



WESTELL
VERSALINK™ SMALL BUSINESS VERSALINK (MODEL 327)

USER GUIDE

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1. PRODUCT DESCRIPTION

The Westell® VersaLink™ Small Business VersaLink provides reliable, high-speed, Internet access to your existing small office phone line. Your ADSL connection is “always-on” ending the hassles of dial-up modems and busy signals. Installation is easy ... no tools ... no headaches. Simply connect the hardware, apply power, and perform the simple software configuration for VersaLink and you are on the Internet.

VersaLink™ is capable of data rates hundreds of times faster than a traditional analog modem. But unlike analog modems, VersaLink™ 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. VersaLink™ supports a variety of networking interfaces such as wireless 802.11b/g+, ADSL, Ethernet and the following optional features:

- VersaPort™: Alternate WAN uplink port
- Layer w/2 QOS with VLAN tagging
- HotSpot
- Simultaneous public/private network support

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

3.1 FCC Compliance Note

(FCC ID: CH8-327WXX-6)

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.

Modifications made to the product, unless expressly approved by Westell Inc., could void the users' right to operate the equipment.

RF EXPOSURE

This device has been tested and complies with FCC RF Exposure (SAR) limits in typical laptop computer configurations and this device can be used in desktop or laptop computers with side-mounted PCMCIA slots, which can provide 20 cm separation distance from the antenna to the body of the user or a nearby person. Thin laptop computers may need special attention to maintain antenna spacing while operating. This device cannot be used with handheld PDAs (personal digital assistants). Use in other configurations may not ensure compliance with FCC RF exposure guidelines. This device and its antenna must not be co-located or operate in conjunction with another antenna or transmitter.

PART 68 - COMPLIANCE REGISTRATION

This equipment (Model 327W15) complies with Part 68 of the FCC 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 FCC 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 FCC Part 68 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 327W15) 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 FCC if you believe such action is necessary.

If you experience trouble with this equipment (Model 327W15), do not try to repair the equipment yourself. The equipment cannot be repaired in the field. Contact your ISP, or contact the original provider of your DSL equipment.

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 327W15) 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 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 327W15) 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 327W15), 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. Refer to section 12 in this User Guide for further details.

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. NETWORKING REQUIREMENTS

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

CONNECTION TYPE	MINIMUM SYSTEM REQUIREMENTS	NETWORKING SCHEME
ETHERNET	• Pentium® or equivalent and above class machines • Microsoft® Windows® (98, ME, NT 4.0, 2000, or XP) or Macintosh® OS X installed • Linux / Unix / Solaris • 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	Networking via 10/100 Base-T Ethernet requires an available Ethernet port with a 10/100 Base-T Network Interface Card (NIC) installed.
WIRELESS IEEE 802.11g	• Pentium® or equivalent and above class machines • Microsoft® Windows® (98, 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 PC card or USB adapter	Networking via Wireless or other 802.11b/g capable network adapter card.

5. HARDWARE FEATURES

5.1 LED Indicators

This section explains the LED States and Descriptions. LED indicators are used to verify the unit's operation and status.

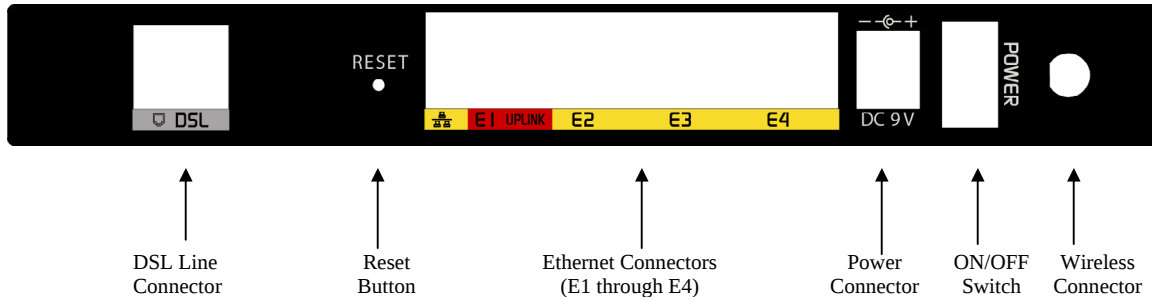
LED States and Descriptions

LED	State	Description
POWER	Solid Green	Power ON
	No Light	No Power
	Solid Red	POST (Power On Self Test), Failure (not bootable) or Device Malfunction. Note: The Power LED should be red no longer than two seconds after the power on self test passes.
ETHERNET	Solid Green	10/100 Base-T link/activity.
	Flashing Green	10/100 Base-T traffic.
	OFF	No Ethernet link or traffic for specific 10/100 Base-T connection.
WIRELESS	Solid Green	Wireless enabled and functioning.
	Flashing Green	Wireless activity present (traffic to/from any Wireless interface).
	OFF	Wireless disabled or not functioning.
DSL	Solid Green	Power ON and synchronized with ADSL line card.
	OFF	Modem power Off.
	Flashing Green	DSL attempting to sync with carrier detect signal.
	Solid Amber	Modem is in safe boot mode.
INTERNET	Solid Green	Internet link established
	OFF	Modem Power is Off, Modem is in Bridge Mode, or the connection is not present.
	Flashing Green	IP connection established and IP Traffic is passing through device (in either direction).

5.2 Cable Connectors and Switch Locations

- DSL Connector (RJ-11)
- Reset Button
- (4) Ethernet Connector (RJ-45) with optional uplink port
(Note: When using the optional uplink port, Ethernet LAN connection is limited to 3)
- Power Connector
- Wireless IEEE 802.11b/g connector

(Note: When using the optional uplink port, Ethernet LAN connection is limited to 3)



5.3 Connector Descriptions

The following chart displays the connector types.

SYMBOL	NAME	TYPE	FUNCTION
	DSL LINE	6-pin RJ-11 modular jack	Connects to an ADSL-equipped telephone jack or DSL connection of a POTS splitter.
	POWER	Barrel connector	Power source.
	ETHERNET	8-pin (RJ-45) modular jack	Connects the Ethernet device to the PC.
Wireless	ANTENNA	SMA connector and antenna	Connects to wireless IEEE 802.11b/g/g+

5.4 Pinout Descriptions

The following tables list the pinout descriptions.

DSL Pinouts

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

Ethernet/Optional Uplink Port Pinouts

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

6. INSTALLING THE HARDWARE

6.1 Installation Requirements

To install VersaLink™, you will need the following:

- A Network Interface Card (NIC) installed in your PC or
- An IEEE 802.11b/g PC card or USB adapter installed on your PC

NOTE: Internet service provider subscriber software and connection requirements may vary. Consult your ISP for installation instructions. Please wait until you have received notification from your ISP that your DSL line has been activated before installing VersaLink™ and the software.

6.2 Before you begin

Make sure that your kit contains the following items:

- Westell VersaLink™ Small Business VersaLink
- Power Supply
- RJ-45 Ethernet cable
- RJ-11 Phone cable
- SMA Antenna
- Westell CD-ROM containing User Guide in PDF format
- Quick Start Guide

6.3 Microfilters

ADSL signals must be blocked from reaching each telephone, answering machine, fax machine, computer modem or any similar conventional device. Failure to do so may degrade telephone voice quality and ADSL performance. Install a microfilter if you desire to use the DSL-equipped line jack for telephone, answering machine, fax machine or other telephone device connections. Microfilter installation requires no tools or telephone rewiring. Just unplug the telephone device from the baseboard or wall mount and snap in a microfilter, next snap in the telephone device. You can purchase microfilters from your local electronics retailer, or contact the original provider of your DSL equipment.

6.4 Hardware Installations



NOTE: Please wait until you have received notification from your ISP that your DSL line has been activated before installing VersaLink.

NOTE: If you are using VersaLink™ in conjunction with an Ethernet Hub or Switch, refer to the manufacturer's instructions for proper installation and configuration. When using a Microfilter, be certain that the DSL phone cable is connected to the "DSL/HPN" non-filtered jack. **Westell recommends the use of a surge suppressor to protect equipment attached to the AC power supply.**

6.4.1 Installation via 10/100 Base-T Ethernet



NOTE: Before you connect via 10/100 Base-T, you must have an available Ethernet card installed in your computer. If your Ethernet card does not auto-negotiate, you must set it to half duplex. Refer to the Ethernet card manufacturer's instructions for installing and configuring your Ethernet card.

1. Connect the power supply cord to the power connector marked **12V** on the rear panel of VersaLink. Plug the other end of the power supply into a wall socket.
2. Connect the DSL phone cable from the jack marked  on the rear panel of VersaLink to the DSL-equipped telephone line jack on the wall. **IMPORTANT:** Do not use a DSL filter on this connection. You must use the phone cord that was provided with the kit.
3. Connect the yellow Ethernet cable from any one of the Ethernet jacks marked  on the rear panel of VersaLink to the Ethernet port on your computer. **Repeat this step to connect up to three additional PCs to VersaLink.**

NOTE: You may connect to any of the four Ethernet jacks on the rear panel of VersaLink as they serve as an Ethernet switch.

4. Check to see if the DSL/RDY LED is solid green. If this LED is solid green, VersaLink is functioning properly.
5. Check to see if the Ethernet LED lights solid green. Solid green indicates that the Ethernet connection is functioning properly.

Congratulations! You have completed the Ethernet hardware installation. No software installation is required when using only an Ethernet connection. Proceed to section 7 to configure VersaLink for Internet connection.

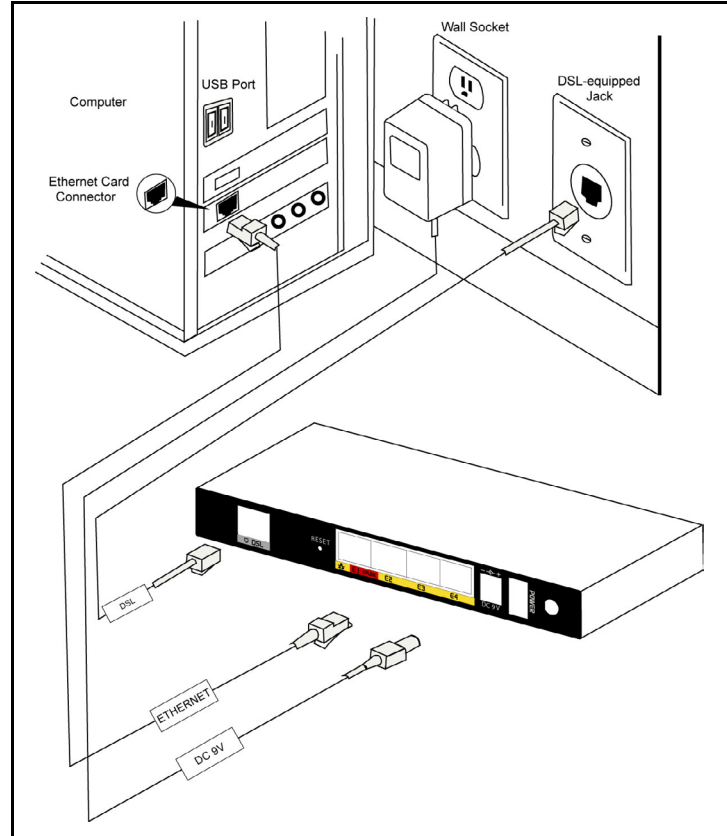


Figure 1. Connection via 10/100 Base-T Ethernet

6.4.2 Connecting PCs via Wireless

IMPORTANT: If you are connecting to VersaLink via a wireless network adapter, the SSID must be the same for both VersaLink and your PC's wireless network adapter. The default SSID for VersaLink is the serial number of the unit (located below the bar code on the bottom of the unit and also on the Westell shipping carton). Locate and run the utility software provided with your PC's Wireless network adapter and enter the SSID value. The PC's wireless network adapter must be configured with the SSID (in order to communicate with VersaLink) before you begin the account setup and configuration procedures. Later, for privacy you can change the SSID by following the procedures outlined in section 12.4 (Wireless Configuration).

NOTE: Client PCs can use any Wireless Fidelity (Wi-Fi) 802.11b/g certified card to communicate with VersaLink. The Wireless card and VersaLink must use the same Wired Equivalent Privacy (WEP) security code type. The factory default for WEP is DISABLED. If you enable WEP, you must ensure the network setting for your wireless adapter is set to "Must Use Shared Key for WEP" or "Open Wi-Fi." You must ensure that your PC's Wi-Fi adapter is configured properly for whichever network setting you use. You can access the settings in the advanced properties of the wireless network adapter.

To network VersaLink to additional computers in your home or office using a wireless installation, you will need to confirm the following:

1. Ensure that an 802.11b/g wireless network adapter has been installed in each PC on your wireless network.
2. Install the appropriate drivers for your Wireless IEEE802.11b or IEEE802.11g PC card or USB adapter.
3. Make sure the SMA antenna connector is loose. Orient the antenna in the proper configuration. Then, tighten the antenna knob to lock it into place.
4. Connect the power supply cord to the power connector marked **12V** on the rear panel of VersaLink. Plug the other end of the power supply into a wall socket.
5. Connect the DSL phone cable from the connector marked  on the rear panel of VersaLink to the DSL-equipped telephone line jack on the wall. **IMPORTANT:** Do not use a DSL filter on this connection. You must use the phone cord that was provided with the VersaLink kit.
6. Check to see if the DSL/RDY LED is flashing Green. If the DSL/RDY LED is flashing Green, VersaLink is functioning properly.
7. Check to see if VersaLink's Wireless LED lights solid Green. This means that the Wireless interface is functioning properly.

Congratulations! You have completed the Wireless installation VersaLink. You must now go to section 7 to configure VersaLink for Internet connection.

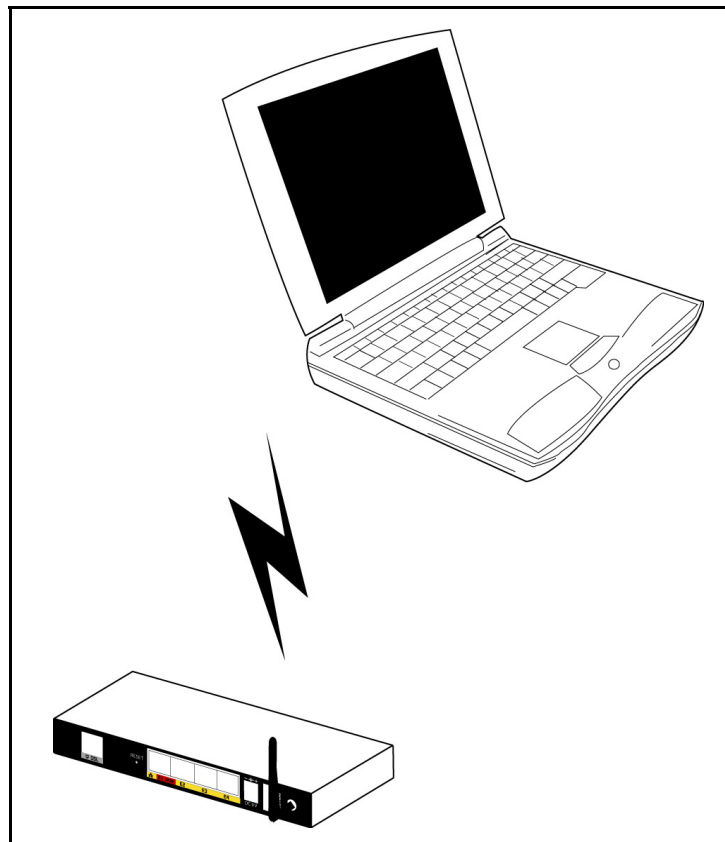


Figure 2. Connection via Wireless

6.4.3 Ethernet and Wireless Combination Installation

The VersaLink™ supports simultaneous use of 10/100 Base-T Ethernet and Wireless. The following instructions explain how to install VersaLink for simultaneous use of Ethernet and Wireless ports.

