WESTELL™

WIRESPEED
ADSL MODEM

USER GUIDE

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WIRESPEED MODEM USER GUIDE

OVERVIEW

With over one million Westell WireSpeed (TM) modem users and valuable experience, Westell has developed our newest Westell WireSpeed ADSL Ethernet modem. Westell's WireSpeed ADSL Ethernet modem uses existing home or office phone lines to provide reliable, high speed internet access. With your WireSpeed ADSL modem, an existing phone line becomes a dedicated "always on" connection, eliminating annoying dial-up modems and busy signals from your service provider. Westell's WireSpeed ADSL Ethernet modem is capable of downstream data rates of up to 8 Mbps and upstream data rates of up to 800 Kbps, making the WireSpeed ADSL Ethernet modem up to 140 times faster than a 56 Kbps analog modem.

In addition to the many features Westell users have enjoyed through the years, we have added our new **Auto-Redirection** feature which guides users through the connection process via a simple web interface. In addition, we have embedded a PPPoE shim in our modem so you no longer have to install any other software to get connected. We have also added VPN support via PPTP so that you can tunnel into your corporate network as well as true "Always-On" which enables you to save your session password. In addition to these new features, your Westell WireSpeed ADSL Ethernet modem is software upgradeable so that as your home or small office needs change, you can upgrade your existing hardware to a networking solution with our widely popular WebShare networking software.

WebShare Benefits

- Auto-Redirection simplifies end-user setup process
- Does not require shim for PPPoE, eliminating third-party software
- Uses current LAN IP address
- Software upgradable
- Always-on connection
- VPN support via PPTP

Minimum System Requirements

The following requirements outline the minimum system for WireSpeed:
- Pentium 166 MHz processor or equivalent
- Microsoft Windows 98, Windows Millennium, Windows 2000, or Windows NT 4.0
- Internet Explorer 4.x or Netscape Navigator 4.x installed
- At least 16 MB RAM
- Five MB of free hard drive space
- Ethernet connection between upgrading PC and ADSL modem
- TCP/IP protocol stack installed
- VGA monitor
- Crossover Ethernet cable for modem to Ethernet hub
- VPI/VCI values (provided by your service provider)
- PPPoA/PPPoE support (provided by your service provider)

WIRESPEED INSTALLATION

The WireSpeed operates up to 300 feet (91.4 meters) from a PC or Ethernet hub over 100-Ohm, Category 5 cable.

For installation on a wall surface, follow the instructions below. If you are not installing the unit on a wall surface, skip this section.

Installing on Hollow Drywall Surfaces (Optional)

To mount the WireSpeed to a wall:

1. Obtain two pan-head screws (one #8 and one #6) and two #4 - #8 wall anchors (not provided).

2. Place the WireSpeed against the wall where it is to be mounted, note and mark the upper keyhole slot and screw location.

3. Drill a 3/16" hole for the upper anchor and insert the anchor and larger (#8) screw until the face of the screw is approximately 3/16" from the wall.

4. Test fit the unit on the screw, and adjust the screw depth for a sliding fit.

5. With a pencil, mark the opening in lower mounting tab. Remove the unit from the wall.

6. Drill a 3/16" hole for the lower anchor and insert anchor. Hang the unit on the upper screw.

7. Insert the smaller (#6) screw through the hole in the lower mounting tab.

8. Tighten the lower screw lightly with a screwdriver. Do not overtighten.

User Setup

Refer to the wiring diagrams shown in Figure 1 and Figure 3.

1. Connect the power supply cord to the power connector on the side of the unit and plug it into the wall power receptacle.

2. Connect a standard RJ-11 telephone cable from the LINE connector to the ADSL-equipped phone line.

3. Connect the straight 10Base-T cable (included with this package) to the ETHERNET connector on the back of the unit to the interface on the computer.

4. Turn the power switch ON.

5. The Ready LED should be a solid green indicating that the power self-test has successfully completed and the unit is synchronized with the ADSL line card. It may take up to 70 seconds for the unit to synchronize with the central office ADSL unit. (See Figure 3.)

6. The Link LED should be solid green indicating that the modem connection has been made. (See Figure 3.)

7. During use, a pulsing yellow Activity LED indicates that data is being transmitted and received on the Ethernet interface.

8. Proceed to "Setting Up Your WebShare Account" on page 11 to configure the software.

ADSL LINE

ON/OFF SWITCH

POWER CONNECTOR
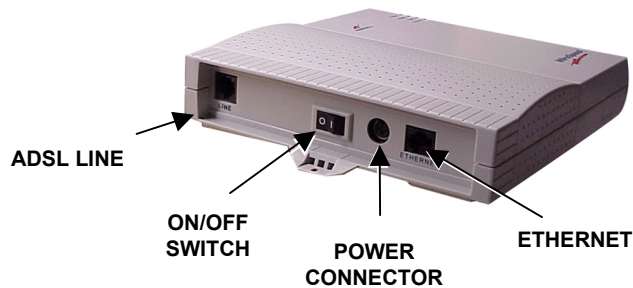
ETHERNET

Figure 1. WireSpeed Single-User Setup Connections

Cable Connectors

There are connectors on the side panel of the WireSpeed (Figure 3) for Power, an ON/OFF switch, 6-pin RJ-11 DSL (LINE) connector and 8-pin RJ-45 ETHERNET connector for customer terminal equipment. Tables 1-3 list the connector types and pinout designations.

10Base-T CONNECTOR

LINE

ETHERNET

DSL CONNECTOR

POWER SWITCH
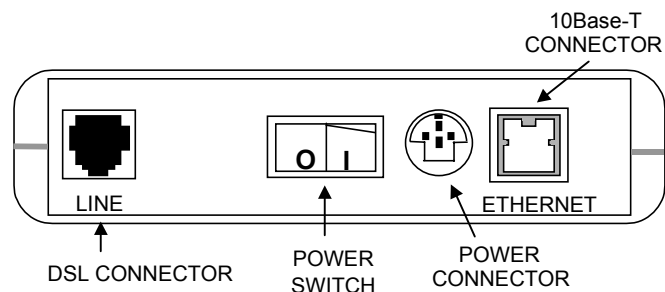
POWER CONNECTOR

Figure 2. WireSpeed Modem (Connector Panel)

Table 1. WireSpeed Connectors

Connector Name	Connector Type	Description
LINE	6-pin (RJ-11) modular jack	POTS/DSL is used to connect the telephone jack with ADSL
POWER	3-pin mini-DIN connector	Connects power cord
ETHERNET	8-pin (RJ-45) jack	Connects to PC or 10BaseT hub

Table 2. LINE Connector Pinouts

LINE Pinouts (RJ-11)	
Pin #	
1, 2, 5, 6	Not Used
3	DSL Tip
4	DSL Ring

Table 3. ETHERNET Connector Pinouts

ETHERNET Pinouts (RJ-45)	
Pin #	
1	Rx+
2	Rx-
3	Tx+
4, 5, 7, 8	Not Used
6	Tx-

LED Indicators

The LED indicators shown in Figure 3 are used to verify the unit's operation and status.

Figure 3. WireSpeed Modem (Front)

LED	State	Description
POWER	Solid Green	Power ON
	No Light	No power
READY	Slow Flashing Green	Power ON and passed power-up diagnostics (1 flash/sec)
	Moderate Flashing Green	Power ON and attempting synchronization (2 flashes/sec)
	Solid Green	Power ON and synchronized with the ADSL line card
	Solid Red	Hardware power-up in progress
	Blinking Red	Unit failed power-up diagnostic
	Alternating Red/Green	Modem diagnostic failed
	No Light	No power
LINK	Solid Green	Link established
	No Light	No 10Base-T link
ACTIVITY	Pulsing Yellow	Data being transmitted. Pulses should match the reception or transmission of Ethernet data.
	No Light	No data on Ethernet interface

Table 4. LED States

Note: Modem LEDs will flash while powering up. This intermittent flashing should not be confused with actual operation status.

WEBSHARE INSTALLATION UTILITIES

Running WebShare Installation Utilities

Account parameters must be added to WebShare before connecting to your ISP or Corporate LAN. Use the Westell-provided WebShare Installation Utilities to simplify the setup of the following:

- Selection of the Ethernet adapter (in instances where more than one Ethernet adapter exists on the PC)
- Automatic configuring of DHCP (Dynamic Host Configuration Protocol)
- Automatic assignment of the WebShare gateway URL address of 192.168.0.1
- Simplified installation of service provider account information via the Configure Account screen

We recommend using the WebShare Installation Utilities to automatically configure DHCP. If necessary, DHCP may be enabled manually.

Running WebShare Installation Utilities for Windows Operating Systems

To install WebShare Installation Utilities on your computer, insert the WebShare Installation Utilities CD into the CD-ROM drive. The CD should run automatically. If it does not, click **Start** > **Run** from the taskbar and type the following line:

E:\win32\setup.exe (where "E" is the designation of the CD-ROM drive)

1. Find and double-click on the WebShare executable program. The **Welcome** screen appears.
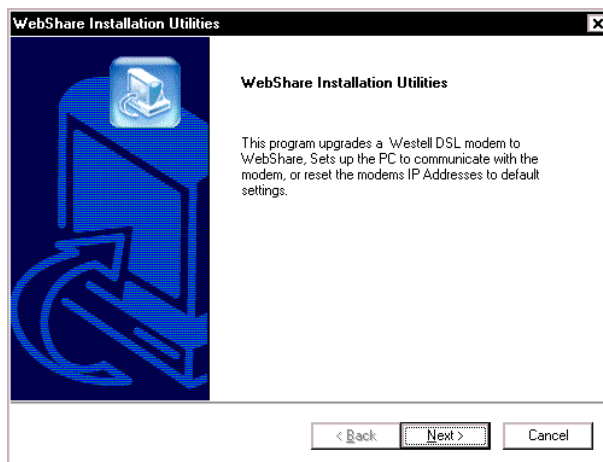
Figure 4. Welcome Window

2. Click **Next**. The **License Agreement** window appears.

3. Read the license agreement, then click **Yes** if you accept the agreement.
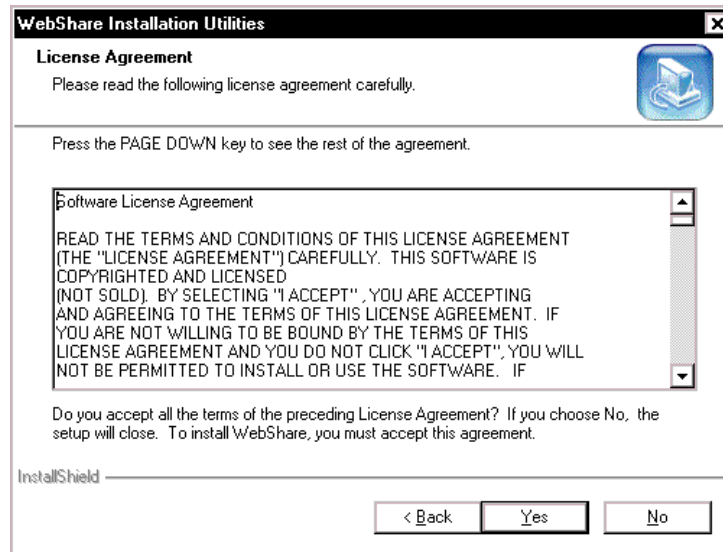
Figure 5. License Agreement

4. The **Function Selection** screen appears. Three options are available:
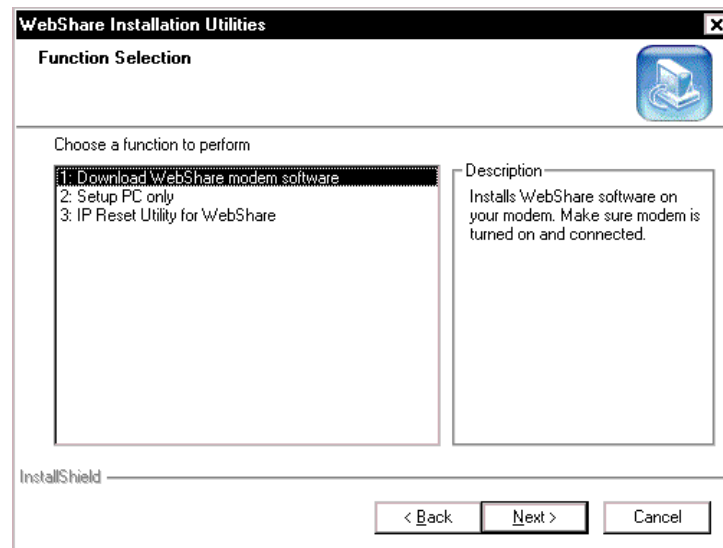
Figure 6. Function Selection

⚠ **CAUTION** ⚠
Do not select the default option!

5. Select the second option, **Setup PC only**.
   Note: Option 1, **Download WebShare modem software**, is the default and is for software upgrades only. Option 3, **IP Reset utility for WebShare** is used to restore modem settings to WebShare defaults.

