eHome NETWORKING™

Connect Your Desktop or Notebook Computer to a Wireless Network

EH100

Wireless G Broadband Router

USER MANUAL

VERSION 1.00

Table of Contents

Package Contents

- eHome EH100 Wireless G Broadband Router
- Power Adapter
- Ethernet Cable
- Manual and Warranty on CD

Note: Using a power supply with a different voltage rating than the one included with the EH100 will cause damage and void the warranty for this product.

System Requirements

- Ethernet-based Cable or DSL Modem
- Computers with Windows®, Macintosh®, or Linux-based operating systems with an installed Ethernet adapter
- Internet Explorer Version 6.0 or Netscape Navigator Version 6.0 and Above (for configuration)

Introduction

The eHome Wireless G EH100 Router is capable of transferring data with a maximum wireless signal rate of up to 54Mbps* in the 2.4GHz frequency — the same wireless frequency as 802.11b. The eHome EH100 Wireless Router also offers four Ethernet ports to support multiple computers.

The advanced wireless technology built into the EH100 Wireless Router offers data transfer speeds with a maximum wireless signal rate of up to 54Mbps* through its wireless channels allowing streaming videos and other high bandwidth applications, such as online gaming events, to operate without the hassle of Ethernet cables. The ability to use high bandwidth applications also makes streaming real-time programs more enjoyable and more efficient.

With the EH100 Wireless Router's built-in advanced firewall, threats of hackers penetrating your network are minimized. Some firewall features include functions that allow or disallow certain ports to be open for certain applications. Time scheduling can be established as a firewall rule so that specific ports will be open at certain times and be closed at other times. Features like MAC filtering, URL blocking, and domain blocking are useful tools to prevent other unwanted intruders from connecting to your network or browsing restricted sites.

The easy-to-use configuration wizard takes only minutes to setup and guides users step-by-step through configuring the EH100. With all the versatile features and an user-friendly utility, the EH100 Wireless Router provides an enhanced networking experience.

* Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

Features

- **Faster Wireless Networking** - The EH100 provides up to 54Mbps* wireless connection with other 802.11g wireless clients. This capability allows users to participate in real-time activities online, such as video streaming, online gaming, and real-time audio. The performance of this 802.11g wireless router gives you the freedom of wireless networking at speeds 5x faster than 802.11b.

- **Compatible with 802.11b and 802.11g Devices** - The EH100 is still fully compatible with the IEEE 802.11b standard, so it can connect with existing 802.11b PCI, USB and Cardbus adapters.

- **Advanced Firewall Features** - The Web-based user interface displays a number of advanced network management features including:

    - **Content Filtering** - Easily applied content filtering based on MAC Address, IP Address, URL, and/or Domain Name.

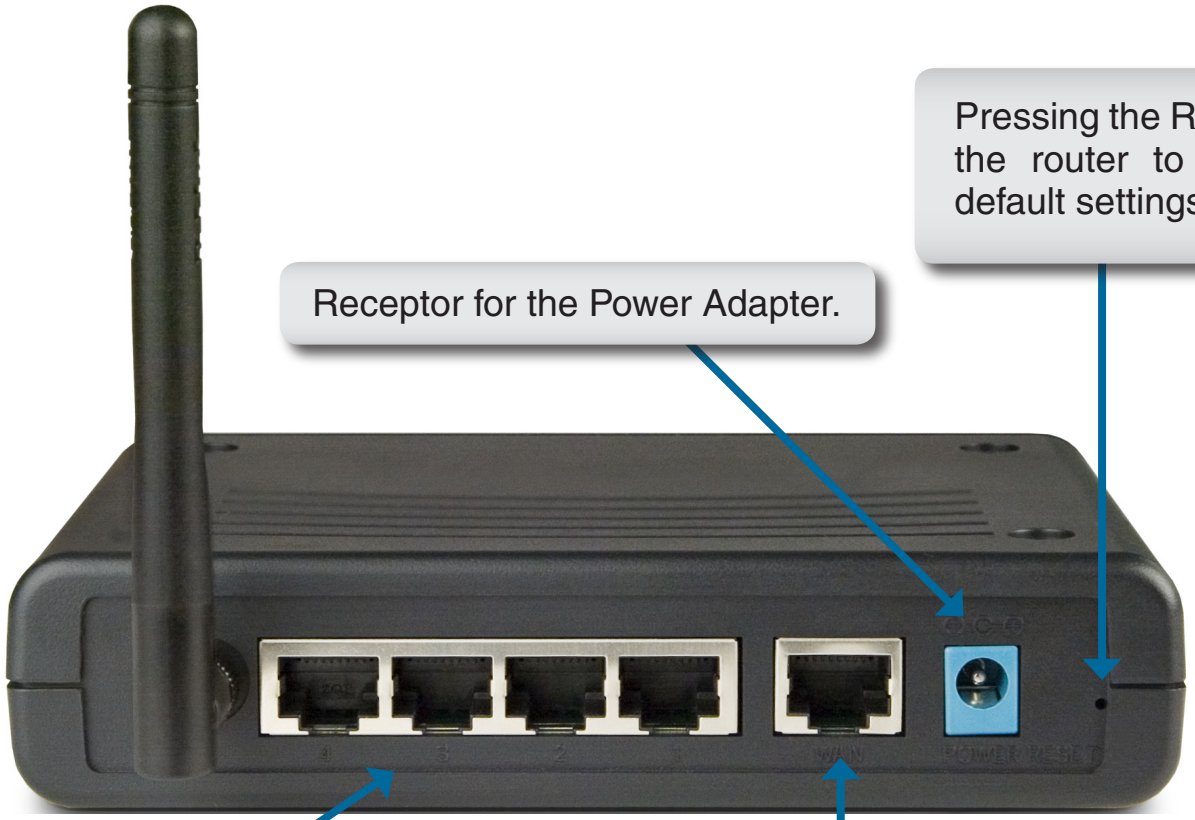
    - **Filter Scheduling** - These filters can be scheduled to be active on certain days or for a duration of hours or minutes.

