone Service

If you want to change the settings for your Broadband Phone Service, refer to the instructions provided by Qwest and "Chapter 6: Using the Web-based Utility."

Chapter 6: Using the Web-based Utility

Overview



NOTE: Your Broadband Phone Adapter is pre-configured for you, and you do not need to change any settings. If you do wish to make changes, follow the instructions in this chapter.

The Web-based Utility can be accessed via your web browser through use of a computer on your network.

There are two main tabs: Router and Voice. Additional tabs will be available after you click one of the main tabs. This chapter will describe each web page of the Web-based Utility and each page's key functions.

Router

- **Status.** This screen displays product and system status information about the Broadband Phone Adapter.
- **WAN Setup.** Use this screen to configure the Internet connection, MAC clone, remote management, QoS, VLAN, and optional settings.
- **LAN Setup.** Use this screen to configure the local IP address, DHCP server, and DHCP lease settings.
- **Application.** On this screen, configure port forwarding, DMZ, multicast, and reserved ports range settings.

Voice

- **Info.** This screen displays voice-related status information about the Broadband Phone Adapter.
- **System.** Use this screen to configure the user password.
- **User 1.** Use this screen to configure call forward, speed dial, supplementary service, and ring settings for the primary Internet phone line.
- **User 2.** Use this screen to configure call forward, speed dial, supplementary service, and ring settings for the secondary Internet phone line.

How to Access the Web-based Utility

To access the Web-based Utility of the Broadband Phone Adapter, launch the web browser on the PC connected to the Broadband Phone Adapter's Ethernet port. If the Broadband Phone Adapter uses its default address, then enter **192.168.0.1** in the *Address* field. If you have assigned a static IP address to the Broadband Phone Adapter, then enter **<IP address of the Broadband Phone Adapter>** in the *Address* field. Press the **Enter** key.

By default there is no password on the Broadband Phone adapter. If you changed the password, then you will see a login screen. In the *User Name* field, enter user, the default user name for **user** access. (This cannot be changed.) Then enter the your password.

Two views of the Web-based Utility are available. Click **basic** to view basic settings, or click **advanced** to view advanced settings.

When you have finished making changes on a screen, click the **Submit All Changes** button to save the changes, or click the **Undo All Changes** button to undo your changes. When changes are saved, the Broadband Phone Adapter may reboot.



Figure 6-1: Login Screen

The Router Tab

The Router - Status Screen

This screen displays product and system information.

Product Information

- **Product Name.** Shown here is the model number of the Broadband Phone Adapter.
- **Serial Number.** Shown here is the serial number of the Broadband Phone Adapter.
- **Software Version.** Shown here is the version number of the Broadband Phone Adapter software.
- **Hardware Version.** Shown here is the version number of the Broadband Phone Adapter hardware.
- **MAC Address.** Shown here is the MAC address of the Broadband Phone Adapter.
- **Client Certificate.** Shown here is the status of the client certificate. It authenticates the Broadband Phone Adapter for use in the network.

System Status

- **Current Time.** Displayed here is the current date and time of the Broadband Phone Adapter.
- **Elapsed Time.** Displayed here is the amount of time elapsed since the last reboot of the Broadband Phone Adapter.



Figure 6-2: Router - Status Screen

- **WAN Connection Type.** Displayed here is the Internet connection type of the Broadband Phone Adapter.
- **Current IP.** Displayed here is the Internet IP address of the Broadband Phone Adapter.
- **Host Name.** Displayed here is the host name of the Broadband Phone Adapter.
- **Domain.** Displayed here is the domain name of the Broadband Phone Adapter.
- **Current Netmask.** Displayed here is the netmask or subnet mask of the Broadband Phone Adapter.
- **Current Gateway.** Displayed here is the IP address of the Broadband Phone Adapter.
- **Primary DNS.** Displayed here is the IP address of the primary DNS server.
- **Secondary DNS.** Displayed here is the IP address of the secondary DNS server.
- **LAN IP Address.** Displayed here is the local IP address of the Broadband Phone Adapter.
- **Broadcast Pkts Sent.** Displayed here is the number of broadcast packets sent.
- **Broadcast Bytes Sent.** Displayed here is the number of broadcast bytes sent.
- **Broadcast Pkts Received.** Displayed here is the number of broadcast packets received and processed.
- **Broadcast Bytes Received.** Displayed here is the number of broadcast bytes received and processed.
- **Broadcast Pkts Dropped.** Displayed here is the number of broadcast packets received but not processed.
- **Broadcast Bytes Dropped.** Displayed here is the number of broadcast bytes received but not processed.

ip (internet protocol): a protocol used to send data over a network.

ip address: the address used to identify a computer or device on a network.

packet: a unit of data sent over a network.

The Router - WAN Setup Screen

This screen lets you configure the Internet connection, MAC clone, remote management, QoS, VLAN, and optional settings. Information about your Internet connection type should be provided by your Internet Service Provider (ISP). If you do not have this information, contact your service provider.

Devices connected to Qwest Broadband (DSL) modems use DHCP which is the default setting on the Broadband Phone Adapter.

Internet Connection Settings

- **Connection Type.** Select the connection type you use: **DHCP**; **Static IP**; **PPPOE**; **PPPoE**, **DHCP**; or **DHCP**, **PPPoE**.
If you select PPPoE, DHCP or DHCP, PPPoE, then the Broadband Phone Adapter will try the first Internet connection type. If that fails, then the Broadband Phone Adapter will try the second Internet connection type.

Static IP Settings

If you selected Static IP, complete the Static IP Settings section.

- **Static IP.** Enter the static or fixed IP address of the Broadband Phone Adapter (this should be provided by your ISP).
- **NetMask.** Enter the net or subnet mask of the Broadband Phone Adapter (this should be provided by your ISP).
- **Gateway.** Enter the IP address of the gateway (this should be provided by your ISP).



Figure 6-3: Router - WAN Setup



Figure 6-4: Static IP Settings

PPPoE Settings

If you selected PPPOE, complete the PPPoE Settings section.

- **PPPoE Login Name.** Enter the name provided by your ISP.
- **PPPoE Login Password.** Enter the password provided by your ISP.
- **PPPoE Service Name (optional).** Enter the service name provided by your ISP.

Optional Settings

- **HostName.** Enter the host name, if provided by your ISP.
- **Domain.** Enter the domain name, if provided by your ISP.
- **Primary DNS.** Enter the IP address of the primary DNS server.
- **Secondary DNS (optional).** Enter the IP address of the secondary DNS server.

MAC Clone Settings

- **Enable MAC Clone Service.** Select whether you want to clone a MAC address onto the Broadband Phone Adapter, **yes** or **no**. The default is **no**.
- **Cloned MAC Address.** Enter the MAC address you want to clone.



Figure 6-5: PPPoE Settings



NOTE: For broadband (DSL) users (non-Qwest), if you need to enable PPPoE support, remember to remove any PPPoE applications that are installed on your PCs.

mac address: the unique address that a manufacturer assigns to each networking device.

Remote Management

- **Enable WAN Web Server.** This feature lets you enable or disable access to the Web-based Utility from the WAN side. Select **yes** or **no** from the drop-down menu. The default is **no**.
- **WAN Web Server Port.** Enter the port number used to access the Utility from the WAN side. The default is **80**.

QoS Settings

- **QoS QDisc.** QoS prioritizes voice communications when different types of traffic are competing for bandwidth. Select the method you want to use: **NONE**, **CBQ**, or **TBF**. The default is **NONE**.
- **Maximum Uplink Speed.** Enter the maximum upload speed of your Internet connection. The default is **128Kbps**.

VLAN (Virtual Local Area Network) Settings

- **Enable VLAN.** VLAN (802.1Q) settings let you use the Broadband Phone Adapter in a virtual LAN environment. Select **yes** or **no** from the drop-down menu. The default is **no**.
- **VLAN ID.** Enter the ID number used by the Broadband Phone Adapter. The default is **1**.
- When you have finished making changes, click the **Submit All Changes** button to save the changes, or click the **Undo All Changes** button to undo your changes.



NOTE: To test your settings, connect to the Internet.

The Router - LAN Setup Screen

This screen lets you configure the local network, dynamic DHCP, and static DHCP lease settings.

— **Networking Service.** Select the service you want to use, **NAT** or **Bridge**. The default is **NAT**.

LAN Network Settings

- **LAN IP Address.** Enter the local IP address of the Broadband Phone Adapter. The default is **192.168.0.1**.
- **LAN Subnet Mask.** Select the local subnet mask: **255.255.255.0**, **255.255.255.128**, **255.255.255.192**, **255.255.255.224**, **255.255.255.240**, **255.255.255.248**, or **255.255.255.252**. The default is 255.255.255.0.
- **Enable DHCP Server.** To use the Broadband Phone Adapter as a router assigning IP addresses, select **yes**. Otherwise, select **no**. The default is **yes**.
- **DHCP Lease Time.** Enter the lease time used by the Broadband Phone Adapter to distribute IP addresses. The default is **24 Hours**.
- **DHCP Client Starting IP Address.** When the Broadband Phone Adapter issues IP addresses, it starts with the first value of its DHCP client IP address range. Enter that value here. The default is **192.168.0.2**.
- **Number of Client IP Addresses.** Enter the number of IP addresses that can be distributed. The default is 50.



Figure 6-6: Router - LAN Setup Screen

Static DHCP Lease Settings

- **Enable.** You can have the Broadband Phone Adapter assign the same IP address to a specific device. To disable this feature, select **no**. To use this feature, select **yes**. The default is **no**.
- **Host MAC Address.** Enter the MAC address of the device whose IP address you want to specify.
- **Host IP Address.** Enter the IP address you want to assign to the device, 192.168.0.x (x being a different number for each device you specify).
- When you have finished making changes, click the **Submit All Changes** button to save the changes, or click the **Undo All Changes** button to undo your changes.