6. Click **Next**.

7. The **Choose Destination Location** window shows the location where user documentation will be placed. (The documentation file is named **Webshare_Usr_Gd.pdf**.)
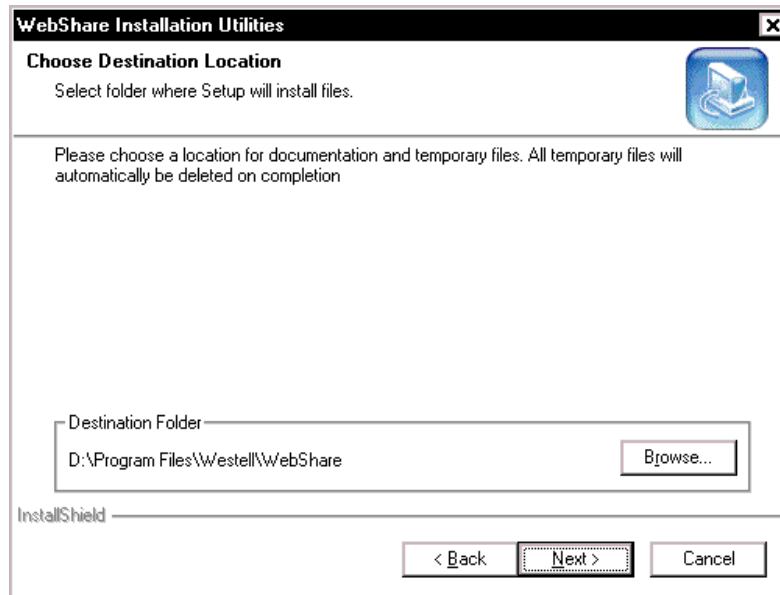
Figure 7. Choose Destination Location

8. Click **Next**. The **Choose Adapter** window appears. (**Note**: This screen will NOT appear if your computer has only one adapter.)
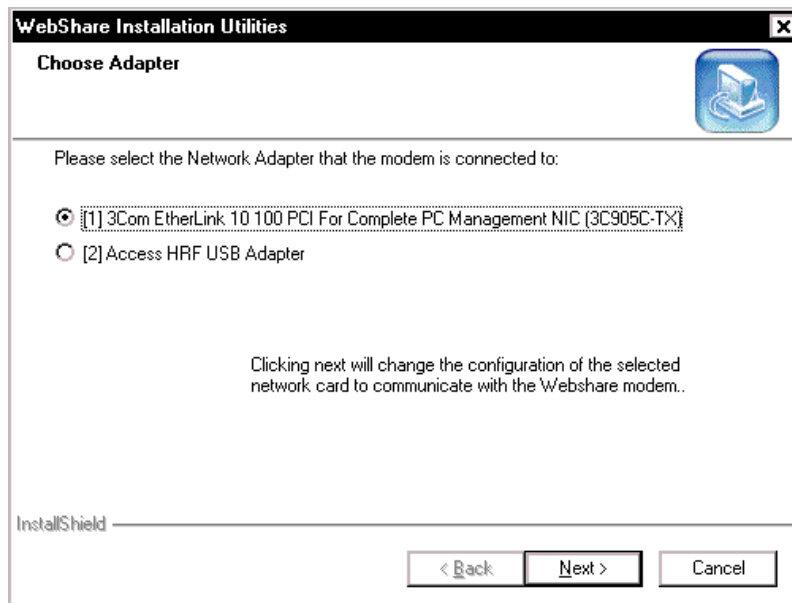
Figure 9. Choose Adapter

9. Click the option button for your network adapter, then click **Next**.

    NOTE: If you have multiple Ethernet adapters, select the one to be used with the WireSpeed . Figure 9 shows a window displaying multiple adapters. Be sure to select the <u>physical</u> adapter that is connected to your ADSL modem.

10. The **Setup Complete** window appears. Setting changes will not take effect until the computer has been restarted.

11. Select **Yes I want to restart my computer now** to restart the PC.
    Note: Before clicking **Finish**, remove the Westell CD-ROM from the CD-ROM drive.
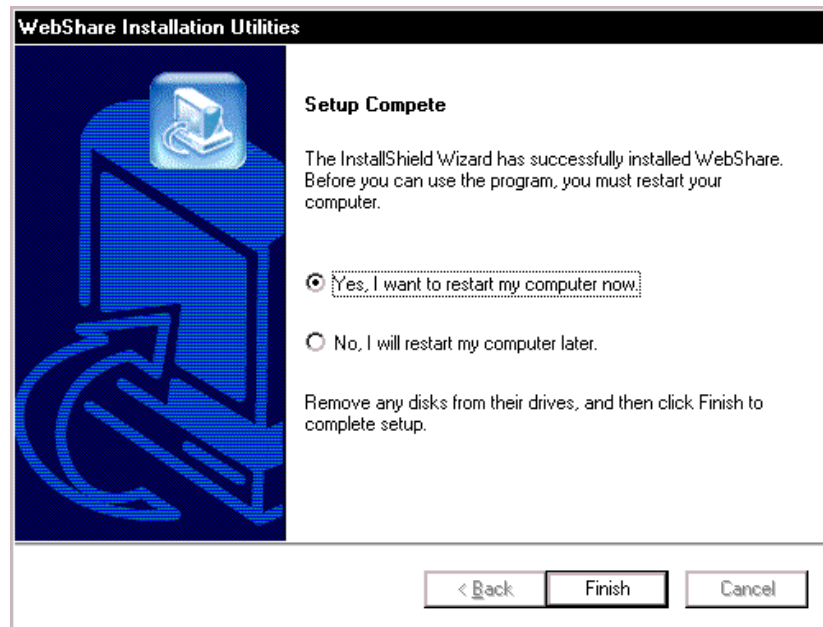
Figure 8. Setup Complete

This completes the basic WebShare setup process. When your computer restarts, the WebShare Home Page will appear. If you do not wish to set up a WebShare account at this time, you may open the WebShare Home Page by clicking on the WebShare icon on your desktop.

⚠ **NOTE** ⚠
Windows Internet Explorer users should proceed to the next page for instructions on disabling the autodial feature.

Disabling Autodial

(For Internet Explorer users.) A browser is typically set to dial into an ISP connection automatically when the browser is launched. In order to access the Internet through your "always-on" ADSL line, the autodial feature must be disabled.

Dial-Up Settings
Your Connection dial-up setting must be set to **Never dial a connection**. Follow this procedure to verify and/or change your dial-up setting:

1. Click **Start** > **Settings**, click **Control Panel**.
2. From the **Control Panel** screen, double-click **Internet Options**.
3. The **Internet Options** screen appears. Click the **Connections** tab.
4. In the **Dial-up settings** box, make sure that the option button for **Never dial a connection** is selected. NOTE: If the Dial-up Settings box is dimmed (grayed out) it means you have not yet set up any connections. If this is the case, you do not need to change any settings.
5. Click **OK**.
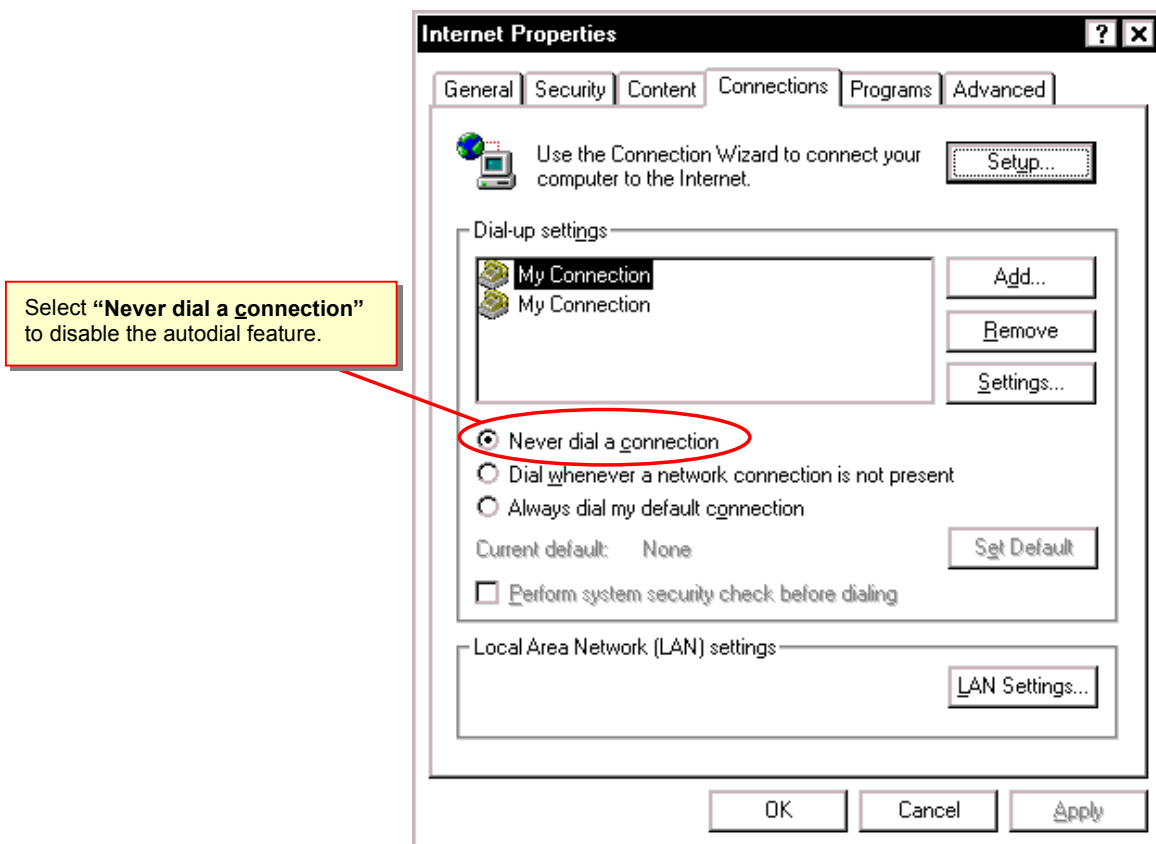
Figure 9. Internet Options Screen (Internet Explorer 5)

SETTING UP YOUR WEBSHARE ACCOUNT

The WebShare Icon

This section shows you how to set up your initial WebShare account. The installation program will also place a WebShare icon on your desktop. The icon will assist you in setting up your WebShare account.

Figure 10. The WebShare Icon

NOTE: The Home Page may also be accessed by opening the browser, typing **192.168.0.1** in the address bar (location bar) and pressing ENTER.

Setting Account Parameters

Account parameters are required before connecting to your service provider. The account parameters to be entered in the Configure Account dialog box are obtained from your service provider. **User ID** and **Account Description** are the only required parameters.

Procedure:
1. To add account parameters, open the WebShare Home Page by clicking the WebShare icon on your desktop. The WebShare Home Page containing PPP Status and PPP Connections windows appears.

Figure 11. WebShare Home Page

2. Under **PPP Connections**, click **New…** The **Configure Account** window appears. This is where you set the account connection parameters.

Figure 12. Configure Account Window

The Description is a word or phrase created to identify the account. For example, the following parameters were obtained from a service provider:

> User ID: Snape@inet
> Password: ******

With the following user-defined input:
>   Account Description: Account 2

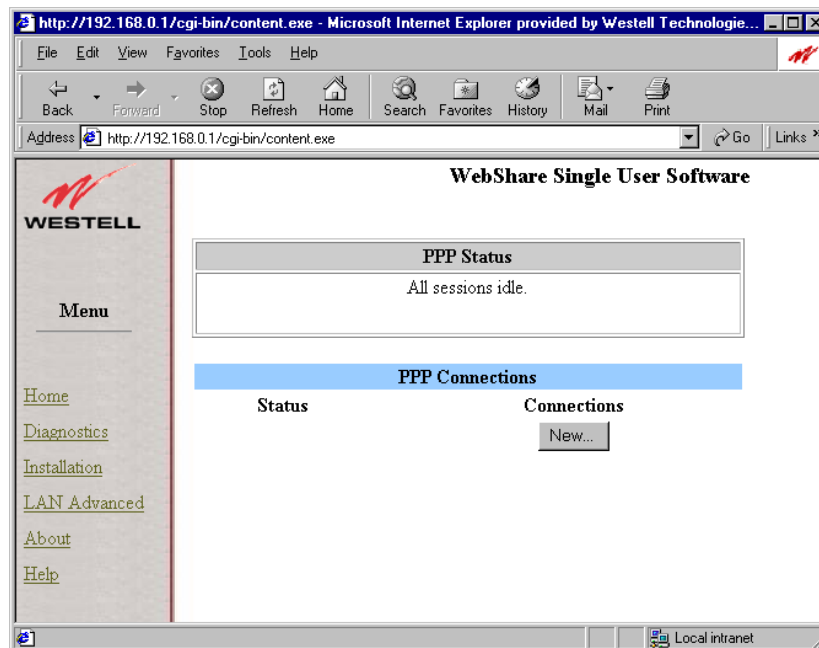The Account Description is the name that will appear on the WebShare Home Page under PPP Connections.

3. In the **Description** field, type the account description you have chosen to call this connection.
4. In the **User ID** field, type the user ID given to you by your service provider.
5. Click **Save**. The new account will now appear in the WebShare **PPP Connections** window.

Congratulations! You have just configured your first account. **Connecting to an Account** shows how to establish a connection.

Adding and Configuring Additional WebShare Accounts

To configure another PPP account, the following information must be obtained from your service provider:

- User ID
- Password

1. On the WebShare Home Page under **PPP Connections**, click the **New** button. The **Configure Account** window opens.
2. In the **Description** field, enter a description or name you wish to call the account. This can be any set of alphanumeric characters that make a user-friendly description for reference (e.g. Account 1, Sales 1, Internet 1, etc.) WebShare holds up to eight accounts.

