

USER GUIDE

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1. PRODUCT DESCRIPTION

The Westell® Dual Connect NAT Router with DMHTM technology adds reliable, high-speed, Internet access to your existing home or 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 your Dual Connect NAT Router.

This Router is capable of data rates hundreds of times faster than a traditional analog modem. But unlike analog modems, Westell's Dual Connect NAT Router 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.

Your Westell modem is equipped with the latest in DSL modem technology. One of the innovative features included within your modem is a technology called Dynamic Multi-Hybrid or DMHTM. This technology enables your modem to achieve the fastest possible connection under various loop (telephone wires) conditions.

NOTE: Hereafter the Westell Dual Connect NAT Router will be referred to as "Dual Connect NAT Router" or "Router."

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.



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

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 2200) 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 no 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 2200) 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 2200), do not try to repair the equipment yourself. The equipment cannot be repaired in the field. Contact Westell 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 2200) 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 2200) 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 2200), 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.



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



4. SYSTEM REQUIREMENTS

4.1 Minimum System Requirements for 10/100 Base-T/Ethernet Installation

The following system specifications are required for optimum performance of the Dual Connect NAT Router via 10/100 Base-T installation:

- Pentium[®] or equivalent and above class machines, Macintosh
- Microsoft® Windows® (98, 2000, ME, NT 4.0, 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
- TCP/IP Protocol stack installed
- 10/100 Base-T Network Interface Card (NIC)

4.2 Minimum System Requirements for USB Installation

The following system specifications are required for optimum performance of the Dual Connect NAT Router via USB installation:

- Pentium[®] or equivalent and above class machines
- Microsoft® Windows® 98, 2000, ME, or XP 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
- USB Version 1.0 or higher compliant bus
- An available USB Port



5. INSTALLING THE HARDWARE

5.1 Installation Requirements

To install the Dual Connect NAT Router, you will need the following:

- A Network Interface Card (NIC) installed in your PC or
- An available USB port installed on your PC.
- A DSL line (provided by your Service Provider).

STOP! Please wait until you have received notification from your Internet service provider (ISP) that your DSL line has been activated before installing this Router and software.

5.2 Before you begin:

Make sure that your kit contains the following items:

- Westell Dual Connect NAT Router
- Power Supply
- RJ-45 Ethernet cable (straight-through) (yellow)
- USB cable (blue)
- RJ-11 Phone cable

5.3 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.

5.4 Router Installations

This section explains the procedures for installing Westell's Dual Connect NAT Router via 10/100 Base-T/Ethernet or USB connection.



NOTE: Please wait until you have received notification from your Service Provider that your DSL line has been activated before installing your Dual Connect NAT Router.

NOTE: If you are using a Westell Dual Connect NAT Router in conjunction with an Ethernet Hub or Switch, refer to the manufacturer's instructions for proper installation and configuration. Westell recommends the use of a surge suppressor to protect equipment attached to the AC power supply.



5.4.1 Router Installation via 10/100 Base-T Ethernet

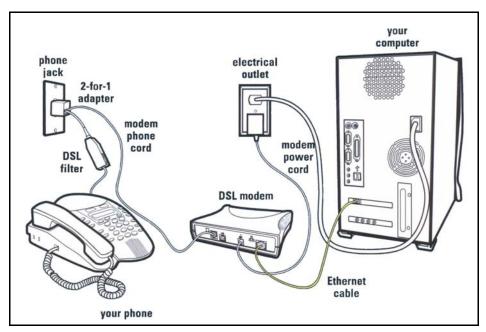
NOTE: Before you connect the Dual Connect NAT Router via 10/100 Base-T, you must have an available Ethernet card installed in your computer. If your Ethernet card does not auto-negotiate, you must set it to half duplex. Refer to the Ethernet card manufacturer's instructions for installing and configuring your Ethernet card. If you do not have an Ethernet card installed in your computer, go to section 5.4.2.

- 1. Connect the power supply cord to the power connector marked **12V** on the rear panel of the Router. Plug the other end of the power supply into an AC wall socket.
- 2. Connect the DSL phone cable from the jack marked **••** on the rear panel of the Router to the DSL-equipped telephone line jack on the wall. **IMPORTANT:** <u>Do not</u> use a DSL filter on this connection. You must use the phone cord that was provided with the Router kit.

NOTE: Your Westell modem is equipped with the latest in DSL modem technology. One of the innovative features included within your modem is a technology called Dynamic Multi-Hybrid or DMHTM. This technology enables your modem to achieve the fastest possible connection under various loop (telephone wire) conditions. When the modem is reset, powered-up or connected to the DSL line there may be a "clicking" noise. This "clicking" is part of the DMH technology and will stop once the modem has successfully locked to the DSL signal.

3. Connect the Ethernet cable from the Ethernet jack marked on the rear panel of the Router to the Ethernet port on your computer.

Congratulations! You have completed the Ethernet hardware installation for your Dual Connect NAT Router. No software installation is required when using an Ethernet connection. **You must now proceed to step 7.**



NOTE: Your modem's rear panel may have additional features. See Figure 3 Figure 1. Connection via 10/100 Base-T Ethernet



5.4.2 Router Installation via USB



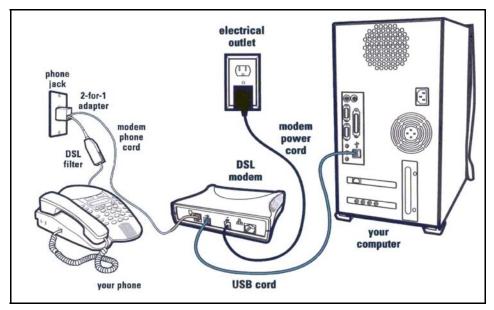
NOTE: The USB installation will not function for Macintosh computers. Macintosh computers must install the Router via Ethernet connection. See section 5.4.1.

- 1. Connect the power supply cord to the power connector marked **12V** on the rear panel of the Router. Plug the other end of the power supply into an AC wall socket.
- 2. Connect the DSL phone cable from the connector marked **u** on the rear panel of the Router to the DSL-equipped telephone line jack on the wall. **IMPORTANT:** <u>Do not</u> use a DSL filter on this connection. You must use the phone cord that was provided with the Router kit.

NOTE: Your Westell modem is equipped with the latest in DSL modem technology. One of the innovative features included within your modem is a technology called Dynamic Multi-Hybrid or DMHTM. This technology enables your modem to achieve the fastest possible connection under various loop (telephone wire) conditions. When the modem is reset, powered-up or connected to the DSL line there may be a "clicking" noise. This "clicking" is part of the DMH technology and will stop once the modem has successfully locked to the DSL signal.

3. Connect the USB cable from the USB connector marked •••• on the rear panel of the Router to the USB port on the PC.

Congratulations! You have completed the USB hardware installation for your Dual Connect NAT Router. You must now go to Section 6 to begin the USB driver software installation.



NOTE: Your modem's rear panel may have additional features. See Figure 3 Figure 2. Connection via USB



5.5 LED Indicators

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

LED	State	Description	
POWER	Solid Green	Power ON	
POWER	No Light	No Power	
	Slow Flashing Green	Power ON and waiting for carrier detect signal (1 flash/sec)	
	Moderate Flashing Green	Power ON and attempting synchronization (2 flashes/sec)	
READY	Solid Green	Power ON and synchronized with ADSL line card	
	Steady Red (less than 20 sec.)	Hardware power-up in process	
	Flashing Yellow	Modem failed self-diagnostics	
	Solid Yellow	Modem is in safe boot mode	
	No Light	No Power	
	Solid Green	Ethernet link established	
ETHERNET	Flashing Green	Transmit or Receive Activity	
	No Light	No link established	
	Solid Green	USB link established	
USB	Flashing Green	Transmit or Receive Activity	
	No Light	No USB link established	

Table 1.	LED	States	and	Descriptions	
----------	-----	--------	-----	--------------	--

5.6 Cable Connectors and Switch Locations

The following items are located on the rear panel of the Router. See Figure 3. Tables 2 through 5 list the connector types and pinout designations.

- DSL Connector (RJ-11)
- USB Connector
- ON/OFF Switch
- Power Connector
- Reset Button
- Ethernet Connector (RJ-45)

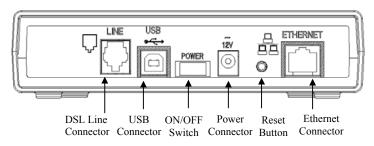


Figure 3. Dual Connect NAT Router Rear Panel (Model x99-220040-00)



SYMBOL	NAME	Түре	FUNCTION
•	LINE	6-pin RJ-11 modular jack	Connects to an ADSL-equipped telephone jack or DSL connection of a POTS splitter.
⊷	USB	4-pin USB Series B connector	Connects the USB device to the PC.
~ 12V	POWER	Barrel connector	Power source.
	ETHERNET	8-pin (RJ-45) modular jack	Connects the Ethernet device to the PC.

Table 2. Connector Descriptions

Table 3. DSL Pinouts

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

Table 4. USB Series B Connector Pinouts

Pin	Name	Description	Cable Color
1	VBUS/Vcc	5 Vdc	Red
2	D –	Data –	White
3	D +	Data +	Green
4	GND	Ground	Black

Table 5. Ethernet Pinouts

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



6. INSTALLING THE USB DRIVERS

This section explains how to install the USB modem drivers for the Dual Connect NAT Router. If you are using only Ethernet ports, USB driver installation is not necessary. The Microsoft® Plug and Play auto-detect feature recognizes when new hardware has been installed. After you connect the Router to the PC, the Router will automatically be detected.

6.1 CD-ROM Installation:

- 1. Place the CD-ROM that you received in the Router kit into the CD-ROM drive of the PC that is connected to the USB port.
- 2. Go to the USB driver installation section that matches your operating system and follow the procedures outlined in that section.
- 3. Verify the connection to the computer by observing the state of the USB LED. Once the USB drivers have been installed, the USB LED should be solid green. Solid green indicates a USB connection has been established. Refer to Table 1 (LED States and Descriptions).

Before you begin the USB driver software installation, determine which operating system is installed on your PC. Then, follow the instructions that match your operating system (e.g., Microsoft Windows 98-refer to the instructions in section 6.2). Next, begin the USB driver software installation. When the installation has completed, proceed to section 7. Table 6 provides a quick reference to the USB software driver instructions.

Your Operating System	Refer to this section for USB driver instructions
Windows 98 or 98 SE	6.2
Windows ME	6.3
Windows 2000	6.4
Windows XP	6.5

Table 6. USB Driver Software Installation

6.2 Installing the USB Drivers for Windows 98

IMPORTANT: Confirm that the Westell USB Driver CD-ROM is inserted in the appropriate drive before continuing this installation.

1. After you have connected the Westell Dual Connect Modem to your PC, the **Found New Hardware** window appears (Figure 4). In a few moments, the Add **New Hardware Wizard** window will open (Figure 5). Click **Next**.

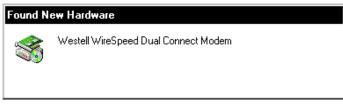


Figure 4. Windows 98



Add New Hardware Wiz	ard
Add New Hardware wiz	This wizard searches for new drivers for: USB Composite Device A device driver is a software program that makes a hardware device work.
	< <u>B</u> ack Next> Cancel

Figure 5. Add New Hardware

2. Windows 98: Click the option button for Search for the best driver for your device. (Recommended). See Figure 6. Click Next.

Add New Hardware Wizard				
	 What do you want Windows to do? Search for the best driver for your device. [Recommended]. Display a list of all the drivers in a specific location, so you can select the driver you want. 			
	< <u>B</u> ack Next > Cancel			

Figure 6. Windows 98



3. Windows 98: Select CD-ROM drive option. See Figure 7. Click Next. Windows will search for the driver.

Add New Hardware Wizard	
	Windows will search for new drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search. Floppy disk drives CD-ROM drive Microsoft Windows Update Specify a location Browse
	< <u>B</u> ack Next > Cancel

Figure 7. Windows 98

4. Windows 98: Select option button The updated driver (Recommended) Westell Dual Connect Modem. See Figure 8. Click Next.



Note: If Figure 8 does not appear at this step, and Figure 9 appears with the text 'USB Composite device', 'C:\Windows\Inf\USB.Inf', do not continue. Click **Back** to Step 3 and specify the location of the Westell CD-ROM.

Add New Hardware Wizard	
	Windows has found an updated driver for this device, and also some other drivers that should work with this device.
	What do you want to install?
	 The updated driver (Recommended) Westell WireSpeed Dual Connect Modem
	O One of the other drivers.
	< <u>B</u> ack Next > Cancel

Figure 8. Windows 98



5. Windows 98: Windows will display the location of the driver. See Figure 9. Click Next. Note: The drive "letter" may vary.

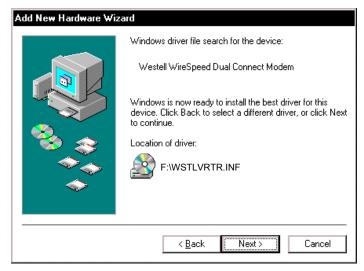


Figure 9. Windows 98

6. Windows 98: Remove the Westell CD from the CD-ROM Drive. Next, insert the Windows operating system CD into the CD-ROM Drive. See Figure 10. Click **OK**.

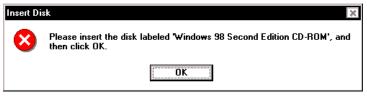


Figure 10. Windows 98

7. Windows 98: The system will begin copying files (Figure 11).

Copying Files	
Source: Windows 98 Second Edition CD-ROM Destination: Scanning	
57%	
(Cancel)	

Figure 11. Windows 98



8. Windows 98: Figure 12 may pop up, depending on how Windows 98 was installed on the computer. The installation of the Westell modem requires files that are supplied by Microsoft for Windows 98. If Figure 13 pops up, insert the Windows 98 Operating System CD into the computers CD-ROM drive, wait a moment for the CD to be recognized by the system, and then click on **OK**. The system should find the required files on the Windows 98 CD and automatically complete the installation.

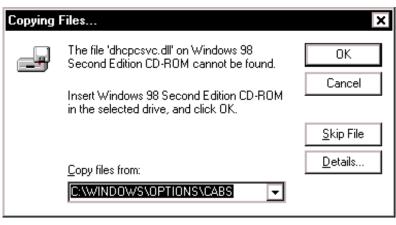


Figure 12. Windows 98

If the Operating System CD is not available, or if Figure 12 pops up again, you will have to manually specify the location of the files. The required files may be stored on your hard drive. A common location for these files is "C:\Windows\Options\Cabs." Try specifying this path or the path to your CD-ROM drive (usually "D:\") by clicking the **Browse...** button in the **Insert Disk** screen. When you have specified the correct path, click on **OK**. The system will begin copying the files. See Figure 14.

NOTE: It is very important that the Windows 98 files be installed. Do not click on **Cancel** or **Skip File** in the dialogs, doing so will result in an improper installation and the modem will not function correctly.

Insert Di	sk	×
_	The file 'nettrans.cat' on Windows 98 Second Edition CD-ROM cannot be found. Setup could not find a file on the specified path. If the path appears below, make sure it is correct. Click OK to try copying again.	OK Cancel <u>S</u> kip File
	Copy files from:	Details Browse

Figure 13. Windows 98



9. Windows 98: The window below confirms that the PC has finished loading the drivers (Figure 14). Click Finish.

Add New Hardware Wizard	
	Westell WireSpeed Dual Connect Modem
	Windows has finished installing the software that your new hardware device requires.
	< <u>R</u> ack Finish Cancel

Figure 14. Windows 98

10. Windows 98: Click Yes to restart your computer. See Figure 15.

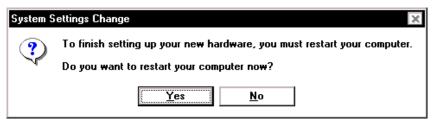


Figure 15. Windows 98

Congratulations! You have completed the software installation for the USB drivers. After the computer has restarted, the Router is ready for use. You must now go to section 7.



6.3 Installing the USB Drivers for Windows ME

1. Windows ME: After you have connected the Dual Connect Modem to your PC, the Found New Hardware window appears (Figure 16). In a few moments, the Add New Hardware Wizard window appears (Figure 17). Click the option button for Automatic search for a better driver (Recommended). Click Next.

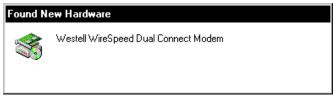


Figure 16. Windows ME

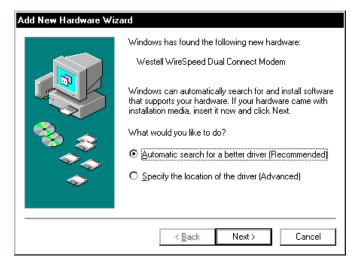


Figure 17. Windows ME

2. Windows ME: Windows will display the location of the driver. See Figure 18.

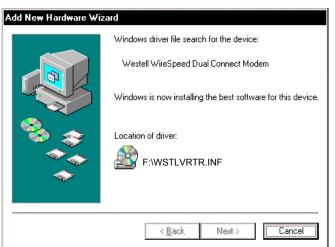


Figure 18. Location of Hardware Device Driver



3. Windows ME: The window below confirms that the PC has finished loading the drivers. See Figure 19. Click Finish.

Add New Hardware Wizard	
	Westell WireSpeed Dual Connect Modem
	Windows has finished installing the new hardware device.
	< Back Finish Cancel

Figure 19. Found New Hardware

4. Windows ME: When the System Settings Change screen appears, the USB drivers are installed properly. See Figure 20. Click Yes.

System Settings Change		
?	To finish setting up your new hardware, you must restart your computer. Do you want to restart your computer now?	
	Yes <u>N</u> o	

Figure 20. Restart the Computer

Congratulations! You have completed the software installation for the USB drivers. After the computer has restarted, the Router is ready for use. You must now go to section 7.



6.4 Installing the USB Driver for Windows 2000

1. Windows 2000: After you have connected the Westell Dual Connect Modem to your PC, the Found New Hardware window appears (Figure 21). In a few moments, the Found New Hardware Wizard window appears (Figure 22). Click Next.