The Router - Application Screen

This screen lets you configure port forwarding, DMZ, and reserved ports range settings.

Port Forwarding Settings

- **Enable.** Select **yes** or **no** for each port forwarding entry, which defines a port range to be forwarded to a server. The default is **no**.
- **Service Name.** Enter the name of the service or application.
- **Starting Port.** Enter the starting port number of the forwarded port range.
- **Ending Port.** Enter the ending port number of the forwarded port range.
- **Protocol.** Select the protocol used, **TCP**, **UDP**, or **Both**. The default is **TCP**.
- **Server IP Address.** Enter the IP address of the server, 192.168.0.x (x being a different number for each server you specify).

DMZ Settings

- **Enable DMZ.** DMZ hosting forwards all ports at the same time to one computer. This allows one local user to be exposed to the Internet for use of special-purpose services such as videoconferencing. Select yes or no from the drop-down menu. The default is no.
- **DMZ Host IP Address.** Enter the IP address of the DMZ host, 192.168.0.x (x being the number for the computer you want to specify). Use the Static DHCP Lease Settings section on the LAN Setup screen, so the DMZ Host keeps this IP address; otherwise, its IP address may change.



Figure 6-7: The Broadband Phone Adapter - Application Screen

tcp: a network protocol for transmitting data that requires acknowledgement from the recipient of data sent.

udp: a network protocol for transmitting data that does not require acknowledgement from the recipient of the data that is sent.

Miscellaneous Settings

— **Multicast Passthru.** Multicasting allows for multiple transmissions to specific recipients at the same time. If multicasting is permitted, then the Broadband Phone Adapter will allow IP multicast packets to be forwarded to the appropriate computers. Select the types of multicast transmissions to allow: **Disabled** (none), **Inbound Only**, **Outbound Only**, or **Inbound and Outbound**. The default is **Disabled**.

System Reserved Ports Range

— **Starting Port.** This port range defines the random TCP/UDP ports used by the application running on the Broadband Phone Adapter. They cannot be used by port forwarding or DMZ. Enter the starting port number of the reserved ports range. The default is **50000**.

— **Num of Ports Reserved.** Select the number of ports you want to reserve: **256**, **512**, or **1024**. The default is **256**.

— When you have finished making changes, click the **Submit All Changes** button to save the changes, or click the **Undo All Changes** button to undo your changes.

The Voice Tab

The Voice - Info Screen

This screen shows voice-related settings for the Broadband Phone Adapter.

Product Information

- **Product Name.** Shown here is the model number of the Broadband Phone Adapter.
- **Serial Number.** Shown here is the serial number of the Broadband Phone Adapter.
- **Software Version.** Shown here is the version number of the Broadband Phone Adapter software.
- **Hardware Version.** Shown here is the version number of the Broadband Phone Adapter hardware.
- **MAC Address.** Shown here is the MAC address of the Broadband Phone Adapter.
- **Client Certificate.** Shown here is the status of the client certificate, which indicates that the Broadband Phone Adapter has been authorized by your provider.

System Status

- **Current Time.** Displayed here is the current date and time of the Broadband Phone Adapter.
- **Elapsed Time.** Displayed here is the amount of time elapsed since the last reboot of the Broadband Phone Adapter.
- **RTP Packets Sent.** Displayed here is the number of RTP packets sent by the Broadband Phone Adapter.

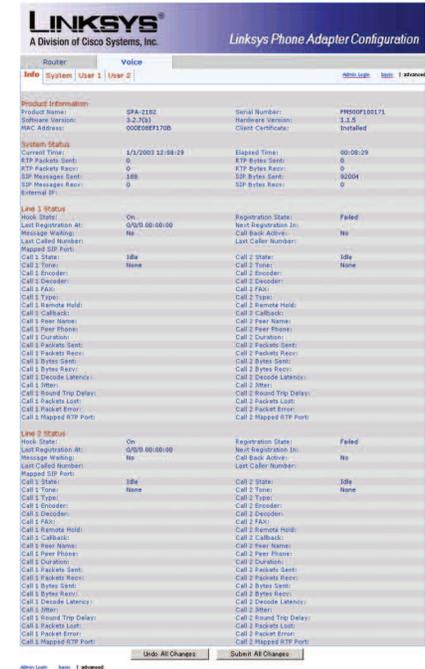


Figure 6-8: Voice - Info Screen

- **RTP Bytes Sent.** Displayed here is the number of RTP bytes sent by the Broadband Phone Adapter.
- **RTP Packets Recv.** Displayed here is the number of RTP packets received by the Broadband Phone Adapter.
- **RTP Bytes Recv.** Displayed here is the number of RTP bytes received by the Broadband Phone Adapter.
- **SIP Messages Sent.** Displayed here is the number of SIP messages sent by the Broadband Phone Adapter.
- **SIP Bytes Sent.** Displayed here is the number of SIP bytes sent by the Broadband Phone Adapter.
- **SIP Messages Recv.** Displayed here is the number of SIP messages received by the Broadband Phone Adapter.
- **SIP Bytes Recv.** Displayed here is the number of SIP bytes received by the Broadband Phone Adapter.
- **External IP.** Displayed here is the external IP address used for NAT mapping.

Line 1/2 Status

Lines 1 and 2 have the same status information available.

- **Hook State.** Displayed here is the status of the Internet phone line's readiness. On indicates that it is ready for use, while Off indicates that it is in use.
- **Registration State.** Shown here is the status of the line's registration with Broadband Phone Service.
- **Last Registration At.** Shown here are the last date and time the line was registered.
- **Next Registration In.** Shown here is the number of seconds until the next registration.

Line 1 Status		Registration State:	Not Registered
Hook State:	On	Last Registration In:	
Last Registration At:		Call Back Address:	None
Message Waiting:	No	Last Caller Number:	
Last Called Number:			
Mapped SIP Port:		Call 1 State:	Idle
Call 1 State:	Idle	Call 2 State:	Idle
Call 1 Tone:	None	Call 2 Tone:	None
Call 1 Encoder:		Call 2 Encoder:	None
Call 1 Decoder:		Call 2 Decoder:	
Call 1 FAX:		Call 2 FAX:	
Call 1 Tone:		Call 2 Tone:	
Call 1 Remote Hold:		Call 2 Remote Hold:	
Call 1 Callback:		Call 2 Callback:	
Call 1 Peer Name:		Call 2 Peer Name:	
Call 1 Duration:		Call 2 Duration:	
Call 1 Packets Sent:		Call 2 Packets Sent:	
Call 1 Packets Recv:		Call 2 Packets Recv:	
Call 1 Bytes Sent:		Call 2 Bytes Sent:	
Call 1 Bytes Recv:		Call 2 Bytes Recv:	
Call 1 Discards Latency:		Call 2 Discards Latency:	
Call 1 Jitter:		Call 2 Jitter:	
Call 1 Round Trip Delay:		Call 2 Round Trip Delay:	
Call 1 Packets Lost:		Call 2 Packets Lost:	
Call 1 Packet Error:		Call 2 Packet Error:	
Call 1 Mapped RTP Port:		Call 2 Mapped RTP Port:	

Figure 6-9: Line 1 Status

- **Message Waiting.** This indicates whether you have new voicemail waiting.
- **Call Back Active.** This indicates whether a call back request is in progress.
- **Last Called Number.** Displayed here is the last number called.
- **Last Caller Number.** Displayed here is the number of the last caller.
- **Mapped SIP Port.** Shown here is the port number of the NAT mapped SIP port.

Calls 1 and 2 have the same status information available.

- **Call 1/2 State.** Displayed here is the status of the call.
- **Call 1/2 Tone.** Displayed here is the type of tone used by the call.
- **Call 1/2 Encoder.** Displayed here is the codec used for encoding.
- **Call 1/2 Decoder.** Displayed here is the codec used for decoding.
- **Call 1/2 FAX.** Displayed here is the status of the fax pass-through mode.
- **Call 1/2 Type.** Displayed here is the direction of the call.
- **Call 1/2 Remote Hold.** This indicates whether the far end has placed the call on hold.
- **Call 1/2 Callback.** This indicates whether the call was triggered by a call back request.
- **Call 1/2 Peer Name.** Displayed here is the name of the internal phone.

- **Call 1/2 Peer Phone.** Displayed here is the phone number of the internal phone.
- **Call 1/2 Duration.** Displayed here is the duration of the call.
- **Call 1/2 Packets Sent.** Displayed here is the number of packets sent.
- **Call 1/2 Packets Recv.** Displayed here is the number of packets received.
- **Call 1/2 Bytes Sent.** Displayed here is the number of bytes sent.
- **Call 1/2 Bytes Recv.** Displayed here is the number of bytes received.
- **Call 1/2 Decode Latency.** Displayed here is the number of milliseconds for decoder latency.
- **Call 1/2 Jitter.** Displayed here is the number of milliseconds for receiver jitter.
- **Call 1/2 Round Trip Delay.** Displayed here is the number of milliseconds for delay.
- **Call 1/2 Packets Lost.** Displayed here is the number of packets lost.
- **Call 1/2 Packet Error.** Displayed here is the number of invalid packets received.
- **Call 1/2 Mapped RTP Port.** Displayed here is the number of the NAT mapped RTP port.

The Voice - System Screen

This screen lets you change the password for user access to the Web-based Utility.

System Configuration

- **User Password.** Enter the password for the user. (By default, there is no password.)
- When you have finished making your change, click the **Submit All Changes** button to save the changes, or click the **Undo All Changes** button to undo your change.