3. In the **User ID** field, enter the user ID obtained from your ISP.

Figure 13. Configure Account Dialog Box

3. Click **Save** to commit these values to WebShare.

4. The **Configure Account** window closes and a new entry appears under **PPP Connections** on the Home Page.
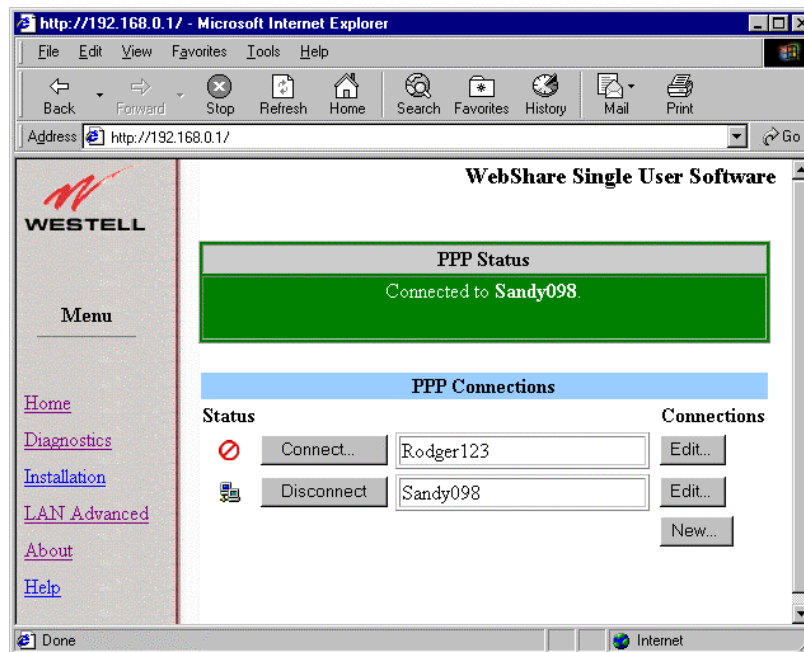
Figure 14. PPP Connections

To add more PPP accounts, repeat the configuration process described above. WebShare holds a maximum of eight accounts.

⚠️ **CAUTION** ⚠️

Only one account may be active at a time. Establishing a session for an idle account while another session is active will disconnect the currently active session.
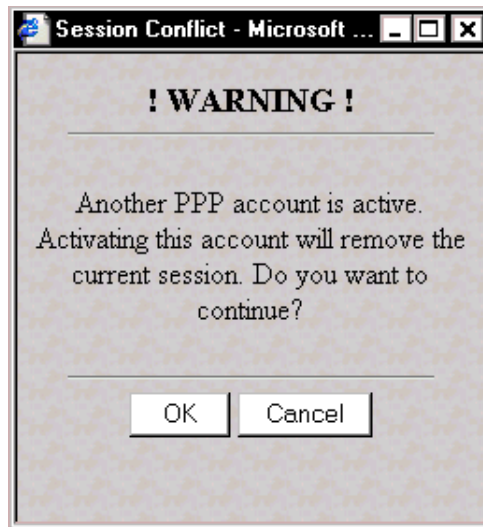

Figure 15. Session Conflict Warning

The Session Conflict warning indicates that a session is already active.

Using Auto-Redirection

With Westell's WireSpeed Auto-Redirection feature, the modem detects and informs users of connection problem. If a problem is found, the modem displays a Web page on the browser that identifies the problem. The Help screen offers possible solutions. Auto-Redirection will detect the following conditions:

Auto-Redirect Message	Possible Causes	Solution
No PPP Session Established (Figure 40)	An account has not been created.	Click **New** to create an account.
	An account was set up incorrectly.	Click **Edit** to change the account information.
	PPP connection not established.	Click the **Connect** button, enter password.
No DSL Connection (Figure 41)	The modem cannot detect a DSL connection.	• Make sure the DSL cable is plugged into the DSL jack. • Check all modem cable connections. • Make sure service provider has activated your DSL account.
Authentication Failure (Figure 42)	Incorrect user ID or password. (ID and password supplied by service provider.)	• Check spelling carefully. • Make sure CAPS LOCK is not on. • User ID/password may be case-sensitive. Use correct upper and lower case letters.
Can't Find Server (RAS) (Figures 43 & 44)	Modem has lost the connection.	Contact your service provider.

In each situation, the Web page displayed informs the user as to the nature of the problem and possible solutions. In cases where the user is trying to access a specific URL (example: http://www.Westell.com) outside the local network but has not established a PPP connection, the user will be automatically directed to the Home Page that indicates the session is idle. When the user makes the connection, they will be instantly redirected to the URL that was initially requested.

Help Screens

Help screens are available to describe common problems and solutions. To access a help screen, click **Help** in the Westell Menu column at the left of the screen.

For more information on the Auto-Redirection feature, see the "Troubleshooting" section.

CONNECTING TO AN ACCOUNT

Verify that the Ready LED of the modem is solid green and at least one PPP account has been created before activating a PPP session with your ISP.

Activating a PPP Session

To activate a PPP session, follow these steps:

1. Click the **Connect** button of the PPP account to be activated on the Home Page as shown in below.
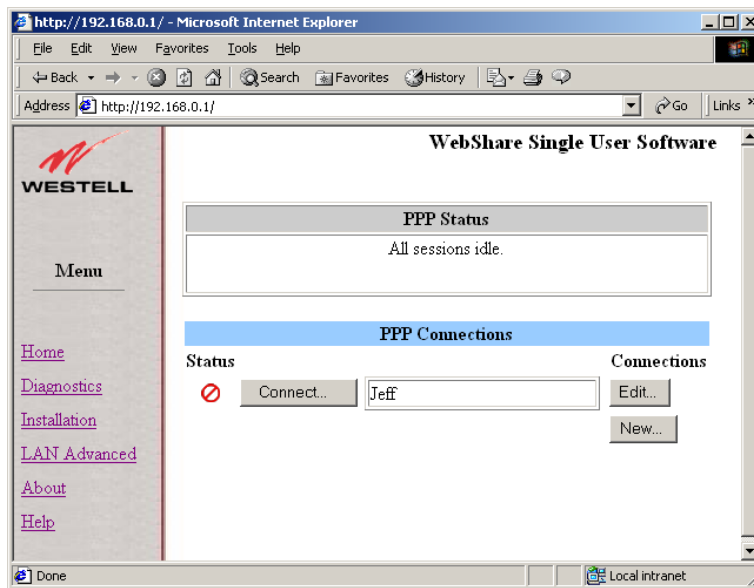
Figure 16. WebShare Home Page

2. In the **Connect** window enter your password (received from the ISP) for the User ID of that account. (A valid password must start and end with something other than a space.)

Figure 17. Connect Window

NOTE: Checking the **Save password and enable Auto-Reconnect** checkbox on the **Connect** window instructs WebShare to save your password. You will not be prompted for a password when using this connection in the future. WebShare will automatically connect to this account when powered on.

3. Click the **Connect** button. A **Connecting to** screen appears briefly. Once a connection is made, a **Connected to <connection>** message appears in the **PPP Status** box to inform you that a PPP session has been established on the connection you chose. (Where "<connection>" is the name of your connection.)
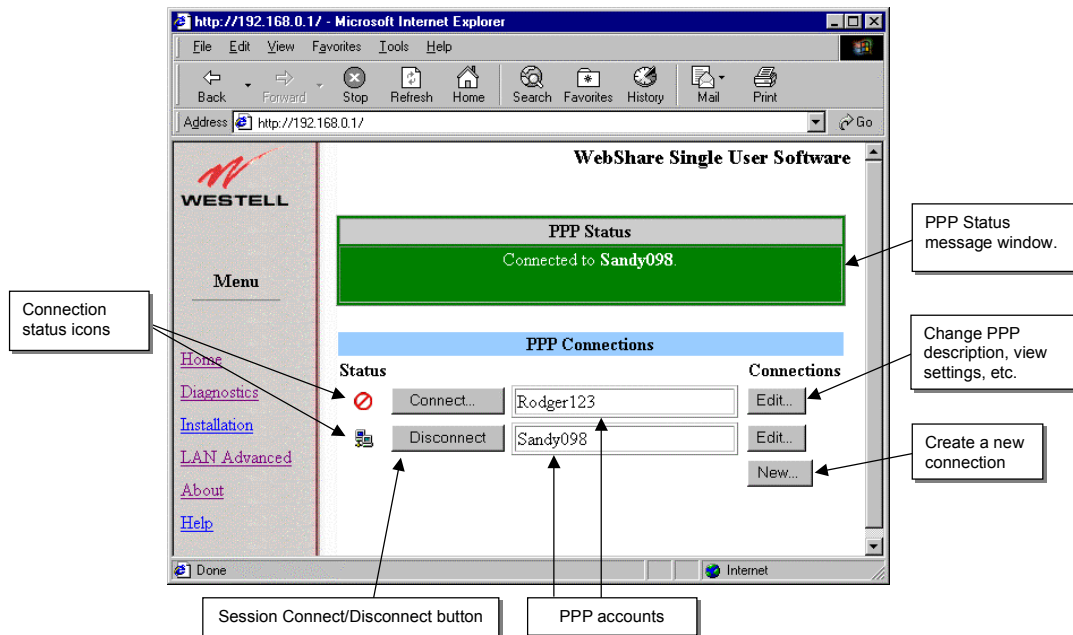
Figure 18. Connection Window

When a PPP session becomes active, the WebShare Home Page will show a **Disconnect** button in place of the **Connect** button in the PPP Connections section. The ![icon] icon replaces the ![icon] icon signifying that a PPP session has been established. The PPP Status window turns green and displays the connected Account.

After the PPP account connects to the ISP, you can browse the Internet by entering the desired URL (universal resource locator) directly into the Address box (Location box) of your browser.

You're now ready to surf the Internet!

Try: http://www.westell.com
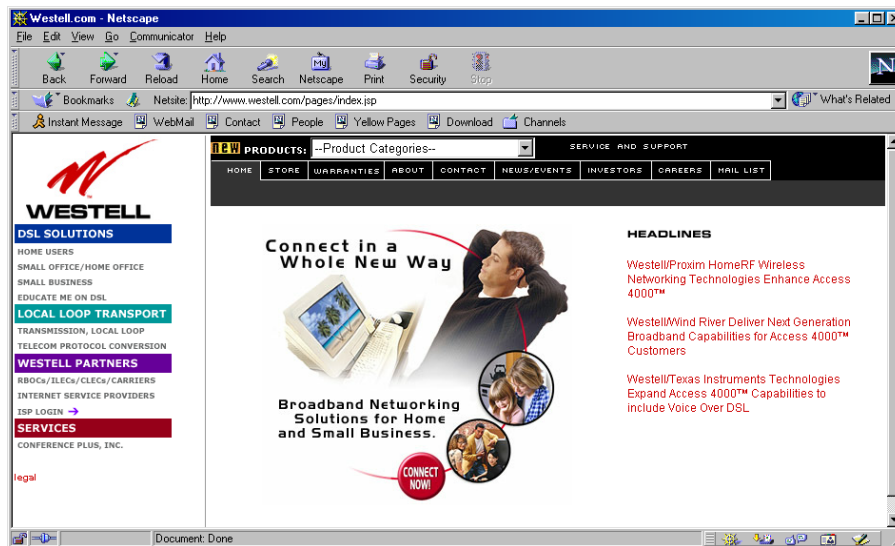
Figure 19. Westell Home Page

Disconnecting from a PPP Session

Your PPP connection remains live unless you disconnect it. Use the following procedure to disconnect an active PPP connection.

Procedure:
1. Return to the WebShare Home Page. Use any of the following methods:

    - Maximize WebShare, if you minimized the Home Page before surfing
    - Select WebShare from your Bookmarks or Favorites
    - Close your browser and double-click the **WebShare** icon on your desktop

2. On the WebShare Home Page, click the **Disconnect** button for your account on the WebShare Home Page. The disconnec Warning screen appears.

⚠ **CAUTION** ⚠
If ANY user disconnects a session, ALL active users are interrupted.
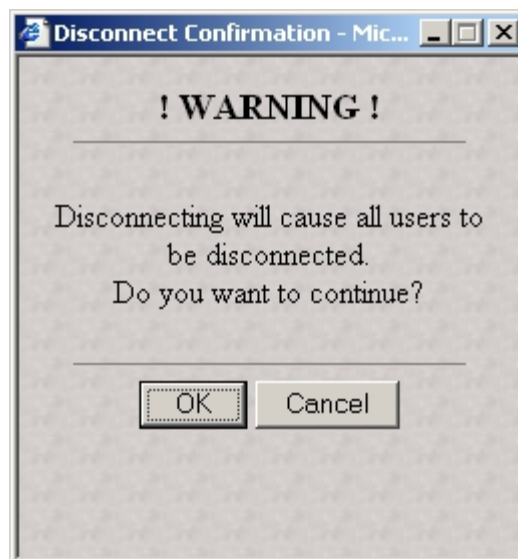
Figure 20. Disconnect Warning

3. Click **OK**.

4. On the WebShare Home Page, the ⊘ icon in place of the 🖳 icon signifies that a PPP session has been disconnected. Close your Web browser.

To begin another PPP session, click the **WebShare** icon on your desktop.

ADVANCED CONFIGURATION

This section covers the WebShare Management Interface features and includes instructions on changing WebShare settings.

Restarting WebShare

When adding, deleting, or modifying WebShare settings, the modem must be restarted for the changes to take effect.

When WebShare is saving information and issues a "Please wait ..." warning, wait until the screen returns to an active state before continuing. Certain actions (especially powering off the modem) during such activities may cause configuration data to be lost and cause problems with applications.

1. After making a setting change, click **Save**, WebShare will prompt you for a restart. The following message appears:
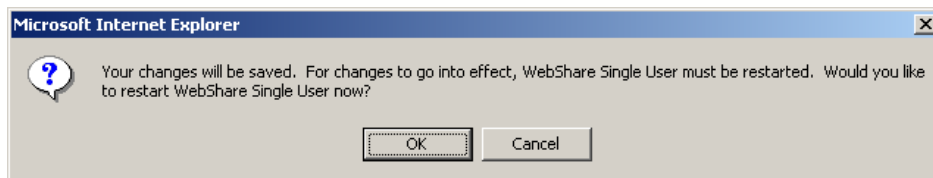
Figure 21.

