WESTELL

VERSALINK™ GATEWAY (MODEL 327W)

USER GUIDE

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1. PRODUCT DESCRIPTION

Westell's VersaLink™ Gateway adds reliable, high-speed, Internet access to your existing home or office phone line. Your DSL connection ends the hassles of dial-up modems and busy signals. Installation is easy ... no tools ... no headaches. Simply plug the VersaLink™ Gateway into the 10/100 Base-T port of your PC, apply power, perform the simple software configuration, and connect your DSL phone line to the VersaLink™ Gateway.

This modem is capable of data rates hundreds of times faster than a traditional analog modem. But unlike analog modems, Westell's VersaLink™ Gateway allows you to use the same phone line for simultaneous voice/fax communications and high-speed Internet access, eliminating the need for dedicated phone lines for voice and data needs. The Plug and Play feature means that no user configuration is required.

NOTE: Hereafter, the Westell VersaLink™ Gateway will be referred to as the "VersaLink" or the "Modem."

2. SAFETY INSTRUCTIONS

- Never install any telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch non-insulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.

WARNING

Risk of electric shock. Voltages up to 140 Vdc (with reference to ground) may be present on telecommunications circuits.

3. REGULATORY INFORMATION

This section details the FCC, compliance registration, and Canada certification notice for the VersaLink™ Gateway.

3.1 FCC Compliance Note

(FCC ID: CH8-C90327WXX-06)

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

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

PART 68 - COMPLIANCE REGISTRATION

This equipment (Model 327W) complies with Part 68 of the ACTA rules and the requirements adopted by the ACTA. A label on the bottom of this equipment contains, among other information, the Ringer Equivalence Number (REN) and the product identifier. For products approved after July 23, 2001 the product identifier is in the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (e.g., 03 is a REN of 0.3). The REN is used to determine the number of devices that may be connected to a telephone line. For earlier products, the REN is separately shown on the label. If requested, this number must be provided to the telephone company.

Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.

This equipment is designated to connect to the telephone network or premises wiring using a compatible modular jack that is Part 68 compliant. An ACTA compliant telephone cord and modular plug is provided with the equipment. See the Installation Information section of this User Guide for details.

A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable ACTA 968-A rules and requirements adopted by the ACTA. A compliant telephone cord and modular plug is provided with this product. It is designed to be connected to a compatible modular jack that is also compliant. See installation instruction for details.

If this terminal equipment (Model 327W) causes harm to the telephone network, the telephone company may request you to disconnect the equipment until the problem is resolved. The telephone company will notify you in advance if temporary discontinuance of service is required. If advance notification is not practical, the telephone company will notify you as soon as possible. You will be advised of your right to file a complaint with the ACTA if you believe such action is necessary. If you experience trouble with this equipment (Model 327W), do not try to

repair the equipment yourself. The equipment cannot be repaired in the field. Contact the BellSouth help desk at 1-888-321-2DSL (2375) for instructions on product return.

The telephone company may make changes to their facilities, equipment, operations, or procedures that could affect the operation of this equipment. If this happens, the telephone company will provide advance notice in order for you to make the modifications necessary to maintain uninterrupted service.

If your home has specially wired alarm equipment connected to the telephone line, ensure that the installation of this equipment (Model 327W) does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

This equipment cannot be used on public coin phone service provided by the telephone company. Connection of this equipment to party line service is subject to state tariffs.

3.2 Canada Certification Notice

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

This equipment meets the applicable Industry Canada Terminal Equipment Technical Specification. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specification were met. It does not imply that Industry Canada approved the equipment. The Ringer Equivalence Number (REN) is 0.0. The Ringer Equivalence Number that is assigned to each piece of terminal equipment provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed five.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local Telecommunication Company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations. Connection to a party line service is subject to state tariffs. Contact the state public utility commission, public service commission, or corporation commission for information.

If your home has specially wired alarm equipment connected to the telephone line, ensure that the installation of this equipment (Model 327W) does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

If you experience trouble with this equipment (Model 327W), do not try to repair the equipment yourself. The equipment cannot be repaired in the field and must be returned to the manufacturer. Repairs to certified equipment should be coordinated by a representative, and designated by the supplier. Contact Westell Technical Support at telephone no. (630) 375-4500 for instructions on product return.

The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed five.

Users should ensure, for their own protection, that the electrical ground connections of the power utility, telephone lines, and internal, metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

⚠ **CAUTION** ⚠

Users should not attempt to make such connections themselves, but should contact the appropriate electrical inspection authority, or electrician, as appropriate.

4. SYSTEM REQUIREMENTS

The following system specifications are required for optimum performance of the VersaLink™ Gateway via 10/100 Base-T and Wireless installation.

CONNECTION TYPE	MINIMUM SYSTEM REQUIREMENTS
ETHERNET 1 (E1)	• Pentium® or equivalent class machines • Microsoft® Windows® (98 SE, ME, 2000, NT 4.0, or XP) Macintosh® OS X, or Linux installed • 64 MB RAM (128 MB recommended) • 10 MB of free hard drive space • TCP/IP Protocol stack installed • 10/100 Base-T Network Interface Card (NIC) • Computer Operating System CD-ROM on hand
ETHERNET (E2, E3, E4)	• Pentium® or equivalent class machines • Microsoft® Windows® (98 SE, ME, 2000, NT 4.0, or XP) Macintosh® OS X, or Linux installed • 64 MB RAM (128 MB recommended) • 10 MB of free hard drive space • TCP/IP Protocol stack installed • 10/100 Base-T Network Interface Card (NIC) • Computer Operating System CD-ROM on hand
WIRELESS IEEE 802.11g	• Pentium® or equivalent class machines • Microsoft® Windows® (98 SE, ME, 2000, or XP) or Macintosh® OS X installed • Computer Operating System CD-ROM on hand • Internet Explorer 4.x or Netscape Navigator 4.x or higher • 64 MB RAM (128 MB recommended) • 10 MB of free hard drive space • An available IEEE 802.11b/g/g+ PC adapter

5. HARDWARE FEATURES

This section explains LED states and descriptions, rear panel features, and pinout descriptions of your modem

5.1 LED Indicators

The LED indicators are used to verify the unit's operation and status. LED states are described in Table 1.

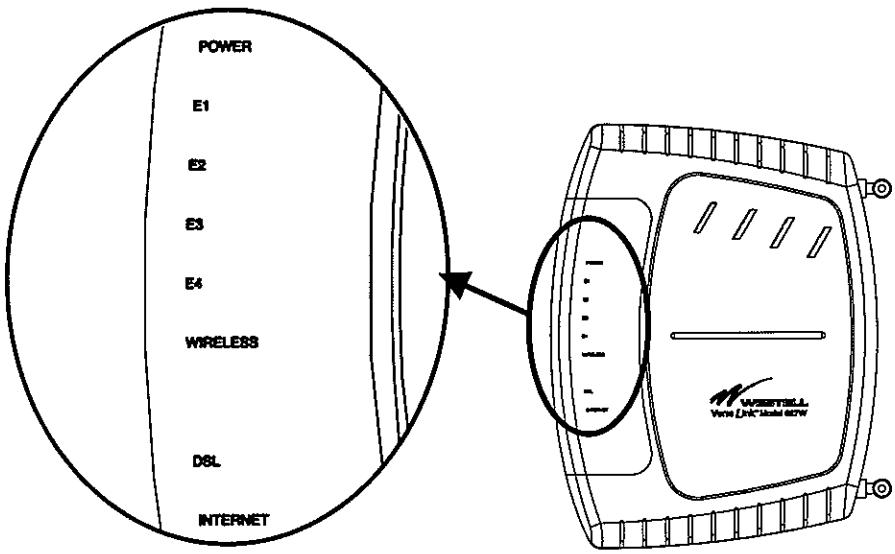


Table 1. LED States and Descriptions

LED	State	Description
POWER	Solid Green	Power ON
	No Light	Power OFF
	Flashing Red	POST (power on self test) failure (not bootable), device malfunction, or the modem is in safe boot mode. Note: All other LEDs shall flash Green when the Power LED flashes Red
ETHERNET (E1, E2, E3, E4)	Solid Green	Powered device connected to the associated port (includes devices with wake-on-lan capability where a slight voltage is supplied to an Ethernet connection)
	Flashing Green	LAN activity present (traffic in either direction) or when modem is in safe boot mode
	No Light	Modem power OFF, no cable or no powered device is connected to the associated port
WIRELESS	Solid Green	Link established.
	Flashing Green	Wireless LAN activity is present (traffic in either direction)
	No Light	Modem power is OFF or No Link established.
DSL	Solid Green	DSL good sync or when modem is in safe boot mode
	Flashing Green	DSL attempting sync
	No Light	Modem power Off or No Link

INTERNET	Solid Green	IP is connected (the device has a WAN IP address from IPCP or DHCP and DSL is up, or a static IP address is configured, PPP negotiation has successfully completed [if used] and DSL is up and no traffic is detected).
	Flashing Green	IP connected and IP Traffic is passing through the device (in either direction)
	Red	If the IP or PPPoE session is dropped due to an idle timeout, the light will remain green if an ADSL connection is still present. If the session is dropped for any other reason, the light is turned off. The light will turn red when it attempts to reconnect and DHCP or PPPoE and fails.
		Modem attempted to become IP connected and failed (no DHCP response, no PPPoE response, PPPoE authentication failed, no IP address from IPCP, etc.)
	No Light	Modem power off, modem in bridge mode or ADSL connection not present.

Note: Safe Boot is reflected when the POWER and INTERNET LED's are both red and all other LEDs are off.

5.2 Rear Panel Features

The following items are located on the rear panel of the modem. See Figure 1. Tables 2 through 5 list the connector types and pinout designations.

- 2 Wireless IEEE 802.11b/g SMA connector and antenna
- DSL Connector (RJ-11)
- Reset Button
- 4 Ethernet Connectors (RJ-45)
- Power Connector (barrel)
- On/Off Switch

Figure 1. VersaLink Gateway Rear Panel

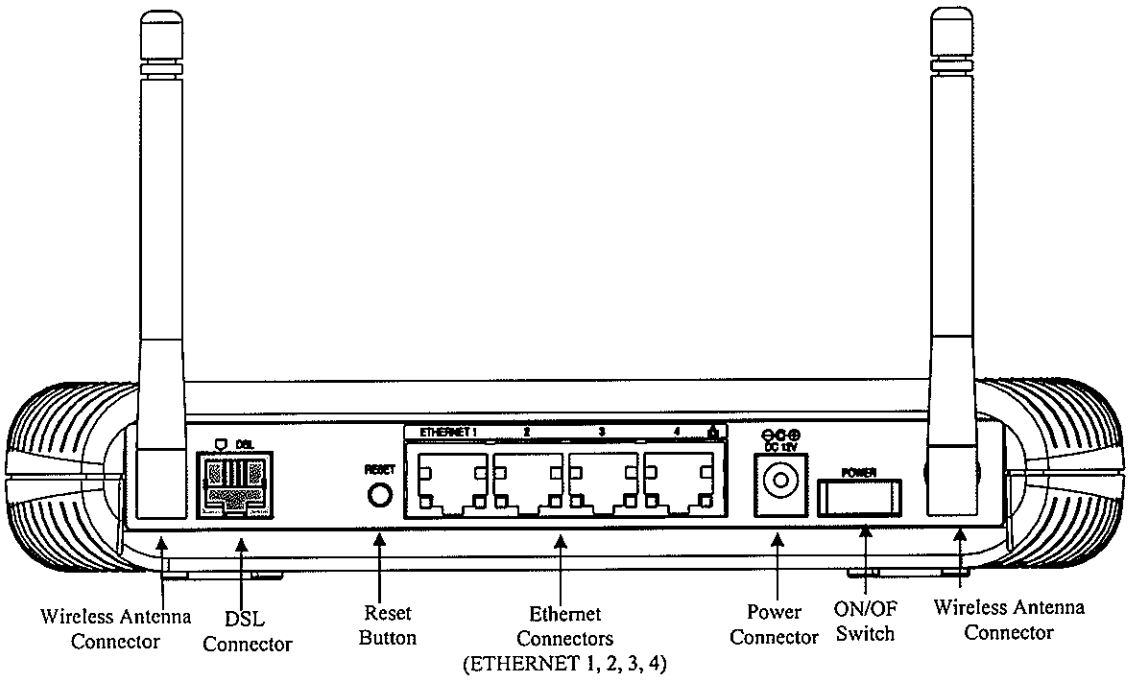


Table 2. Connector Descriptions

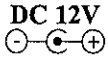
SYMBOL	NAME	TYPE	FUNCTION
	DSL LINE	RJ-11	Connects to an ADSL-equipped telephone jack or DSL connection of a POTS splitter.
	ETHERNET	RJ-45	10/100 Base-T Ethernet Connection to PC or Hub.
DC 12V 	POWER	Barrel connector	Connection to DC (12V) Power Connector .
Wireless	ANTENNA	SMA connector and antenna	Connects to wireless IEEE 802.11b/g/g+ device.

Table 3. DSL Pinouts

Pinout	Description
1, 2, 5, 6	Not Used
3	DSL Tip
4	DSL Ring

Table 4. Ethernet Pinouts

Pinout	Description
1	Rx+
2	Rx-
3	Tx+
4,5,7,8	Not Used
6	Tx-

6. CUSTOMER INFORMATION

To browse the Internet using your VersaLink™ Gateway, you must (1) set up your customer information, (2) confirm your DSL sync, and (3) establish a PPP session with BellSouth. Refer to the Internet service provider's installation manual to install the software required for your Internet connection.

NOTE: Internet service provider subscriber software and connection requirements may vary. Consult BellSouth for installation instructions. If you have trouble with your connection, refer to section 16, Appendix A: Troubleshooting Connection Failures, for details.

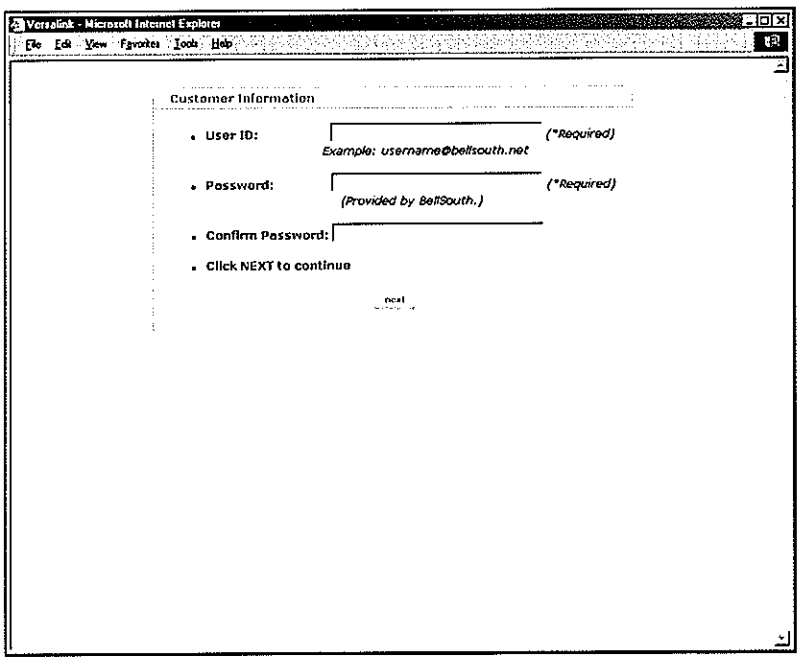
6.1 Confirming Your DSL Sync

You must have active DSL service before your modem can synchronize with your ISP's equipment. To determine if your modem has a DSL sync, confirm that the DSL LED on the front of the modem is solid green. Solid green indicates that you have established a DSL sync. For additional details on the modem's LED states, refer to section 5 (Hardware Features).

6.2 Setting Up Customer Information

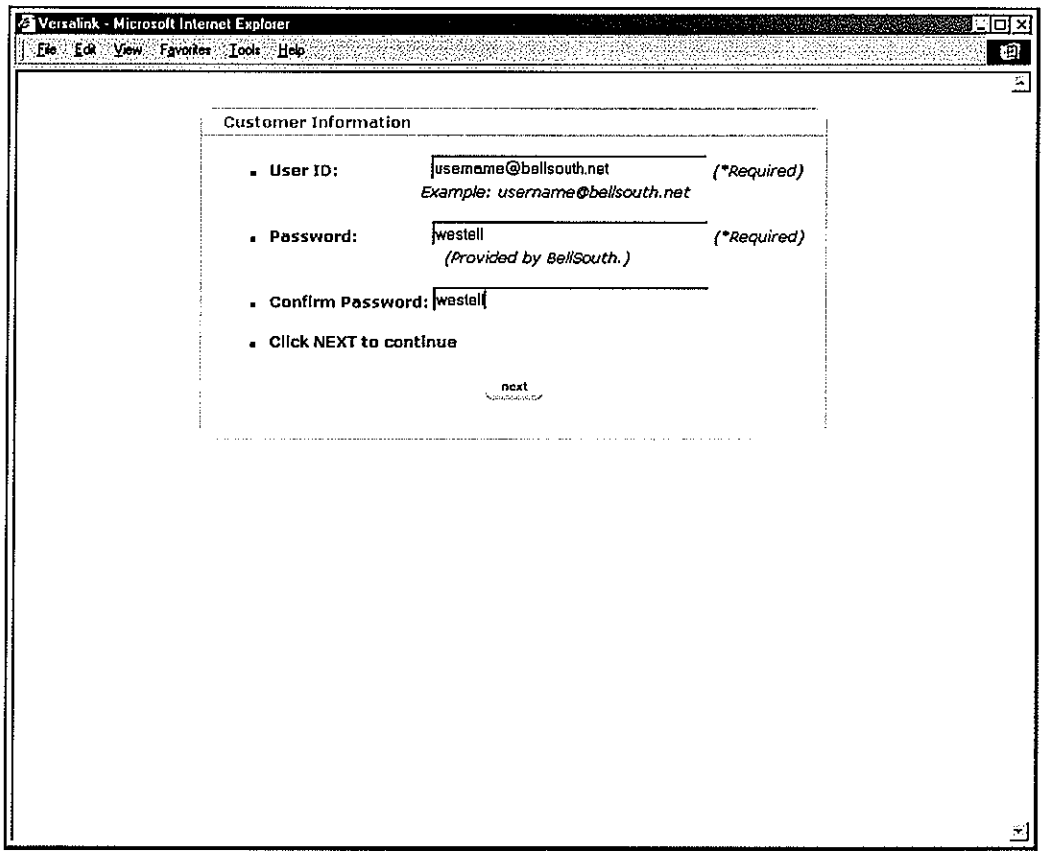
After installing the VersaLink™ Gateway, bring up your Web browser and type **http://launchmodem/** in your browser's address bar. Next, press 'Enter' on your keyboard. The following **Customer Information** page will be displayed. This page allows you to enter the appropriate information needed for your BellSouth Internet connection.

NOTE: The Email Address, DSL Phone Number and Password are required information for your Internet connection. You must enter this information in the fields provided to proceed with the installation. Contact the BellSouth help desk at 1-888-321-2DSL (2375) if you need assistance with your customer information settings.



Customer Information	
User ID	If applicable and different from your email address.
Password	Provided by BellSouth.
Confirm Password	Provided by BellSouth.

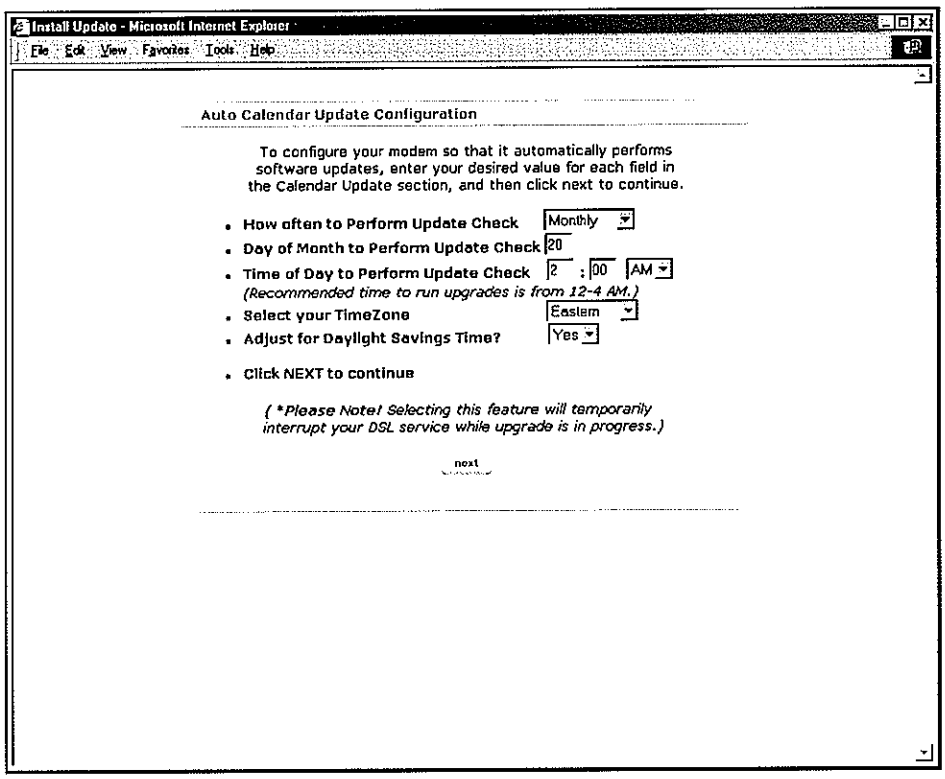
Enter the appropriate values in the **Customer Information** page, and then click **next** to continue.



After you have entered the appropriate values in the **Customer Information** page and clicked **next,** the following **Auto Calendar Update Configuration** page will be displayed. The **Auto Calendar Update Configuration** page enables you to configure your modem to automatically perform software updates when updates are available for your modem. If you change any settings in the modem web pages, you must click **save** to allow the settings to take effect.

Enter your desired values in the **Auto Calendar Update Configuration** page, and then click **save**. Click **Back** to return to the **Home Summary** page.

NOTE: You may also perform software updates via the **Update Modem** submenu at the **Auto Calendar Configuration** page. This feature will temporarily interrupt your DSL service while a software upgrade is in progress.



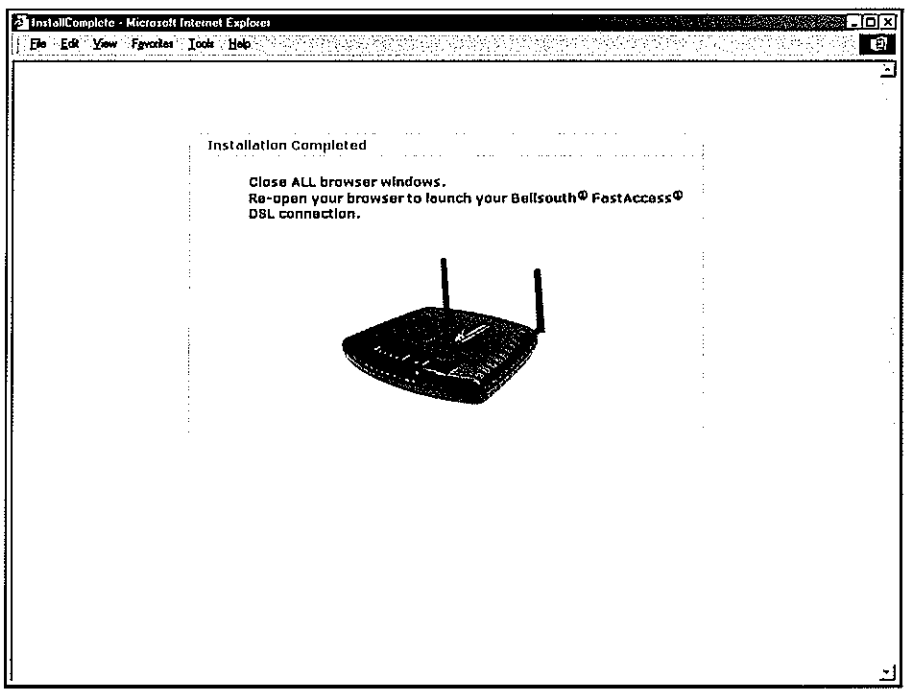
Auto Calendar Update Configuration	
To configure your modem so that it automatically performs software updates, enter your desired value for each field in the Calendar Update section, and then click **next** to continue.	
How Often to Perform Update Check	Factory Default = Monthly The interval that you want the modem to automatically perform a software update if an update is available for your modem. Possible responses are: **Disable** - If selected, the modem will not automatically perform a software update because Calendar Update is turn off. **Bi-Weekly** – If selected the software update will occur every two weeks if an update is available for your modem. **Monthly** – If selected the software update will occur once a month if an update is available for your modem.
Day of Month to Perform Update Check	Factory Default = Any value from 1 through 28 The Day of Month that you want to the modem to perform the update if

	an update is available for your modem. Possible responses are: 1 through 28 (Note: If you enter a value lower than 1 or higher than 28, an error message will appear when you click **save**.)
Time of Day to Perform Update Check	Factory Default = 2:00 A.M. You may choose your desired setting (A.M. or P.M.). However, the recommended time to perform your software update is 12-4:00 A.M. due to network traffic.
Select your Time Zone	Factory Default = Eastern The Time Zone of your area. Possible responses are: Greenwich, Atlantic, Eastern, Central, Mountain, Pacific
Adjust for Daylight Savings Time?	Factory Default = Yes If 'No' is selected, the update will not adjust for Daylight Savings Time.

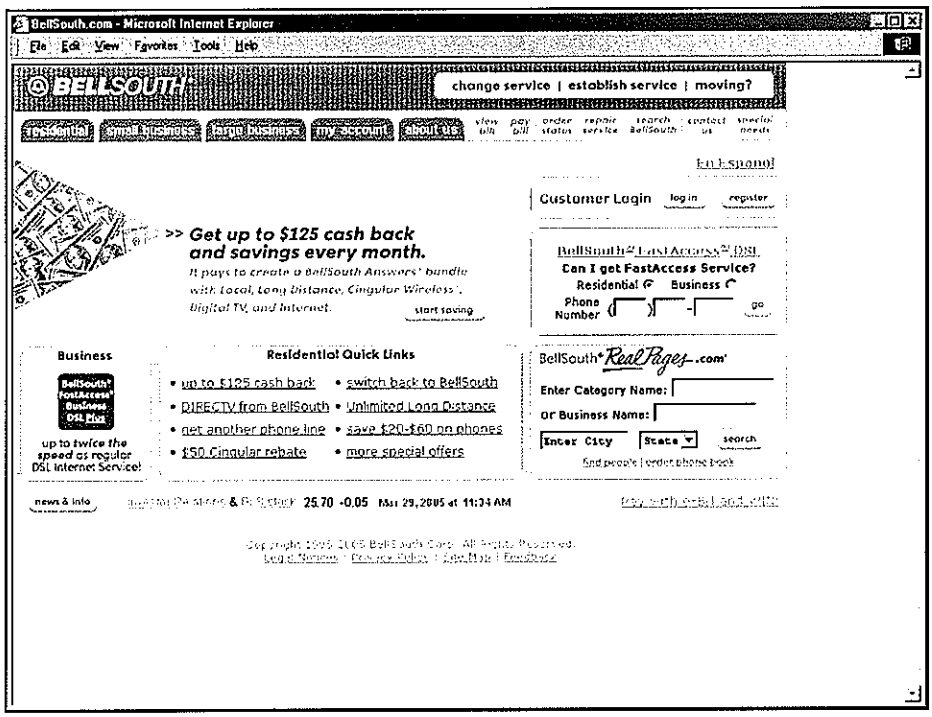
6.3 Establishing Your PPP Session

After you click **save** in the **Auto Calendar Update Configuration** page, the following **Installation Completed** page will be displayed. Confirm that the modem's **Internet** LED is solid green. If the **Internet** LED is solid green, this indicates that you have established a PPP session with BellSouth and you may now browse the Internet. Close all browser windows, and then re-open your browser to launch your Bellsouth® FastAccess® DSL connection.

NOTE: If your modem attempts to connect to the Internet and the connection fails, the **Internet** LED on the modem will light red and then return to the off state. Check your hardware components to ensure that all cables are properly connected (see section 5, Table 1. LED States and Descriptions, for details on the modem's LEDs). Next, go to section 16, Appendix A: Troubleshooting Connection Failures, to troubleshoot the problem and establish a connection. If problems persist, contact the BellSouth help desk at 1-888-321-2DSL (2375) for further instructions. Please do not proceed with the modem's configuration until you have confirmed that the **Internet** LED is solid green.



For example, after you have confirmed that the **Internet** LED on your modem is solid green, type **http://www.bellsouth.com** in you browser's address bar and press "Enter" on your keyboard. The BellSouth® home page will be displayed. Please note that the actual web page might differ from the page displayed in this document.



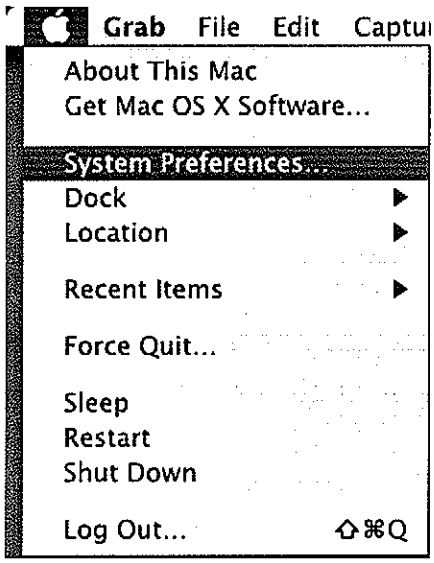
When you are ready to access the modem's web pages, proceed to section 8 (Configuring VersaLink) for instructions.

7. MACINTOSH OS X

This section provides instructions on how to use Macintosh Operating System 10 with the Westell VersaLink™ Gateway. Follow the instructions in this section to create a new network configuration for Macintosh OS X.

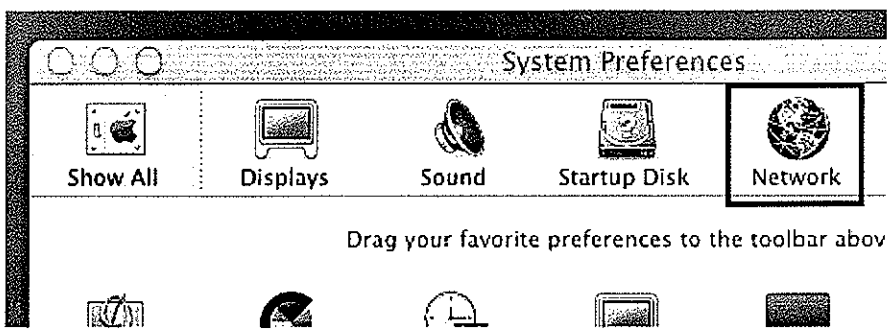
Open the System Preference Screen

After you have connected the Westell VersaLink™ Gateway to the Ethernet port of your Macintosh, the following screen will appear. Click the "**Apple**" icon in the upper-right corner of the screen and select **System Preferences**.



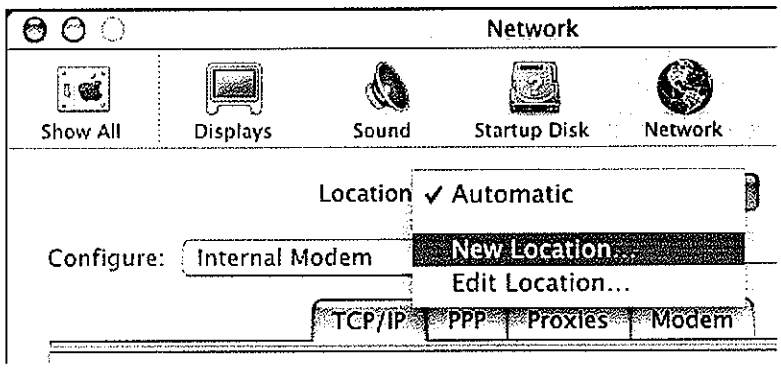
Choose the Network Preferences

After selecting **System Preferences...**, from the previous screen, the **System Preferences** screen will be displayed. From the **System Preferences** screen, click the **Network** icon.



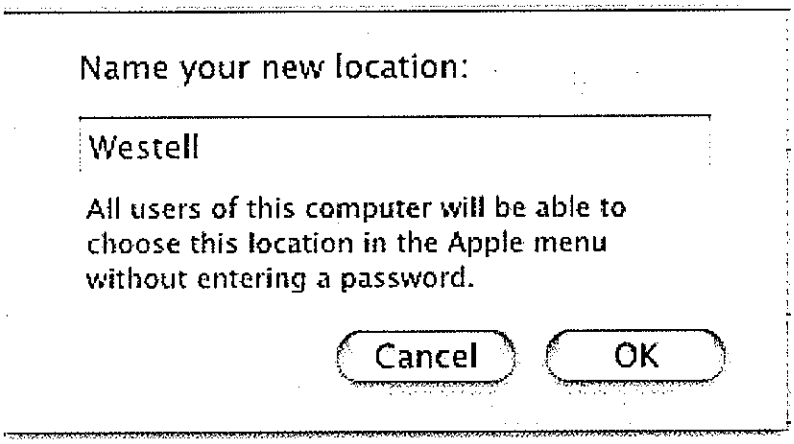
Create a New Location

After selecting the **Network** icon at the **System Preferences** screen, the **Network** screen will be displayed. Select **New Location** from the **Location** field.