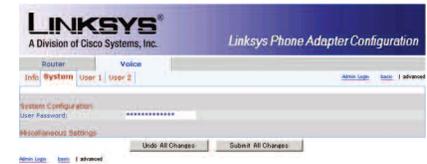


Figure 6-10: Voice System Screen

Appendix A: Troubleshooting

This appendix provides solutions to problems that may occur during the installation and operation of the Broadband Phone Adapter. Read the description below to solve your problems. If you can't find an answer here, check the Qwest Web site at www.qwest.com/mybroadbandphone or the Linksys Web site at www.linksys.com.

Common Problems and Solutions

1. I don't hear a dial tone, and the PHONE LED is not lit.

Go through this checklist until your problem is solved:

- A. Make sure the telephone is plugged into the PHONE port.
- B. Disconnect and re-connect the RJ-11 telephone cable between the Broadband Phone Adapter and telephone.
- C. Make sure your telephone is set to its tone setting (not pulse).
- D. Make sure your network has an active Internet connection. Try to access the Internet. If you do not have a connection, power off your network devices, including the Broadband Phone Adapter and broadband (DSL)/cable modem. Wait
- E. 30 seconds, and power on the broadband (DSL)/cable modem first. Then power on the Broadband Phone Adapter and other network devices.
- F. Verify your account information and confirm that the phone line is registered with your Broadband Phone Service.

2. I'm trying to access the Broadband Phone Adapter's Web-based Utility, but I do not see the login screen. Instead, I see a screen saying, "404 Forbidden."

If you are using Windows Explorer, perform the following steps until you see the Web-based Utility's login screen (Netscape Navigator will require similar steps):

- A. Click **File**. Make sure *Work Offline* is NOT checked.
- B. Press **CTRL + F5**. This is a hard refresh, which will force Windows Explorer to load new webpages, not cached ones.
- C. Click **Tools**. Click **Internet Options**. Click the **Security** tab. Click the **Default level** button. Make sure the security level is Medium or lower. Then click the **OK** button.

3. I need to set a static IP address on a PC.

The Broadband Phone Adapter, by default, assigns an IP address range of 192.168.0.100 to 192.168.0.150 using the DHCP server on the Broadband Phone Adapter. To set a static IP address, you can only use the ranges 192.168.0.2 to 192.168.0.99 and 192.168.0.151 to 192.168.0.254. Each PC or network device that uses TCP/IP must have a unique address to identify itself in a network. If the IP address is not unique to a network, Windows will generate an IP conflict error message. You can assign a static IP address to a PC by performing the following steps:

For Windows 98 and Millennium:

- A. Click **Start, Setting,** and **Control Panel**. Double-click **Network**.
- B. In The *following network components are installed* box, select the **TCP/IP->** associated with your Ethernet adapter. If you only have one Ethernet adapter installed, you will only see one TCP/IP line with no association to an Ethernet adapter. Highlight it and click the **Properties** button.
- C. In the *TCP/IP properties* window, select the **IP address** tab, and select **Specify an IP address**. Enter a unique IP address that is not used by any other computer on the network connected to the Broadband Phone Adapter. You can only use an IP address in the ranges 192.168.0.2 to 192.168.0.99 and 192.168.0.151 to 192.168.0.254. Make sure that each IP address is unique for each PC or network device.
- D. Click the **Gateway** tab, and in the *New Gateway* prompt, enter **192.168.0.1**, which is the default IP address of the Broadband Phone Adapter. Click the **Add** button to accept the entry.

- E. Click the **DNS** tab, and make sure the **DNS Enabled** option is selected. Enter the Host and Domain names (e.g., John for Host and home for Domain). Enter the DNS entry provided by your ISP. If your ISP has not provided the DNS IP address, contact your ISP to get that information or go to its website for the information.
- F. Click the **OK** button in the *TCP/IP properties* window, and click **Close** or **OK** for the *Network* window.
- G. Restart the computer when asked.

For Windows 2000:

- A. Click **Start**, **Settings**, and **Control Panel**. Double-click **Network and Dial-Up Connections**.
- B. Right-click the **Local Area Connection** that is associated with the Ethernet adapter you are using, and select the **Properties** option.
- C. In the *Components checked are used by this connection* box, highlight **Internet Protocol (TCP/IP)**, and click the **Properties** button. Select **Use the following IP address** option.
- D. Enter a unique IP address that is not used by any other computer on the network connected to the Broadband Phone Adapter. You can only use an IP address in the ranges 192.168.0.2 to 192.168.0.99 and 192.168.0.151 to 192.168.0.254.
- E. Enter the Subnet Mask, **255.255.255.0**.
- F. Enter the Default Gateway, **192.168.0.1** (Broadband Phone Adapter's default IP address).
- G. Toward the bottom of the window, select **Use the following DNS server addresses**, and enter the Preferred DNS server and Alternative DNS server (provided by your ISP). Contact your ISP or go on its website to find the information.
- H. Click the **OK** button in the *Internet Protocol (TCP/IP) Properties* window, and click the **OK** button in the *Local Area Connection Properties* window.
- I. Restart the computer if asked.

For Windows XP:

The following instructions assume you are running Windows XP with the default interface. If you are using the Classic interface (where the icons and menus look like previous Windows versions), please follow the instructions for Windows 2000.

- A. Click **Start** and **Control Panel**.
- B. Click the **Network and Internet Connections** icon and then the **Network Connections** icon.
- C. Right-click the **Local Area Connection** that is associated with the Ethernet adapter you are using, and select the **Properties** option.
- D. In the *This connection uses the following items* box, highlight **Internet Protocol (TCP/IP)**. Click the **Properties** button.
- E. Enter a unique IP address that is not used by any other computer on the network connected to the Broadband Phone Adapter. You can only use an IP address in the ranges 192.168.0.2 to 192.168.0.99 and 192.168.0.151 to 192.168.0.254.
- F. Enter the Subnet Mask, **255.255.255.0**.
- G. Enter the Default Gateway, **192.168.0.1** (Broadband Phone Adapter's default IP address).
- H. Toward the bottom of the window, select **Use the following DNS server addresses**, and enter the Preferred DNS server and Alternative DNS server (provided by your ISP). Contact your ISP or go on its website to find the information.
- I. Click the **OK** button in the *Internet Protocol (TCP/IP) Properties* window. Click the **OK** button in the *Local Area Connection Properties* window.

4. I want to test my Internet connection.

A. Check your TCP/IP settings.

For Windows 98 and Millennium:

Refer to Windows Help for details. Make sure **Obtain IP address automatically** is selected in the settings.

For Windows 2000:

1. Click **Start**, **Settings**, and **Control Panel**. Double-click **Network and Dial-Up Connections**.
2. Right-click the **Local Area Connection** that is associated with the Ethernet adapter you are using, and select the **Properties** option.
3. In the *Components checked are used by this connection* box, highlight **Internet Protocol (TCP/IP)**, and click the **Properties** button. Make sure that **Obtain an IP address automatically** and **Obtain DNS server address automatically** are selected.
4. Click the **OK** button in the *Internet Protocol (TCP/IP) Properties* window, and click the **OK** button in the *Local Area Connection Properties* window.
5. Restart the computer if asked.
6. Click the **OK** button in the *Internet Protocol (TCP/IP) Properties* window, and click the **OK** button in the *Local Area Connection Properties* window.
7. Restart the computer if asked.

For Windows XP:

The following instructions assume you are running Windows XP with the default interface. If you are using the Classic interface (where the icons and menus look like previous Windows versions), please follow the instructions for Windows 2000.

1. Click **Start** and **Control Panel**.
2. Click the **Network and Internet Connections** icon and then the **Network Connections** icon.
3. Right-click the **Local Area Connection** that is associated with the Ethernet adapter you are using, and select the **Properties** option.

4. In the *This connection uses the following items* box, highlight **Internet Protocol (TCP/IP)**, and click the **Properties** button. Make sure that **Obtain an IP address automatically** and **Obtain DNS server address automatically** are selected.
- B. Open a command prompt on a computer directly connected to the “LAN” port of the Broadband Phone Adapter.
1. For Windows 98 and Millennium, click **Start** and **Run**. In the *Open* field, type **command**. Press the **Enter** key or click the **OK** button.
 2. For Windows 2000 and XP, click **Start** and **Run**. In the *Open* field, type **cmd**. Press the **Enter** key or click the **OK** button.
- C. In the command prompt, type **ping 192.168.0.1** and press the **Enter** key.
1. If you get a reply, the computer is communicating with the Broadband Phone Adapter.
 2. If you do NOT get a reply, check the cable, and make sure **Obtain an IP address automatically** is selected in the TCP/IP settings for your Ethernet adapter.
- D. In the command prompt, type **ping** followed by your Internet IP address and press the **Enter** key. The Internet IP Address can be found in the web interface of the Broadband Phone Adapter. For example, if your Internet IP address is 1.2.3.4, you would enter **ping 1.2.3.4** and press the **Enter** key.
1. If you get a reply, the computer is connected to the Broadband Phone Adapter.
 2. If you do NOT get a reply, try the ping command from a different computer to verify that your original computer is not the cause of the problem.
- E. In the command prompt, type **ping www.qwest.com** and press the **Enter** key.
1. If you get a reply, the computer is connected to the Internet. If you cannot open a webpage, try the ping command from a different computer to verify that your original computer is not the cause of the problem.

2. If you do NOT get a reply, there may be a problem with the connection. Try the ping command from a different computer to verify that your original computer is not the cause of the problem.