2. Click **OK**. The following screen appears:
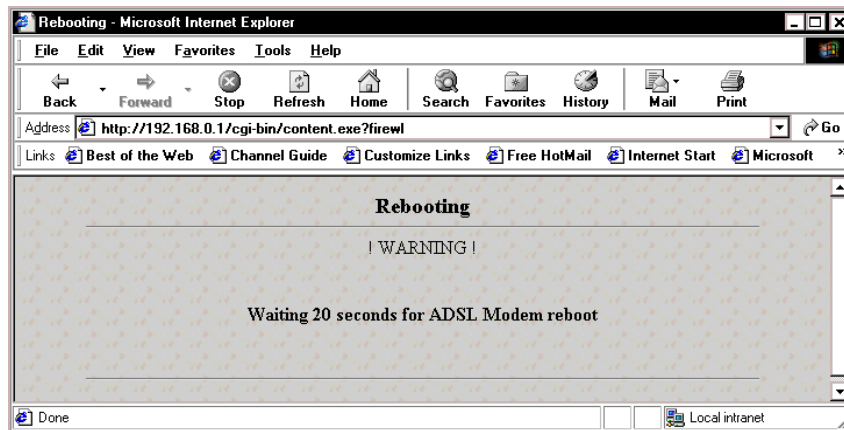
Figure 22.

3. The restart happens automatically and may take up to twenty seconds.

⚠️ **CAUTION** ⚠️

Do not turn the modem off while a restart is in progress or changes will be lost. You do not need to turn the modem or your PC off and on.

THE WEBSHARE MANAGEMENT INTERFACE

The Management Menu

Selecting the WebShare icon on the desktop activates your web browser and establishes a home page for WebShare. A **Management Menu** is located in the left portion of your home page. It provides links to the other management pages available for configuration, status, control and other operation information for WebShare.

Home
The WebShare Menu on the WebShare Home Page provides access to all the configured PPP accounts and allows PPP session control. This is the page you used when setting up your first account.

Diagnostics
Provides modem and PPP session diagnostic capability.

Installation
Provides a method for installing an upgrade to WebShare software.

LAN Advanced
Allows the editing of local Ethernet interface configuration parameters.

About
Contains the model number, serial number and software versions of WebShare

Help
Provides help information for the management page being displayed.
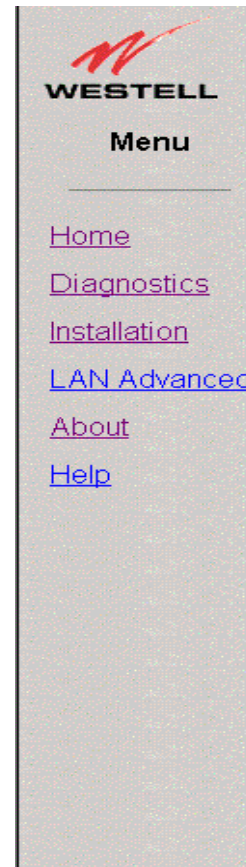
Figure 23. Management Menu

The Home Page

The WebShare Home Page provides access to all of the configured PPP accounts and allows users to establish connections, create accounts and edit accounts. This is the same screen you used when you set up an account on page 11.
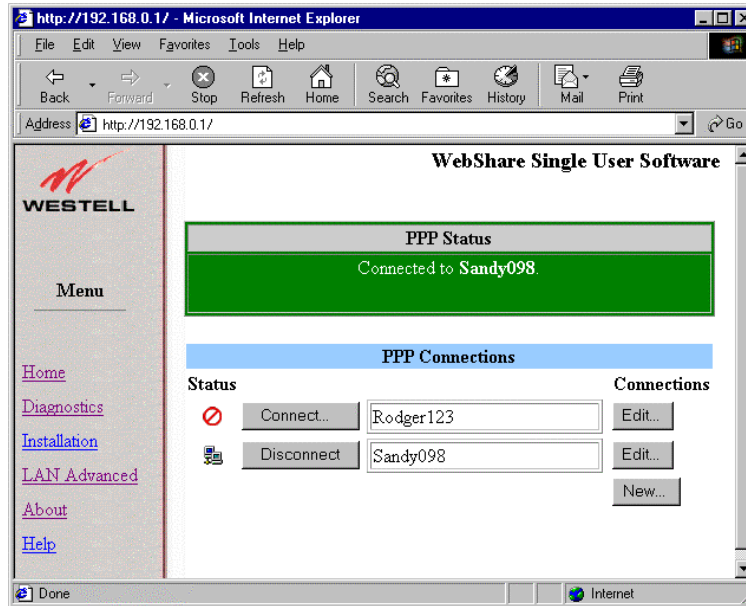
Figure 24. WebShare Home Page

PPP Status
The PPP Status box displays the color-coded status for the current connection state:

> Blue = connection idle
> Green = connection established
> Red = error

In addition to the color coding, the box may contain error message text.

PPP Connections
The PPP Connections section provides a description of each individual PPP account. The text string is the user-friendly description you entered in the Configure Account dialog box. Other fields for this section are defined below.

Connect/Disconnect Button
The **Connect**/**Disconnect** button provides PPP session control for the associated account. This allows you to connect and disconnect from various PPP accounts, when desired. This button changes depending upon the state of the PPP session. If the account is inactive, the button reads **Connect**. If the account is active, it reads **Disconnect**.

New Button
The **New** button gives users the ability to create new accounts. Edit lets users change the account description and view configuration data.

Edit Button

The **Edit** button allows users to change settings for an account. Note: User ID and passwords are usually assigned by the service provider. Users may freely change the account Description.

Connection Status

The **Status** column indicates the connection status of each PPP account.

This icon shows that the account is INACTIVE. (No connection established.) Click **Connect** to activate the connection.

This icon shows that a PPP account is ACTIVE. (A connection is currently active.) Clicking on this icon will disconnect the user. (An empty account has no icon in the Status column.)

Building New Accounts

To add a new account to the Home Page, see "Setting Up Your WebShare Account" on page 11 and "Adding and Configuring Additional WebShare Accounts" on page 12.)

Click the **New** button. In the **Configure Account** dialog box, type a description of the account into the **Description** field and the user ID defined by your ISP. Click the **Save** button in the dialog box to commit the new account information to WebShare.

IP Addresses Assigned as Part of PPP Session Setup

When a PPP session is established, your service provider's PPP server assigns an IP address to your modem's DSL interface. It also informs your modem of the IP addresses to which it should send DNS requests. It may be necessary to verify one of these IP addresses for a specific PPP account while troubleshooting. To view the current settings for an account:

1. Click the **Edit** button of the appropriate PPP account. The **Configure Account** dialog box appears.
2. Click the **Advanced** button to view the DNS and IP information.
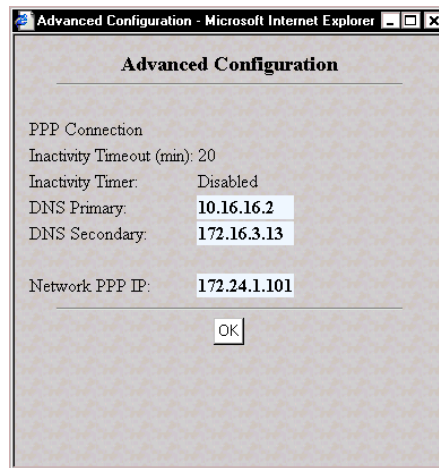
Figure 25. Advanced Configuration (Sample values. Actual data may vary.)

The **Advanced Configuration** dialog box displays your DNS IP values. These values and the Network PPP IP only appear when a connection is established. **Settings cannot be changed on the Advanced Configuration dialog box.**

Diagnostics

Accessing the Main Diagnostics Page

Select the **Diagnostics** menu item from the WebShare management menu to display the Diagnostics page. The figure below shows the Diagnostics window before any diagnostic tests have been performed.

Figure 26. Diagnostics Window

Test All

The **Test All** button will execute all of the tests sequentially beginning with the Self-Test and ending with PING.

⚠️ **NOTE** ⚠️
To get a valid PING result, you must enter an IP address in the PING fields.

The figure below shows the Diagnostics window returned after clicking the **Test All** button and providing PING IP address values.
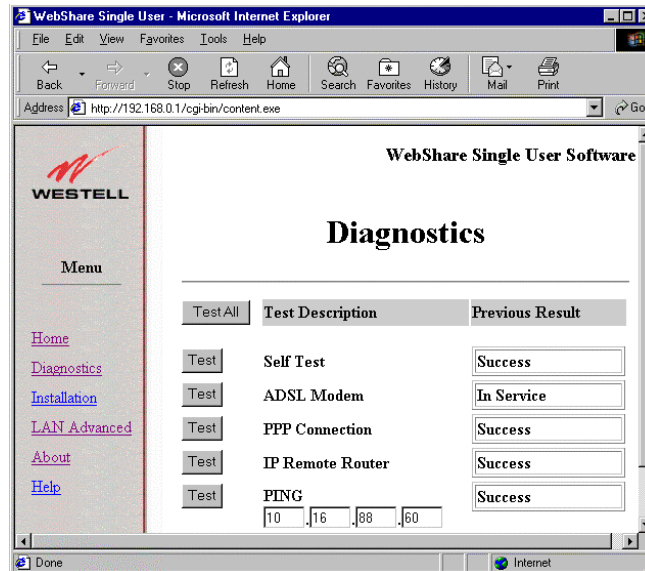
Figure 27. Diagnostics Window (Sample values. Actual data may vary.)

Self-Test

This test button starts a testing process that verifies the integrity of all PPP account information.

> *Messages:*
> - **Success**: All stored information verified correctly.
> - **Failure**: An error was detected in the stored PPP account information. The information needs to be re- entered.

ADSL Modem

This test button initiates a testing process that verifies management communications with the modem transceiver.

> *Messages:*
> - **In Service**: The modem is synchronized with the central office Channel Unit and is ready to send/receive data.
> - **Out of Service**: The modem transceiver is NOT synchronized with the central office Channel Unit, but is functioning properly. (This may happen if the connector cable is not correctly plugged into the modem or the access jack.)
> - **Failure**: The modem transceiver is not functioning properly.

PPP Connection

This test button initiates a testing process that verifies connectivity with the service provider's Remote Access Server (RAS).

> *Messages:*
> - **Success**: The modem has a verified connection with the ISP and is ready to send and receive data.
> - **No PPP Connection**: There is no link between the modem and the central office equipment.
> - **Failure**: A PPP session is active, but the modem failed to get a response from the Remote Access Server.

IP Remote Router

This test button initiates a test that pings the remote IP address linked by the PPP session establishment.

> *Messages:*
> - **Success**: A response was obtained from the remote IP address.
> - **No PPP Connection**: No link found between the modem and the central office equipment.
> - **Failure**: No response from the remote IP address.

PING

This test button initiates a 'ping' to any host IP address specified in the PING data fields. A PING (Packet Internet Groper) is a protocol program for sending a signal to see whether another network host or other device is on-line and responding. This application will tell you if a particular entity is presently connected to the Internet. It is used to check if a machine on the Internet is alive and reachable.

> *Messages:*
> - **Success**: A response was obtained from the IP address entered.
> - **No PPP Connection**: No link found between the modem and the Central Office equipment.
> - **Unknown Host**: No response from the specified IP address.

The New Software Installation Page

This screen is reserved for installing future software upgrades. Westell will provide instructions with new upgrades.
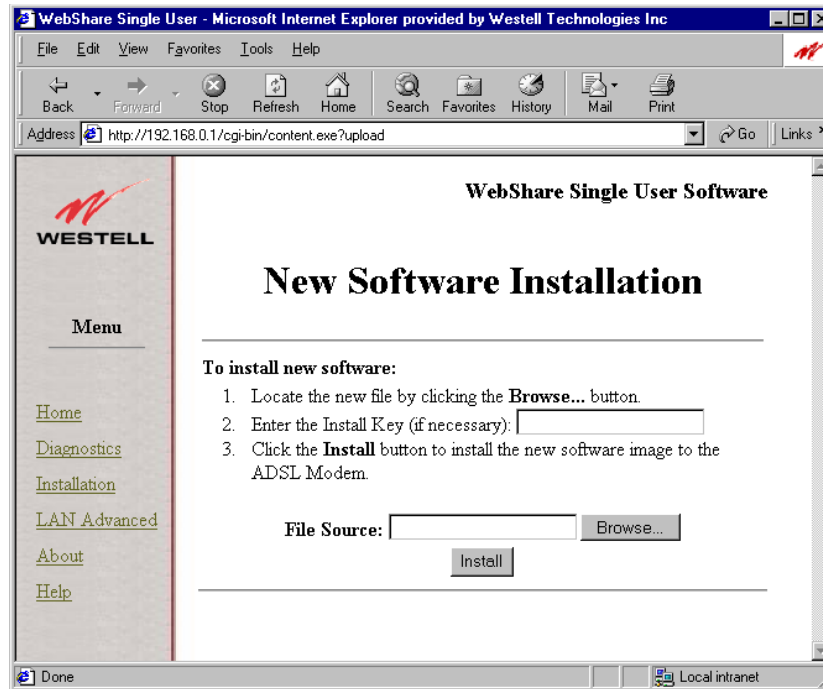
Figure 28. Software Installation Window

The LAN Advanced Configuration Page

Accessing the LAN Advanced Configuration Dialog Box

The **LAN Advanced Configuration** dialog box is accessed by selecting the **LAN Advanced** menu item from any of the WebShare management windows.