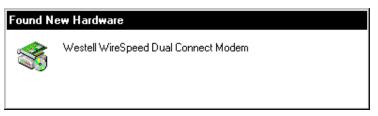


Figure 21. Found New Hardware



Figure 22. Welcome to Install Device Driver



2. Windows 2000: The Install Hardware Device Drivers window appears. Select Search for a suitable driver for my device (recommended) See Figure 23. Click Next.

Found New Hardware Wizard Install Hardware Device Drivers A device driver is a software program that enables a hardware device to work with an operating system.
This wizard will complete the installation for this device:
Westell WireSpeed Dual Connect Modem
A device driver is a software program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the installation click Next.
What do you want the wizard to do?
 Search for a suitable driver for my device (recommended)
O Display a list of the known drivers for this device so that I can choose a specific driver
< Back Next > Cancel

Figure 23. Search for Device Driver

3. Windows 2000: The Driver Files Search Results window appears. Select the CD-ROM drives option See Figure 24). Click Next.

Found New Hardware Wizard	
Locate Driver Files Where do you want Windows to search for driver	files?
Search for driver files for the following hardware d	levice:
Westell WireSpeed Dual Connect Mode	em
The wizard searches for suitable drivers in its drivers any of the following optional search locations that	
To start the search, click Next. If you are searchin insert the floppy disk or CD before clicking Next.	ng on a floppy disk or CD-ROM drive,
Optional search locations:	
Floppy disk drives	
CD-ROM drives	
🗖 Specify a location	
Microsoft Windows Update	
	<back next=""> Cancel</back>

Figure 24. Locate Driver Files



4. Windows 2000: The Driver Files Search Results window appears (Figure 25). Click Next. Note: The drive "letter" may vary.

Found New Hardware Wizard
Driver Files Search Results The wizard has finished searching for driver files for your hardware device.
The wizard found a driver for the following device:
Westell WireSpeed Dual Connect Modem
Windows found a driver for this device. To install the driver Windows found, click Next.
F:WSTLVRTR.INF
< Back Next > Cancel

Figure 25. Driver Files Search Results

5. Windows 2000: The window below confirms that the PC has finished loading the drivers (Figure 26). Click Finish.



Figure 26. Drivers Loaded



6. Windows 2000: When the System Settings Change screen appears, the USB drivers are installed properly. See Figure 27. Click Yes.

System Settings Change	
?	You must restart your computer before the new settings will take effect. Do you want to restart your computer now?
	Yes No

Figure 27. Restart Your Computer

Congratulations! You have completed the software installation for the USB drivers. After the computer has restarted, the Router is ready for use. You must now go to section 7.

6.5 Installing the USB Driver for Windows XP

1. Windows XP: After you have connected the Westell Dual Connect Modem to your PC, the Found New Hardware Wizard window will open. See Figure 28. Select option button Install the software automatically (Recommended). Click Next.

Found New Hardware Wizard	
	Welcome to the Found New Hardware Wizard
	This wizard helps you install software for:
	Westell WireSpeed Dual Connect Modem
	If your hardware came with an installation CD or floppy disk, insert it now.
	What do you want the wizard to do?
	 Install the software automatically (Recommended) Install from a list or specific location (Advanced)
	Click Next to continue.
	< Back Next > Cancel

Figure 28. Windows XP



2. Windows XP: The window below confirms that the PC has finished loading the drivers (Figure 29). Click Finish.



Figure 29. Windows XP

Congratulations! You have completed the software installation for the USB drivers. After the computer has restarted, the Router is ready for use. You must now go to section 7.



7. CONFIGURING THE ROUTER FOR INTERNET CONNECTION

To surf the Internet using your Westell Dual Connect NAT Router, you must set up your account profile, confirm your DSL sync, and establish a DHCP/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. After you have connected to the Internet, you may use the Router's Network Address Translation (NAT) feature to configure your Router for a specific NAT service, discussed later in this section.

NOTE: When viewing the screens, please note that the actual information displayed may vary.

7.1 Setting Up an Account Profile

At the **Getting Started** screen, click on **next**.

🖉 Welcome - Microsoft Internet Explorer	
Getting Started	
Welcome to the Westell Setup wizard. The following screens will ask you a few simple set-up questions that you will need to answer to establish a connection profile. Click next to start.	
	v



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.

	User Name	<u>*</u>
Connection Name	My Connection	
	User provided name for connection profile.	
Account ID		
	Provided by your ISP.	
Account Password		
	Provided by your ISP.	
	next reset	
	Help	
<u>ــــــــــــــــــــــــــــــــــــ</u>		▼

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.



User Name	<u>*</u>
My Connection	
User provided name for connection profile.	
westell@local	
Provided by your ISP.	
2000000	
Provided by your ISP.	
next reset	
Help	
	V
	My Connection User provided name for connection profile. westell@local Provided by your ISP. Provided by your ISP.

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

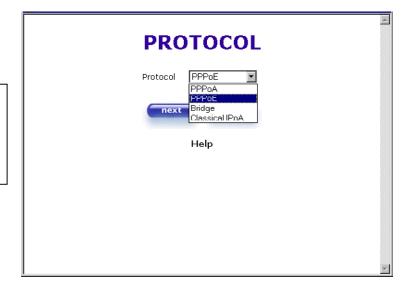
ſ

	VPI / VCI VPI (0-255) 0 VCI (1-65535) 35	VPI = 0 VCI = 35
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.	next reset 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**.

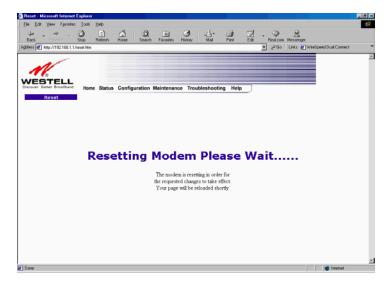


If you clicked on **done**, the following pop-up screen will be displayed. Click on **OK**. This will allow the modem to be reset and the new configuration will take effect.





If you clicked on **OK** in the preceding screen, the following screen will be displayed. This screen shows that the Router is being reset.



7.2 Establishing a PPP Session

View the **Connection Rate** at the **Connection Overview** section in the following Home page. If this status reads **No DSL Connection**, check the DSL physical connection, explained in section 5 (INSTALLING THE HARDWARE).

NOTE: If no DSL sync is established, the connect button will not be displayed. To determine if the DSL sync is established, check the Router's DSL LED. If the DSL LED is not solid green, you do not have a DSL link established. Contact your ISP for details.

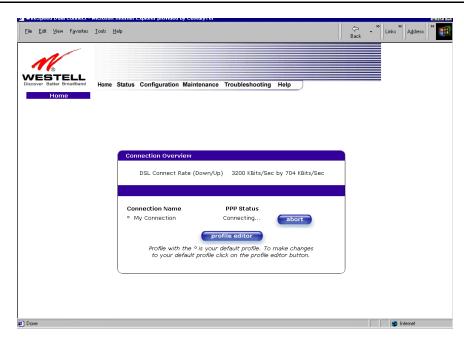
The screen below shows the connection rate with values that indicate a successful SYNC has been established. The connection rate values represent the transmission speed of your DSL line. (The Router may take time to report the values.) Click on the **Connect** button to establish a PPP session.



Eile Edit View Favorites	Toop Heb		∑ ack	• *	Links	Address)*
Discover Better Broadband	Home Status Configuration Maintenance Troubleshooting Help						
	Connection Overview DSL Connect Rate (Down/Up) 3200 KBits/Sec by 704 KBits/Sec						
	Connection Name PPP Status My Connection DOWN connect profile editor						
	profile editor Profile with the ° is your default profile. To make changes to your default profile click on the profile editor button.	J					
Done					😻 Ir	itemet	

If you clicked on **connect**, the following screen will appear briefly. The **PPP Status** in the **Connection Overview** screen 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: The Router will handle transmission rates up to 8 Mbps. 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.

Elle Edit View Favorites Iools Help	WR.
Home Status Configuration Maintenance Troubleshooting Help]
Connection Overview DSL Connect Rate (Down/Up) 8000 KBits/Sec by 0992 KBit	ts/Sec
Connection Name PPP Status © My Connection UP Drofile Editor	
The profile editor link allows the user to edit a connections p	or of iko.

7.3 Disconnecting a PPP Session

If you are ready 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.

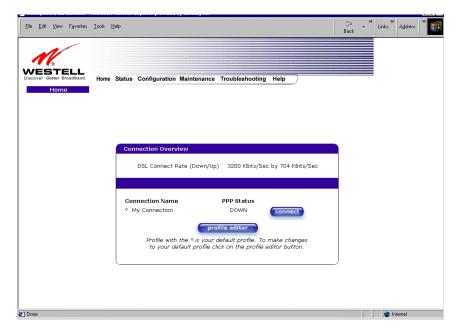




The screen below will appear briefly. When the **PPP Status** displays **Disconnecting...**, this means that you are disconnecting from your PPP session.

Eile Edit View Favorites	Iools Help	G Back	→ Links Address)
WESTELL Discover Batter Broadband Home	Home Status Configuration Maintenance Troubleshooting Help		
	Connection Overview DSL Connect Rate (Down/Up) 3200 KBits/Sec by 704 KBits/Sec		
	Connection Name PPP Status o My Connection Disconnecting disconnect profile editor Profile with the ° is your default profile. To make changes to your default profile click on the profile editor button.		
ව Done	(Internet

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 an ISP connection. In this event, your Router will maintain its DSL connection. If you want to remove the DSL connection, power down the Router via the power switch on the rear of the Router.



To re-establish your PPP session, click on connect. (If you powered down the Router, you will need to logon first.)



7.4 Service Configuration

To use an application that utilizes the NAT (Network Address Translation) protocol, you will have to configure your Router's NAT settings. Select **Service Configuration** 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 service profile, you will ensure that the appropriate ports on your Router 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).

Ele Edit View Favorites Iools Help	Back · Links Address)
Home Status Configuration Maintenance Troubleshooting Help	
Current Profile: Default v enable def Service Name Select A Service v enable def	
Service Name Service Mode Host Device define custom service static NAT	
Contains commands for working with the selected items.	

This screen allows you to attach a predefined NAT service to your default profile. Once you have selected a NAT service from the **Service Name** pull-down arrow, click on **enable**.

Eile Edit View Fgrontes Iools Help	
WESTELL Discover Better Brodbard Nome Status Configuration Maintenance Troubleshooting Help Service Configuration	
Current Profile: Default	
Service Name Need for Speed, Porsche Need for Speed 3, Hot Pursuit NetWheeling NNTP Service Name Outgrave Utgrave Service Name Outgrave Service Name Outg	
Image: Static NAT Client FOP/IMAP	4



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.

Microsoft Interne	et Explorer	×
Host Se	ervice?	
<u>ОК</u>	Cancel	

If you clicked on **OK** in the **Host Service**? 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. Select a device from the **Host Device** pull-down arrow and click on **done**.

🛎 Host Device - Microsoft Internet Explorer provided by CenturyTel 📃	X
Host Device 192.168.1.47 💌	
done	
The actual information displayed in this screen may vary.	
in this serven may vary.	

NOTE: You can attach multiple NAT services to your profile. However, for each NAT service that you attach, you must first select the new NAT service. Next, you must load the new NAT Configuration, as explained in section 7.

If you want to view the details of the service you selected, click on **details**. If you want to delete the NAT service that is attached to your profile, click on **delete**.



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Image: Service Configuration Maintenance Troubleshooting Help Service Configuration Current Profile: Default I Service Name Service Service Name Service Service Met2Phone Port Forwarding redis: Getatis Getatis Getatis	Eile ⊑dit ⊻iew Favorites Iools	s <u>H</u> elp			Deck	→ Links Address >
Current Profile: Default Service Name Service Mode Host Device Net2Phone Port Forwarding redis-98 details delete Static NAT	Service	me Status Configuration Mainten	ance Troubleshooti	ng Help		
Net2Phone Port Forwarding redis-98 details delete define custom service static NAT		Select A Service	×			dit
	Net2Phone define c	Port Forwarding		details	delete	

If you select **details**, the screen below will be displayed. It contains the service name, type, protocol, and port information for the NAT service you selected. Click on **close** to continue.

🖉 Well Known Service Details - Microsof 🗖 🖬	X
Service Details	
Service Name Net2Phone Type: Port Forwarding	
Port 1	
Protocol: UDP Global Port(s): 6801 Base Host Port: 6801	
Port 2	
Protocol: UDP Global Port(s): 6801 Base Host Port: 6801	•



7.5 Exiting the Dual Connect NAT Router

When you are ready to exit this interface, click on X (close) in the upper right-hand corner of the homepage window.

NOTE: Closing this 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.

Edk	: Yier	v Favorite	es <u>I</u> ools	Help						
	/	ELL								
over	Better	Broadband	Home	Status	Configuration	Maintenanc	e Troublesh	ooting Help		
				Conne	ction Overviev	v				
				DS	L Connect Rate	(Down/Up)	8000 KBits/	Sec by 0992 KBi	ts/Sec	
					ction Name		PPP Status			
				€му	Connection		UP	disconnect		
						prof	ile editor			
				The	e profile editor i	link allows the	e user to edit	a connections p	orofile.	
)	



8. SETTING UP MACINTOSH OS X

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

NOTE: The USB installation will not function for Macintosh Computers. Macintosh computers must use the Router's Ethernet installation. Refer to section 5.4.1 for installation instructions via Ethernet.

Open the System Preference Screen

After you have connected the Westell Router 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**.

Ú	Grab	File	Edit	Captu		
About This Mac						
Ge	t Mac (DS X S	oftwar	e		
Sy	stem P	referer	nces			
Do	ock			•		
Lo	cation			•		
Recent Items						
Fo	rce Qu	it				
Sle	ep					
Re	start					
Sh	ut Dow	'n				
Lo	g Out			۵ %Q		

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.

00			Networ	k
3 @		æ	?	
Show All	Displays	Sound	Startup Di	sk Network
		Location 🗸	' Automatio	-
Configure: Internal M		odem	New Loca	
		TCP/IP	Edit Locat	ion

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 on **OK**.

Westell	
choose this l	his computer will be able to ocation in the Apple menu ring a password.
/14/2011	Cancel OK



Select the Ethernet Configuration

After clicking on **OK** in the previous step, 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 the Router.



Check the IP Connection

To verify that the computer is communicating with the Router, 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 the Router's wiring connection to the PC. If necessary, refer to section 5 for installation instructions.

00	Ne	twork		
how All Disp	lays Sound Start	2 up Disk	Network	
	Location: Weste	11	\$	
Configure: Bui	t-in Ethernet	•		
	TCP/IP PPPoE	AppleTalk	Proxies	
c	onfigure: Using DHCP		+)
IP Addre	ess: 192.168.1.15 (Provided by DHCP serve		nain Name Serv	ers (Optional)
DHCP Client	ID:			
	(Optional)	Sear	ch Domains	(Optional)
Ethernet Addre	ss: 00:30:65:e1:84:ba			
		Exam	nple: apple.com, e	arthlink.net
				(
Click the lo	k to prevent further change	15.		(Save)



Create a user Account

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

000						01	WireSpee	d Dual Con	inect			
d Back 🗕	Forward	X Stop	Refresh	n Home		AutoFill	E rint	Mail				e
Address:	@ http:/	/dslrouter/) go
@ Live H	lome Page	() Apple	💩 Apple Supp	ort 🔘	Apple	Store	iTools	🔘 Mac OS X	🔘 Microsoft MacTopia	Office for Macintosh	🔘 MSN	
!!</td <td></td>												
Fav												

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 Router.

🖉 Welcome - Microsoft Internet Explorer	_ 🗆 ×
	<u> </u>
Cotting Started	
Getting Started	
Welcome to the Westell Setup wizard.	
The following screens will ask you a few	
simple set-up questions that you will need	
to answer to establish a connection profile.	
Click next to start.	
next Cancel	
	v



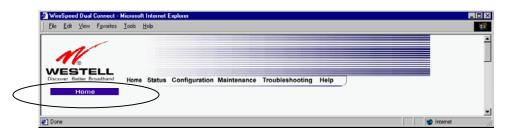
9. HOME

9.1 Setting Up Advanced Configuration

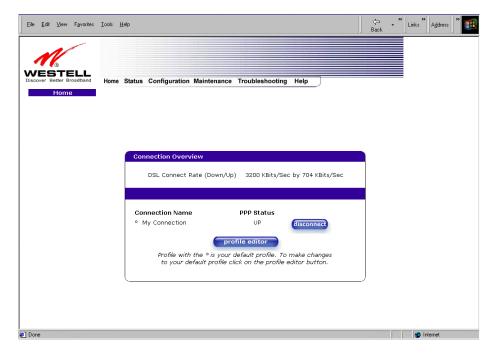
STOP! The following sections assume that you have active DSL and Internet service.

The Advanced Configuration section of your Westell Router allows you to make changes to features like your firewall settings. The following sections will explain each feature of your Router and show you how to make changes to your configuration. 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 your Westell Router, the name of the active page that you have selected will appear in the left-hand window of the homepage screen, as shown below.



The following settings will be displayed on your Home page. To make your connection, click on profile editor.





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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.

9.2 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 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. You can store up to eight unique user profiles in your Router. Details on the **New Connection** screen are located at the end of this section.

in VinSpeed Dual Connect - Microsoft Internet Explorer المحافظ المحاف	Eile Edit View Favorites Iools Help
WESTELL	New Connection
Discover Better Brootband Home Status Configuration Maintenance Troubleshooting Help	User provided name for connection profile.
A VI VITICES I TOTHE	Account ID
	Provided by your ISP.
	Account Password
	Provided by your ISP.
Connection Overview	Service Profile Default
	C Manual ⊙ On Demand C Always On ☑ Time Out Enable ☑ Save Password
DSL Connect Rate (DownyUp) 8000 KBHs/Sec by 0992 KBHs/Sec	20 Minutes for Connection Time Out
Connection Name PPP Status @ My Connection UP disconnect redit	new Close Help
The new connection The new connection link allows the user to add more connections.	
e) Dore	

If you select **Edit** from the **Connection Overview** 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.



