ParkerVision®

SIGNAL MAX™

Quick Start GUIDE

WIRELESS
WR1500
4-Port DSL/Cable Router

D2D TECHNOLOGY

www.parkervision.com

Congratulations on your purchase of the ParkerVision WR1500 Wireless Router.

You have just purchased a wireless device that is guaranteed to provide the best distance, best coverage, best throughput, and best technology of any 802.11b/802.11g-compatible Wi-Fi router or access point.

Please follow the instructions in this Quick Start Guide in order to achieve the maximum performance of this product.

Once you have completed the steps in this guide, you will want to browse the full, comprehensive manual on the CD ROM. This device features many advanced settings. In the majority of applications, simply following the procedures outlined in this Quick Start Guide will bring your WR1500 to the scope of operation that meets your requirements. *Advanced options are available, and are described completely in the manual.*

PACKAGE CONTENTS

- D2D™ Wireless WR1500 Wireless Router
- AC Power Adapter
- CAT-5 Ethernet Cable
- Manual on CD ROM
- Latest software always on-line at www.direct2data.com

SYSTEM REQUIREMENTS

- Computer with a 10/100 Ethernet Port, an Internet Explorer™-6 compatible browser.

- ParkerVision WR1500 Wireless Router works with any 802.11b/802.11g-compatible Wireless LAN network, communicating with other 802.11b/g equipped computers with hard-wired PC laptop/desktops with an available 10/100 LAN Port.

Visit www.direct2data.com for information on ParkerVision's complete line of extended range Wireless LAN products.

This product is available for purchase in the U.S. and Canada.

CUSTOMER SUPPORT

You can access customer support online at www.direct2data.com. This is the quickest way to access:

- Answers to Frequently Asked Questions
- Troubleshooting Guides
- Updated Drivers
- Manuals

You can also request help by sending an email to support@direct2data.com or calling customer support directly at 1-800-231-1759. See the manual on the CD ROM for important warranty and FCC information about this product.

D2D TECHNOLOGY

Start Here!
INSTALLATION

This section will guide you through the installation of the WR1500.

STEP 1

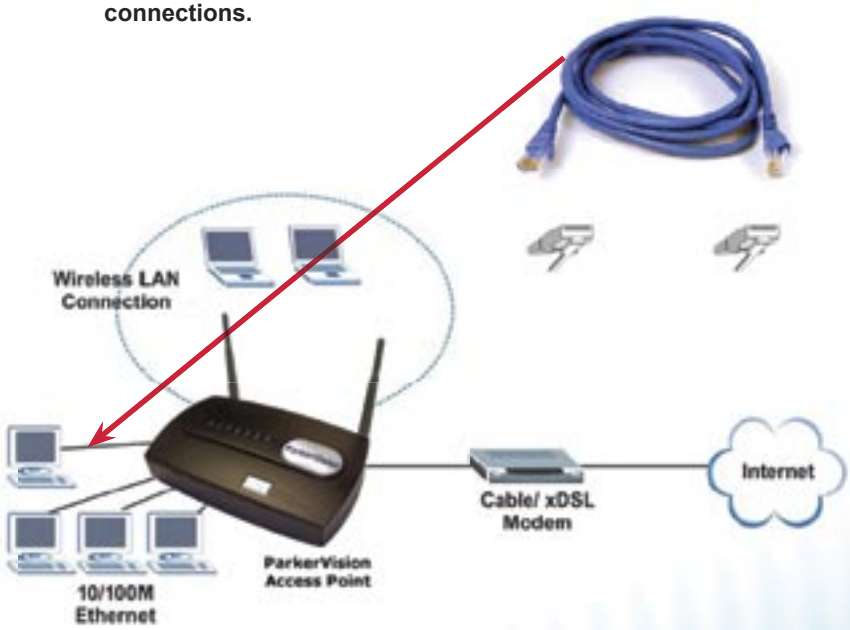
Unpack your WR1500 and make sure that everything is unwrapped and ready to begin.

First, either install, or make sure the antennas for the WR1500 are securely installed onto the rear panel of the unit.

A CAT-5 Ethernet Cable is supplied to connect between your computer and the WR1500. A picture of this type of cable is shown below.

Also shown below is an illustration of a typical installation for the WR1500.

The next page will describe the specifics of making these connections.



Internet Access Application Example

The WR1500 ships with an internal IP address of 192.168.1.1, which certain cable/DSL modems may also utilize. If your cable/DSL modem has the same IP address as the WR1500 (192.168.1.1) you will not be able to connect during setup. ParkerVision has already performed this procedure on your WR1500, however, **IF YOU RESET** the WR1500 to factory defaults you will need to repeat the following procedure.

Please reference STEP 2 on page 7 of this quick start guide for the following process:

Step 1. Ensure the cable/DSL modem is not connected to the WR1500, if it is, disconnect it now.

Step 2. Power the WR1500 by plugging the adapter into a surge-protected electrical outlet.

Step 3. Connect the provided Ethernet cable into port 1 on the WR1500 and the other end of the cable into your computer's Ethernet port.

Step 4. Reset the WR1500 by depressing the Reset button (located on the back of the unit) using a paper clip or pen until the system light on the top of the unit begins to flash red. Once the system light begins to flash red, release the Reset button.