The LAN Advanced Configuration dialog box displays the local Ethernet characteristics including the IP address, subnet mask, DNS proxy IP addresses, and the state of the DHCP server. After making any changes to this data, click the **Save** button to save the new account information. You will be prompted for a modem restart. Allow 20 seconds for the restart to complete. Interrupting the restart process may cause you to lose your setting data. (See "Restarting WebShare" on page 20.)

These parameters are stored and remain in WebShare until changed, or until the default values are reset with the IP Reset Utility for WebShare. (Option 3 on the **Function Selection** screen. See page 7.)

⚠ CAUTION ⚠

If the IP address is changed, WebShare will not respond to the default IP address of 192.168.0.1. Be sure to change the URL to the new IP address when accessing the management pages.

Figure 29. LAN Advanced Configuration Dialog Box (Sample values. Actual data may vary.)

IP Address

The Internet Protocol (IP) address is a unique 32-bit number used to identify the host computer connected to a TCP/IP network. The value of the IP Address is represented in a dotted decimal format. WebShare assigns 192.168.0.1 to this address by default. This value may be changed to any valid IP address e.g. an 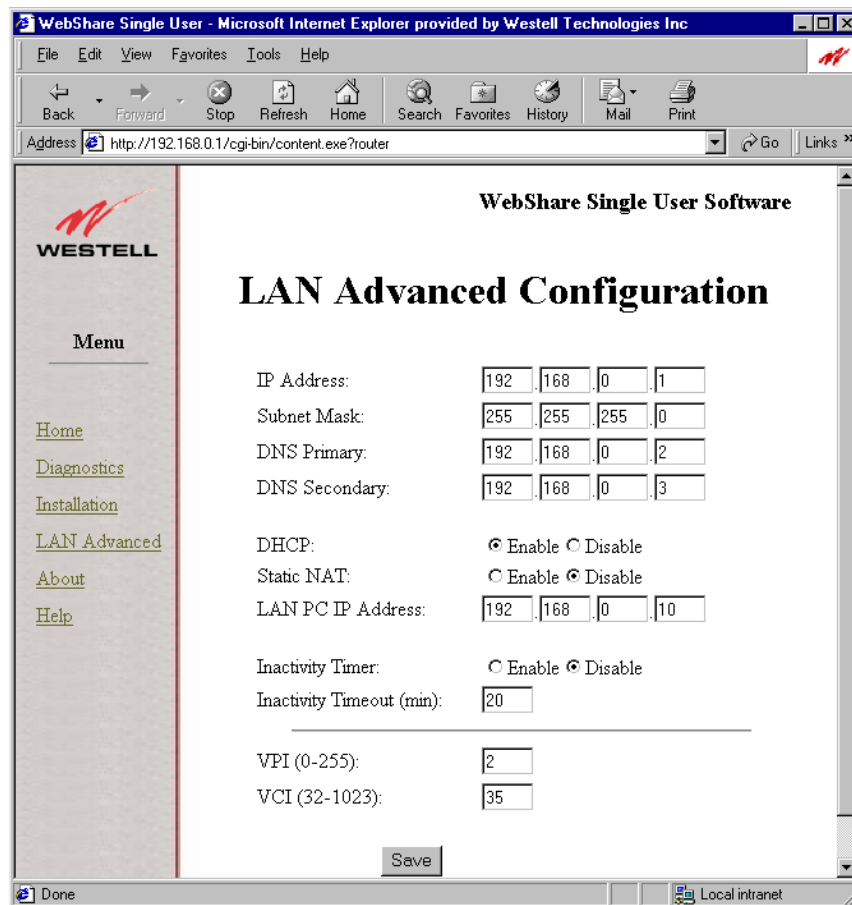existing address assigned for local LAN administration. Note: If the default IP Address needs to be changed, the DHCP Base and End addresses will also have to be adjusted. All changes will be entered in the LAN Advanced Configuration screen.

Subnet Mask

The subnet mask is a 32-bit number used to identify the network and host segments of an IP address. This value is represented in the same dotted decimal format as the IP address. This is the subnet mask associated with the IP address above. This value should not be set to a subnet address greater than 255.255.255.248 to accommodate the WebShare IP.

> The default value for the subnet mask is 255.255.255.0.

Domain Name System (DNS) Primary

The domain naming system is a convention used for identifying computers attached to the Internet or a Local Area Network (LAN). DNS maps a name to its corresponding IP address. A host desiring to resolve a domain name to the IP address uses the main DNS server. The secondary or backup DNS server performs the same function as the main server.

> This IP address represents the address that WebShare uses to respond to primary DNS queries from your computer. The default value is 192.168.0.2.

Domain Naming System (DNS) Secondary

This IP address represents the address that WebShare uses to respond to secondary DNS queries from your computer.

> The default value is 192.168.0.3.

Dynamic Host Configuration Protocol (DHCP)

DHCP is a protocol used to automate the administration of IP addresses within a local area network. A server provides the IP allocation for computer hosts that are running a DHCP client. This controls the state of the local WebShare DHCP Server.

> The default value is **enabled**.

Static NAT

If enabled, Static NAT makes it possible to specify an IP address to which WebShare should direct unsolicited inbound traffic. For example, it lets you allow users on the Internet to access your local Web server.

> The default value is **enabled**.

LAN PC IP Address

This IP address serves two purposes. If DHCP is enabled, this is the IP address that will be assigned to the DHCP client computer. If Static NAT is enabled, this is the IP address to which that traffic will be directed.

> The default value is 192.168.0.10.

Inactivity Timer Timeout

WebShare provides an Inactivity Timer that closes an active PPP session if there has been no traffic through the modem from or to any user. The timeout value may be adjusted on the LAN Advanced Configuration window. For a session to be "always on", select the **Inactivity Timer Disable** option.

> The Inactivity Timeout Value determines the length of time a session will remain connected with no data flow in either direction. The default setting is disabled. To enable, select LAN Advanced from the Management menu. In the LAN Advanced Configuration window, select the Enable option and enter an Inactivity Timeout time in minutes. The valid range is from 0 to 9999 minutes. A zero has the same effect as disabling the timer.

VPI/VCI Parameters

Viewing VPI/VCI Parameters

Your service provider will provide you with a VPI (Virtual Path Indicator) and VCI (Virtual Channel Indicator) which are path assignments for your ADSL connection. To verify your VPI/VCI settings, select **LAN Advanced** from the WebShare Home Page Menu.

The WebShare **LAN Advanced Configuration** window shows the current configuration settings.

⚠ **NOTE** ⚠

Westell modems are shipped with VPI/VCI preset for your area. If these need to be changed, contact your service provider for the correct settings and follow the instructions on the next page.
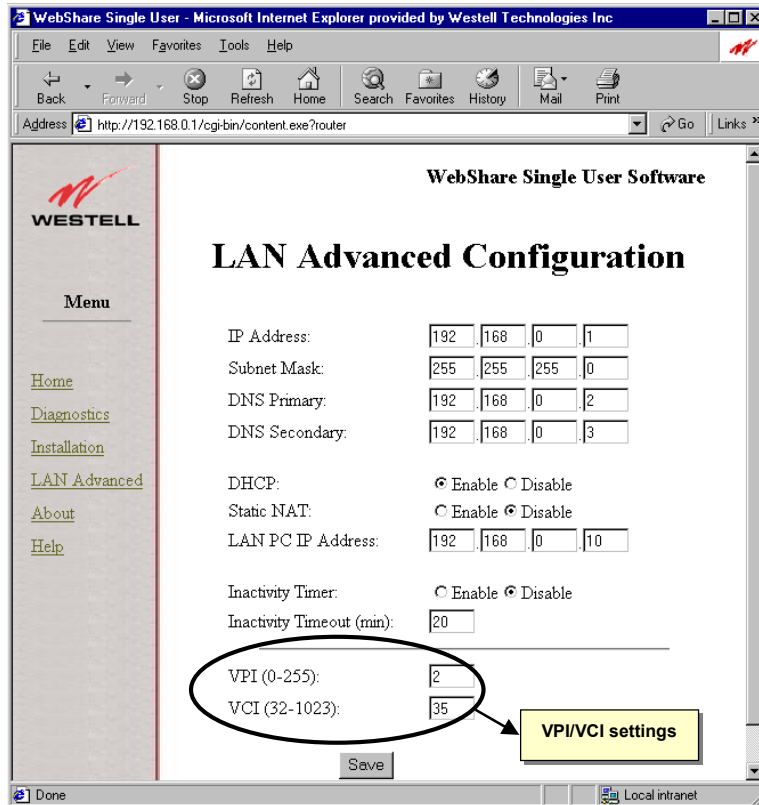
Figure 30. LAN Advanced Configuration Window

Changing VPI/VCI Settings

⚠ **CAUTION** ⚠

Do not change your VPI/VCI settings unless instructed to do so by your service provider!

Current VPI/VCI settings are located on the LAN Advanced window. To change them, type the correct numbers in the fields provided and click the Save button at the bottom of the screen. The setting change will not take place until the modem has restarted. Follow the on-screen instructions.

VIRTUAL PRIVATE NETWORK SUPPORT

Your WireSpeed modem supports Virtual Private Networks (VPN). VPN allows users working at home or at an off-site location to create a direct "tunnel" to a corporate LAN server. The VPN is a point-to-point connection between the user's computer and another network (usually a corporate LAN). This direct connection avoids much of the Internet congestion and allows secure communication and encryption.

The WireSpeed modem VPN feature supports the PPP-to-PPTP relaying protocol. Settings for VPN must be made to both sides of the VPN "tunnel" connection: the user PC and the corporate LAN server.

NOTE: Before creating a VPN connection, you must have created a PPP account and established a PPP session.

VPN Requirements

To operate the VPN feature of your Westell modem, the following requirements must be met:

- **Service Provider.** Your service provider must provide the following:
  – VPI/VCI values for PPP service
  – User ID and password
  If you already have DSL service, use your existing user ID and password.

- **Personal Computer.** Your computer must support Point-to-Point and Point-to-Point Tunneling Protocol (PPTP). Please refer to your original operating system documentation to see if your PC supports these protocols.

- **Operating System.** Your Westell modem supports VPN on Windows 98, Windows Me, Windows 2000, and Windows NT operating systems.

- **TCP/IP**. Prior to establishing PPTP tunnels, IP addresses must be properly configured at both ends of the PPTP tunnel. This means both your PC and the PPTP server for your corporate LAN.

- **Corporate LAN**. Check with your corporate IT or LAN group to make sure that such connections are supported. You will need the IP address or host name of the corporate LAN server.

INSTALLING VPN

The following sections describe how to install VPN client and create a connection for Windows 98 and later operating systems.

Installing VPN for Windows 98/Me

Use this four-step process to install VPN client for Windows 98 or Windows Me (Millennium Edition).

1. Click **Start**, point to **Settings**, click **Control Panel**, and then double-click **Add/Remove Programs**.

2. Click the **Windows Setup** tab.

3. Click **Communications**, click **Details**, click to select the **Virtual Private Networking** check box, and then click **OK**.

4. Click **OK**, and then click **Yes** to restart your computer.

You may now create a VPN connection. See the appropriate section for your operating system.

Creating a VPN Connection

After you have installed VPN, you must create a new connection in Dial-Up Networking.

NOTE: You need the host name or IP address of your corporate LAN (or other service provider) to make this connection. Check with the administrator of the server to which you are trying to connect to get this information. Some systems may require DNS settings for VPN connections. Check with the system administrator.

Creating a VPN Connection for Windows 98

To create a VPN connection for Windows 98:

1. Double Click **My Computer** and then double-click on **Dial-Up Networking**.

2. Double-click **Make New Connection**.

3. In the **Type a name for the computer you are dialing** box, type the name that you want to use for the connection.

4. In the **Select a device** box, choose **Microsoft VPN Adapter**, and then click **Next**.

5. In the **Host name or IP Address** box, type the name of the server or the IP address.

6. Click **Next**, and then click **Finish**.

Creating a VPN Connection for Windows Me

To create a VPN connection for Windows Millennium Edition:

1. Click **Start**, point to **Settings**, click **Control Panel**, and then double-click **Dial-Up Networking**.

2. Double-click **Make New Connection**.

3. In the **Type a name for the computer you are dialing** box, type the name that you want to use for the connection.

4. In the **Select a device** box, choose **Microsoft VPN Adapter**, and then click **Next**.

5. In the **Host name or IP Address** box, type the name of the server or the IP address.

6. Click **Next**, and then click **Finish**.

Creating a VPN Connection for Windows 2000

To connect to a VPN server on a corporate LAN, you need to first make sure that you are connected to the Internet by connecting to your ISP. Connecting to the Internet puts you on the same worldwide Internet backbone where the corporate VPN server is connected. Next, you make a second connection to create a VPN connection.

To create this second connection to the corporate server, follow this procedure:

1. Click **Start**, **Settings**, **Network and Dial-up Connections** and select **Make New Connection** to start the Network Connection Wizard.