Name the New Location

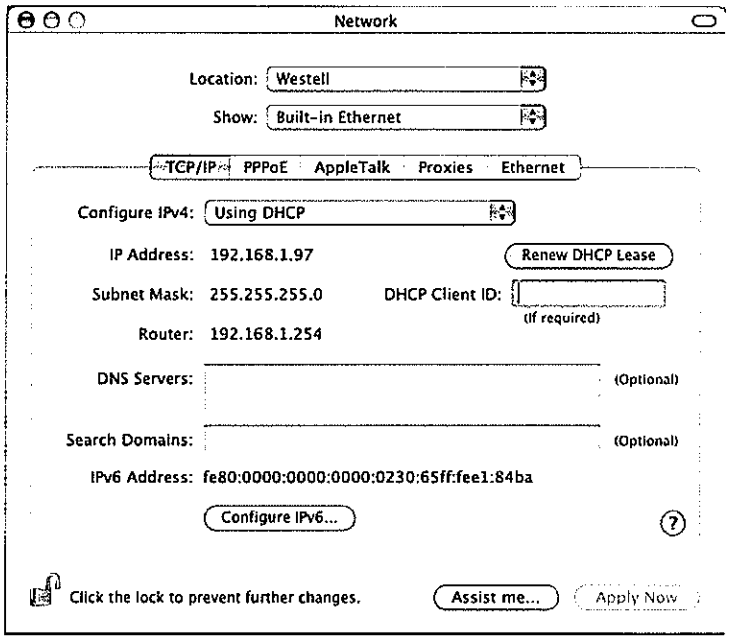
After selecting **New Location** from the **Network** screen, the following screen will be displayed. In the field labeled **Name your new location:**, change the text from **"Untitled"** to **"Westell."** Click **OK**.



Select the Ethernet Configuration

After clicking **OK** in the previous step, the **Network** screen will be displayed. The **Network** screen shows the settings for the newly created location. From the **Show** field in the **Network** screen, select **Built-in Ethernet**. Click **Apply Now** to continue.

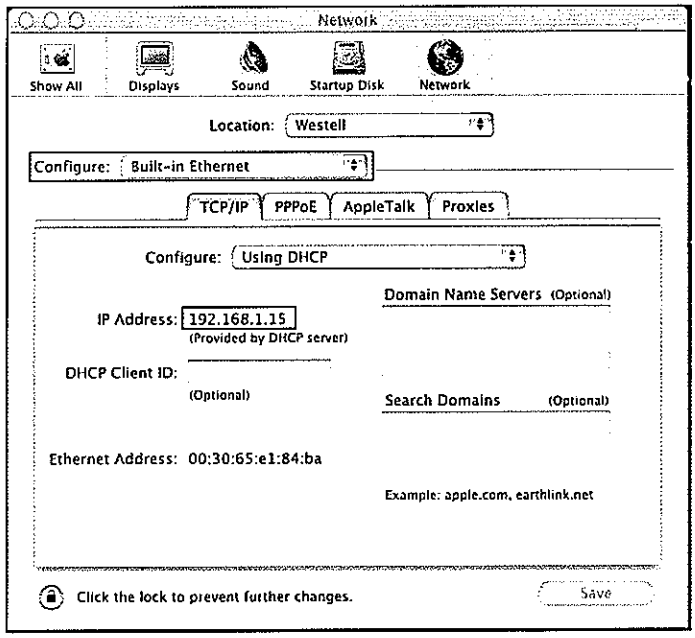
Note: Default settings for the Built-in Ethernet configuration are sufficient to operate the VersaLink Gateway.



Check the IP Connection

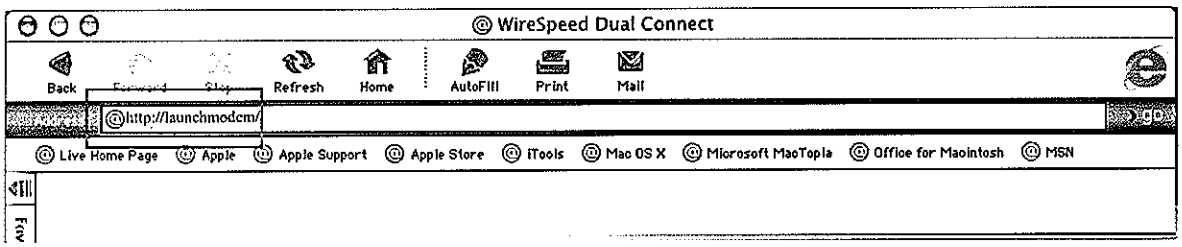
To verify that the computer is communicating with the modem, follow the instructions below.

1. Go to the "**Apple**" icon and select **System Preferences**.
2. From the **System Preferences screen**, click the **Network** icon. The **Network** screen will be displayed.
3. From the **Configure** field in the **Network** screen, select **Built-in Ethernet**.
4. View the IP address field. An IP address that begins with **192.168.1** should be displayed. (NOTE: The DHCP server provides an IP address.) If the IP address is not displayed, check the modem's wiring connection to the PC.

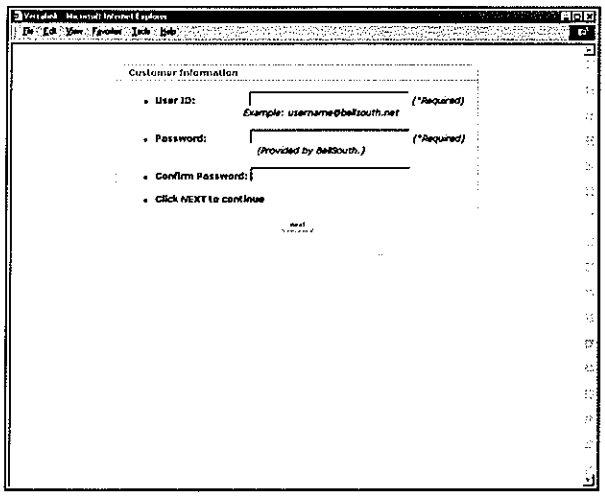


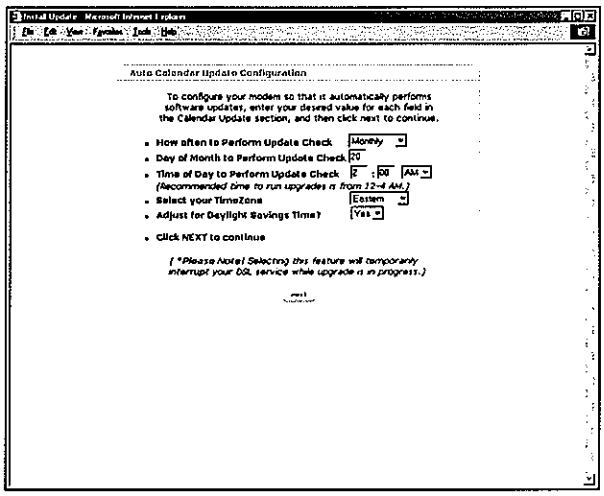
Create a User Account

In your Internet Explorer web browser address window, type **http://launchmodem/**. Press 'Enter' on your keyboard.



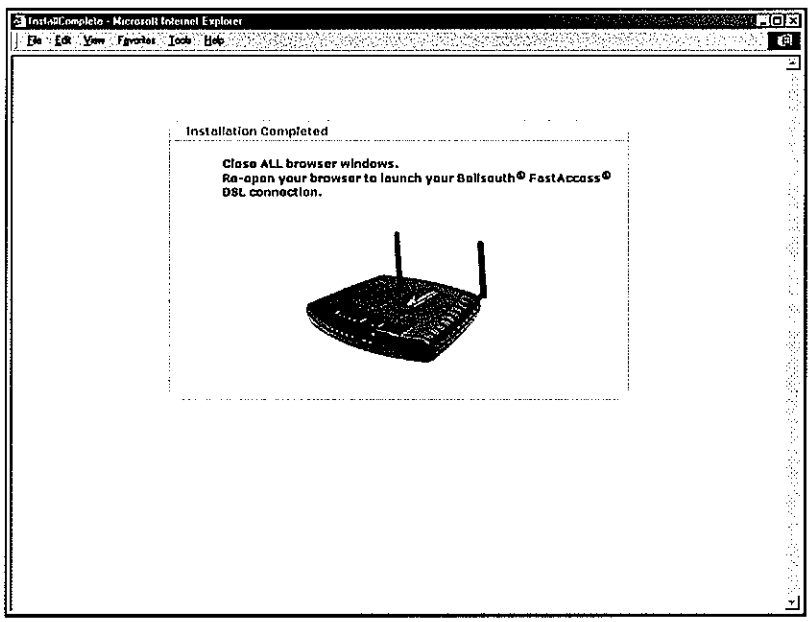
After you press 'Enter' on your keyboard, the following **Customer Information** page will be displayed. The name of the modem is VersaLink. Enter the appropriate values (provided by BellSouth) in the **Customer Information** page and click **next**. The **Auto Calendar Update Configuration** page will be displayed. Enter your desired values in the **Auto Calendar Update Configuration** page and click **save** to continue.





If you clicked **save** in the preceding page, the following page will be displayed. Confirm that the **Internet** LED on your modem is solid green. Next, close all browser windows, and then re-open your browser to launch your Bellsouth® FastAccess® DSL connection. Refer to section 6 of this User Guide for detailed instructions on the **Customer Information** section.

NOTE: If the **Internet** LED does not light solid green, contact the BellSouth help desk at 1-888-321-2DSL (2375) for further instructions. Do not proceed with the modem's configuration until the **Internet** LED is solid green. If needed, refer to section 16, Appendix A: Troubleshooting Connection Failures, for details on connection failures.

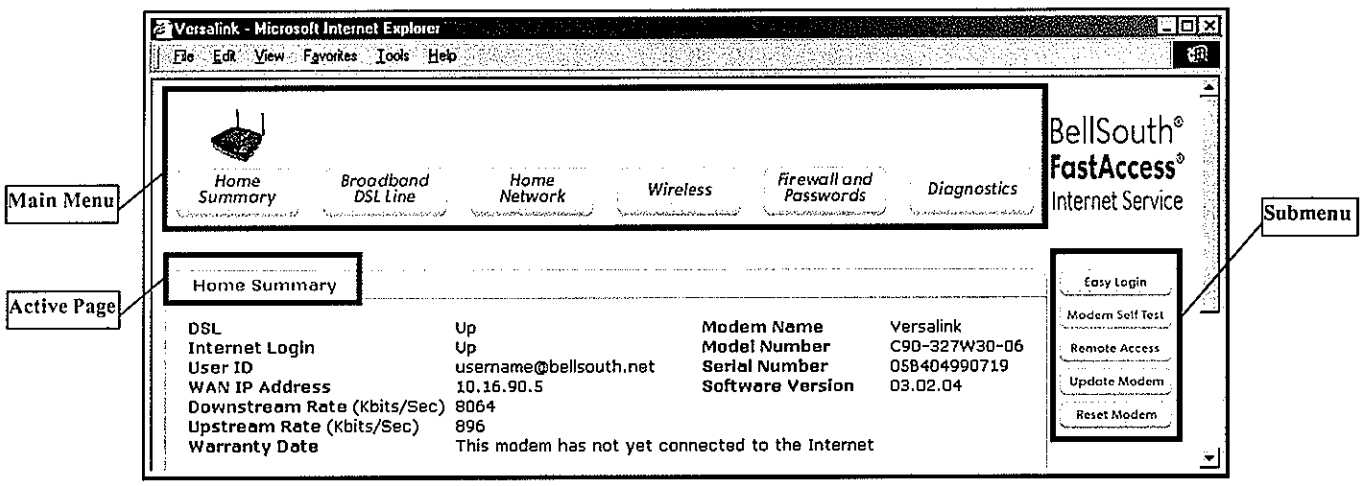


After you have completed the **Customer Information** section, go to section 8 (Configuring VersaLink) to begin your modem's configuration.

8. CONFIGURING VERSALINK

STOP! The following sections assume that you have active DSL and Internet service.

VersaLink enables you to make changes to advanced features of your Gateway such as account profiles, routing configurations, and firewall settings. The following sections explain each feature and show you how to make changes to VersaLink's settings. A Main navigation menu is displayed at the top of the page. As you navigate through the various pages of the modem, the active page that you have selected from the Main menu will appear in the left corner of the page. The submenu options for that page will appear on the right side of the page, as shown below. The Main menu and Submenu options enable you to set up the configurable functions of your modem. Please note that the values displayed in the pages of this document might differ from the actual values reported by your modem. Additional details are provided in the tables below the pages. A "Back" button is located on the submenu pages, and by clicking the "Back" button, you can return to the main page within that subsection.



Please note that the menu options displayed in VersaLink's web pages will vary according to the WAN configuration you have chosen to use for VersaLink's internet connection: **DSLATM PORT** or **ETHERNET PORT 1**. However, all menu options are displayed if VersaLink is enabled for **DSLATM PORT.**

If you use VersaLink's **DSLATM PORT** mode, you will enable VersaLink's DSL transceiver. This will disable the WAN Ethernet interface (labeled **Ethernet 1**) on the rear panel of VersaLink and allow the WAN interface to use the DSL port instead. Conversely, if you use VersaLink's uplink mode, **ETHERNET PORT 1**, you will disable VersaLink's DSL transceiver. This will disable the DSL port (on the rear panel of VersaLink) and allow the WAN interface to use the **Ethernet 1** port.

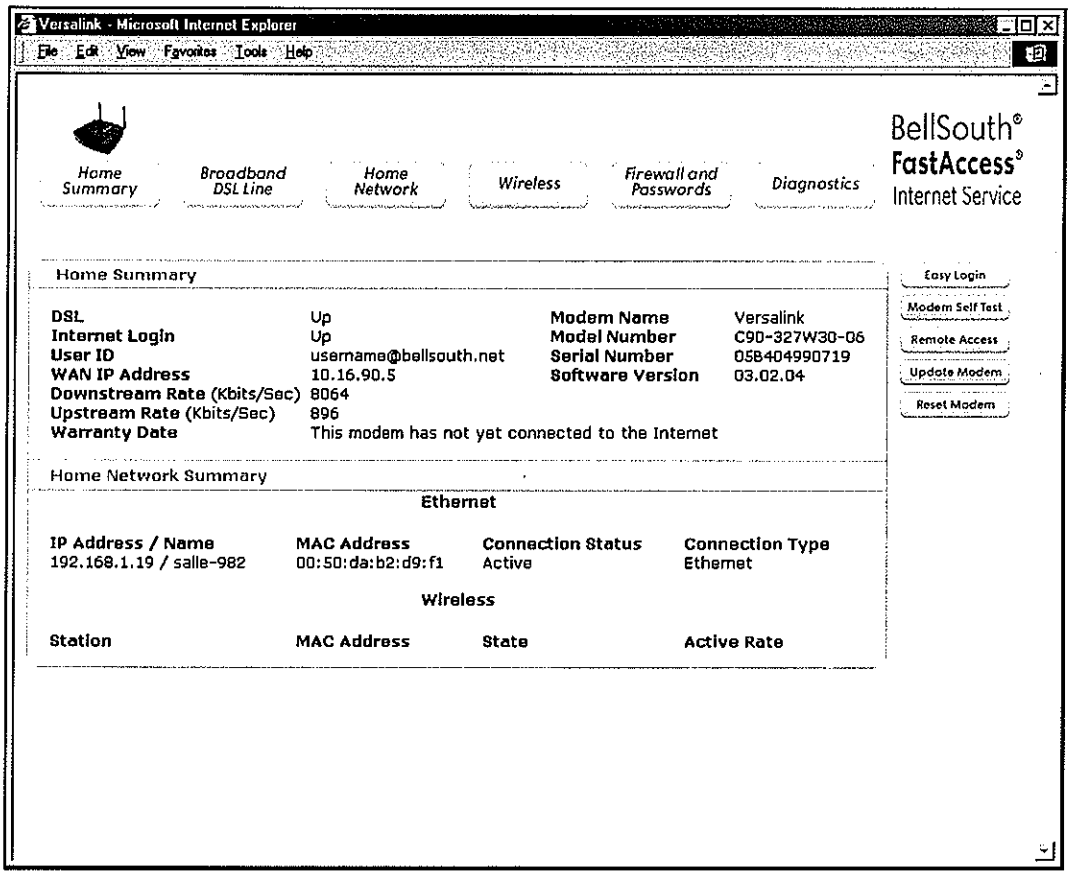
NOTE: The uplink feature (**ETHERNET PORT 1**) is optional, and if **ETHERNET PORT 1** is disabled, VersaLink will use DSL and wireless only, and the port labeled **Ethernet 1** on the rear panel of VersaLink can be used in addition to ports E2, E3, and E4 for LAN access. When using **DSLATM PORT**, you may connect to any of the three Ethernet jacks (E2, E3, or E4) on the rear panel of VersaLink as they serve as an Ethernet switch. The **Ethernet 1** port is used as a WAN transport connection when installing VersaLink without DSL. When using Ethernet 1 port instead of the DSL port, Ethernet LAN connection is limited to ports E2, E3, and E4.

Instructions on enabling and disabling **DSLATM PORT** and **ETHERNET PORT 1** are explained in section 10.4 (WAN). This document was created with the **DSLATM PORT** enabled. The sections explained throughout this document will indicate when a menu item is unavailable. To set up the advanced functions of your VersaLink, follow the instructions provided in sections 9 through 15.

9. HOME SUMMARY

After you have logged in to BellSouth (explained in section 6, Customer Information), you are ready to configure the modem. To access the modem's web pages, type **http://launchmodem** in the browser's address bar and press "Enter" on your keyboard. The following **Home Summary** page will be displayed. This page displays basic statistics about your modem.

NOTE: If you are in Bridge Ethernet mode, the **Internet Login, User ID** and the **IP Address** fields will not be displayed in the **Home Summary** page.



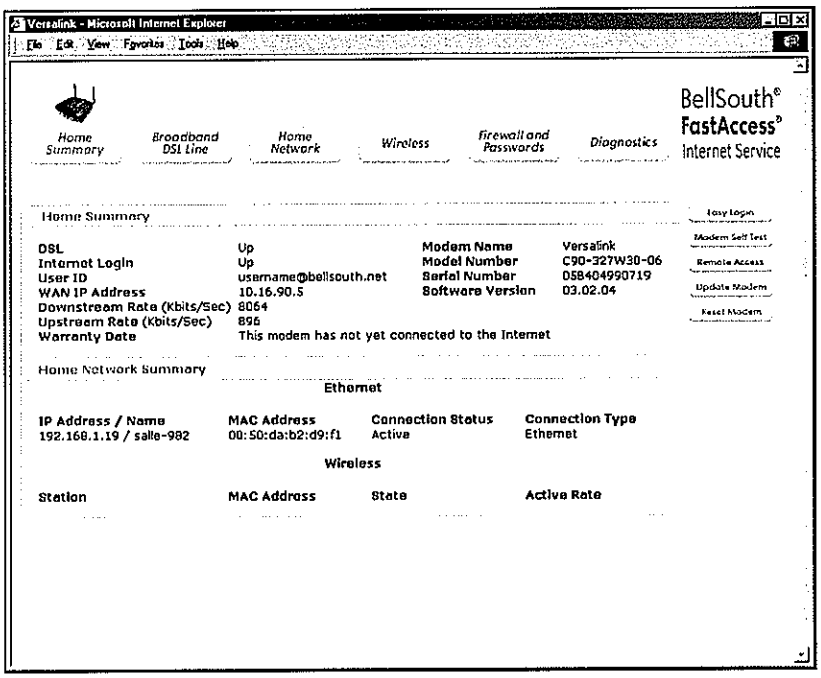
Home Summary	
DSL	The status of your DSL connection. Up=Connected Down=Disconnected
Internet Login	The status of your Internet connection. Up=Connected Down=Disconnected
User ID	The username that you used in your login (refer to section 6).
WAN IP Address	The PPP IP address that the ISP has assigned the modem.
Downstream Rate (Kbits/Sec)	The downstream (incoming) rate of your DSL signal transmission.
Upstream Rate (Kbits/Sec)	The upstream (outgoing) rate of your DSL signal transmission.

Warranty Date	The manufacturer's warranty date.
Modem Name	The manufacturer's product description.
Model Number	The manufacturer's model number.
Serial Number	The manufacturer's serial number.
Software Version	The version of application software.
Home Network Summary	
IP Address/Name	The IP address or the name that identifies your device on the Internet
MAC Address	Media Access Controller (MAC). The hardware address of your device.
Connection Status	The status of the connection you are using.
Connection Type	The type of connection you are using.

9.1 Easy Login

After you have logged in and established a PPP session with BellSouth, the **Home Summary** page will display **Up** at the **Internet Login** field and you may now browse the Internet. If you want to disconnect from BellSouth (end your PPP session), click on the **Easy Login** button at the right of the page.

NOTE: The Easy Login menu option will not be available if you are in Bridge Ethernet mode.

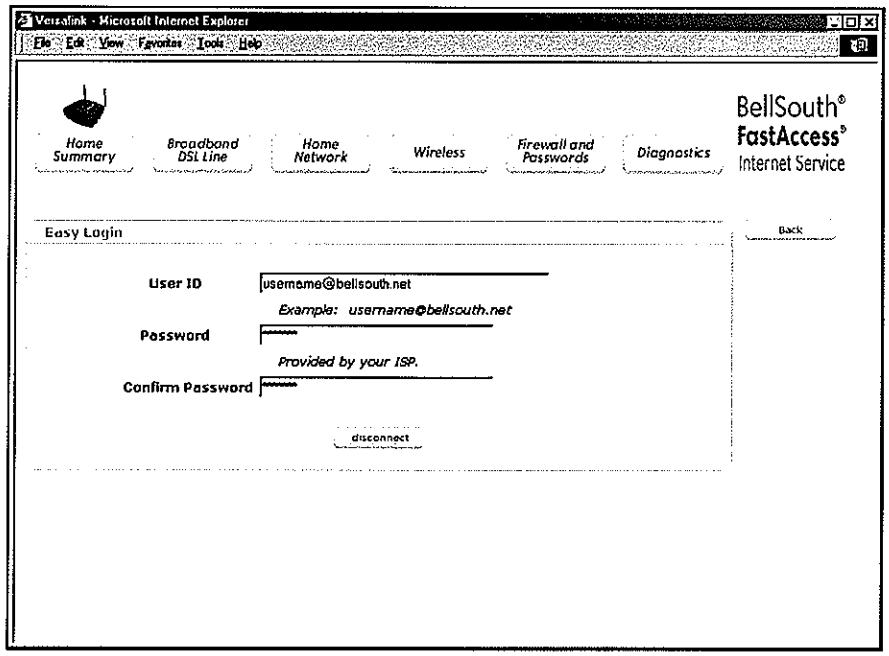


The connection type that your modem is set to determines whether you will automatically or manually connect to your ISP. The factory default "connection type" for VersaLink is "Always On."

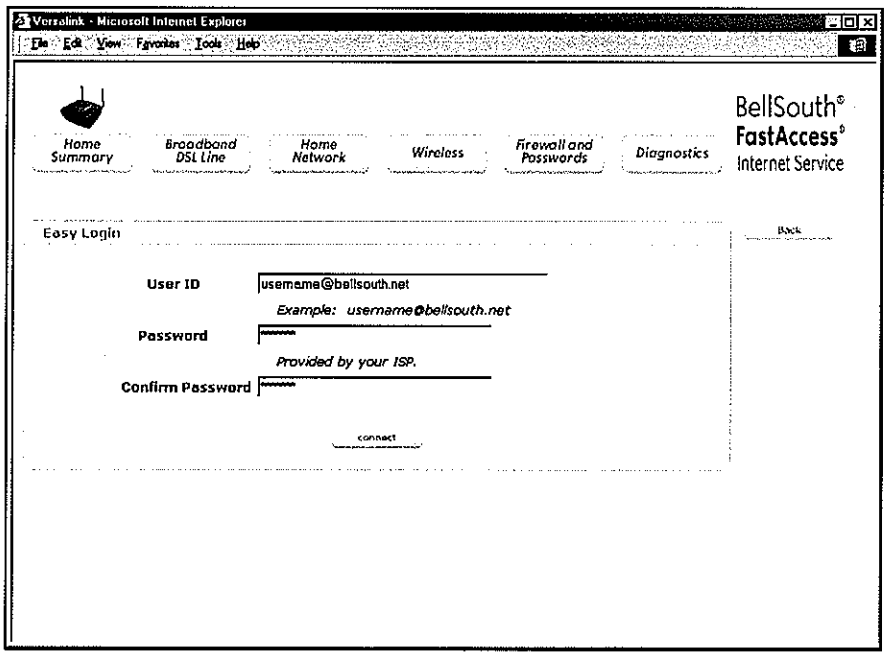
NOTE: If the modem's connection type is set to "Always On" or "On Demand," after a brief delay, the **Easy Login** page will display a **disconnect** button. The **disconnect** button indicates that you have established a PPP session with your ISP. If the connection type is set to "Manual," The **Easy Login** page will display a **Connect** button and you must click on the **Connect** button to establish a PPP session with your ISP. Once the PPP session has been established, you may proceed with your modem's configuration. To change your connection type, go to the **Configure Connection** page at the **Broadband DSL Line** main menu.

If you clicked the **Easy Login** button, the following page will be displayed. Click the **disconnect** button if you want to disconnect from BellSouth. (This will end your PPP session and all computers connected to your modem will be disconnected from the ISP.)

NOTE: The **Disconnect** button should be used only when you are ready to log off the Internet. When you are ready to log in to the Internet, click the **connect** button in the **Easy Login** page.

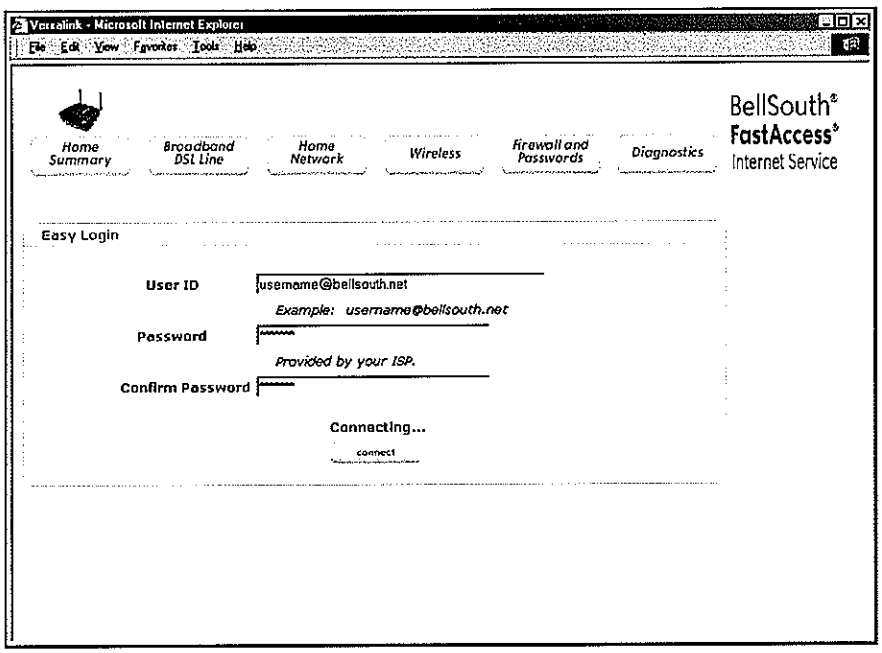


If your connection type is set to "Manual" or if you have previously disconnected from your ISP, the following page will be displayed when you click the **Easy Login** button. Click on the **connect** button to connect (establish a PPP session) to your ISP.

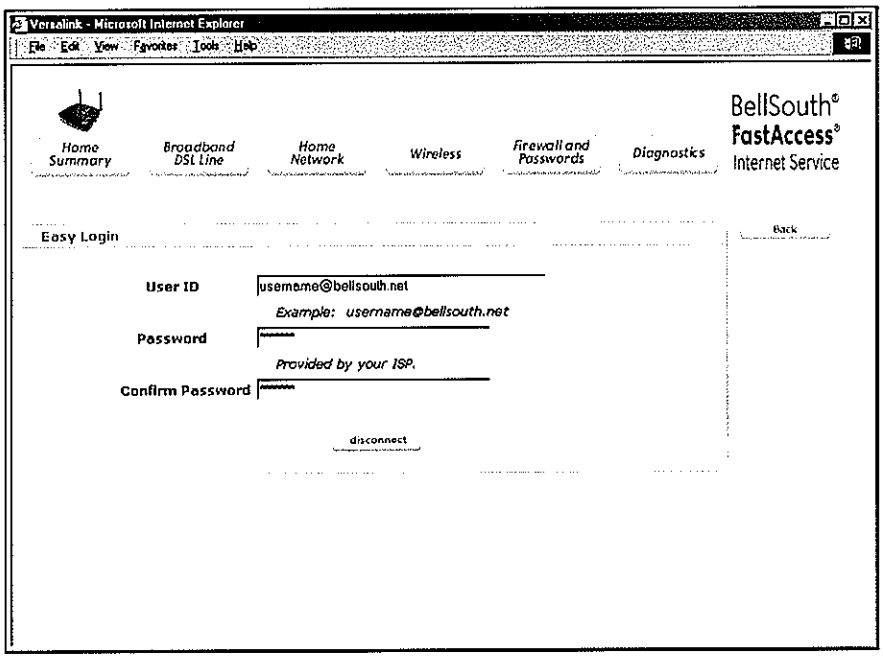


If you clicked the **connect** button, the following page will display the "**Connectng...**" message. This indicates that the modem is attempting to establish PPP session with your ISP.

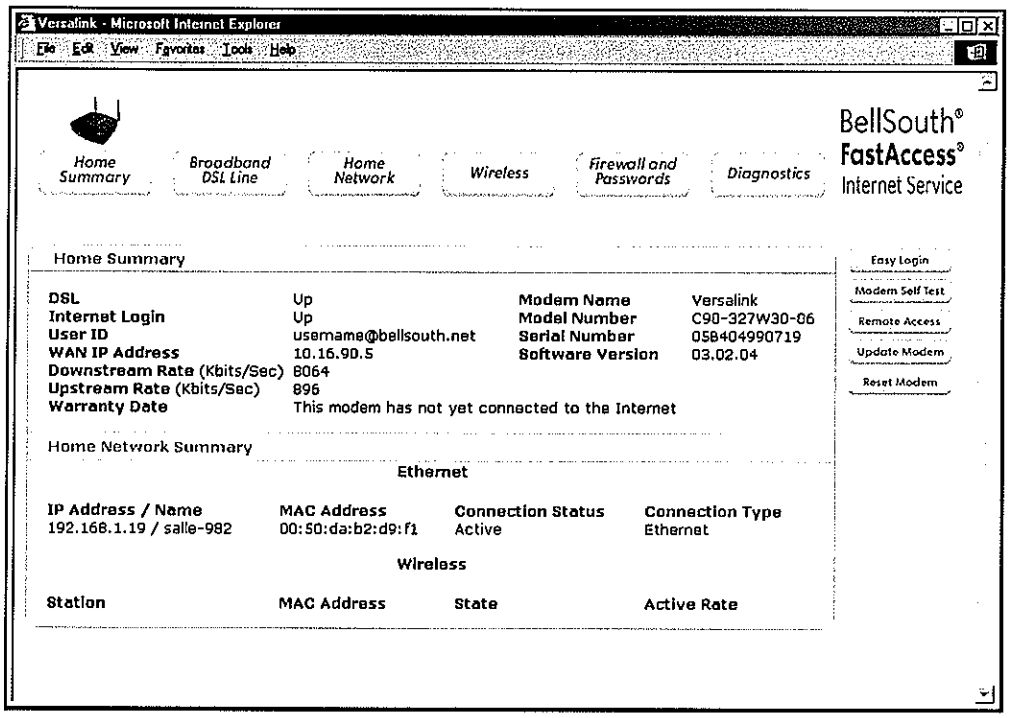
NOTE: If you click the **connect** button and your connection is successful, the **Easy Login** page will be displayed, and you may now click the **Back** button to return to the **Home Summary** page. If your connection is not successful, the **Easy Login** page will appear along with a message that displays details on the failed connection. If needed, refer to section 16, Appendix A: Troubleshooting Connection Failures, for an explanation on connection failures.



After you have connected to your ISP, the following page will be displayed. Click the **Back** button to return to the **Home Summary** page.

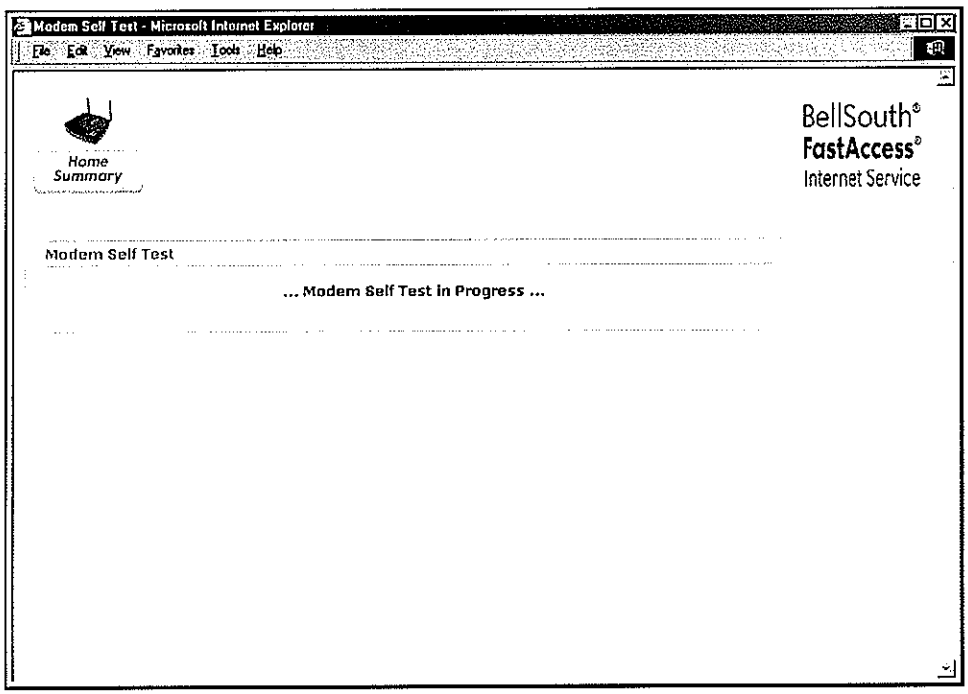


At the **Home Summary** page, confirm that the **DSL** and **Internet Login** fields display **Up** before continuing your modem's configuration.