    - **Secure Multiple/Concurrent Sessions** - The EH100 can pass through VPN sessions. It supports multiple and concurrent IPSec and PPTP sessions, so users behind the EH100 can securely access corporate networks.

- **User-friendly Setup Wizard** - Through its easy-to-use Web-based user interface, the EH100 lets you control what information is accessible to those on the wireless network, whether from the Internet or from your company's server. Configure your router to your specific settings within minutes.

* Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

Hardware Overview
Connections



Pressing the Reset Button restores the router to its original factory default settings.

Receptor for the Power Adapter.

LAN Ports
Connect Ethernet devices such as computers, switches, and hubs.

The Auto MDI/MDIX WAN port is the connection for the Ethernet cable to the Cable or DSL modem.

Hardware Overview

LEDs

WAN LED
A solid light indicates connection on the WAN port. This LED blinks during data transmission.

WLAN LED
A solid light indicates that the wireless segment is ready. This LED blinks during wireless data transmission.

Local Network LEDs
A solid light indicates a connection to an Ethernet-enabled computer on ports 1-4. This LED blinks during data transmission.

Power LED
A solid light indicates a proper connection to the power supply.

Status LED
A blinking light indicates that the EH100 is ready.

Installation

This section will walk you through the installation process. Placement of the router is very important. Do not place the router in an enclosed area such as a closet, cabinet, or in the attic or garage.

Before you Begin

Please configure the router with the computer that was last connected directly to your modem. Also, you can only use the Ethernet port on your modem. If you were using the USB connection before using the router, then you must turn off your modem, disconnect the USB cable and connect an Ethernet cable to the WAN port on the router, and then turn the modem back on. In some cases, you may need to call your ISP to change connection types (USB to Ethernet).

If you have DSL and are connecting via PPPoE, make sure you disable or uninstall any PPPoE software such as WinPoet, Broadjump, or Enternet 300 from your computer or you will not be able to connect to the Internet.

Wireless Installation Considerations

The eHome wireless router lets you access your network using a wireless connection from virtually anywhere within the operating range of your wireless network. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

1. Keep the number of walls and ceilings between the eHome router and other network devices to a minimum - each wall or ceiling can reduce your adapter's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.

2. Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.

3. Building Materials make a difference. A solid metal door or aluminum studs may have a negative effect on range. Try to position access points, wireless routers, and computers so that the signal passes through drywall or open doorways. Materials and objects such as glass, steel, metal, walls with insulation, water (fish tanks), mirrors, file cabinets, brick, and concrete will degrade your wireless signal.

4. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.

5. If you are using 2.4GHz cordless phones or X-10 (wireless products such as ceiling fans, lights, and home security systems), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even if the phone in not in use.

Connect to Cable/DSL/Satellite Modem

If you are connecting the router to a cable/DSL/satellite modem, please follow the steps below:

1. Place the router in an open and central location. Do not plug the power adapter into the router.

2. Turn the power off on your modem. If there is no on/off switch, then unplug the modem's power adapter. Shut down your computer.

3. Unplug the Ethernet cable (that connects your computer to your modem) from your computer and place it into the WAN port on the router.

4. Plug an Ethernet cable into one of the four LAN ports on the router. Plug the other end into the Ethernet port on your computer.

5. Turn on or plug in your modem. Wait for the modem to boot (about 30 seconds).

6. Plug the power adapter to the router and connect to an outlet or power strip. Wait about 30 seconds for the router to boot.

7. Turn on your computer.

8. Verify the link lights on the router. The power light, WAN light, and the LAN light (the port that your computer is plugged into) should be lit. If not, make sure your computer, modem, and router are powered on and verify the cable connections are correct.

9. Skip to page 14 to configure your router.

Connect to Another Router

If you are connecting the eHome router to another router to use as a wireless access point and/or switch, you will have to do the following before connecting the router to your network:

- Disable UPnP™
- Disable DHCP
- Change the LAN IP address to an available address on your network. The LAN ports on the router cannot accept a DHCP address from your other router.

To connect to another router, please follow the steps below:

1. Plug the power into the router. Connect one of your computers to the router (LAN port) using an Ethernet cable. Make sure your IP address on the computer is 192.168.0.xxx (where xxx is between 2 and 254). Please see the **Networking Basics** section for more information. If you need to change the settings, write down your existing settings before making any changes. In most cases, your computer should be set to receive an IP address automatically in which case you will not have to do anything to your computer.

2. Open a web browser and enter **http://192.168.0.1** and press **Enter**. When the login window appears, set the user name to **admin** and leave the password box empty. Click **OK** to continue.