NOTE: Refer to Figure 1 and Figure 2 for instructions on hardware installation via Ethernet and Wireless connections.

1. Ensure that an 802.11b/g wireless network adapter has been installed in each PC on your wireless network
2. Install the appropriate drivers for your Wireless IEEE802.11b or IEEE802.11g PC card or USB adapter.
3. Make sure the SMA antenna connector is loose. Orient the antenna in the proper configuration. Then, tighten the antenna knob to lock it into place.
4. Connect the power supply cord to the power connector marked **12V** on the rear panel of VersaLink. Plug the other end of the power supply into a wall socket.
5. Connect the DSL phone cable from connector marked  on the rear panel of VersaLink to the DSL-equipped telephone line jack on the wall. **IMPORTANT: Do not** use a DSL filter on this connection. You must use the phone cord that was provided with the kit.
6. Connect the yellow Ethernet cable from any one of the Ethernet jacks marked  on the rear panel of VersaLink to the Ethernet port on your computer. **Repeat this step to connect up to three additional PCs to VersaLink.**

NOTE: You may connect to any of the four Ethernet jacks on the rear panel of VersaLink as they serve as an Ethernet switch.

7. Check to see if the DSL/RDY LED is solid green. If the DSL/RDY LED is solid green, VersaLink is functioning properly.
8. Check to see if the Ethernet LED lights solid green. Solid green indicates the Ethernet connection is functioning properly.
9. Check to see if VersaLink's Wireless LED lights solid Green. This means that the Wireless interface is functioning properly.

Congratulations! You have completed the simultaneous hardware (Ethernet and Wireless) installation. You must now go to section 7 to configure VersaLink for Internet connection.

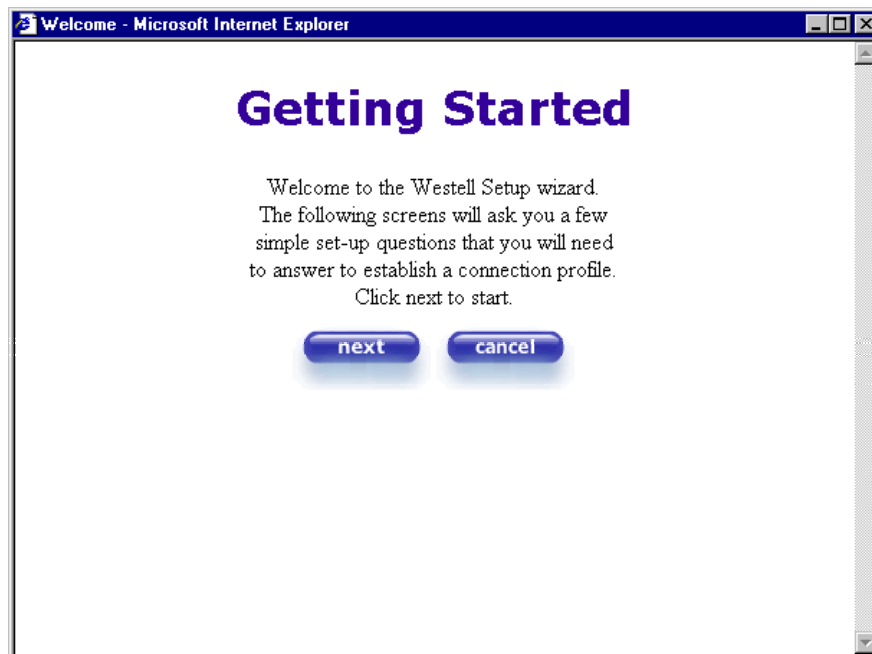
7. CONFIGURING VERSALINK™ FOR INTERNET CONNECTION

To surf the Internet using VersaLink™, you must set up your account profile, confirm your DSL sync, and establish a PPP session with your Internet Service Provider (ISP). 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 your Internet service provider for installation instructions.

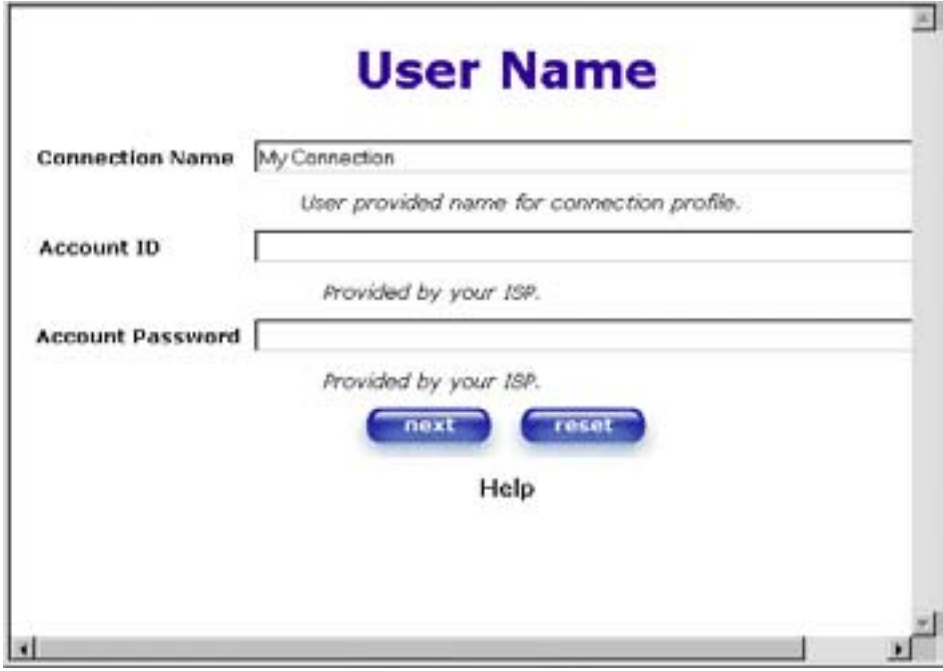
7.1 Setting Up an Account Profile

After connecting VersaLink, bring up your Web browser and type **http://dslrouter** or **http://192.168.1.1** in the browser's address window. Press **Enter** on your keyboard. The **Getting Started** screen will appear. Click on **next**.



If you clicked on **Next**, the following screen will be displayed. This screen will allow you to set up your account profile.

NOTE: Before you set up your account profile, you must obtain your **Account ID**, **Account Password**, and **VPI/VCI** values from your Internet service provider. You will use this information when you set up your account parameters. If you are at a screen and need help, click on the **Help** button to learn more about the screen, or see section 17 (Help) for additional information on the help messages.

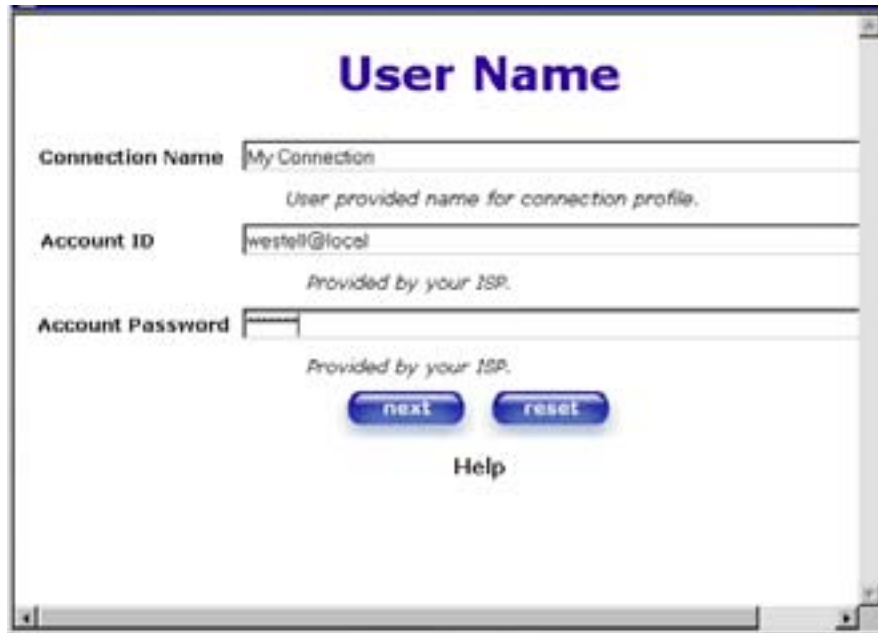


The image shows a web browser window titled "User Name". Inside the window, there are three input fields. The first field is labeled "Connection Name" and contains the text "MyConnection". Below this field is a hint: "User provided name for connection profile.". The second field is labeled "Account ID" and is empty. Below it is a hint: "Provided by your ISP.". The third field is labeled "Account Password" and is empty. Below it is a hint: "Provided by your ISP.". At the bottom of the form, there are two blue buttons labeled "next" and "reset", and a link labeled "Help".

Type in your account parameters. (Account parameters are required before connecting to the Internet.)
Account Parameters include:

- **Connection Name**-the Connection Name is a word or phrase that you use to identify your account. (You may enter up 64 characters in this field.)
- **Account ID**-the Account ID is provided by your Internet Service Provider. (You may enter up 255 characters in this field.)
- **Account Password**-the Account Password is provided by your Internet Service Provider. (You may enter up 255 characters in this field.)

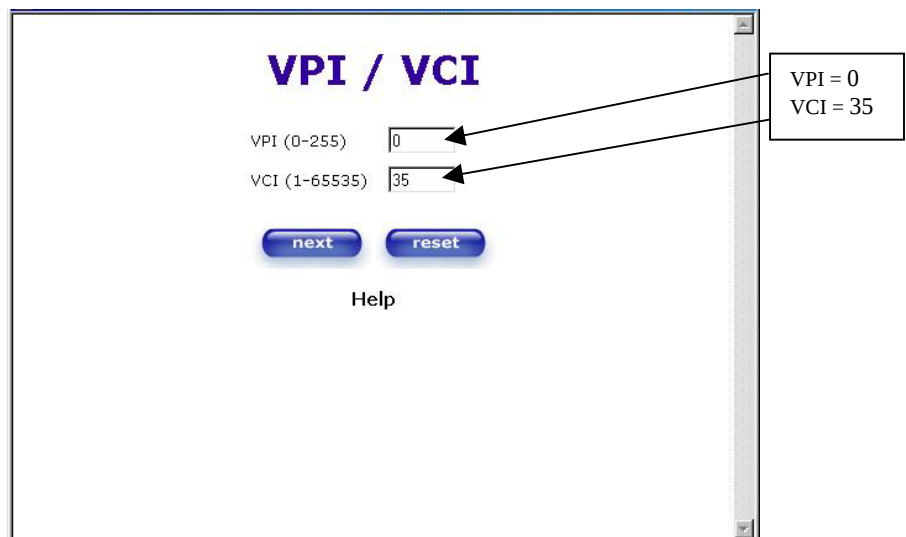
When you enter your account parameters at the **User Name** screen, they will be displayed as shown in the screen below. Click **next** if you want your account parameters to take effect. Click on **reset** if you do not want the account parameters that you entered to take effect or if you want to re-enter the parameters.



The 'User Name' configuration screen displays three input fields: 'Connection Name' with the value 'My Connection', 'Account ID' with the value 'westell@local', and 'Account Password' which is currently empty. Each field has a descriptive note below it: 'User provided name for connection profile.', 'Provided by your ISP.', and 'Provided by your ISP.' respectively. At the bottom of the screen are three buttons: 'next', 'reset', and 'Help'.

Enter the VPI and VCI values (**0** for VPI and **35** for VCI default) you obtained from your Internet service provider. Click on **next**.

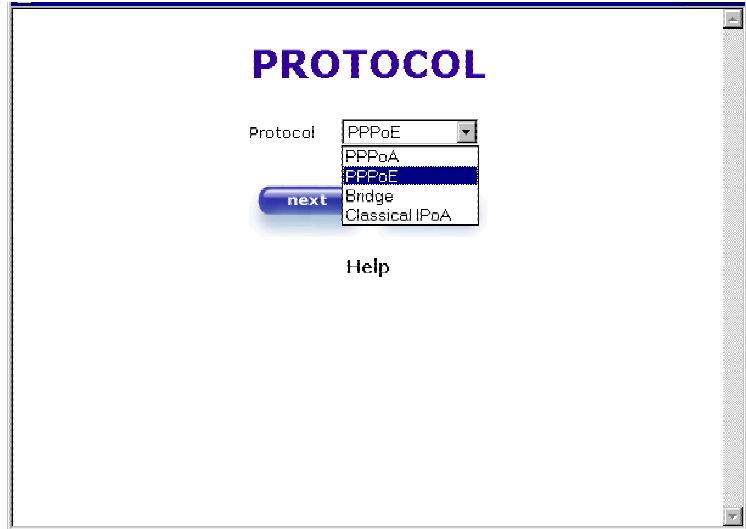
NOTE: Depending on your Internet Service Provider, the **VPI/VCI** screen may come pre-configured and it will be displayed here. In this case, you should not change any values in this screen. Click on **next** to go to the **PROTOCOL** screen.



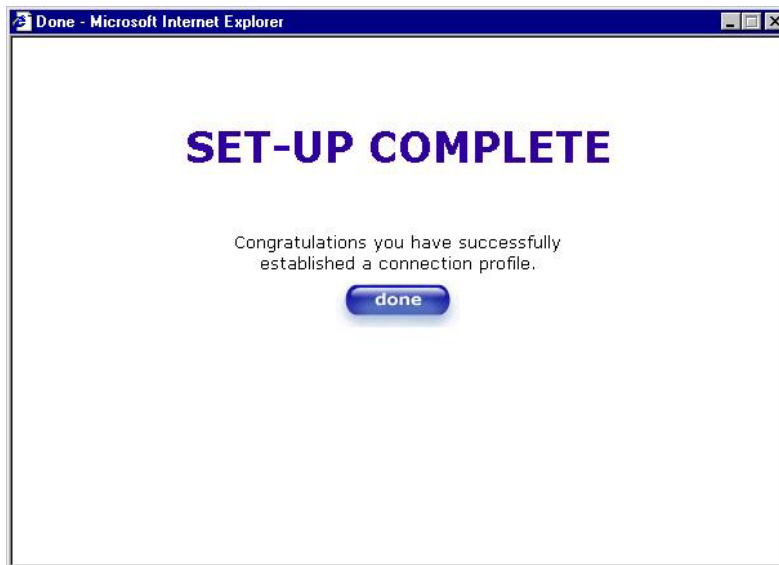
The 'VPI / VCI' configuration screen shows two input fields: 'VPI (0-255)' with the value '0' and 'VCI (1-65535)' with the value '35'. Arrows from a callout box on the right point to these values. The callout box contains the text 'VPI = 0' and 'VCI = 35'. At the bottom of the screen are three buttons: 'next', 'reset', and 'Help'.