9.2 Modem Self Test

If you click the **Modem Self Test** button at the **Home Summary** page, the following page will be displayed. This page enables you to check the modem's internal operations. After the test has completed, the status of the test will be displayed in the page. Click the **Back** button to return to the **Home Summary** page.

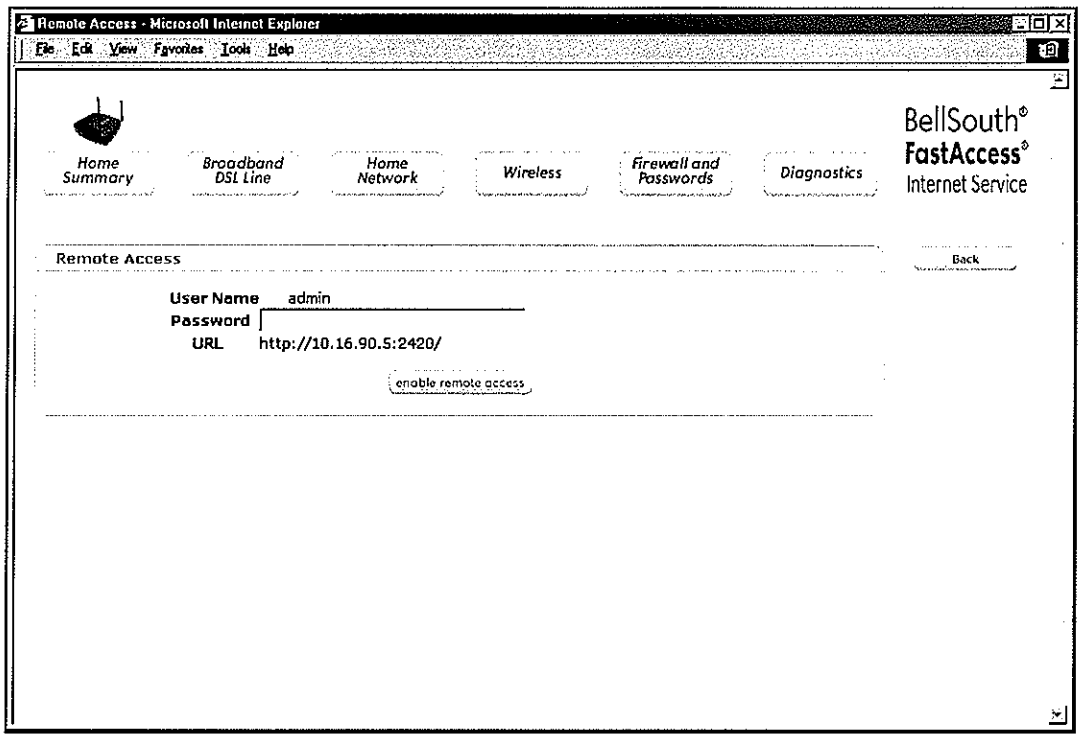


9.3 Remote Access

If you click the **Remote Access** button at the **Home Summary** page, the following page will be displayed. This page enables you enter a password and enable remote access. (The Remote Access menu button will appear only after you have successfully established a connection to the Internet.)

To enable Remote Access, type in a password and click the **enable remote access** button. The password should be at least 4 characters long and should not exceed 32 characters. Do not type a blank space or asterisks in the Password field. The password is also case sensitive.

NOTE: The Remote Access menu option will not be available if you are in Bridge Ethernet mode.

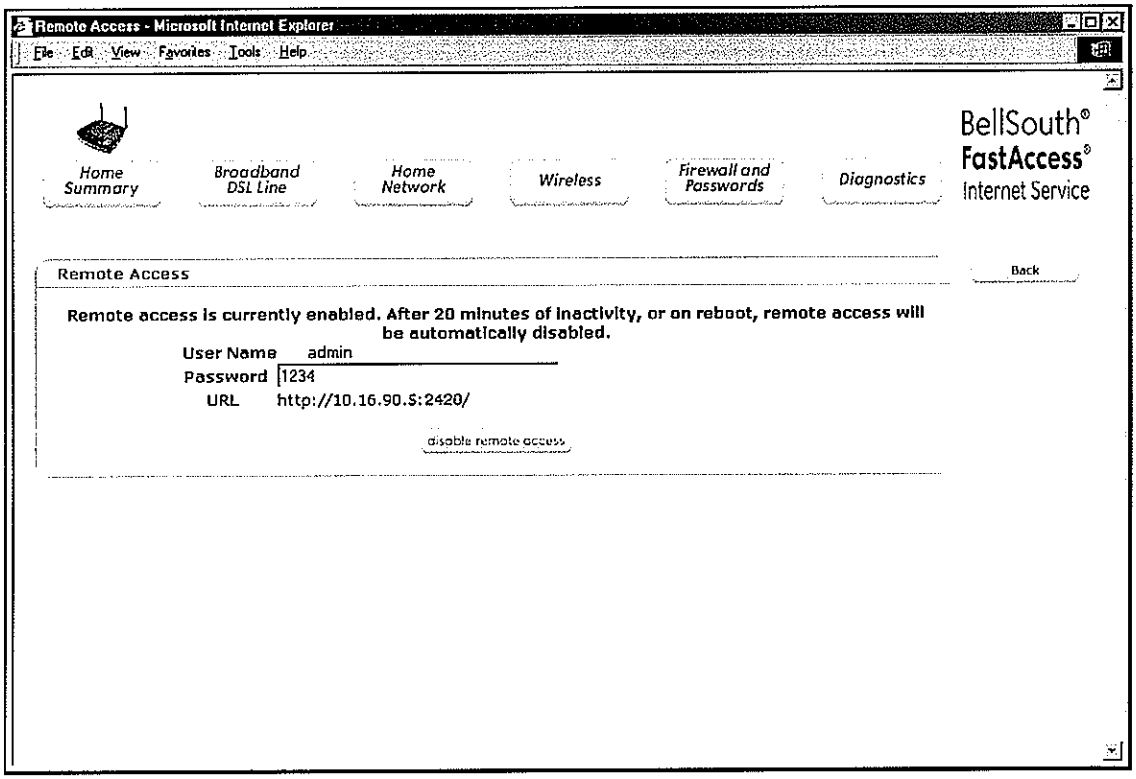


Remote Access	
User Name	Displays your current User Name (Static field)
Password	Field for entering your password
URL Address	Displays the IP address of the remote management gateway.

After you have entered a password and clicked **enable remote access** in the preceding page, the **Remote Access** page will display the following message:

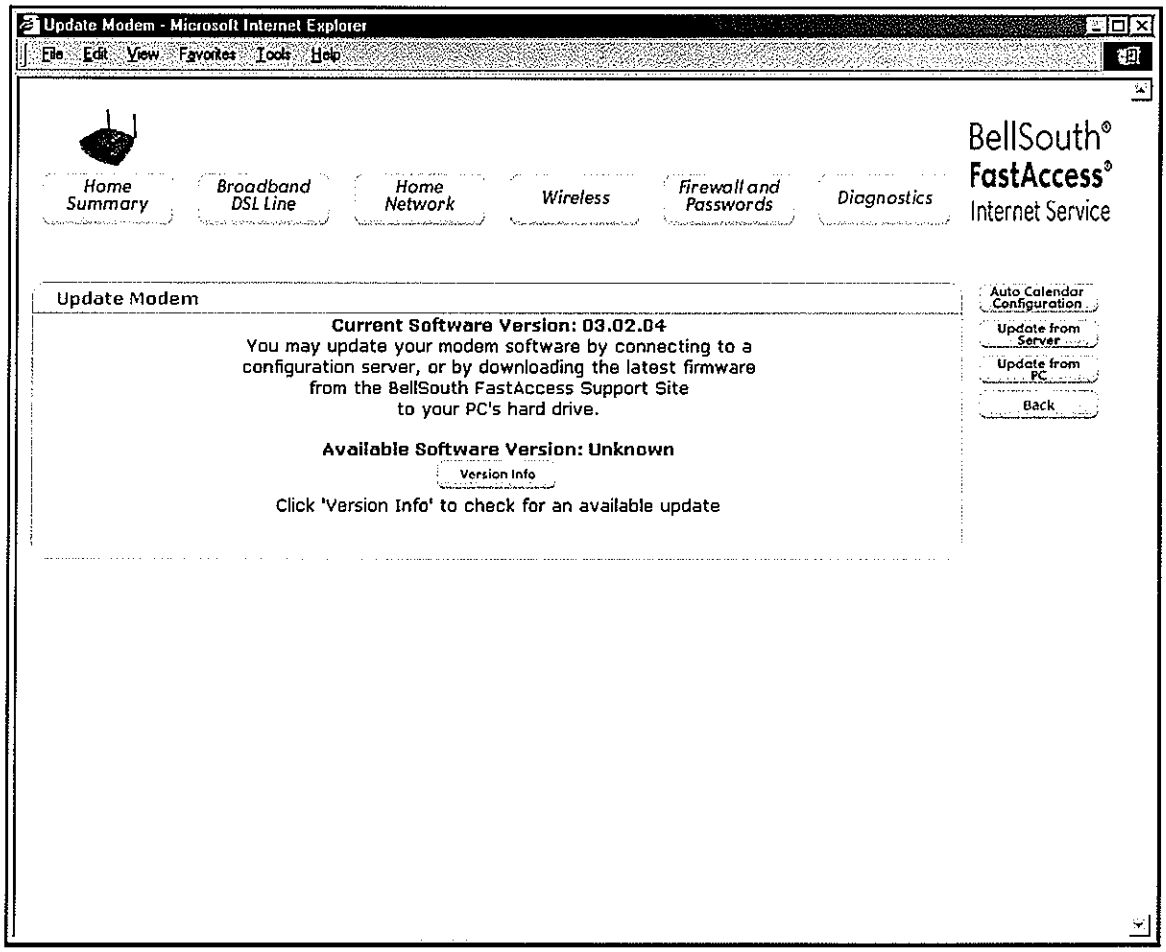
Remote access is currently enabled. After 20 minutes of inactivity, or upon reboot, remote access will be automatically disabled.

To disable this function, click **disable remote access**, and then click the **Back** button to return to the **Home Summary** page.



9.4 Update Modem

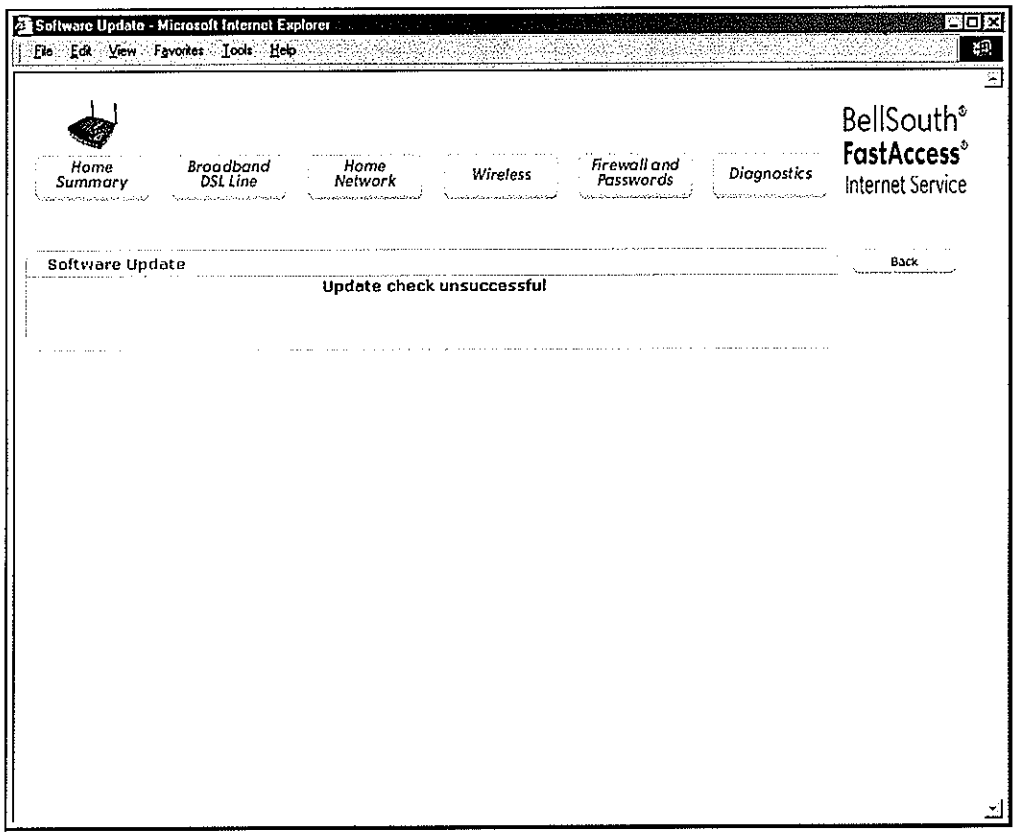
If you click the **Update Modem** button at the **Home Summary** page, the following page will be displayed. This page enables you to update the software on your VersaLink Gateway. There are three different ways to update your modem's software: (1) Click on **Auto Calendar Update Configuration**, (2) Click on **Update from Server**, or (3) Click on **Update from PC.** Details on these options follow this page.



9.4.1 Version Info.

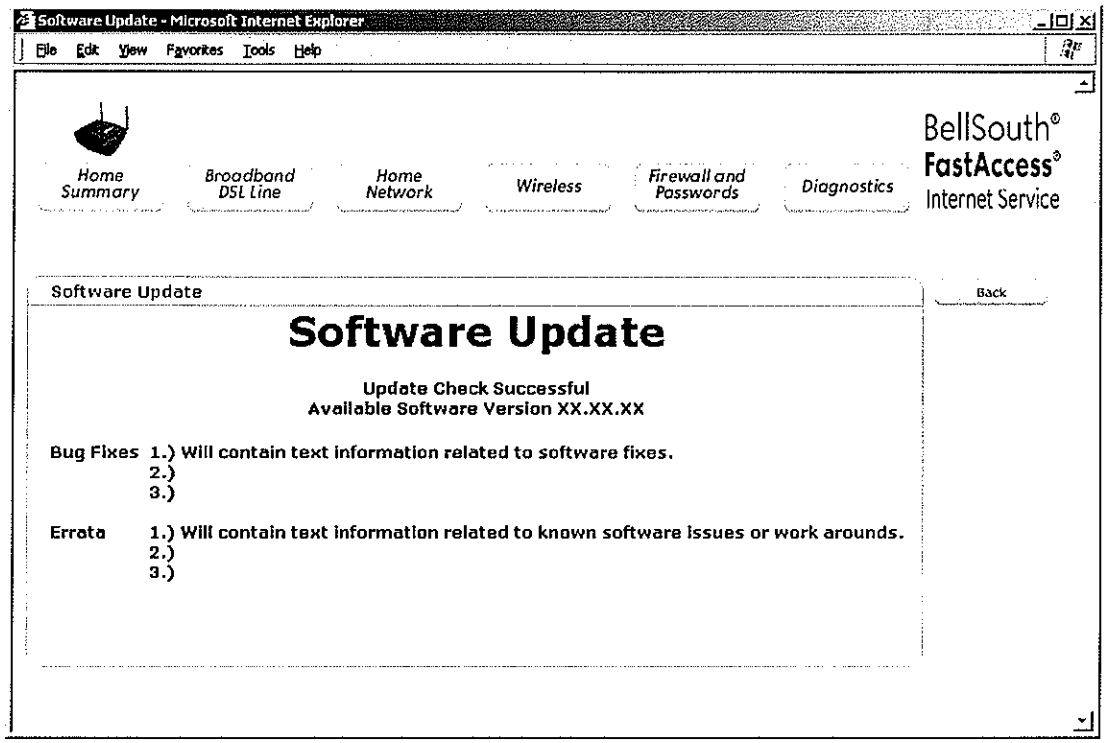
The version information feature enables you to check for the latest software update for your modem. Click on the **Version Info.** button to check your ISP's server for an available update. If an update is available, go to the **Update Modem** page and select the method that you want to use to upgrade your modem: **Auto Calendar Configuration, Update from Server**, or **Update from PC**.

If you click the **Version Info.** button, the modem will begin searching for the latest update.



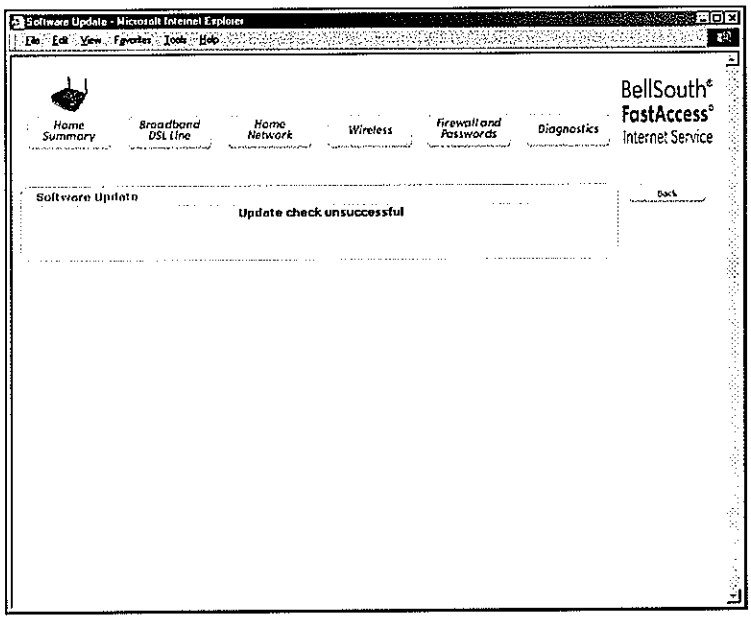
9.4.1.1 Software Update Available

If the system determines that a more current update is available, the message "Update check successful" will be displayed, as shown in the following page. The available software version will be detailed along with information on the new code update. Click **close** to return to the **Update Modem** page.



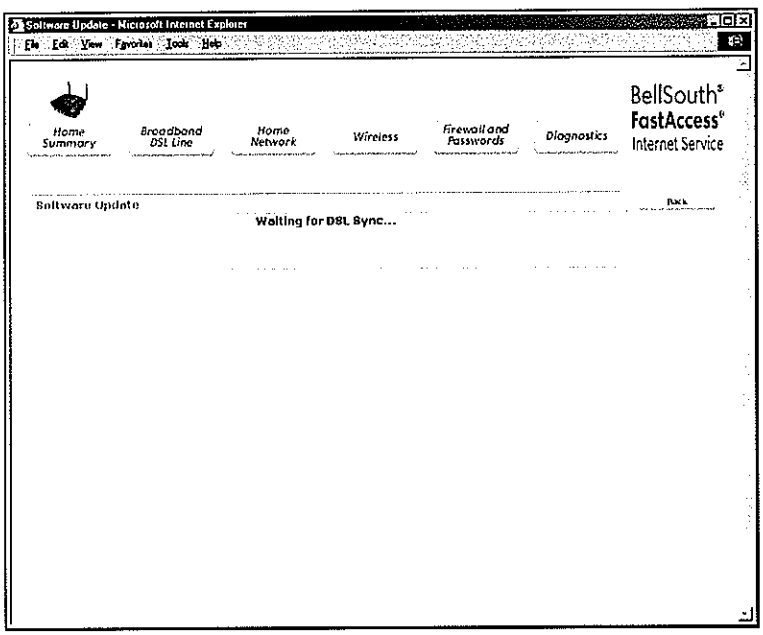
9.4.1.2 Software Update Unavailable

If a more current software update is not available, the following page will be displayed. Click **Back** to return to the **Update Modem** page.

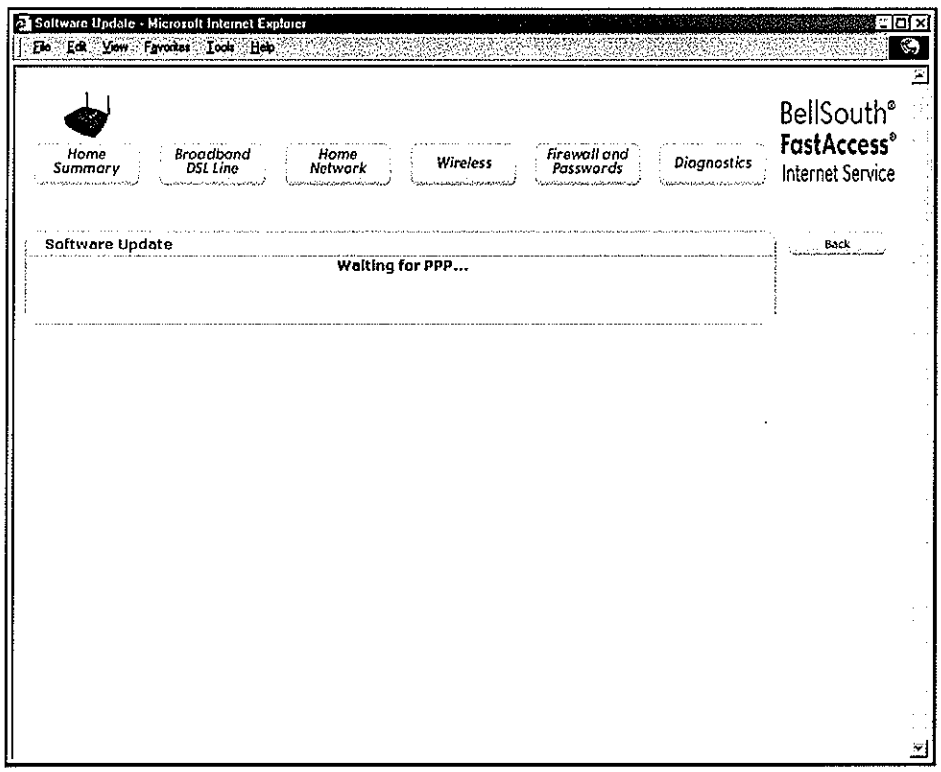


9.4.1.3 DSL Connection is Down

If your DSL connection is **Down** when you click the **Version Info.** button in the **Update Modem** page, the following page will appear. Click the **Back** button, and then check your DSL connection. You must have a DSL sync (DSL is UP) to confirm the software version and to perform a software upgrade. Refer to section 16, Appendix A: Troubleshooting Connection Failures, for details on connection failures.



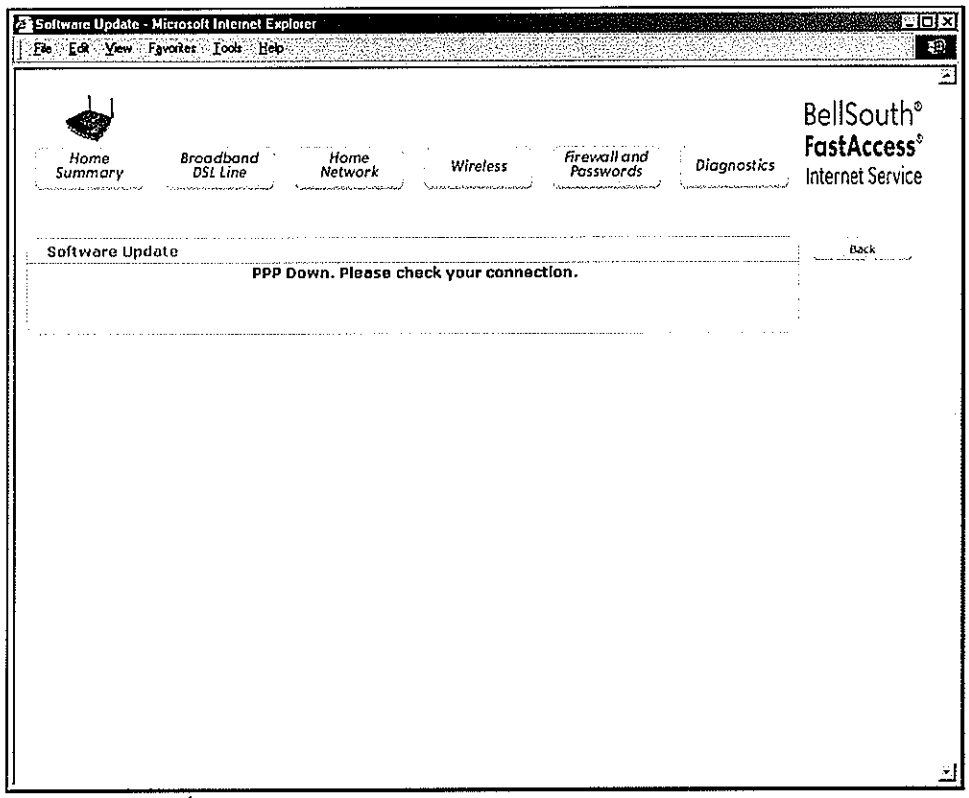
The following screen will be displayed once the modem has established a DSL connection and then attempts to establish a PPP session. After the DSL connection and PPP session have been established, the **Home Summary** page will be displayed, and the DSL and Internet Login fields will display **Up.**



9.4.1.4 Internet Connection is Down

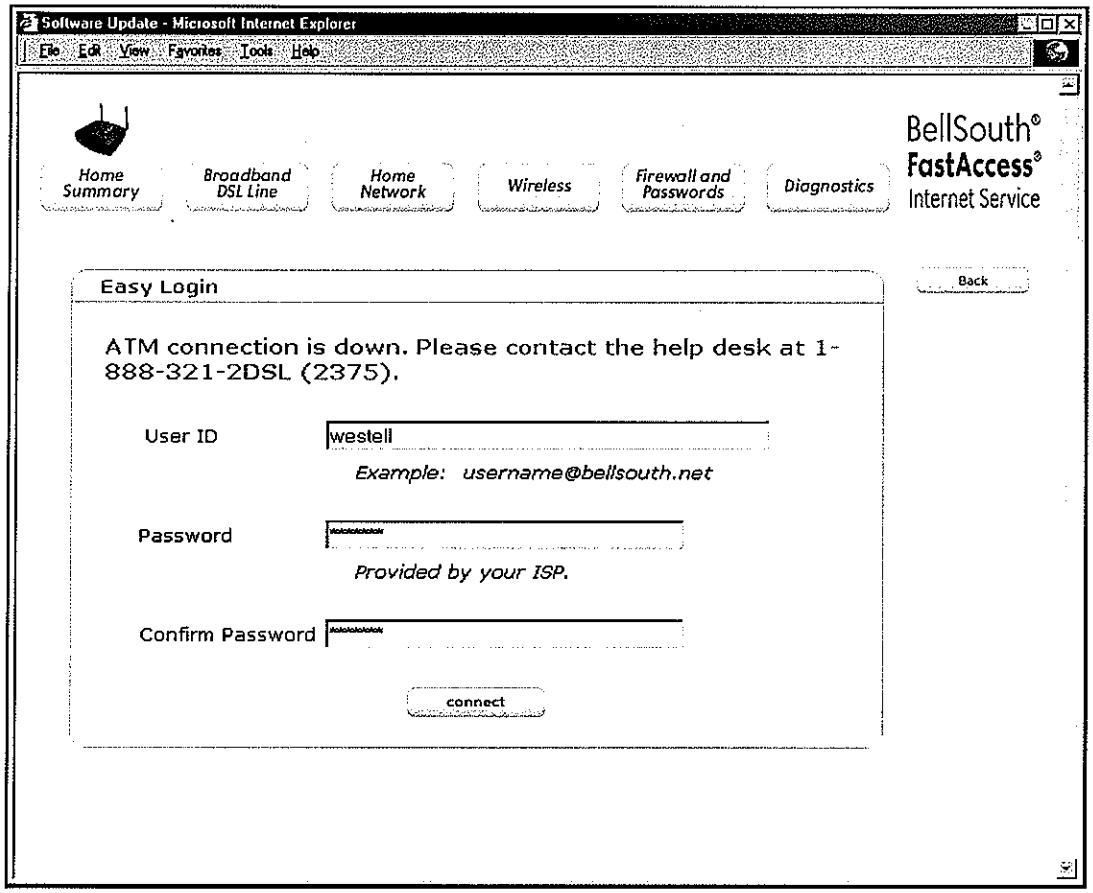
If your Internet connection is **Down** when you click the **Version Info.** button in the **Update Modem** page, the following page will appear. Click the **Back** button, and then check your Internet connection. You must have an Internet connection (PPP is UP) to confirm the software version and to perform a software upgrade. Refer to section 16, Appendix A: Troubleshooting Connection Failures, for details on connection failures.

NOTE: If you attempt to connect to the Internet and your connection fails, the **Internet** LED will light red and then return to the off state. If you have problems with your connection, refer to section 16, Appendix A: Troubleshooting Connection Failures, to troubleshoot the problem and establish a connection. If your connection succeeds, the **Internet** LED will light solid green.



9.4.1.5 ATM is Down

If your ATM connection is **Down** when you click the **Version Info.** button in the **Software Upgrade** page, the following page will appear. Click the **Back** button, and then check your Internet connection. Your ATM connection must be up to confirm the software version and to perform a software upgrade. Refer to section 16, Appendix A: Troubleshooting Connection Failures, for details on connection failures.

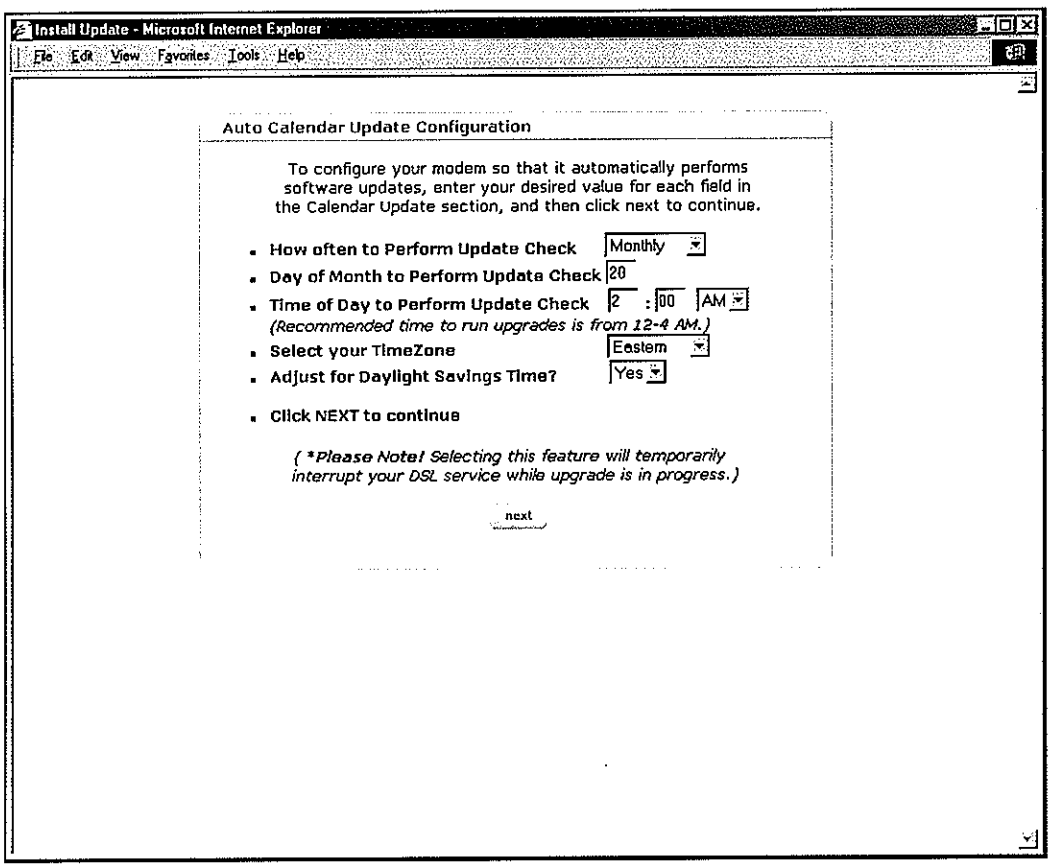


9.4.2 Auto Calendar Configuration

To configure your modem to automatically perform software updates when they are available for your modem, click the **Auto Calendar Configuration** button in the **Home Summary > Update Modem** page, the following **Auto Calendar Update Configuration** page will be displayed.

Enter your desired values in the **Auto Calendar Update Configuration** page, and then click **save** to allow the settings to take effect. Next, click **Back** to return to the **Home Summary** page.

NOTE: The settings that you specify in the following **Auto Calendar Update Configuration** page will override any previously configured update settings. This feature will temporarily interrupt your DSL service while the upgrade is in progress. If your connection type is set to "Manual," after the update is finished you will need to go to the **Home Summary > Easy Login** page and click **connect** to establish a PPP session with your ISP.