3. Browse to the **Advanced > Advanced Network** page. Uncheck the box next to **Enable UPnP**. Click the **Save Settings** button to continue.

4. Browse to the **Setup > Network Settings** page. Uncheck the box next to **Enable DHCP Server**.

5. Under **Router Settings**, enter an available IP address and the subnet mask of your network. Click **Save Settings** to save your settings. Use this new IP address to access the configuration utility of the router in the future. Close the browser and change your computer's IP settings back to the original values as in Step 1.

6. Disconnect the Ethernet cable from the router and reconnect your computer to your network.

7. Connect an Ethernet cable in one of the LAN ports of the router and connect it to your other router. Do not plug anything into the WAN port of the eHome router.

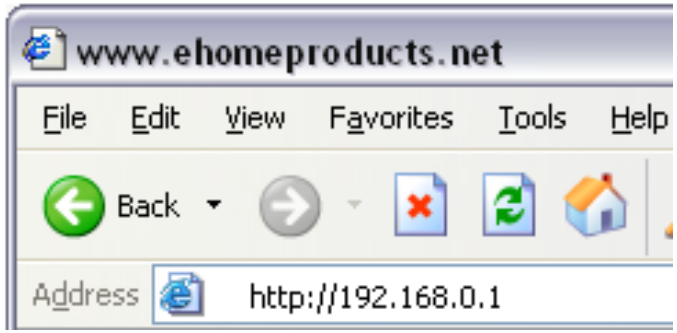
8. You may now use the other 3 LAN ports to connect other Ethernet devices and computers. To configure your wireless network, open a web browser and enter the IP address you assigned to the router. Refer to the **Configuration** and **Wireless Security** sections for more information on setting up your wireless network.

Configuration

This section will show you how to configure your new eHome wireless router using the web-based configuration utility.

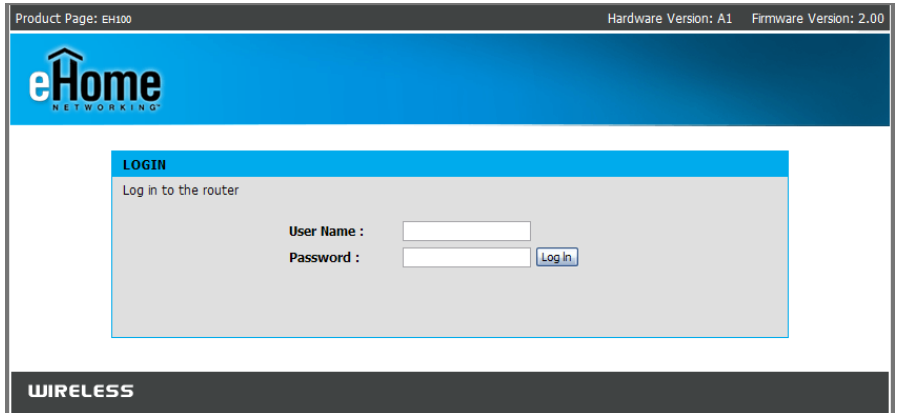
Web-based Configuration Utility

To access the configuration utility, open a web-browser such as Internet Explorer and enter the IP address of the router (192.168.0.1).