Select the Protocol type that you obtained from your Internet Service Provider. Click on **next**.

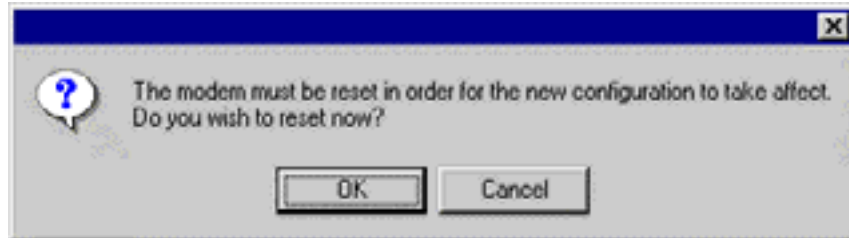
NOTE: Depending on your Internet Service Provider, the **PROTOCOL** screen may come pre-configured and it will be displayed here. In this case, you will need to click on **next** to go to the **SET-UP COMPLETE** screen.



When the **SET-UP COMPLETE** screen appears, you have successfully completed your Account Profile setup. Click on **done**.



If you changed the **VPI/VCI** settings and clicked on **done** in the **SET-UP COMPLETE** screen, the following screen will appear. Click on **OK**.



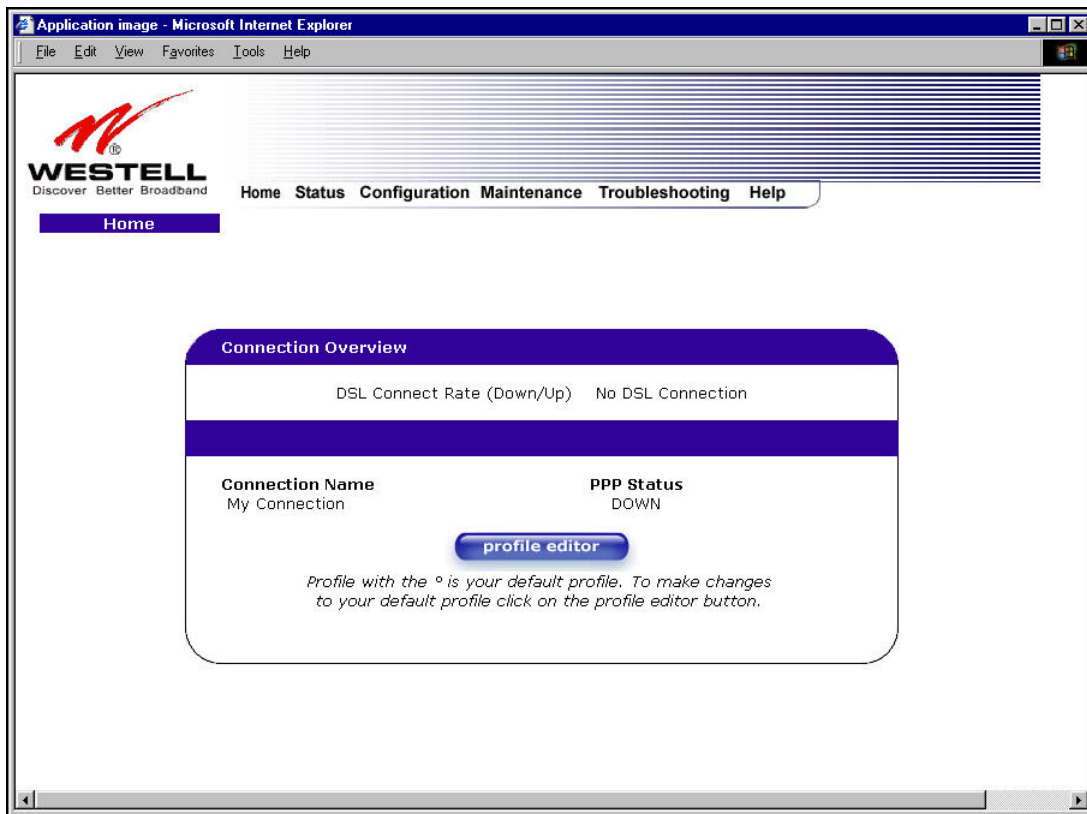
If you clicked on **OK**, the following screen will be displayed. VersaLink™ will be reset and the new configuration will take effect. Next, proceed to section 7.2 to confirm your DSL sync.



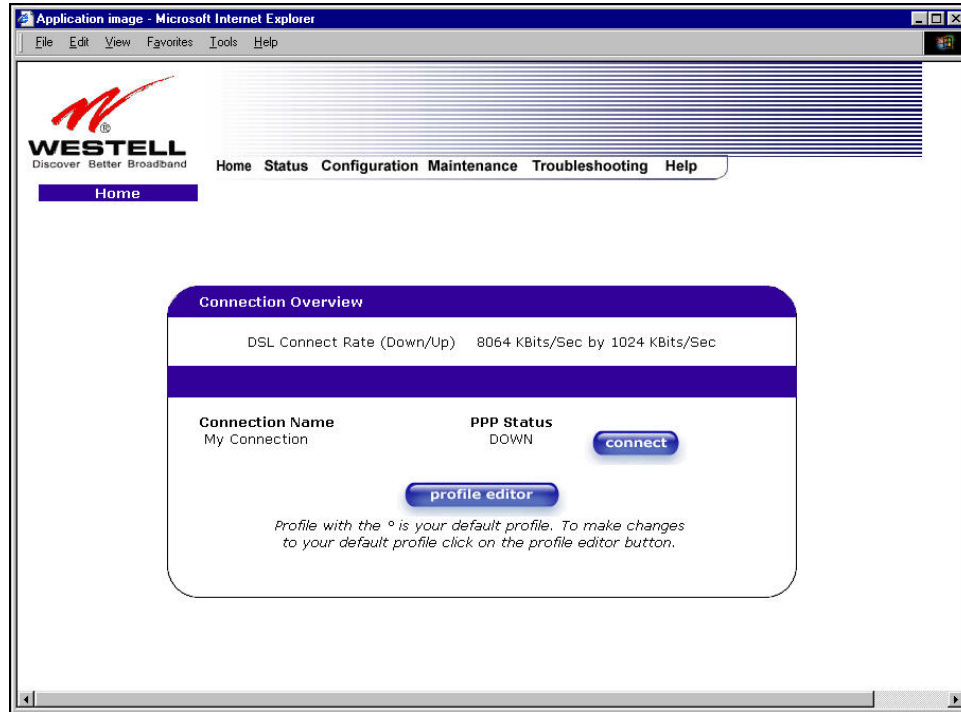
7.2 Confirm a DSL Sync

Remember, you must have active DSL service before VersaLink can synchronize with your ISP's equipment. To determine if VersaLink has a DSL sync, view the DSL Connection Rate in the **Connection Overview** section (see the following homepage screen). If the status reads **No DSL Connection**, check the DSL physical connection, explained in section 6 (INSTALLING THE HARDWARE) of this User Guide.

NOTE: If no DSL sync is established, the **connection** button will not be displayed in the following screen. To determine if the DSL sync is established, check VersaLink's DSL/RDY LED. If the DSL/RDY LED is not solid green, you do not have a DSL sync established. Contact your ISP for further instructions.



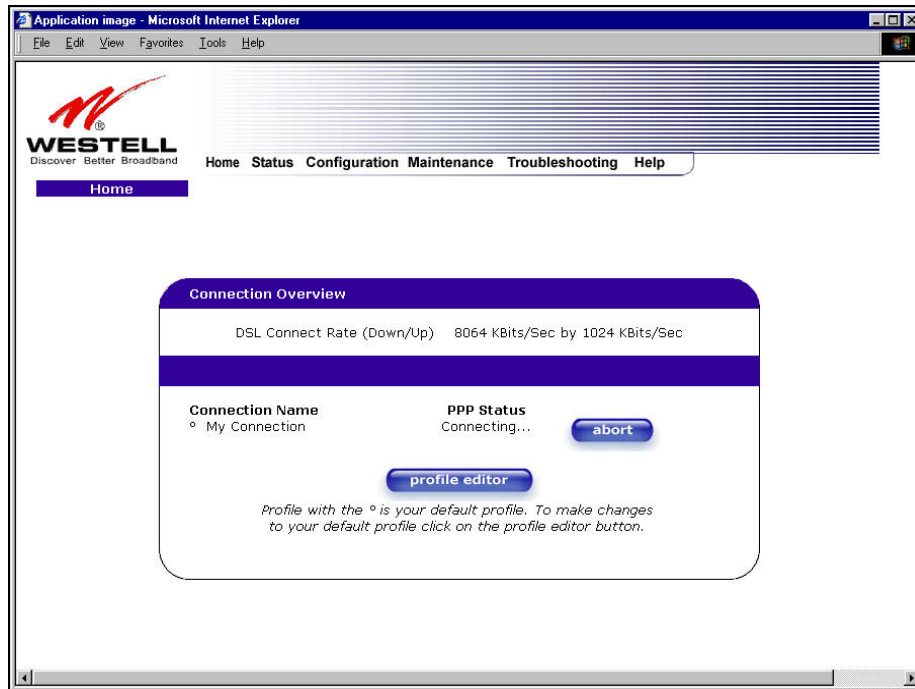
The screen below shows the connection rate, indicating that a successful SYNC has been established. The connection rate values represent the transmission speed of your DSL line. (VersaLink might take time to report the values.) Click on the **Connect** button to establish a PPP session.



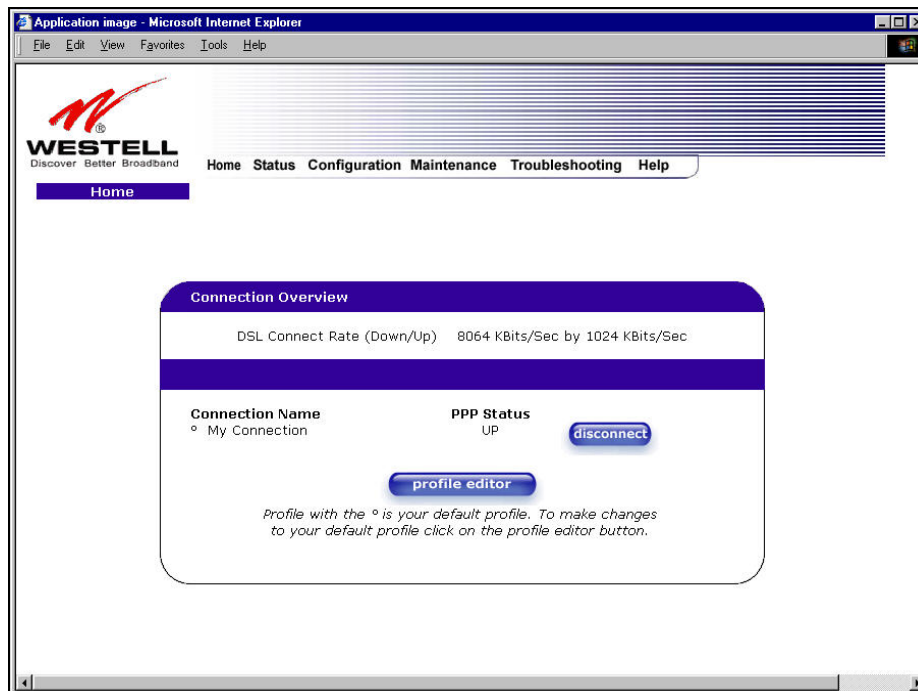
7.3 Establishing a PPP Session

If you clicked on **connect** button in the **Connection Overview** window, the following screen will appear briefly. The **PPP Status** in the **Connection Overview** window allows you to view the state of your ISP connection. When the **PPP Status** displays **Connecting...**, this means that you are establishing a PPP session.

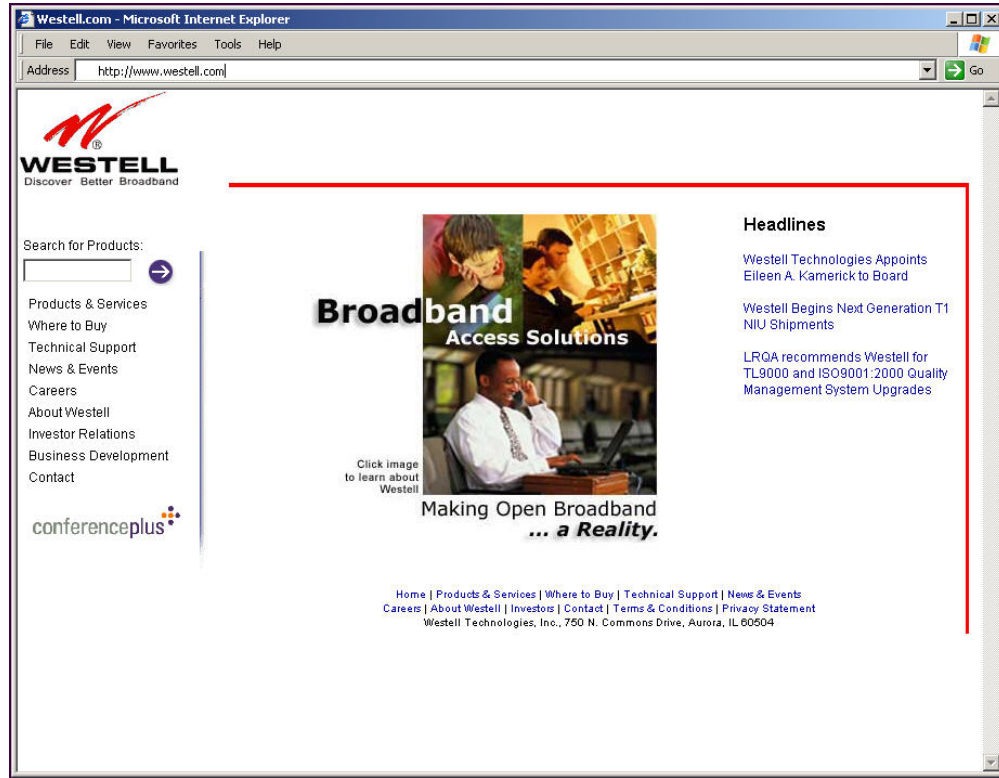
NOTE: VersaLink will handle transmission rates up to 8 Mbps in ADSL mode. Your actual DSL rates may vary depending on your Internet service provider.



Once a PPP session has been established, the **PPP Status** will display **UP**. Congratulations! You may now surf the Internet.

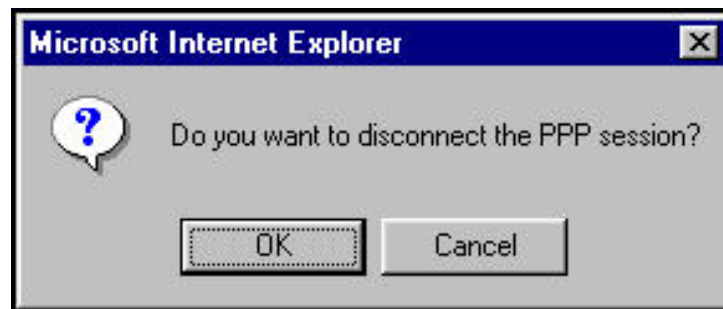


For example, if you want to visit Westell's home page, type **Http://www.westell.com** in your browser's address window.