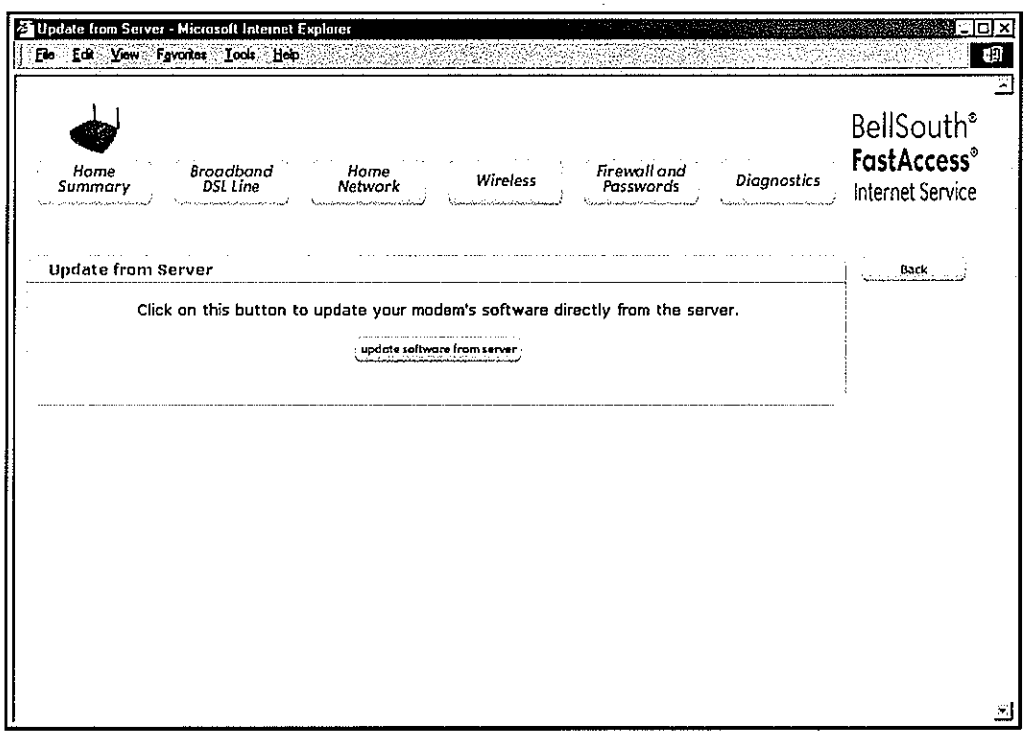


Auto Calendar Update Configuration	
To configure your modem so that it automatically performs software updates, enter your desired value for each field in the Calendar Update section, and then click **next** to continue.	
How Often to Perform Update Check	Factory Default = Monthly The interval that you want the modem to automatically perform a software update if an update is available for your modem. Possible responses are: **Disable** - If selected, the modem will not automatically perform a software update because Calendar Update is turn off. **Bi-Weekly** – If selected the software update will occur every two weeks

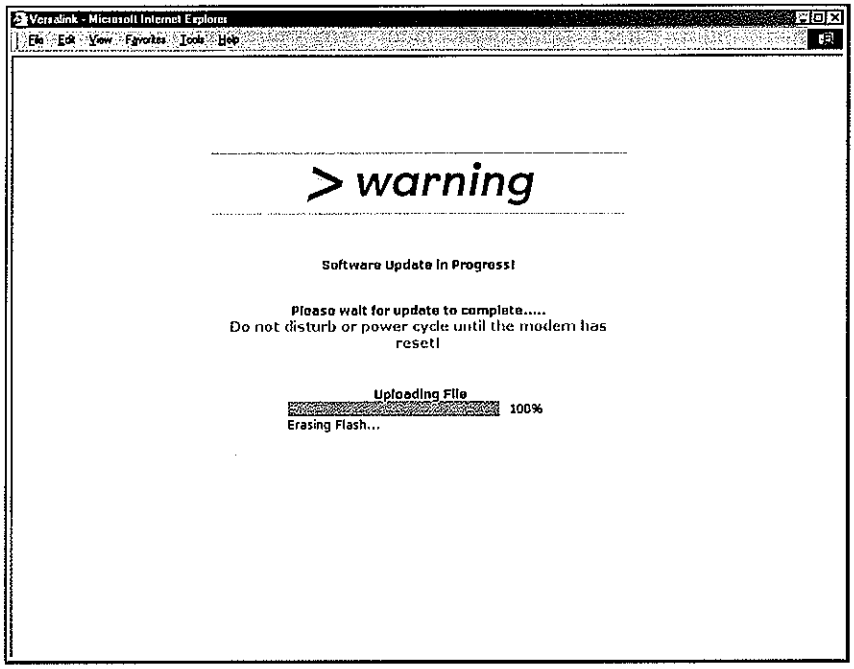
	if an update is available for your modem. **Monthly** – If selected the software update will occur once a month if an update is available for your modem.
Day of Month to Perform Update Check	Factory Default = Any value from 1 through 28 The Day of Month that you want to the modem to perform the update if an update is available for your modem. Possible responses are: 1 through 28 (Note: If you enter a value lower than 1 or higher than 28, an error message will appear when you click **save**.)
Time of Day to Perform Update Check	Factory Default = 2:00 A.M. You may choose your desired setting (A.M. or P.M.). However, the recommended time to perform your software update is 12-4:00 A.M. due to network traffic.
Select your Time Zone	Factory Default = Eastern The Time Zone of your area. Possible responses are: Greenwich, Atlantic, Eastern, Central, Mountain, Pacific
Adjust for Daylight Savings Time?	Factory Default = Yes If 'No' is selected, the update will not adjust for Daylight Savings Time.

9.4.3 Update from Server

To configure your modem to perform software update directly from your ISP's server, click the **Update from Server** button in the **Home Summary > Update Modem** page. The following page will be displayed. Next, click the **update software from server** button.

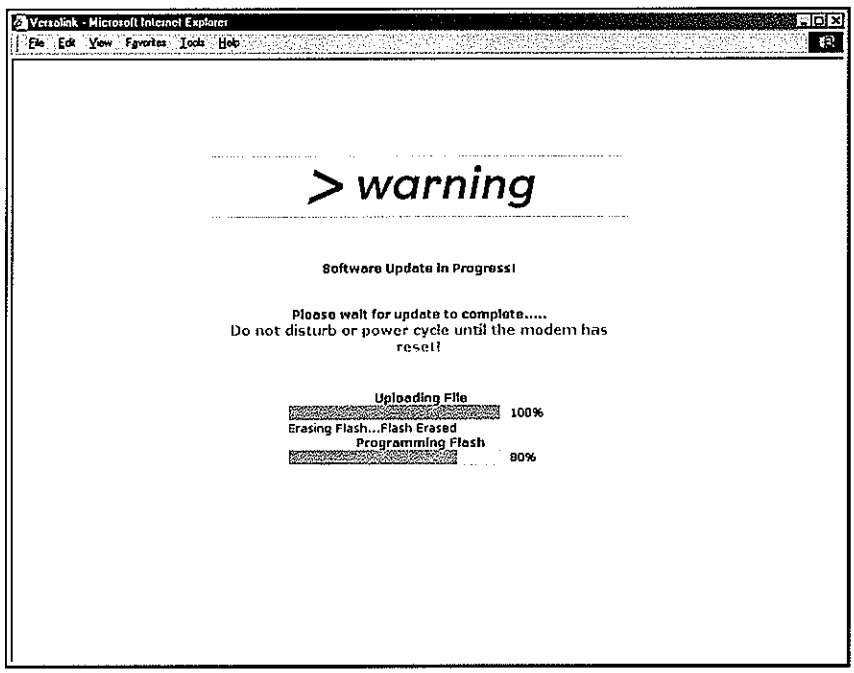


If you clicked on the **update software from server** button in the **Update from Server** page, the following screen will be displayed. The status bar shows the status of the download as the update file is being downloaded to VersaLink.

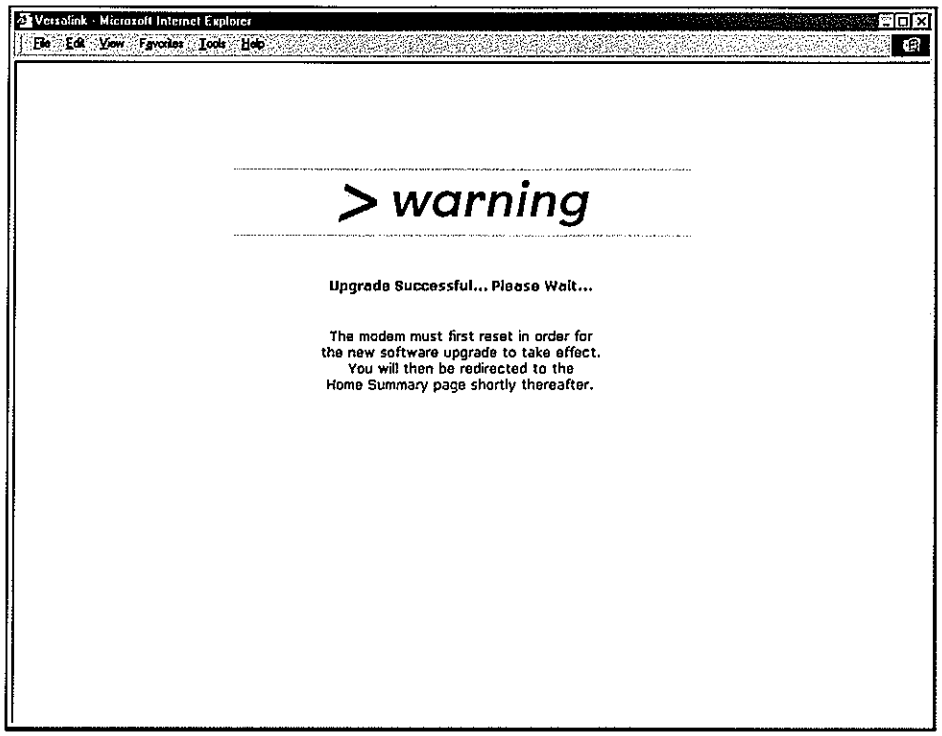


The following screen shows that the file download has completed and that the Programming Flash is downloading.

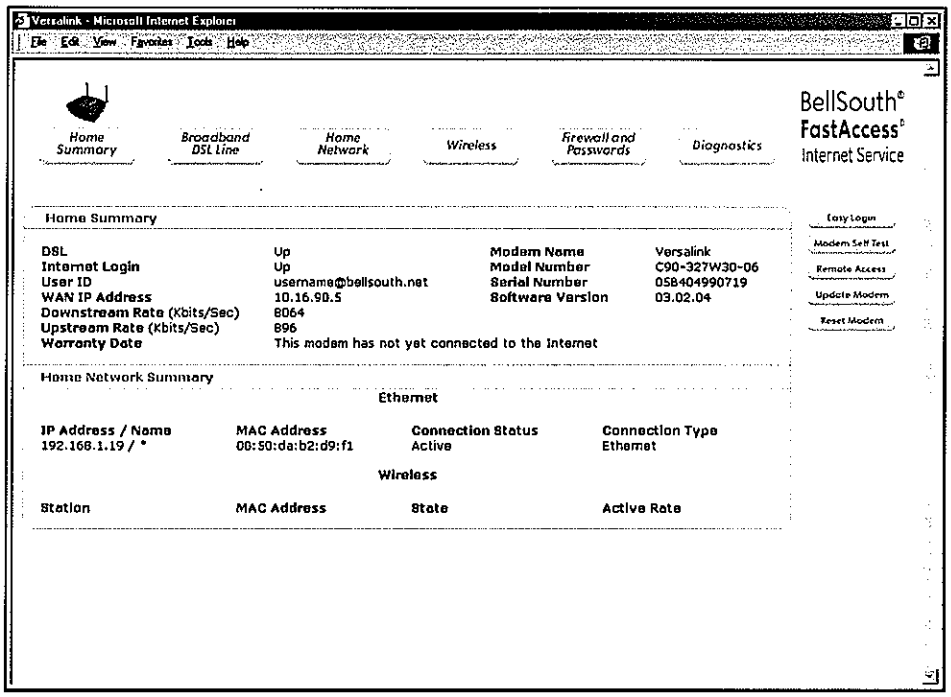
NOTE: Programming Flash is a temporary storage area for the downloaded file.



If the software update was successful, the modem will automatically reset upon completing the software update, and the following screen will be displayed.

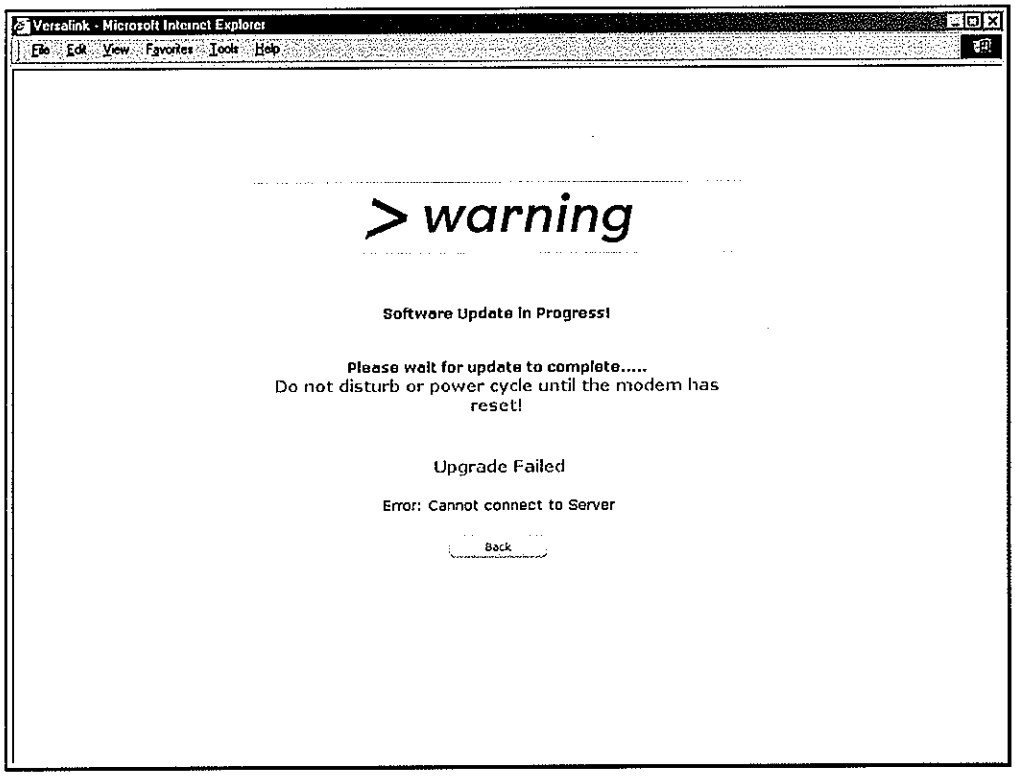


After the modem has been reset, the following **Home Summary** page will be displayed.



If the software update was unsuccessful, the following screen will be displayed. Click the **Back** button to return to the **Update Modem** page.

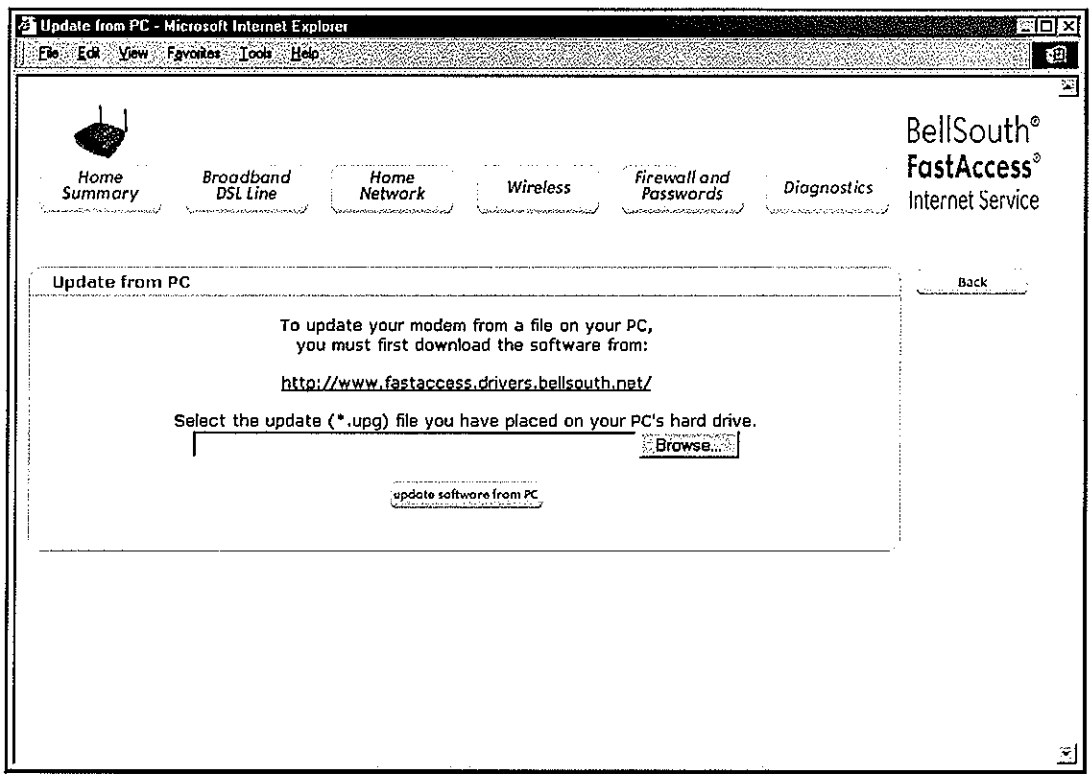
Note: If you experience connection failures, refer to section 16, Appendix A: Troubleshooting Connection Failures, for details. If problems persist, contact the BellSouth help desk at 1-888-321-2DSL (2375) for further instructions.



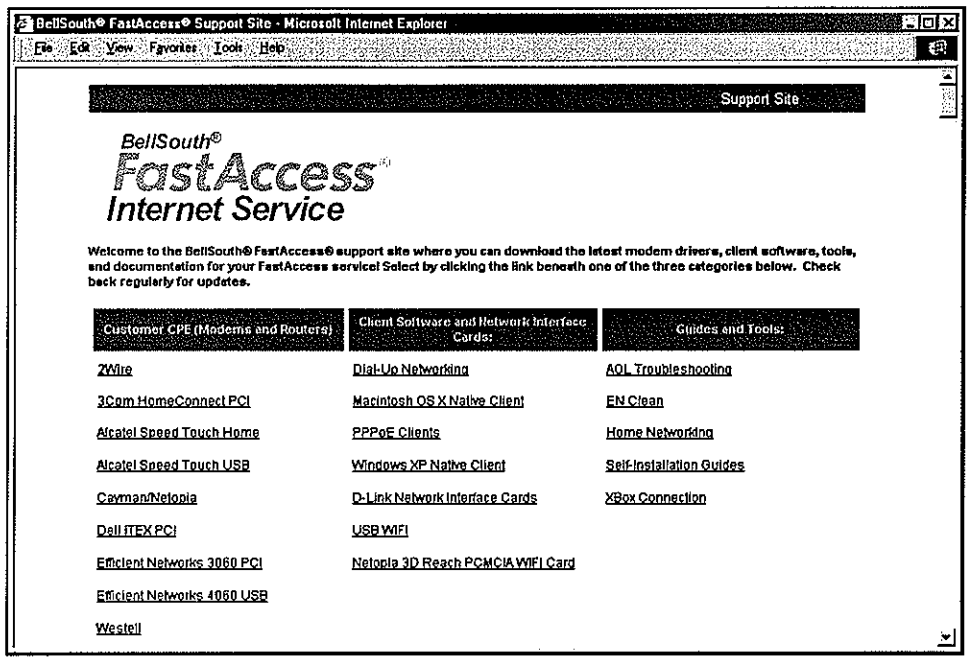
9.4.4 Update from PC

If you clicked on the **Update from PC** button in the **Home Summary > Update Modem** page, the following page will be displayed. This page enables you to update your modem's software by connecting to a configuration server or by downloading the latest firmware from the BellSouth® FastAccess® Support Site to your computer's hard drive.

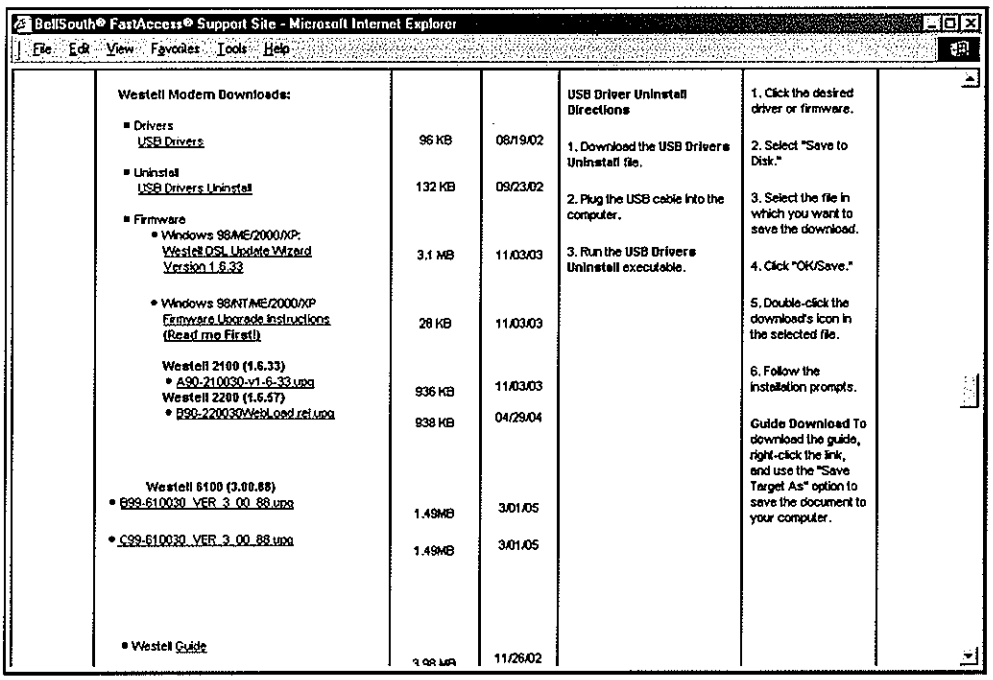
Click on **http://www.fastaccess.drivers.bellsouth.net/** to go to the BellSouth® FastAccess® support site and locate the update file.



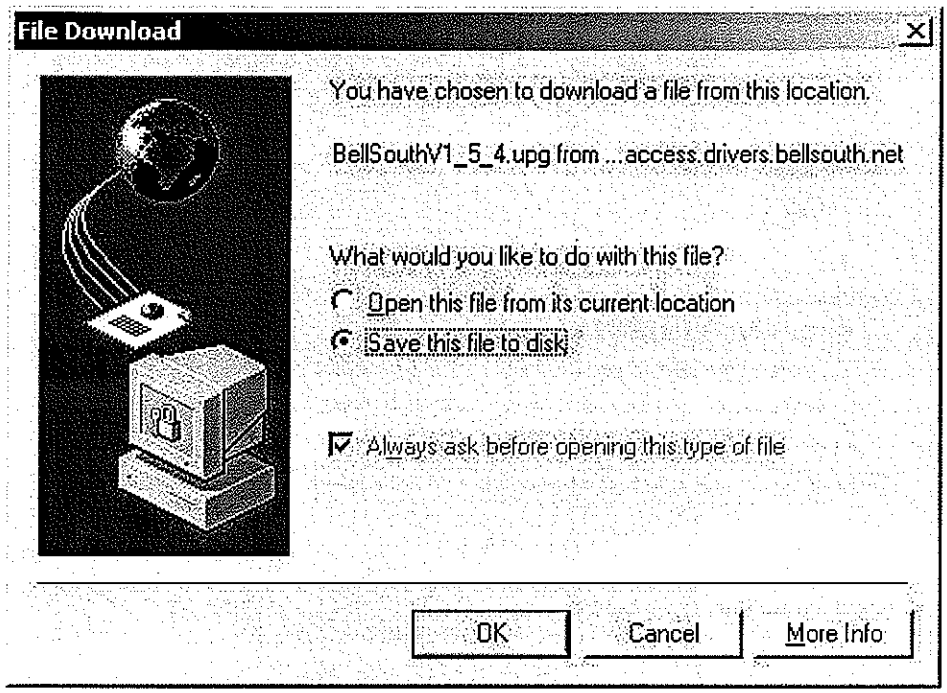
After you have accessed the support site, the following screen will be displayed. Click on **Westell.**



If you clicked on **Westell**, the following screen will be displayed. Click on the firmware version that you want to download (the actual firmware version may differ from the version displayed in this document).

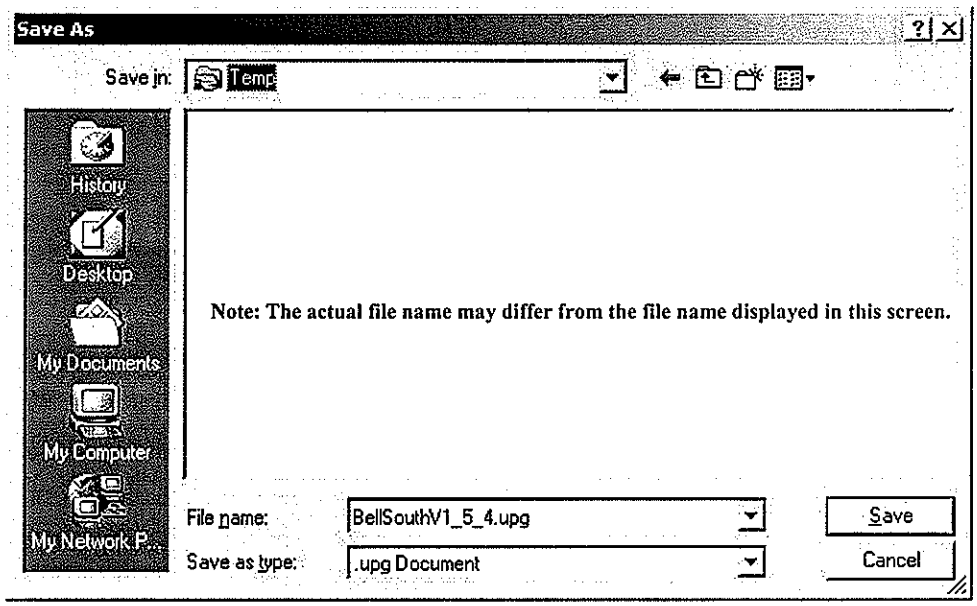


In the **File Download** screen, click the option labeled **Save this file to disk,** and then click **OK.**

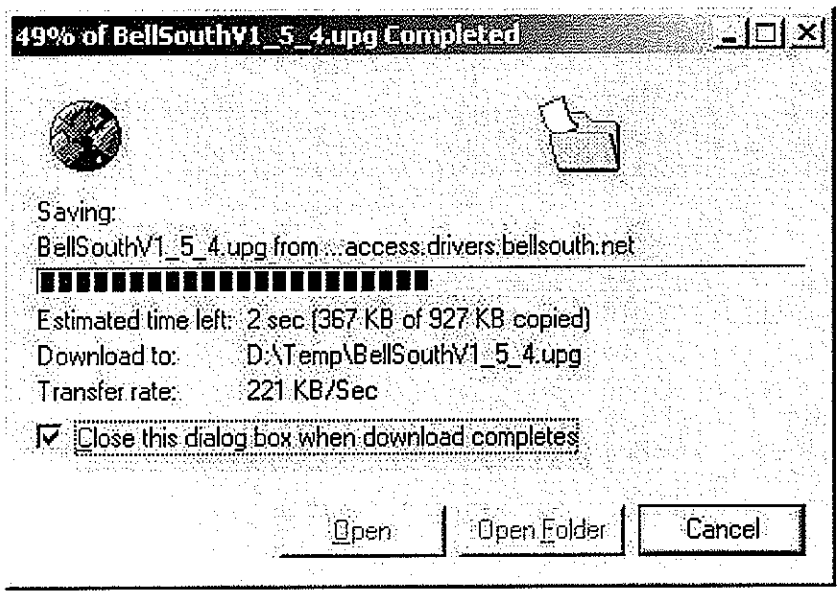


Save the update file to the directory of your choice by using the **Save in:** drop-down menu. Once you have selected the location where you want to store the file, click **save.**

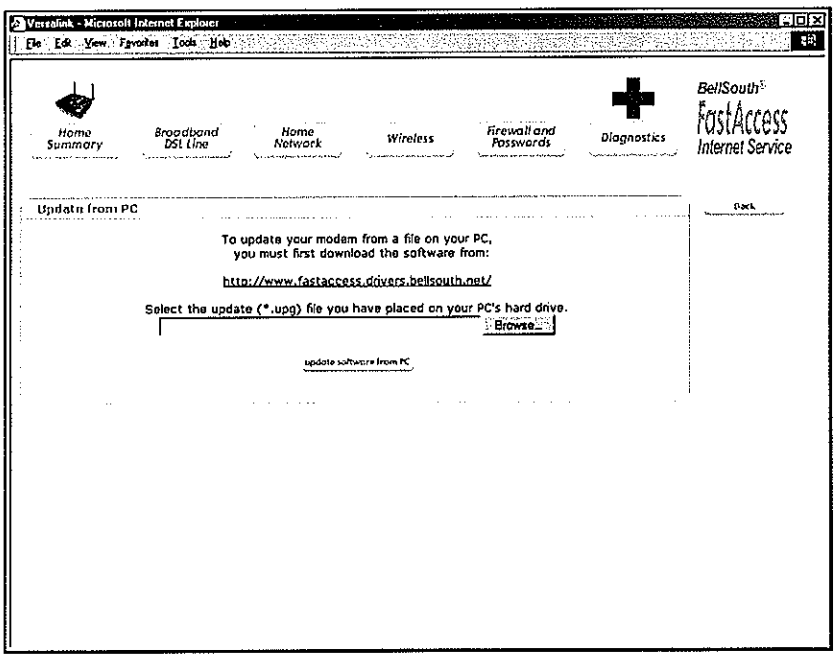
NOTE: The file extension should be .upg



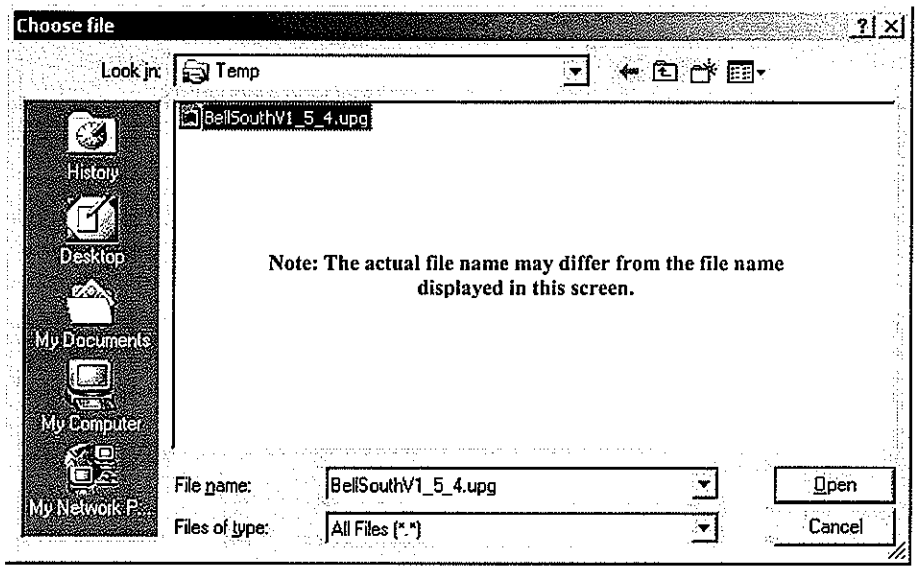
If you clicked **save**, the following screen will be displayed. This screen shows that the file is being downloaded (saved) to your PC's hard drive. For future reference, please record the path name of the saved file. The path name is located to the right of the **Download to:** heading.



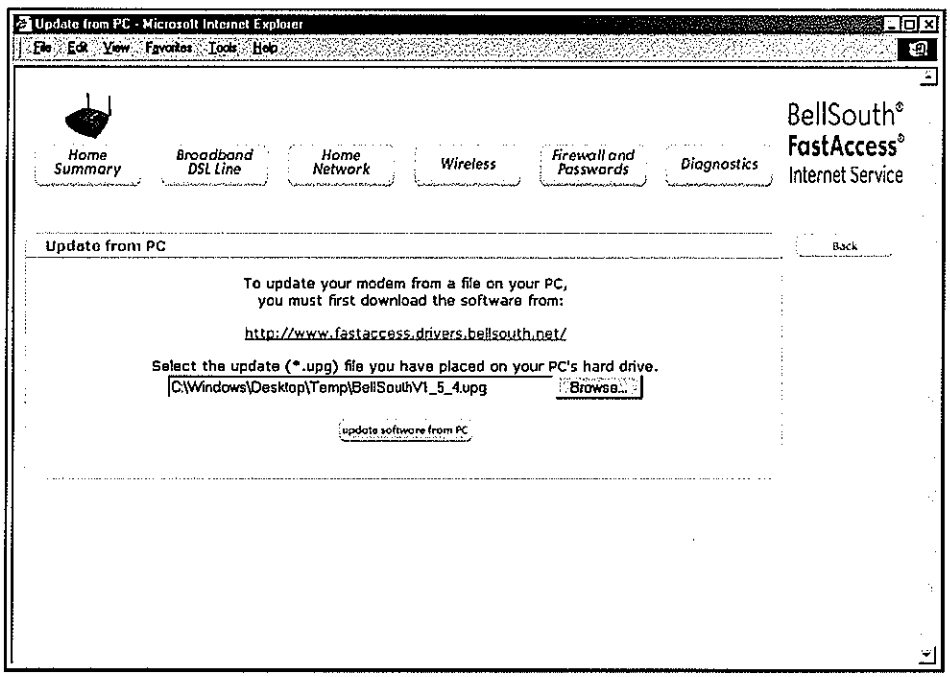
After you have saved the upgrade software to your PC, you are ready to begin the upgrade process. Click **Browse...** and go to the location where the update file is stored on your PC's hard drive.



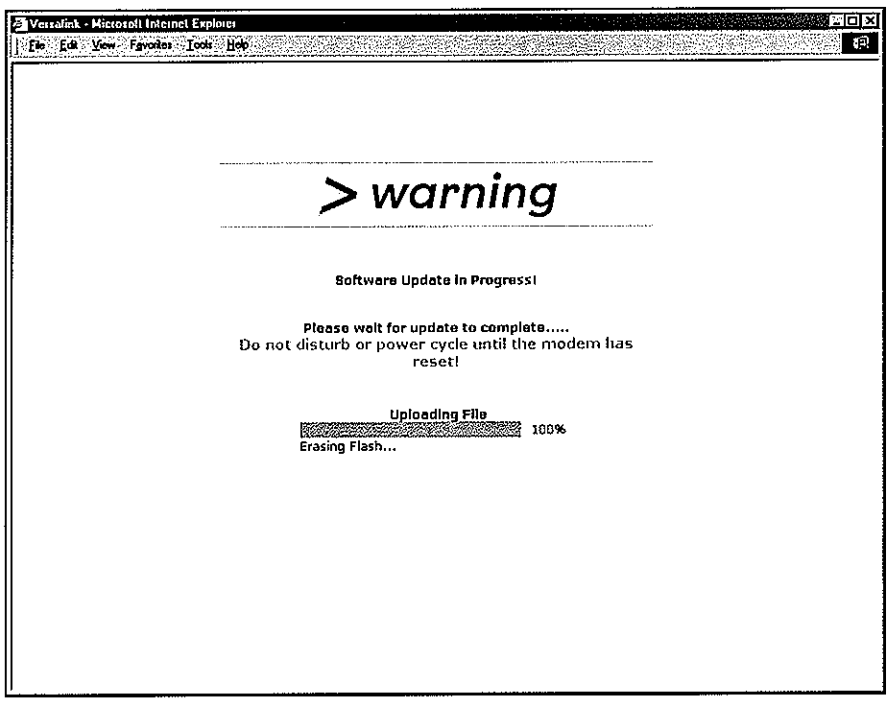
After you have located the update file on your PC's hard drive, click the update (*.upg) file. The file name will appear in the field labeled **File name:**. Click **Open.**



If you clicked **Open,** the following page will be displayed. The path name of the update file will appear in the Browse window. Next, click the **update software from PC** button to begin the modem update.