Step 5. After reset, the system light will turn green indicating normal operation.

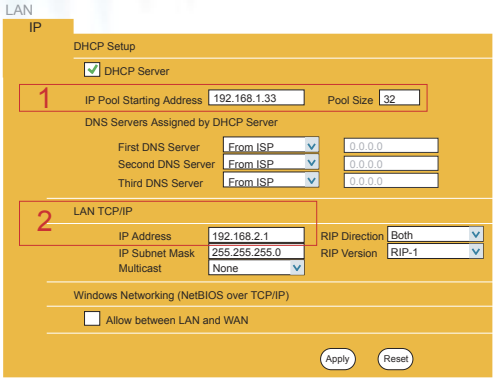
Please reference STEP 3 on page 8 of this quick start guide to prepare your computer to connect to the WR1500.

After you connect to the WR1500, you will need to change the IP Address.

Continued next page

Changing the IP Address

Step 1. On the LAN screen, change the IP Pool Starting Address (Box 1 on the illustration below; 192.168.1.33 by default) to the recommended setting of 192.168.2.33.



Step 2. Change the IP Address (Box 2 on the illustration below; set to 192.168.1.1 by default) to the recommended setting of 192.168.2.1.

Step 3. Click Apply at the bottom of the screen to save the settings. Clicking Apply will cause you to lose your connection to the Web Configuration Utility.

Step 4. Turn off power to both the WR1500 and cable/DSL modem.

Reconnecting the cable/DSL modem

Step 1. While both are powered off, reconnect the cable/DSL modem to the WAN port on the WR1500. *(See Step 1 and Step 2 in the WR1500 Quick Start Guide).*

Step 2. Power the router back on, wait until the status lights are normal.

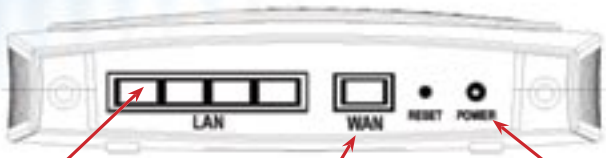
Step 3. Power the cable/DSL modem.

After you have performed these steps you should reboot the computer and test the LAN/WAN connectivity. If you are still having issues, ParkerVision Technical Support is available at 800.231.1759 or at support@parkervision.com.

STEP 2

Make the connections as described below.

The rear panel of the WR1500 contains several ports, as shown:



Plug your computer's Ethernet cable into Port 1. The remaining ports can to be used with other computers in a hard-wired router fashion.

Plug your cable or DSL modem's Ethernet Cable into this port.

Plug the AC Adapter into this port.

For initial setup, you should have:

- The power adapter plugged into the WR1500 as shown, and this adapter plugged into a surge-protected electrical outlet.
- Your Cable or DSL modem's Ethernet cable plugged into the Internet-In port as shown above.
- An Ethernet cable plugged into the router port 1 as shown above, and the other end of this cable plugged into your computer's Ethernet port.

Proceed to the Next Page to Begin Setting Up Your WR1500.

STEP 3

Establishing Contact on Your Computer with the WR1500.

Once you have made all of the connections shown in the previous step, complete the following steps, which will allow you to configure the WR1500 using the Web Configuration Utility. The Web Configuration Utility makes it easy to configure and manage the WR1500 Wireless Router.

Accessing the WR1500 Wireless Router Web Configuration Utility.

Step 3.1 Make sure your WR1500 Wireless Router hardware is properly connected.

Step 3.2 Prepare your computer to connect to the WR1500 Wireless Router, if it is not powered on, boot it up and log in.

Step 3.3 Launch your web browser.

Step 3.4 Type “http://192.168.1.1” as the URL Address field.

Step 3.5 Type “1234” (default) as the password and click Login. In some versions, the default password appears automatically - if this is the case, click Login.

Step 3.6 You should see a screen asking you to change your password (highly recommended) as shown next. Type a new password (and retype it to confirm) and click Apply or click Ignore to allow access without password change.

Continued next page

Note - If the default password of "1234" is not accepted, refer to page 17 of this guide and go through the reset procedure to set all parameters back to factory defaults. Then try the above steps again.