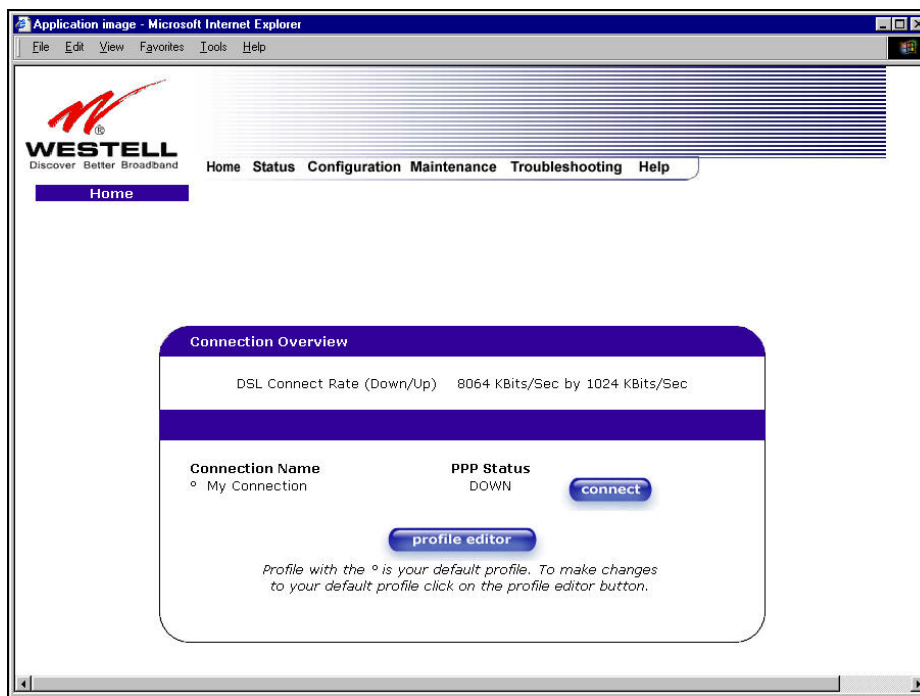


7.4 Disconnecting a PPP Session

If you have finished surfing the Internet and want to disconnect from your Internet service provider, click on the **Disconnect** button in the **Connection Overview** screen (the preceding screen). The following pop-up screen will appear. Click on **OK** to disconnect the PPP session.



If you clicked the **Disconnect** button in the preceding **Connection Overview** screen, the **PPP Status** should display **DOWN**. This means that you no longer have a PPP session. In this event, VersaLink will maintain its DSL connection. If you want to remove the DSL connection, power down VersaLink via the power switch on the rear of VersaLink.



When you are ready to establish a PPP session, click on the **connect** button. (If you powered down VersaLink, you must first power up VersaLink and log into your account profile before you establish a PPP session.)

NOTE: When you are ready to exit VersaLink's interface, click on the **X** (close) in the upper right-hand corner of the window. Closing the window will not affect your PPP Status (your PPP session will not be disconnected). You must click on the disconnect button to disconnect your PPP session.

8. SETTING UP MACINTOSH OS X

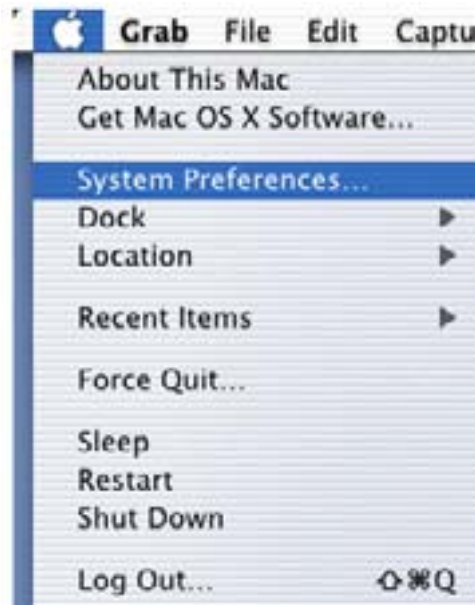
This section provides instructions on how to use Macintosh Operating System 10 with VersaLink. Follow the instructions in this section to create a new network configuration for Macintosh OS X.



NOTE: Macintosh computers must use VersaLink's Ethernet installation. Refer to section 6, (INSTALLING THE HARDWARE).

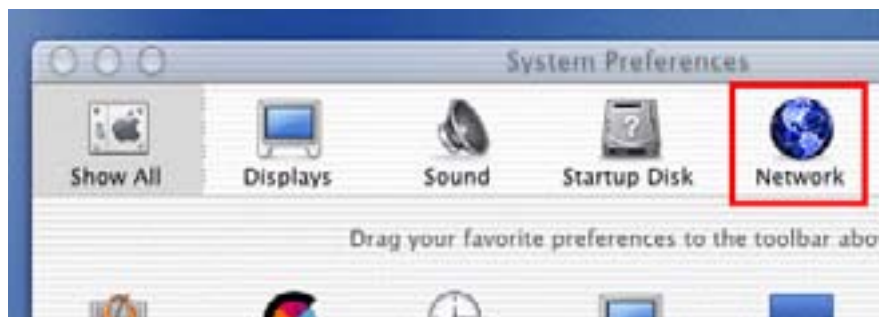
Open the System Preference Screen

After you have connected the Westell VersaLink to the Ethernet port of your Macintosh, the screen below will appear. Click on 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 on 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 on **OK** in the preceding screen, the **Network** screen will be displayed. The **Network** screen shows the settings for the newly created location. From the **Configure** field in the **Network** screen, select **Built-in Ethernet**. Click on **Save**.

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

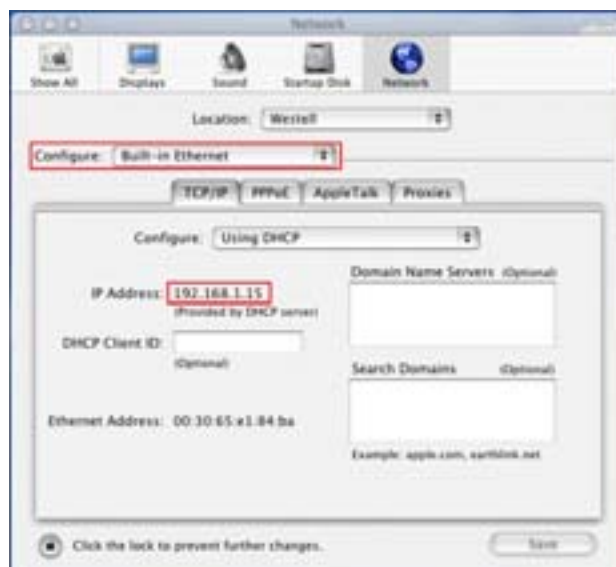


Check the IP Connection

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

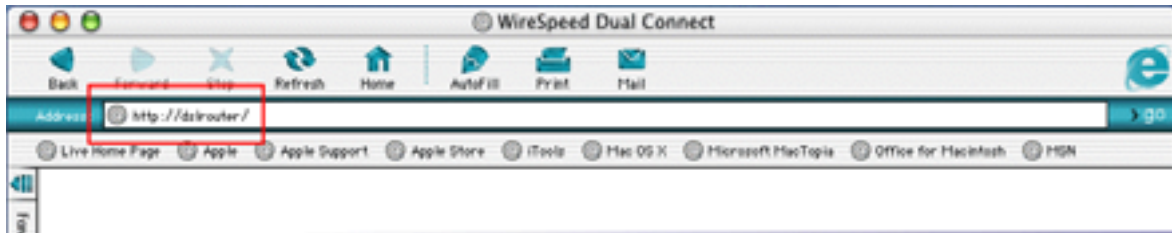
1. Go to the “**Apple**” icon in the upper right corner of the screen and select **System Preferences**.
2. From the **System Preferences** screen, click on the **Network** icon. The **Network** screen will be displayed.
3. From the **Configure** field in the **Network** screen, select **Built-in Ethernet**.
4. View the IP address field. An IP address that begins with **192.168.1** should be displayed.

NOTE: The DHCP server provides this IP address. If this IP address is not displayed, check VersaLink’s wiring connection to the PC. If necessary, refer to section 5 for hardware installation instructions.

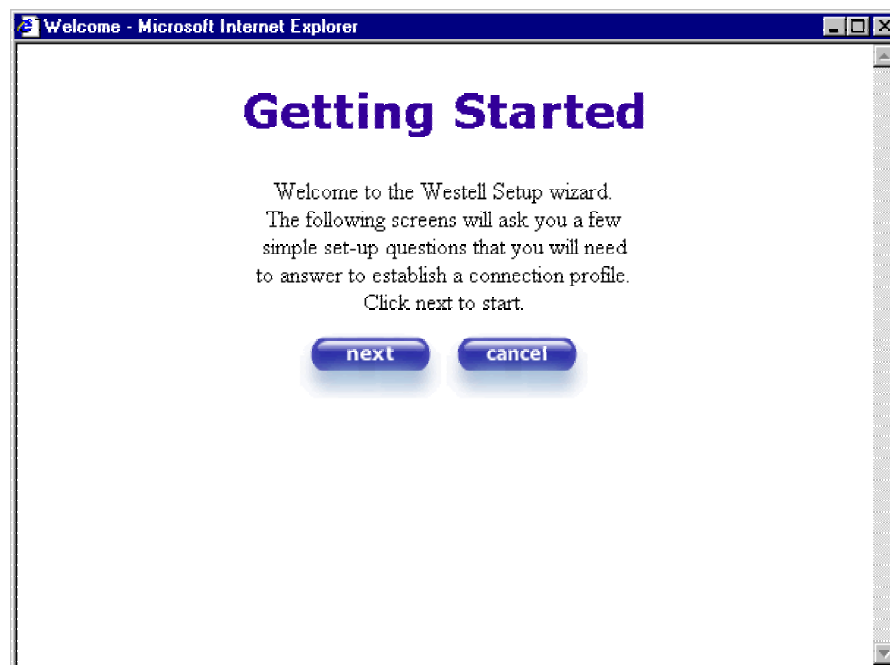


Create a User Account

In the address window of your Internet Explorer web browser, type **Http://dslVersaLink/**. Press enter on your keyboard.



The **Getting Started** screen will be displayed. You may now begin your Account Setup. Refer to section 7 of this User Guide to configure your Westell VersaLink for Internet connection.



The following sections explain the advanced features of VersaLink™.
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9. SETTING UP ADVANCED CONFIGURATION

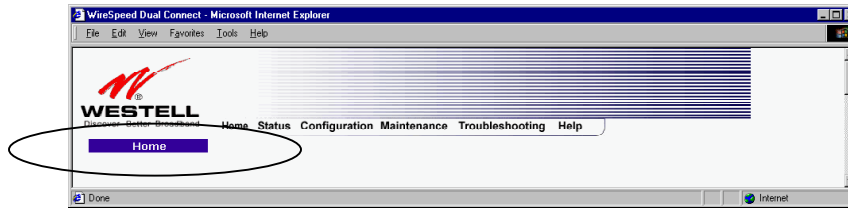
Advanced Configuration instructions are explained in Section 10 through Section 16. If you want to set up advanced features for VersaLink™, follow the instructions provided in sections 10 through 16.

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

VersaLink™ allows you to make changes to advanced features such as account profiles, routing configurations, and firewall settings. The following sections will explain each feature and show you how to make changes to VersaLink's settings. If you are at a screen and need help, click on the **Help** button to learn more about that screen.

NOTE: As you navigate through the various screens of VersaLink, the name of the active page that you have selected will appear in the left-hand side of the homepage screen, as shown below. Please note that the actual values might differ from the values displayed in the screens.

10. HOME



If you have set up your account profile and established your PPP session as discussed in section 7, the following settings will be displayed when you click on your **Home** page. Click on **profile editor** to edit your connection profile.

NOTE: If you have created multiple account profiles, select the radio button for the active account profile.

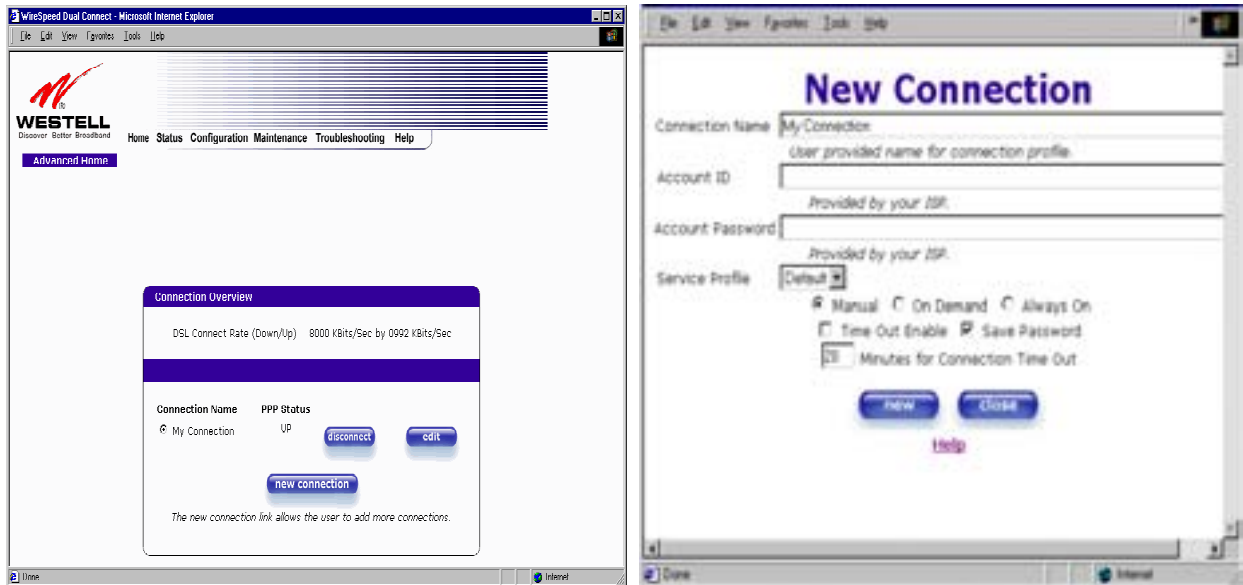


Connection Overview	Displays your DSL connection rate.
Connection Name	This Connection Name is from the connection profile that you established in section 7.
PPP Status	UP = PPP session established DOWN = No PPP session established.
Connect/Disconnect	CONNECT = Establish a PPP session DISCONNECT = Disconnect a PPP session
Profile Editor	This allows you to make changes to the profile that you created in section 7.

10.1 Adding Account Profiles

If you select the **Profile Editor** button from your **Home** page, the **Advanced Home** screen will appear, as shown below. Click on the **new connection** button in the **Advanced Home** screen. The **New Connection** screen will appear. Enter your account profile information and click on **New**. Next, click on **OK** in the pop-up screen to save your new connection. If you do not want to add a connection profile, click on **Close** in the **New Connection** screen.

NOTE: You may store up to eight unique user profiles in VersaLink. Details on the **New Connection** screen are located at the end of this section.



If you clicked **OK** in the “**Save new connection?**” pop-up screen, the following screen will be displayed. This screen will allow you to edit a connection profile. Select a profile name from the **Connection Name** field and click on the **edit** button adjacent to the name.