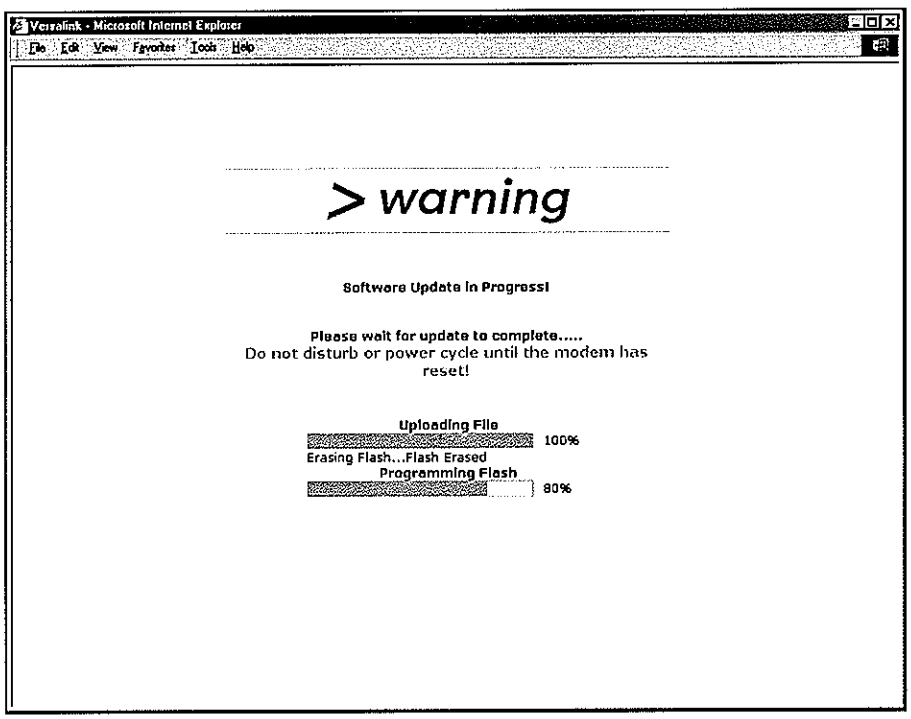


If you clicked the **update software from PC** button, the following screen will be displayed. The status bar shows the status of the download as the update file is being downloaded to VersaLink.



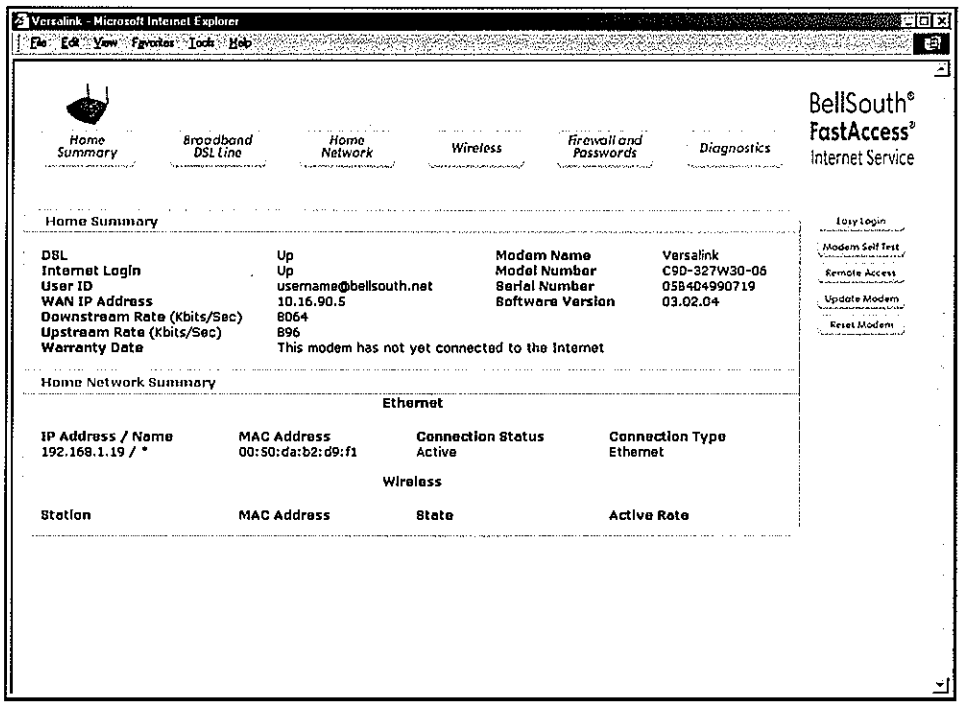
The following screen shows that the file download has completed and that the Programming Flash is downloading.

NOTE: Programming Flash is a temporary storage area for the downloaded file.



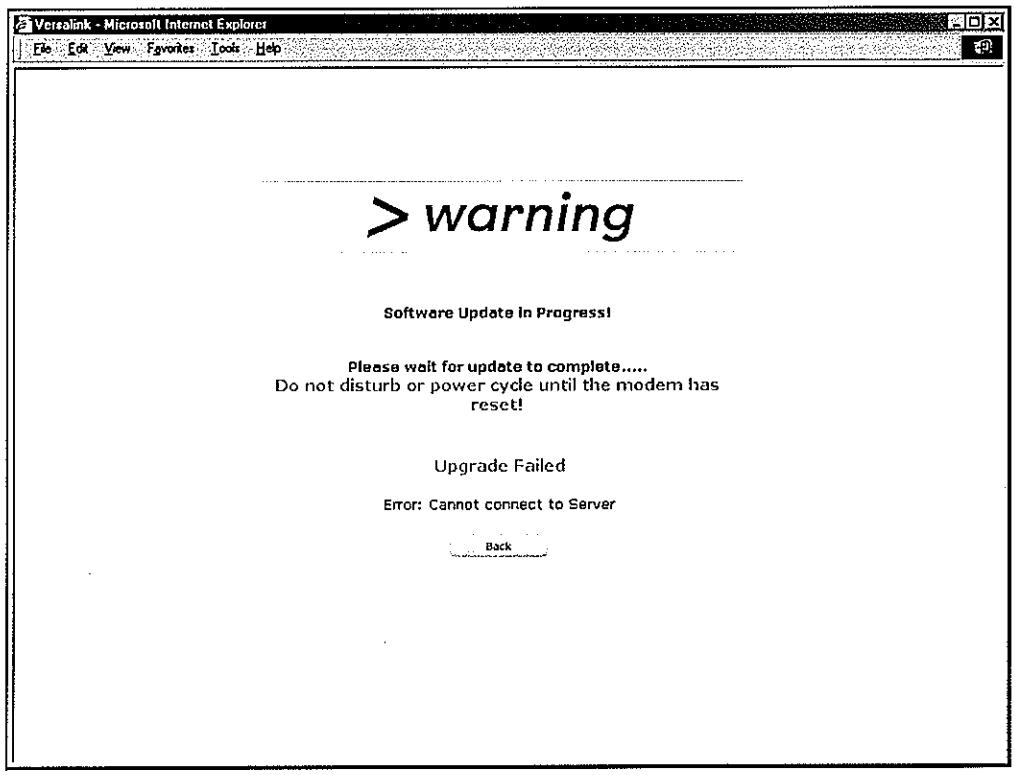
If the software update was successful, the modem will automatically reset upon completing the software update, and the following screen will be displayed.

After the modem has been reset, the following **Home Summary** page will be displayed.



If the software update was unsuccessful, the following screen will be displayed. Click the **Back** button to return to the **Software Upgrade** page.

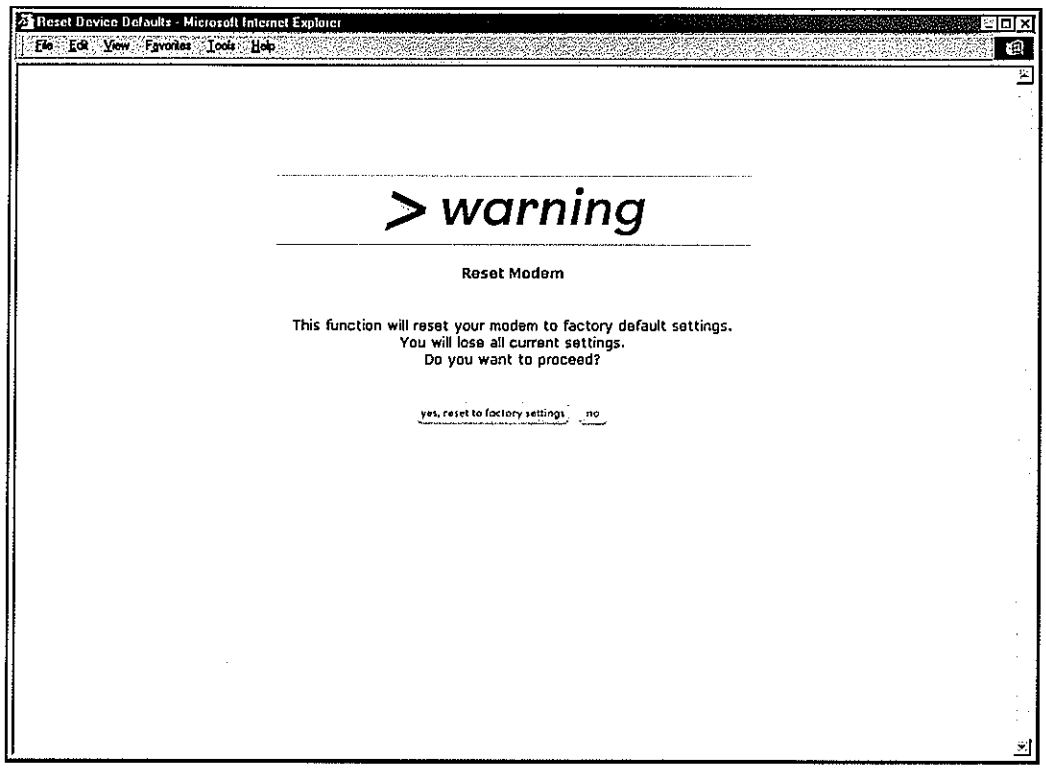
Note: If you experience connection failures, refer to section 16, Appendix A: Troubleshooting Connection Failures, for details. If problems persist, contact the BellSouth help desk at 1-888-321-2DSL (2375) for further instructions.



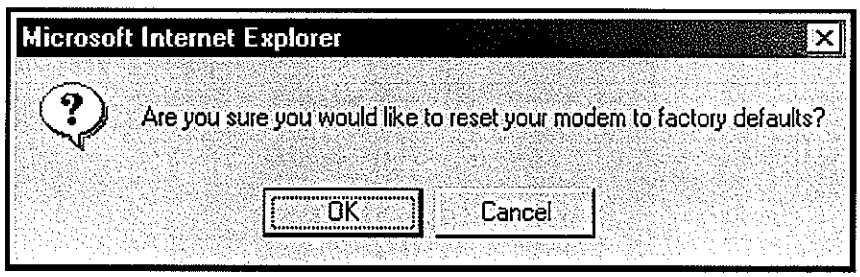
9.5 Reset Modem

To reset VersaLink to the factory settings, click the **Reset Modem** button at the **Home Summary** page. The following page will be displayed. Next, click the button labeled **yes, reset to factory settings.** Click **no** if you want to return to the **Home Summary** page.

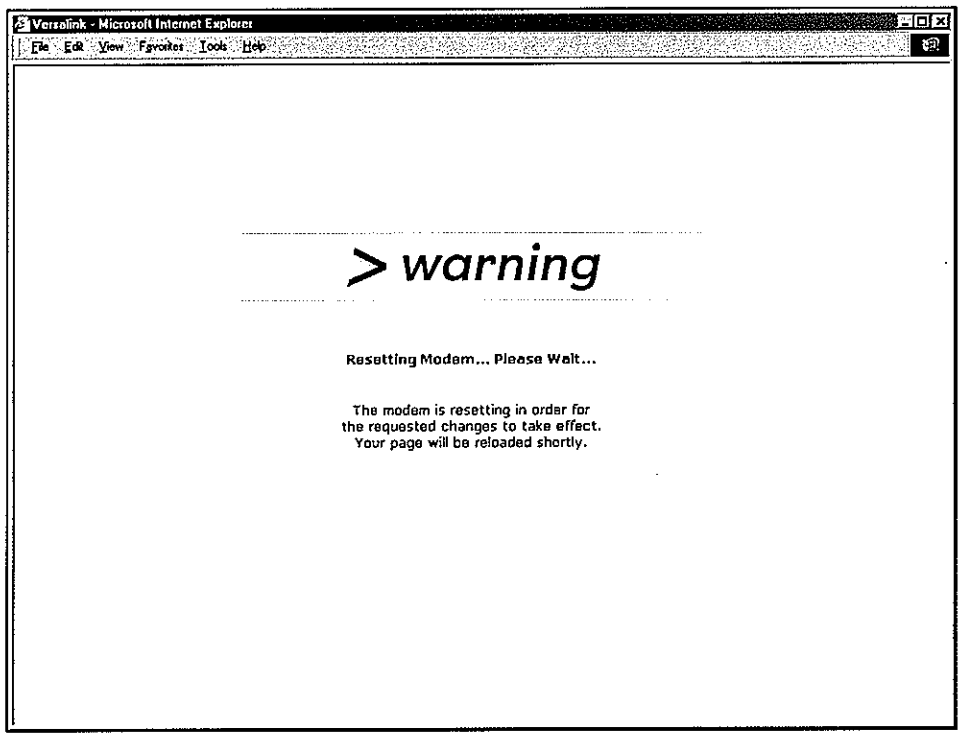
WARNING: If you click **"yes, reset to factory settings,"** you will lose all current settings.



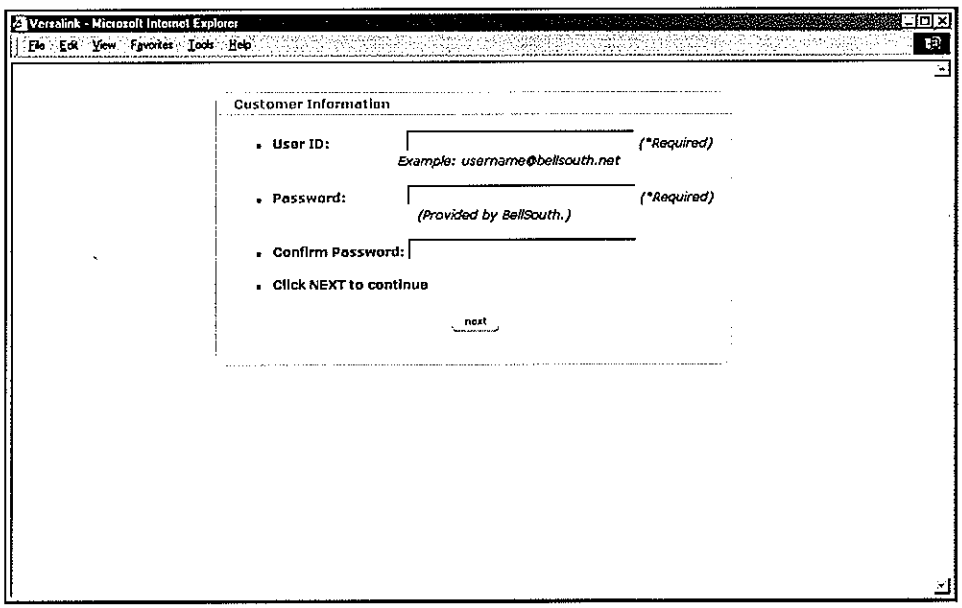
If you clicked **yes, reset to factory settings** at the **Reset Modem** page, the following pop-up screen will be displayed. Click **OK** in the pop-up screen, to confirm that you want to reboot the modem. If you click **Cancel,** the modem will not be reset.



If you clicked **OK** in the preceding pop-up screen, the following screen will be displayed. The message confirms that the modem is resetting.

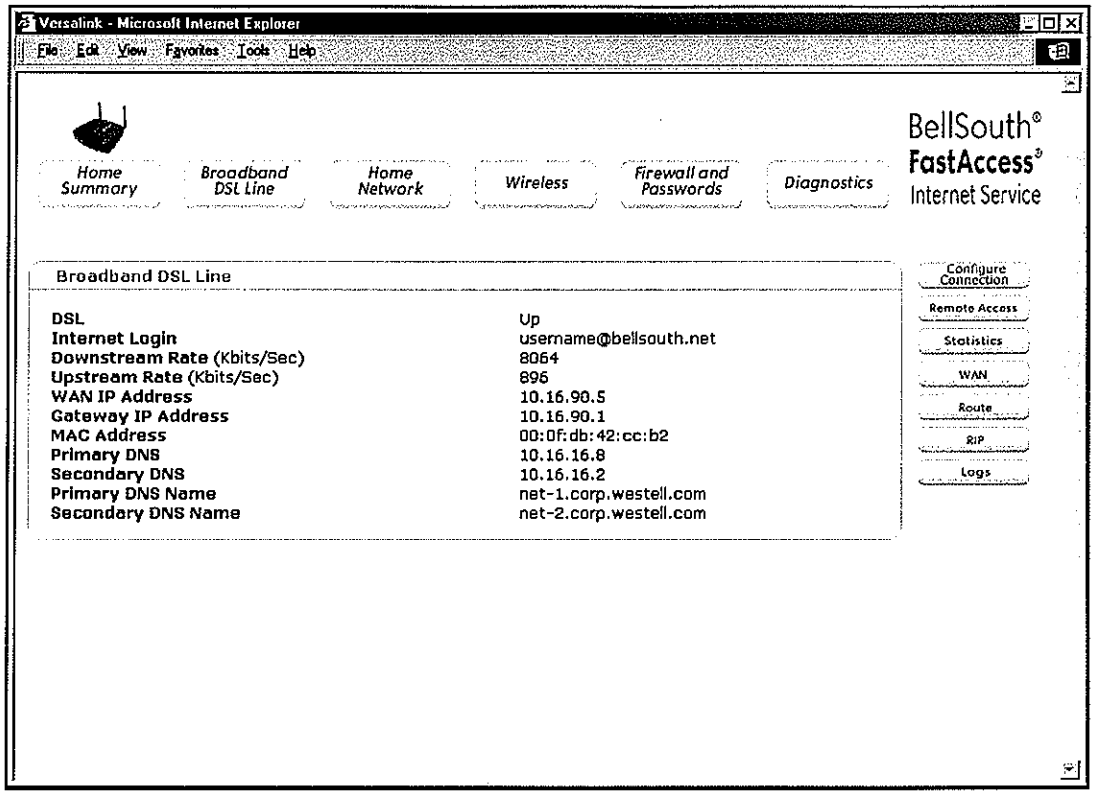


After the modem has been reset the **Customer Information** page will be displayed. Enter your values in the fields provided and click **next** to continue. Refer to section 6 for detailed instructions on the **Customer Information** page.



10. BROADBAND DSL LINE

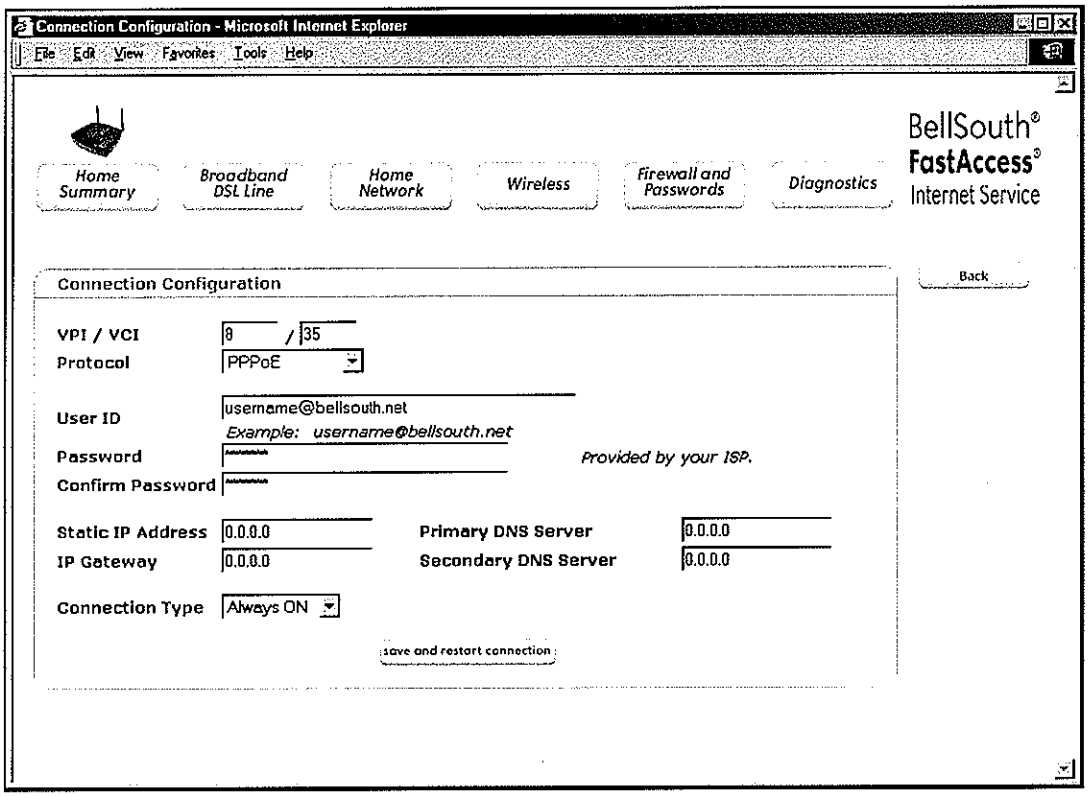
If you click on **Broadband DSL Line** at the main menu, the following page will be displayed. This page provides statistics about your modem's DSL connection. To configure the settings for your modem, click on the desired submenu button at the right of the page.



Broadband DSL Line	
DSL	Up = DSL connection established Down = No DSL connection established
Internet Login	The login name used to connect to your ISP (see section 6). Provided by BellSouth.
Downstream Rate (Kbits/Sec)	The downstream (incoming) rate of your DSL signal transmission.
Upstream Rate (Kbits/Sec)	The upstream (outgoing) rate of your DSL signal transmission.
WAN IP Address	The WAN IP address that your modem is on.
Gateway IP Address	The modem's Gateway IP address.
MAC Address	The modem's Media Access Controller (MAC) address.
Primary DNS	Provided by BellSouth.
Secondary DNS	Provided by BellSouth.
Primary DNS Name	Provided by BellSouth.
Secondary DNS Name	Provided by BellSouth.

10.1 Configure Connection

If you click the **Configure Connection** button at the **Broadband DSL Line** page, the following page will be displayed. This page enables you to change your connection settings. If you change any settings in this page, you must click **save and restart connection** to allow the settings to take effect. After you have configured the settings for this page, click **Back** to return to the **Broadband DSL Line** page.

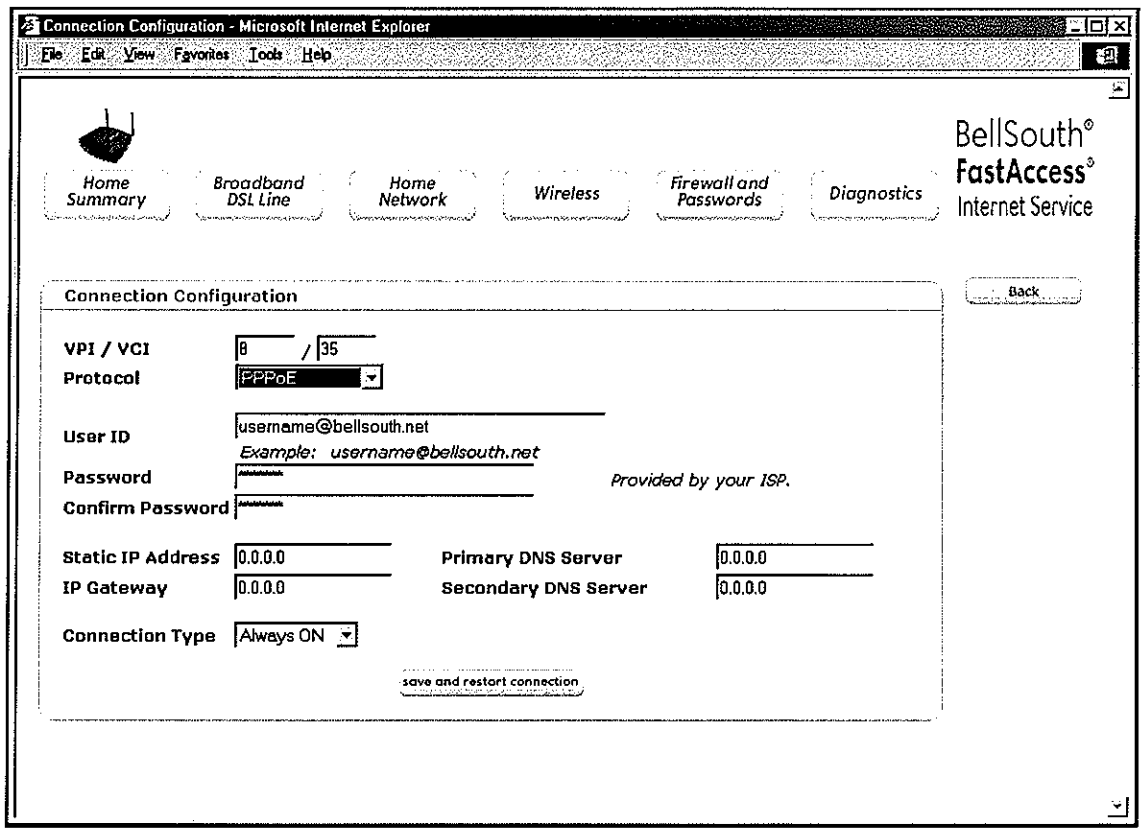


Connection Configuration	
VPI/VCI	VPI =The VPI (Virtual Path Indicator) value for a particular VC, which is defined by BellSouth. VCI = The VCI (Virtual Channel Indicator) value for a particular VC, which is defined by BellSouth.
Protocol	Default = PPPoE Displays the Protocol for each VC, which is specified by our Internet Service Provider. Possible responses are: PPPoE = Point to Point Protocol over Ethernet Bridge Ethernet =Bridge Protocol over Ethernet
User ID	The User ID is provided by BellSouth. An example of the user name is username@bellsouth.net
Password	The Password is provided by BellSouth.
Confirm Password	The identical value that you typed in the Password field.
Static IP Address	IP address assigned by BellSouth.
IP Gateway	IP Gateway address assigned by BellSouth.
Connection Type	Factory default = Always On Possible response are: Manual = Selecting this feature allows you to manually establish your PPP session.

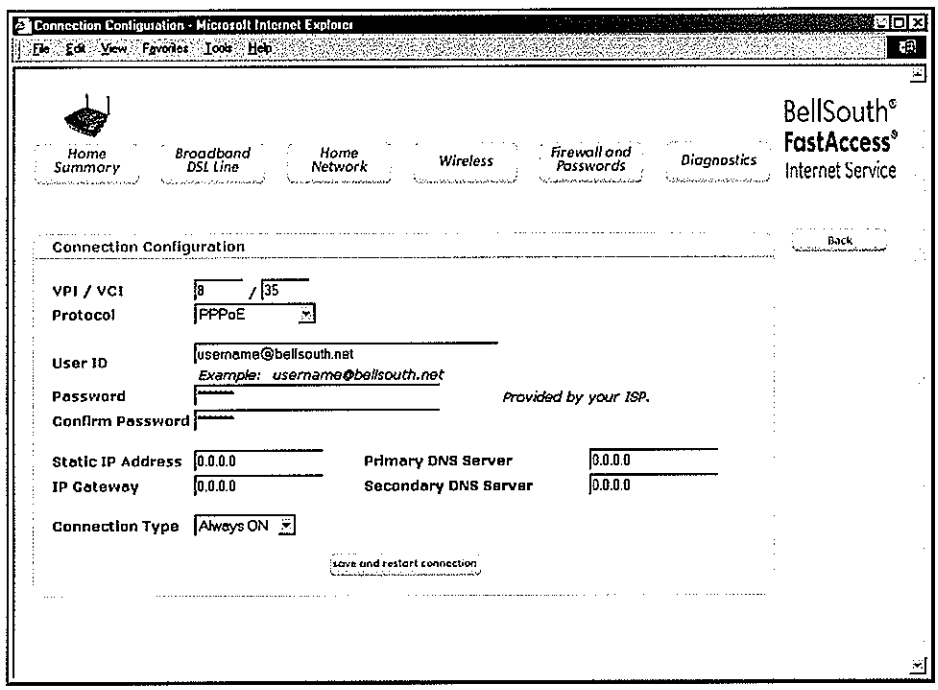
	On Demand = Selecting this feature allows VersaLink to automatically re-establish your PPP session on demand anytime your PC requests Internet activity (for example, browsing the Internet, email, etc.). When you have traffic, it may cause a delay. Always On = Selecting this feature allows VersaLink to automatically establish a PPP session when you log on, or if the PPP session goes down.
Primary DNS Server	Provided by BellSouth.
Secondary DNS Server	Provided by BellSouth.

10.1.1 Configuring VersaLink for PPPoE

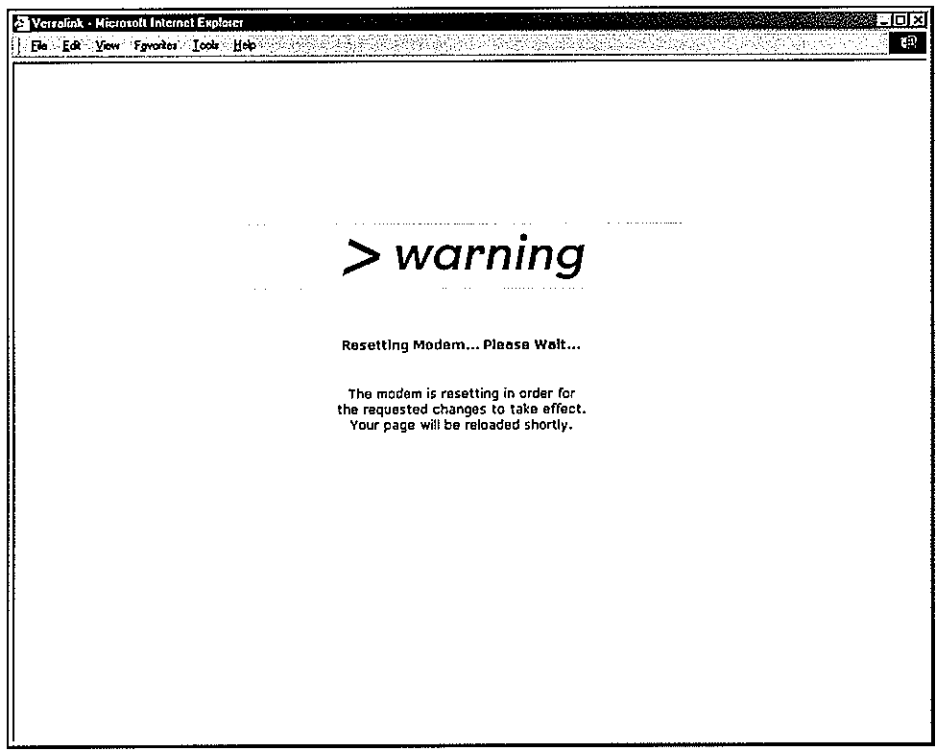
To configure VersaLink for PPPoE protocol, select **PPPoE** from the **Protocol** drop-down menu.



If you selected **PPPoE**, the following page will be displayed. Enter the appropriate values in the fields provided, and then click on **save and restart connection** to save the changes.

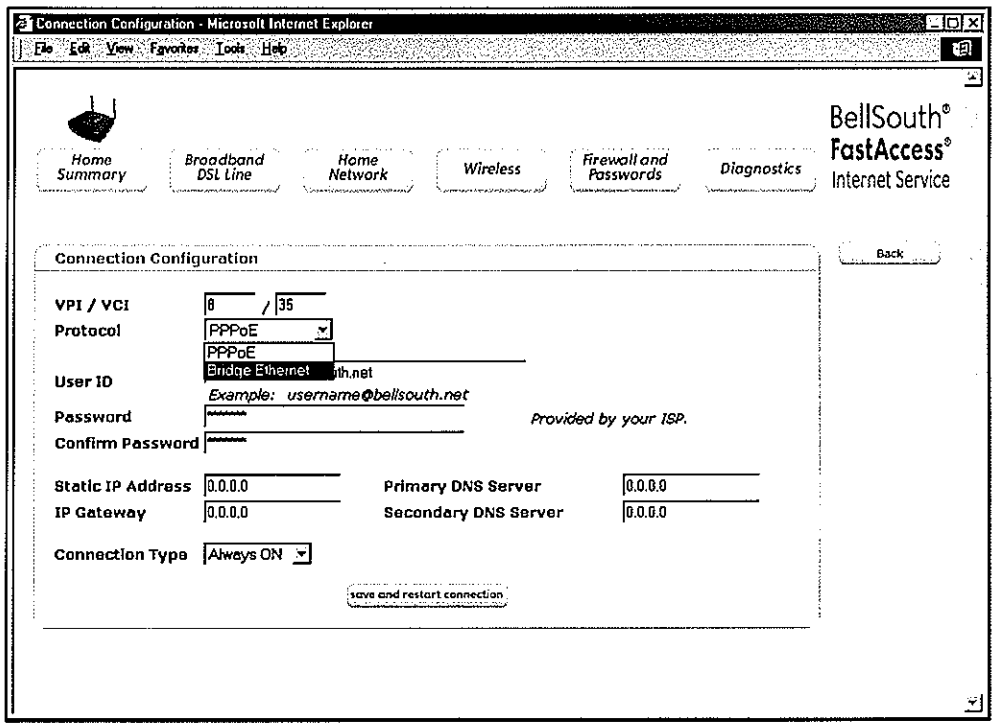


If you clicked on **save and restart connection**, the following screen will be displayed and the modem will be reset. After a brief moment, the **Home Summary** page will be displayed.