5. I am not getting an IP address on the Internet with my Internet connection.

- A. Refer to “Problem #4, I want to test my Internet connection” to verify that you have connectivity.
- B. If you need to register the MAC address of your Ethernet adapter with your ISP, please see “Appendix B: Finding the MAC Address and IP Address for Your Ethernet Adapter.” If you need to clone the MAC address of your Ethernet adapter onto the Broadband Phone Adapter, see the Router - WAN Setup - MAC Clone Settings section of “Chapter 6: Using the Web-based Utility” for details.
- C. Make sure you are using the right Internet settings. Contact your ISP to see if your Internet connection type is DHCP, Static IP Address, or PPPoE (commonly used by DSL consumers). Please refer to the Router - WAN Setup - Internet Connection Settings section of “Chapter 6: Using the Web-based Utility” for details on Internet Connection Type settings.
- D. Make sure you use the right cable. Check to see if the Ethernet LED is solidly lit.
- E. Make sure the cable connecting from your broadband (DSL) or cable modem is connected to the Broadband Phone Adapter's Internet port. Verify that the Router - Status page of the Broadband Phone Adapter's Web-based Utility shows a valid IP address from your ISP.
- F. Turn off the computer, Broadband Phone Adapter, and cable/broadband (DSL) modem. Wait 30 seconds, and then turn on the Broadband Phone Adapter, cable/broadband (DSL) modem, and computer. Check the Router - Status page of the Broadband Phone Adapter's Web-based Utility to see if you get an IP address.

6. I am not able to access the Broadband Phone Adapter's Web-based Utility Setup page.

- A. Refer to “Problem #4, I want to test my Internet connection” to verify that your computer is properly connected to the Broadband Phone Adapter.
- B. Refer to “Appendix B: Finding the MAC Address and IP Address for Your Ethernet Adapter” to verify that your computer has an IP Address, Subnet Mask, Gateway, and DNS.

- C. Set a static IP address on your system; refer to “Problem #3: I need to set a static IP address on a PC.”
- D. Refer to “Problem #10: I am a PPPoE user, and I need to remove the proxy settings or the dial-up pop-up window.”

7. I need to set up a server behind my Broadband Phone Adapter.

To use a server like a web, ftp, or mail server, you need to know the respective port numbers they are using. For example, port 80 (HTTP) is used for web; port 21 (FTP) is used for FTP, and port 25 (SMTP outgoing) and port 110 (POP3 incoming) are used for the mail server. You can get more information by viewing the documentation provided with the server you installed. Follow these steps to set up port forwarding through the Broadband Phone Adapter’s Web-based Utility. We will be setting up web, ftp, and mail servers.

- A. Access the Broadband Phone Adapter’s Web-based Utility by going to **http://192.168.0.1** or the IP address of the Broadband Phone Adapter. Go to the **Router => Application** tab.
- B. Select yes from the *Enable* drop-down menu.
- C. Enter any name you want to use for the service.
- D. Enter the port range of the service you are using. For example, if you have a web server, you would enter the range 80 (in the *Starting Port* field) to 80 (in the *Ending Port* field).
- E. Select the protocol you will be using, **TCP** or **UDP**, or select **Both**.
- F. Enter the IP address of the PC or network device that you want the port server to go to. For example, if the web server’s Ethernet adapter IP address is 192.168.0.100, you would enter 100 in the field provided. Check “Appendix B: Finding the MAC Address and IP Address for Your Ethernet Adapter” for details on getting an IP address.

G. Follow the instructions in steps B-F for the port services you want to use. Consider the examples below:

Enable	Service Name	Starting and Ending Points	Protocol	IP Address
yes	Web server	80 to 80	Both	192.168.0.100
yes	FTP server	21 to 21	TCP	192.168.0.101
yes	SMTP (outgoing)	25 to 25	Both	192.168.0.102
yes	POP3 (incoming)	110 to 110	Both	192.168.0.102

When you have completed the configuration, click the **Submit All Changes** button.

8. I need to set up online game hosting or use other Internet applications.

If you want to play online games or use Internet applications, most will work without doing any port forwarding or DMZ hosting. There may be cases when you want to host an online game or Internet application. This would require you to set up the Broadband Phone Adapter to deliver incoming packets or data to a specific computer. This also applies to the Internet applications you are using. The best way to get the information on what port services to use is to go to the website of the online game or application you want to use. Follow these steps to set up online game hosting or use a certain Internet application:

A. Access the Broadband Phone Adapter's Web-based Utility by going to **http://192.168.0.1** or the IP address of the Broadband Phone Adapter. Go to the **Router => Application** tab.

B. Select **yes** from the *Enable* drop-down menu.

- C. Enter any name you want to use for the service.
- D. Enter the port range of the service you are using. For example, if you have a web server, you would enter the range 80 (in the *Starting Port* field) to 80 (in the *Ending Port* field).
- E. Select the protocol you will be using, **TCP** or **UDP**, or select **Both**.
- F. Enter the IP address of the PC or network device that you want the port server to go to. For example, if the web server's Ethernet adapter IP address is 192.168.0.100, you would enter 100 in the field provided. Check "Appendix B: Finding the MAC Address and IP Address for Your Ethernet Adapter" for details on getting an IP address.
- G. Follow the instructions in steps B-F for the port services you want to use. Consider the examples below:

Enable	Service Name	Starting and Ending Points	Protocol	IP Address
yes	UT	7777 to 27900	Both	192.168.0.100
yes	Halflife	27015 to 27015	Both	192.168.0.105
yes	PC Anywhere	5631 to 5631	UDP	192.168.0.102
yes	VPN IPSec	500 to 500	UDP	192.168.0.100

When you have completed the configuration, click the **Submit All Changes** button.

9. I can't get the Internet game, server, or application to work.

If you are having difficulties getting any Internet game, server, or application to function properly, consider exposing one PC to the Internet using DeMilitarized Zone (DMZ) hosting. This option is available when an application requires too many ports or when you are not sure which port services to use. Make sure you disable all the forwarding entries if you want to successfully use DMZ hosting, since forwarding has priority over DMZ hosting. (In other words, data that enters the Broadband Phone Adapter will be checked first by the forwarding settings. If the port number that the data enters from does not have port forwarding, then the Broadband Phone Adapter will send the data to whichever PC or network device you set for DMZ hosting.) Follow these steps to set DMZ hosting:

- A. Access the Broadband Phone Adapter's Web-based Utility by going to **http://192.168.0.1** or the IP address of the Broadband Phone Adapter. Go to the **Router => Application** tab.
- B. Disable or remove the entries you have entered for forwarding. Keep this information in case you want to use it at a later time.
- C. Select yes from the **Enable DMZ** drop-down menu.
- D. Enter the Ethernet adapter's IP address of the computer you want exposed to the Internet. This will bypass the NAT security for that computer. Please refer to "Appendix B: Finding the MAC Address and IP Address for Your Ethernet Adapter" for details on getting an IP address.

Once completed with the configuration, click the **Submit All Changes** button.

10. I am a PPPoE user, and I need to remove the proxy settings or the dial-up pop-up window.

If you have proxy settings, you need to disable these on your computer. Because the Broadband Phone Adapter is the gateway for the Internet connection, the computer does not need any proxy settings to gain access. Please follow these directions to verify that you do not have any proxy settings and that the browser you use is set to connect directly to the LAN.

For Microsoft Internet Explorer 5.0 or higher:

- A. Click **Start, Settings,** and **Control Panel.** Double-click **Internet Options.**
- B. Click the **Connections** tab.
- C. Click the **LAN settings** button and remove anything that is checked.
- D. Click the **OK** button to go back to the previous screen.
- E. Click the option **Never dial a connection.** This will remove any dial-up pop-ups for PPPoE users.

For Netscape 4.7 or higher:

- A. Start **Netscape Navigator,** and click **Edit, Preferences, Advanced,** and **Proxies.**
- B. Make sure you have **Direct connection to the Internet** selected on this screen.
- C. Close all the windows to finish.

11. When I enter a URL or IP address, I get a time-out error or am prompted to retry.

Go through this checklist until your problem is solved:

- A. Check if other PCs work. If they do, ensure that your workstation's IP settings are correct (IP Address, Subnet Mask, Default Gateway, and DNS). Restart the computer that is having a problem.
- C. If the PCs are configured correctly, but still not working, check the Broadband Phone Adapter. Ensure that it is connected and powered on. Connect to it and check its settings. (If you cannot connect to it, check the LAN and power connections.)
- D. If the Broadband Phone Adapter is configured correctly, check your Internet connection (broadband (DSL)/cable modem, etc.) to see if it is working correctly. You can remove the Broadband Phone Adapter to verify a direct connection.
- E. Manually configure the TCP/IP with a DNS address provided by your ISP.
- F. Make sure that your browser is set to connect directly and that any dial-up is disabled. For Internet Explorer, click **Tools, Internet Options,** and then the **Connection** tab. Make sure that Internet Explorer is set to **Never dial a connection.** For Netscape Navigator, click **Edit, Preferences, Advanced,** and **Proxy.** Make sure that Netscape Navigator is set to **Direct connection to the Internet.**

Frequently Asked Questions

Q. Can I make Broadband Phone Service calls if my Internet connection is down?

A. No. When you make Broadband Phone Service calls, your high-speed Internet connection must be active.

Q. Can I make calls while I'm browsing the Internet?

A. Yes. You can make calls while browsing the Internet. However, your web browsing may affect the quality of your Internet calls, depending on the amount of upstream data traffic passing through your Internet connection.

Q. What is the maximum number of IP addresses that the Broadband Phone Adapter will support?

A. The Broadband Phone Adapter will support up to 253 IP addresses.

Q. Where is the Broadband Phone Adapter installed on the network?

A. In a typical environment, the Broadband Phone Adapter is installed between the DSL or cable modem and the local area network (LAN). Plug the Broadband Phone Adapter into the broadband (DSL) or cable modem's Ethernet port.