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© Wardspeed Dual Connect - Microsoft Internet Explorer	j <u>File Edit View Favorites Iools H</u> elp
WESTELL Doore their Brooker	Edit "My Connection" Connection
Advanced Home	Connection Name My Connection
	User provided name for connection profile.
	Account ID westell@local
	Provided by your ISP.
	Account Password
Connection Overview	Provided by your ISP.
DSI, Connect Rate (Down/Up) 8000 KBits/Sec by 0992 KBits/Sec	Service Profile Default
and devices user frame all.	C Manual 💿 On Demand C Always On
	🗹 Time Out Enable 🔽 Save Password
Connection Name PPP Status	20 Minutes for Connection Time Out
disconnet edit	save delete close
new connection	Help
The new connection link allows the user to add more connections.	
e) Done	🖉 Done 🔮 Internet

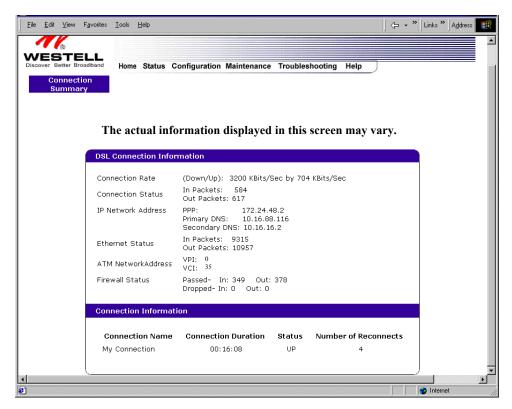
Connection Name	This field allows you to enter a new connection name of your choice (up to 64 characters).
Account ID	Use the same account ID that you used in section 7 if you are connecting to the same Service Provider. If you have multiple Service Providers, you can enter this information at this time.
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	Selecting this feature allows you to manually establish your PPP session.
On Demand	Factory default = On Demand Selecting this feature allows the Router to automatically re-establish your PPP session upon demand.
Always On	Selecting this feature allows the Router to establish an "always-on" PPP session if it goes down.
Time Out Enable	Selecting this feature allows you to enable the timeout parameter of your PPP session, which is set to a factory default of 20 minutes.
Save Password	Selecting this feature allows you to save the password for your new connection profile in your Router 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.)



10. STATUS

10.1 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 display 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 Internet
	Service Provider.
Firewall Status	This field will display your firewall traffic in packets.
	Passed: Monitors information traffic that was successfully received (IN) or

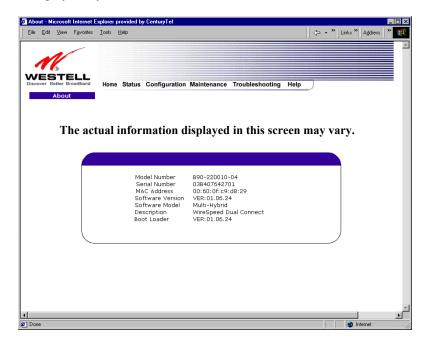


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	transmitted (OUT) in packets.		
	Dropped: Monitors information traffic that was not successfully received (IN) or		
	transmitted (OUT) due to your firewall settings.		
	PPP Connection Information		
Connection Name	This is from the connection profile 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.		

10.2 About

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



Model Number	Router manufacturer's model number.
Serial Number	Router manufacturer's serial number.
MAC Address	MAC address of this device.
Software Version	Version of Application Software.
Software Model	Router application type.
Description	Product description.
Boot Loader	Version of boot loader software



11. CONFIGURATION

11.1 VC Configuration

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

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

Edit	¥iew	Favorites	Tools	Help					/	
				_						
									/	
					Status \	/PI	VCI	Protocol	▶	
					Enable 💌	0	35	PPPoE	edit	
					Disable 💌	0	43	Bridge	edit	
					Disable 💌	0	37	Bridge	edit	
					Disable 💌	0	38	Bridge	edit	
					Disable 💌	0	39	Bridge	edit	
					Disable 💌	0	40	Bridge	edit	
					Disable 💌	0	41	Bridge	edit	
					в	ridge	e Broa	dcast	2	
							e Multi	cast ee Protoco		
					5					
						S	ive filt	er settings		

NOTE: If you experience any problems, please reset your Router via the external hardware re-set button or via the procedure defined under the **Maintenance** menu.



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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	PPPoA = Point to Point Protocol over ATM (Asynchronous Transfer Mode)
specified by your Service	PPPoE = Point to Point Protocol over Ethernet
Provider will determine which	Bridge = Bridge Protocol
Protocols are available to you.	Classical IPoA = Internet Protocol over ATM (Asynchronous Transfer
	Mode). This is an ATM encapsulation of the IP protocol.
Bridge Broadcast	Factory Default = CHECKED
	When this setting is CHECKED, the Router will allow Broadcast IP packets
	to/from the WAN.
	When this setting is NOT CHECKED, the router 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, the Router will allow Multicast IP packets
	to/from the WAN.
	When this setting is NOT CHECKED, the Router 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.



The following settings will be displayed if you select **edit** from your **VC Configuration** menu on any of your existing VC (Virtual Connections) settings. If you change any of your existing VC settings, click on **Set VC**.

NOTE: If you experience any problems, please reset your Router via the external hardware re-set button or via the procedure defined under the **Maintenance** menu.

This screen is divided into two parts for illustrative purposes.

NOTE: The actual information displayed in this screen may vary, depending on network connection established.

VC 1 Configuration - Microsoft Internet Explorer provide	VC 1 Configuration - Microsoft Internet Explorer provide File Edit View Favorites Icols Help
VC 1 Configuration	VC 1 - PPPUE Settings
VPI: 0	Gateway: 0.0.0.0
VCI: 35	DNS Primary: 0.0.0.0
PCR: 100	DNS Secondary: 0.0.0.0
QoS: UBR 🗸	MRU Negotiation 🗖
Protocol: PPPoE	LCP Echo Disable
Status: Enabled	LCP Echo Failures 6
VC 1 - PPPoE Settings	"Must be between 1 and 30 inclusive."
IP Address: 0.0.0.0	LCP Echo Duration 60
Gateway: 0.0.0.0	"Must be between 5 and 300 seconds inclusive and greater or equal to Retry Duration."
DNS Primary: 0.0.0.0	LCP Echo Retry Duration 10
DNS Secondary: 0.0.0.0	"Must be between 5 and 300 seconds inclusive."
MRU Negotiation 🗖	Tunneling © Enable O Disable
LCP Echo Disable 🗖	set VC cancel
LCP Echo Failures 6	Help
🙋 Done	🔊 Done

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

Microsoft Internet E	xplorer	×
Set this PPF	PoE VC configura	ation?
OK]	Cancel	



	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.
	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.
	PPPoA = Point to Point Protocol over ATM (Asynchronous Transfer Mode)
	PPPoE = Point to Point Protocol over Ethernet
	Bridge = Bridge Protocol
	Classical IPoA = Internet Protocol over ATM (Asynchronous Transfer Mode). This
	is an ATM encapsulation of the IP protocol.
Status	The protocol status.
	VC x PPPoE Settings
IP Address	Displays the IP network address that your modem is on.
Gateway	Displays the router IP Gateway address
DNS Primary	Provided by your Service Provider
DNS Secondary	Provided by your Service Provider
MRU Negotiation	Factory Default = DISABLED
	If ENABLED, the Maximum Received Unit (MRU) would enforce MRU
	negotiations. (NOTE: enable this option only at your Internet Service Provider's
LCP Echo Disable	request.)
LCP ECHO DIsable	Factory Default = Enable If checked, this option will disable the modem LCP Echo transmissions.
LCP Echo Failures	Indicates number of continuous LCP echo non-responses received before the PPP
	session is terminated.
LCP Echo Retry Duration	Indicates the interval between LCP Echo transmissions with responses.
LCP Echo Retry Duration	Indicates the interval between LCP. Echo after no response.
Tunneling	Factory Default = ENABLE
e e	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 the Router's capability to do this.
	L

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 these values unless you are instructed by the Internet Service Provider.



Configuring the Router's Protocol Settings

If you want to change your Router's protocol setting, select VC Configuration from the Configuration menu. Next, select edit from your VC Configuration menu on any of your existing VC (Virtual Connections) settings. The following screen will be displayed.

<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools <u>H</u> elp	
Search: 🔍 Web	(
VC 1 Configuration	
VPI: 0	
VCI: 35	
PCR: 100	
QoS: UBR 💌	
Protocol: PPPoE	
Status: PPPoA PPPoE	
VC 1 - PPPo ^{Bridge} Classical IPoA	
IP Address: 0.0.0.0	
Gateway: 0.0.0.0	
DNS Primary: 0.0.0.0	
DNS Secondary: 0.0.0.0	
MRU Negotiation 🗖	
LCP Echo Disable 🗖	
LCP Echo Failures 6	
"Must be between 1 and 30 inclusive."	-



If you selected **Bridge** as the protocol you want to use, the following screen will be displayed. Select a mode from the options displayed at the **Mode** pull-down arrow under VC - 1 **Bridge Settings**.

<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites	<u>T</u> ools <u>H</u> elp
🔇 P	💌 Search: 🔍 Web 👔 🎽
	*
VC 1 Con	figuration
VPI:	0
VCI:	35
PCR:	100
QoS:	UBR 💌
Protocol:	Bridge
Status:	Enabled
VC 1 - Brie	dge Settings
Mode:	Bridge
set VC	Bridge Routed Bridge
	Proxy Bridge Help
I	l leih
	<u>v</u>
e)	🔮 Internet

	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.
	CBR = Constant Bit Rate
	UBR = Unspecified Bit Rate
	VBR = Variable Bit Rate



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Protocol	The Protocol for each VC, which is specified by your Service Provider.			
11010001	The Protocol for each vie, which is specified by your service Provider.			
	PPPoA = Point to Point Protocol over ATM (Asynchronous Transfer Mode)			
	PPPoE = Point to Point Protocol over Ethernet			
	Bridge = Bridge Protocol			
	Classical IPoA = Internet Protocol over ATM (Asynchronous Transfer Mode). This			
	is an ATM encapsulation of the IP protocol.			
Status	The protocol status.			
	VC 1 Bridge Settings			
	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 form a DHCP server in the network or it can be assigned			
	statically.			
	Routed Bridge = Routed Bridged Encapsulation (RBE) is the process by which a bridged segment			
	is terminated on a routed interface. Specifically, the router is routing on an IEEE 802.3 or			
	Ethernet header carried over RFC 1483 bridged ATM. RBE was developed to address the kno			
Mode	RFC1483 bridging issues, including broadcast storms and security. The modem will get a WAN			
moue	IP address through DHCP or can be assigned statically. NAT will use the global address assigned			
	to the modem.			
	Proxy Bridge = Proxy Bridge is the process in which the modem acts as a proxy ARP agent for a			
	local public subnet. The modem will be assigned an IP address from within that public subnet.			
	The modem will direct all traffic to a gateway, which is configured statically. The gateway			
	address must not reside within the modems assigned public subnet. All traffic will be sent via the			
	gateway MAC address. The LAN may also have a private NAT'ed network. NAT will use the			
	global address assigned to the modem.			



If you select **Routed Bridge**, the following screen will be displayed. Click on **set VC** to save your VC settings.

ē	VC 1	Conf	iguratio	on - Mici	rosoft Ir	iternel	Explor	er prov	ide	. 🗆 X
	<u>F</u> ile	<u>E</u> dit	⊻iew	F <u>a</u> vorite	es <u>T</u> oo	ls <u>H</u> e	lp		×	
Γ	V	С	1	Со	nfi	qu	ira	iti	on	
				VPI:	0					
				VCI:	35					
				PCR:	100					
				QoS:	UBR	•				
			Pro	tocol:	Bridg	e	•			
			S	tatus:	Enable	ed				
	1	VC	1 -	Br	idg	e S	ett	ing	s	
			\langle	Mode:	Route	ed Brid	lge 💌	>		
			DHCP	Client	O En	able	🖸 Disa	ble		
			IP Ad	dress:	0.0.0.0)				
		Si	ubnet	Mask:	255.25	5.255	.255			
			Gat	eway:	0.0.0.0)				
		D	NS Pri	mary:	0.0.0.0)				
		DNS	Secor	ndary:	0.0.0.0)				
		(set \	/C	Ca	incel				•
ø] Don	e 🦅	19. 19.	- Argender	(all the set		0	Internet		

If you clicked on **set VC**, the following pop-up screen will be displayed. Click on **OK** when asked **Set this PPPoE VC configuration?** If you click on **cancel**, the new VC settings will not be saved.





11.2 DNS Configuration

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

<u>Eile E</u> dit ⊻iew F <u>a</u> vorites <u>I</u> ools <u>H</u> elp		← • *	Links » 🛛 A <u>d</u> dress 🗍 » 🔢
			-
DNS Server			
Enable 🗹			
User Assigned DNS			
Domain Name myhome.westell.com		set	
Static Host Assignment			
Host Name	IP Address		
dslrouter	192.168.1.1	set	
deviceweb	192.168.1.1	delete	
SmartDevice	192.168.1.1	delete	
	0.0.0.0	add	
Discovered Local Devices			
redis-98 192.168	1.47		
		/	
∢ ØDone			V Internet

DNS Server					
Enable	Factory Default = CHECKED				
	Displays the status of the DNS Server. If you disable this feature, the router				
will not automatically resolve the host name.					
User Assigned DNS					
Domain Name	This field allows you to enter a Domain Name for your Router.				
NOTE C ICD					
NOTE: Some ISP's may	To add a Domain Name, in the field under User Assigned DNS, type in your				
require the name for	new domain name and click Set.				
identification purposes.					
	Static Host Assignment				
Host Name	This field allows you to enter a HOST name for your Router.				
	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 your Router's **Host Name** and **IP Address** in the fields provided in the **Static Host Assignment** section.

DNS Server	
Enable 🔽	
User Assigned DN8	
Domain Name myhome.w	vestell.com
Static Host Assignment	
Hust Name	IP Address
dslrouter	102 160 1 1 Set
dsirbuter	192.168.1.1
deviceweb	192.168.1.1 delete
	192.100.1.1
, deviceweb	192.168.1.1 delete
, deviceweb SmartDevice	192.168.1.1 delete 192.168.1.1 delete 192.168.1.1 delete 00.0.0 add
, deviceweb	192.168.1.1 delete 192.168.1.1 delete 192.168.1.1 delete 00.0.0 add

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

<u>F</u> ile <u>E</u> d	dit <u>V</u> iew	Favorites	Iook Help	🛛 🕁 🔹 🖉 Links 🎽 Address 🔢
				<u> </u>
			DNS Server	
			Enable 🔽	
			User Assigned DNS	
			Domain Name myhome.westell.com	
			Static Host Assignment	
			Host Name IP Address	
			dslrouter 192.168.1.1	
			deviceweb 192.168.1.1 dele	te
			smartdevice 192.168.1.1 dele	te
			dnsnamehere 192.168.1.25 add	
			Discovered Local Devices	
			redis-98 192,168,1,47	
•			<u></u>	
ð]				🔰 🔮 Internet



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.

1440 - 1524L			
Enable	N		
User Assigned DN8			
Domain Name myh	ome.westell.c	om	set
Static Host Assignm	ent		
		arm.	
Host Na	me	IP Address	
dstrouter		192.168.1.1	set
deviceweb		192.168.1.1	delete
deviceweb smartdevice		192.168.1.1 192.168.1.1	delete delete
smartdevice		192.168.1.1	delete
smartdevice	vices	192.168.1.1 192.168.1.25	delete delete

11.3 DHCP Configuration (Private LAN)

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

DHCP Configuration - Microsoft Internet Explorer	- 0
Elle Edit View Fgroutes Iools Help	
<i>N</i> //	
VESTELL Incover Better Broadband Home Status Configuration Maintenance Troubleshooting Help	
DHCP Configuration	
The actual information displayed in this screen may vary.	
i no accuai into mación ansprayea in ento ser con may varye	
DHCP Server: Private LAN	
Private LAN DHCP Settings	
DHCP Start Address 192.168.1.15	
DHCP End Address 192.168.1.47	
DHCP Lease Time 1 : 0 : 0 : 0	
Days Hours Minutes Seconds	
save reset	
one	



DHCP Server	 This setting allows the ADSL router 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)

11.3.1 Disabling the DHCP Server

If you click on the pull-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** pull-down arrow. Click on **save**.





DHCP Configuration - Micro		-0;
Elle Edit View Favorites	Toola Help	
Discover Better Broasband	Home Status Configuration Maintenance Troubleshooting Help	
	DHCP Server: Off	
	save reset	
Done		Internet

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

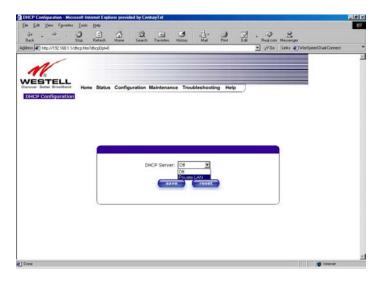
If you clicked on **save**, in the preceding **DHCP Configuration** screen, the following pop-up screen will appear. Click on **OK**.

Microsof	t Internet Explorer 🛛 🔀
?	Save and reconfigure DHCP?
	Cancel



11.3.2 Enabling the DHCP Server

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



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

	soft Internet Explorer provided by CenturyTel	-0
<u>Eile E</u> dit ⊻iew Fgvorites	Tools Help	🛛 🤄 🕶 🐂 Links 🎽 A <u>d</u> dress 🖉 🚺
N		
WESTELL		
Discover Better Broadband DHCP Configuration	Home Status Configuration Maintenance Troubleshooting Help	
DHCP Configuration		
	DHCP Server Private LAN	
	Drivete LAN DUCD Cettings	
	Private LAN DHCP Settings	
	DHCP Start Address 192.168.1.15	
	DHCP End Address 192.168.1.47 DHCP Lease Time 1 : 0 : 0 : 0	
	DHCP Lease Time 1 : 0 : 0 : 0 Days Hours Minutes Seconds	
	save	
)
		/
-		



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



11.4 Private LAN Configuration

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

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

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

Private LAN Configuration	Microsoft Internet Explorer	_ 0
Elle <u>E</u> dit ⊻iew Fgvorites	Icols Help	
VESTELL Jacover Better Broadband Private LAN Configuration	Home Status Configuration Maintenance Troubleshooting Help	
	Private LAN DHCP Server Enable P	
	Private LAN Enable	
	Modem IP Address 192.168.1.1	
	Submet Mask 255.255.0	
	Private LAN DHCP Settings	
	DHCP Start Address 192.168.1.15	
	DHCP End Address 192.168.1.47	
	DHCP Lease Time 1 : 0 : 0 : 0	
	Days Hours Minutes Seconds	
	save	
Done		Internet

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 on **Cancel**, your new settings will not take effect.