2. From the **Network Connection Type** screen, select **Connect to a private network through the Internet**.
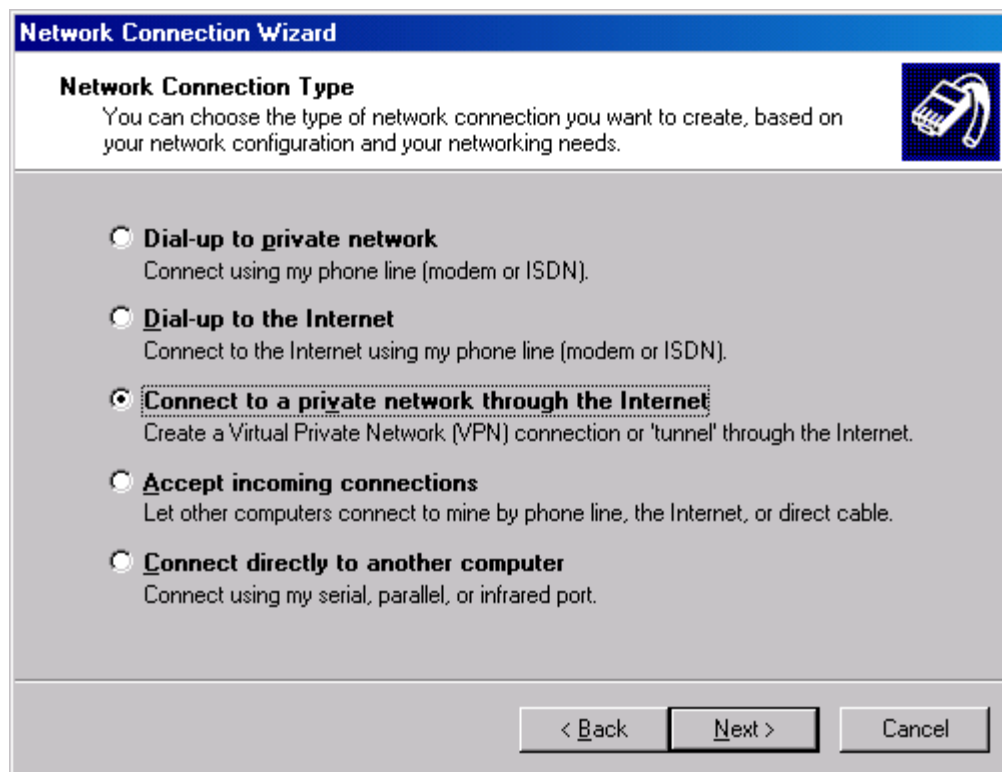

Figure 31. Network Connection Type

The **Public Network** screen appears.

3. On the **Public Network** screen, select the option **Do not dial the initial connection**. Click **Next**.
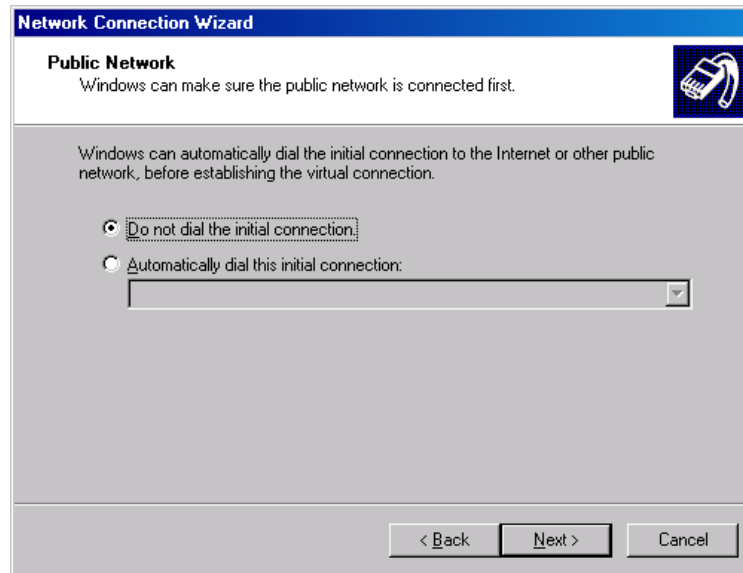
Figure 32. The Public Network Screen

4. On the **Destination Address** screen, type the **host name** or **IP address** of the corporate LAN to which you are connecting. Click **Next**.

Figure 33. Destination Address

The **Connection Availability** screen appears.

5. On the **Connection Availability** screen, click the option **Only for myself**. Click **Next**.

Figure 34. Connection Availability

6. Follow the on-screen instructions to finish the wizard.

When you use your connection, by default you will only have the option to type your user name and password.
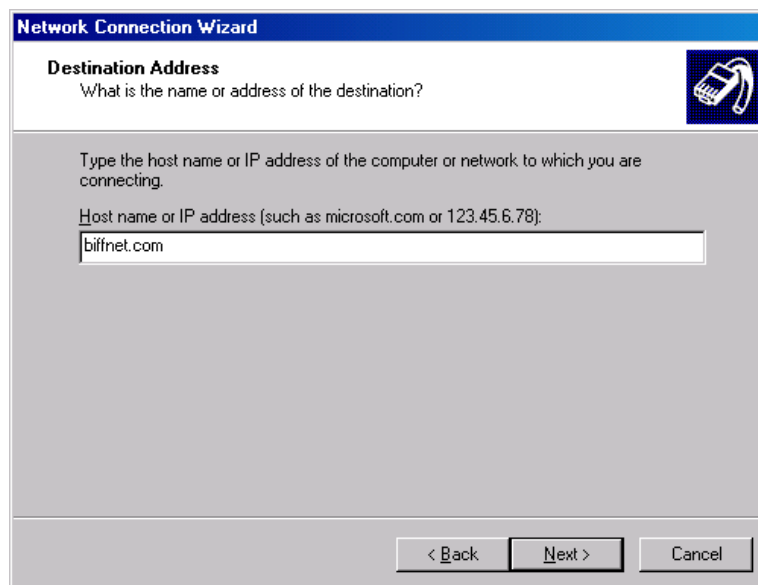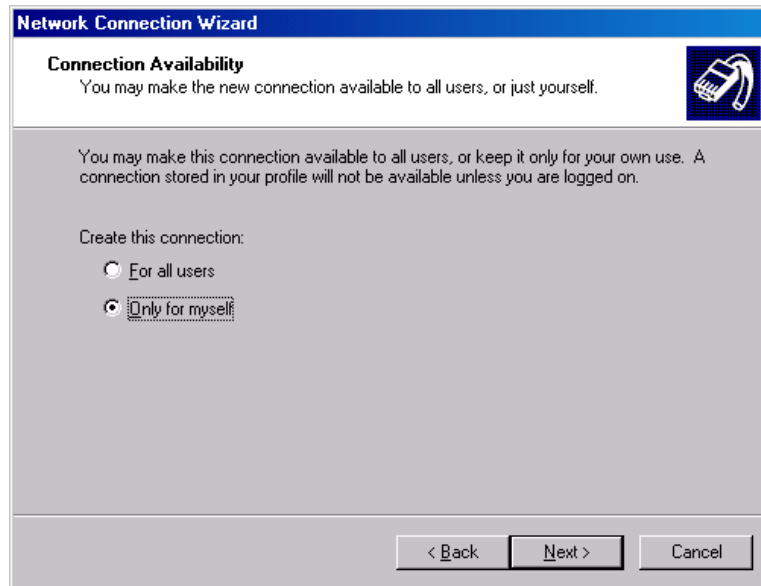
Domain Option
A corporate LAN connection may prompt remote users for a domain name for full access to features such as corporate e-mail and file sharing.

To add the domain option, follow these steps:

1. Click your connection icon (or click **Start**, point to **Settings**, **Network and Dial-up Connections** and click your connection name).

2. The **Connect To** dialog box opens. (The name of your connection appears in the title bar.)

3. Click **Properties**. On the **Options** tab select the box **Include Windows logon domain**, as shown below.
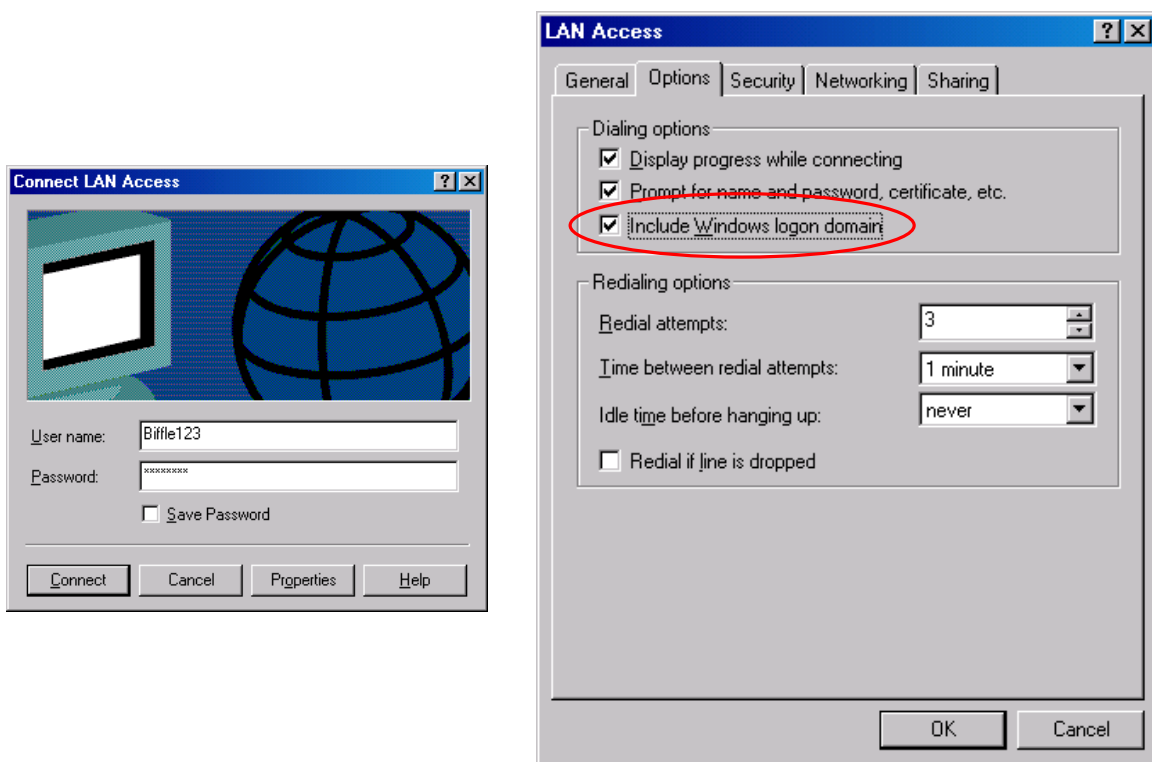
Figure 35. Including Windows Logon Domain

4. Click **OK**.

Using a VPN Connection (Windows 2000)

After configuring the connection, follow these steps to establish a connection:

1. Double-click the icon in the **Dial-Up Networking** folder or click the shortcut on your desktop.

2. The **Connect to** window appears. (The name of your connection appears in the title bar.) Type the **User name** and **Password**. If using the domain option, type the **Logon domain** name.

   The figure below shows the Connect To screen with (right) and without (left) the domain option.

   NOTE: To avoid entering the password each time, you can save it by checking **Save Password**. The next time you establish this connection, both **User name** and **Password** are displayed automatically. (The password field is encrypted for security.) If you are using the domain option, the **Logon domain** will also be saved.
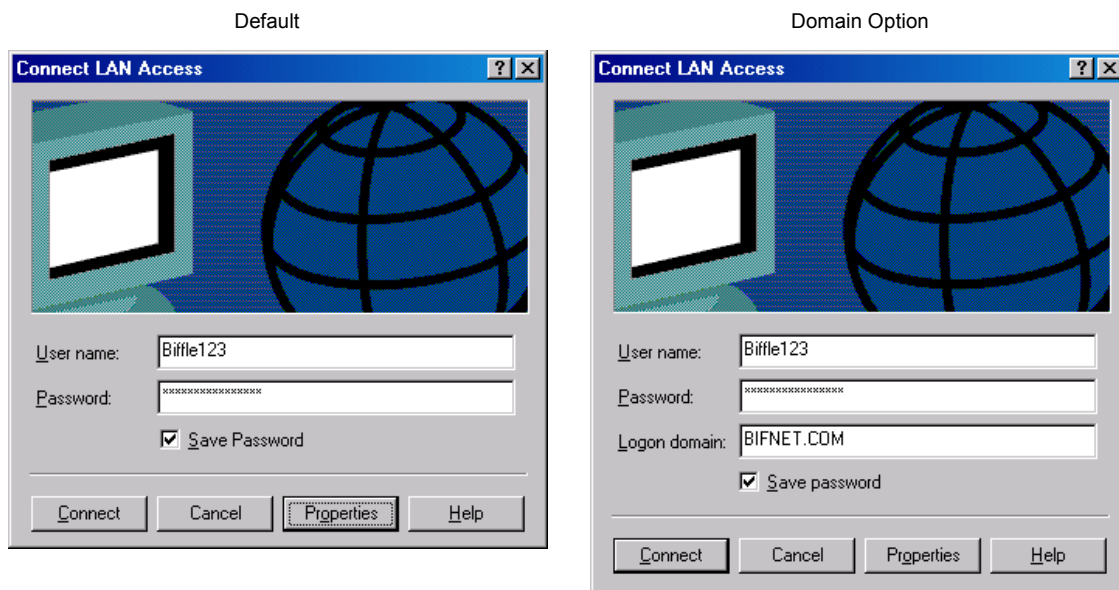
Figure 36. Connect To Screen

3. Click **Connect**.

4. The **Connecting To** window appears briefly.

5. You can now open your Web browser.

NOTE: While connected, you can open the **Connected To** window by double-clicking the minimized icon in the task bar.

Disconnecting a VPN Connection (Windows 2000)

Use the following steps to release a VPN connection:

1. If minimized, double-click the connection icon in the task bar.
2. In the **Connected To** window, click **Disconnect**. The VPN connection no longer exists.