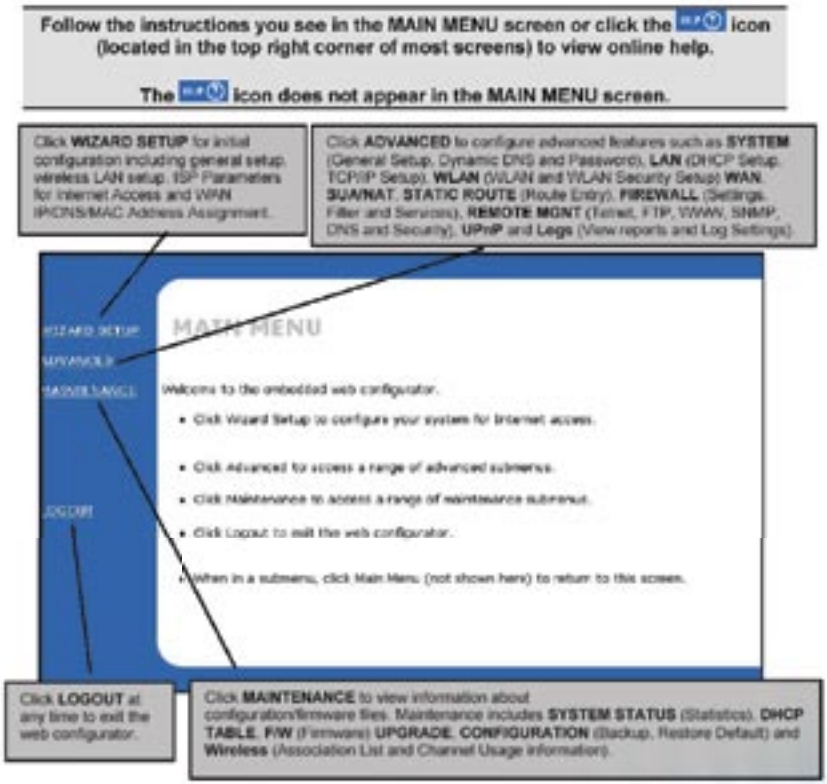
If you do not see the log-in window, go back and double check that the WR1500 is powered on, and that the Ethernet Cable between it and your computer is plugged in securely. If, after checking these items, you still cannot make contact with the WR1500, you may want to try a different Ethernet Cable. Also, refer to the troubleshooting section in the appendix of this quick start guide. If you still have difficulty with installation, contact support at 800-231-1759 or support@direct2data.com.

Establishing Contact on Your Computer with the WR1500 - *Continued*

Step 3.7 You should now see the **MAIN MENU** screen, as shown below.

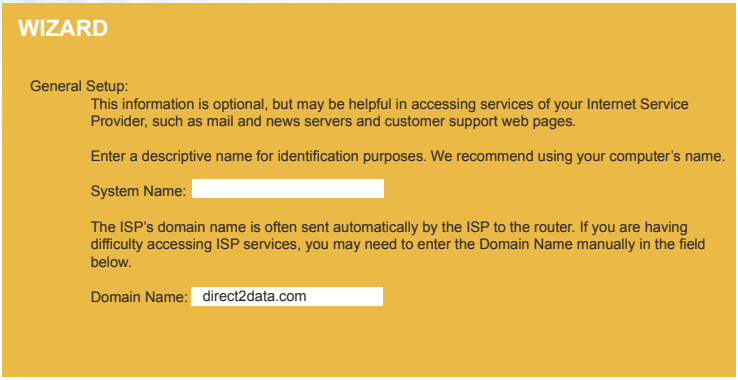
Note - The WR1500 Wireless Router automatically times out after five minutes of inactivity. Simply log back into the WR1500 Wireless Router if this happens to you.

Note - If you forget your password or cannot access the WR1500, you will need to reset the unit. Refer to the section on resetting the unit in the appendix of this quick start guide.



Wizard Setup: General Setup

General Setup contains administrative and system-related information.



The following table describes the labels in the Wizard Setup screen.

LABEL	DESCRIPTION
System Name	It is recommended you type your computer's "Computer name", some ISP's check this name; you should enter your computer's "Computer Name". > In Windows 2000, click **Start, Settings, Control Panel** and then double-click **System.** Click the **Network Identification** tab and then the **Properties** button. Note the entry for the **Computer name** field and enter it as the **System Name.** > In Windows XP, click **Start, My Computer, View system information** and then click the **Computer Name** tab. Note the entry in the **Full computer name** field and enter it as the WR1500 Wireless Router **System Name.** This name can be up to 30 alphanumeric characters long. Spaces are not allowed, but dashes"-" and underscores"_" are accepted.
Domain Name	The **Domain Name** entry is what is propagated to the DHCP clients on the LAN. Type the domain name (if you know it) here. If you leave this field blank, the ISP may assign a domain name via DHCP. The domain name entered by you is given priority over the ISP assigned domain name.
Next	Click **Next** to proceed to the next screen.

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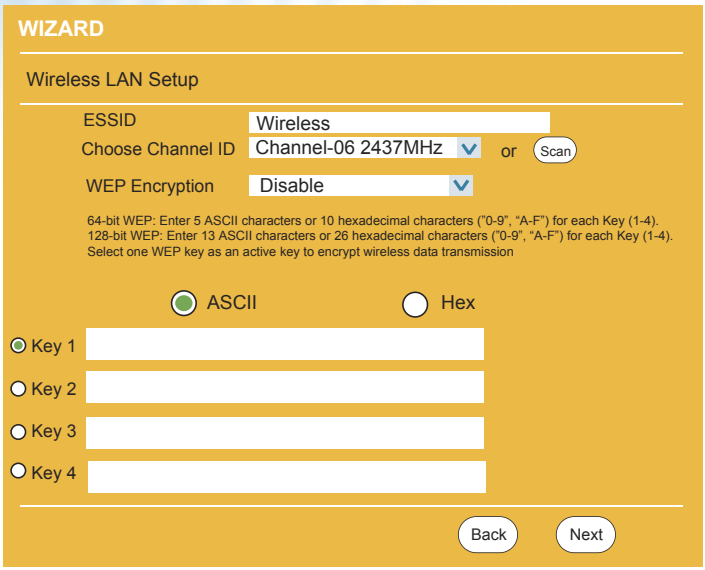
Wizard Setup: Wireless LAN Setup - *Continued*

Set up your wireless LAN using the wizard screen below.