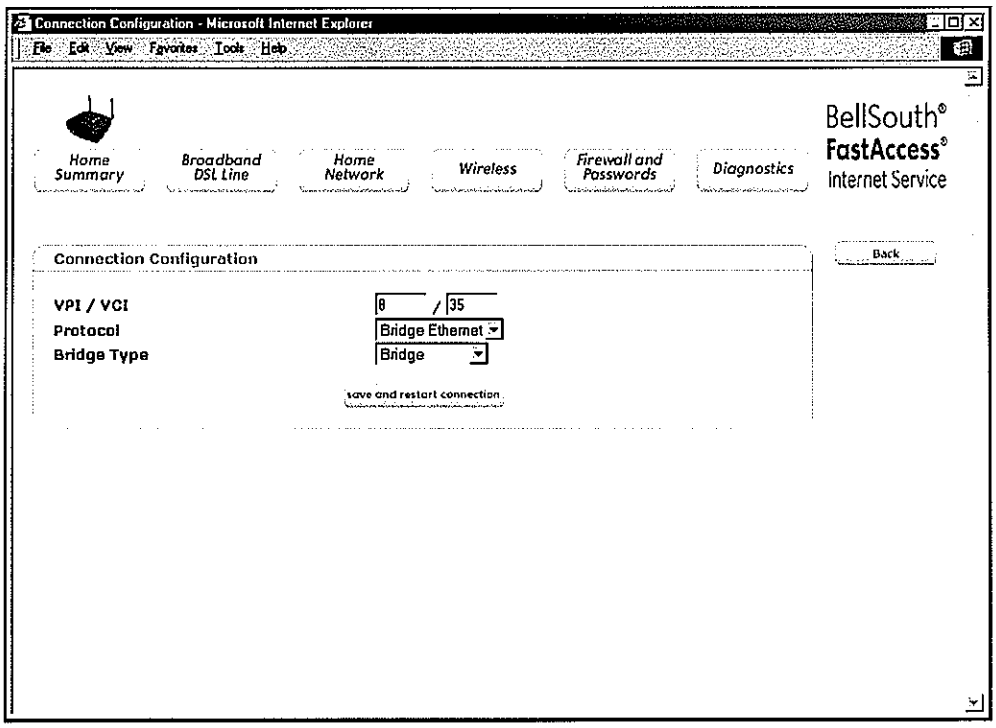


10.1.2 Configuring VersaLink for Bridge Ethernet

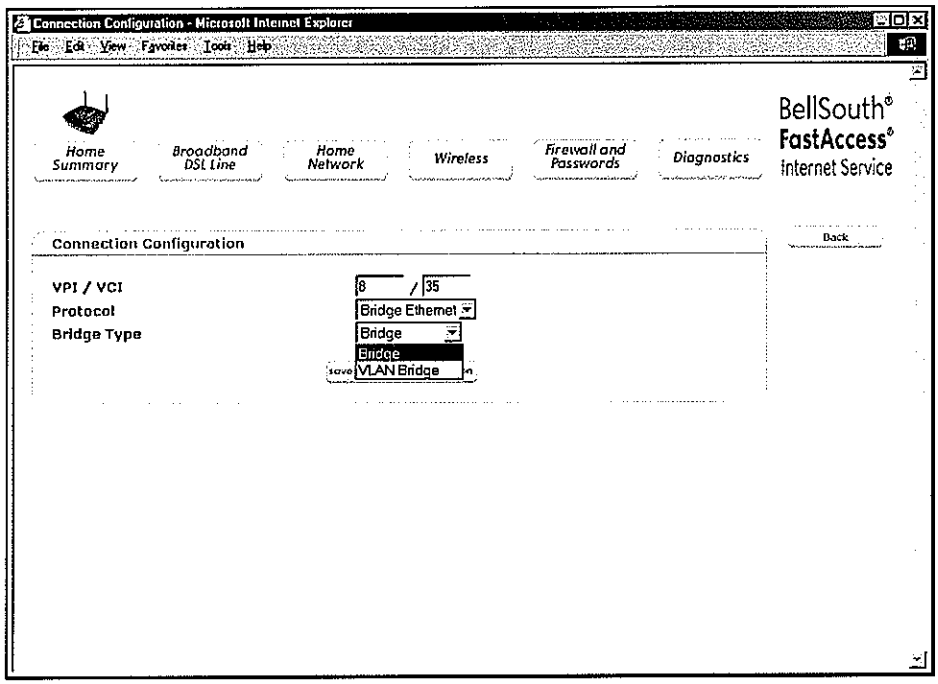
To configure VersaLink for Bridge Ethernet protocol, select **Bridge Ethernet** from the **Protocol** drop-down menu.



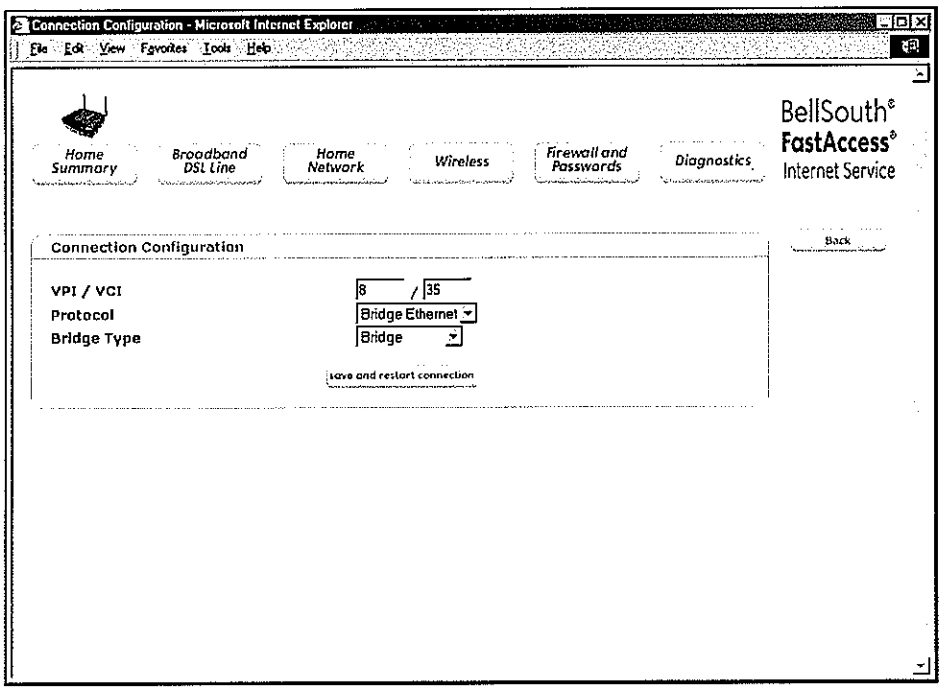
If you selected **Bridge Ethernet**, the following page will be displayed.



From the **Bridge Type** drop-down menu, select the type that you will use for your Bridge connection.

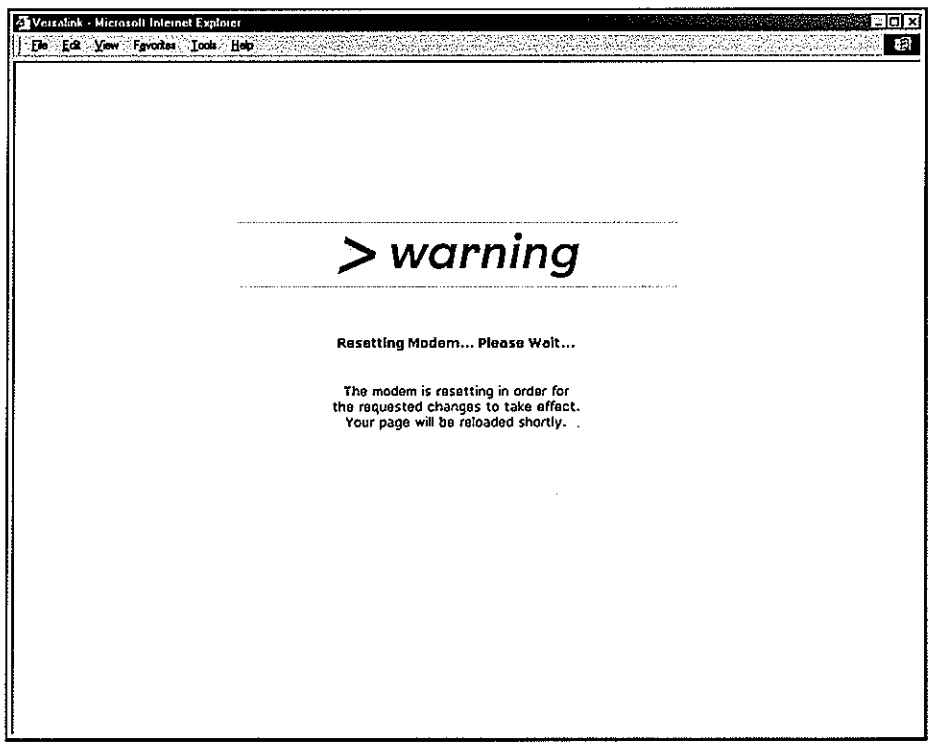


If you selected **Bridge**, the following page will be displayed. Click **save and restart connection** to save the settings.

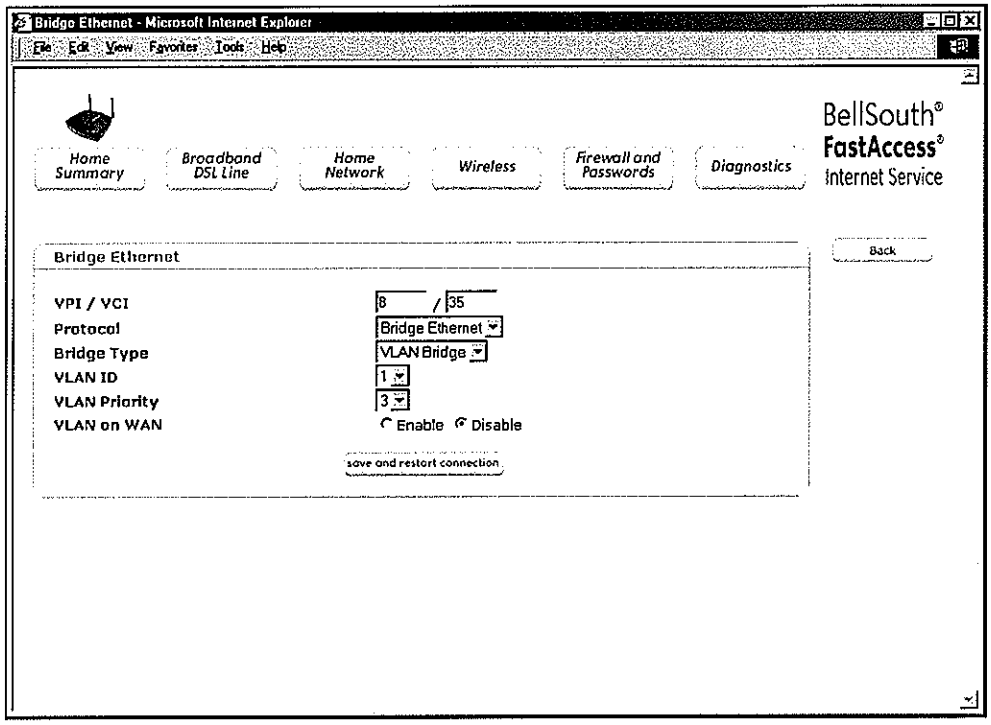


Connection Configuration	
VPI/VCI	VPI =The VPI (Virtual Path Indicator) value for a particular VC, which is defined by BellSouth. VCI = The VCI (Virtual Channel Indicator) value for a particular VC, which is defined by BellSouth.
Protocol	Factory Default = PPPoE Displays the Protocol for each VC, which is specified by our Internet Service Provider. Possible responses are: PPPoE = Point to Point Protocol over Ethernet Bridge Ethernet =Bridge Protocol over Ethernet
Bridge Type	Factory Default = Bridge Possible response are: Bridge = A bridge is a layer 2 device that connects two segments of the same LAN that use the same protocol such as Ethernet. The modem does not have a WAN IP address in this mode. The client PC will typically get an IP address from a DHCP server in the network or the IP address can be assigned to the client PC statically. VLAN Bridge = Assigns VLAN tags to individual data ports on the modem.

If you clicked on **save and restart connection**, the following screen will be displayed and the modem will be reset. After a brief moment, the **Home Summary** page will be displayed.

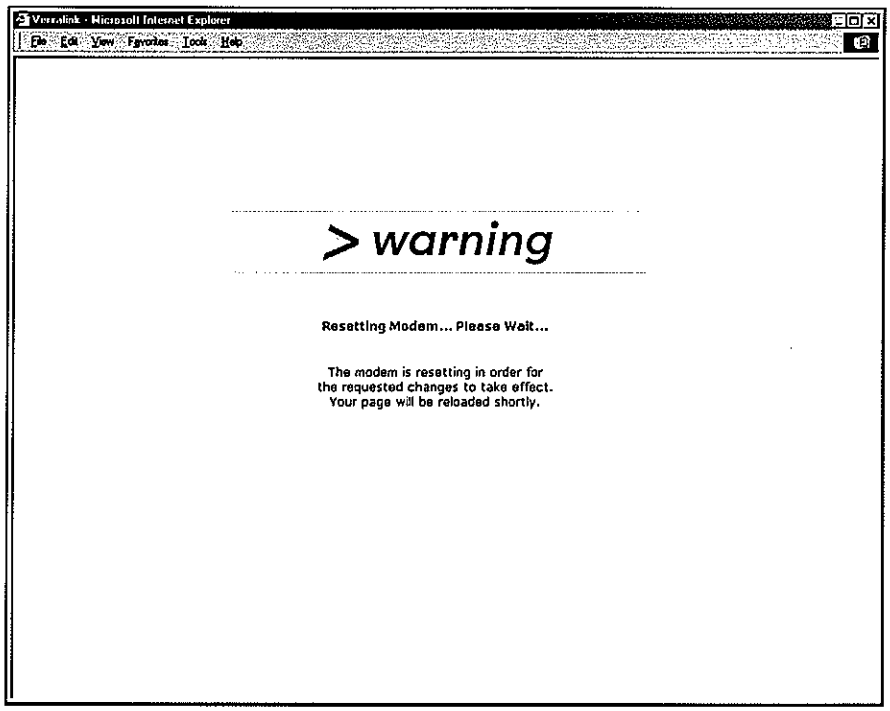


If you selected **VLAN Bridge** from the **Bridge Type** drop-down menu, the following page will be displayed. Enter the appropriate values, and then click **save and restart connection** to save the settings.



Bridge Ethernet	
VPI/VCI	VPI =The VPI (Virtual Path Indicator) value for a particular VC, which is defined by BellSouth. VCI = The VCI (Virtual Channel Indicator) value for a particular VC, which is defined by BellSouth.
Protocol	Factory Default = PPPoE Displays the Protocol for each VC, which is specified by our Internet Service Provider. Possible responses are: PPPoE = Point to Point Protocol over Ethernet Bridge Ethernet =Bridge Protocol over Ethernet
Bridge Type	Factory Default = Bridge Possible response are: Bridge = A bridge is a layer 2 device that connects two segments of the same LAN that use the same protocol such as Ethernet. The modem does not have a WAN IP address in this mode. The client PC will typically get an IP address from a DHCP server in the network or the IP address can be assigned to the client PC statically. VLAN Bridge = Assigns VLAN tags to individual data ports on the modem.
VLAN ID	This allows you to assign a VLAN ID to the port. Possible responses are: 1 through 8
VLAN Priority	This allows you to set the VLAN priority for the port. Possible responses are: 0 through 7
VLAN on WAN	Factory Default = Disable When Enabled, this will enable you to keep or remove the VLAN tag on the port when data is outgoing to the WAN.

If you clicked on **save and restart connection**, the following screen will be displayed and the modem will be reset. After a brief moment, the **Home Summary** page will be displayed.

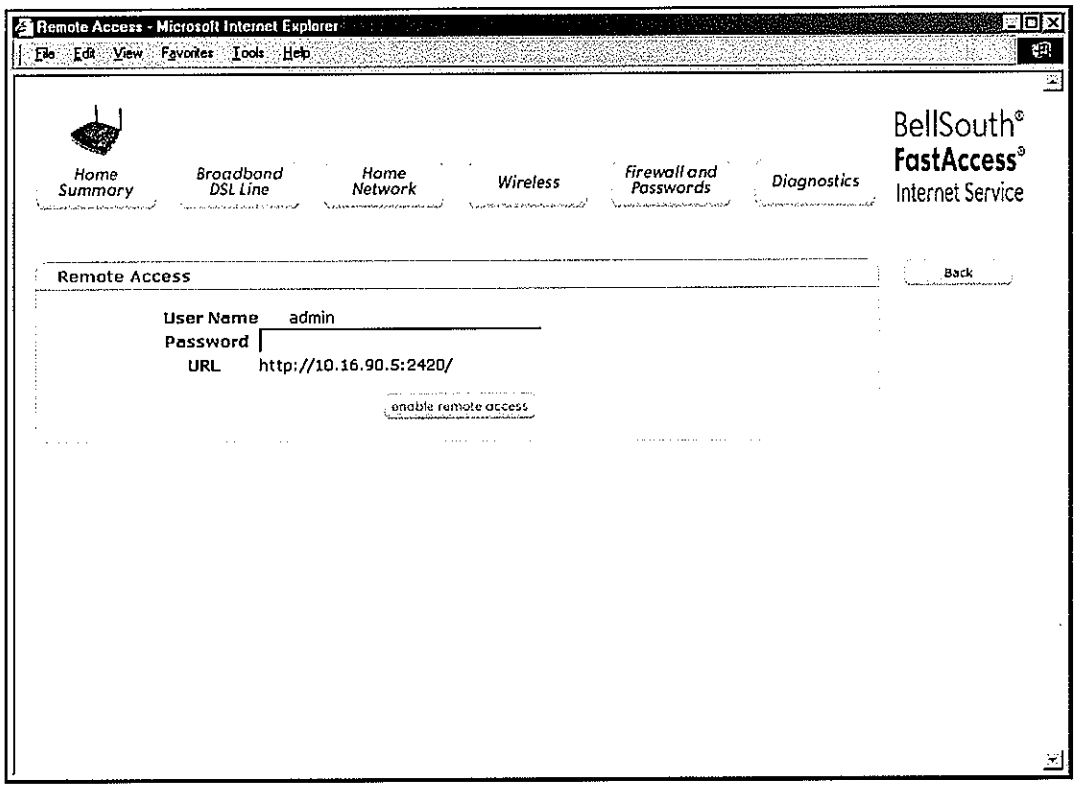


10.2 Remote Access

If you click the **Remote Access** button at the **Broadband DSL Line** page, the following page will be displayed. This page enables you enter a password and enable remote access. (The Remote Access menu button will appear only after you have successfully established a connection to the Internet.)

To enable Remote Access, type in a password and click the **enable remote access** button. The password should be at least 4 characters long and should not exceed 32 characters. Do not type a blank space or asterisks in the Password field. The password is also case sensitive.

NOTE: The Remote Access menu option will not be available if you are in Bridge Ethernet mode.

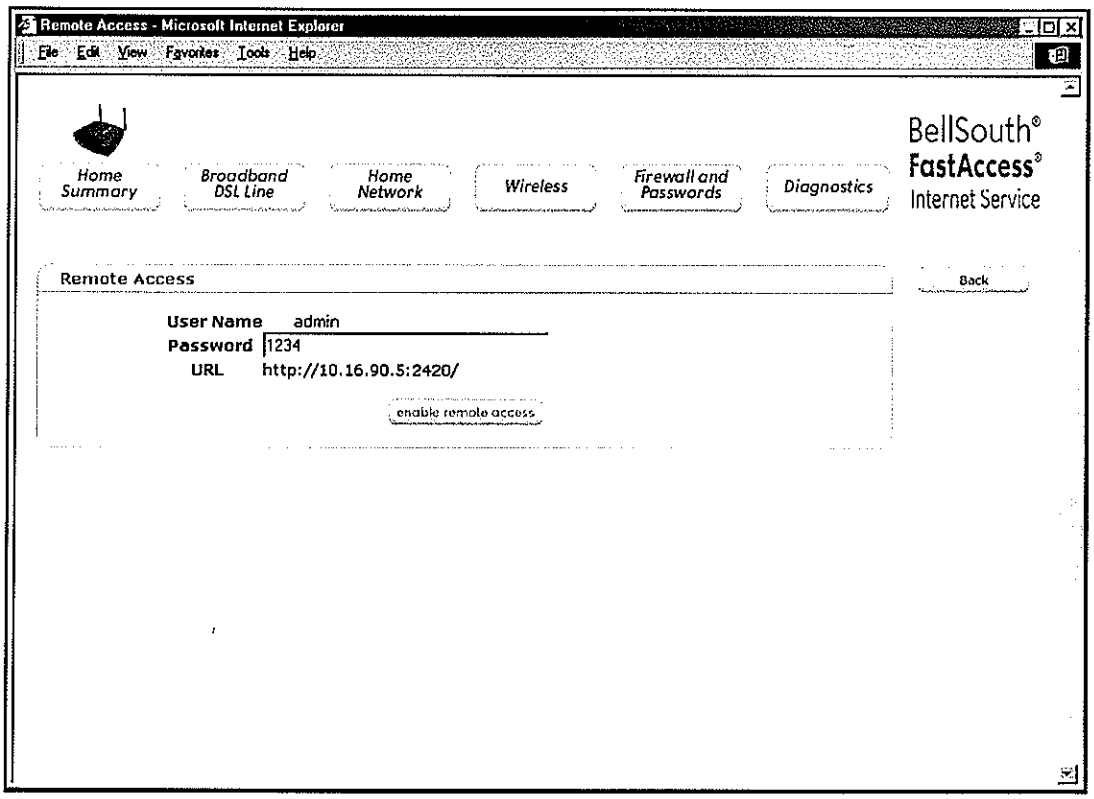


Remote Access	
User Name	Displays your current User Name (Static field)
Password	Field for entering your password
URL Address	Displays the IP address of the remote management gateway.

After you have entered a password and clicked **enable remote access** in the preceding page, the **Remote Access** page will display the following message:

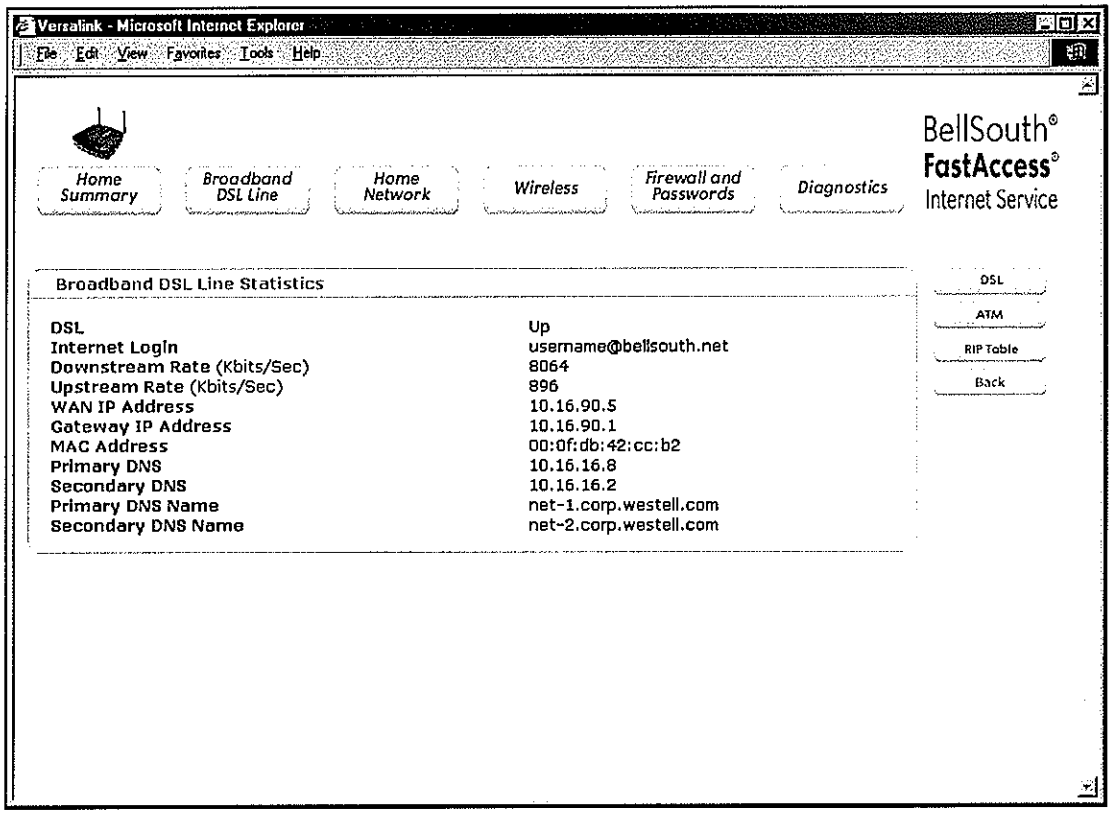
Remote access is currently enabled. After 20 minutes of inactivity, or upon reboot, remote access will be automatically disabled.

To disable remote access, click the **disable remote access** button.



10.3 Statistics

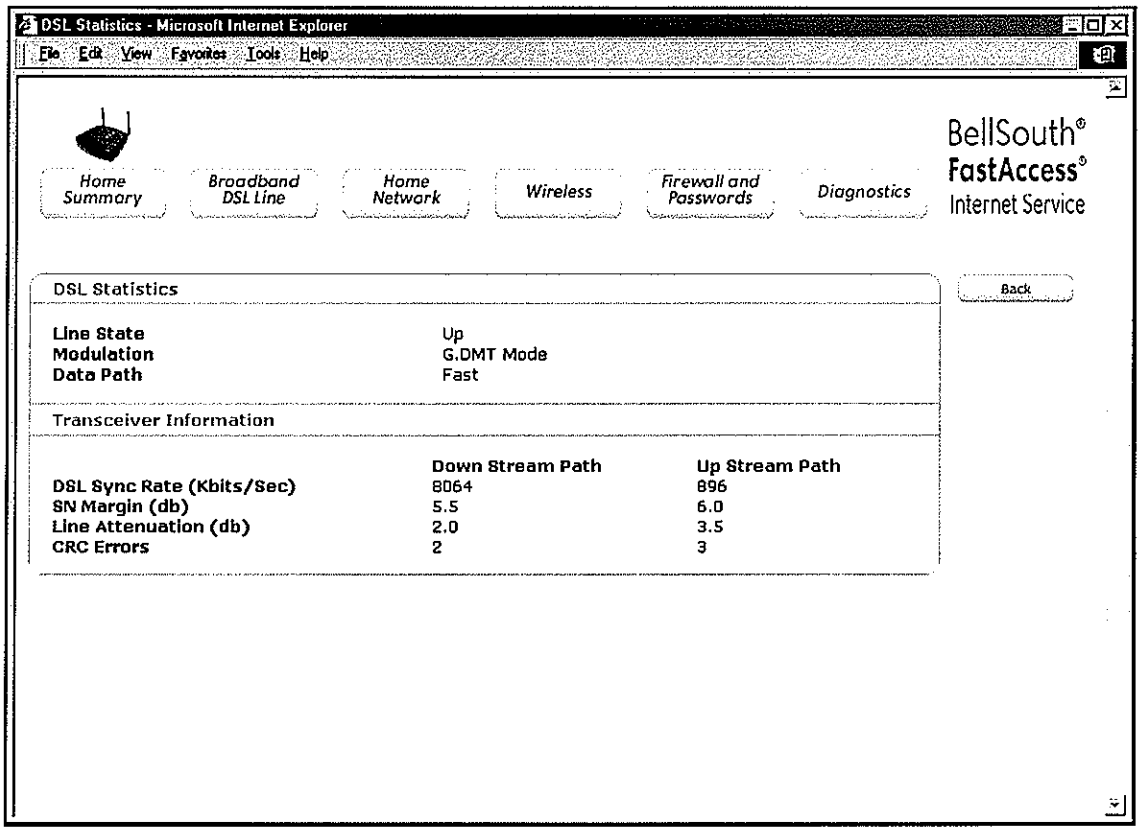
If you click the **Statistics** button at the **Broadband DSL Line** page, the following page will be displayed. This page provides information about your DSL connection. Click on the desired submenu button to view the statistics page for that option.



Connection Information	
DSL	Up = DSL connection established Down = No DSL connection established
Internet Login	The login name used to connect to your ISP (see section 6). Provided by BellSouth.
Downstream Rate	The downstream (incoming) rate of your DSL signal transmission.
Upstream Rate	The upstream (outgoing) rate of your DSL signal transmission.
WAN IP Address	The WAN IP address that your modem is on.
Gateway IP Address	The modem's Gateway IP address.
MAC Address	The modem's Media Access Controller (MAC) address.
Primary DNS	Provided by BellSouth.
Secondary DNS	Provided by BellSouth.
Primary DNS Name	Provided by BellSouth.
Secondary DNS Name	Provided by BellSouth.

10.3.1 DSL Statistics

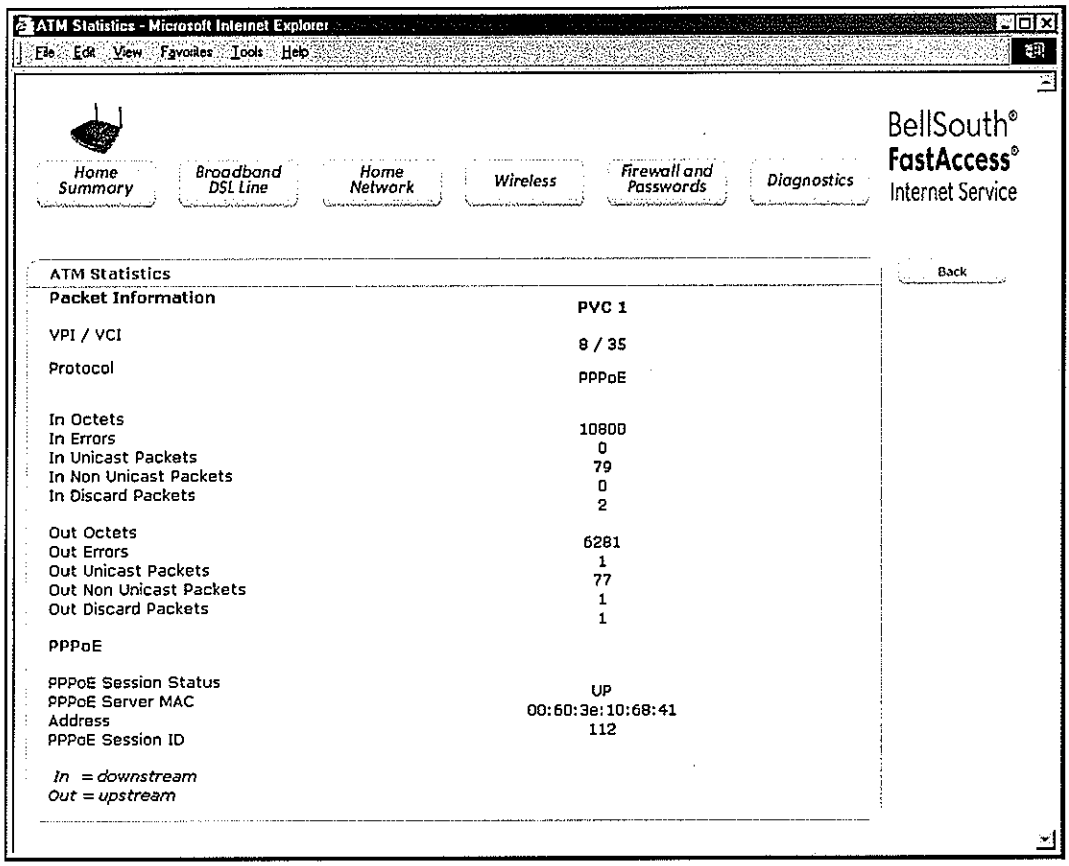
If you click the **DSL** button at the **Broadband DSL Line Statistics** page, the following page will be displayed. After viewing the information in this page, click the **Back** button to return to the **Broadband DSL Line Statistics** page.



DSL Statistics	
Line State	The status of your DSL connection: up or down
Modulation	The operational mode. Modes supported are No Mode, Multi Mode, T.1413 Mode, G.DMT Mode, and G.LITE Mode.
Data Path	The data path used (either Fast or Interleaved).
Transceiver Information	
DSL Sync Rate (Kbits/Sec)	The rate at which the Gateway's DSL interface synchronizes with the ISP's equipment.
SN Margin (db)	The Signal-to-Noise Ratio (S/N) where 0 db=$1x10^{-7}$, which inhibits your DSL speed
Line Attenuation (db)	The DSL line loss.
CRC Errors	The number of errors in the data that has been transmitted on the communications link.