10.2 Editing Account Profiles

If you clicked on **Edit** in the preceding screen, the **Edit “My Connection”** screen will appear. Follow the steps in the **Edit “My Connection”** screen to change your existing connection profile, which you set up in section 7. If you do not want to change your connection profile, click on **close** in the screen. Click on **delete** if you want to delete your connection profile.



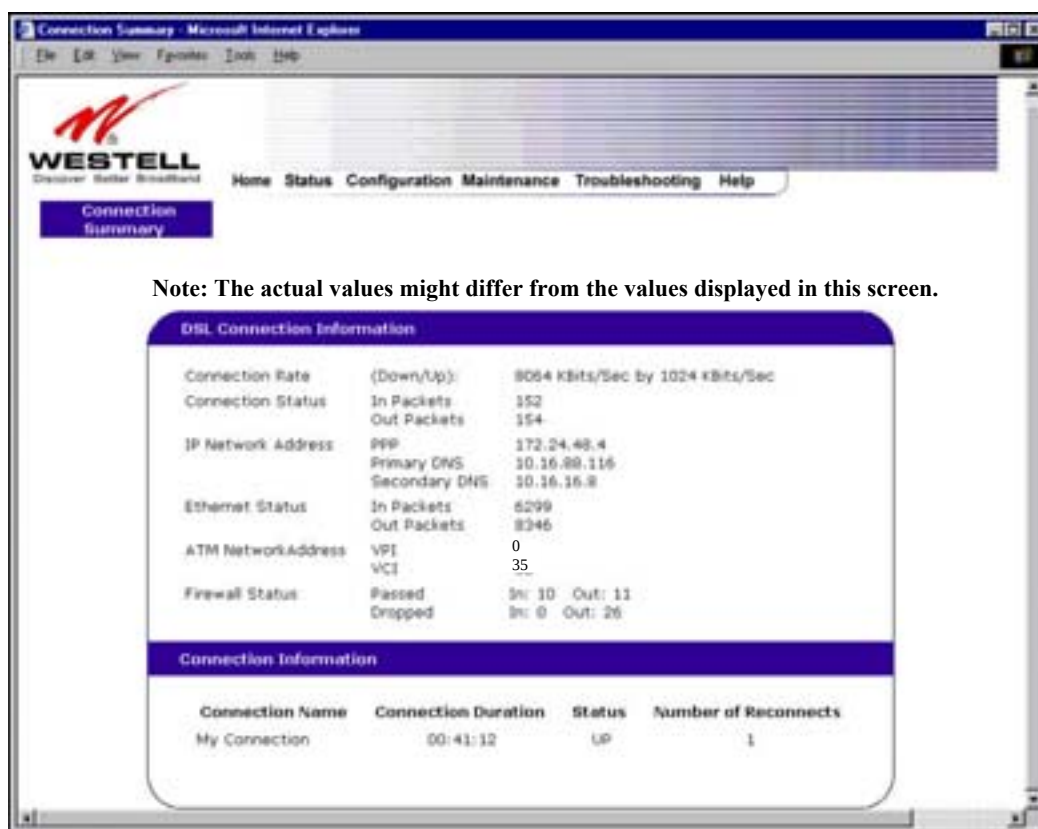
Connection Name	This field allows you to enter a new connection name of your choice (up to 64 characters).
Account ID	Use the same account ID that you used in section 7 if you are connecting to the same Service Provider. If you have multiple Service Providers, you can enter this information at this time.
Account Password	Use the same account password that you used in section 7 if you are connecting to the same Service Provider. If you have multiple Service Providers, you can enter this information at this time.
Service Profile	Westell recommends that you use the Default parameter.
Manual	Factory default = 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 upon demand.
Always On	Selecting this feature allows VersaLink to establish an “always-on” PPP session if it goes down.
Save Password	Selecting this feature allows you to save the password for your new connection profile in VersaLink so that you will not have to re-enter it in case of a re-boot.
Minutes for Connection Time Out	This option allows you to specify the number of minutes that you want a PPP session to stay active before it is disconnected due to inactivity. (This feature works if you have selected the Time Out Enable feature explained above.)

11. STATUS



11.1 Connection Summary

The following settings will be displayed if you select **Connection Summary** from the **Status** menu.

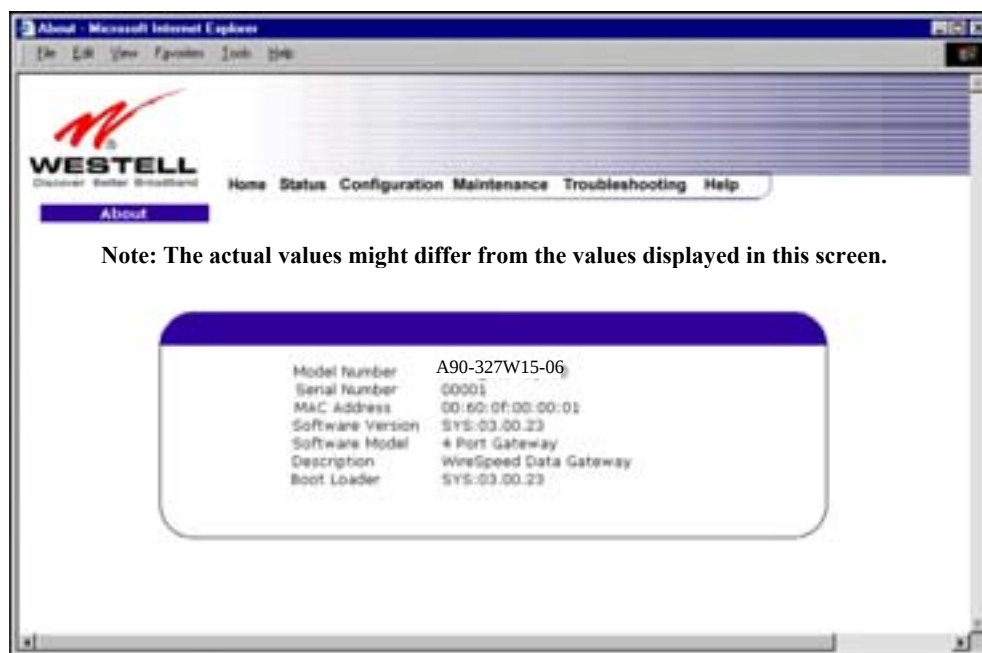


DSL Connection Information	
Connection Rate	This field will let you know if you have a DSL Sync (UP/DOWN) and the DSL rate at which you are connected.
Connection Status	This field will show how much information was received (IN) or sent (OUT) in packets.
IP Network Address	PPP = An IP address identifies your device on the Internet Primary DNS = Provided by your Service Provider

	Secondary DNS = Provided by your Service Provider
Ethernet Status	This field will display your Ethernet information that was received (IN) or sent (OUT) in packets on your Ethernet port.
ATM Network Address	This field will display your VPI and VCI values, which are provided by your ISP.
Firewall Status	This field will display your firewall traffic in packets. Passed: Monitors information traffic that was successfully received (IN) or transmitted (OUT) in packets. Dropped: Monitors information traffic that was not successfully received (IN) or transmitted (OUT) due to your firewall settings.
PPP Connection Information	
Connection Name	This is from the connection profile that you established in section 7.
Connection Duration	This field will display how long your PPP session has been connected.
Status	This field will display the status of your PPP session. UP=Connected DOWN=Disconnected
Number of Reconnects	This field will display the number of attempts that were made to establish a PPP session.

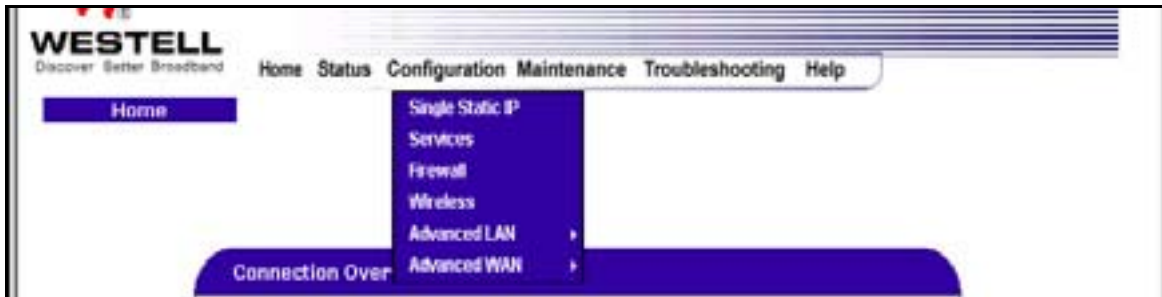
11.2 About

The following settings will be displayed if you select **About** from the **Status** menu.



Model Number	VersaLink manufacturer's model number.
Serial Number	VersaLink manufacturer's serial number.
MAC Address	Media Access Controller (MAC) i.e., hardware address of this device.
Software Version	Version of Application Software.
Software Model	VersaLink application type.
Description	Product description.
Boot Loader	Version of boot loader software

12. CONFIGURATION



12.1 Single Static IP

The following settings will be displayed if you select **Single Static IP** from the **Configuration** menu.

STOP: Static NAT must be disabled before you can enable **Single Static IP**. To disable Static NAT, select **Service Configuration** from the **Configuration** menu. Next, click on the **static NAT** button. Select the device from the **Static NAT Device** drop-down menu and click on **disable**. Return to Single Static IP Configuration by selecting **Single Static IP Configuration** from the **Configuration** menu.



12.1.1 Enabling Single Static IP Configuration

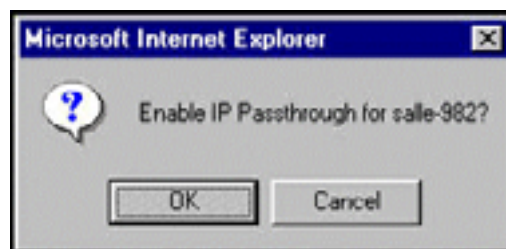
To enable Single Static IP, select a device from the options listed in the window that will share your Single Static IP. Click on **enable**.

NOTE: The Single Static IP Configuration screen allows you to select the device on your LAN that will share your Single Static IP.

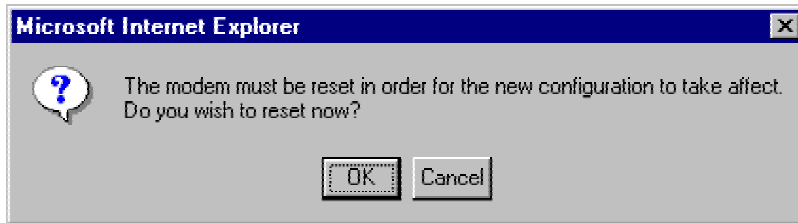


If you clicked on **enable**, the following pop-up screen will appear. Click on **OK** to enable this device for Single Static IP. Click on **Cancel** if you do not want to enable Single Static IP.

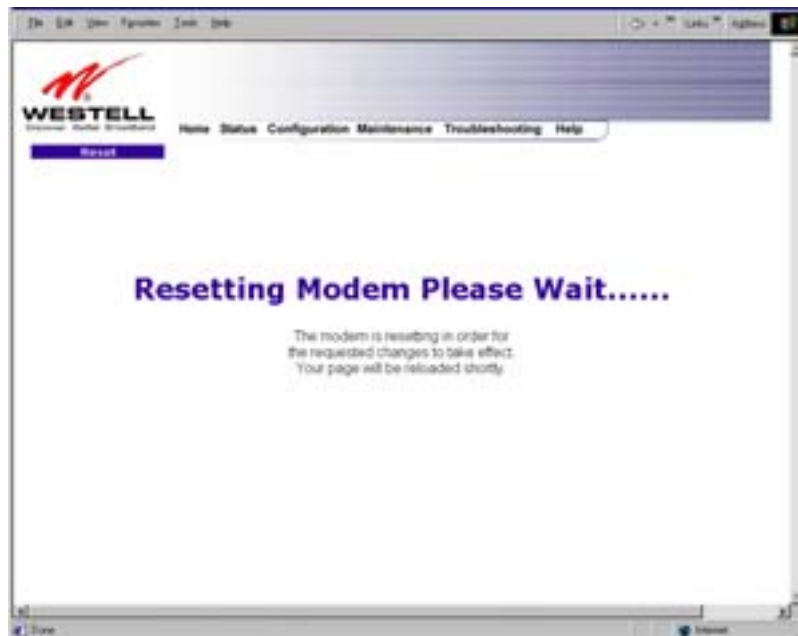
NOTE: The actual device name may differ from the name displayed in this screen.



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



If you clicked on **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 page will be displayed. Confirm that you have a DSL sync and that your PPP session displays **UP**. (Click on the **connect** button to establish a PPP session). Next, Select **Single Static IP** from the **Configuration** menu to confirm that Single Static IP is **enabled**, as shown in the following screen.



STOP! After you enable Single Static IP, you must reboot your computer.

12.1.2 Disabling Single Static IP

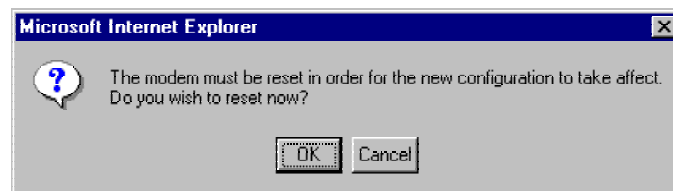
To disable Single Static IP, select **Single Static IP** from the **Configuration** menu. Click on **disable**.



If you clicked on **disable** in the preceding screen, the following pop-up screen will be displayed. Click on **OK**.



If you clicked on **OK** in the **Disable IP Passthrough?** screen, the following pop-up screen will be displayed. This screen will allow the modem to be reset and the new configuration will take effect. Click on **OK**.



If you clicked on **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 page will be displayed. Confirm that you have a DSL sync and that your PPP session displays **UP**. (Click on the **connect** button to establish a PPP session). Next, Select **Single Static IP** from the **Configuration** menu to confirm that Single Static IP is **disabled**, as shown in the following screen.



STOP! After you disable Single Static IP, you must reboot your computer.

12.1.3 Configuring Static IP on Your PC

If you have static IP service (your Internet Service Provider [ISP] supplies static IP addresses), you will need to perform the following steps to obtain Internet access:

1. Configure your PC settings to obtain an IP address automatically. (Refer to your Windows Help screen for instructions.)
2. Follow the instructions in section 7 (Configuring VersaLink™ for Internet Connection).
3. View the settings at the VPI/VCI screen (section 7). The values should read **0** (for VPI) and **35** (for VCI). If you type any other value in the fields and click on **next**, you will lose your DSL connection. The connection cannot be restored until the VPI/VCI is set to 0/35.
4. Select the **Configuration** menu, and then select **Advanced WAN > VC**.
5. Click on the **edit** button in the row that displays the VPI/VCI equal to 0/35. The **VC 1 Configuration** screen will be displayed.
6. Select **Bridge** from the list of Protocol options. Next, under the **VC 1 Bridge Settings**, select **Routed Bridge** as the Mode.