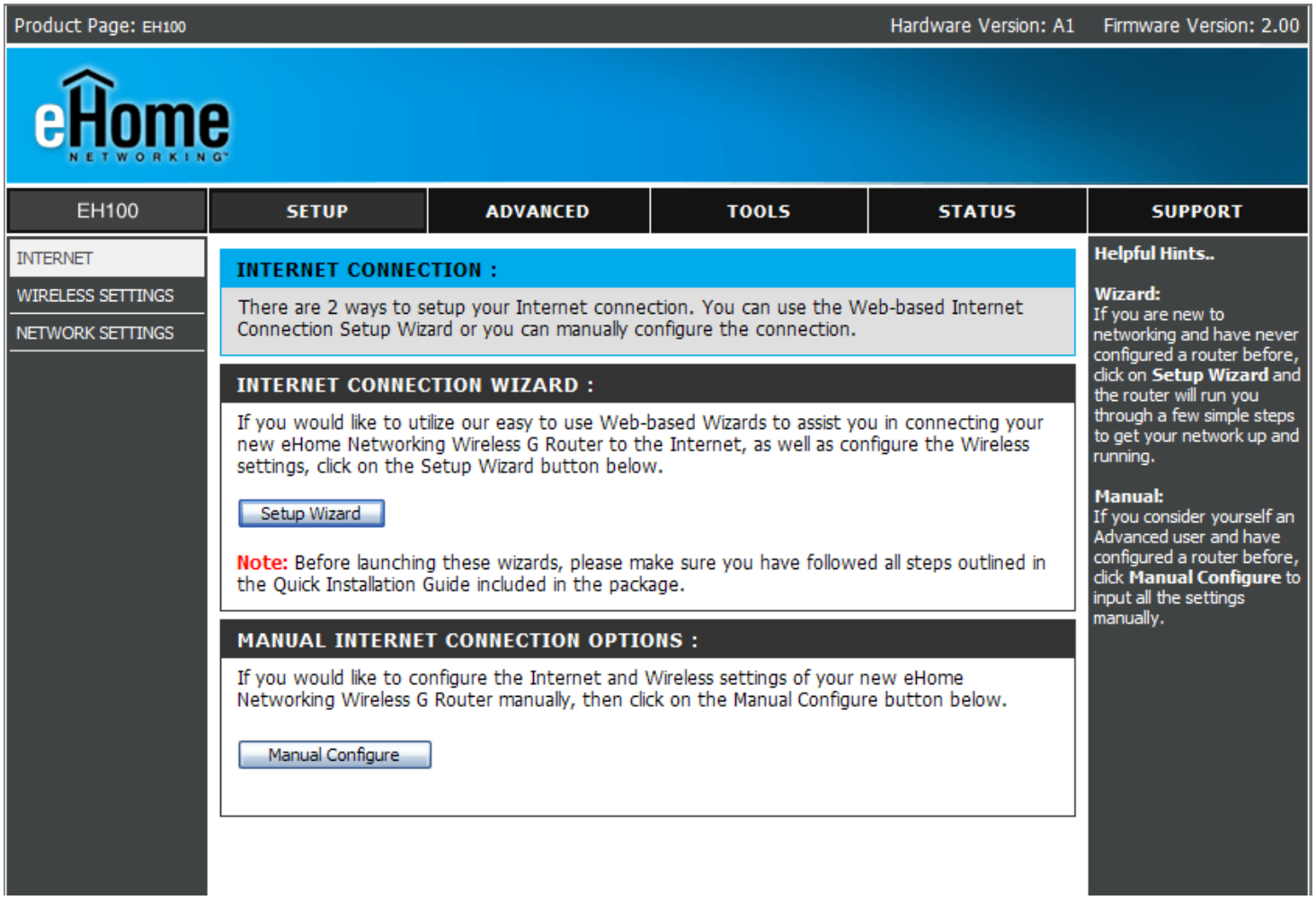


Enter the user name (admin) and your password. Leave the password blank by default.

If you get a “Page Cannot be Displayed” error, please refer to the **Troubleshooting** section for assistance.

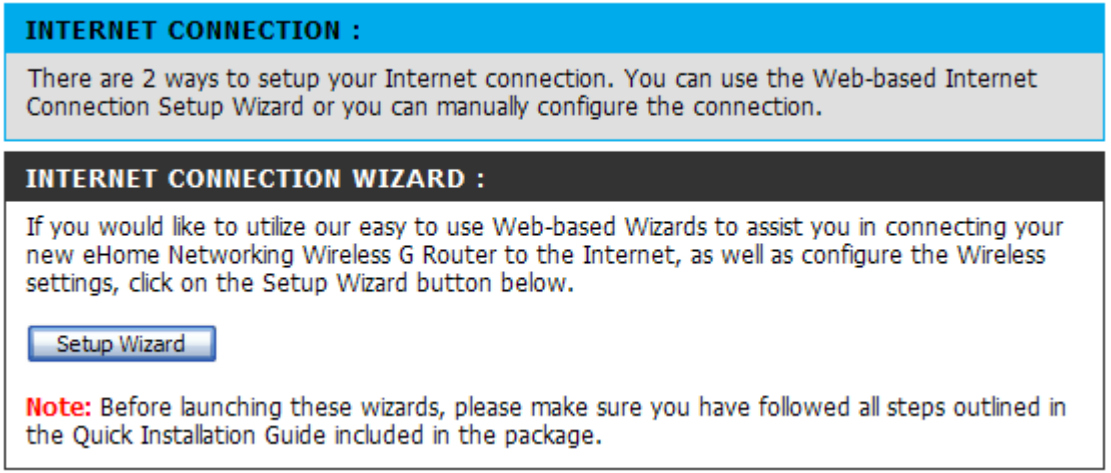


After logging in the Setup page will be displayed:



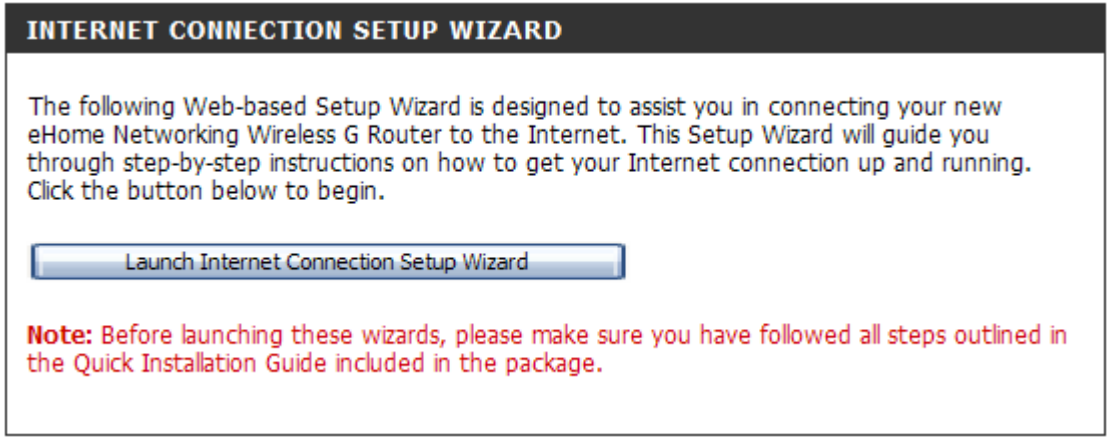
Setup Wizards

Setup Wizards are available to quickly and easily configure basic router settings. Click **Setup Wizard** to access the wizards.