CONFIGURING VPN FOR WINDOWS NT

This section describes how to create and set up PPP/PPTP Dial-Up connections for Windows NT.
NOTE: Make sure that Microsoft Service Pack 3 has been installed on your computer before creating PPTP tunnel sessions.

Installing PPTP for Windows NT

Before you create VPN connections, install the PPTP networking protocol as follows:

1. From the Windows taskbar, click **Start** > **Control Panel** > **Network**.

2. The Network window appears. Click the **Protocol** tab then click **Add**.

3. The **Select Network Protocol** window opens. Select the **Point To Point Tunneling Protocol** from the list. Click **OK**.

4. Setup will copy some Windows NT files and prompt you for the correct path. You may have to explore the Windows CD to find the folder appropriate for your system. Specify the path and click **Continue**. The installation will load the necessary PPTP files.

5. The **PPTP Configuration** window opens. Enter the number of connections you wish to make. For most users, this will be one. Click **OK**.

6. A setup message appears. Click **OK** to begin configuring the RAS.

NOTE: This completes the first part of the installation, adding PPTP as a remote protocol. The remaining steps of the installation configure the RAS for PPTP.

7. The **Remote Access Setup** window appears and lists the modem that is already set up. To add the new VPN ports to RAS, click **Add**.

8. The **Add RAS Device** window appears. Each port must be added individually. To add a port, double-click on the correct port and click **OK**. Repeat steps 7 and 8 for each VPN.

9. By default, the ports are configured for dial-in only. To change this, in the **Remote Access Setup** window, select a port and click **Configure**.

10. The **Configure Port Usage** window opens. Select **Dial-out only** and click **OK**.

11. Repeat steps 9 and 10 for each port you wish to configure before proceeding to step 12.

12. To define which PPTP tunneled protocols you will allow through the VPNs, highlight each port and click **Network**. The **Network Configuration** window opens. Enable the IP protocol. Click **OK**.

13. Click **Continue**, then click **Close**. The computer will prompt you for a restart for the changes to take effect. Click **Yes**.

Creating a New VPN Phonebook Entry for Windows NT

The following procedure tells how to create a VPN Phonebook entry for use with a corporate LAN or dial-up transport. A VPN connection contains the IP address of a PPTP server and the user account information for that server. WebShare allows you to create and store up to eight accounts for VPN and other types of connections.

To create a VPN connection to a server on your corporate LAN:

1. Click **My Computer** > **Dial-Up Networking**.

2. The **Dial-Up Networking** window appears. The Phonebook entry selection box lists all existing PPTP connections. Click **New** to create a new connection.

3. The **New Phonebook Entry Wizard** opens.

4. Enter a name for the tunnel you are creating. The PPTP tunnel will be saved in the phonebook under this name. Click **Next**.

5. The **Server** window opens. Activate all the options that apply to your tunnel. Click **Next**.

6. The **Phone Number** window opens. Enter the Phone Number of the dial-up server you are calling. (The IP address or DNS host name of the PPTP server on your corporate LAN.)

7. Click **Next**.

NOTE: Multiple Numbers. You can assign more than one phone number (IP address or DNS host name) to each entry. This can be useful if you have a pool of host names and addresses to connect to. To do this, click **Alternates**.

8. The **New Phonebook Entry Wizard** informs you that the new tunnel was successfully created. Click **Finish**. The tunnel definition is saved and added to the Phonebook entries.

Logging On to a VPN Server

After the connection to your VPN server has been created, proceed as follows to log on:

1. Click **My Computer** > **Dial-Up Networking**.

2. The **Dial-Up Networking** window opens. In the **Phonebook Selection** box, select the tunnel you want to set up and click **Dial**.

3. The **Connect To** window appears. Enter your password for the VPN server. To save your password, click the **Save Password** check box.

4. Enter the optional information in the **Domain** box. (This is only required for some Microsoft NT VPN servers.) Click **OK**.

5. The **Connecting to** <connection name> window appears and displays the status of the connection process. Once the connection is established, the window is minimized to the taskbar.

Disconnecting a VPN Connection

Use these steps to close a PPTP tunnel:

1. Click the connection icon for the tunnel you wish to close.

2. Click **Disconnect**.

The VPN connection to your service provider or corporate LAN has been disconnected.

The WebShare About Page

The About page provides the model number and version information for WebShare. This information is necessary when calling for technical support. (Sample data shown below--your information will vary.)
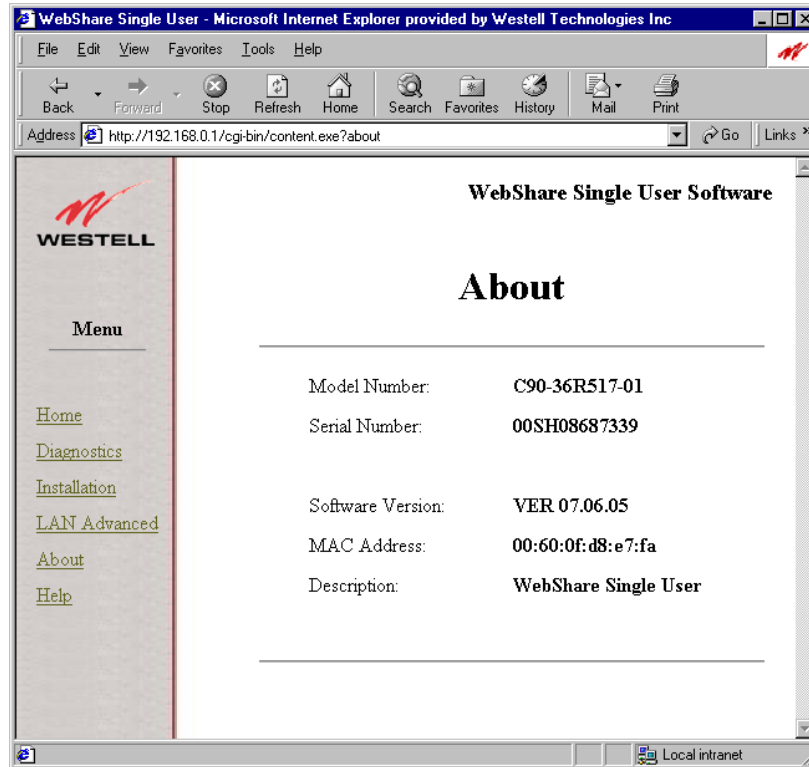

Figure 37. WebShare About Window (Actual data may vary.)

WebShare Help

The Help feature on the WebShare Management Menu is context-sensitive. Clicking **Help** will display information about the page you are currently on.

TROUBLESHOOTING

Software Installation

If you have more than one adapter, the following screen appears:
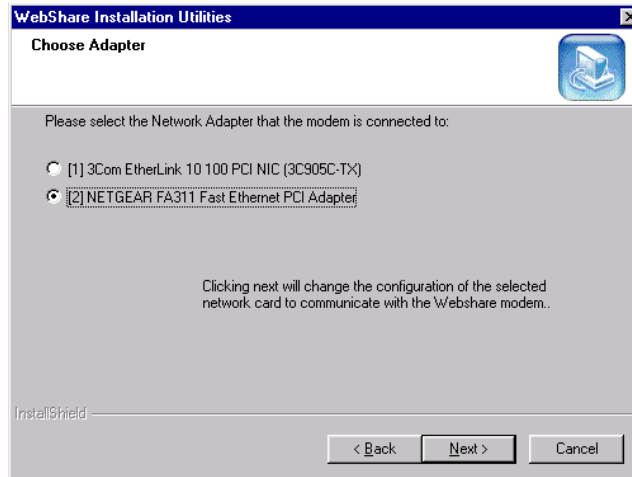
Figure 38. Choose Adapter

Click the option button for the network card the modem is connected to. Click **Next**. The **IP Address Settings** screen appears.
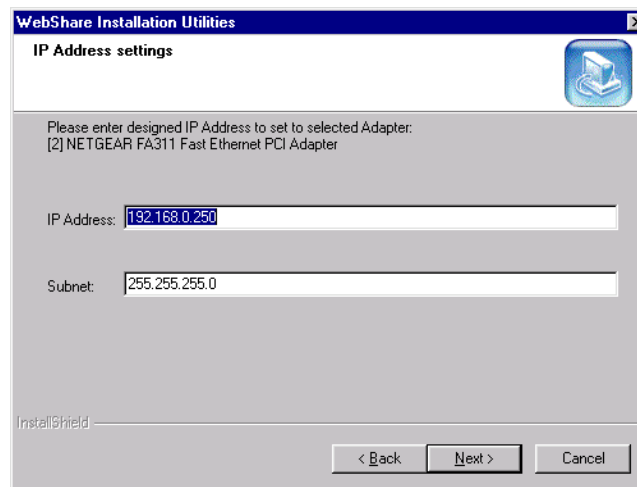
Figure 39. IP Address Settings

If you know there is a conflict with the default **IP Address** and **Subnet** settings, adjust the defaults.
Click **Next**. The **Reboot Required** screen appears.

Restart the computer and run the setup program again.

NOTE: On Windows 98, Windows ME and Windows 2000, if the Auto IP feature was not disabled, Windows will assign an address of 169.254.x.x. This problem should not occur for these operating systems.

Auto-Redirection Screens

With Westell's WireSpeed Auto-Redirection feature, the modem detects and informs users of connection problem. If a problem is found, the modem displays a Web page on the browser that identifies the problem. The Help screen offers possible solutions.

In each situation, the Web page displayed informs the user as to the nature of the problem and possible solutions. In cases where the user is trying to access a specific URL (example: http://www.Westell.com) outside the local network but has not established a PPP connection, the user will be automatically directed to the Home Page that indicates the session is idle. When the user makes the connection, they will be instantly redirected to the URL that was initially requested.

No PPP Session Established

Before you are able to connect to the Internet, you must set up an account. If an account has not been set up or was not set up correctly, the modem will be unable to connect to your service provider and display the **No PPP Session Established** page. This page also appears if the connection has been set up but you have not yet connected (clicked the **Connect** button).
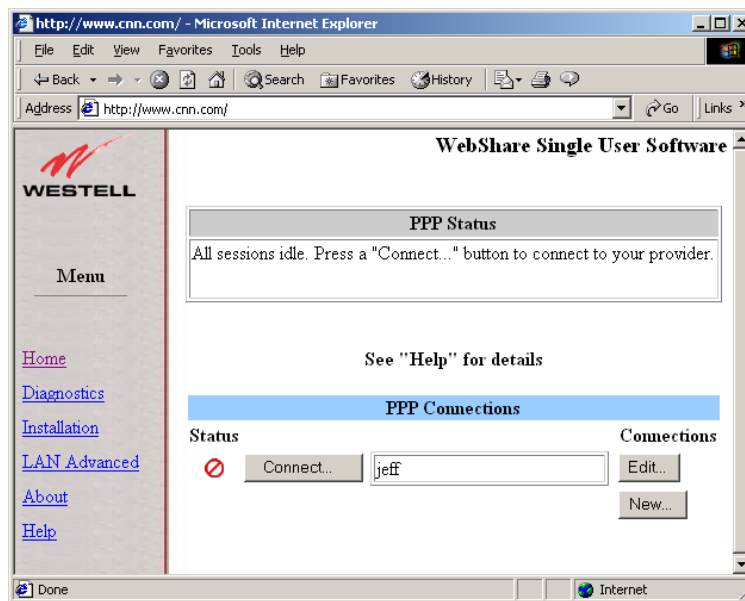

Figure 40. No PPP Session Established

Solutions:
- To create an account, see "Setting Up Your WebShare Account" on page 11. Once the account has been created, click the **Connect** button to establish a PPP session.
- If an account already exists, click **Edit** to view and change settings for the connection.
- Click the **Connect** button for the account to establish a PPP session.

No DSL Connection

If the modem is unable to detect a DSL connection, Auto-Redirect will display the No DSL Connection page:
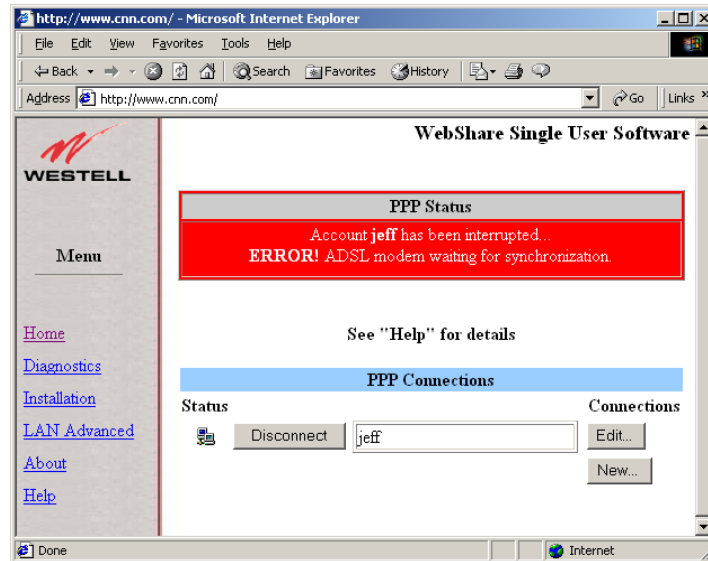

Figure 41. No DSL Connection

Solutions:
- Make sure the DSL cable is plugged into the DSL jack.
- Check all modem connections.
- Make sure your service provider has activated your DSL account.