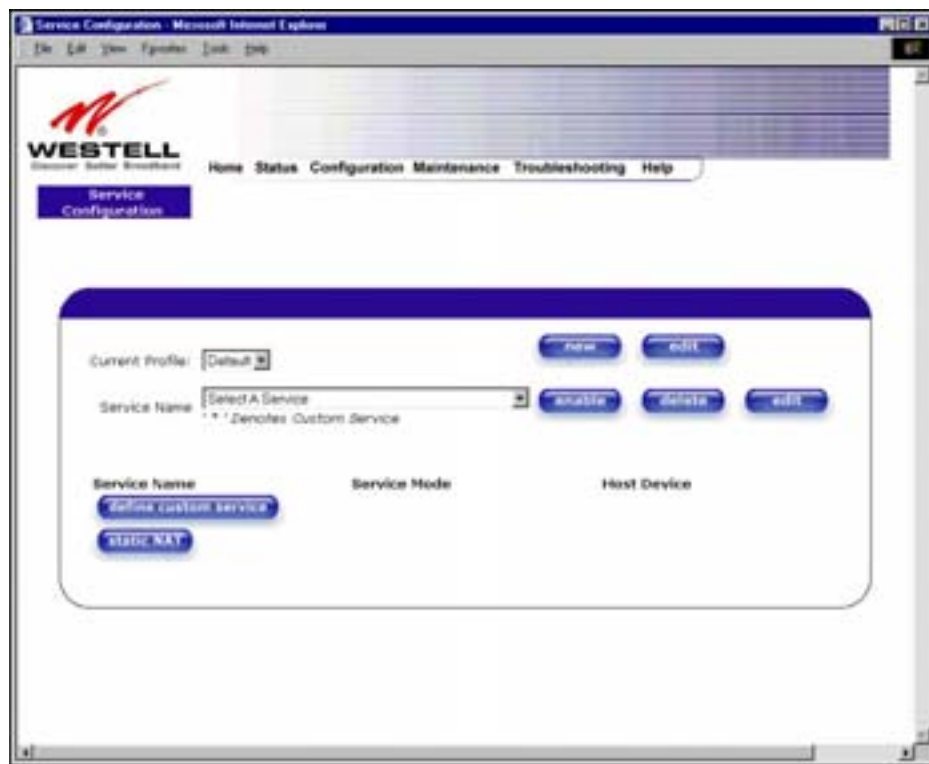
7. Disable DHCP Client (if enabled) by clicking on the **Disable** radio button adjacent to DHCP Client.
8. Replace the addresses in the fields labeled **IP address, Subnet Mask, VersaLink, DNS Primary, and DNS Secondary** with the addresses you obtained from your Internet service provider.
9. Click on the **set VC** button.
10. Click on **OK** in the VC Configuration pop-up screen.
11. Click on **OK** in the reset modem pop-up screen.

After you complete the preceding steps, VersaLink will be reconfigured and your new settings will take effect. After VersaLink has been reset, confirm that you have a DSL sync and that your PPP session displays **UP** before continuing VersaLink's configuration.

12.2 Service Configuration

The following settings will be displayed if you select **Services** from the **Configuration** menu.

Westell has developed an extensive list of NAT services and you may select any service from this list. By selecting your specific NAT service and setting up a NAT profile, you will ensure that the appropriate ports on VersaLink are open and that the required application traffic can pass through your LAN. For a list of supported services, go to section 16 (NAT Services).



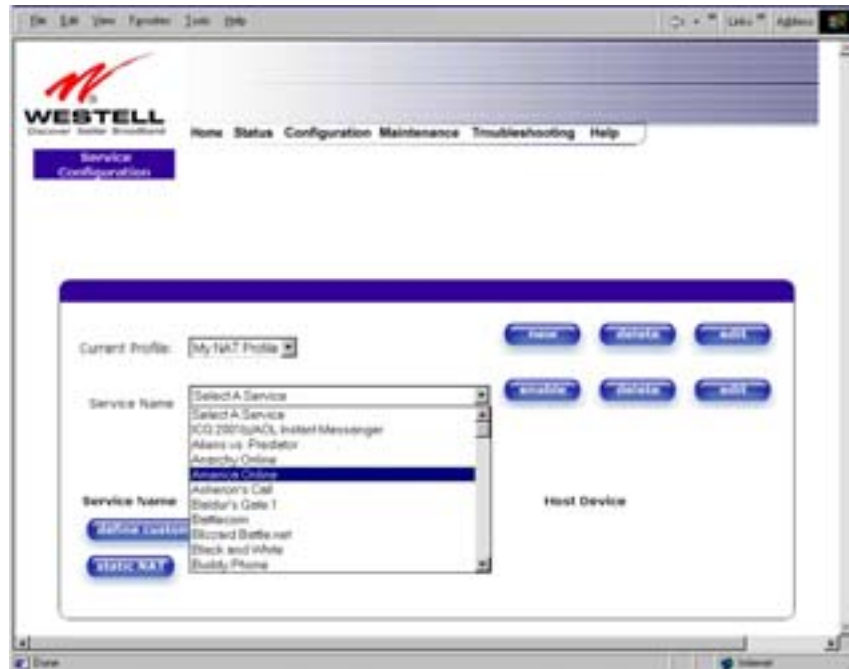
Current Profile	Displays the NAT (Network Address Translation) services that you have selected.
Service Name	Drop down selection menu of NAT (Network Address Translation) service you can select to configure you VersaLink.

12.2.1 Adding NAT Services to a Profile

This section explains how to add NAT services to your NAT service profile. Remember, you may attach an unlimited number of NAT services to your profile.

NOTE: Westell has developed an extensive list of NAT services and you may select any service from this list. By selecting your specific NAT service and setting up a NAT profile, you will ensure that the appropriate ports on VersaLink are open and that the required application traffic can pass through your LAN. For a list of supported NAT services, go to section 16 (NAT Services).

To add a NAT service, select **Services** from the **Configuration** menu. Next, Select a NAT service from the options provided at the **Service Name** drop-down arrow and click on **enable**.



If you clicked on **enable**, the following **Host Service** screen will be displayed. Click on **OK**. This will load the new NAT Configuration and the settings will be saved automatically.



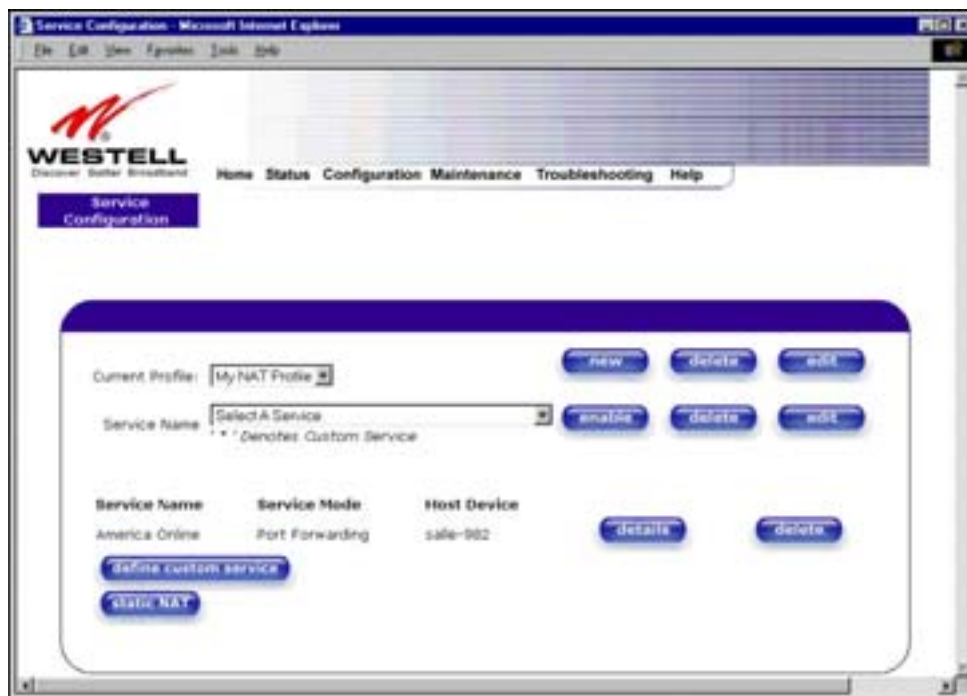
If you clicked on **OK** in the preceding pop-up screen, the **Host Device** screen will be displayed. The **Host Device** screen will allow you to select which device will host the NAT service you selected on your local area network. You

must either select the device from the **Host Device** drop-down arrow or type an IP address in the field labeled **IP Address**. Click on **done**.



NOTE: You can attach multiple NAT services to your profile. However, for each NAT service that you attach to your profile, you must first select the new NAT service. Then, you must load the new NAT Configuration, as explained earlier in this section.

Once you have selected a NAT service and you have saved it to your NAT service profile, the following screen will be displayed. It shows which NAT service is active for the selected profile.



Service Name	Service Mode	Host Device	details	delete
America Online	Port Forwarding	safe-982		

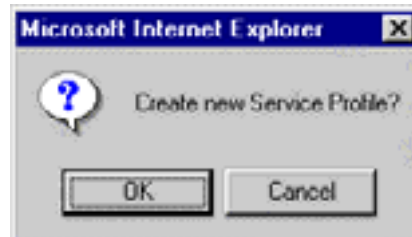
If you select the **details** button in the **Service Configuration** screen, the following screen will display the details of the selected NAT service. If you click on the **delete** button in the **Service Configuration** screen, you will remove that NAT service from your NAT service profile. Click on **close** to continue.



NOTE: If you would like to set up additional Advanced Service Configuration options, refer to section 13 (Setting Up Advanced Service Configuration).

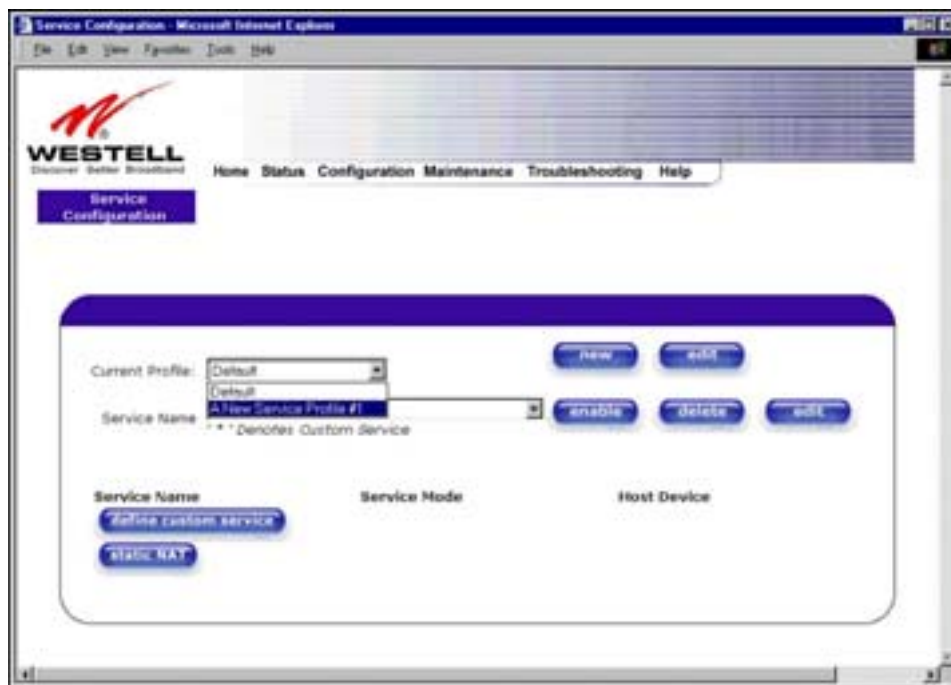
12.2.2 Creating a New NAT Service Profile

If you select **new** from the preceding **Service Configuration** screen, the **Create new Service Profile?** pop-up screen will be displayed. Click on **OK** to begin creating your new NAT service profile. Click **Cancel** if you do not want to create a new NAT service profile.

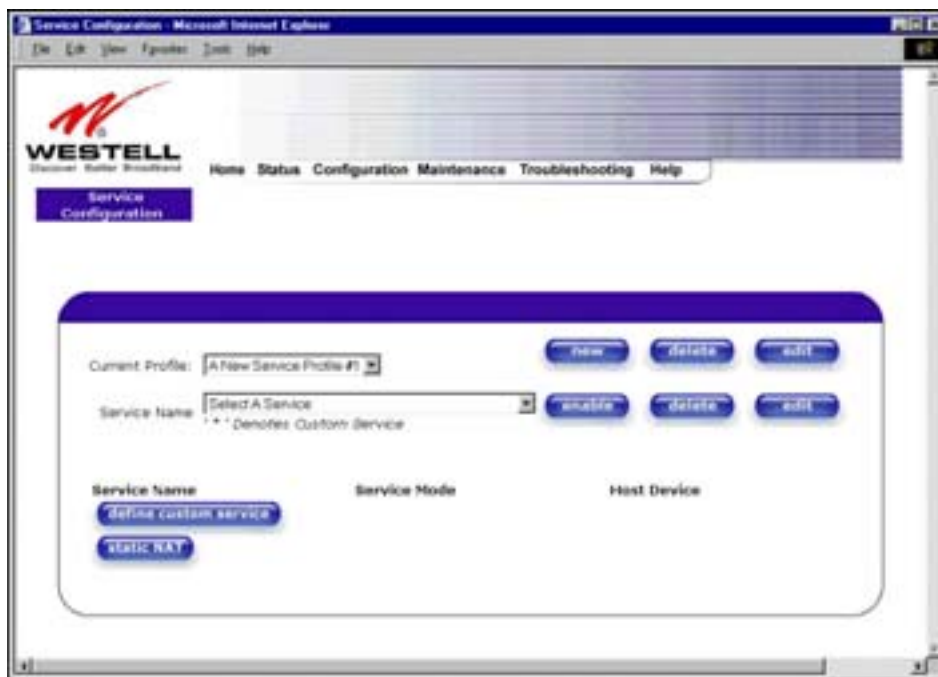


If you clicked on **OK**, the following screen will be displayed. Select “**A New Service Profile #1**” from the **Current Profile** drop-down arrow.

NOTE: You may create up to four NAT profiles and attach an unlimited number of services to each profile.



If you selected “A New Service Profile #1” from the **Current Profile** drop-down arrow, the following screen will be displayed. This screen shows that you have chosen to create a new NAT service profile. You may create up to four NAT service profiles and attach an unlimited number of services to each profile.



12.2.3 Editing a NAT Service Profile

Once you have created a NAT service profile, you may edit the profile. If you select **edit** from the **Service Configuration** screen, the following screen will be displayed. By selecting the **edit** button, you can make changes to your NAT profile by adding or deleting NAT applications that will work with VersaLink. Type your new NAT service profile name into the field labeled **Profile Name**.



The following screen shows that a new profile name called '**My NAT Profile**' was entered into the **Profile Name** field. If you want save the new NAT profile, click on **save**. If you do not want to save the new NAT profile, click on **close**.