The table on the following page describes the labels in the Wizard Setup screen shown above.

Continued next page

LABEL	DESCRIPTION
ESSID	Enter a descriptive name (up to 32 printable 7-bit ASCII characters) for the wireless LAN. If you change this field on the WR1500 Wireless Router, make sure all wireless stations use the same ESSID in order to access the network.
Choose Channel ID	To manually set the WR1500 Wireless Router to use a channel, select a channel from the drop-down list box. Open the **Channel Usage Table** screen to make sure the channel is not already used by another AP or independent peer-to-peer wireless network. To have the WR1500 Wireless Router automatically select a channel, click **Scan** instead.
Scan	Click this button to have the WR1500 Wireless Router automatically scan for and select a channel with the least interference.
WEP Encryption	Select **Disable** allows all wireless computers to communicate with the Wireless Routers without any data encryption. Select **64-bit WEP** or **128-bit WEP** to allow data encryption.
ASCII	Select this option in order to enter ASCII characters as the WEP keys.
HEX	Select this option to enter hexadecimal characters as the WEP keys. The preceding “Ox” is entered automatically. Leave this in front of our key.
Key 1 to Key 4	used to encrypt data. Both the WR1500 Wireless Router and the wireless stations must use the same WEP key for data transmission. If you chose **64-bit WEP,** then enter any 5 ASCII characters or 10 hexadecimal characters (“0-9”, “A-F”). If you chose **128-bit WEP,** then enter 13 ASCII characters or 26 hexadecimal characters (“0-9”, “A-F”). You must configure all four keys, but only one key can be activated at any one time. The default key is key 1.
Next	Click **Next** to continue.
Back	Click **Back** to return to the previous screen.

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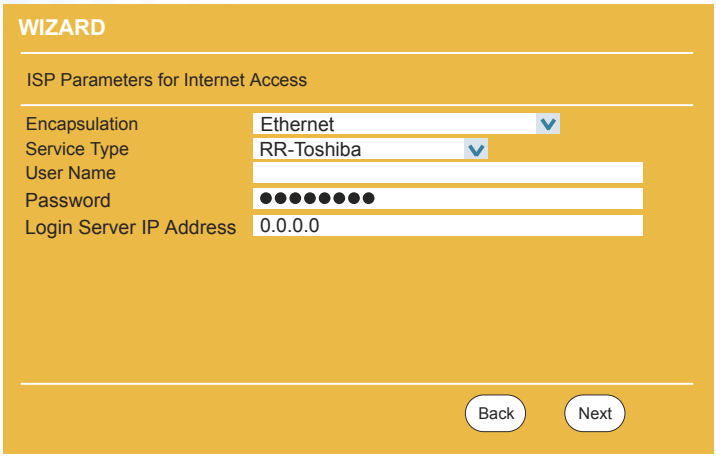
Continued - ISP Parameters

The WR1500 Wireless Router offers three choices of encapsulation. They are Ethernet, PPTP or PPPoE. The screen varies depending upon the type chosen.

Ethernet



The following table describes the labels in the above screen.

LABEL	DESCRIPTION
ISP Parameters for Internet Access	
Encapsulation	You must choose the **Ethernet** option when the WAN port is used as a regular Ethernet. Otherwise, choose **PPPoE** or **PPTP** for a dial-up connection. PPTP is typically used outside of the United States.
Service Type	Select from **Standard, RR-Toshiba** (RoadRunner Toshiba authentication method), **RR-Manager** (Roadrunner Manager authentication method), **RR-Telstra** or **Telia Login.** Choose a Roadrunner service type if your ISP is Time Warner's Roadrunner; otherwise choose **Standard.** The **User Name, Password** and **Login Server IP Address** fields are not applicable **(N/A)** for the **Standard** service type.

Continued next page

Wizard Setup - Ethernet - *Continued*

LABEL	DESCRIPTION
User Name	Type the username given to you by your ISP.
Password	Type the password associated with the username above.
Login Server IP Address	The WR1500 Wireless Router will find the Roadrunner Server IP if this field is left blank. If it does not, then you must enter the authentication server IP address.
Login Server (Telia Login only)	Type the domain name of the Telia login server, for example “login.telia.com”. This field is not available on all models.
Re-login Every(min) (Telia Login only)	The Telia server logs the WR1500 Wireless Router out if the WR1500 Wireless Router does not log in periodically. Type the number of minutes from 1 to 59 (30 recommended) for the WR1500 Wireless Router to wait between logins.This field is not available on all models.
Next	Click **Next** to proceed to the next page.
Back	Click Back to go back to the previous page.