Q. Does the Broadband Phone Adapter support IPX or AppleTalk?

A. No. TCP/IP is the only protocol standard for the Internet and has become the global standard for communications. IPX, a NetWare communications protocol used only to route messages from one node to another, and AppleTalk, a communications protocol used on Apple and Macintosh networks, can be used for LAN to LAN connections, but those protocols cannot connect from the Internet to the LAN.

Q. What is Network Address Translation and what is it used for?

A. Network Address Translation (NAT) translates multiple IP addresses on the private LAN to one public address that is sent out to the Internet. This adds a level of security since the address of a PC connected to the private LAN is never transmitted on the Internet. Furthermore, NAT allows the Broadband Phone Adapter to be used with Internet service, such as broadband (DSL) or cable modems, when only one TCP/IP address is provided by the ISP. The user may have many private addresses behind this single address provided by the ISP.

Q. Does the Broadband Phone Adapter support any operating system other than Windows 98, Millennium, 2000, or XP?

A. Yes; however Qwest does not, at this time, provide technical support for setup, configuration or troubleshooting of any non-Windows operating systems.

Q. Does the Broadband Phone Adapter support ICQ send file?

A. Yes, with the following fix: click **ICQ menu => preference => connections** tab=>, and check **I am behind a firewall or proxy**. Then set the firewall time-out to 80 seconds in the firewall setting. The Internet user can then send a file to a user behind the Broadband Phone Adapter.

Q. I set up an Unreal Tournament Server, but others on the LAN cannot join. What do I need to do?

A. If you have a dedicated Unreal Tournament server running, you need to create a static IP for each of the LAN computers and forward ports 7777, 7778, 7779, 7780, 7781, and 27900 to the IP address of the server. You can also use a port forwarding range of 7777 to 27900. If you want to use the UT Server Admin, forward another port (8080 usually works well but is used for remote admin. You may have to disable this.), and then in the [UWeb.WebServer] section of the server.ini file, set the ListenPort to 8080 (to match the mapped port above) and ServerName to the IP assigned to the Broadband Phone Adapter from your ISP.

Q. Can multiple gamers on the LAN get on one game server and play simultaneously with just one public IP address?

A. It depends on which network game or what kind of game server you are using. For example, Unreal Tournament supports multi-login with one public IP.

Q. How do I get Half-Life: Team Fortress to work with the Broadband Phone Adapter?

A. The default client port for Half-Life is 27005. The computers on your LAN need to have "+clientport 2700x" added to the HL shortcut command line; the x would be 6, 7, 8, and on up. This lets multiple computers connect to the same server. One problem: Version 1.0.1.6 won't let multiple computers with the same CD key connect at the same time, even if on the same LAN (not a problem with 1.0.1.3). As far as hosting games, the HL server does not need to be in the DMZ. Just forward port 27015 to the local IP address of the server computer.

Q. How can I block corrupted FTP downloads?

A. If you are experiencing corrupted files when you download a file with your FTP client, try using another FTP program.

Q. Will the Broadband Phone Adapter function in a Macintosh environment?

A. Yes, but the Broadband Phone Adapter's setup pages are accessible only through Internet Explorer 5.0 or Netscape Navigator 5.0 or higher for Macintosh.

Q. I am not able to get the web configuration screen for the Broadband Phone Adapter. What can I do?

A. You may have to remove the proxy settings on your Internet browser, e.g., Netscape Navigator or Internet Explorer. Or remove the dial-up settings on your browser. Check your browser documentation, and make sure that your browser is set to connect directly and that any dial-up is disabled. For Internet Explorer, click **Tools, Internet Options**, and then the **Connection** tab. Make sure that Internet Explorer is set to **Never dial a connection**. For Netscape Navigator, click **Edit, Preferences, Advanced**, and **Proxy**. Make sure that Netscape Navigator is set to **Direct connection to the Internet**.

Q. What is DMZ Hosting?

A. Demilitarized Zone (DMZ) allows one IP address (computer) to be exposed to the Internet. Some applications require multiple TCP/IP ports to be open. It is recommended that you set your computer with a static IP if you want to use DMZ Hosting. To get the LAN IP address, see “Appendix B: Finding the MAC Address and IP Address for Your Ethernet Adapter.”

Q. If DMZ Hosting is used, does the exposed user share the public IP with the Broadband Phone Adapter?

A. No.

Q. Does the Broadband Phone Adapter replace a modem? Is there a DSL or cable modem in the Broadband Phone Adapter?

A. No, this version of the Broadband Phone Adapter must work in conjunction with a broadband (DSL) or cable modem.

Q. Which modems are compatible with the Broadband Phone Adapter?

A. The Broadband Phone Adapter is compatible with virtually any broadband (DSL) or cable modem that supports Ethernet.

Q. How do I get mIRC to work with the Broadband Phone Adapter?

A. Use the *Router - Application* screen. Configure an entry and set the Starting and Ending Ports to **113** for the PC on which you are using mIRC.

Q. How do I reset the Broadband Phone Adapter?

A. Refer to “Chapter 5: Using the Interactive Voice Response Menu” for instructions.

Appendix B: Finding the MAC Address and IP Address for Your Ethernet Adapter

This section describes how to find the MAC address for your computer's Ethernet adapter so you can use the MAC address cloning feature of the Broadband Phone Adapter. You can also find the IP address of your computer's Ethernet adapter. This IP address is used for the Phone Adapter's forwarding and/or DMZ features. Follow the steps in this appendix to find the adapter's MAC or IP address in Windows 98, Me, 2000, or XP.

Windows 98 or Me Instructions

1. Click **Start** and **Run**. In the *Open* field, enter **winipcfg**. Then press the **Enter** key or the **OK** button.
2. When the *IP Configuration* screen appears, select the Ethernet adapter you have connected to the Broadband Phone Adapter via a CAT 5 Ethernet network cable.
3. Write down the Adapter Address as shown on your computer screen. This is the MAC address for your Ethernet adapter and is shown as a series of numbers and letters.
 - The MAC address/Adapter Address is what you will use for MAC address cloning.
 - The example shows the Ethernet adapter's IP address as 192.168.1.100. Your computer may show something different.

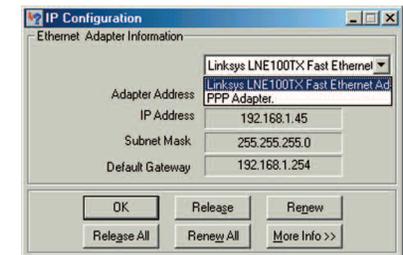


Figure B-1: IP Configuration Screen

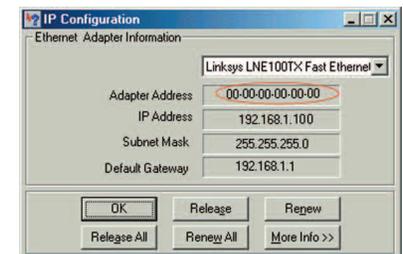


Figure B-2: MAC/Adapter Address

Windows 2000 or XP Instructions

1. Click **Start** and **Run**. In the *Open* field, enter **cmd**. Press the **Enter** key or click the **OK** button.
2. At the command prompt, enter **ipconfig/all**. Then press the **Enter** key.
3. Write down the Physical Address as shown on your computer screen; it is the MAC address for your Ethernet adapter. This appears as a series of numbers and letters.
 - The MAC address/Physical Address is what you will use for MAC address cloning.
 - The example shows the Ethernet adapter's IP address as 192.168.1.100. Your computer may show something different.

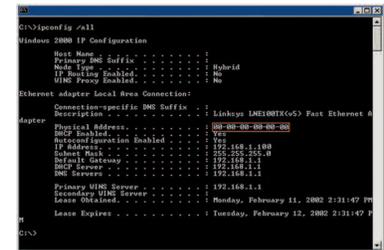


Figure B-3: MAC/Physical Address

For the Broadband Phone Adapter's Web-based Utility

For MAC address cloning, enter the 12-digit MAC address in the field provided.



Figure B-4: MAC Address Cloning

Appendix C: Windows Help

Windows is the most used operating system in the world and comes with many features that help make networking easier. These features can be accessed through Windows Help and are described in this appendix.

TCP/IP

Before a computer can communicate with a network router, TCP/IP must be enabled. TCP/IP is a set of instructions, or protocol, all PCs follow to communicate over a network. This is true for wireless networks as well. Your PCs will not be able to utilize wireless networking without having TCP/IP enabled. Windows Help provides complete instructions on enabling TCP/IP.

Shared Resources

If you wish to share printers, folder, or files over your network, Windows Help provides complete instructions on utilizing shared resources.

Network Neighborhood/My Network Places

Other PCs on your network will appear under Network Neighborhood or My Network Places (depending upon the version of Windows you're running). Windows Help provides complete instructions on adding PCs to your network.

Appendix D: Glossary

This glossary contains some basic networking terms you may come across when using this product. For more advanced terms, see the complete Linksys glossary at <http://www.linksys.com/glossary>.

Bandwidth – The transmission capacity of a given device or network.

Bit – A binary digit.

Boot – To start a device and cause it to start executing instructions.

Broadband – An always-on, fast Internet connection.

Browser – An application program that provides a way to look at and interact with all the information on the World Wide Web.

Byte – A unit of data that is usually eight bits long.

Cable Modem – A device that connects a computer to the cable television network, which in turn connects to the Internet.

Daisy Chain – A method used to connect devices in a series, one after the other.

DDNS (Dynamic Domain Name System) – Allows the hosting of a website, FTP server, or e-mail server with a fixed domain name (e.g., www.xyz.com) and a dynamic IP address.

Default Gateway – A device that forwards Internet traffic from your local area network.