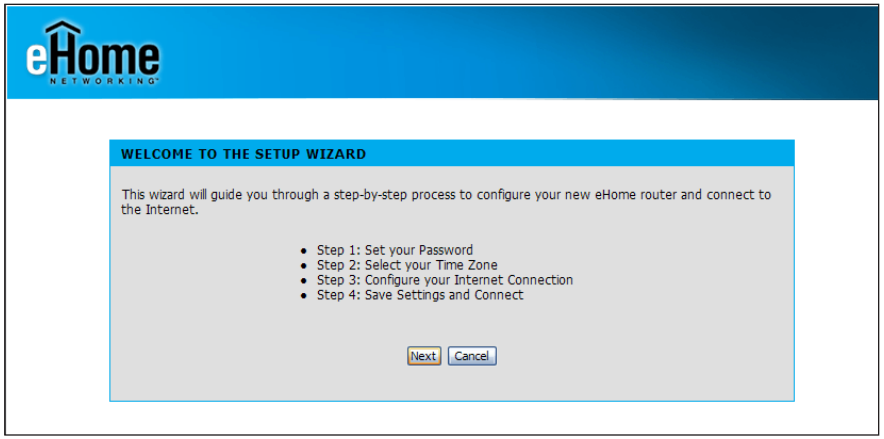


Internet Connection Wizard

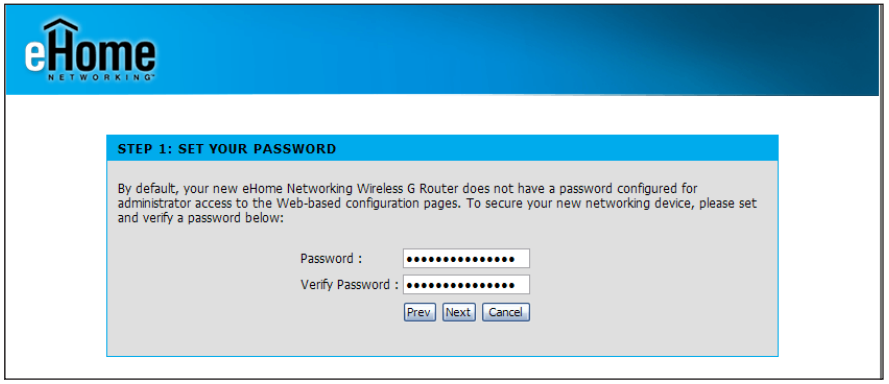
Click **Launch Internet Connection Setup Wizard**.



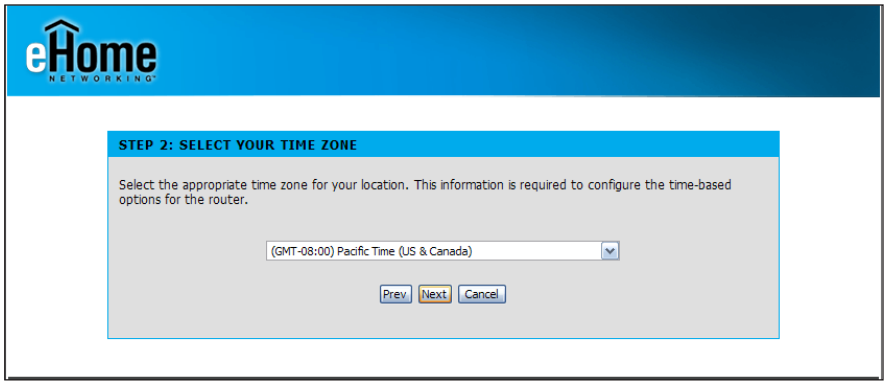
Click **Next** to continue.



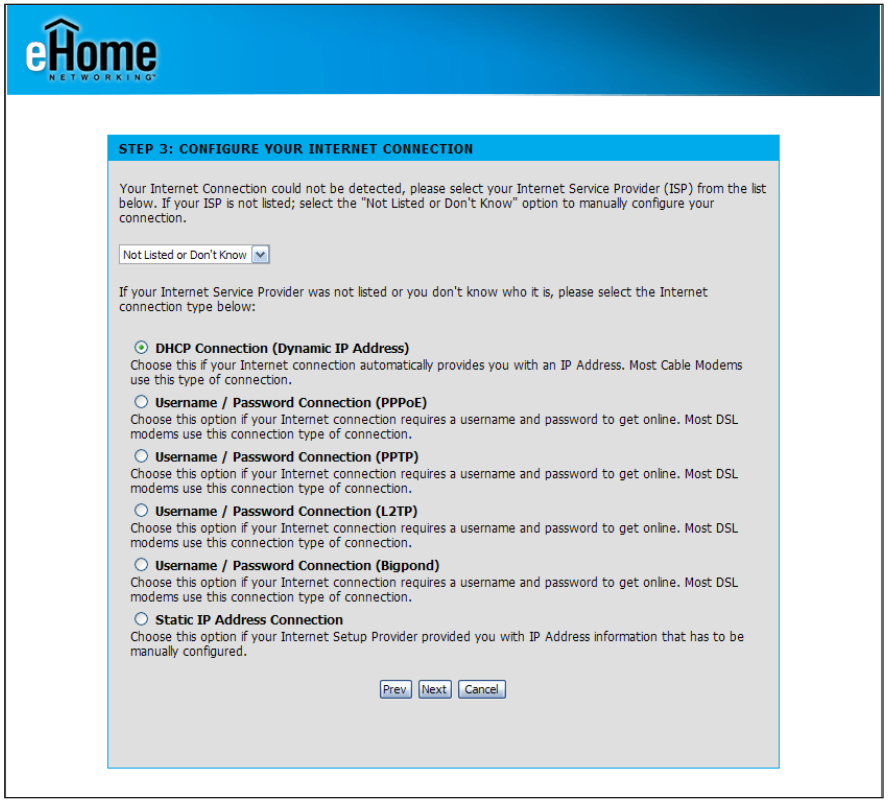
Create a new password and then click **Next** to continue.