Microsof	t Internet Exp	lorer	×
?	Load new Priv	ate LAN configu	iration?
	OK I	Cancel	



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
	LAN to use the NAT interface.
Modem IP Address	Displays the Router's IP address
Subnet Mask	Displays the Subnet Mask, which determines what portion of an IP
	address is controlled by the network, and which portion is controlled
	by the host.
DHCP Start Address	Displays the first IP address that the DHCP server will provide.
DHCP End Address	Displays the last IP address that the DHCP server will provide.
DHCP Lease Time	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 following format: $(dd:hh:mm:ss)^*$ This value must be greater than 10 seconds. The default = 01:00:00:00. 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).

If the settings you have entered in the **Private LAN Configuration** screen are incorrect, the following warnings messages may be displayed via pop-up screens. If this occurs, check the settings in the **Private LAN Configuration** screen.

Warning Message	Check Private LAN DHCP Settings
Start Address is not part of the Subnet	Check the value in the DHCP Start Address field
End Address is not part of the Subnet	Check the value in the DHCP End Address field
End Address is below the Start Address	Check the value in the DHCP End Address field
Lease time must be greater than 10 seconds	Check the values in the DHCP Lease Time fields
Seconds must be between 0 and 53	Check the Seconds value in the DHCP Lease Time field
Minutes must be between 0 and 59	Check the Minutes value in the DHCP Lease Time field
Hours must be between 0 and 23	Check the Hours value in the DHCP Lease Time field

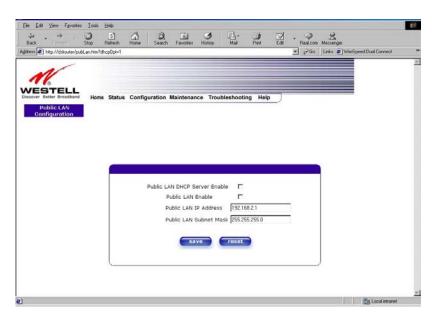
11.5 Public LAN Configuration

The following screen will be displayed if you select **Public LAN Configuration** from the **Configuration** menu. Click in the **Public LAN DHCP Server Enable** box. A check mark will appear in the box.

NOTE: The Public LAN feature, if available from your service provider, allows the Router to use LAN IP addresses that are accessible from the WAN. Public LAN allows your computer to have global address ability. To utilize the Public LAN feature on your Router, your ISP must support Public LAN and Static IP. Contact your ISP for details.



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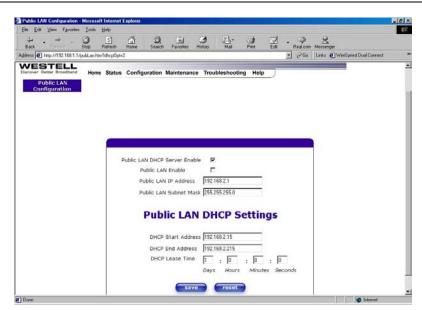


Public LAN DHCP Server Enable	Default = NOT CHECKED
	If this box is CHECKED, it enables DHCP addresses to be served
	from the Public LAN pool.
Public LAN Enable	Default = NOT CHECKED
	If this box is CHECKED, it enables the addresses from the Public
	LAN to bypass the NAT interface.
Public LAN IP Address	Provides a Public IP Address if the service provider does not
	automatically provide one.
Public LAN Subnet Mask	Provides a Public Subnet Mask if the service provider does not
	automatically provide one.



If you clicked on the **Public LAN DHCP Server Enable** box, the following screen will be displayed. Click on the **Public LAN Enable** box to enable Public LAN.

NOTE: By enabling the Public DHCP Server, you automatically disable the Private LAN DHCP Server on your Router.



If you clicked on the Public LAN Server Enable box, the following screen will be displayed. Click on save.

_ Eile Edit ⊻iew Fgvorites Iools Help	- • » Links » Address »
Discover Better Broadband Home Status Configuration Maintenance Troubleshooting Help Public LAN Configuration	×
Public LAN DHCP Server Enable 🔽 Public LAN Enable 🔽	
Public LAN IP Address 1921682.1 Public LAN Subnet Mask 255.255.255.0	
Public LAN DHCP Settings	
DHCP Start Address 192.168.2.15	
DHCP End Address 192.168.2.215 DHCP Lease Time 1 : 0 : 0 : 0	
Days Hours Minutes Seconds	
save	
0	internet



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

Microsoft	Internet Explorer 🛛 🗙	I
?	Load new Public LAN configuration?	
	Cancel	

NOTE: DHCP Lease Time is displayed in the following format: $(dd:hh:mm:ss)^*$. This value must be greater than 10 seconds. The default = 01:00:00:00. 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).

If the settings you have entered in the **Public LAN Configuration** screen are incorrect, the following warnings messages may be displayed via pop-up screens. If this occurs, check settings in the **Public LAN Configuration** screen.

Warning Message	Check Public LAN DHCP Settings
Start Address is not part of the Subnet	Check the value in the DHCP Start Address field
End Address is not part of the Subnet	Check the value in the DHCP End Address field
End Address is below the Start Address	Check the value in the DHCP End Address field
Lease time must be greater than 10 seconds	Check the values in the DHCP Lease Time fields
Seconds must be between 0 and 53	Check the Seconds field at DHCP Lease Time
Minutes must be between 0 and 59	Check the Minutes field at DHCP Lease Time
Hours must be between 0 and 23	Check the Hours field at DHCP Lease Time

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

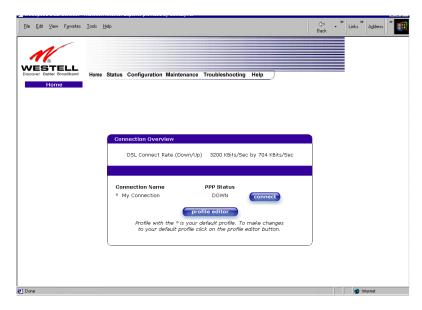
Microsoft Internet Explorer			
?	The modem must be reset in order for the new configuration to take affect. Do you wish to reset now?		
	Cancel		



If you clicked on **OK** in the preceding screen, the following screen will be displayed. This screen shows that the Router is being reset.



After the modem has completed resetting, the following screen will be displayed. Confirm that you have a DSL sync and click on the **connect** button to establish a PPP session. When the PPP Status reads **UP**, you are ready to continue configuring your Router.





11.6 Single Static IP Configuration

The following settings will be displayed if you select **Single Static IP Configuration** 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** pull-down menu and click on **disable**. Return to Single Static IP Configuration by selecting **Single Static IP Configuration** from the **Configuration** menu.



11.7.1 Enabling Single Static IP Configuration

To enable Single Static IP, click on the 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.



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Biscover Better Broadband	Home Status Configuration Maintenance Troubleshooting Help)
	Please select which device will share your Single Static IP.	
	If "User Configured PC" is selected, a local PC must be manually configured to have the Single Static IP address. WAN IP Address : 172.24.48.2	
	User Configured PC redis-98	
	Single Static IP is currently disabled.	
Done		Internet

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 information displayed in this screen may vary.

 Microsoft Internet Explorer

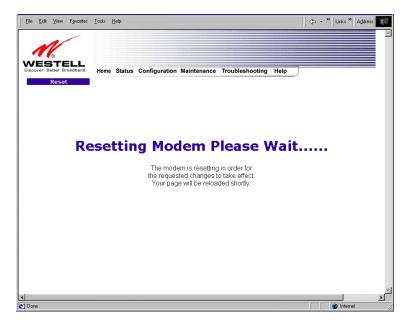
 Image: Concelement of the screen may vary.

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

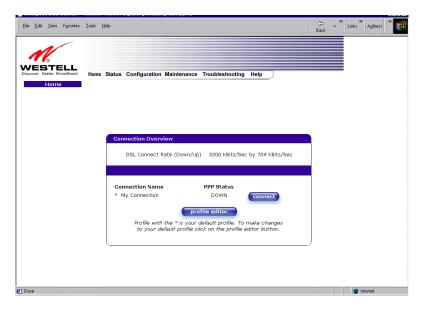




If you clicked on **OK**, the following screen will be displayed. The Router will be reset and the new configuration will take effect.



After the modem has completed resetting, the following screen will be displayed. Confirm that you have a DSL sync and click on the **connect** button to establish a PPP session. When the PPP Status reads **UP**, you are ready to continue configuring your Router.





11.7.2 Disabling Single Static IP

To disable Single Static IP, select **Single Static IP Configuration** from the **Configuration** menu. Next, select your device (from the options displayed in the window). Click on **disable**.

Please s	elect which device will share your Single Static IP.
	nfigured PC" is selected, a local PC must be manually nfigured to have the Single Static IP address.
	WAN IP Address : Not Connected
	User Configured PC ddivj-982
	Single Static IP is currently enabled for ddivj-982. disable

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

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

Microsoft Interne	et Explorer 🛛 🔀
? Disable	IP Passthrough?
OK	Cancel

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

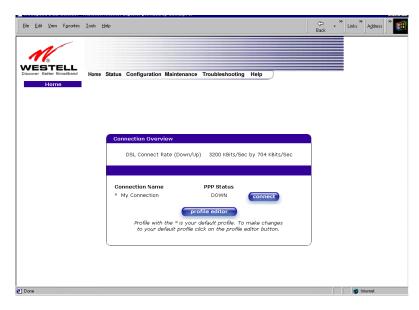




 Image: Contract England
 Image: Contract England</t

If you clicked on **OK**, the following screen will be displayed. The Router will be reset and the new configuration will take effect.

After the modem has completed resetting, the following screen will be displayed. Confirm that you have a DSL sync and click on the **connect** button to establish a PPP session. When the PPP Status reads **UP**, you are ready to continue configuring your Router.





11.7.3 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. Access the Router by following the instructions in section 7 (Configuring the Router 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 can't be restored until the VPI/VCI is set to 0/35.
- 4. Select VC Configuration from the Configuration menu.
- 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. Disable DHCP Client (if enabled) by clicking on the DHCP Client **Disable** button located in **VC** –1 **Bridge Settings.** Note: You must be in Routed Bridge mode (using Bridge Protocol) to access this function.
- 7. Replace the addresses in the fields labeled **IP address**, **Subnet Mask**, **Gateway**, **DNS Primary**, **and DNS Secondary** with the addresses you obtained from your Internet service provider.
- 8. Click on the **set VC** button.
- 9. Click on **OK** in the VC Configuration pop-up screen.
- 10. Click on **OK** in the reset modem pop-up screen.

After you complete the preceding steps, the Router will be reconfigured and your new settings will take effect. Ensure that the connection status is **UP** before continuing your Router's configuration.



11.7 Service Configuration

The following settings will be displayed if you select **Service Configuration** 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 your Router 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).

<u>E</u> ile <u>E</u> dit ⊻iew F <u>a</u> vorites	Iools Help	🛛 🕁 🔹 🐂 Links 🎽 Address 🌆
Discover Better Broadband Service Configuration	Home Status Configuration Maintenance Troubleshooting Help	
Current Profile:	Default T	lit
Service Name	Select A Service Cenable del ** Denotes Custom Service	ete edit
Service Name define custo Static NAT	Service Mode Host Device	
∢ ≇] Done		Internet

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 Router.



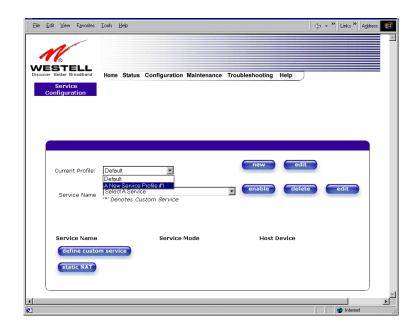
11.8.1 Creating a New NAT Service Profile

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.

Microsoft Internet	Explorer 🛛 🗙
? Create ne	ew Service Profile?
OK	Cancel

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

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

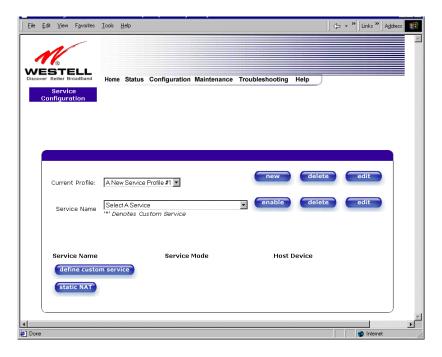




If you selected "A New Service Profile #1" from the Current Profile pull-down arrow, the following screen will be displayed. This screen shows that you have chosen to create a new NAT service profile. You may create up to four NAT service profiles and attach an unlimited number of services to each profile.

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Disco	5	Servic		Home Status Configuration Maintenance Troubleshooting Help			
	Con	figura	ition				
	_						
	0	Curren	t Profile:	A New Service Profile #1 🔽		edit	
		Servi	ce Name	Select A Service enable delete		edit	
		Servio	e Name	Service Mode Host Device			
		defi	ne custo	m service			
		stat	ic NAT				
	L						
•							<u> </u>
🕘 Don	e					🔮 Internet	

11.8.2 Editing a NAT Service Profile





Westell Dual Connect NAT Router with DMH Technology

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 your Router. Type your new NAT service profile name into the field labeled **Profile Name**.

Edit Service Profile	4
Profile Name: A New Service Profile #1	
save	
	T

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**.

Edit Service Profile	<u></u>
Profile Name: My NAT Profile	
save close	
	-



Westell Dual Connect NAT Router with DMH Technology

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.

Microsoft	Internet Explorer	×
?	Save this Profile?	
[OK Cancel	



11.8.3 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.

To add a NAT service to your NAT service profile, select a service from the options provided at the **Service Name** pull-down arrow.

Service Configuration Maintenance Troubleshooting Help Service Configuration Image: Status Configuration Maintenance Troubleshooting Help Current Profile: My NAT Profile	-
Discover Better Broadband Service Configuration Home Status Configuration Maintenance Troubleshooting Help Current Profile: My NAT Profile Service Name Select A Service Select	<u> </u>
Discover Better Broadband Service Configuration Home Status Configuration Maintenance Troubleshooting Help Current Profile: My NAT Profile Service Name Select A Service Select	
Current Profile: My NAT Profile V Service Name Select A Service Select A Service delete edit Select A Service A Service A Service A Select A Service A Service A Select A Service A	
Current Profile: My NAT Profile Service Name Select A Service enable delete edit Select A Service ICO 2010 b/AOL Instant Messanger	
Current Profile: My NAT Profile Service Name Select A Service enable delete edit Select A Service ICO 2010 b/AOL Instant Messanger	
Current Profile: My NAT Profile Service Name Select A Service enable delete edit Select A Service ICO 2010 b/AOL Instant Messanger	
Current Profile: My NAT Profile Service Name Select A Service enable delete edit Select A Service ICQ 2010/b/AOL Instant Messanger	
Current Profile: My NAT Profile Service Name Select A Service enable delete edit Select A Service ICQ 2010/b/AOL Instant Messanger	
Service Name Select A Service IICO 2010/A/OL Instant Messanger	
Service Name Select A Service IICO 2010/A/OL Instant Messanger	
Aliens vs. Predator	
Anarchy Online	
America Online Asheron's Call	
Service Name Baldur's Gate 1 Host Device Battlecom	
define custon Bilizzard Battle net Black and White	
Static NAT Buddy Phone	
4	▼

For example, the screen below displays **America Online** as the NAT service selected. Once you have selected a service, click on **enable**.

Eile Edit View Fgvorites	Tools Heb	🛛 🤄 🔹 🐂 Links 🎽 A <u>d</u> dress 🔢
		X
Service Configuration	Home Status Configuration Maintenance Troubleshooting	нер
Current Profile:	My NAT Protile 💌	delete edit
Service Name	America Online Canable Contact of the contact of t	delete edit
Service Name define custo static NAT		Device
ا		internet



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. Select the device from the **Host Device** pull-down arrow and click on **done**.

🚰 Host Device - Microsoft Internet Explorer provided by CenturyTel 🛛 💻	
Host Device 192.168.1.47 💌	
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.



← • » Links » Address WESTELL Home Status Configuration Mainte Troubleshooting Help Current Profile: My NAT Profile 💌 Select A Service -Service Name Denotes Custom Service Service Name Service Mode Host Device America Online Port Forwarding redis-98 details delete define custom service static NAT inte

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.

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



NOTE: If you would like to set up additional Advanced Service Configuration options, please refer to section 12 (Setting Up Advanced Service Configuration).