DHCP (Dynamic Host Configuration Protocol) – A networking protocol that allows administrators to assign temporary IP addresses to network computers by “leasing” an IP address to a user for a limited amount of time, instead of assigning permanent IP addresses.

DMZ (Demilitarized Zone) – Removes the Router’s firewall protection from one PC, allowing it to be “seen” from the Internet.

DNS (Domain Name Server) – The IP address of your ISP’s server, which translates the names of websites into IP addresses.

Domain – A specific name for a network of computers.

Download – To receive a file transmitted over a network.

DSL (Digital Subscriber Line) – An always-on broadband connection over traditional phone lines.

Dynamic IP Address – A temporary IP address assigned by a DHCP server.

Encryption – Encoding data transmitted in a network.

Ethernet – IEEE standard network protocol that specifies how data is placed on and retrieved from a common transmission medium.

Firewall – A set of related programs located at a network gateway server that protects the resources of a network from users from other networks.

Firmware – The programming code that runs a networking device.

FTP (File Transfer Protocol) – A protocol used to transfer files over a TCP/IP network.

Full Duplex – The ability of a networking device to receive and transmit data simultaneously.

Gateway – A device that interconnects networks with different, incompatible communications protocols.

Half Duplex – Data transmission that can occur in two directions over a single line, but only one direction at a time.

HTTP (HyperText Transport Protocol) – The communications protocol used to connect to servers on the World Wide Web.

IP (Internet Protocol) – A protocol used to send data over a network.

IP Address – The address used to identify a computer or device on a network.

IPCONFIG – A Windows 2000 and XP utility that displays the IP address for a particular networking device.

ISP (Internet Service Provider) – A company that provides access to the Internet.

LAN – The computers and networking products that make up your local network.

MAC (Media Access Control) Address – The unique address that a manufacturer assigns to each networking device.

Mbps (MegaBits Per Second) – One million bits per second; a unit of measurement for data transmission.

NAT (Network Address Translation) – NAT technology translates IP addresses of a local area network to a different IP address for the Internet.

Network – A series of computers or devices connected for the purpose of data sharing, storage, and/or transmission between users.

Packet – A unit of data sent over a network.

Ping (Packet Internet Groper) – An Internet utility used to determine whether a particular IP address is online.

POP3 (Post Office Protocol 3) – A standard mail server commonly used on the Internet.

Port – The connection point on a computer or networking device used for plugging in cables or adapters.

PPPoE (Point to Point Protocol over Ethernet) – A type of broadband connection that provides authentication (username and password) in addition to data transport.

PPTP (Point-to-Point Tunneling Protocol) – A VPN protocol that allows the Point to Point Protocol (PPP) to be tunneled through an IP network. This protocol is also used as a type of broadband connection in Europe.

RJ-45 (Registered Jack-45) – An Ethernet connector that holds up to eight wires.

Router – A networking device that connects multiple networks together.

Server – Any computer whose function in a network is to provide user access to files, printing, communications, and other services.

SMTP (Simple Mail Transfer Protocol) – The standard e-mail protocol on the Internet.

SNMP (Simple Network Management Protocol) – A widely used network monitoring and control protocol.

Static IP Address – A fixed address assigned to a computer or device that is connected to a network.

Static Routing – Forwarding data in a network via a fixed path.

Subnet Mask – An address code that determines the size of the network.

Switch – 1. A data switch that connects computing devices to host computers, allowing a large number of devices to share a limited number of ports. 2. A device for making, breaking, or changing the connections in an electrical circuit.

TCP (Transmission Control Protocol) – A network protocol for transmitting data that requires acknowledgement from the recipient of data sent.

TCP/IP (Transmission Control Protocol/Internet Protocol) – A set of instructions PCs use to communicate over a network.

Telnet – A user command and TCP/IP protocol used for accessing remote PCs.

Throughput – The amount of data moved successfully from one node to another in a given time period.

TX Rate – Transmission Rate.

Upgrade – To replace existing software or firmware with a newer version.

Upload – To transmit a file over a network.

URL (Uniform Resource Locator) – The address of a file located on the Internet.

WAN (Wide Area Network) – The Internet.

Appendix E: Specifications

Model	SPA2102
Data Networking	MAC Address (IEEE 802.3) IPv4 - Internet Protocol v4 (RFC 791) ARP - Address Resolution Protocol DNS - A Record (RFC 1706), SRV Record (RFC 2782) DHCP Client - Dynamic Host Configuration Protocol (RFC 2131) DHCP Server - Dynamic Host Configuration Protocol (RFC 2131) PPPoE Client - Point to Point Protocol over Ethernet (RFC 2516) ICMP - Internet Control Message Protocol (RFC792) TCP - Transmission Control Protocol (RFC793) UDP - User Datagram Protocol (RFC768) RTP - Real Time Protocol (RFC 1889) (RFC 1890) RTCP - Real Time Control Protocol (RFC 1889) DiffServ (RFC 2475), Type of Service - TOS (RFC 791/1349) VLAN Tagging - 802.1p SNTP - Simple Network Time Protocol (RFC 2030) Upload Data Rate Limiting - Static and Automatic QoS - Voice Packet Prioritization over Other Packet Types Router or Bridge Mode of Operation MAC Address Cloning Port Forwarding

Voice Gateway

SIPv2: Session Initiation Protocol v2 (RFC 3261, 3262, 3263, 3264)
SIP Proxy Redundancy - Dynamic via DNS SRV, A Records
Re-registration with Primary SIP Proxy Server
SIP Support in Network Address Translation Networks - NAT (incl. STUN)
Secure (Encrypted) Calling via Pre-Standard Implementation of Secure RTP
Codec Name Assignment

Voice Algorithms

G.711 (A-law and μ -law)
G.729 A
Dynamic Payload
Adjustable Audio Frames per Packet

Physical Interfaces

2 100baseT RJ-45 Ethernet Port (IEEE 802.3) -- 1 WAN, 1 LAN
2 RJ-11 FXS Phone Ports - For Analog Circuit Telephone Device (Tip/Ring)

**Subscriber Line Interface
Circuit (SLIC)**

Ring Voltage: 40-55 VRMS Configurable
Ring Frequency: 10 Hz - 40 Hz
Ring Waveform: Trapezoidal and Sinusoidal
Maximum Ringer Load: 3 REN
On-hook/off-hook Characteristics:
On-hook voltage (tip/ring): -50 V NOMINAL
Off-hook current: 25 mA min
Terminating Impedance: 8 Configurable Settings including
North America 600 ohms, European CTR21

Regulatory Compliance	FCC (Part 15 Class B), CE, ICES-003, A-Tick Certification, RoHS
Power Supply	Switching Type (100-240V) Automatic DC Input Voltage: +5 VDC at 2.0 A Max. Power Consumption: 5 Watts Power Adapter: 100-240V - 50-60Hz (26-34VA) AC Input, 1.8 m cord
Indicator Lights/LEDs	Power, Ethernet (WAN), Phone 1, Phone 2
Documentation	Quick Installation and User Guides are downloadable from www.qwest.com/mybroadbandphone
Dimensions (W x H x D)	3.98" x 3.98" x 1.10" (101 x 101 x 28 mm)
Unit Weight	5.29 oz. (0.15 kg)
Operating Temp.	32 to 113° F (0 to 45° C)
Storage Temp.	-13 to 185° F (-25 to 85° C)
Operating Humidity	10 to 90% Non-condensing, operating and non-operating

Appendix F: Warranty Information

Please refer to the Broadband Phone Service Terms & Conditions for warranty information located at www.qwest.com/legal.

Appendix G: Regulatory Information

FCC Statement

This product has been tested and complies with the specifications for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used according to 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 is found 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 or devices
- Connect the equipment to an outlet other than the receiver's
- Consult a dealer or an experienced radio/TV technician for assistance

Safety Notices

- Caution: To reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cord.
- Do not use this product near water, for example, in a wet basement or near a swimming pool.
- Avoid using this product during an electrical storm. There may be a remote risk of electric shock from lightning.

Industry Canada (Canada)

- This device complies with Industry Canada ICES-003 rule.
- Cet appareil est conforme à la norme NMB003 d'Industrie Canada.

EC Declaration of Conformity (Europe)

- In compliance with the EMC Directive 89/336/EEC, Low Voltage Directive 73/23/EEC, and Amendment Directive 93/68/EEC, this product meets the requirements of the following standards:

EN55022 Emission

EN55024 Immunity

EN60950 Safety

User Information for Consumer Products Covered by EU Directive 2002/96/EC on Waste Electric and Electronic Equipment (WEEE)

This document contains important information for users with regards to the proper disposal and recycling of Linksys products. Consumers are required to comply with this notice for all electronic products bearing the following symbol:

Ceština/Czech**Informace o ochraně životního prostředí pro zákazníky v zemích Evropské unie**

Evropská směrnice 2002/96/ES zakazuje, aby zařízení označené tímto symbolem na produktu anebo na obalu bylo likvidováno s netříděným komunálním odpadem. Tento symbol udává, že daný produkt musí být likvidován odděleně od běžného komunálního odpadu. Odpovídáte za likvidaci tohoto produktu a dalších elektrických a elektronických zařízení prostřednictvím určených sběrných míst stanovených vládou nebo místními úřady. Správná likvidace a recyklace pomáhá předcházet potenciálním negativním dopadům na životní prostředí a lidské zdraví. Podrobnější informace o likvidaci starého vybavení si laskavě vyžádejte od místních úřadů, podniků zabývajících se likvidací komunálních odpadů nebo obchodu, kde jste produkt zakoupili.