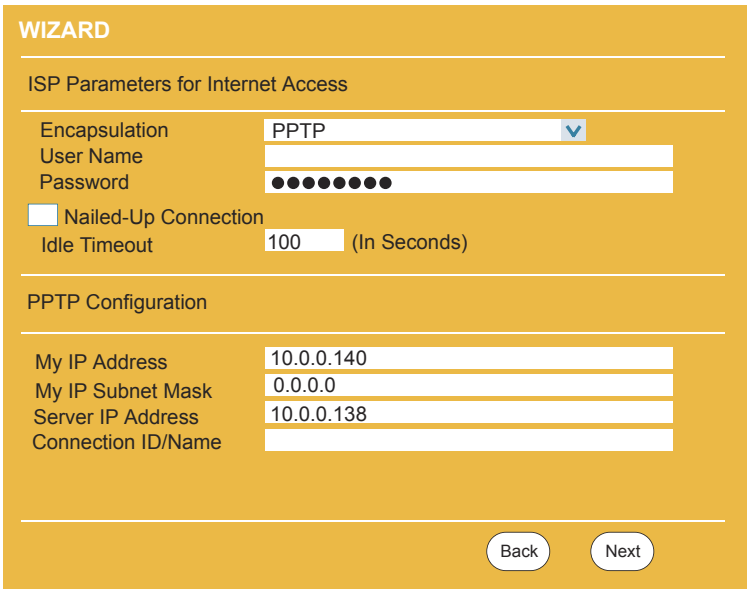
PPTP Encapsulation

Point-to-Point Tunneling Protocol (PPTP) is a network protocol that enables transfers of data from a remote client to a private server, creating a Virtual Private Network (VPN) using TCP/IP-based networks.

PPTP supports on-demand, multi-protocol, and virtual private networking over public networks, such as the Internet.

Refer to the manual on the CD ROM for more information on PPTP.

The WR1500 Wireless Router supports one PPTP server connection at any given time.



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PPTP Encapsulation - *Continued*

The following table describes the labels in the wizard screen on the previous page.

LABEL	DESCRIPTION
ISP Parameters for Internet Access	
Encapsulation	Select **PPTP** from the drop-down list box.
User Name	Type the user name given to you by your ISP. Most home users will need to use their name with their domain designation, such as user@bellsouth.net
Password	Type the password associated with the User Name above.
Nailed Up Connection	Select **Nailed Up Connection** if you do not want the connection to time out.
Idle Timeout	Type the time in seconds that elapses before the WR1500 Wireless Router automatically disconnects from the PPTP server.
PPTP Configuration	
My IP Address	Type the (static) IP address assigned to you by your ISP.
My IP Subnet Mask	Type the subnet mask assigned to you by your ISP (if given).
Server IP Address	Type the IP address of the PPTP server.
Connection ID/Name	If your ISP has provided a connection ID name, enter it in this field exactly as provided.
Next	Click **Next** to continue.
Back	Click **Back** to return to the previous screen.

Continued next page

PPPoE Encapsulation

Point-to-Point Protocol over Ethernet (PPPoE) functions as a dial-up connection. PPPoE is an IETF (Internet Engineering Task Force) draft standard specifying how a host personal computer interacts with a broadband modem (for example xDSL, cable, wireless, etc.) to achieve access to high-speed data networks. It preserves the existing Microsoft Dial-Up Networking experience and requires no new learning or procedures.

For the service provider, PPPoE offers an access and authentication method that works with existing access control systems (for instance, RADIUS). For the user, PPPoE provides a login and authentication method that the existing Microsoft Dial-Up Networking software can activate, and therefore requires no new learning or procedures for Windows users.

One of the benefits of PPPoE is the ability to let end users access one of multiple network services, a function known as dynamic service selection. This enables the service provider to easily create and offer new IP services for specific users.

Operationally, PPPoE saves significant effort for both the subscriber and the ISP/carrier, as it requires no specific configuration of the broadband modem at the subscriber's site.

By implementing PPPoE directly on the WR1500 Wireless Router (rather than individual computers), the computers on the LAN do not need PPPoE software installed, since the WR1500 Wireless Router does that part of the task. Furthermore, with NAT, all of the LAN's computers will have Internet access.

Refer to the manual on the CD ROM for more information on PPPoE, and to the next page for setup details.

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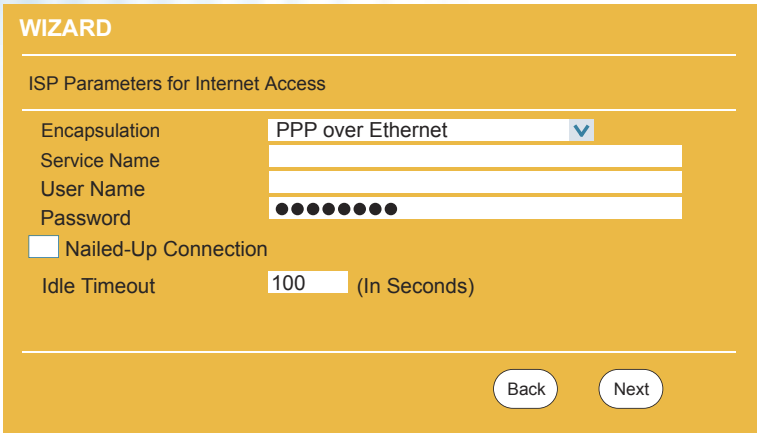
PPPoE Encapsulation - *Continued*

PPoE Wizard Setup Screen



The following table describes the labels in the above screen.

LABEL	DESCRIPTION
ISP Parameter for Internet Access	
Encapsulation	Choose an encapsulation method from the pull-down list box. PPPoE forms a dial-up connection.
Service Name	Type the name of your service provider.
User Name	Type the user name given to you by your ISP.
Password	Type the password associated with the user name above.
Nailed Up Connection	Select **Nailed Up Connection** if you do not want the connection to time out.
Idle Timeout	Type the time in seconds that elapses before the WR1500 Wireless Router automatically disconnects from the PPPoE server.
Next	Click **Next** to continue.
Back	Click **Back** to return to the previous screen.