11.8 Firewall Configuration

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

Recurity Level Control outbound traffic initiated from within the local network. Inbound traffic initiated from within the local network. Inbound traffic initiated from within the local network. Inbound traffic except Mail, News, Web, FTP, and IPSEC Medium The default and recommended setting. C Medium The default and recommended setting. C None All traffic is allowed Custom Customize settings Gutter Custom Customize settings C Custom Customize settings		s Configuration M	faintenance Tro	ubleshooting He		t Links @]WinSpeed Dual t	Connect
Boome Status Configuration Maintenance Troubleshooting Help Firewall Configuration Bocurity Level Bocurity Level Bocurity Level Control outbound traffic initiated from within the local network. Inbound traffic may be controlled by configuring Port Forwarding. Filigh Blocks all outgoing traffic except Mail, News, Web, FTP, and IPSEC @ Medium The default and recommended setting. C Low Only known security holes are protected @ None All traffic is allowed C None All traffic is allowed	Home Statu	s Configuration M	faintenance Tro	ubleshooting He	elp)		
Configuration Security Level Control outbound traffic initiated from within the local network. Inbound traffic may be controlled by configuring Port Forwarding. C High Blocks all outgoing traffic except Mail, News, Web, FTP, and IPSEC @ Medium The default and recommended setting. C Low Only known security holes are protected C None All traffic is allowed							
Control outbound traffic initiated from within the local network. Inbound traffic may be controlled by configuring Port Forwarding. P High Blocks all outgoing traffic except Mail, News, Web, FTP, and IPSEC Madium The default and recommended setting. C Low Only known security holes are protected C None All traffic is allowed							
Control outbound traffic initiated from within the local network. Inbound traffic may be controlled by configuring Port Forwarding. P High Blocks all outgoing traffic except Mail, News, Web, FTP, and IPSEC Madium The default and recommended setting. C Low Only known security holes are protected C None All traffic is allowed							
Control outbound traffic initiated from within the local network. Inbound traffic may be controlled by configuring Port Forwarding. P High Blocks all outgoing traffic except Mail, News, Web, FTP, and IPSEC Madium The default and recommended setting. C Low Only known security holes are protected C None All traffic is allowed							
Inbound traffic may be controlled by configuring Port Forwarding. C High Bicks all outgoing traffic except Mail, News, Web, FTP, and IPSEC Medium The default and recommended setting. C Low Only known security holes are protected C None All traffic is allowed	Security Lev						
Madium The default and recommended setting. C Low Only known security holes are protected None All traffic is allowed							
C Low Only known security holes are protected C None All traffic is allowed	C High	Blocks all outgoin	g traffic except M	fail, News, Web, F	TP, and IPSEC		
C None All traffic is allowed	@ Medium	The default and r	ecommended set	ting.			
	C Low	Only known secur	ity holes are prot	tected			
C custom Customize settings	C None	All traffic is allow	ed				
	C Custom	Customize setting	is.		6	edit	
		C High & Medium C Low C None	Control outbour Inbound traffic rr C High Blocks all outgoin Medium The default and r C Low Only known secur C None All traffic is allown	Control outbound traffic initiated Inbound traffic may be controlled C High Blocks all outgoing traffic except N Medium The default and recommended set C Low Only known security holes are prot C None All traffic is allowed	Control outbound traffic initiated from within the J Inbound traffic may be controlled by configuring Po P High Blocks all outgoing traffic except Mail, News, Web, F Madium The default and recommended setting. C Low Only known security holes are protected C None All traffic is allowed	Control outbound traffic initiated from within the local network. Inbound traffic may be controlled by configuring Part Forwarding. C High Blocks all outgoing traffic except Mail, News, Web, FTP, and IPSEC Medium The default and recommended setting. C Low Only known security holes are protected C None All traffic is allowed	Control outbound traffic initiated from within the local network. Inbound traffic may be controlled by configuring Port Forwarding. C High Blocks all outgoing traffic except Mail, News, Web, FTP, and IPSEC Medium The default and recommended setting. C Low Only known security holes are protected C None All traffic is allowed

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, your Router 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.



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If you select **Edit** in the preceding **Firewall Configuration** 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** pull-down arrow. To apply the new settings, click on **Apply** in the screen labeled **User Defined Firewall Rules**.

<u>File E</u> dik <u>Y</u> iew F <u>a</u> vunites Iuuls <u>H</u> elp] >> 📑
User Defined Firewall Rules Inbound 🔽	_
title [Security Level 2 IN rules [hbound] Outbound	
begin	
TTLDrop	
drop match 3 8 { 01:FE } >> alert 4 [TTL of 0 or 1]	
AddresDrop	
drop from addr 0.0.0.0 >> done, alert 4 [0.0.0.0 Source IP Address]	
pass protocol udp, to port 53 >> done	
pass protocol udp, from port 53 >> done	
pass icmp-type reply >> done	
pass icmp-type unreachable >> done	
pass icmp-type exceeded >> done	
drop protocol icmp >> done, alert 4 [Invalid ICMP Type]	
Rules	
pass all	
end	
The information displayed in this screen depends on the level of security you have selected.	6
	*
help	
apply save	
Done Solutionel	

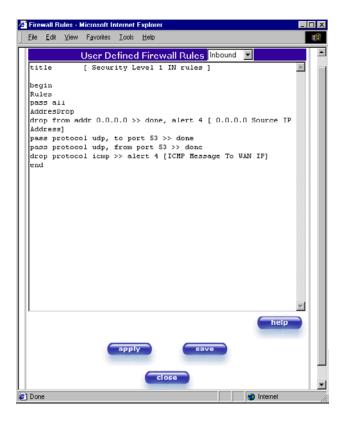
If you clicked **Apply** in the **User Define Firewall Rules** screen, the following pop-up screen will be displayed. Click on **OK** if you want your new firewall setting to take effect. If you click on **Cancel**, your new firewall settings will not take effect.





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 the Router to factory default settings, push the reset button on the rear of the Router.



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.

Microsol	t Internet Explo	rer	×
?	Do wish to save these Rules to Flash and switch your Security Level to "Use		
	OK	Cancel	



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.

File Edit View Favorites Tools Help	100 C
	9
ile/Buffer Format	
The RDL file or buffer format is divided into two sections. The first portion of the file defines any number of keys ontains the filtering rule definitions.	and associated values. The second portio
Key Definition Section	
A key definition consists of the key followed by the associated value. A value is actually a character string. Th quare brackets. An example of a keyword definition would look like the following.	he string is delimited by the open and clos
title [High security RDL file]	
The packet filter engine does not use keys. They are intended to provide information associated with the file. The salse pairs as standard text.	e user interface treats the key definition an
Rules Section	
The rules section of the RDL file or buffer is delimited by the begin and end keywords. The rules lates converted to a decision tree data structure used by the packer filter engine. The rules lated are implemented se the packet filter engine finds a much for a rule it will mote the filter action to be taken (pass or decay) and cont green packet unders otherwise instructed (see the description of the done action is rection 3.2.1.2.3).	quentially as listed in the RDL source. One
Rule Names	
RDL rules may be given names. The packet logging facility and the user interface uses these rule names. A nam in the Rules Section until another name is declared or the end statement. An identifier (one or more alphan character) on a line by itself declares a new name for the following rule(s).	
RDL Comments	
Comments begin with the # character. The parser ignores all characters following the comment character to the	end of the line.
RDL Command Syntax	
Done	Internet

11.9 ATM Loopbacks

If you select ATM Loopbacks from the Configuration menu, the following settings will be displayed.

ATM Loop Ele Edit						
	ter Bro	adband	Home	Status	Configuration Maintenance Troubleshooting Help	
					Enable ATM 0/21 Loopback	
Done	_		_	_		💣 Internet

Enable ATM 0/21 Loopback:	Factory Default = ENABLED
	This option enables the 0/21 loopback, which is used by your ISP. NOTE: Westell does not recommend that you change this setting.

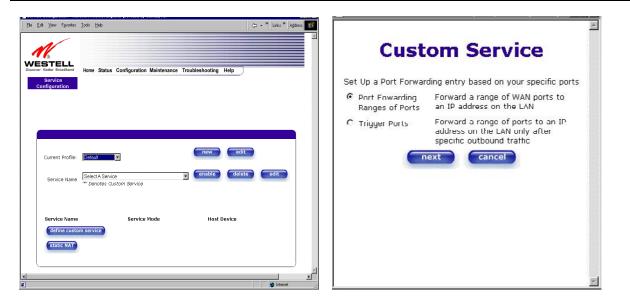


12. SETTING UP ADVANCED SERVICE CONFIGURATION

You can set up additional Service Configuration options for your NAT Router that allow you to enter the port forwarding and trigger ports ranges of your choice. Go to **Configuration** at the homepage menu and select **Service Configuration**.

When you click on **define custom service** in the **Service Configuration** screen, the Custom Service screen will guide you through the steps of creating an advanced NAT service entry via the **define custom service** button.

NOTE: Westell strongly recommends that you do not change any values in this section. If you experience any problems, please reset your Router via the external hardware re-set button or the procedure defined under the **Maintenance** menu.



Port Forwarding Ranges of Ports	This option allows you to forward a range of WAN ports to an IP address on the LAN.
Trigger Ports	This option allows you to forward a range of ports to an IP address on the LAN only after specific outbound traffic.



12.1 Port Forwarding Ranges of Ports

To select **Port Forwarding Ranges of Ports**, click on **define custom service** from the **Service Configuration** screen, and then select **Port Forwarding Ranges of** Ports from the **Custom Service** screen. Click on **Next**. The follow settings will be displayed in the **Port Range** screen. Enter your values in the **Global Port Range** fields and click on **next** to continue.

Custom Service	Port Range
Set Up a Port Forwarding entry based on your specific ports Port Fowarding Enrward a range of WAN ports to Ranges of Ports an IP address on the LAN Trigger Ports Forward a range of ports to an IP address on the LAN only after specific outbound traffic Text Cancel	Set Up a Port Forwarding range entry based on your specific ports Service Name: My New Service The above name will be saved as this Services description Global Port Range: 0 - 0 Base Host Port: 0 Protocol: © TCP C UDP next back cancel

12.2 Adding Port Forwarding Ports

If you made changes in the **Global Port Range** screen and clicked on **next**, the following screen will be displayed. You may either click on **close** to accept the changes, or click on **add** to go back to **Global Port Range** screen, enter additional port range values, and click on **next**. You can repeat this step for each range of ports that you want to add (up to 62 port forwarding ranges). When you are finished adding ports to the Global Port Range, you must click on **close** to accept the information you have entered and return to the **Service Configuration** screen.





Service Name	The NAT service for which you are configuring Port Forwarding.	
Туре	The type of NAT service configuration you selected.	
Protocol	The type of Protocol that is used to run this NAT service.	
	TCP- Transmission Control Protocol.	
	UDP-User Datagram Protocol (UDP).	
Local IP Address	If a static IP address has been assigned, it will be displayed here.	
Base Host Port	The port on the WAN that will host the NAT service selected.	

12.3 Port Forwarding Trigger Ports

To select **Port Forwarding Trigger Ports**, click on **define custom service** from the **Service Configuration** screen, and then select **Trigger Ports** from the **Custom Service** screen. Click on **next**. The follow settings will be displayed in the **Trigger Ports** screen. Enter your values in the **Local 'Trigger' Port Range** fields and click on **next** to continue.

Custom Service	Trigger Ports
Set Up a Port Forwarding entry based on your specific ports Port Fowarding Ranges of Ports Trigger Ports Forward a range of ports to an IP address on the LAN Trigger Ports Forward a range of ports to an IP address on the LAN only after specific outbound traffic 	Set Up a Trigger Port Forwarding entry based on your specific ports Service Custom Trigger Port Name: Custom Trigger Port The above name will be saved as this Services description Local 'Trigger' 0 Port Range: 0 Global Port 0 Range 0 Whon outbound traffic is detected on the 'Trigger' Port Port Forwarding is enabled through the Range of the Global Ports Inext back

Service Name	The NAT service you selected.
Local Trigger Port Range	The local LAN side TCP/UDP port.
Global Port Range	The WAN side TCP/UDP port range.



12.4 Adding Local Trigger Ports

If you made changes in the **Local 'Trigger' Port Range** screen and clicked **next**, the following screen will be displayed. You may either click on **close** to accept the changes, or click on **add** to go back to the **Trigger Ports** screen, enter additional port range values, and click on **next**. You can repeat this step for each port range that you want to add (up to 10 trigger ports). When you are finished adding ports to the Local 'Trigger' Port Range, you must click on **close** to accept the information you have entered and to return to the **Service Configuration** screen.

Service Details	
Service Name *Custom Trigger Port Type: Trigger Ports	
Port 1	
Protocol: TCP/UDP Global Port(s): 1-12 Trigger Port(s): 1-12	
add	
After clicking 'Close' you can enable your new service from the 'Serivce Name' select box.	
close	



12.5 Static NAT

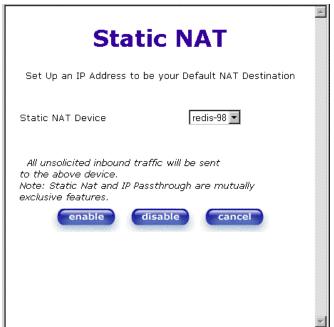
To configure you Router for Static NAT, click on the static NAT button in the Service Configuration screen.

NOTE: Static NAT will allow you to configure your Router to work with the special NAT services.

_ Elle Edit ⊻iew Favorites	Icole Help	🗘 🔹 👻 Links 🎇 Address 🔠
Discour Better Breatband Service Configuration	Home Status Configuration Maintenance Troubleshooting	Help
Current Profile: Service Name	Estault y Select A Service service service service	edit delete edit
Service Name define custor static NAT	Service Mode Host D	evice
×		P Internet

12.6 Enabling Static NAT

If you clicked on **static NAT** in the **Service Configuration** screen, the following screen will be displayed. Select your device name from the **Static NAT Device** pull-down arrow and click on **enable** in the Static NAT screen. This will automatically enable the Static NAT feature for that device. Then, the **Service Configuration** screen will be displayed.



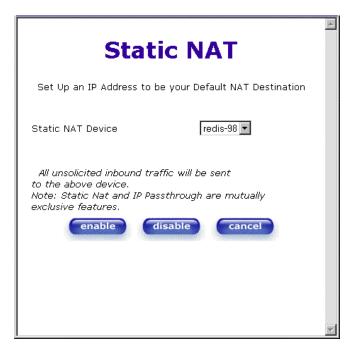


This following screen shows Static NAT enabled.

<u>Eile E</u> dit ⊻iew Fgvorites	Tool: Help	🛛 🦕 🔹 🔪 Links 🎇 A <u>d</u> dress 🔢
		4
16		
Discover Better Broadband	Home Status Configuration Maintenance Troubleshooting Help)
Service Configuration		
Current Profile:	Default ed	
Service Name	Select A Service dele	edit
Service Ivalle	'*' Denotes Custom Service	
Service Name	Service Mode Host Device	
define custo	m service	
static NAT	Enabled for redis-98	
		J
<u></u>		

12.7 Disabling Static NAT

If you click on **static NAT** in the **Service Configuration** screen, the following screen will be displayed, select a device name from the **Static NAT Device** pull-down arrow and click on **disable**. This will automatically disable the Static NAT feature for that device. Then, the **Service Configuration** screen will be displayed.





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The following screen shows Static NAT disabled (No device is displayed in the field adjacent to the static Nat button.)

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M						
Service	Home Status Co	nfiguration Maintenanc	e Troubleshooting	Help		
Configuration						
Current Profile:	Default 💌		new	edit		
Current Profile: Service Name	Default Select A Service	n Service	new enable	edit delete	edit	
	Select A Service	n Service			edit	
Service Name Service Name	Select A Service '*' Denotes Custon	n Service Service Made	enable		edit	
Service Name	Select A Service '*' Denotes Custon		enable	delete	edit	
Service Name Service Name define custor	Select A Service '*' Denotes Custon		enable	delete	edit	



13. MAINTENANCE

13.1 Backup/Store

The following settings will be displayed if you select **Backup/Restore** from the **Maintenance** menu.

e <u>E</u> dit	jew Fgvorites	Took	deb	
			Status Configuration Maintenance Troubleshooting Help	
	o/Restore		Status Configuration Maintenance roubleshooting help	
			Current configuration becomes "Backup configuration"	
			Backed up configuration becomes "Current configuration"	
			Factory defaults becomes "Current configuration"	

Current configuration becomes Backup	Select this button if you want to store all of the current configuration data such that it can be recalled later.
Configuration	
Backed up configuration	Select this button if you want to retrieve the last back up copy of all
becomes Current	configuration parameters and make these values current.
configuration	
Factory default becomes	Select this button if you want set all user configurable parameters back to the
Current configuration	factory default.



13.2 Firewall Log

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

This screen is an advanced diagnostics screen. It alerts you of noteworthy information sent to your Router from the Internet. The screen can contain 1000 entries, but a maximum of 50 entries are displayed at a time. Once 1000 entries have been logged, the oldest entry is removed to make space for the new entries as they occur. The following settings are displayed.

Ele Edt Yew Favorite	is Icoli	Help Belinsh	Home	Q Search	B	3		Pied	New	0	2		1 53
Back Formed	Shop			Search	Favorites	History	Mai	Parl	Edit		Messenger	Speed Dual Connect	
WESTELL	Ham	e Status	Contin	untion 1	Maintenn	nna Tra	ubleshoet	ing Hole	. 1				
scover Better Broadband	Hom	e Status	Config	uration I	Maintena	nce Tro	ubleshoot	ing Help					
			Packet	Time	Inte	erface <u>Pas</u>	Direct	ion F	tule	Alert			
				cle	ar log	1 prints	able/savat	ie format)				
		L									J		
Dura												The Local Internet	

Packet	The packet number.
Time	The time that the packet was sent.
Interface	The type of protocol interface.
Direction	The direction of transmission.
Rule	The internal rule that caused the logged event. The internal rule is setup under Firewall rules.
Alert	A description of the logged event.

To clear the Firewall log, click **clear log** in the **Firewall Log** screen. The following pop-up screen will be displayed. Click **OK** when asked "**Do you wish to clear the Firewall log file?**" If you click **Cancel**, the firewall log will not be cleared.

Microsoft	Internet Explorer
?	Do you wish to clear the Firewall log file?
	OK Cancel

To obtain a printable format of the Firewall Log, at the **Firewall Log** screen, click **Printable/Savable Format**. This will allow you to send a copy of the Firewall log to your designated printer.



13.3 Change Password

The following settings will be displayed if you select **Change Password** from the **Maintenance** menu. After you enter your data into the appropriate settings, click on **change**.

<u>Eile E</u> dk	⊻iew	Fgvorites	Tools	telo	19. 19.
Chan	etter Bro		Home	Status Configuration Maintenance Troubleshooting Help	
				Enter Administration Name	
				Verify Administration Password changes the systems administration password not the pp password change	
			l)	

Enter Administrative Name NOTE: This changes the Systems Administrator password not the PPP password.	Type the name of your network administrative.
Enter Administrative Password	Type your network administrator's password.
Verify Administrative Password	Re-type your network administrator's password.



13.4 Remote Access

The following screen will appear if you select **Remote Access** from the **Maintenance** menu. To enable Remote Access, type in a password and click the enable remote access button.