Authentication Failure

When the user ID and/or password are typed incorrectly, Auto-Redirection will present the following Authentication Failure page:
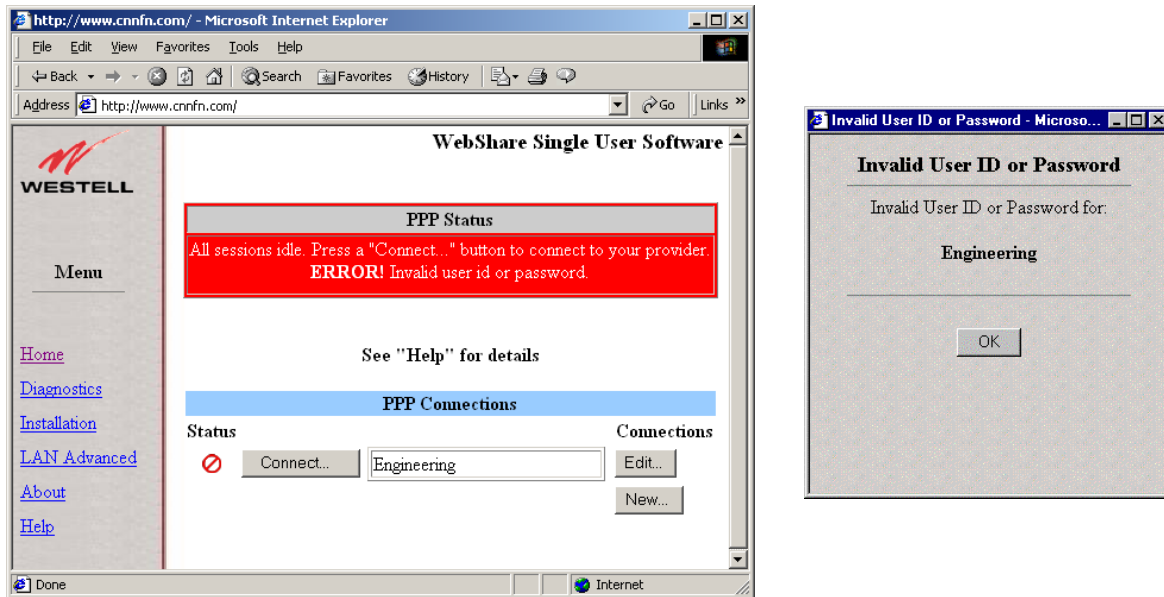

Figure 42. Authentication Failure

In addition to the Auto Redirection screen, your browser may return an Invalid User error message.

Click OK to close the browser error message.

Solutions:
- Check the spelling of the user ID and password carefully.
- Make sure CAPS LOCK is not on.
- User IDs and passwords for some ISPs are case-sensitive.

NOTE: Make sure you have a record of your correct user ID and password. As a security measure, some ISPs will lock out an account after repeated authentication failures.

Can't Find Server (RAS)

This page appears when the connection is lost. On occasion, your service provider's equipment may undergo maintenance or experience difficulty.

If the modem loses an established connection, the following page will appear:

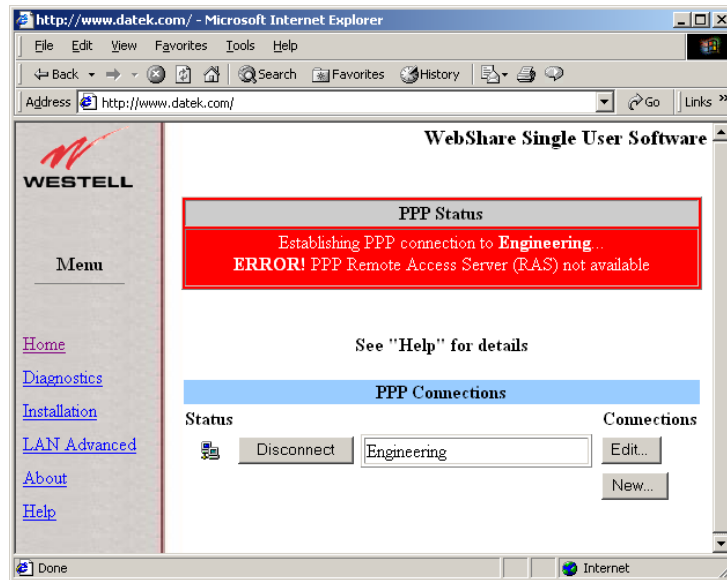**Figure 43. RAS Not Available**

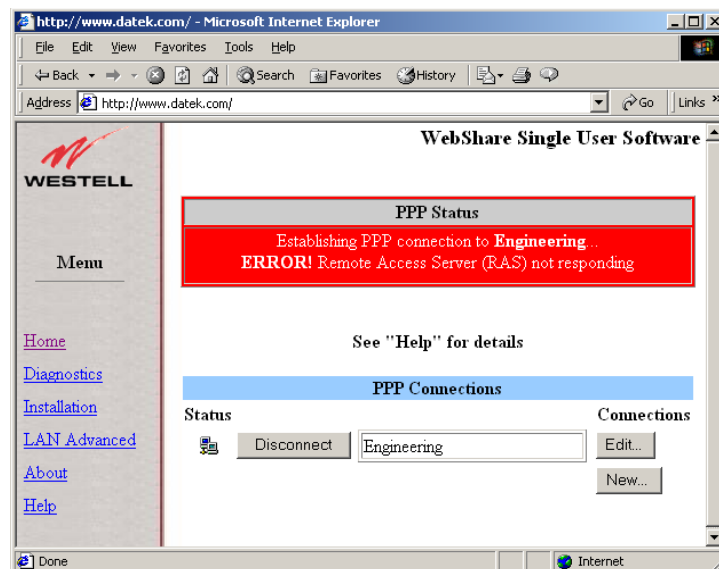If the modem cannot find the server, this page will appear:

Figure 44. RAS Not Responding

Solutions:
In either case, wait a few minutes and try again. If the problem persists, contact your service provider.

WebShare Error Messages

This section describes possible WebShare error messages and how to correct them. The figure below shows an example of an error message.
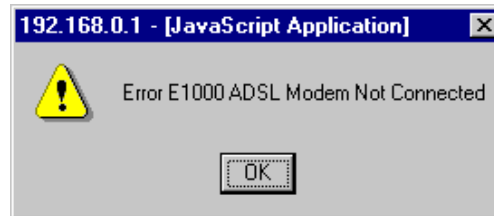

Figure 45. Example of Error Message

E1000 – WebShare Proxy Router Not Connected

Description: The WireSpeed Proxy Router (ADSL Modem) has not achieved synchronization. The router may take several minutes to achieve synchronization.

Remedy: Check the DSL cables and connections. If all connections are correct and the problem persists, contact your service provider.

E1001 – Network Circuit Not Available

Description: The ATM virtual circuit has not been established within the ADSL Router.

Remedy: Contact your ISP.

E1002 – PPP Remote Access Server (RAS) Not Available

Description: There is no response from the RAS while attempting to activate a PPP account.

Remedy: Contact your ISP.

E1003 – Invalid Login

Description: An invalid User ID and/or password was used.

Remedy: Verify that the User ID is a valid account, then retry the password. Contact your ISP if this problem persists.

E1005 – IP Remote Router Not Available

Description: The remote router is not responding.

Remedy: Contact your ISP.

E1008 – Configuration Information Corrupt

Description: The PPP account or Advanced Configuration information is corrupt.

Remedy: Delete the PPP accounts and re-enter the account information and the Advanced Configuration information.

Resetting to Factory Default

To return Ethernet characteristics to the factory default, follow the WebShare Installation Utilities on page 6. On the Function Selection screen, choose Option 3, **IP Reset Utility for WebShare**.
The following screen appears:
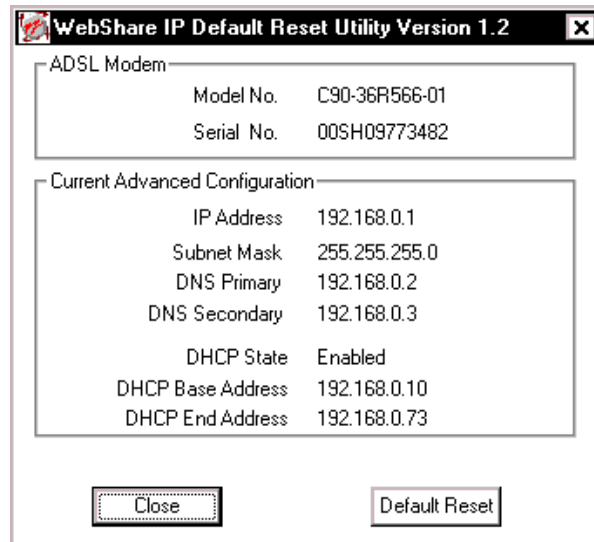
Figure 46. WebShare IP Default Reset Utility Dialog Box (Actual data may vary.)

1. On the **WebShare IP Default Reset Utility** dialog box, click the **Default Reset** button to restore the factory default values. The following message appears:

Figure 47. IP Default Reset Dialog Box

2. Click **OK** to return to the default settings.

⚠️ **NOTE** ⚠️

To reinstall the WebShare software on the modem, follow the WebShare Installation Utilities on page 6. On the Function Selection screen (see Fig. 7), choose option 1, "Download WebShare Modem Software" and follow the screen instructions.
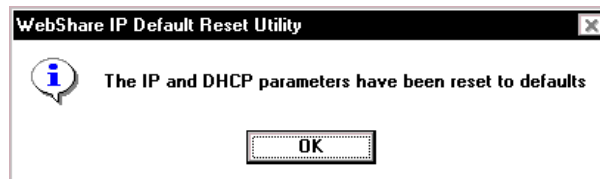
PRODUCT ASSISTANCE AND GENERAL INQUIRIES

Westell Customer Support

For technical assistance, contact:

> Westell Customer Support
> 750 North Commons Drive
> Aurora, Illinois 60504
>
> Phone: 1-630-375-4500
> Fax: 1-630-375-4931
>
> Web Address (Westell's Web Store): www.westell.com

Product Return

 DO NOT return damaged merchandise to Westell until you have first obtained a Return Material Authorization (RMA) from Westell. For return of material, contact your Westell Customer Support representative.

PRODUCT SPECIFICATIONS

ROUTING
- Dynamic Host Control Protocol (DHCP) - Automatic or Manual Local Address Assignment
- Network Address Translation (NAT)
- DNS Proxy Implementation

TRANSPORT AND APPLICATION PROTOCOL SUPPORT
- TCP, UDP, ICMP, SMTP, NNTP, FTP, HTTP, HTTPS, SSL, DNS, PPTP
- Support for PPTP VPN tunnel through NAT router
- Bridge PPPoE from PC simultaneously with NAT router PPPoE session.

TRAFFIC MANAGEMENT
- PPP over AAL5
- Link Control Protocol
- CHAP and PAP Authentication
- IP Control Protocol (IPCP): RFC – 1332
- IPCP Configuration Options
  – IP Address Configuration
  – Preliminary and Secondary DNS
- Address Proxy (Patent Pending)
- PPP Echo Request-Reply
- Internet Control Message Protocol
- Router Advertisement /Solicitation
- ICMP Echo Request/Reply (Ping)
- ARP
- Path MTU Discovery

MINIMUM SYSTEM REQUIREMENTS
- Westell ADSL Ethernet modem
- Microsoft® Windows 98, Windows ME, Windows 2000, or Windows NT 4.0
- Microsoft® Internet Explorer™ 4.x or higher, or Netscape Navigator ™ 4.x or higher
- 5 MB of free Hard Drive space
- 16 MB RAM
- Ethernet 10Base-T network interface card
- TCP/IP Protocol stack installed
- Multi-Port Ethernet 10BaseT Hub (optional)
- Crossover Ethernet cable for modem to Ethernet Hub
- VPI/VCI Values (provided by your service provider)
- PPPoA/PPPoE support (provided by your service provider)

CONFIGURATION
- User configurable parameters include:
  - Account name and password
  - DHCP Function (Enable/Disable)
  - DHCP Base Address
  - Primary and Secondary DNS server address
  - Password (secret) - used to respond to CHAP/PAP challenges
  - True "Always On" functionality. (User can configure modem to remember password.)

AUTO-REDIRECTION DETECTS:

- No PPP session
- No DSL sync/connection
- No remote access server (RAS)
- Authentication failure (wrong user ID/password)

APPENDIX

MAC AND LINUX SUPPORT

The WebShare Installation Utility will not run on Macintosh or Linux computers. However, computers running Macintosh and Linux operating systems can be installed on a network that is using WebShare by simply configuring the Macintosh or Linux computer to support DHCP. Once DHCP is enabled simply attach the computer to the network hub, launch the browser and begin surfing. To enable access to WebShare, launch the browser and enter the URL 192.168.0.1. Make this URL a favorite or a bookmark on the browser.

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REGULATORY INFORMATION

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 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 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.

This equipment also complies with Part 68 of the FCC rules. ON the bottom of this equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

An FCC compliant telephone cord and modular plug is provided with the equipment. This equipment is designated to be connected to the telephone network or premises wiring using a compatible modular jack which is Part 68 compliant. See Installation Instructions for details.

If this terminal equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notification is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

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

If you experience trouble with this equipment do not try to repair yourself. The equipment can not be repaired in the field and must be returned to the manufacturer. Please contact: Westell Customer Support, (630) 375-4500. DO NOT return damaged merchandise to Westell until you have first obtained a Return Material Authorization from Westell. For return of material, contact your Westell Customer Support representative.

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

CANADA CERTIFICATION NOTICE

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

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

A representative designated by the supplier should coordinate repairs to certified equipment. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request

the user to disconnect the equipment.

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

⚠ **CAUTION** ⚠

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

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