Dansk/Danish**Miljøinformation for kunder i EU**

EU-direktiv 2002/96/EF kræver, at udstyr der bærer dette symbol på produktet og/eller emballagen ikke må bortskaffes som usorteret kommunalt affald. Symbolet betyder, at dette produkt skal bortskaffes adskilt fra det almindelige husholdningsaffald. Det er dit ansvar at bortskaffe dette og andet elektrisk og elektronisk udstyr via bestemte indsamlingssteder udpeget af staten eller de lokale myndigheder. Korrekt bortskaffelse og genvinding vil hjælpe med til at undgå mulige skader for miljøet og menneskers sundhed. Kontakt venligst de lokale myndigheder, renovationstjenesten eller den butik, hvor du har købt produktet, angående mere detaljeret information om bortskaffelse af dit gamle udstyr.

Nederlands/Dutch**Milieu-informatie voor klanten in de Europese Unie**

De Europese Richtlijn 2002/96/EC schrijft voor dat apparatuur die is voorzien van dit symbool op het product of de verpakking, niet mag worden ingezameld met niet-gescheiden huishoudelijk afval. Dit symbool geeft aan dat het product apart moet worden ingezameld. U bent zelf verantwoordelijk voor de vernietiging van deze en andere elektrische en elektronische apparatuur via de daarvoor door de landelijke of plaatselijke overheid aangewezen inzamelingskanalen. De juiste vernietiging en recycling van deze apparatuur voorkomt mogelijke negatieve gevolgen voor het milieu en de gezondheid. Voor meer informatie over het vernietigen van uw oude apparatuur neemt u contact op met de plaatselijke autoriteiten of afvalverwerkingsdienst, of met de winkel waar u het product hebt aangeschaft.

English**Environmental Information for Customers in the European Union**

European Directive 2002/96/EC requires that the equipment bearing this symbol on the product and/or its packaging must not be disposed of with unsorted municipal waste. The symbol indicates that this product should be disposed of separately from regular household waste streams. It is your responsibility to dispose of this and other electric and electronic equipment via designated collection facilities appointed by the government or local authorities. Correct disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about the disposal of your old equipment, please contact your local authorities, waste disposal service, or the shop where you purchased the product.

Eesti/Estonian**Keskkonnaalane informatsioon Euroopa Liidus asuvatele klientidele**

Euroopa Liidu direktiivi 2002/96/EÜ nõuete kohaselt on seadmeid, millel on tootel või pakendil käesolev sümbol, keelatud kõrvaldada koos sorteerimata olmejäätmetega. See sümbol näitab, et toode tuleks kõrvaldada eraldi tavalistest olmejäätmevoogudest. Olete kohustatud kõrvaldama käesoleva ja ka muud elektri- ja elektroonikaseadmed riigi või kohalike ametiasutuste poolt ette nähtud kogumispunktide kaudu. Seadmete korrektne kõrvaldamine ja ringlussevõtt aitab vältida võimalikke negatiivseid tagajärgi keskkonnale ning inimeste tervisele. Vanade seadmete kõrvaldamise kohta täpsema informatsiooni saamiseks võtke palun ühendust kohalike ametiasutustega, jäätmekäitlusfirmaga või kauplusega, kust te toote ostsite.

Suomi/Finnish**Ympäristöä koskevia tietoja EU-alueen asiakkaille**

EU-direktiivi 2002/96/EY edellyttää, että jos laitteistossa on tämä symboli itse tuotteessa ja/tai sen pakkauksessa, laitteistoa ei saa hävittää lajittelemattoman yhdyskuntajätteen mukana. Symboli merkitsee sitä, että tämä tuote on hävitettävä erillään tavallisesta kotitalousjätteestä. Sinun vastuullasi on hävittää tämä elektroniikkatuote ja muut vastaavat elektroniikkatuotteet viemällä tuote tai tuotteet viranomaisen määräämään keräyspisteeseen. Laitteiston oikea hävittäminen estää mahdolliset kielteiset vaikutukset ympäristöön ja ihmisten terveyteen. Lisätietoja vanhan laitteiston oikeasta hävitystavasta saa paikallisilta viranomaisilta, jätteenhävityspalvelusta tai siitä myymälästä, josta ostit tuotteen.

Français/French

Informations environnementales pour les clients de l'Union européenne

La directive européenne 2002/96/CE exige que l'équipement sur lequel est apposé ce symbole sur le produit et/ou son emballage ne soit pas jeté avec les autres ordures ménagères. Ce symbole indique que le produit doit être éliminé dans un circuit distinct de celui pour les déchets des ménages. Il est de votre responsabilité de jeter ce matériel ainsi que tout autre matériel électrique ou électronique par les moyens de collecte indiqués par le gouvernement et les pouvoirs publics des collectivités territoriales. L'élimination et le recyclage en bonne et due forme ont pour but de lutter contre l'impact néfaste potentiel de ce type de produits sur l'environnement et la santé publique. Pour plus d'informations sur le mode d'élimination de votre ancien équipement, veuillez prendre contact avec les pouvoirs publics locaux, le service de traitement des déchets, ou l'endroit où vous avez acheté le produit.

Deutsch/German

Umweltinformation für Kunden innerhalb der Europäischen Union

Die Europäische Richtlinie 2002/96/EC verlangt, dass technische Ausrüstung, die direkt am Gerät und/oder an der Verpackung mit diesem Symbol versehen ist nicht zusammen mit unsortiertem Gemeindeabfall entsorgt werden darf. Das Symbol weist darauf hin, dass das Produkt von regulärem Haushaltsmüll getrennt entsorgt werden sollte. Es liegt in Ihrer Verantwortung, dieses Gerät und andere elektrische und elektronische Geräte über die dafür zuständigen und von der Regierung oder örtlichen Behörden dazu bestimmten Sammelstellen zu entsorgen. Ordnungsgemäßes Entsorgen und Recyceln trägt dazu bei, potentielle negative Folgen für Umwelt und die menschliche Gesundheit zu vermeiden. Wenn Sie weitere Informationen zur Entsorgung Ihrer Altgeräte benötigen, wenden Sie sich bitte an die örtlichen Behörden oder städtischen Entsorgungsdienste oder an den Händler, bei dem Sie das Produkt erworben haben.

Ελληνικά/Greek

Στοιχεία περιβαλλοντικής προστασίας για πελάτες εντός της Ευρωπαϊκής Ένωσης

Η Κοινοτική Οδηγία 2002/96/ΕΚ απαιτεί ότι ο εξοπλισμός ο οποίος φέρει αυτό το σύμβολο στο προϊόν και/ή στη συσκευασία του δεν πρέπει να απορριπτείται μαζί με τα μικτά κοινотικά απορρίμματα. Το σύμβολο υποδεικνύει ότι αυτό το προϊόν θα πρέπει να απορριπτείται ξεχωριστά από τα συνήθη οικιακά απορρίμματα. Είστε υπεύθυνος για την απόρριψη του παρόντος και άλλου ηλεκτρικού και ηλεκτρονικού εξοπλισμού μέσω των καθορισμένων εγκαταστάσεων συγκέντρωσης απορριμμάτων οι οποίες παρέχονται από το κράτος ή τις αρμόδιες τοπικές αρχές. Η σωστή απόρριψη και ανακύκλωση συμβάλλει στην πρόληψη πιθανών αρνητικών συνεπειών για το περιβάλλον και την υγεία. Για περισσότερες πληροφορίες σχετικά με την απόρριψη του παλαιού σας εξοπλισμού, παρακαλώ επικοινωνήστε με τις τοπικές αρχές, τις υπηρεσίες απόρριψης ή το κατάστημα από το οποίο αγοράσατε το προϊόν.

Magyar/Hungarian

Környezetvédelmi információ az európai uniós vásárlók számára

A 2002/96/EC számú európai uniós irányelv megkívánja, hogy azokat a termékeket, amelyeken, és/vagy amelyek csomagolásán az alábbi címke megjelenik, tilos a többi szelektálatlan lakossági hulladékkal együtt kidobni. A címke azt jelöli, hogy az adott termék kidobásakor a szokványos háztartási hulladékszállítási rendszerektől elkülönített eljárást kell alkalmazni. Az Ön felelőssége, hogy ezt, és más elektromos és elektronikus berendezéseit a kormányzati vagy a helyi hatóságok által kijelölt gyűjtőrendszereken keresztül számolja fel. A megfelelő hulladékfeldolgozás segít a környezetre és az emberi egészségre potenciálisan ártalmas negatív hatások megelőzésében. Ha elavult berendezéseinek felszámolásához további részletes információra van szüksége, kérjük, lépjen kapcsolatba a helyi hatóságokkal, a hulladékfeldolgozási szolgálattal, vagy azzal üzlettel, ahol a terméket vásárolta.

Italiano/Italian

Informazioni relative all'ambiente per i clienti residenti nell'Unione Europea

La direttiva europea 2002/96/EC richiede che le apparecchiature contrassegnate con questo simbolo sul prodotto e/o sull'imballaggio non siano smaltite insieme ai rifiuti urbani non differenziati. Il simbolo indica che questo prodotto non deve essere smaltito insieme ai normali rifiuti domestici. È responsabilità del proprietario smaltire sia questi prodotti sia le altre apparecchiature elettriche ed elettroniche mediante le specifiche strutture di raccolta indicate dal governo o dagli enti pubblici locali. Il corretto smaltimento ed il riciclaggio aiuteranno a prevenire conseguenze potenzialmente negative per l'ambiente e per la salute dell'essere umano. Per ricevere informazioni più dettagliate circa lo smaltimento delle vecchie apparecchiature in Vostro possesso, Vi invitiamo a contattare gli enti pubblici di competenza, il servizio di smaltimento rifiuti o il negozio nel quale avete acquistato il prodotto.