NOTE: 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.

ile <u>E</u> dit	⊻юн	Favorites	∐ools	Help						
		cess	Home	Status	Configuration	n Maintenance	Troubleshooting	нер		
					User Name	admin		_		
					Password Remote URL:	http://10.16.80	8.132:2420/			
						enable re	mote access			
			l						 J	

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

The following screen displays a message that the remote access is currently enabled. After 20 minutes of inactivity, or on reboot, remote access will be automatically disabled. To disable remote access, click on the **disable remote access** button.

Remote Access - Microsof	t Internet	Explorer	
Elle Edit View Favorites	Tools	Help	18 C
WESTELL			
Discover Better Broadband		Status Configuration Maintenance Troubleshooting Help	
Remote Access			
	1		
		Remote access is currently enabled. After 20 minutes of inactivity, or on reboot, remote access will be automatically disabled.	
		User Name admin	
		Password ebcd	
		Remote URL: http://10.16.88.132:2420/	
		disable remote access	
	()	
Done			Internet



13.5 Update Device

The following screen will be displayed if you click on **Update Device** from the **Maintenance** menu. This screen is used to update the firmware that controls the operation of the DSL Router. The updated firmware may be loaded from either a file that is located on your PCs hard drive or from update files stored on an Internet server.

 	<mark>e - Microsoft</mark> w F <u>a</u> vorites] ∢	⊱ • » Links »	Address *
	Update D	evice					-	
				-	tus Unknown			
					sion: VER:01.06.24			
				Newer Versi	ion: Unknown			
	Issues/E							
	bug info	rmation	not avai	ilable			*	
	errata r	not avai	lable					
							Ψ.	
	Status:							
	Last Upd	ate Chec	k Performe	ed: unknown				
		<u> </u>					-	
		chec	k for web	update web	update now	cal update now		
				set	tings			
)
\sim							r-	/

Click on the **check for web update** button in the **Update Device** screen to check the web for possible software updates. This screen will retrieve the software update file and display any available update information. You must be connected to the Internet to use this option.

NOTE: If you click on check for web update and the page returns a "page not found" message, this indicates that the software update file is not available. Go back to the previous screen to continue.

Click on the **web update now** button in the **Update Device** screen to download the software update file and automatically update the modem firmware if an update is available and applicable. You must be connected to the Internet to use this option.

If you click on the **settings** button in the **Update Device** screen, the following screen will appear. This screen displays the location of the software update file.



Westell Dual Connect NAT Router with DMH Technology

N		
ESTELL er Detter Broadband to Update Device	Home Status Configuration Maintenance Troubleshooting Help	
o update bevice		
	Auto Update Device	
	Update File Location:	
	http://www.westell.com/upgrades/modeD0000/X399000000xml	
	save cancel	

Click on the **local update now** button in the **Update Device** screen to select the upgrade file from your PC's hard drive. This screen allows you to upgrade the software on your Router. Click **Browse...** and go to the location where the upgrade file is stored.

WireSpeed Duel Connect Upgrade Software - Microsoft Internet Explorer	
upload file Help	Choose file ? X Look jn: 3½ Floppy (A:) T E E E E E E
	File name: A90-210010WebLoad.rel.upg Open Files of type: All Files (*.*) Cancel



Westell Dual Connect NAT Router with DMH Technology

Select the appropriate upgrade file from your browser. The file name will appear in the field labeled **Upgrade File**. Click on **upload file**.



This screen shows that the file is being uploaded to your Router.

	ftware Upgrade
	ansfer by clicking the 'upload file' butto
Upgrade Fi	le: A1X90-XXXXWebLoc Browse
	upload file
	Help
	Uploading File 1%



The screens below show that the file upload has completed and that the Programming Flash is being erased to prepare the Flash storage area for upload of the new file. (Programming Flash is a temporary storage area for uploaded files.)

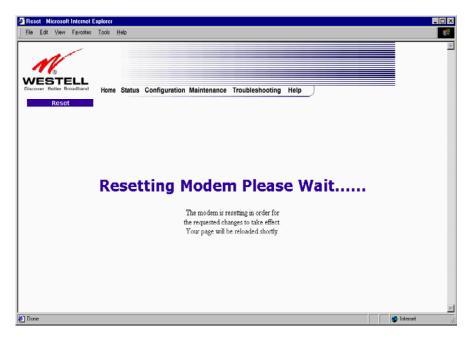
🖉 WireSpeed Dual Connect Upgrade Software - Microsoft Internet Explorer 👘 🔲 🗙	🚈 WireSpeed Dual Connect Upgrade Software - Microsoft Internet Explorer 👘 💷 🗙
Software Upgrade Click browse to select the upgrade file. Then start the transfer by clicking the 'upload file' button. Upgrade File: Browse	Software Upgrade Click browse to select the upgrade file. Then start the transfer by clicking the 'upload file' button. Upgrade File:Browse
upload file Help	upload file Help
Uploading File 100% Erasing Flash	Uploading File 100% Erasing Flash. Flash Erased Programing Flash 56%

The screen below shows that the upload was successful. The modem will now reboot.

🖉 WireSpeed Dual Connect Upgrade Software - Microsoft Internet Explorer 👘 📃 🗖 🗙
Software Upgrade Click browse to select the upgrade file. Then start the transfer by clicking the 'upload file' button.
Upgrade File: Browse
upload file Help
File Uploaded
Update Complete
Please wait 15 seconds as your modem reboots.



The screen below shows that the Router is being reset.





14. TROUBLESHOOTING

14.1 System Self Tests

The following settings will be displayed if you select **System Self Tests** from the **Troubleshooting** menu. Click on **test all** to run a diagnostic test on your Router's connection.

This screen had been displayed in two parts for illustrative purposes. The actual information displayed in this screen may vary.

System Sell Tests - Microsoft Internet Explores	🔮 System Sell Tests - Microsoft Internet Explorer 📰 📰 🕱
Fir Ed Yew Fyrnites Look Holp	fin Edt Vew Fpontes Lock Hop
WESTELL Decrew Letter Provided Home Status Configuration Maintenance Troubleshooting Help Brytern Bell Troots	Connection / Status DSL: Up SPD:: Section up SPD: Connection up SPD: Connection up TestDescription / Test Results Self Test - Success PUNG ISP'S Router - Success DNS - Success DNS - Success
Connection / Status DSL: Up SDDDE: Sension up PDP: Connection up Test Description / Test Results Self Test - PTWs 15°'s Router - DNS - Test Description / Test Results Self Test - PTWs 15°'s Router - DNS - Test Description / Test Results Self Test - PTWs 15°'s Router - DNS - Test Description / Test Results Self Test - PTWs 15°'s Router - DNS - Test Description / Test Results Self Test - PTWs 15°'s Router - DNS - Test Description / Test Results Self Test - PTWs 15°'s Router - DNS - Test Description / Test Results Self Test - PTWs 15°'s Router - DNS - Test Description / Test Results Self Test - PTWs 15°'s Router - PTWs 1	Image: State
2] Done	e) Done 🔮 Internal

If you want to PING using the System Self Test screen (diagnostics page) shown above, enter your **DNS** or **IP** address in the fields provided and click on the **test** button. The System Self Test will run a diagnostic test that executes independent of firewall security settings. See the following table for test descriptions and possible responses.

If you want to PING using the MS-DOS (shell) window, first you will need to check your firewall security setting. (If you PING via DOS shell you are susceptible to firewall rules, as this PING is dependent on your Router's firewall settings.) If your firewall is set to **Medium** or **High**, you will not be able to PING. You must set your firewall security setting to **Low** or **None**.

Westell Dual Connect NAT Router with DMH Technology



User Guide

	Connection/Status
DSL	The Router checks the status of the Router connection.
	Possible responses are: UP: The Router is operating correctly and has obtained synchronization with the opposing network device. DOWN: The Router is operating correctly, but has not synchronized with the opposing device.
РРРоЕ	Indicates that a PPPoE session is or is not established.
	Possible responses are: Session UP: A valid PPPoE session has been detected. No Session: Currently there is no active PPPoE session established. Initiating Session: A PPP session must be connected from the homepage screen.
PPP	Indicates that a PPPoE or PPPoA session must already be established.
	 Possible responses are: Connection UP: The Router has established a connection No Connection: There is no PPP connection Initiating Connection: The PPP connection process has been initiated Connection Halted: A successful PPP connection was halted Cannot Connect: A PPP connection could not be made because of a PPPoE session failure. Authorization Failure: The user name or password is incorrect. Link Control Protocol Failed: Re-establish the session (from the home page).
	Test Description / Test Results
Self Test	Performs an integrity check of certain internal components of the Router.
PING ISP's Router	 Performs an IP network check (i.e., an IP Ping) of the Service Provider's Router. This test verifies that the Router can exchange IP traffic with an entity on the other side of the DSL line. Possible responses are: Success: The Router has detected an IP Remote Router connection. No Response: The IP Remote Router does not answer the IP Ping. Could not test: The test could not be executed due to Router settings. Check your DSL sync or your PPP session. You must have both a DSL sync and a PPP
DNG	connection established to execute a PING.
DNS	 Performs a test to try to resolve the name of a particular host. The host name is entered in the input box. Possible responses are: Success: The Router has successfully obtained the resolved address. The IP address is shown below the host name input box. No Response: The Router has failed to obtain the resolved address. Host not found: The DNS Server was unable to find an address for the given host name. No data, enter host name: No host name is specified. Could not test: The test could not be executed due to Router settings. Check your DSL sync or your PPP session. You must have both a DSL sync and a PPP connection established to execute a PING.
IP Address	IP Address of the Host Name.
PING	Performs an IP connectivity check to a remote computer either within or beyond



	the Service Provider's network. You can PING a remote computer via the IP address or the DNS address. If your PING fails, try a different IP or DNS address.
	Possible responses are:
	Success: The Remote Host computer was detected.
	No Response: There was no response to the Ping from the remote computer.
	No name or address to PING: No host name or IP address was specified.
	Could not test: The test could not be executed due to Router settings. Check your
	DSL sync or your PPP session. You must have both a DSL sync and a PPP
	connection established to execute a PING.
Trace Route	Determines the route taken to destination by sending Internet Control Message
	Protocol (ICMP) echo packets with varying IP Time-To-Live (TTL) values to the
	destination. Trace Route is used to determine where the packet is stopped on the
	network.

14.2 Diagnostic Logs

If you select **Diagnostic Log**, from the **System Self Test** menu, the following screen will be displayed.

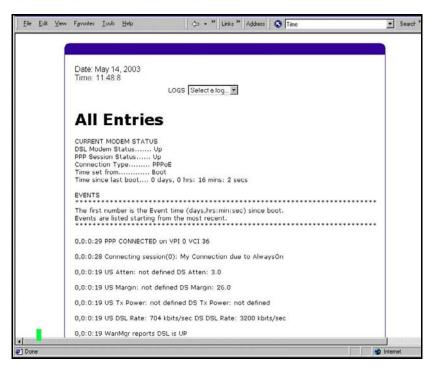
Eile _Edit ⊻iew Favorites	Tool: Help	🛛 🗇 🕶 🐂 Links 🎽 A <u>d</u> dress 🗃
		*
WESTELL		_
Discover Better Broadband Diagnostic Logs	Home Status Configuration Maintenance Troubleshooting Help	J
	Date: May 9, 2003 Time: 18:16:44	
	LOGS Select a log 💌	
	clear diagnostic log	
		Ţ
। हो		Internet



To see a list of the log options, click on the arrow at the LOGS pull-down menu. Select an option from the list provided at the **Diagnostics Logs** screen.

j <u>F</u> ile <u>E</u> dit ⊻iew F <u>a</u> vorites	Icols Help	│
WESTELL Discover Better Broadband Diagnostic Logs	Home Status Configuration Maintenance Troubleshooting Help	
		_
	Date: May 9, 2003 Time: 18:16:44 LOGS Select a log Y Select a log All Connection System	
4		

If you clicked on **All**, the following screen will be displayed. This screen provides a detailed list of the Router's connection status and system information. Click on **clear diagnostic log** to clear the diagnostic log information.





14.3 WAN VC Statistics

The following settings will be displayed if you select WAN VC Stats from the Troubleshooting menu.

For Tion Linkows	Iools Help		
Ń			
ESTELL over Better Broadband	Home Status Configuration Maintena	nce Troubleshooting Help	
VAN VC Statistics			
	Packet Information	PVC 1	
	VPI / VCI	0/35	
	VPI / VCI In Errors	0/35	
	VPI / VCI	0/35	
	VPI / VCI In Errors In Discard Packets	0/35 0 12	
	VPI / VCI In Errors In Discard Packets In Non Unicast Packets	0/35 0 12 0	
	VPI / VCI In Errors In Discard Packets In Non Unicast Packets In Unicast Packets In Octets Out Errors	0/35 0 12 1292 548346 20	
	VPI / VCI In Error Packets In Discard Packets In Unicast Packets In Unicast Packets In Octets Out Errors Out Discard Packets	0/35 0 12 12 1292 540340 20 1579	
	VPI / VCI In Errors In Discond Packets In Non Unicast Packets In Unicast Packets In Octets Out Errors Out Discard Packets Out Discard Packets	0/35 0 12 1292 540340 20 1579 1	
	VPI / VCI In Error Packets In Non Unicast Packets In Unicast Packets In Octets Out Errors Out Discard Packets Out Non Unicast Packets Out Non Unicast Packets	0/35 0 12 0 12992 549340 20 1579 1 317	
	VPI / VCI In Errors In Discard Packets In Non Unicast Packets In Octets Out Errors Out Discard Packets Out Non Unicast Packets Out Non Unicast Packets Out Out Cast Packets Out Octets	0/35 0 12 0 1292 540340 20 1579 1 317 223105	
	VPI / VCI In Errors In Discard Packets In Unicast Packets In Unicast Packets Un Octets Out Discard Packets Out Discard Packets Out Onicast Packets Out Outcast Packets Out Octets	0/35 0 12 1292 540340 20 1579 1 1317 223105 1540	
	VPI / VCI In Errors In Discard Packets In Non Unicast Packets In Octets Out Errors Out Discard Packets Out Non Unicast Packets Out Non Unicast Packets Out Outoast Packets Out Octets MTU Interface Type	0/35 0 12 0 1202 540340 20 1579 1 317 223105 1540 1	
	VPI / VCI In Errors In Discard Packets In Unicast Packets In Unicast Packets Un Octets Out Discard Packets Out Discard Packets Out Onicast Packets Out Outcast Packets Out Octets	0/35 0 12 1292 540340 20 1579 1 1317 223105 1540	

VPI/VCI	Displays the VPI/VCI values obtained from your Internet Service Provider.
In Errors	The number of error packets received on the ATM port.
In Discard Packets	The number of discarded packets received.
In Non Unicast Packets	The number of non-Unicast packets received on the ATM port.
In Unicast Packets	The number of Unicast packets received on the ATM port.
In Octets	The number of bytes received on the ATM port.
Out Errors	The number of outbound packets that could not be transmitted due to errors.
Out Discard Packets	The number of outbound packets discarded.
Out Non Unicast Packets	The number of non-Unicast packets transmitted on the ATM port.
Out Unicast Packets	The number of Unicast packets transmitted on the ATM port.
Out Octets	The number of bytes transmitted on the ATM port.
MTU	Maximum Transmission Unit - The number of data bytes contained in the ATM frame.
Interface Type	A unique identifier that represents the interface type.
Interface Description	A description field that refers to the interface type.



14.4 Ethernet Statistics

The following settings will be displayed if you select Ethernet Stats from the Troubleshooting menu.

e Edit	⊻iew	Fgvorites	Took	Help		
cover 0	letter Br	ELL oadband	Home	Status Configuration Maintena	nce Troubleshooting Help	
	ernet atisti					
			- F	Packet Information	Port	
				r donot innormation	PUR	
				In Errors In Discard Packets In Non Unicast Packets In Unicast Packets In Octets	0 0 711 6799 762307	
				In Errors In Discard Packets In Non Unicast Packets In Unicast Packets	0 0 711 6799	
				In Errors In Discard Packets In Non Unicast Packets In Unicast Packets In Octets Out Biscard Packets Out Discard Packets Out Nincast Packets Out Nincast Packets	0 0 711 6799 762307 0 0 804 7482	

In Errors	The number of error packets received on the Ethernet interface.
In Discard Packets	The number of discarded packets received.
In Non Unicast Packets	The number of non-Unicast packets received on the Ethernet interface.
In Unicast Packets	The number of Unicast packets received on the Ethernet interface.
In Octets	The number of bytes received on the Ethernet interface.
Out Errors	The number of outbound packets that could not be transmitted due to errors.
Out Discard Packets	The number of outbound packets discarded.
Out Non Unicast Packets	The number of non-Unicast packets transmitted on the Ethernet interface.
Out Unicast Packets	The number of Unicast packets transmitted on the Ethernet interface.
Out Octets	The number of bytes transmitted on the Ethernet interface.
MTU	Maximum Transmission Unit- The number of data bytes contained in the Ethernet frame.
Interface Type	A unique identifier that represents the interface type.
Interface Description	A description field that refers to the interface type.



14.5 Transceiver Statistics

The following settings will be displayed if you select **Transceiver Stats** from the **Troubleshooting** menu.

🖉 Transceiver Statistics - Mi	icrosoft Internet Explore	er provided by Cer	ituryTel		_ 🗆 ×
<u>File Edit View Favorites</u>	<u>I</u> ools <u>H</u> elp] ⇐	» Links » Address) » 🔢
					A
Discover Better Broadband	Home Status C	onfiguration M	aintenance Troublesho	acting Holp	
Transceiver Statisti		onnguration w	antenance froublesho	boung Help	
Transceiver Statisti	CS				
	Transceiver Revisio	n: 06.03.00			
	Vendor ID Code:	4			
	Line Mode:	G.DMT-Mod	e		
	Data Path:	Fast			
	PSD/Shaping	AUTO 💌			
	Transceiver Infor	mation	Down Stream Path	Up Stream Patl	n
	DSL Speed (Kbits/9	Sec)	3200	704	
	Margin (db)		27.0	12.0	
	Line Attenuation (c	ib)	1.5	18.5	
	Transmit Power (db	o/Hz)	9.0	11.0	
	-				
4					×
Ø] Done					👔 Internet

Transceiver Revision	The transceiver software version number.	
Vendor ID Code	The CPE Vendor's ID code for their chipset.	
Line Mode	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).	
PSD/Shaping	Factory Default = AUTO	
	Possible responses are:	
	ON: Turn on power density	
	OFF: Turns off power density	
Transceiver Information-Down Stream/Up Stream Path		
DSL Speed (Kbits/Sec)	The transmission rate that is provided by your Internet Service Provider (ISP).	
SNR Margin (db)	The Signal-to-Noise Ratio (S/N) where 0 db = 1×10^{-7} , which inhibits your DSL	
	speed.	
Line Attenuation (dB)	The DSL line loss.	
Transmit Power (db/Hz)	The transmitted signal strength.	