Select your time zone from the drop-down menu and then click **Next** to continue.

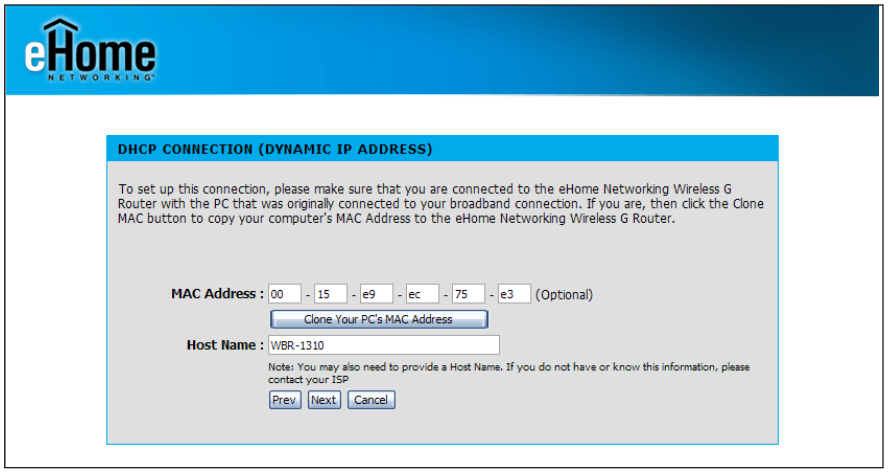


Select the type of Internet connection you use and then click **Next** to continue.



If you selected Dynamic, you may need to enter the MAC address of the computer that was last connected directly to your modem. If you are currently using that computer, click **Clone Your PC's MAC Address** and then click **Next** to continue.

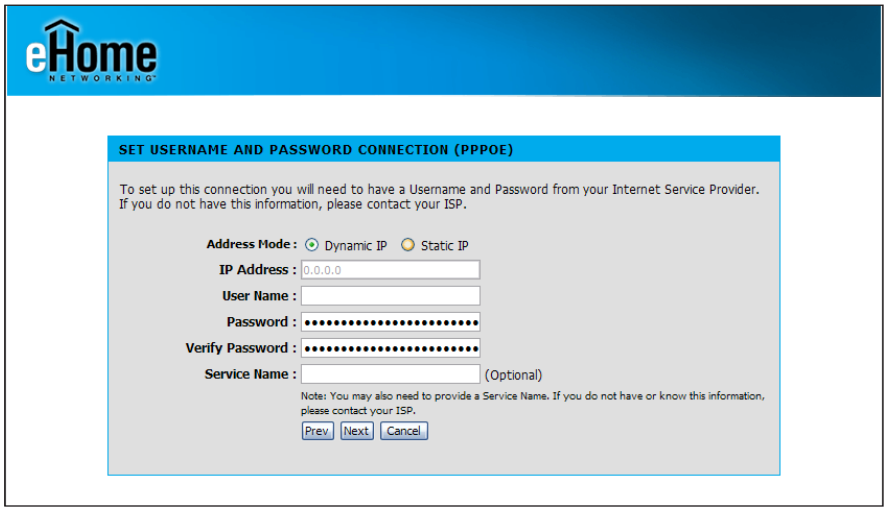
The Host Name is optional but may be required by some ISPs. The default host name is the device name of the Router and may be changed.



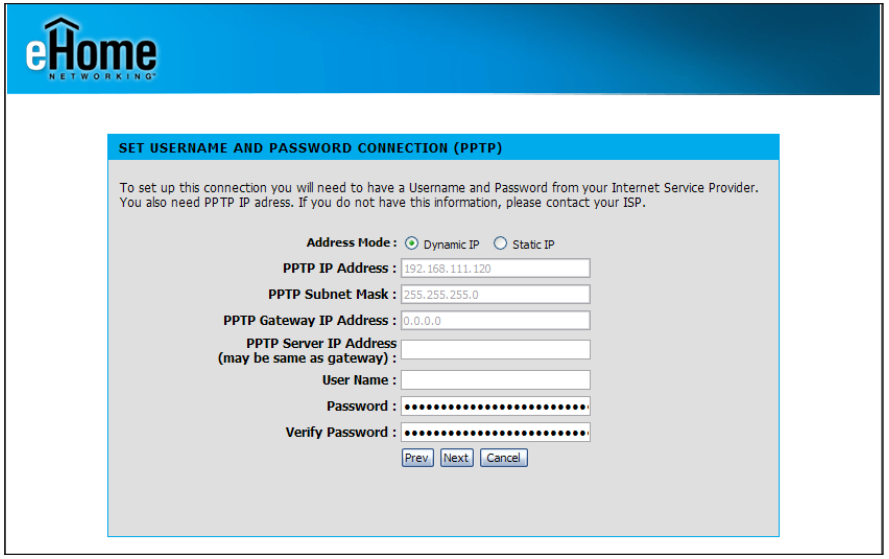
If you selected PPPoE, enter your PPPoE username and password. Click **Next** to continue.

Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses.

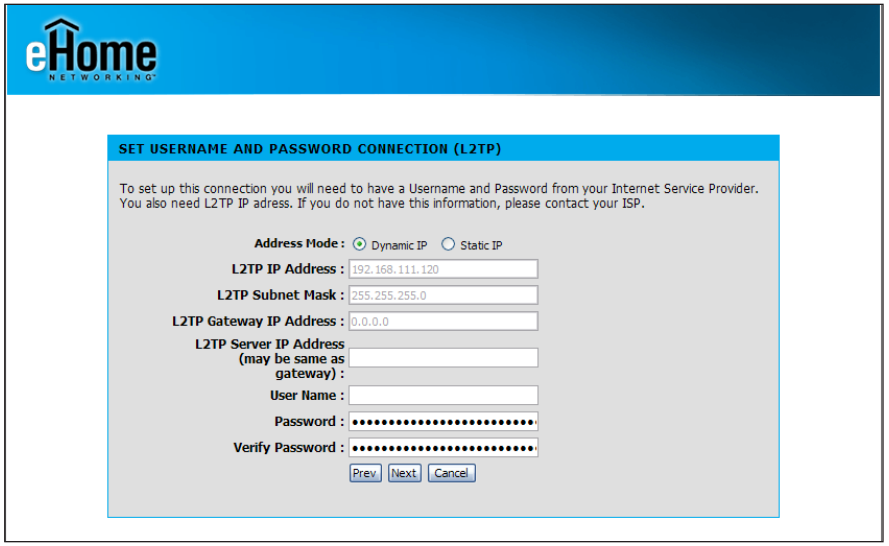
Note: *Make sure to remove your PPPoE software from your computer. The software is no longer needed and will not work through a router.*



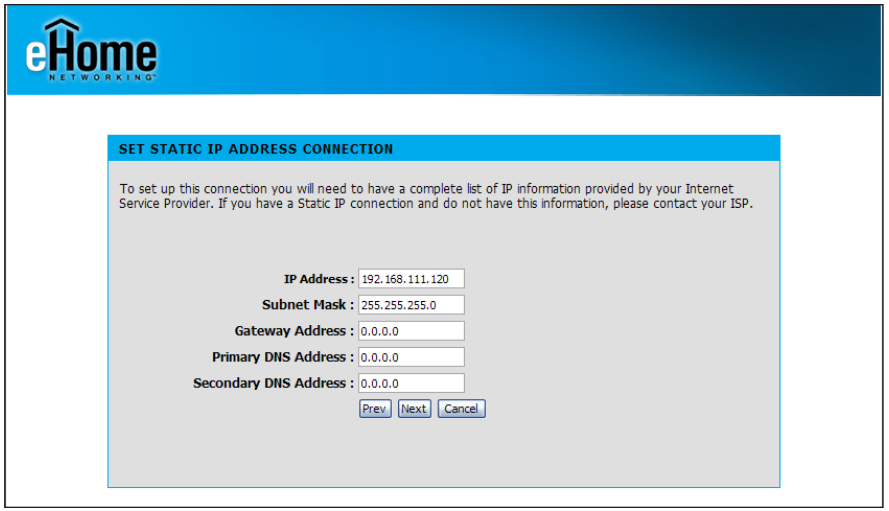
If you selected PPTP, enter your PPTP username and password. Click **Next** to continue.



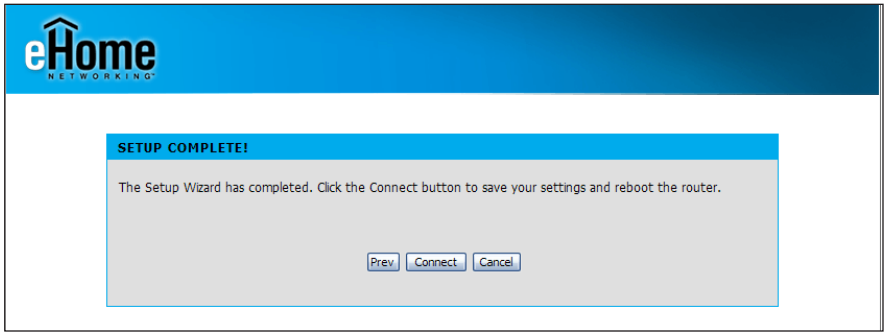
If you selected L2TP, enter your L2TP username and password. Click **Next** to continue.



If you selected Static, enter your network settings supplied by your Internet provider. Click **Next** to continue.