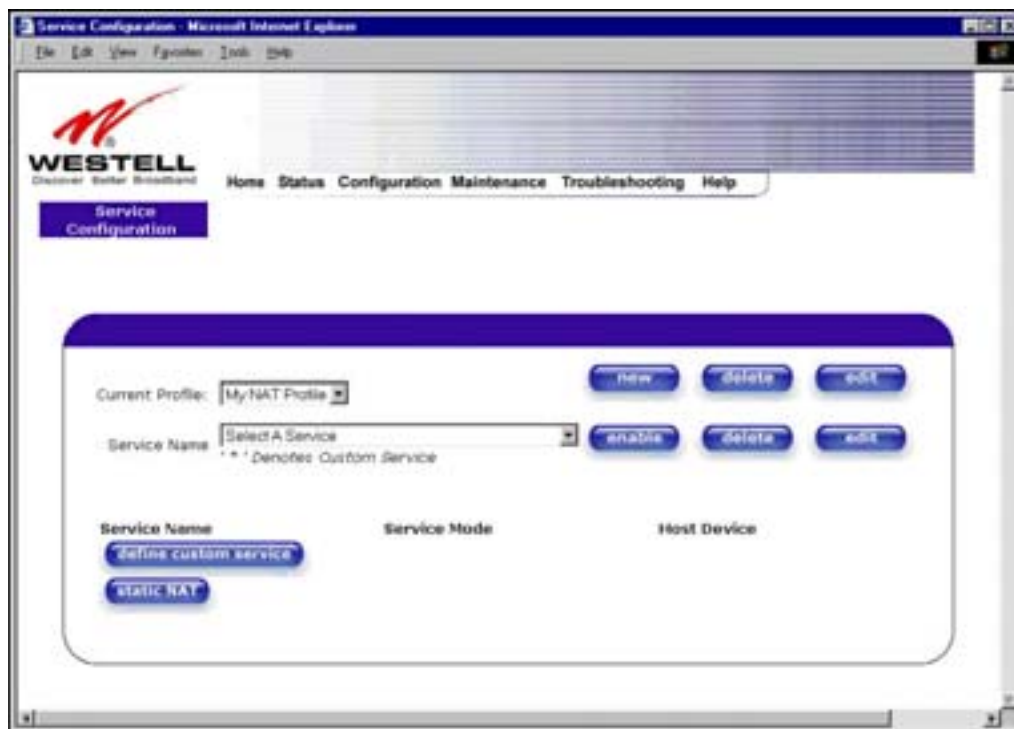


If you clicked on **save** in the **Edit NAT Profile** screen, the following pop-up screen will be displayed. Click **OK** to save your new profile settings. If you click on **Cancel**, your new profile settings will not be saved.



The following screen displays the current profile. If desired, you may create a new profile and delete or edit an existing profile.

NOTE: You may create up to four NAT profiles and attach an unlimited number of services to each profile.



12.3 Firewall Configuration

The following settings will be displayed if you select **Firewall** from the **Configuration** menu.

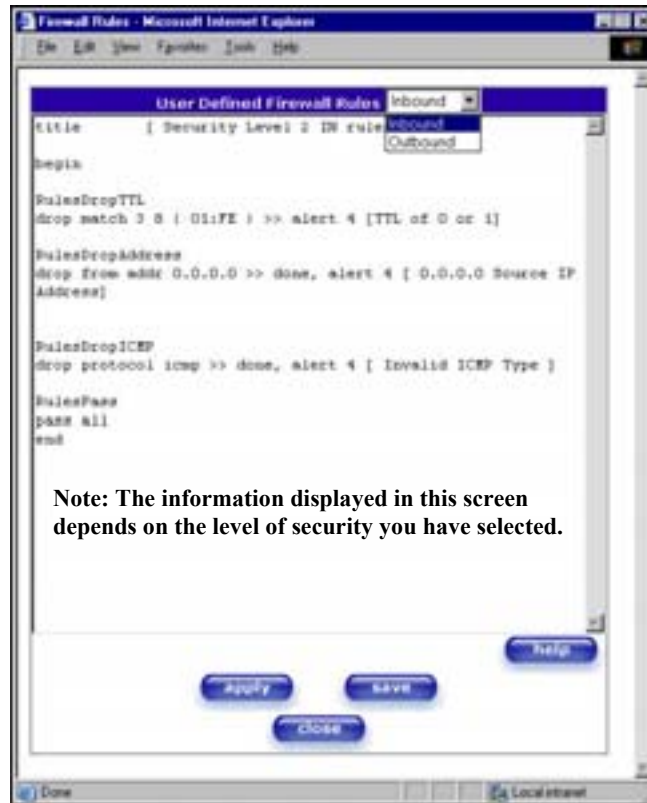


High	High security level only allows basic Internet functionality. Only Mail, News, Web, FTP, and IPSEC are allowed. All other traffic is prohibited.
Medium	Factory Default = MEDIUM Like High security, Medium security only allows basic Internet functionality by default. However, Medium security allows customization through NAT configuration so that you can enable the traffic that you want to pass.
Low	The Low security setting will allow all traffic except for known attacks. With Low security, VersaLink is visible to other computers on the Internet.
None	Firewall is disabled. (All traffic is passed)
Custom	Custom is an advanced configuration option that allows you to edit the firewall configuration directly. NOTE: only the most advanced users should try this.

If you select **Edit** from the **Security Level** screen, the **User Defined Firewall Rules** screen will be displayed. This screen allows you to change the security parameters on your Inbound and Outbound Firewall rules via the **User Defined Firewall Rules** drop-down arrow. If you select **Inbound**, this will restrict inbound traffic from the WAN to the LAN. **Outbound** restricts outbound traffic to the WAN from the LAN. To apply the new settings, click **Apply** in the screen labeled **User Defined Firewall Rules**.

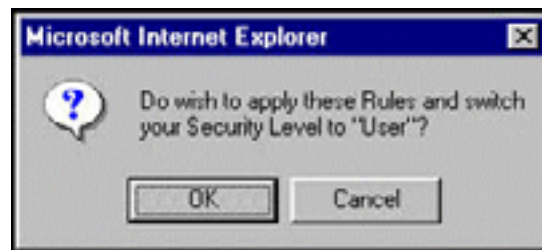
NOTE: Westell recommends that you do not change the settings in the **User Defined Firewall Rules** screen. If you need to reset VersaLink to factory default settings, push the reset button on the rear of VersaLink.

The information displayed in the following screen depends upon the Firewall security setting you have selected. If you selected “None” in the preceding Firewall **Security Level** screen, no values will be displayed in the following **User Defined Firewall Rules** screen.



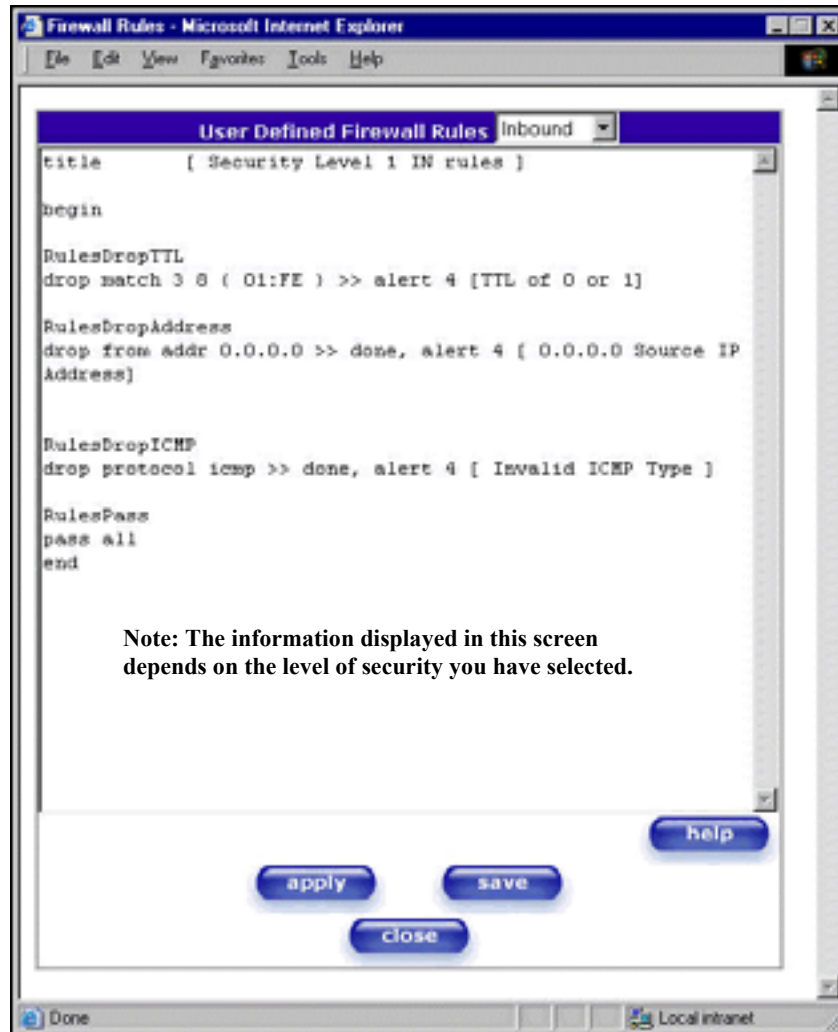
Note: The information displayed in this screen depends on the level of security you have selected.

If you clicked **Apply** in the **User Define Firewall Rules** screen, the following pop-up screen will be displayed. Click on **OK** if you want your new firewall setting to take effect. If you click on **Cancel**, your new firewall settings will not take effect.

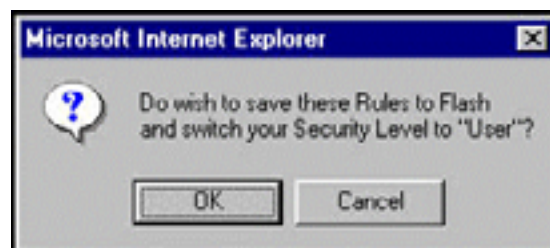


If you want to save your new firewall settings, click on **save** in the screen labeled **User Define Firewall Rules**.

NOTE: Westell recommends that you do not change the settings in the **User Defined Firewall Rules** screen. If you need to reset VersaLink to factory default settings, push the reset button on the rear of VersaLink.



If you clicked **save** in the **User Define Firewall Rules** screen, the following pop-up screen will be displayed. Click **OK** when asked **Do you wish to save these Rules to Flash and switch you Security Level to "User"?** This will save your new firewall settings. If you click **Cancel**, your new firewall settings will not be saved.



If you select **Help** in the screen labeled **User Defined Firewall Rules**, the following screen will be displayed. This screen gives a detailed explanation of the Firewall Rules.



12.4 Wireless Configuration

The following fields will be displayed if you select **Wireless** from the **Configuration** menu.

IMPORTANT: If you are connecting to VersaLink via a wireless network adapter, the SSID must be the same for both the Westell VersaLink and your PC's wireless network adapter. The default SSID for VersaLink is the serial number of the unit (located below the bar code on the bottom of the unit and also on the Westell shipping carton). Locate and run the utility software provided with your PC's Wireless network adapter and enter the SSID value. The PC's wireless network adapter must be configured with the SSID (in order to communicate with VersaLink) before you begin VersaLink's account setup and configuration procedures. For privacy, you may change the **Network Name (SSID)** value in the **Wireless Configuration** screen to your desired value.

NOTE: Client PCs can use any Wireless Fidelity (Wi-Fi) 802.11b/g+ certified card to communicate with VersaLink. The Wireless card and VersaLink must use the same Wired Equivalent Privacy (WEP) security code type. The factory default for WEP is DISABLED. If you enable WEP, you must ensure the network setting for your wireless adapter is set to "Must Use Shared Key for WEP" or "Open Wi-Fi." You must ensure that your PC's Wi-Fi adapter is configured properly for whichever network setting you use. You can access the settings in the advanced properties of the wireless network adapter.

To select a network setting, click on the drop-down arrow at the field labeled **Authentication Type**, and then select either **Open System** or **Shared Key**. If you change any settings in this screen, you must click on the **Save** button to ensure that the settings take effect.

NOTE: For privacy, you may change the **Network Name (SSID)** value to your desired value.



Wireless Card Information	
Wireless Operation	Factory Default = Enabled. When disabled, no stations will be able to connect to the VersaLink.
Network Name (SSID)	This string, (32 characters or less) is the name associated with the AP. To connect to the AP, the SSID on a Station card must match the SSID on the AP card or be set to "ANY."
Channel	The AP transmits and receives data on this channel. The number of channels to choose from is pre-programmed into the AP card. Station cards do not have to be set to the same channel as the AP; the Stations scan all channels, and look for an AP to connect to.
Mode	This setting allows station to communicate with VersaLink. Possible Responses: Mixed: Station using any of the 802.11b, 802.11b+, and 802.11g rates can communicate with VersaLink. 11b only: Communication with VersaLink is limited to 802.11b 11b+ : Stations using any of the 802.11b and 802.11b+ rates can communicate with VersaLink 11g only: Communication with VersaLink is limited to 802.11g
4x Support	Factory Default = Disabled When selected, this enables/disables the 4X. If enabled, 4X support provides additional algorithms for increased throughput.
Advanced Configuration	Selecting this button allows access to the Wireless Advanced Configuration settings.
Privacy Settings	
Authentication Type	Factory Default = Open System Possible Response: Open System: Open System authentication is the default selection. Shared Key: To use Shared Key authentication, WEP must be enabled, and a valid WEP key must be present. Enabling WEP does not force the use of Shared Key authentication. It is permissible to have WEP enabled and still use Open System authentication.
WEP Security WEP Security WEP (Wired Equivalent Privacy)	Factory Default=DISABLED The AP card supports 64-bit, 128-bit, or 256-bit WEP encryption. If WEP is disabled, any station can connect to the AP (as long as its SSID matches the AP SSID). IF WEP is enabled, the risk of someone nearby accessing the AP is minimized.
Key Select	If selected, the WEP Key is treated as a string of text characters, and the number of characters must be either 5 (for 64-bit encryption) or 13 (for 128-bit encryption) or 29 (for 256-bit encryption). If not selected, the WEP key is treated as a string of hexadecimal characters, and the number of characters must be either 10 (for 64-bit encryption), 26 (for 128-bit encryption), or 58 (for 256-bit encryption). The only allowable hexadecimal characters are 0-9 and A-F. NOTE: The WEP key must be the same value and type for both Versa Link and the wireless network adapter. "Pass Phrase" is not the same as "text" and should not be used.
Key Mapping Table button	Selecting this button will allows access to the Wireless Key Mappings settings.
Hide SSID	Factory Default = Disabled. If Enabled, stations will need to set the SSID to match the Network Name (SSID) in order to connect to Versa Link.
MAC Address Filtering	Factory Default = Disabled. If Enabled, only the stations in the MAC Filter Table can connect to Versa Link.
MAC Filter Table button	Selecting this button allows access to the Wireless MAC Address Filter Table.

12.4.1 Wireless Advanced Configuration

The following screen will be displayed if you click on the **Advanced Configuration** button in the **Wireless Configuration** screen.

The screenshot shows the 'Wireless Advanced Configuration' page of a Westell router. The page has a navigation bar with links: Home, Status, Configuration, Maintenance, Troubleshooting, and Help. Below the navigation bar is a 'Wireless Advanced Configuration' button. The main content area contains the following settings:

- Beacon Period:** 200 msec (range: 1-65535)
- RTS Threshold:** 2347 bytes (range: 0-2347)
- Fragmentation Threshold:** 2346 bytes (range: 256-2346)
- Preamble Algorithm:** Local STA's
- Slot Time Algorithm:** Local STA's
- PBCC Algorithm:** Enhanced Dynamic
- ERP Protection Algorithm:** Dynamic
- Rate Adaptation:** Enabled
- Rate Fallback:** After 1 Retry
- 802.11b Rates(Mbps):**
 - N - not supported
 - Y - supported
 - B - basic supported
 - 1: [B] 2: [B] 5.5: [B] 11: [Y] 22: [Y]
- 802.11g Rates(Mbps):**
 - N - not supported
 - Y - supported
 - B - basic supported
 - 6: [Y] 9: [Y] 12: [Y] 18: [Y] 24: [Y] 36: [Y] 48: [Y] 54: [Y]

At the bottom of the configuration area are three buttons: Save, Cancel, and Back.