Wizard Setup: WAN and DNS

The fourth wizard screen allows you to configure WAN IP address assignment, DNS server address assignment and the WAN MAC address.

WAN IP Address Assignment

Every computer on the Internet must have a unique IP address. If your networks are isolated from the Internet, for instance, only between your two branch offices, you can assign any IP addresses to the hosts without problems. However, the Internet Assigned Numbers Authority (IANA) has reserved the following three blocks of IP addresses specifically for private networks.

10.0.0.0	-	10.255.255.255
172.16.0.0	-	172.31.255.255
192.168.0.0	-	192.168.255.255

You can obtain your IP address from the IANA, from an ISP or have it assigned by a private network. If you belong to a small organization and your Internet access is through an ISP, the ISP can provide you with the Internet addresses for your local networks. On the other hand, if you are part of a much larger organization, you should consult your network administrator for the appropriate IP addresses.

Regardless of your particular situation, do not create an arbitrary IP address; always follow the guidelines above. For more information on address assignment, please refer to RFC 1597, Address Allocation for Private Internets and RFC 1466, Guidelines for Management of IP Address Space.

Continued next page

IP Address and Subnet Mask

Similar to the way houses on a street share a common street name, so too do computers on a LAN share one common network number. Where you obtain your network number depends on your particular situation. If the ISP or your network administrator assigns you a block of registered IP addresses, follow their instructions in selecting the IP addresses and the subnet mask.

If the ISP did not explicitly give you an IP network number, then most likely you have a single user account and the ISP will assign you a dynamic IP address when the connection is established. If this is the case, it is recommended that you select a network number from 192.168.0.0 to 192.168.255.0 and you must enable the Network Address Translation (NAT) feature of the WR1500 Wireless Router. The Internet Assigned Number Authority (IANA) reserved this block of addresses specifically for private use; please do not use any other number unless you are told otherwise. Let's say you select 192.168.1.0 as the network number; which covers 254 individual addresses, from 192.168.1.1 to 192.168.1.254 (zero and 255 are reserved). In other words, the first three numbers specify the network number while the last number identifies an individual computer on that network.

Once you have decided on the network number, pick an IP address that is easy to remember, for instance, 192.168.1.1, for your WR1500 Wireless Router, but make sure that no other device on your network is using that IP address.

The subnet mask specifies the network number portion of an IP address. Your WR1500 Wireless Router will compute the subnet mask automatically based on the IP address that you entered. You don't need to change the subnet mask computed by the WR1500 Wireless Router unless you are instructed to do otherwise.

DNS Server Address Assignment

Use DNS (Domain Name System) to map a domain name to its corresponding IP address and vice versa. For instance, the IP address of a web site with an URL of www.anycompany.com could be 192.168.3.1. The DNS server is extremely important because without it, you must know the IP address of a computer before you can access it.

There are two ways that an ISP disseminates the DNS server addresses.

1. The ISP tells you the DNS server addresses, usually in the form of an information sheet, when you sign up. If your ISP gives you DNS server addresses, enter them in the DNS Server fields in DHCP Setup.

2. Leave the DNS Server fields in DHCP Setup blank (for example 0.0.0.0). The WR1500 Access Point acts as a DNS proxy when this field is blank.

WAN MAC Address

Every Ethernet device has a unique MAC (Media Access Control) address. The MAC address is assigned at the factory and consists of six pairs of hexadecimal characters, for example, 00:A0:C5:00:00:02.

You can configure the WAN port's MAC address by either using the factory default or cloning the MAC address from a workstation on your LAN. Once it is successfully configured, the address will be copied to the "rom" file (factory configuration file). It will not change unless you change the setting or upload a different "rom" file.

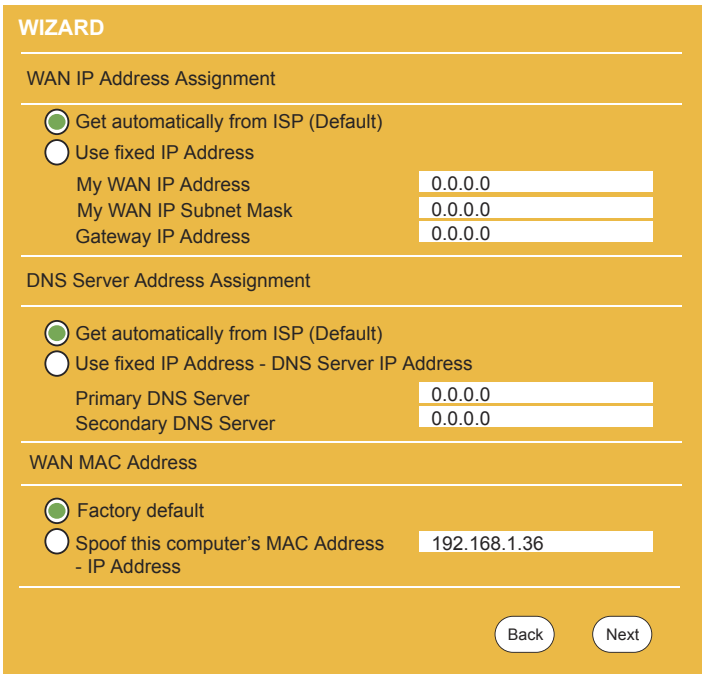
ParkerVision recommends you clone the MAC address from a workstation on your LAN even if your ISP does not require MAC address authentication.
Your WR1500 Wireless Router WAN port is always set at half-duplex mode as most cable/DSL modems only support half-duplex mode. Make sure your modem is in half-duplex mode. Your WR1500 Wireless Router supports full duplex mode on the LAN side.