10.3.2 ATM Statistics

If you click the **ATM** button at the **Broadband DSL Line Statistics** page, the following page will be displayed. After viewing the information in this page, click the **Back** button to return to the **Broadband DSL Line Statistics** page.



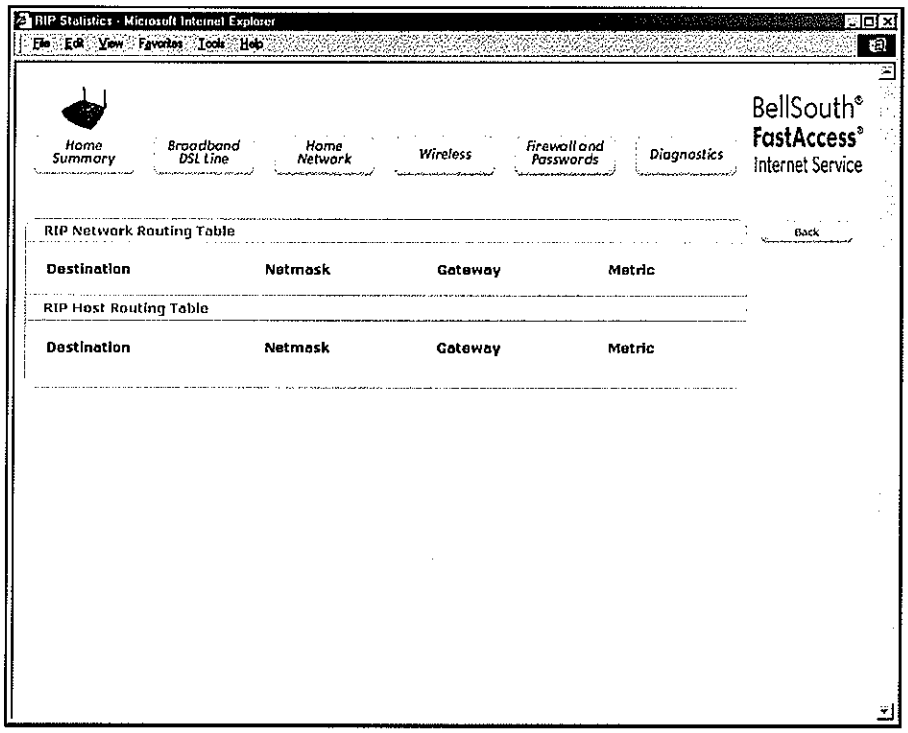
ATM Statistics	
VPI/VCI	VPI =The VPI (Virtual Path Indicator) value for a particular VC, which is defined by BellSouth. VCI = The VCI (Virtual Channel Indicator) value for a particular VC, which is defined by BellSouth.
Protocol Note: the configuration specified by our Service Provider will determine which Protocols are available to you.	Displays the Protocol for each VC, which is specified by BellSouth. Possible responses are: PPPoE = Point to Point Protocol over Ethernet Bridge Ethernet = Bridge Protocol
In Octets	The number of bytes received on the ATM port.
In Errors	The number of error packets received on the ATM port.
In Unicast Packets	The number of Unicast packets received on the ATM port.
In Non Unicast Packets	The number of non-Unicast packets received on the ATM port.
In Discard Packets	The number of discarded packets received.
Out Octets	The number of bytes transmitted on the ATM port.
Out Errors	The number of outbound packets that could not be transmitted due to errors.
Out Unicast Packets	The number of Unicast packets transmitted on the ATM port.

Out Non Unicast Packets	The number of non-Unicast packets transmitted on the ATM port.
Out Discard Packets	The number of outbound packets discarded.
PPPoE	
PPPoE Session Status	UP=PPP session established. DOWN=No PPP session established.
PPPoE Server MAC Address	MAC address of the PPPoE server that provides the session.
PPPoE Session ID	Session ID

10.3.3 RIP Table Statistics

If you click the **RIP Table** button at the **Broadband DSL Line Statistics** page, the following page will be displayed. After viewing the information in this page, click the **Back** button to return to the **Broadband DSL Line Statistics** page.

NOTE: RIP must be enabled for this table to be populated. RIP Table will not be available if you are in Bridge Ethernet mode.



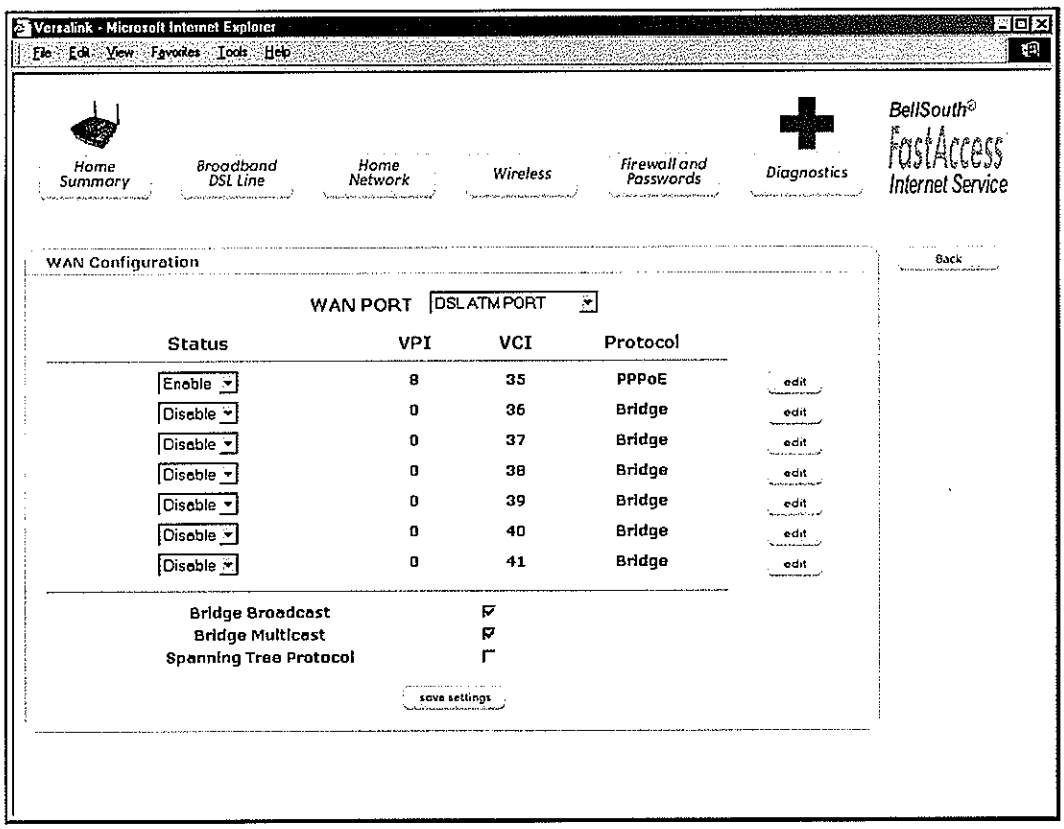
RIP Network Routing Table	Indicates Network routes received via RIP.
Destination	The destination IP address of the route
Netmask	The IP mask of the route
Gateway	The gateway of the route
Metric	The RIP metric (0-15). A lower value is better.
RIP Host Routing Table	Indicates Host routes received via RIP.
Destination	The destination IP address of the route
Netmask	The IP mask of the route
Gateway	The gateway of the route
Metric	The RIP metric (0-15). A lower value is better.

10.4 WAN

If you click the **WAN** button at the **Broadband DSL Line** page, the following page will be displayed. If you change the **Bridge Broadcast, Bridge Multicast,** or **Spanning Tree Protocol** configurations in this page, click the **save settings** button to allow these changes to take effect. If you change any of the **Status** configurations, a pop-up screen will prompt you to reset the modem. After the modem has been reset, the **Status** configurations will take effect. The **edit** buttons enable you to change the VC configuration settings of the modem. Details on the **edit** button are explained in section 10.4.1 (Editing the WAN Configuration).

NOTE: If VersaLink is configured for **ETHERNET PORT 1, QoS** and **VLAN** will not be displayed. You must configure VersaLink for **DSLATM PORT** to set up **QoS** and **VLAN** configuration. Refer to section 17, Appendix B: Configuring the WAN Port, for details. All menu options for VersaLink are available if VersaLink is configured for **DSLATM PORT.**

The actual information displayed in this page may vary, depending on the network connection established.



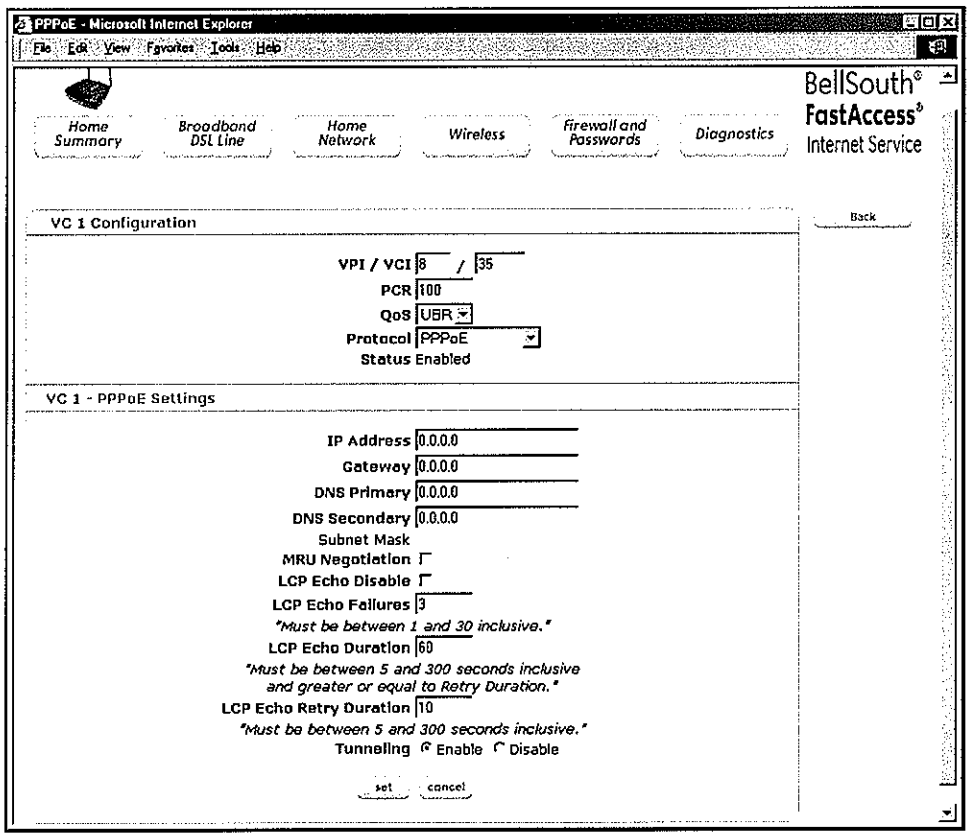
WAN Configuration	
Status	Allows you to enable or disable your VC (Virtual Connection)
VPI	Displays the VPI (Virtual Path Indicator) value for a particular VC, which is defined by your Service Provider.
VCI	Displays the VCI (Virtual Channel Indicator) value for a particular VC, which is defined by your Service Provider.
Protocol	Displays the Protocol for each VC, which is specified by your Service Provider.

NOTE: The configuration specified by your Service Provider will determine which Protocols are available to you.	Possible responses are: PPPoE = Point to Point Protocol over Ethernet Bridge Ethernet = Bridge Protocol over Ethernet
Bridge Broadcast	Factory Default = CHECKED When this setting is CHECKED, VersaLink will allow Broadcast IP packets to/from the WAN. When this setting is NOT CHECKED, VersaLink will block Broadcast IP packets to/from the WAN. This setting is only valid if one of the Virtual Channels is configured for Bridge mode.
Bridge Multicast	Factory Default = CHECKED When this setting is CHECKED, VersaLink will allow Multicast IP packets to/from the WAN. When this setting is NOT CHECKED, VersaLink will block Multicast IP packets to/from the WAN. This setting is only valid if one of the Virtual Channels is configured for Bridge mode.
Spanning Tree Protocol	Factory Default = DISABLED Spanning Tree Protocol is a link management protocol that provides path redundancy while preventing undesirable loops in the network. For Ethernet network to function properly, only one active path can exist between two stations. When ENABLED, two bridges are used to interconnect the same two computer network segments. Spanning Tree Protocol will allow the bridges to exchange information so that only one of them will handle a given message that is being sent between two computers within the network. NOTE: Spanning Tree can't be enabled if VLAN is enabled.

10.4.1 Editing the WAN Configuration

The following **VC 1 Configuration** page will be displayed if you click on the **edit** button adjacent to any of the 'Enabled' protocols displayed in the **WAN Configuration** page. (Note: The Protocol must be enabled before you can edit its VC configuration.) The **VC 1 Configuration** page allows you to edit your virtual connection (VC). A virtual connection identifies a connection through the service provider's ATM network to your ISP. Unlike physical hardware connections, virtual connections are defined by data.

NOTE: If you experience any problems, please reset VersaLink via the external hardware reset button or via the procedure defined in the **Reset Modem** menu in section 9.5. The actual information displayed in this page may vary, depending on the network connection established.

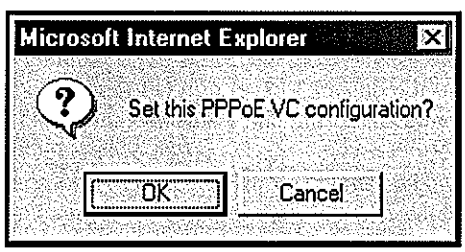


VC 1 Configuration	
VPI	This setting allows you to change your VPI (Virtual Path Indicator) value for a particular VC, which is defined by your Service Provider.
VCI	This setting allows you to change your VCI (Virtual Channel Indicator) value for a particular VC, which is defined by your Service Provider.
PCR	Factory Default = 100% Peak Cell Rate (PCR)-The maximum rate at which cells can be transmitted across a virtual circuit, specified in cells per second and defined by the interval between the transmission of the last bit of one cell and the first bit of the next. This value is a percentage of the current data rate. 100 allows this VC to use 100% of the available bandwidth. 80 allows this VC to use 80% of the available bandwidth.
QoS	Quality of Service, which is determined by your Service Provider.

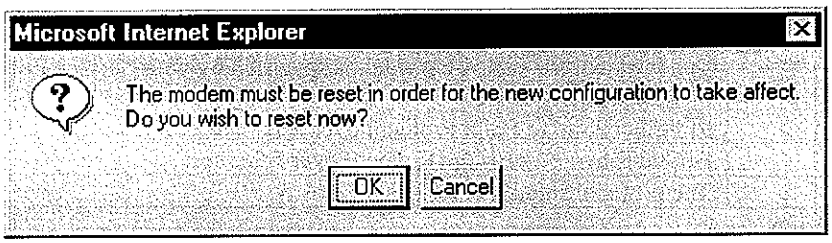
	Possible responses are: CBR = Constant Bit Rate UBR = Unspecified Bit Rate VBR = Variable Bit Rate
Protocol	The Protocol for each VC, which is specified by your Service Provider. Possible responses are: PPPoE = Point to Point Protocol over Ethernet Bridge Ethernet = Bridge Protocol over Ethernet
Status	The protocol status.
VC 1 - PPPoE Settings	
IP Address	Displays the IP network address that your modem is on.
Gateway	Provided by BellSouth.
DNS Primary	Provided by BellSouth.
DNS Secondary	Provided by BellSouth.
MRU Negotiation	Factory Default = DISABLED If ENABLED, the Maximum Received Unit (MRU) would enforce MRU negotiations. (NOTE: enable this option only at BellSouth's request.)
LCP Echo Disable	Factory Default = Enable If checked, this option will disable the modem LCP Echo transmissions.
LCP Echo Failures	Factory Default = 3 Indicates number of continuous LCP echo non-responses received before the PPP session is terminated. This value must be between 1 and 30 inclusive.
LCP Echo Retry Duration	Factory Default = 60 The interval between LCP Echo transmissions with responses. This value must be between 5 and 300 seconds inclusive and greater than or equal to the Retry Duration.
LCP Echo Retry Duration	The interval between LCP. Echo after no response. This value must be between 5 and 300 seconds inclusive.
Tunneling	Factory Default = ENABLE If ENABLED, this option allows PPP traffic to be bridged to the WAN. This feature allows you to use a PPPoE shim on the host computer to connect to the Internet Service Provider, by bypassing VersaLink's capability to do this. NOTE: Tunneling is available in PPPoE mode only.

NOTE: The values for IP Address, Gateway, DNS Primary, and DNS Secondary are all "Override of the value obtained from the PPP connection," They default to "0.0.0.0," in which case the override is ignored. Westell recommends that you do not change the values unless BellSouth instructs you to change them.

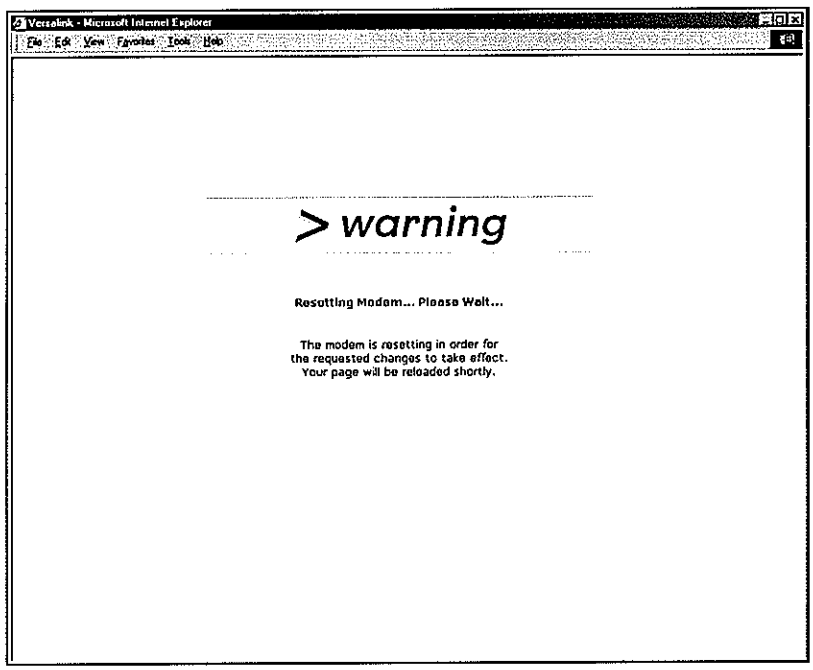
If you have made any changes to your VC settings, you must save them. To save the new VC settings, click on **set** in the **VC 1 Configuration** page. Next, click on **OK** when asked **Set this PPPoE VC configuration?** If you click on **cancel**, the new VC settings will not be saved.



If you clicked on **OK** in the preceding pop-up screen, the following pop-up screen will appear. VersaLink must be reset to allow the new configuration to take effect. Click **OK.**



If you clicked **OK** in the preceding screen, the following screen will be displayed. VersaLink will be reset and the new configuration will take effect.

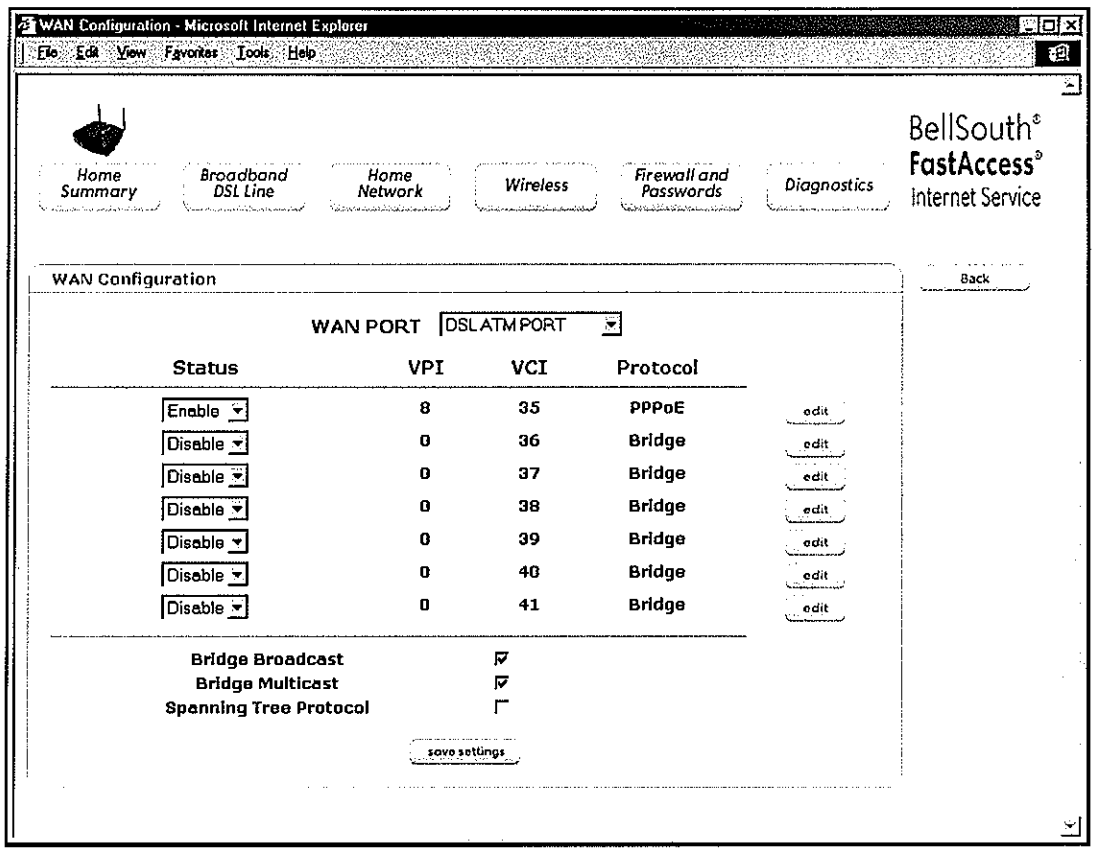


After a brief delay, the **Home Summary** page will be displayed. Confirm that you have a DSL sync and that your PPP session displays **UP.** (Depending on your connection type, you may need to go to the **Easy Login** page and to click the **connect** button to establish a PPP session).

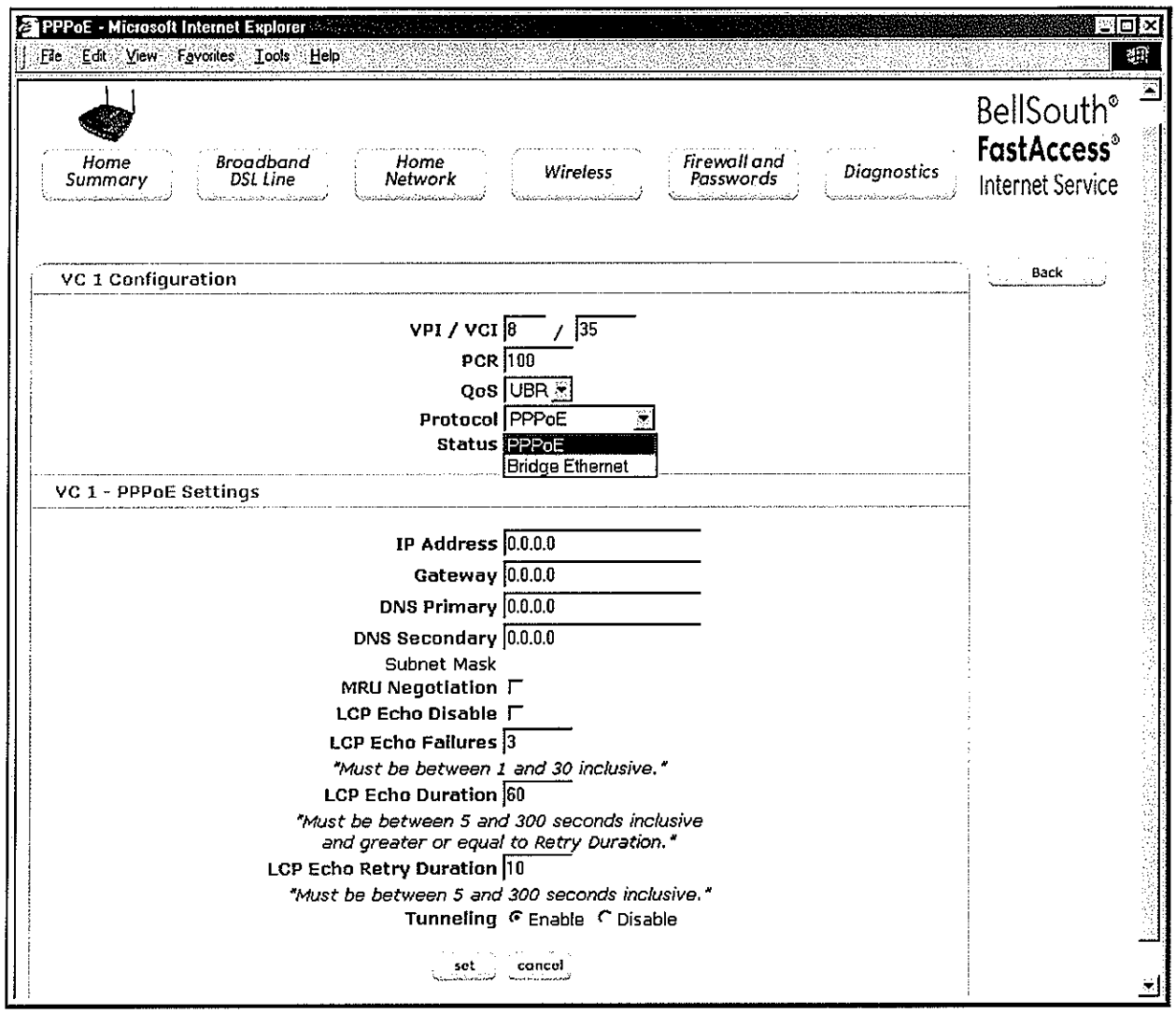
10.4.2 Configuring VersaLink's Protocol Settings for PPPoE Mode

To configure VersaLink's protocol settings for **PPPoE** mode, go to the **WAN Configuration** page within the **Broadband DSL Line** main menu. Next, click the **edit** button adjacent to any of the existing 'Enabled' VC (Virtual Connection) protocols.

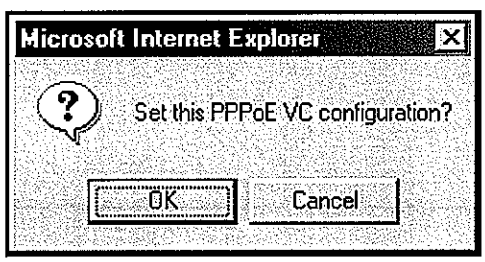
NOTE: The protocol status must display "Enable" to allow edits to its VC configuration.



If you clicked **edit** in the **WAN Configuration** page, the following **VC 1 Configuration** page will be displayed. Select **PPPoE** from the options listed in **Protocol** drop-down menu. After you have made the configuration for this protocol, select the **set VC** button.



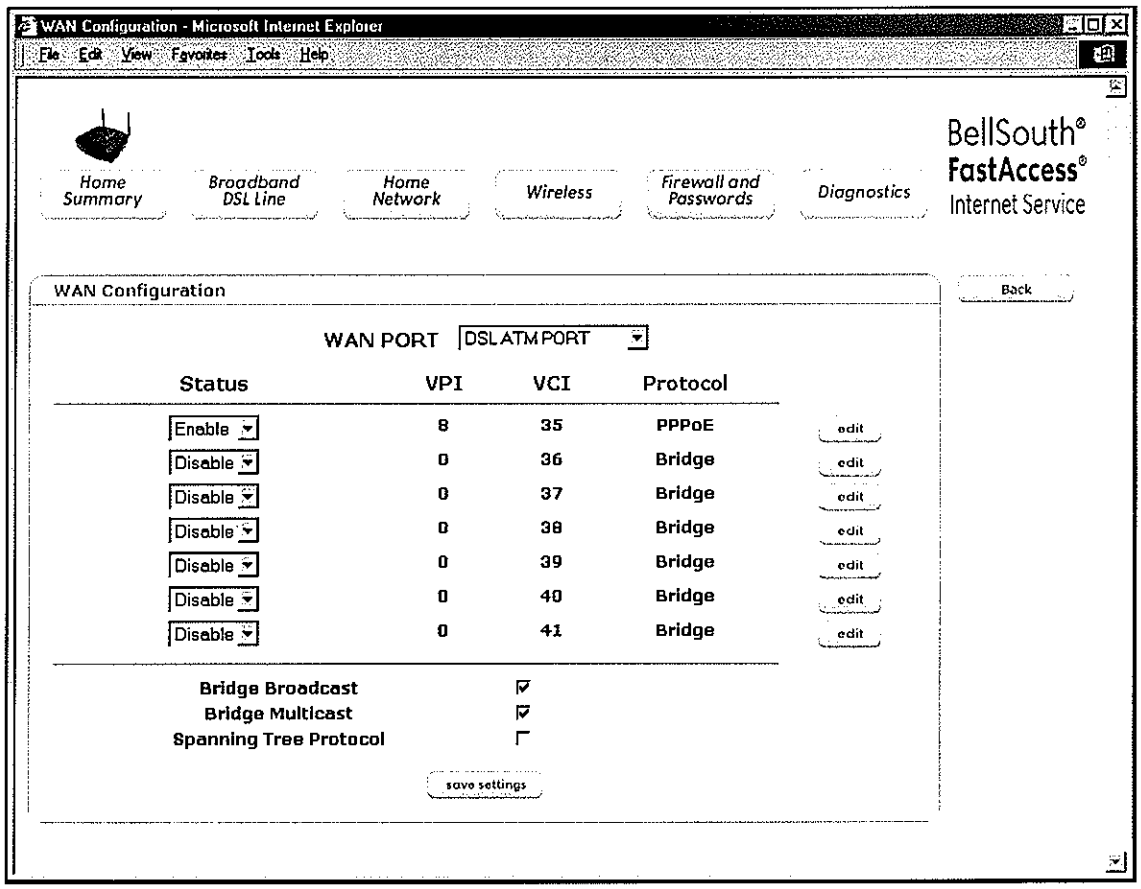
If you clicked the **set VC** button, the following pop-up screen will be displayed. Click on **OK** in the pop-up screen. If you click on **Cancel**, the new settings will not be saved. After you click on **OK,** follow the instructions to reset VersaLink, as previously discussed in section 10.4.1.



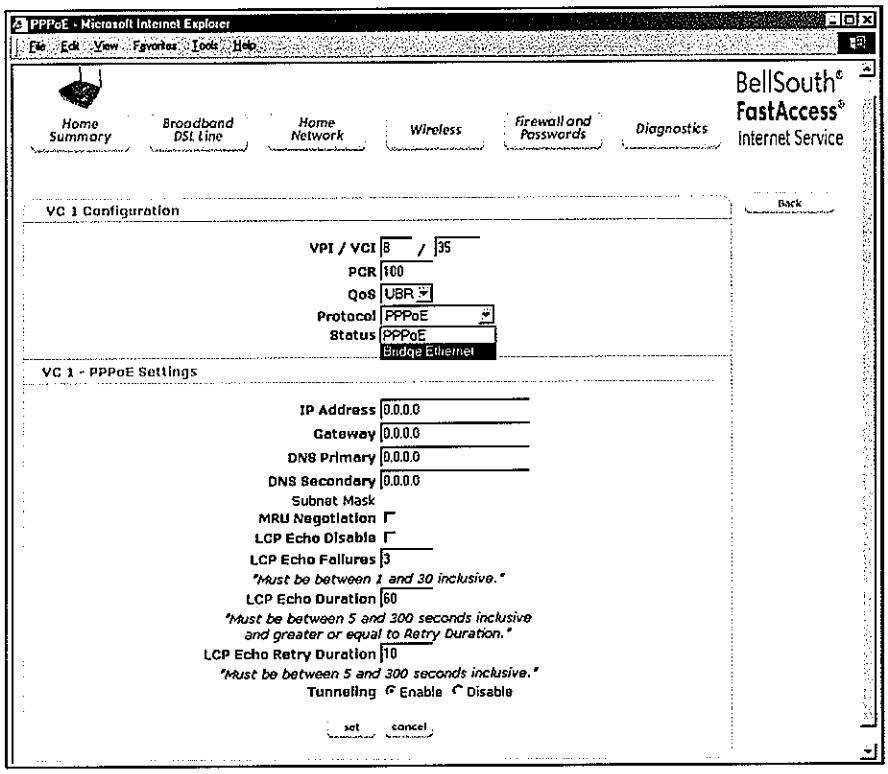
10.4.3 Configuring VersaLink's Protocol Settings for Bridge Ethernet Mode

To configure VersaLink's protocol settings for **Bridge Ethernet** mode, go to the **WAN Configuration** page within the **Broadband DSL Line** main menu. Next, click the **edit** button adjacent to any of the existing 'Enabled' VC (Virtual Connection) protocols.

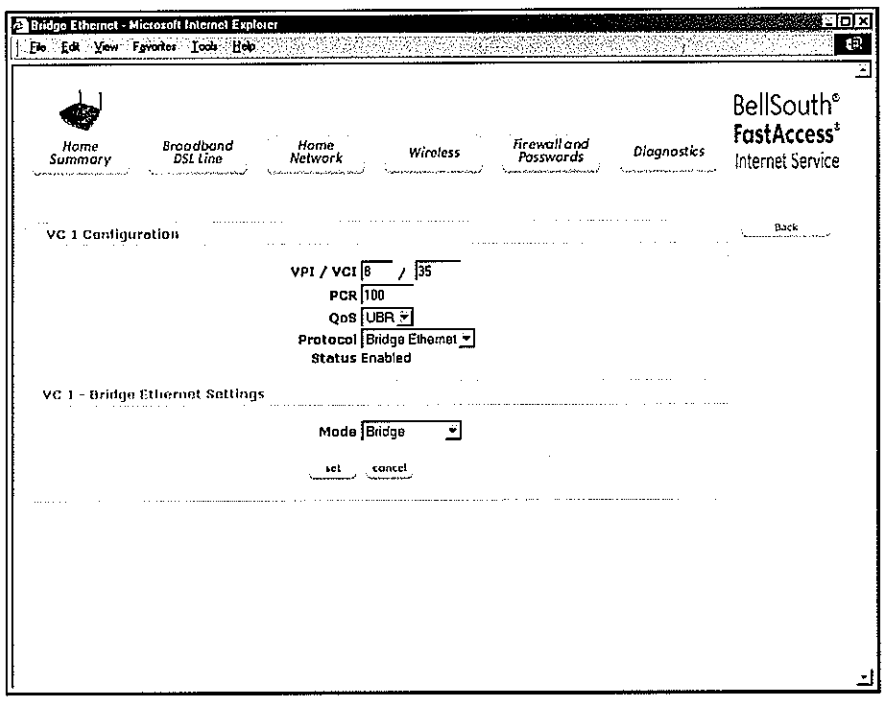
NOTE: The protocol status must display "Enable" to allow edits to its VC configuration.