Latviešu valoda/Latvian

Ekoloģiska informācija klientiem Eiropas Savienības jurisdikcijā

Direktīvā 2002/96/EK ir prasība, ka aprīkojumu, kam pievienota zīme uz paša izstrādājuma vai uz tā iesaiņojuma, nedrīkst izmest nešķīrotā veidā kopā ar komunālajiem atkritumiem (tiem, ko rada vietēji iedzīvotāji un uzņēmumi). Šī zīme nozīmē to, ka šī ierīce ir jāizmet atkritumos tā, lai tā nenonāktu kopā ar parastiem mājsaimniecības atkritumiem. Jūsu pienākums ir šo un citas elektriskas un elektroniskas ierīces izmest atkritumos, izmantojot īpašus atkritumu savākšanas veidus un līdzekļus, ko nodrošina valsts un pašvaldību iestādes. Ja izmēšana atkritumos un pārstrāde tiek veikta pareizi, tad mazinās iespējamais kaitējums dabai un cilvēku veselībai. Stikākas ziņas par novecojušu aprīkojuma izmēšanu atkritumos jūs varat saņemt vietējā pašvaldībā, atkritumu savākšanas dienestā, kā arī veikalā, kur iegādājāties šo izstrādājumu.

Lietuviškai/Lithuanian

Aplinkosaugos informacija, skirta Europos Sąjungos vartotojams

Europos direktyva 2002/96/EC numato, kad įrangos, kuri ir (arba) kurios pakuotė yra pažymėta šiuo simboliu, negalima šalinti kartu su nerūšiuotomis komunalinėmis atliekomis. Šis simbolis rodo, kad gaminiį reikia šalinti atskirai nuo bendro buitinių atliekų srauto. Jūs privalote užtikrinti, kad ši ir kita elektros ar elektroninė įranga būtų šalinama per tam tikras nacionalinės ar vietinės valdžios nustatytas atliekų rinkimo sistemas. Tinkamai šalinant ir perdurbant atliekas, bus išvengta galimos žalos aplinkai ir žmonių sveikatai. Daugiau informacijos apie jūsų senos įrangos šalinimą gali pateikti vietinės valdžios institucijos, atliekų šalinimo tarnybos arba parduotuvės, kuriose įsigijote tą gaminiį.

Malti/Maltese

Informazzjoni Ambjentali għal Kliġenti fl-Unjoni Ewropea

Id-Direttiva Ewropea 2002/96/KE titlob li t-tagħmir li jkun fi h is-simbolu fuq il-prodott u/jew fuq l-ippakkjar ma jstax jintrema ma' skart municipali li ma għix isseparat. Is-simbolu jindika li dan il-prodott għandu jintrema separatament minn ma' l-iskart domestiku regolari. Hija responsabbiltà tiegħek li tarmi dan it-tagħmir u kull tagħmir iehor ta' l-eletriku u elettroniku permezz ta' facilitajiet ta' għir appuntati apposta mill-gvern jew mill-awtoritajiet lokali. Ir-rimi b' mod korrett u r-riċiklagg jgħin jipprevjeni konsegwenzi negattivi potenzjali għall-ambjent u għas-saħħa tal-bniedem. Għal aktar informazzjoni dettaljata dwar ir-rimi tat-tagħmir antik tiegħek, jekk joghgbok ikkuntattja lil-awtoritajiet lokali tiegħek, is-servizzi għar-rimi ta' l-iskart, jew il-hanut minn fejn xtrajt il-prodott.

Norsk/Norwegian

Miljøinformasjon for kunder i EU

EU-direktiv 2002/96/EF krever at utstyr med følgende symbol avbildet på produktet og/eller pakningen, ikke må kastes sammen med usortert avfall. Symbolet indikerer at dette produktet skal håndteres atskilt fra ordinær avfallsinnsamling for husholdningsavfall. Det er ditt ansvar å kvitte deg med dette produktet og annet elektrisk og elektronisk avfall via egne innsamlingsordninger slik myndighetene eller kommunene bestemmer. Korrekt avfallshåndtering og gjenvinning vil være med på å forhindre mulige negative konsekvenser for miljø og helse. For nærmere informasjon om håndtering av det kasserte utstyret ditt, kan du ta kontakt med kommunen, en innsamlingsstasjon for avfall eller butikken der du kjøpte produktet.

Polski/Polish

Informacja dla klientów w Unii Europejskiej o przepisach dotyczących ochrony środowiska

Dyrektywa Europejska 2002/96/EC wymaga, aby sprzęt oznaczony symbolem znajdującym się na produkcie i/lub jego opakowaniu nie był wyrzucany razem z innymi niesortowanymi odpadami komunalnymi. Symbol ten wskazuje, że produkt nie powinien być usuwany razem ze zwykłymi odpadami z gospodarstw domowych. Na Państwu spoczywa obowiązek wyrzucania tego i innych urządzeń elektrycznych oraz elektronicznych w punktach odbioru wyznaczonych przez władze krajowe lub lokalne. Pozbywanie się sprzętu we właściwy sposób i jego recykling pomogą zapobiec potencjalnie negatywnym konsekwencjom dla środowiska i zdrowia ludzkiego. W celu uzyskania szczegółowych informacji o usuwaniu starego sprzętu, prosimy zwrócić się do lokalnych władz, służb oczyszczania miasta lub sklepu, w którym produkt został nabyty.

Português/Portuguese

Informação ambiental para clientes da União Europeia

A Directiva Europeia 2002/96/CE exige que o equipamento que exibe este símbolo no produto e/ou na sua embalagem não seja eliminado junto com os resíduos municipais não separados. O símbolo indica que este produto deve ser eliminado separadamente dos resíduos domésticos regulares. É da sua responsabilidade eliminar este e qualquer outro equipamento eléctrico e electrónico através dos instalações de recolha designadas pelas autoridades governamentais ou locais. A eliminação e reciclagem correctas ajudarão a prevenir as consequências negativas para o ambiente e para a saúde humana. Para obter informações mais detalhadas sobre a forma de eliminar o seu equipamento antigo, contacte as autoridades locais, os serviços de eliminação de resíduos ou o estabelecimento comercial onde adquiriu o produto.

Slovenčina/Slovak

Informácie o ochrane životného prostredia pre zákazníkov v Európskej únii

Podľa európskej smernice 2002/96/ES zariadenie s týmto symbolom na produkte a/alebo jeho balení nesmie byť likvidované spolu s netriedeným komunálnym odpadom. Symbol znamená, že produkt by sa mal likvidovať oddelene od bežného odpadu z domácnosti. Je vašou povinnosťou likvidovať toto i ostatné elektrické a elektronické zariadenia prostredníctvom špecializovaných zberných zariadení určených vládou alebo miestnymi orgánmi. Správna likvidácia a recyklácia pomôže zabrániť prípadným negatívnym dopadom na životné prostredie a zdravie ľudí. Ak máte záujem o podrobnejšie informácie o likvidácii starého zariadenia, obráťte sa, prosím, na miestne orgány, organizácie zaoberajúce sa likvidáciou odpadov alebo obchod, v ktorom ste si produkt zakúpili.

Slovenčina/Slovene

Okoljske informacije za stranke v Evropski uniji

Evropska direktiva 2002/96/EC prepoveduje odlaganje opreme, označene s tem simbolom – na izdelku in/ali na embalaži – med običajne, nerazvrščene odpadke. Ta simbol opozarja, da je treba izdelek odvreči ločeno od preostalih gospodinjstvih odpadkov. Vaša odgovornost je, da to in preostalo električno in elektronsko opremo odnesete na posebna zbirališča, ki jih določijo državne ustanove ali lokalna uprava. S pravilnim odlaganjem in recikliranjem boste preprečili morebitne škodljive vplive na okolje in zdravje ljudi. Če želite izvedeti več o odlaganju stare opreme, se obrnite na lokalno upravo, odpad ali trgovino, kjer ste izdelek kupili.

Svenska/Swedish

Miljöinformation för kunder i Europeiska unionen

Det europeiska direktivet 2002/96/EC kräver att utrustning med denna symbol på produkten och/eller förpackningen inte får kastas med osorterat kommunalt avfall. Symbolen visar att denna produkt bör kastas efter att den avskiljts från vanligt hushållsavfall. Det faller på ditt ansvar att kasta denna och annan elektrisk och elektronisk utrustning på fastställda samlingsplatser utsedda av regeringen eller lokala myndigheter. Korrekt kassering och återvinning skyddar mot eventuella negativa konsekvenser för miljön och personhälsa. För mer detaljerad information om kassering av din gamla utrustning kontaktar du dina lokala myndigheter, avfallshanteringen eller butiken där du köpte produkten.

Appendix H: Contact Information

Broadband Phone Service

For support, www.qwest.com/residential/customerService/contactus/voip.html.

Linksys

Visit Linksys online for information on the latest products and updates to your existing products at:

<http://www.linksys.com>

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WARNING: This product contains chemicals, including lead, known to the State of California to cause cancer, and birth defects or other reproductive harm. ***Wash hands after handling.***

How to Use this Guide

Your guide to the Broadband Phone Adapter has been designed to make understanding networking with the Broadband Phone Adapter easier than ever. Look for the following items when reading this guide



This exclamation point means there is a caution or warning and is something that could damage your property or the Broadband Phone Adapter.



This question mark provides you with a reminder about something you might need to do while using the Broadband Phone Adapter.



This checkmark means there is a note of interest and is something you should pay special attention to while using the Broadband Phone Adapter.

In addition to these symbols, there are definitions for technical terms that are presented like this:

word: **definition.**

Also, each figure (diagram, screenshot, or other image) is provided with a figure number and description, like this:

Figure 0-1: Sample Figure Description

Figure numbers and descriptions can also be found in the “List of Figures” section.

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www.qwest.com