Continued next page

WAN MAC Address - *Continued*

Example of Network Properties for LAN Servers with Fixed IP Addresses:

Choose an IP address	192.168.1.2-192.168.1.32; 192.168.1.65-192.168.1.254.
Subnet mask	255.255.255.0
Gateway (or default route)	192.168.1.1(WR1500 Wireless RouterLANIP)



The table on the following page describes the labels in the screen above.

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WAN MAC Address - *Continued*

LABEL	DESCRIPTION
WAN IP Address Assignment	
Get automatically from ISP	Select this option If your ISP did not assign you a fixed IP address. This is the default selection.
Use fixed IP address	Select this option If the ISP assigned a fixed IP address.
My WAN IP Address	Enter your WAN IP address in this field if you selected **Use Fixed IP Address.**
My WAN IP Subnet Mask	Enter the IP subnet mask in this field if you selected **Use Fixed IP Address.** This field is not available when you select PPPoE encapsulation in the previous wizard screen.
Gateway IP Address	Enter the gateway IP address in this field if you selected **Use Fixed IP Address.** This field is not available when you select PPPoE encapsulation in the previous wizard screen.
DNS Server Address Assignment	
Get automatically from ISP	Select this option if your ISP does not give you DNS server addresses. This option is selected by default.
Use fixed IP address -DNS Server IP Address	Select this option If your ISP provides you a DNS server address.
Primary/Secondary DNS Server	If you selected the **Use fixed IP address - Primary/Secondary DNS Server** option, enter the provided DNS addresses in these fields.
WAN MAC Address: The MAC address field allows you to configure the WAN port's MAC address by either using the factory default or cloning the MAC address from a workstation on your LAN.	
Factory Default	Select this option to use the factory assigned default MAC address.
Spoof this Computer's MAC address - IP Address	Select this option and enter the IP address of the computer on the LAN whose MAC address you are cloning. Once it is successfully configured, the MAC address will be copied to the rom file (ROM configuration file). It will not change unless you change the setting or upload a different rom file. It is advisable to clone the MAC address from a computer on your LAN even if your ISP does not presently require MAC address authentication.
Back	Click **Back** to return to the previous screen.
Next	Click **Next** to continue.

The Basic Setup of Your WR1500 is Now Complete

Click **Finish** to complete and save the wizard setup.

If you are currently using a wireless (LAN) adapter to access this ParkerVision Router/Wireless Router and you made changes to the ESSID, then you will need to make the same change to your wireless (LAN) adapter after you click the Finish button.

Your WR1500 should now be operational. There are many additional configurations that can be set. Complete details of how to configure these options are in the manual, on the CD-ROM.

Saving and Restoring Your Configuration

It is important that you now save your configuration file in case you ever need to reset your WR1500, so you can easily restore your configuration settings.

Follow the steps below to save your configuration.

1. From the **Main Menu**, choose **Maintenance**, then **Configuration**, then **Backup.**
2. You will be presented with the option to save the configuration file on your computer's hard drive. It is important that you choose a location that you will be able to locate later.

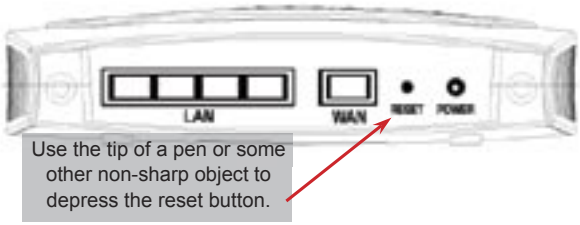
3. **Logout** of the **Main Menu.**

Note - It is important to always logout when you are finished using the Web Configuration Utility.

Appendix 1 - How to Reset the WR1500

Resetting the WR1500 Wireless Router

If you forget your password or cannot access the WR1500 Wireless Router, you will need to reload the factory-default configuration file or use the RESET button on the rear panel of the WR1500 Wireless Router. Uploading this configuration file replaces the current configuration file with the factory-default configuration file. This means that you will lose all configurations that you had previously and the speed of the console port will be reset to the default of 9600bps with 8 data bit, no parity, one stop bit and flow control set to none. The password will be reset to “1234”, also.



Procedure to Use the Reset Button

Make sure the SYS LED is on (not blinking) before you begin this procedure.

Step 1. Press the RESET button for more than five seconds, and then release it. If the SYS LED begins to blink, the defaults have been restored and the WR1500 Wireless Router restarts. Otherwise, go to step 2.

Step 2. Turn the WR1500 Wireless Router off.

Step 3. While pressing the RESET button, turn the WR1500 Wireless Router on.