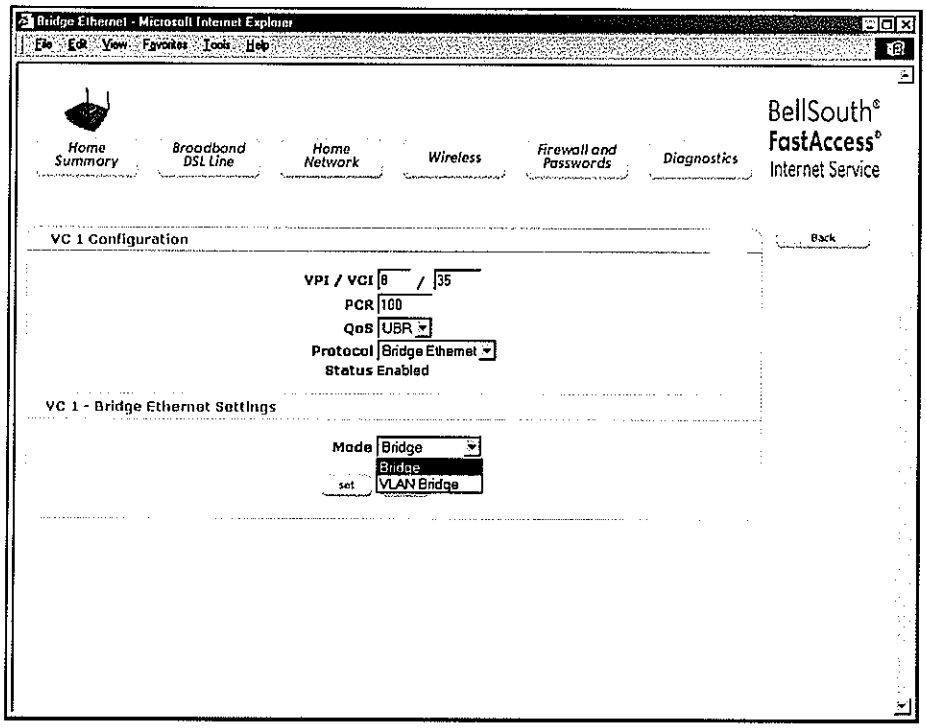
If you clicked **edit,** the following page will be displayed. Select **Bridge Ethernet** from the **Protocol** drop-down menu.



If you selected **Bridge Ethernet**, the following page will be displayed.

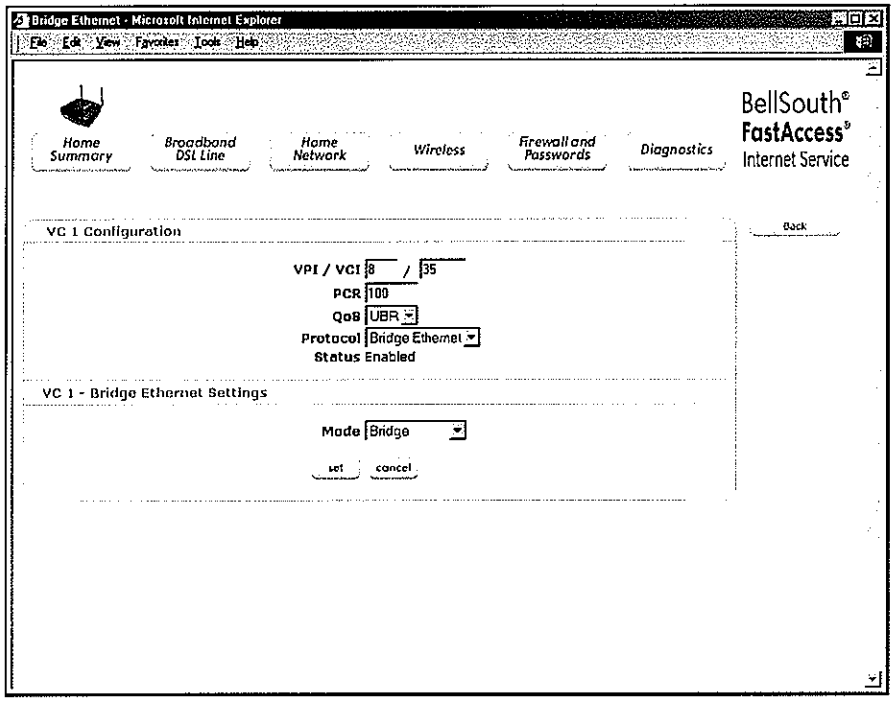


Next, select a mode from the options listed in the **Mode** drop-down menu, under **VC 1 – Bridge Ethernet Settings.**

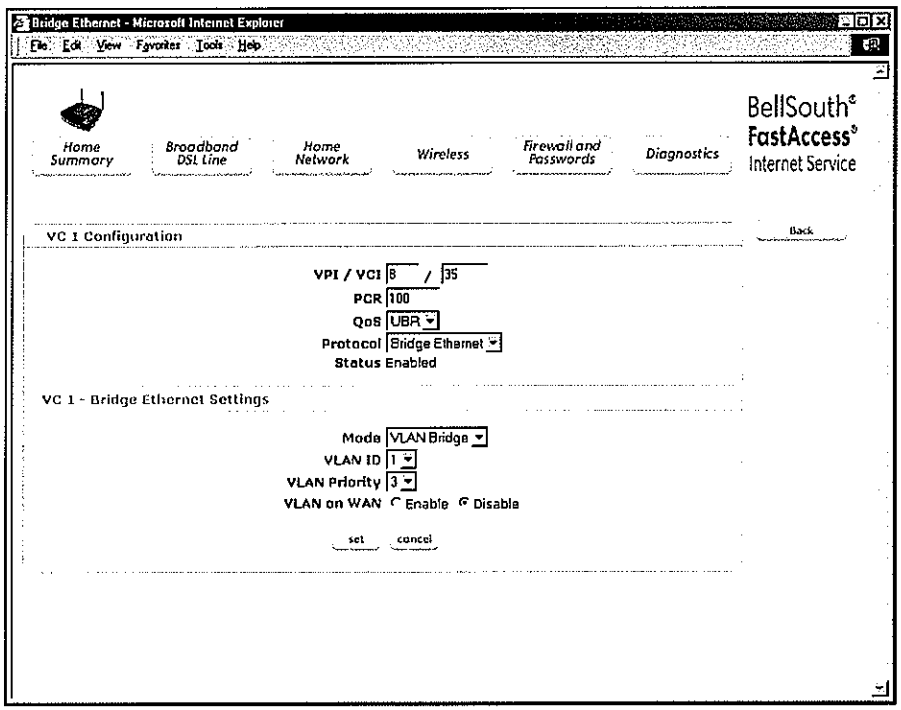


VC 1 Configuration	
VPI	This setting allows you to change your VPI (Virtual Path Indicator) value for a particular VC, which is defined by your Service Provider.
VCI	This setting allows you to change your VCI (Virtual Channel Indicator) value for a particular VC, which is defined by your Service Provider.
PCR	Factory Default = 100% Peak Cell Rate (PCR)-The maximum rate at which cells can be transmitted across a virtual circuit, specified in cells per second and defined by the interval between the transmission of the last bit of one cell and the first bit of the next. This value is a percentage of the current data rate. 100 allows this VC to use 100% of the available bandwidth. 80 allows this VC to use 80% of the available bandwidth.
QoS	Quality of Service, which is determined by your Service Provider. Possible responses are: CBR = Constant Bit Rate UBR = Unspecified Bit Rate VBR = Variable Bit Rate
Protocol	The Protocol for each VC, which is specified by your Service Provider. Possible responses are: PPPoE = Point to Point Protocol over Ethernet Bridge Ethernet = Bridge Protocol
Status	The protocol status.
VC 1 - Bridge Ethernet Settings	
Mode	Bridge = A bridge is a layer 2 device that connects two segments of the same LAN that use the same protocol such as Ethernet. The modem does not have a WAN IP address in this mode. The client PC will typically get an IP address from a DHCP server in the network or the IP address can be assigned to the client PC statically.
	VLAN Bridge = Assigns VLAN tags to individual data ports on the modem.

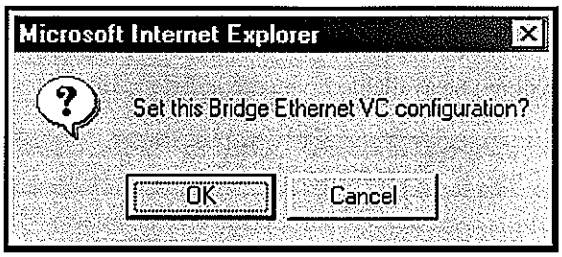
If you selected **Bridge,** the following page will be displayed. Enter the desired values and then click **set** to save the settings.



If you selected **VLAN Bridge,** the following page will be displayed. Enter the desired values and then click **set** to save the settings.



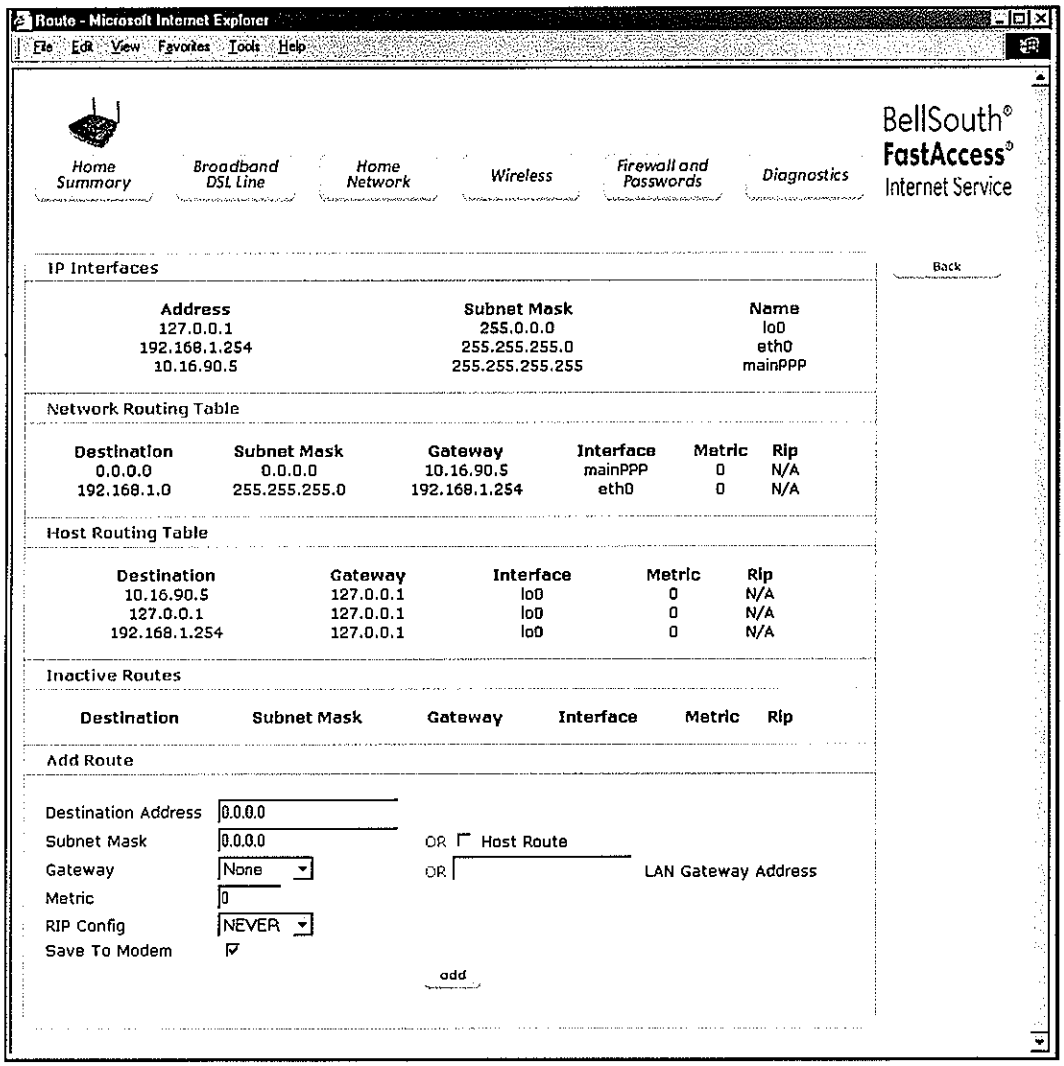
After you have entered the desired values and click on **set** in the **VC 1 Configuration** page, the following pop-up screen will be displayed. Click **OK** to continue. If you click on **Cancel,** the new settings will not be saved. After you have clicked on **OK**, follow the instructions to reset VersaLink as previously discussed in section 10.4.1.



10.5 Route

If you click the **Route** button at the **Broadband DSL Line** page, the following page will be displayed. To add a Route to the network routing table, enter a **Subnet Mask** address or check the **Host Route** box, and then click the **add** button to establish a static route.

NOTE: The Route menu option will not be available if you are in Bridge Ethernet mode.



IP Interfaces	
The list of active interfaces on the modem and their IP and Subnet mask address. Eth0 is the local LAN interface. Lo0 is the loopback interface. MainPPP is the WAN interface	
Address	The IP interface address.
Subnet Mask	The IP interface subnet address.
Name	The IP interface device name.

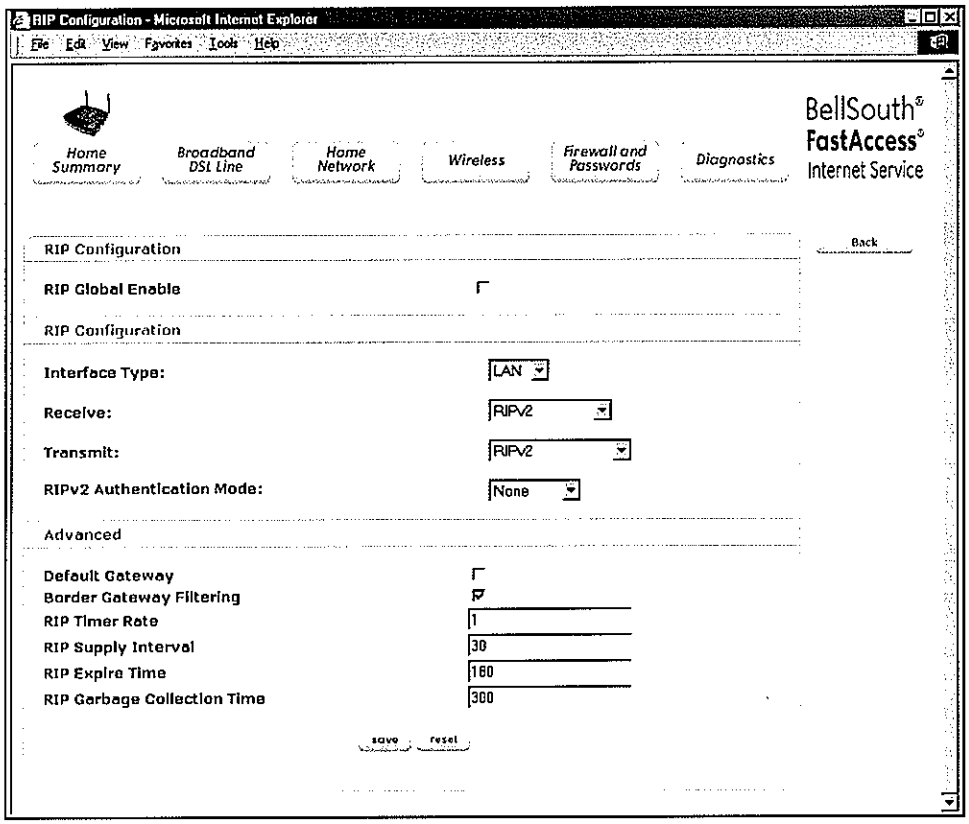
Network Routing Table	
The list of network routes. These can be either routes for directly connected interfaces or static routes.	
Destination Address	The IP address or subnet of the Route.
Subnet Mask	If the Route is a network route, Subnet Mask is used to specify the subnet address. If the Route is a Host route, then the Host Route check box is used.
Gateway	Indicates were to send the packet if it matches this route.
Interface	Indicates were to send the packet if it matches this route.
Metric	The RIP metric to be assigned to this route if and when it is advertised using RIP.
RIP	Indicates whether a static route should be advertised via RIP.
Host Routing Table	
The list of host routes. A host route is an IP route with a 32-bit mask, indicating a single destination (as opposed to a subnet, which could match several destinations.)	
Destination Address	The IP address or subnet of the Route.
Subnet Mask	If the Route is a network route, Subnet Mask is used to specify the subnet address. If the Route is a Host route, then the Host Route check box is used.
Gateway	Indicates were to send the packet if it matches this route.
Interface	Indicates were to send the packet if it matches this route.
Metric	The RIP metric to be assigned to this route if and when it is advertised using RIP.
RIP	Indicates whether a static route should be advertised via RIP.
Inactive Routes	
Static routes whose interface is currently not in service.	
Destination Address	The IP address or subnet of the Route.
Subnet Mask	If the Route is a network route, Subnet Mask is used to specify the subnet address. If the Route is a Host route, then the Host Route check box is used.
Gateway	Indicates were to send the packet if it matches this route.
Interface	Indicates were to send the packet if it matches this route.
Metric	The RIP metric to be assigned to this route if and when it is advertised using RIP.
RIP	Indicates whether a static route should be advertised via RIP.
Add Route	
This is used to add a new static route in the modem.	
Destination Address	The IP address or subnet of the Route.
Subnet Mask/ Host Route	If the Route is a network route, Subnet Mask is used to specify the subnet address. If the Route is a Host route, then the Host Route check box is used.
Gateway/LAN Gateway IP Address	The interface to use for sending the packet, if it matches this route. (Only active Routers can be used to create a static route.)
Metric	The RIP metric to be assigned to this route if and when it is advertised using RIP.
RIP Conf	Determines whether or not to advertise the static route, using RIP. (RIP must also be enabled before the route will be advertised.)
Save to Modem	If checked, then the route will be made permanent by saving it to flash memory. If not checked, the route will disappear the next time the modem restarts.

10.6 RIP

If you click the **RIP** button at the **Broadband DSL Line** page, the following page will be displayed. If you change any settings in this page, you must click on **save** to allow the settings to take effect. If you click on **reset,** this page will refresh and display your last saved RIP configuration.

RIP (Routing Interface Protocol) is a dynamic inter-network routing protocol primarily used in interior routing environments. A dynamic routing protocol, as opposed to a static routing protocol, automatically discovers routes and builds routing tables.

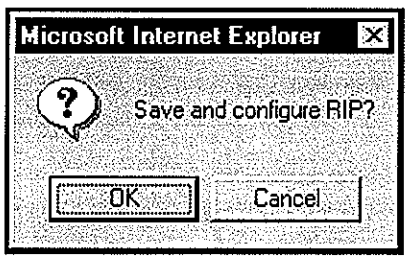
NOTE: The RIP menu option will not be available if you are in Bridge Ethernet mode.



RIP Configuration	
RIP Enable	Factory Default = DISABLED If this box is checked, RIP will be Enabled (turned ON).
RIP Configuration	
Interface Type	LAN: Select this if you are configuring RIP for the LAN side. WAN: Select this if you are configuring RIP for the WAN side. (WAN side is receive only.)
Receive	The version of RIP to be accepted. Possible responses are: None RIPv1 RIPv2 RIPv1 or RIPv2

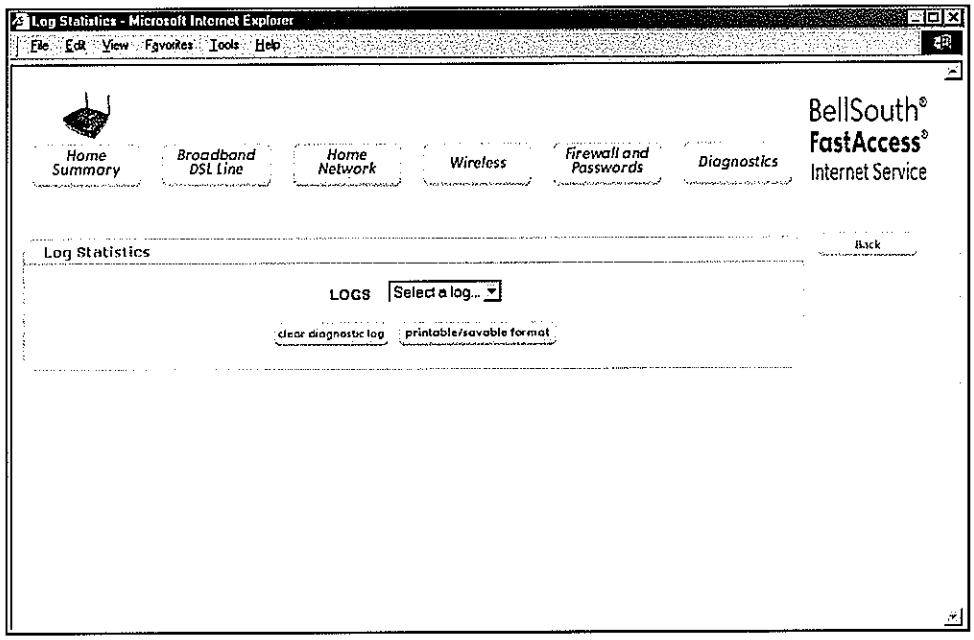
Transmit	The version of RIP to be transmitted. (WAN side RIP never transmits) Possible responses are: None RIPv1 RIPv1 Compatible RIPv2
RIPv2 Authentication Mode	If using RIP V2, you must select the type of authentication to use. Possible responses are: None Clear Text MD5 (If MD5 authentication, the password)
Advanced	
Default Gateway	Factory Default = DISABLED If this box is check (Enabled), this feature will determine whether the modem advertises itself as the default Gateway (that is, the default route)
Border Gateway Filtering	Factory Default = ENABLED If this box is unchecked (Disabled), the modem will not summarize subnets into a single route before advertising.
RIP Timer Rate	Indicates how often to update the local routing table.
RIP Supply Interval	Indicates how often to advertise routes to neighbors.
RIP Expire Time	Indicates how long routes received from neighbors become invalid, if no refresh of the route is received.
RIP Garbage Collection Time	Indicates how long to advertise invalid routes after they have expired.

If you change any settings in the **RIP Configuration** page and click on **save,** the following screen will be displayed. Click **OK** to save your new RIP settings. Click **Cancel** to abort.

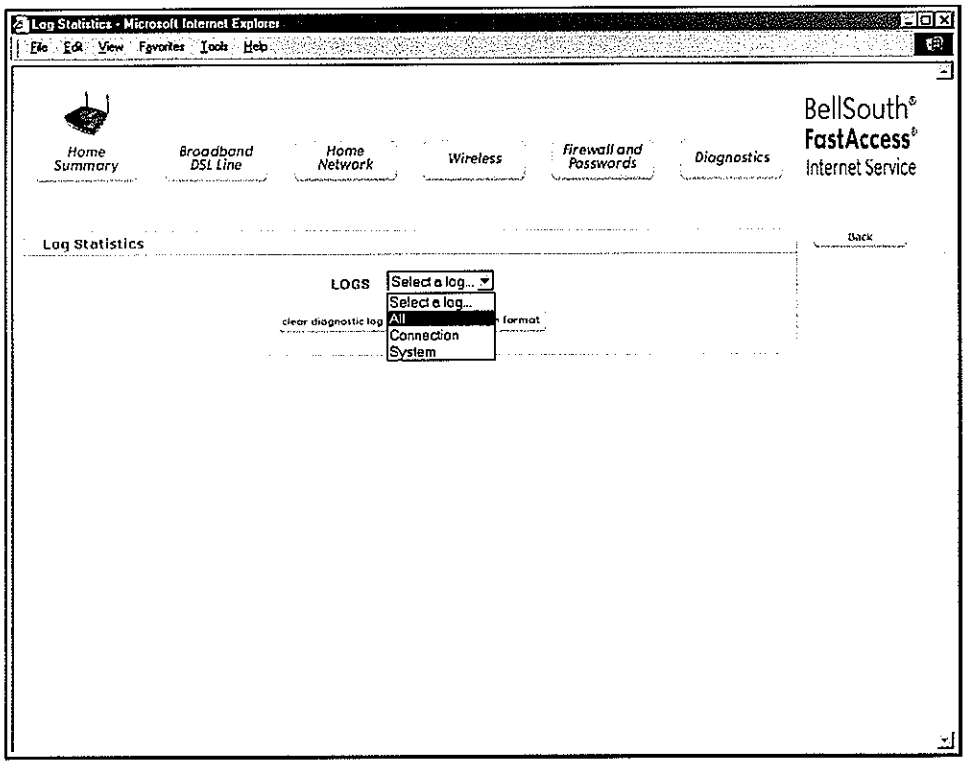


10.7 Logs

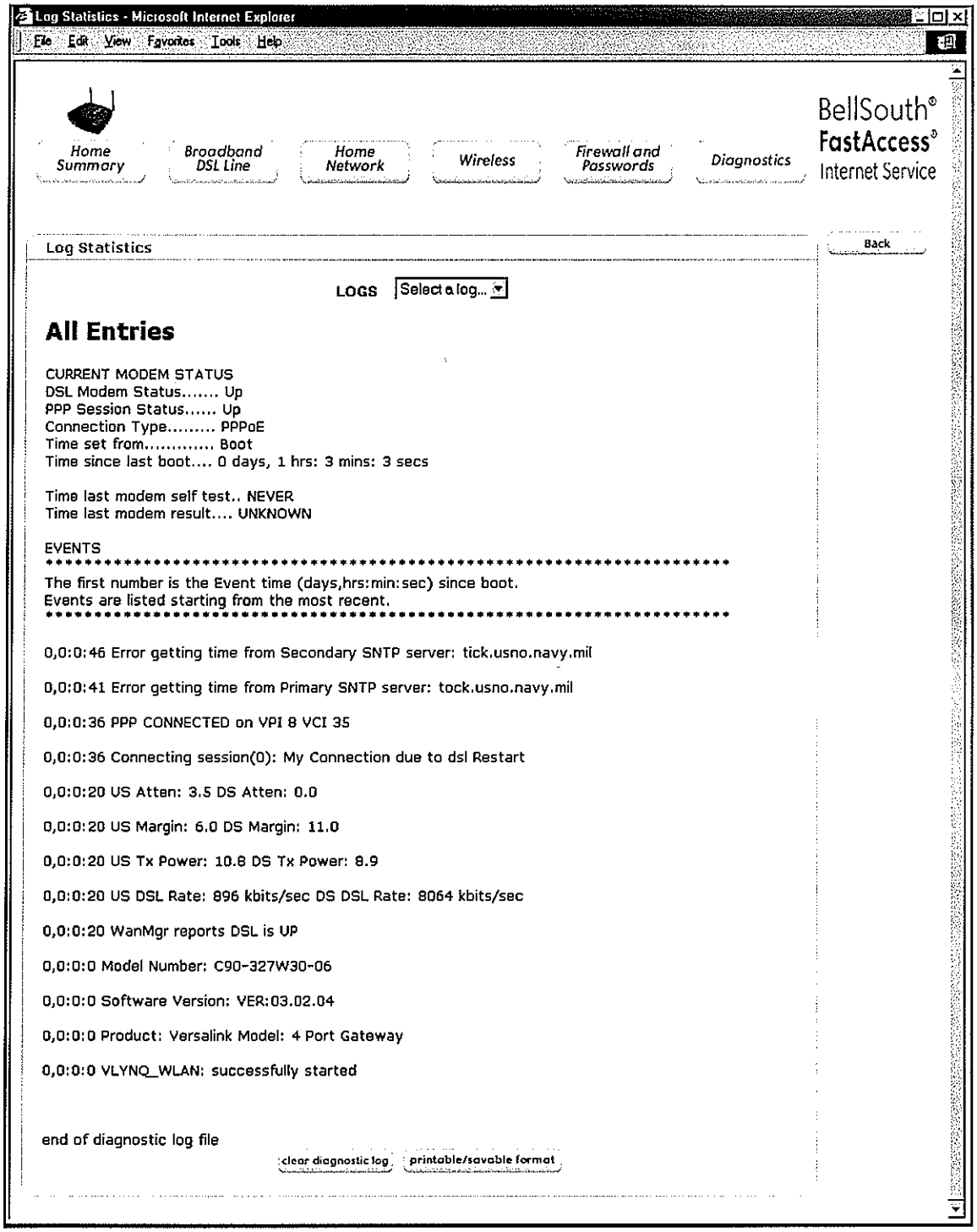
If you click the **Logs** button at the **Broadband DSL Line** page, the following page will be displayed. After you have viewed the log file, click the **Back** button to return to the **Broadband DSL Line** page.



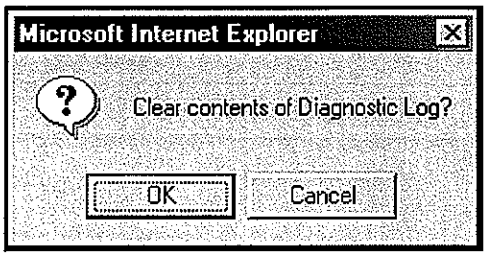
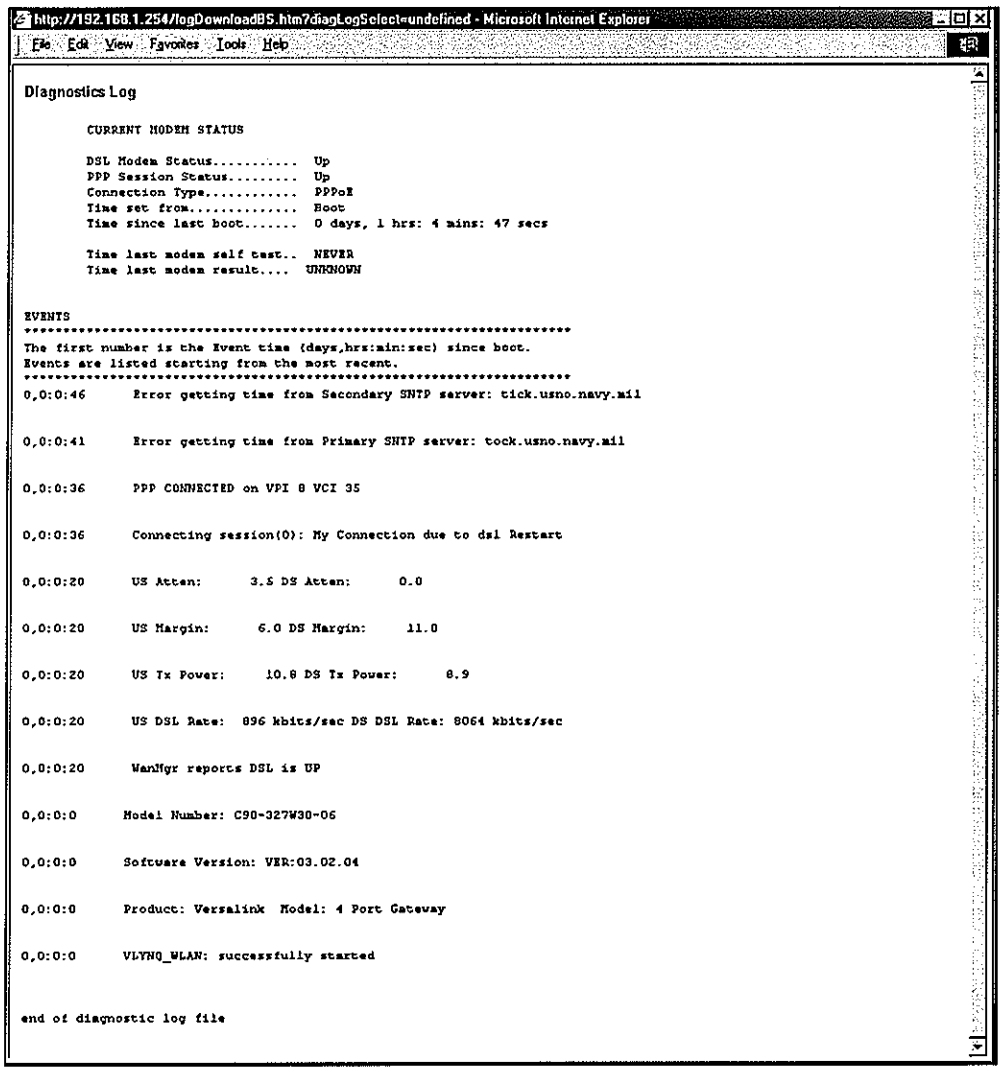
To view all Log entries in the Log Statistic, select **All** from the **LOGS** drop-down menu.



If you selected **All** from the **LOGS** drop-down menu, the following page will be displayed. To clear the Log Statistics, click on **clear diagnostic log.**



If you clicked on **clear diagnostic log,** the following pop-up screen will appear. Click **OK** to clear the contents of the diagnostic log.



If you click printable/savable format in the **Logs Statistics** page, the following page will be displayed. You will need to click the 'back' arrow in your browser to return to the **Log Statistics** page.