14.6 USB Port Statistics

The following settings will be displayed if you select USB Port Stats from the Troubleshooting menu.

Edit View Favorites	Took	Help		
16				
ESTELL				
wer Better Broadband		Status Configuration Maintenance Trou	bleshooting Help	
BB Port Statistics				
	ſ	Packet Information	USB	
		Number of Resets	0	
		Number of Resets Number of Isrs	0 2	
		Number of Resets Number of Isrs In Unicast Packets In Non Unicast Packets	0 2 0	
		Number of Resets Number of Isrs In Unicast Packets In Non Unicast Packets In Multicast Frames	0 2 0 0	
		Number of Resets Number of Isra In Unicast Packets In Non Unicast Packets In Multicast Frames In Broadcast Frames	0 2 0 0 0	
		Number of Resets Number of Isrs In Unicast Packets In Non Unicast Packets In Multicast Frames	0 2 0 0	
		Number of Resets Number of Isra In Unicast Packets In Non Unicast Packets In Multicast Frames In Broadcast Frames	0 2 0 0 0	
		Number of Resets Number of Isra In Unicast Packets In Nuricast Packets In Multicast Frames In Broadcast Frames In Errors Out Good Frames Out Good Frames Out Unicast Packets	0 0 0 0 0 0 0	
		Number of Resets Number of Isrs In Unicast Packets In Non Unicast Packets In Broadcast Frames In Broadcast Frames In Errors Out Good Frames Out Unicast Packets Out Non Unicast Packets		
		Number of Resets Number of Isrs In Unicast Packets In Nuricast Packets In Multicast Frames In Broadcast Frames Un Good Frames Out Good Frames Out Unicast Packets Out Municast Frames		
		Number of Resets Number of Isrs In Unicast Packets In Multicast Frames In Broadcast Frames In Errors Out Good Frames Out Unicast Packets Out Micast Packets Out Multicast Frames		
		Number of Resets Number of Isrs In Unicast Packets In Nuricast Packets In Multicast Frames In Broadcast Frames Un Good Frames Out Good Frames Out Unicast Packets Out Municast Frames		
		Number of Resets Number of Isrs In Unicast Packets In Multicast Frames In Broadcast Frames In Errors Out Good Frames Out Unicast Packets Out Micast Packets Out Multicast Frames		

Number of Resets	The number of times the Host PC reset the USB interface.
Number of Isrs	The number of times the Host PC requested communication with the Router.
In Unicast Packets	The number of packets received that did not have a Multicast or Broadcast class destination IP address.
In Non Unicast Packets	The number of packets received that had a Multicast or Broadcast class destination IP address.
In Multicast Frames	The number of frames received that had a Multicast class destination IP address.
In Broadcast Frames	The number of frames received that had a Broadcast class destination IP address.
In Errors	The number of packets received with an invalid format
Out Good Frames	The number of frames sent to the Host PC.
Out Unicast Packets	The number of packets sent that did not have a Multicast or Broadcast class destination IP address
Out Non Unicast Packets	The number of packets sent that had a Multicast or Broadcast class destination IP address.
Out Multicast Frames	The number of frames sent that had a Multicast class destination IP address.
Out Broadcast Frames	The number of frames sent that had a Broadcast class destination IP address.
Out Errors	The number of packets received by the Router but not sent to PC due to an error condition.



14.7 LAN Statistics

The following settings will be displayed if you select LAN Stats from the Troubleshooting menu.

<u>F</u> ile <u>E</u> dit <u>V</u> iew F <u>a</u> vorites	<u>T</u> ools <u>H</u> elp				<⊢ → [≫] Links [≫] A <u>d</u> dress
M					
WESTELL Discover Better Broadband	Home Status C	onfiguration Maintenance	Troubleshooting	Help	
LAN Statistics					
	Devices On LAN	J			
	IP Address 192.168.1.47	MAC Address 00:50:da:b2:d9:f1	Name redis-98	Status Active	
	192.168.1.47	00:50:03:62:09:11	reals-98	ACTIVE	J
)one					Internet

Device IP Address	Displays the IP address of the devices on the LAN.
DHCP NetMask	Displays the Subnet Mask, which determines what portion of an IP address that is
	controlled by the network and what portion is controlled by the host.
DHCP Start Address	Displays the first IP address that the DHCP server will provide.
DHCP End Address	Displays the last IP address that the DHCP server will provide.
DHCP Server Status	Displays the status, "ON" or "OFF" of the DHCP Server.
DHCP Server	This setting allows the ADSL router to automatically assign IP addresses to local
	devices connected to 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.
	Devices on LAN
IP Address	Displays the IP network address that your Router is on.
MAC Address	Media Access Controller (MAC) address of this device.
Name	Displays the ASCII (text) name of the devices connected to the LAN.
Status	Displays the status of the devices connected to the LAN.



15. HELP

If you select **Help** from the menu bar, a message from the help screens will be displayed. The type of message displayed depends on the menu that you are viewing. If you are viewing a pop-up screen, click the **help** link in the pop-up screen to obtain help messages.

A

About

This screen provides information about the Router. The following settings are displayed.

About		
Model Number	Router manufacturer's model number.	
Serial Number	Router manufacturer's serial number.	
MAC Address	Ethernet MAC (i.e., hardware) Address of the Router.	
Software Version	Router application software version number.	
Software Model	Router application type.	
Description	Description of the Router protocol processing application software.	
Boot Loader	Router boot loader version number.	

Advanced Home Page

The advanced home page offers the same functionality as the home page but adds the ability to change the connection profile settings defined in the Router.

About		
Edit	An "Edit" link is added for each connection profile. Selecting this link will	
	pop-up a window that allows the connection profile settings to be changed.	
New Connection	The "New Connection" link will pop-up a window to allow the creation of a new connection profile.	

ATM Loopback

ATM Loopback		
ATM Loopback	This setting enables 0/21 loopback. Westell recommends that you do not	
	change this setting.	



B

Backup/Restore

This option allows the Router configuration to be backed up to or restored from a secure location in flash. The following options are displayed.

Backup/Restore		
Current becomes Back-up	Selecting this command button will backup the current active configuration to	
	the secure flash location.	
Back-up becomes Current	This command button will restore the previously stored configuration from	
	the flash location.	
Factory becomes Current	This option will restore the Router to the state that it arrived in from the	
_	factory.	

C

Change Administration Password

The Router has an administrator password. This password protects the Router from any unauthorized modifications to the configuration setting in the Router. The following settings are displayed.

Change Administration Password		
Enter Administration	This field specifies the Administrator's name. Only one administrator can be	
Name	defined.	
Enter/Verify	This field specifies the password required to enable administrator access. The	
Administration Password	password must be entered twice to ensure that the password has been entered	
	correctly.	

Connection Summary

Connection Summary		
Connection Summary	The connection profile screen displays summary information about the Router. The connection state is shown along with the amount of traffic has passed through the Router. Each connection profile is listed with its associated usage	
	information.	



D

Diagnostics Help

This screen provides tools for diagnosing PPP connection problems. Some tests depend on the Router status and the capabilities exercised by previous tests, which may prevent other types of testing.

Beginning of Diagnostics Help screens

DSL

The Router status checks the Router connection. The following is a list of the possible responses:

	DSL
Up	The Router is operating correctly and has obtained synchronization with the opposing modem.
Down	Explanation: The Router is operating correctly, but has not synchronized with the opposing DSLAM. Solution: First, check to be sure that the cable connecting your Router to the ADSL wall jack is properly connected at both ends. If the cable is properly connected and the Router does not synchronize, try another phone cable. Next, wait for the Router to train. It can sometimes take as long as two minutes for the Router to train. If it still has not come into synchronization, power cycle the Router. If you have tried the approach above and the Router still does not synchronize, contact your service provider.

PPPoE

The PPPoE status indicates if a PPPoE session is established (i.e., if the PPPoE Discovery procedure has completed). The following is a list of the possible responses:

	PPPoE	
Session up	A valid PPPoE session has been detected.	
no session	Currently there is no active PPPoE session. A PPP session must be connected	
	from the homepage screen.	
initiating session	The connection process for a PPPoE session has been initialized. It can sometimes take a few seconds for the PPPoE Discovery procedure to complete. Wait 10-15 seconds and try again. If the PPPoE Discovery still cannot complete, there may be a configuration issue with your service provider's equipment. Verify your VPI/VCI settings (on the LAN Advanced page) and contact your ISP provider.	
Session halted	A successful PPPoE session was halted. A PPP session must be connected from the homepage screen.	
passed	A valid PPPoE session was established.	
Session failure	A PPPoE session could not be made. There may be a configuration issue with your service provider's equipment. Verify your VPI/VCI settings (on the LAN Advanced page) and contact your provider.	



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PPP

This field displays the PPP Connection status. A PPPoE or PPPoA session must already be established. The following is a list of the possible responses:

РРР	
Connection up	The Router has established a PPP connection.
no connection	There is no PPP connection. A PPP session must be connected from the
	homepage screen.
initiating connection	The PPP connection process has been initialized.
Connection halted	A successful PPP connection was halted. Solution: A PPP session must be
	connected from the homepage screen.
Cannot connect	Explanation: A PPP connection could not be made because of a PPPoE session
	failure.
Authorization failure	The username or password is incorrect. Verify that the username and password
	your Service Provider issued are entered correctly.
Link control protocol	Try re-establishing the session (from the home page). If this doesn't help, there
failed	may be a configuration issue or other failure with your provider's equipment.
	Contact your service provider.

Self Test

The Self Test performs an integrity check of certain internal components of the Router. The following is a list of the possible responses:

Self Test	
Success	The Router is operating correctly.
Flash Corrupt	Explanation: The self-test process has detected a problem with internal flash memory. Solution: Restart the Router. If the error persists, contact your service provider.

PING ISPs' Router

The IP remote router test performs an IP network check (i.e., an IP Ping) of the Service Provider's Router. This test verifies that the Router can exchange IP traffic with an entity on the other side of the DSL line. The following is a list of the possible responses:

PING ISP's Router	
Success	The Router has detected an IP remote router connection.
No Response	Explanation: This message will occur when an IP remote Router does not answer the IP Ping. Solution: This test fails when the provider's Router does not give its IP address to the Router during session establishment. Try Pinging another host, using the Ping test near the bottom of the Diagnostic screen. If you are able to Ping any host, or even if you are able to find an IP address for a given host name (try "www.yahoo.com"), then the failure of the "IP Remote Router" test is moot, because the success of the Ping demonstrates that you are getting IP traffic across the DSL line. If the separate Ping fails as well, contact your service provider.
could not test	Explanation: Test could not be executed because of Router status.



DNS

The DNS test issues a request to try to resolve the name of a particular host. The host name is entered in the input box. The following is a list of the possible responses:

DNS	
Success	The Router has successfully obtained the resolved address. The IP address is
	shown below the host name input box
No Response	Explanation: The Router has failed to successfully obtain the resolved address.
	Solution: Determine the IP addresses of your DNS servers (from the home page,
	click "Edit" and then "Advanced"), and then use the Ping test near the bottom of
	the Diagnostic screen to try to Ping those addresses. This may provide useful
	information when you contact your service provider and speak with Technical
	Support.
Host not found	Explanation: The DNS Server was unable to find an address for the given host
	name.
	Solution: That host may no longer be available on the Internet. Try entering a
	different host name.
No data, enter host name	Explanation: There must be a host name entered in the input box.
could not test	Explanation: Test could not be executed because of Router status.

PING

Select **PING** to check IP continuity to a remote computer either within or beyond the Service Providers network.

Enter either the IP address or the hostname of the remote host computer into the input box to the right of the Test button. If you Ping by name, DNS will be used to look up the appropriate IP address for that name. The following is a list of the possible responses:

PING	
Success	The Remote Host Computer was detected.
No Response	Explanation: This message will occur when there was no response to the Ping
	from the remote computer.
	Solution: Bear in mind that many hosts on the Internet are configured for
	security reasons to not respond to IP Ping messages. If you get a success from
	the DNS test using the same host name, chances are good that your connection
	is fine, whether you can Ping the named host or not.
No name or address to	Explanation: There must be a host name or IP address entered in the input box
PING	in order for the Router to Ping.
could not test	Explanation: Test could not be executed because of Router status.

End of Diagnostic Help Screens



DHCP Configuration

This screen contains the settings which control how the ADSL router interacts with the local devices connected to the router. Westell does not recommend that you change these settings. The following settings are displayed.

DHCP	
DHCP Server	Dynamic Host Configuration Protocol (DHCP) is an Internet
	standard that allows the ADSL router to automatically assign IP
	addresses to devices connected on the LAN network. It is advised
	that this is enabled for Private LAN.
DHCP Start Address (If DHCP is	This setting specifies the start of the IP address pool that the modem
enabled)	uses to assign IP addresses to local devices.
DHCP End Address (If DHCP is	This setting specifies the end address of the IP address pool used for
enabled)	automatic configuration of local devices.
DHCP Lease (If DHCP is enabled)	This setting specifies the DHCP lease time.

DNS Configuration

The Router has a built-in DNS server. The Router has a feature called "Dynamic DNS." When an IP address is assigned, the Router will interrogate the new device for a machine name using several well-known networking protocols. Any names learned will dynamically be added to the DNS server's table of local hosts. A static host assignment is needed only if the new device does not support any of the well-known protocols. The following settings are displayed.

DNS Configuration Screen	
Domain Name	The name of your network. This uses the internet standard for delineating
	domain names.
Static Host Assignment	This table allows the creation and maintenance of manually configured DNS
	entries.
Dynamic Host	This table shows the current list of devices that have automatically provided
Assignment	information.



E

Edit Connection Profiles

This screen facilitates the changing of connection profile parameters. The following settings are displayed.

Edit Connection Profiles	
Connection Name	This field is a description of the default connection profile that the Router will
	use. Feel free to use whatever description you desire.
Account ID	Your account ID is supplied by your ISP. This text string uniquely identifies
	you with your ISP.
Account Password	The Account Password is a key phrase or text string that verifies your identity to
	the ISP.
Service Profile	The Router stores several service profiles. A service profile is a collection of
	settings for the built-in firewall and NAT. These settings control which
	applications are enabled to talk through the Router. This selection specifies
	which service profile is used when the Router is using this connection.
Manual/Auto/Always ON	These radio buttons specify how this connection profile is used. A manual
	setting requires that this connection must be manually established through the
	"homepage" connection button. When this is set to auto, the Router will monitor
	the network traffic and determine when a connection needs to be made. The
	connection process will happen automatically the "Always ON" selection causes
	the Router to aggressively establish a connection with your ISP. Whenever the
	Router detects that the connection to your ISP is down, it will try to re-establish that connection.
Time Out	
Enable/Connection Time	Selecting this option will enable the disconnect timeout. If this option is enabled
Out	the Router will monitor the ISP connection for activity. If there is no activity for the timeout period, the Router will disconnect from the ISP
Edit VC Connection	the timeout period, the Router will disconnect from the ISP.
East VC Connection	This screen is an advanced screen. Modifying parameters identified on this screen can cause severe disruption of your service. VC stands for "Virtual
	Connection." A VC identifies a connection through the service provider's ATM
	network to your ISP. It is not recommended that you change anything on these
	pages unless explicitly instructed by your service provider.
	pages amess explicitly instructed by your service provider.

F

Firewall Settings

This screen is an advanced configuration screen. It allows you to set the level of security you wish to have on your local network. All security levels except "None" protect against known Internet attacks and devices that attempt to gain remote access to your Router. The following settings are displayed.

Firewall Settings	
High	This security level only allows basic Internet functionality. Only Mail, News, Web, FTP, and IPSEC are allowed. No other traffic is allowed. Another restriction of high security is that it can't be modified by NAT configuration options. With High security, you are guaranteed to only pass the previously mentioned traffic.
Medium	This security level only allows basic Internet functionality by default. Like High



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	security, Medium security, allows customization through NAT configuration, so 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, your Router is visible by other computers on the Internet.
Custom	Custom is a very advanced configuration option that allows you to edit the firewall configuration directly. Only the most expert users should try this.

Η

Home Page

The home page gives you a quick summary of the Router's state. The following settings are displayed.

Home Page	
Connection Overview	The Connection Overview section displays the status of the DSL connection.
	The DSL must show a state of "UP" in order for the Router to communicate
	with your service provider's network.
Connection Name	The Connection Name section displays all of the connection profiles that are defined by the Router. A connection profile is information that the Router needs to establish a connection to your ISP. The "PPP Status" columns will show a status of " UP " if the Router is currently using that profile to communicate. The command button allows you to control the connection state.
Profile Editor	Selecting the "Profile Editor" link will allow you to define or change any of the
	connection profile settings.

L

LAN Configuration

This screen contains the setting that controls how the Router interacts with the local devices connected to the Router. Westell does not recommend that you change these settings. The following settings are displayed.

LAN Configuration	
Router IP Address	This controls the IP address that the Router uses for local communication.
Subnet Mask	This setting specifies the subnet mask to use to determine if an IP address
	belongs to your local network.
DHCP Start Address	This setting specifies the start of the IP address pool that the Router uses to
	assign IP addresses to local devices.
DHCP End Address	This setting specifies the end address of the IP address pool used for automatic
	configuration of local devices.
DNS Server Enable	DNS stands for Domain Name System. This is an Internet standard that
	facilitates communication among devices. This allows a name to be used when
	specifying a device instead of an IP address. Normally you want this enabled.
DHCP Server Enable	DHCP stands for Dynamic Host Configuration Protocol. This is an Internet
	standard that allows the Router to automatically assign IP addresses to devices
	connected on the LAN network. It is advised that this opt ion is set to Enabled.