Step 4. Continue to hold the RESET button. The SYS LED will begin to blink and flicker very quickly after about 10 or 15 seconds.This indicates that the defaults have been restored and the WR1500 Wireless Router is now restarting.

Step 5. Release the RESET button and wait for the WR1500 Wireless Router to finish restarting.

Continued next page

Appendix 2 - Troubleshooting the WR1500 Initial Setup and Installation

This section will assist you in troubleshooting the setup and installation of your WR1500. Extensive troubleshooting procedures are included in the manual on the CD ROM.

Problems Starting Up the WR1500 Access Point

Troubleshooting the Start-Up of Your WR1500 Access Point

<table>
<tr><th>PROBLEM</th><th colspan="2">CORRECTIVE ACTION</th></tr>
<tr><td>None of the LED's turn on when I plug in the power adaptor.</td><td colspan="2">Make sure you are using the supplied power adaptor and that it is plugged in to an appropriate power source. Check that the power source is turned on. If the problem persists, you may have a hardware problem. In this case, you should contact your local vendor.</td></tr>
<tr><td rowspan="4">I cannot access the WR1500 Access Point via the console port.</td><td colspan="2">1. Check to see if the WR1500 Access Point is connected to your computer's console port.</td></tr>
<tr><td rowspan="3">2. Check to see if the communications program is configured correctly. The communications software should be configured as follows:</td><td>VT100 terminal emulation.</td></tr>
<tr><td>9600 bps is the default speed on leaving the factory. Try other speeds in case the speed has been changed.</td></tr>
<tr><td>No parity, 8 data bits, 1 stop bit, data flow set to none.</td></tr>
</table>

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Appendix 2 - Troubleshooting the WR1500 Initial Setup and Installation - *Continued*

Problems with the Password

Troubleshooting the Password

PROBLEM	CORRECTIVE ACTION
I cannot access the WR1500 Wireless Router.	The **Password** and **User name** fields are case-sensitive. Make sure that you enter the correct password and username using the proper casing.
	Use the **RESET** button on the side panel of the WR1500 Wireless Router to restore the factory default configuration file (hold this button in for more than five seconds). This will restore all of the factory defaults including the password.

Problems with the Ethernet Interface

Troubleshooting the Ethernet Interface

PROBLEM	CORRECTIVE ACTION
I cannot access the WR1500 Wireless Router from the Ethernet	If all of the **LAN** LED's on the front panel are off, check the Ethernet cable connection between your WR1500 Wireless Router and the computer connected to the **LAN** port. Check for faulty Ethernet cables. Make sure the computer's Ethernet adapter is installed and working properly or Verify that the IP addresses and the subnet masks of the WR1500 Wireless Router and the computer are on the same subnet.
I cannot ping any computer on the LAN.	If all of the **LAN** LED's on the front panel are off, check the Ethernet cable connection between your WR1500 Wireless Router and the computer connected to the **LAN** port. Verify that the IP addresses and the subnet masks of the WR1500 Wireless Router and the computers are on the same subnet.

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Appendix 2 - *Continued*
Troubleshooting the WR1500 Initial Setup and Installation

Problems with the WAN Interface

Troubleshooting the WAN Interface

PROBLEM	CORRECTIVE ACTION
I cannot get a WAN IP address from the ISP.	The ISP provides the WAN IP address after authenticating you. Authentication may be through the user name and password, the MAC address or the host name. The username and password apply to PPPoE and PPTP encapsulation only. Make sure that you have entered the correct **Service Type, User Name** and **Password** (be sure to use the correct casing). Refer to the *WAN Screens* chapter (Web Configuration Utility) or the *Internet Access* chapter (SMT). Clone the MAC address from your computer on the LAN as the WR1500 Wireless Router's WAN MAC address. Refer to the *WAN Screens* chapter (Web Configuration Utility) or the *General and WAN Setup* chapter (SMT). It is recommended that you clone your computer's MAC address, even if your ISP presently does not require MAC address authentication. Configure your computer's name as the WR1500 Wireless Router's system name. Refer to the *Wizard Setup* chapter (Web Configuration Utility) or the *General and WAN Setup* chapter (SMT).

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Appendix 2 - *Continued*
Troubleshooting the WR1500 Initial Setup and Installation

Problems with Internet Access

Troubleshooting Internet Access

PROBLEM	CORRECTIVE ACTION
I cannot access the Internet.	Connect your cable/DSL modem to the WR1500 Wireless Router using the appropriate cable. Check with the manufacturer of your cable/ DSL device about your cable requirement because for some devices may require a crossover cable and others a straight-through Ethernet cable. Verify your WAN settings. Refer to the *WAN* chapter (Web Configuration Utility) or the *Internet Access* chapter (SMT). Make sure you entered the correct user name and password. For wireless stations, check that both the WR1500 Wireless Router and wireless station(s) are using the same ESSID, channel and WEP keys (if WEP encryption is activated).
Internet connection disconnects	If you use PPTP or PPPoE encapsulation, check the idle time-out setting. Refer to the *WAN* chapter (Web Configuration Utility) or the *Remote Node Configuration* chapter (SMT). Contact your ISP.

See the manual on the CD ROM for additional, extensive troubleshooting procedures, including OS-oriented (Windows 2000 or XP) tips and suggestions.

You can also request help by sending an email to support@direct2data.com or calling customer support directly at 1-800-231-1759.