Beacon Period	The time interval between beacon frame transmissions. Beacons contain rate and capability information. Beacons received by stations can be used to identify the access points in the area.
RTS Threshold	RTS/CTS handshaking will be performed for any data or management MPDU containing a number of bytes greater than the threshold. If this value is larger than the MSDU size (typically set by the fragmentation threshold), no handshaking will be performed. A value of zero will enable handshaking for all MPDUs.
Fragmented Threshold	Any MSDU or MMPDU larger than this value will be fragmented into an MPDU of the specified size.
Preamble Algorithm	Factory Default = Local STA's Possible Responses: Always Long: Transmissions are done using the long preamble algorithm. Always Short: Transmissions are done using the short preamble algorithm. Local STA's: If all associated stations support short preamble, then the short preamble algorithm is used. Otherwise, the long preamble algorithm is used.
Slot Time Algorithm	Factory Default = Local STA's Possible Response: Always Off: Transmissions are done using a 20 usec slot time.

	Always ON: Transmissions are done using a usec slot time (SST). Local STA's: If all associated stations support SST, then the 9 usec slot time is used. Otherwise, the 20 uses slot time is used. Enhanced Dynamic: Similar to Local STA's, with the following extension: If associated stations that do not support SST do not transmit for a period of time, the 9 usec slot time is used.
PBCC Algorithm	Factory Default = Enhanced Dynamic Possible Response: Always Off: PBCC is not used, operation at 22 Mbps is not possible. Always ON: PBCC is used. Local STA's: If all associated stations support PBCC, then PBCC is used. Otherwise, PBCC is not used. Dynamic: Similar to local STA's with the following extension: PBCC setting is also dependent on Beacon frames from overlapping BSS. If Beacon frames are received that do not support PBCC, then PBCC is not used. Enhanced Dynamic: Similar to Dynamic with the following extension: If associated stations that do not support PBCC do not transmit for a period of time, then PBCC is not used.
ERP Protection Algorithm	Factory Default = Dynamic Possible Response: Always Off: ERP is not used Always ON: ERP is used. Local STA's: If there are any associated stations than do not support ERP, a protection algorithm is used to prevent contention. Dynamic: Similar to local STA's with the following extension: The ERP protection setting is also dependent on Beacon frames from overlapping BSS. IF Beacon frames are received that indicate ERP is not supported, then a protection algorithm is used. Enhanced Dynamic: Similar to Dynamic with the following extension: If associated stations that do not support ERP do not transmit for a period of time, then protection algorithm is not used.
Rate Adaptation	Factory Default = Enable If disabled, the highest rate shared between VersaLink and STA is used for each transmission.
Rate Fallback	Factory Default = After 1 Retry The number of retries to attempt before falling back to the next lower rate. If Fallback is disabled, the starting rate is the only rate tried. IF Rate Adaptation is also disabled, the maximum rate shared with the STA is always the starting rate and the only rate tried. This may not work in noisy environments, and will reduce roaming distances. Possible Response: After 1 Retry/ Disable/ After 1 Retry/ After 2 Retry
802.11b Rates (Mbps) 802.11g Rates (Mbps)	These are the allowable communication rates that VersaLink will attempt to use. The rates are also broadcast within the connection protocol as the rates supported by VersaLink.

12.4.2 Wireless Key Mappings

The following screen will be displayed if you click on the **Key Mapping Table** button in the **Wireless Configuration** screen.



WEP Key	Select Enable if you want this WEP key enabled for the listed MAC Address.
MAC Address	The MAC address assigned to the station for which you want to assign a WEP key.
Key Length	The number of bits the encryption is going to use for WEP. The options are 64, 128, or 256 bits.
Key Value	The WEP key to be used for this station.

12.4.3 Wireless Filter Table

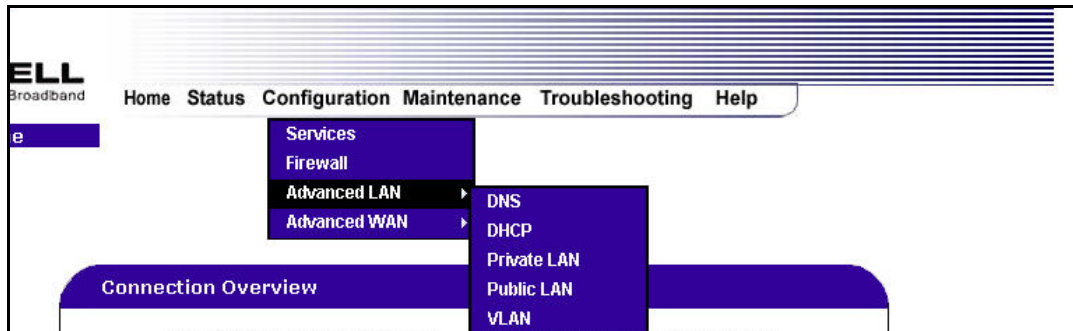
The following screen will be displayed if you click on the **MAC Filter Table** button in the **Wireless Configuration** screen.



Traffic	Allowed: When the MAC Filter is enabled, only stations in the MAC Filter Table (which are set to “Allowed”) will have access to the AP. Blocked: This allows the station to remain in the table, but no access to the VersaLink is allowed.
MAC Address	The MAC address assigned to the station that you want to Allow access to.
Station Name	The station name or description that the MAC address is assigned to. This is an optional field that is useful in identifying the station.

12.5 Advanced LAN

This section explains the configurable features of VersaLink that are available if you select **Advanced LAN** from the **Configuration** menu.



12.5.1 DNS Configuration

The following settings will be displayed if you select **DNS** from the **Advanced LAN** menu.



User Assigned DNS	
Domain Name	This field allows you to enter a Domain Name for VersaLink.
NOTE: Some ISP's may require the name for identification purposes.	To add a Domain Name, in the field under User Assigned DNS, type in your new domain name and click Set .
Static Host Assignment	
Host Name	This field allows you to enter a HOST name for VersaLink.
	To add a new Host name, in the field under Static Host Assignment, type in the Host Name and the IP address and click Set .
IP Address	Displays the IP address that is assigned to the Host Name.
Discover Local Devices	
This field displays a list of the computers on the LAN that were assigned a DHCP Address. The computer name, MAC address, and IP address of each discovered device is displayed.	

If you want to add a new Host Name and IP address to your DNS server, enter VersaLink's **Host Name** and **IP Address** in the fields provided in the **Static Host Assignment** section.



The following screen displays a **Host Name** and an **IP Address** in the fields. Now click on **add**.

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Home Status Configuration Maintenance Troubleshooting Help

DNS Configuration

User Assigned DNS

Domain Name:

Static Host Assignment

Host Name	IP Address	
router	192.168.1.1	set
deviceweb	192.168.1.1	delete
SmartDevice	192.168.1.1	delete
browserwhere	192.168.1.25	add

Discovered Local Devices

No Discovered Devices

If you clicked on **add**, the following screen will be displayed. The **Host Name** and **IP Address** have been added to the Static Host Assignment.

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Home Status Configuration Maintenance Troubleshooting Help

DNS Configuration

User Assigned DNS

Domain Name:

Static Host Assignment

Host Name	IP Address	
router	192.168.1.1	set
deviceweb	192.168.1.1	delete
smartdevice	192.168.1.1	delete
browserwhere	192.168.1.25	delete
	11.1.1.1	add

Discovered Local Devices

No Discovered Devices

12.5.2 DHCP Configuration (Private LAN)

The following settings will be displayed if you select **DHCP** from the **Advanced LAN** menu.



DHCP Server	This setting allows VersaLink to automatically assign IP addresses to local devices connected on the LAN. Westell advises setting this to enabled for the private LAN. Off = DHCP Server is disabled Private LAN = DHCP addresses will be saved into the Private LAN configuration. Public LAN = DHCP addresses will be saved into the Public LAN configuration. This option is only available if the Public LAN DHCP server is enabled. NOTE: These addresses will be overwritten if the Internet Service Provider supports dynamic setting of these values.
DHCP Start Address	Factory Default = 192.168.1.15 This field displays the first IP address that the DHCP server will provide. The DHCP Start Address must be within the IP address and lower than the DHCP End Address. You may use any number from 0 to 254 in this address.
DHCP End Address	Factory Default = 192.168.1.47 This field displays the last IP address that the DHCP server will provide. The DHCP End Address must be within the IP address and higher than the DHCP Start Address. You may use any number from 0 to 254 in this address.

DHCP Lease Time	Factory Default = 01:00:00:00 Displays the amount of time the provided addresses will be valid, after which the DHCP client will usually re-submit a request. NOTE: DHCP Lease Time is displayed in the format (dd:hh:mm:ss)*. This value must be greater than 10 seconds. Seconds must be between 0 and 59, minutes must be between 0 and 59, and hours must be between 0 and 23. *(dd = days, hh = hours, mm = minutes, ss = seconds)
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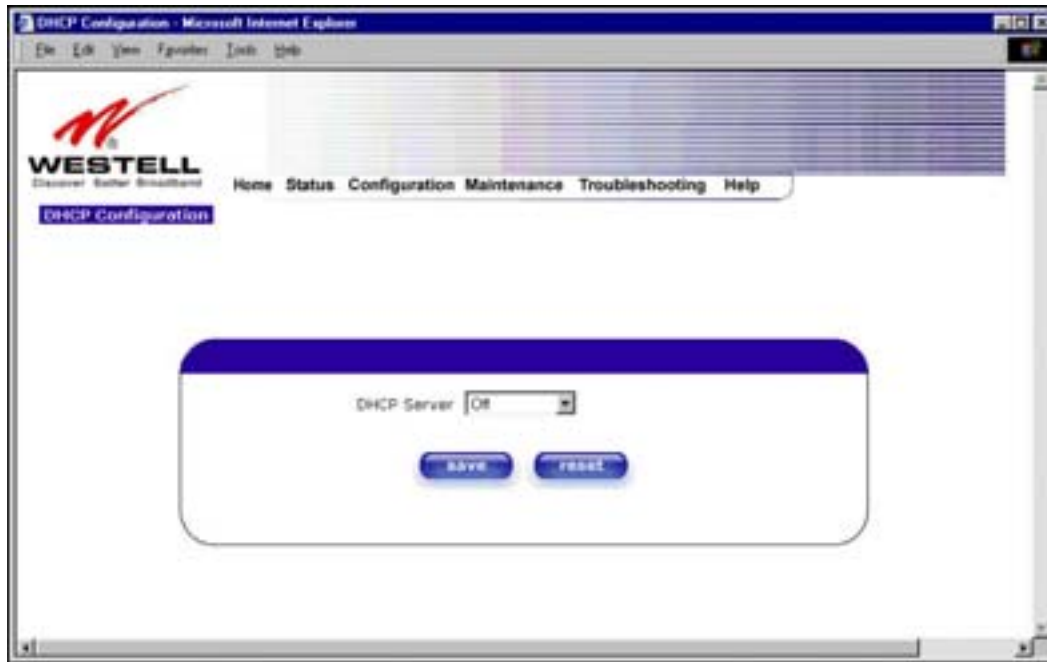
12.5.3 Disabling the DHCP Server

If you click on the drop-down arrow at **DHCP Server:**, a list of options will be displayed.

If you want to disable your DHCP server, select **Off** from the **DHCP Server** drop-down arrow. Click on **save**.



If you selected **Off** at **DHCP Server:**, the following screen will be displayed. Click on **save** to save the **DHCP Server** setting.



If you clicked on **save**, in the preceding **DHCP Configuration** screen, the following pop-up screen will appear. Click on **OK**.

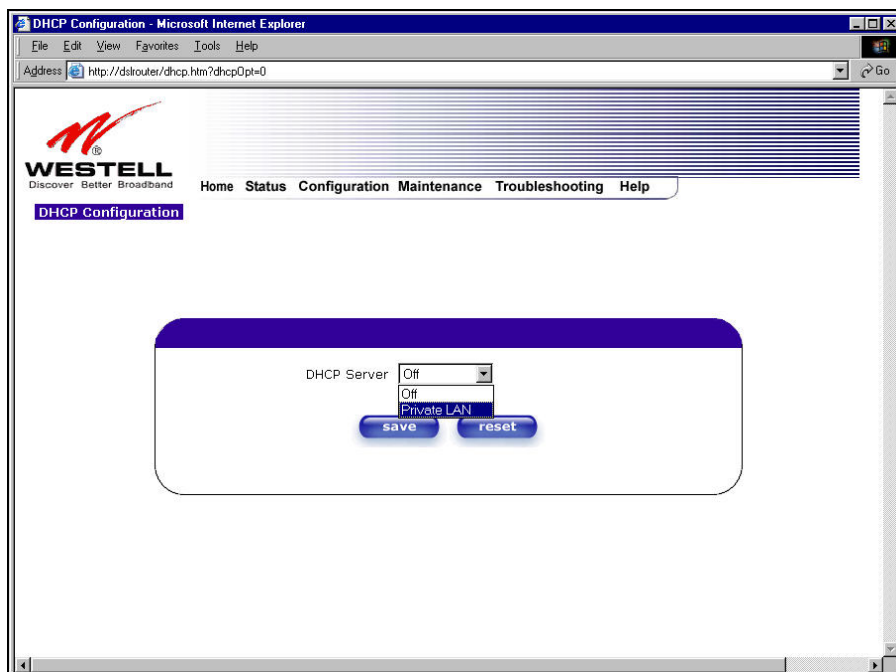


12.5.4 Enabling the DHCP Server

If you want to enable your DHCP Server settings, select **Private LAN** at the **DHCP Server** drop-down arrow.



If you have recently disabled the DHCP Server for Private LAN, select **Private LAN** while in the following screen.



If you selected **Private LAN**, the following screen will be displayed automatically. Click on **save** to save your DHCP Server setting. If you click on **reset**, your DHCP Server will be reset to factory default. (Private LAN is the factory default for the DHCP Server.)



If you clicked on **save**, the following pop-up screen will appear. Click on **OK**.



12.5.5 Private LAN Configuration

The following settings will be displayed if you select **Private LAN** from the **Advanced LAN** menu. (Private LAN is the default configuration for this VersaLink.)

NOTE: Private LAN allows you to set up a network behind VersaLink.

If you change the settings in this screen, click on **save**. If you click on **reset**, the changes will not take effect.

If you made changes and clicked on **save**, the following pop-up screen will be displayed. Click on **OK**. This will save your **Private LAN Configuration** settings. If you click **Cancel**, your new settings will not take effect.



Private LAN DHCP Server Enable	Default = CHECKED If this box is CHECKED, it enables DHCP addresses to be served from the Private LAN pool.
Private LAN Enable	Default = CHECKED If this box is CHECKED, it enables the addresses from the Private