LAN Statistics

This page contains information regarding the configuration and status of your Local LAN. The following settings are displayed.

LAN Configuration		
Device IP Address	This displays the IP address that the ADSL router uses for local communication.	
DHCP NetMask	This displays the subnet address that the ADSL router's DHCP server issues in	
	DHCP responses.	
DHCP Start Address	This setting specifies the start of the IP address pool that the modem uses to	
	assign IP addresses to local devices.	
DHCP End Address	This setting specifies the end address of the IP address pool used for automatic	
	configuration of local devices.	
DHCP Server Status	Displays the status, "ON" or "OFF" of the DHCP Server	
DHCP Server	Displays which network "Public" or "Private" the DHCP server is serving IP	
	addresses for.	
Devices on LAN	This page displays the current devices the modem has found on your LAN. The	
	name of the device, the Ethernet MAC address, and the status, "Active" or	
	"Inactive" is displayed in the table.	

P

Private LAN

This page contains the settings that control how the ADSL router interacts with the local devices connected to the router. It is not recommended that these settings be changed. The following settings are displayed.

Private LAN		
Private LAN DHCP Server Enable	Dynamic Host Configuration Protocol (DHCP) is an Internet standard that allows the ADSL router to automatically assign IP addresses to devices connected on the LAN network. It is advised that this is enabled for Private LAN.	
Private LAN Enable	This setting enables the Private NAT'ed interface. It is advised to leave this enabled.	
Modem IP Address	This controls the IP address that the ADSL router uses for local communication.	
Subnet Mask	This setting specifies the subnet mask to use to determine if an IP address belongs to your local network.	
DHCP Start Address (If DHCP is enabled for Private LAN)	This setting specifies the start of the IP address pool that the modem uses to assign IP addresses to local devices.	
DHCP End Address (If DHCP is enabled for Private LAN)	This setting specifies the end address of the IP address pool used for automatic configuration of local devices.	
DHCP Lease (If DHCP is enabled for Private LAN)	This setting specifies the DHCP lease time.	



Protocol

Protocol	
Protocol	This screen informs the Router which networking protocol to use when
	communicating with your ISP. This information is provided by your ISP.

Public LAN

This screen contains the settings that control how the ADSL router interacts with the local devices connected to the router. It is not recommended that these settings be changed. The following settings are displayed.

Public LAN		
Public LAN DHCP Server	Dynamic Host Configuration Protocol (DHCP) is an Internet standard that	
Enable	allows the ADSL router to automatically assign IP addresses to devices	
	connected on the LAN network. It is advised that this is enabled for Private	
	LAN.	
Public LAN Enable	This setting enables the Public interface. This feature allows a global subnet to	
	exist behind your modem.	
Modem IP Address	This controls the IP address that the ADSL router uses for local	
	communication.	
Subnet Mask	This setting specifies the subnet mask to use to determine if an IP address	
	belongs to your local network.	
DHCP Start Address (If	This setting specifies the start of the IP address pool that the modem uses to	
DHCP is enabled for	assign IP addresses to local devices.	
Public LAN)		
DHCP End Address (If	This setting specifies the end address of the IP address pool used for automatic	
DHCP is enabled for	configuration of local devices.	
Public LAN)		
DHCP Lease (If DHCP is	This setting specifies the DHCP lease time.	
enabled for Public LAN)		

R

Remote Access

This page allows you to configure your modem so that it can be configured remotely. Once enabled, this feature can be manually disabled, or it will automatically disable after 20 minutes of configuration inactivity. NOTE: This feature is not available in Bridge Mode.

Remote Access		
Password	The password is used to enter the modem's web interface. It must be at least 4	
	characters long and contain no spaces.	
URL	The URL must be placed in a remote PC's web browser in order to	
	communicate with your modem. If this field says "Not Connected," you are not	
	currently connected to the Internet.	
Enable Remote Access	Remote Access is enabled after you have entered a valid password and	
	connected to the Internet.	



S

Single Static IP

This page contains the settings that would allow the PPP address received from the network to be propagated to a single LAN device behind the modem.

Single Static IP	
WAN IP Address	This is the PPP IP address the ISP has assigned the modem.
Selection box	This box contains the devices available to share the Single Static IP address the ISP has assigned the modem. The names listed in the select box will be populated by the modem's DHCP server based on DHCP requests. If a device's name cannot be determined, the current IP address of the device will be placed in the list.
	When the feature is enabled, the active machine will be highlighted in the select box and be displayed at the bottom of the page with the "disable" button.
	When the feature is disabled, no device in the select box will be highlighted and the "enable" button will be available.
	When the "User Configured PC" is selected, a local PC must be configured manually with the WAN IP address as its Ethernet adapter's address.

Τ

Trace

The Trace feature allows you to perform an IP trace route to a remote computer either within or beyond the Internet service provider's network. Enter either the IP address or the hostname of the remote host computer into the input box to the right of the Trace button. If you trace by name, DNS will be used to look up the appropriate IP address for that name.

Trace	
Success	Trace will display its progress in the text box. Trace will show three round trip
	times and the DNS name (if available) of each intermediate router.
Failure	Trace will display "*" when it does not receive a response or cannot determine the DNS name of an intermediate router. This is not necessarily an error, as some routers are configured to ignore trace route packets or do not have DNS name.



U

Update Device

Update Device (Software Upgrade)	
Update Device	This screen is used to upgrade the Router's application image. The application
(Software Upgrade)	image is specified by entering in the filename or by using the browse button.

User Name

This screen is asks for information that will allow the Router to make a connection to the ISP on your behalf. The Router will need to know your Account ID and Account Password. This information is stored in the Router.

User Name		
Connection Name	This is a description of the default connection profile, which the Router will use.	
	Feel free to use whatever description you desire.	
Account ID	Your Account Id is supplied by your ISP and is a text string that uniquely	
	identifies you with your ISP.	
Account Password	The Account Password is a key phrase or text string that verifies your identify to	
	the ISP.	

V

VC Configuration

VC Configuration Screen	
VC Configuration	This screen is an advanced screen. Modifying parameters on this screen can
	cause severe disruption of your service. VC stands for "Virtual Connection." A
	VC identifies a connection through the service provider's ATM network to your
	ISP. It is not recommended that anything be changed on these pages unless
	explicitly instructed by your service provider.

VPI/VCI

VPI/VCI	
VPI/VCI	This screen asks for information that the Router needs to establish a
	communication channel to your ISP. The VPI and VCI values are supplied by
	your ISP.



16. NAT SERVICES

Application/Game	Port/Protocol
Aliens vs. Predator	80 UDP, 2300 UDP, 8000-8999 UDP
America Online	5190 TCP/UDP
AoE II: Conquors	47624 TCP/UDP, 6073 TCP/UDP, 2300-2400 TCP/UDP
AOL Instant Messenger	4099 TCP, 5190 TCP
Asheron's Call	9000-9013 UDP, 28800-29000 TCP
Battlecom	2300-2400 TCP/UDP, 47624 TCP/UDP
Black and White	2611-2612 TCP, 6667 TCP, 6500 UDP, 27900 UDP
Blizzard Battle.net (Diablo II)	4000 TCP, 6112 TCP/UDP
Buddy Phone	700, 701 UDP
Bungie.net, Myth, Myth II Server	3453 TCP
Calista IP Phone	3000 UDP, 5190 TCP
Citrix Metaframe	1494 TCP
Client POP/IMAP	110 TCP
Client SMTP	25 TCP
Counter Strike	27015 TCP/UDP, 27016 TCP/UDP
Dark Reign 2	26214 TCP/UDP
Delta Force (Client and Server)	3568 UDP, 3100-3999 TCP/UDP
Delta Force 2	3568-3569 UDP
DeltaForce: Land Warrior	UDP 53
Dental ofee. Land Warnor	TCP 21
	TCP 7430
	TCP 80
	UDP 1029
	UDP 1144
	UDP 65436
	UDP 17478
DNS	53 UDP
Elite Force	2600 UDP, 27500 UDP, 27910 UDP, 27960 UDP
Everquest	1024-7000 TCP/UDP
F-16, Mig 29	3863 UDP
F-22 Lightning 3	4660-4670 TCP/UDP, 3875 UDP, 4533-4534 UDP, 4660-
T-22 Eightning 5	4670 UDP
F-22 Raptor	3874-3875 UDP
Fighter Ace II	50000-50100 TCP/UDP
Fighter Ace II for DX play	50000-50100 TCP/UDP, 47624 TCP, 2300-2400 TCP/UDP
FIGHTER ACE IT IOF DA play	
	20 TCP, 21 TCP UDP 3783
GameSpy Online	
	UDP 6515
	TCP 6667
	UDP 12203 TCP/UDP 13130
	TCP/UDP 13139
	UDP 27900
	UDP 28900
	UDP 29900
	UDP 29901

Table 7. Applications/Games/VPN Support



Application/Game	Port/Protocol
Ghost Recon	TCP 80
	UDP 1038
	UDP 1032
	UDP 53
	UDP 2347
	UDP 2346
GNUtella	6346 TCP/UDP, 1214 TCP
Half Life Server	27005 UDP(client only)
	27015 UDP
Heretic II Server	28910 TCP
Hexen II	26900 (+1) each player needs their own port. Increment by
	one for each person
	5500, 5502 TOD 5400 LIDD
Hotline Server	5500, 5503 TCP 5499 UDP
HTTPS	443 TCP/UDP
ICMP Echo	4 ICMP
ICQ OLD	4000 UDP, 20000-20019 TCP
ICQ 2001b	4099 TCP, 5190 TCP
ICUII Client	2000-2038 TCP, 2050-2051 TCP, 2069 TCP, 2085 TCP, 2010-2020 TCP
ICUII Client Version 4.xx	3010-3030 TCP
ICUII Client Version 4.xx	1024-5000 TCP, 2050-2051 TCP, 2069 TCP, 2085 TCP, 3010-3030 TCP, 2000-2038 TCP6700-6702 TCP, 6880
	TCP, 1200-16090 TCP
IMAP	119 TCP/UDP
IMAP v.3	220 TCP/UDP
Internet Phone	22555 UDP
IPSEC ESP	PROTOCOL 50
IPSEC IKE	500 UDP
Ivisit	9943 UDP, 56768 UDP
KALI, Doom & Doom II	2213 UDP, 6666 UDP (EACH PC USING KALI MUST
KALI, Doolii & Doolii II	USE A DIFFERENT PORT NUMBER STARTING WITH
	2213 + 1
KaZaA	1214 TCP/UDP
Limewire	6346 TCP/UDP, 1214 TCP
Medal Of Honor: Allied Assault	TCP 80
	UDP 53
	UDP 2093
	UDP 12201
	TCP 12300
	UDP 2135
	UDP 2139
	TCP/UDP 28900
mIRC Chat	6660-6669 TCP
Motorhead Server	16000 TCP/UDP, 16010-16030 TCP/UDP
MSN Game Zone	6667 TCP, 28800-29000 TCP
MSN Game Zone (DX 7 & 8 play)	6667 TCP, 6073 TCP, 28800-29000 TCP, 47624 TCP,
	2300-2400 TCP/UDP
MSN Messenger	6891-6900 TCP, 1863 TCP/UDP, 5190 UDP, 6901
	TCP/UDP



User Guide

Application/Game	Port/Protocol
Napster	6699 TCP
Need for Speed 3, Hot Pursuit	1030 TCP
Need for Speed, Porsche	9442 UDP
Net2Phone	6801 UDP
NNTP	119 TCP/UDP
Operation FlashPoint	47624 UDP, 6073 UDP, 2300-2400 TCP/UDP, 2234 TCP
Outlaws	5310 TCP/UDP
Pal Talk	2090-2091 TCP/UDP, 2095 TCP, 5001 TCP, 8200-8700 TCP/UDP, 1025-2500 UDP
pcAnywhere host	5631 TCP, 5632 UDP, 22 UDP
Phone Free	1034-1035 TCP/UDP, 9900-9901 UDP, 2644 TCP, 8000 TCP
Quake 2	27910 UDP
Quake 3	27660 UDP
	Each computer playing QuakeIII must use a different port number, starting at 27660 and incrementing by 1. You'll also need to do the following: 1. Right click on the QIII icon 2. Choose "Properties"
	 3. In the Target field you'll see a line like "C:\Program Files\Quake III Arena\quake3.exe" 4. Add the Quake III net port command to specify a unique
	communication port for each system. The complete field should look like this: "C:\Program Files\Quake III Arena\quake3.exe" +set net port 27660
	5. Click OK.6. Repeat for each system behind the NAT, adding one to
	the net port selected (27660,27661,27662)
Quicktime 4/Real Audio	6970-32000 UDP, 554 TCP/UDP
Rainbow Six & Rogue Spear	2346 TCP
RealOne Player	TCP - 554, 7070 to 7071
	UDP - 6970 to 7170
Real Audio	6970-7170 UDP
Roger Wilco	TCP/UDP 3782
	UDP 3783 (BaseStation)
ShoutCast Server	8000-8005 TCP
SSH Secure Shell	22 TCP/UDP
Starcraft	2346 TCP
Starfleet Command	2300-2400 TCP/UDP, 47624 TCP/UDP
Telnet	23 TCP
Tiberian Sun & Dune 2000	1140-1234, 4000 TCP/UDP
Ultima Online	5001-5010 TCP, 7775-7777 TCP, 8800-8900 TCP, 9999 UDP, 7875 UDP
Unreal Tournament server	7777 (default gameplay port) 7778 (server query port
	7779,7779+ are allocated dynamically for each helper UdpLink objects, including UdpServerUplin objects. Try starting with 7779-7781 and add
	ports if needed 27900 server query, if master server uplink is enabled. Home master servers use other ports like 27500 Port 8080 is for UT Server Admin. In the



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Application/Game	Port/Protocol
	[UWeb.WebServer] section of the server.ini file, set the
	ListenPort to 8080 and ServerName to the IP assigned to
	the router from your ISP.
USENET News Service	143 TCP
VNC, Virtual Network Computing	5500 TCP, 5800 TCP, 5900 TCP
Westwood Online, C&C	4000 TCP/UDP, 1140-1234 TCP/UDP
World Wide Web (HTTP)	80 TCP
	443 TCP (SSL)
	8008 OR 8080 TCP (PROXY)
XBOX Live	TCP/UDP 88 and 3074
Yahoo Messenger Chat	5000-5001 TCP
Yahoo Messenger Phone	5055 UDP
VPN Protocol	Comments
IPSec Encryption	IPSec using AH can not be supported through NAT. IPSec
	using ESP and L2TP can be supported via an ALG
L2TP	IPSec using ESP and L2TP can be supported via an ALG.
РРТР	Works through NAT.



17. TECHNICAL SUPPORT INFORMATION

Westell Technical Support

If technical assistance is required, contact Westell by using one of the following options:

North America Phone: 1-630-375-4500

<u>U.K./Europe</u> Phone: (44) 01256 843311

18. WARRANTY INFORMATION

Warranty

Westell warrants this product free from defects at the time of shipment. Westell also warrants this product fully functional for the period specified by the terms of the warranty. Any attempt to repair or modify the equipment by anyone other than an authorized Westell representative will void the warranty.

Repairs

Westell will repair any defective Westell equipment without cost during the warranty period if the unit is defective for any reason other than abuse, improper use, or improper installation, or acts of nature. Before returning the defective equipment, request a Return Material Authorization (RMA) number from Westell. Once an RMA number is obtained, return the defective unit, freight prepaid, along with a brief description of the problem to:

North America Westell, Inc. ATTN: R.G.M. Department 750 N. Commons Drive Aurora, IL 60504-7940 USA

<u>U.K./Europe</u> Westell, Ltd. Ringway House Bell Road Daneshill Basingstoke RG24 8FB United Kingdom

Westell will continue to repair faulty equipment beyond the warranty period for a nominal charge. Contact a Westell Technical Support Representative for details.



19. PRODUCT SPECIFICATIONS

ADSL

- DSL Line Code: Discrete Multi-Tone (DMT)
- DSL Rates: 32 kbps to 8 Mbps downstream and 32 kbps to 800 Kbps upstream
- Power spectral density: -40 dBm/Hz
- DSL Impedance: 100 Ohms
- DSL Performance: Performance: per G.992.1, ANSI T1.413.

Protocol Features

- Bridge Encapsulation per RFC2684 (Formerly RFC1483)
- Logical Link Control/Subnetwork Access Protocol (LLC/SNAP)
- Software Upgradeable
- PPPoE Support
- ATM SAR: Internal to Modem

System Requirements for USB

- Pentium or equivalent and above class machines
- Microsoft Windows 98, 2000, ME, or XP installed
- Operating system CD 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
- USB Version 1.0 or higher compliant bus

System Requirements for 10/100 Base-T/Ethernet

- Pentium[®] or equivalent and above class machines, Macintosh
- Microsoft® Windows® (98, 2000, ME, NT 4.0, 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
- TCP/IP Protocol stack installed

• 10/100 Base-T Network Interface Card (NIC)

Dimensions

- Weight Height: 1.6 in. (4.0 cm)
- Width: 7.3 in. (16.0 cm)
- Depth: 6.1 in. (12.8 cm)

Weight

• Approx. 2.0 lbs. (0.90 kg)

Environmental

- Ambient Operating Temperature: +32 to +104°F (0 to +40°C)
- Relative Humidity: 5 to 95%, noncondensing

Power Supply

• 120 VAC to 12 VAC wall-mount power supply

Power Consumption

• Less than 8 watts typical, from 120 VAC

Connectors

- DSL/LINE: 6-pin modular jack
- PC: USB Series B connector
- Power connector
- Ethernet: 8-pin RJ-45 modular jack

EMC Compliance

• FCC, Part 15 Class B

Safety

- Conforms to UL Standard 60950, 3rd Edition
- Certified to CAN/CSA Standard C22.2 No. 60950

Regulatory Approval

- UL
- CSA
- TIA/EIA/IS-968A
- Industry Canada CS03



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10. No Waiver. The failure of either party to enforce any rights granted hereunder or to take action against the other party in the event of any breach hereunder shall not be deemed a waiver by that party as to subsequent enforcement of rights or subsequent actions in the event of future breaches.

21. PUBLICATION INFORMATION

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