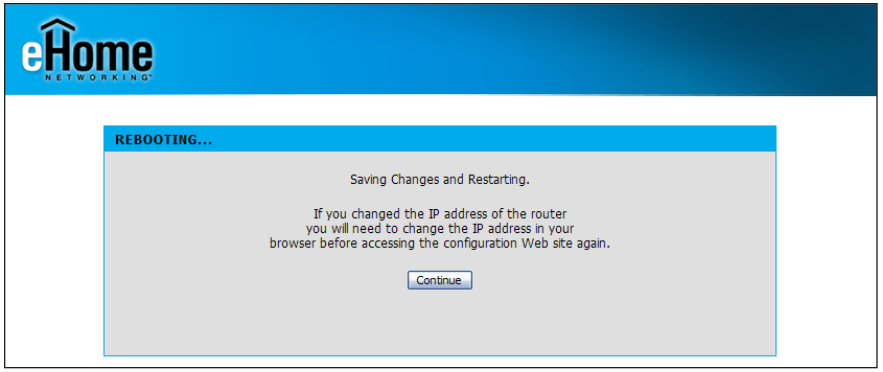


Click **Connect** to save your settings.



Once the router is finished rebooting, click **Continue**. Please allow 1-2 minutes to connect.

Close your browser window and reopen it to test your Internet connection. It may take a few tries to initially connect to the Internet.

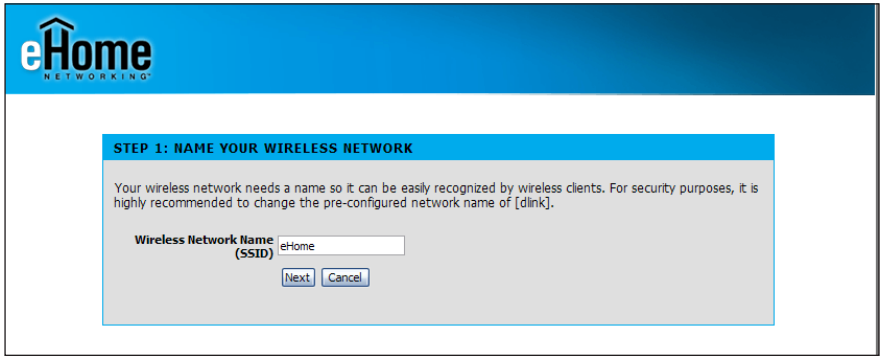


Wireless Security Wizard

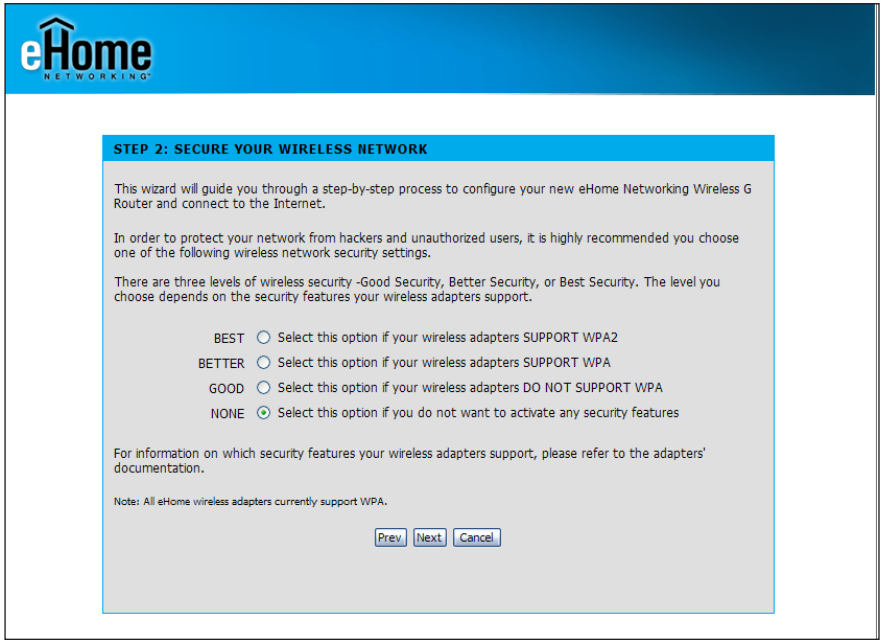
To run the Wireless Security wizard, click **Launch Internet Connection Setup Wizard**.

From the Wireless Security wizard welcome screen, click **Next** to continue.

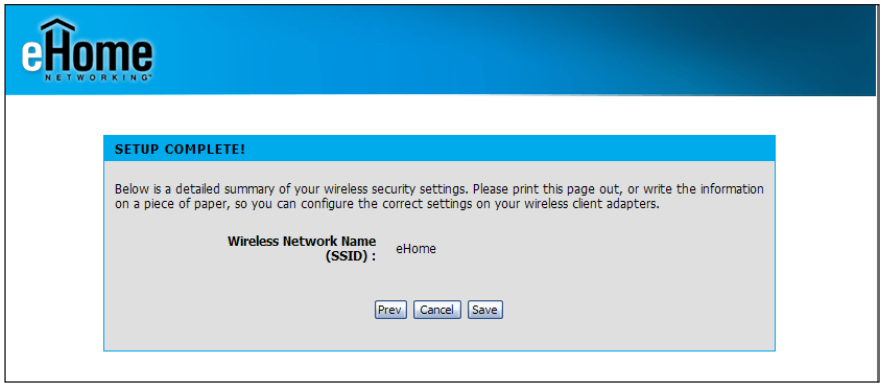
Select a name for your wireless network (SSID) and click **Next** to continue.



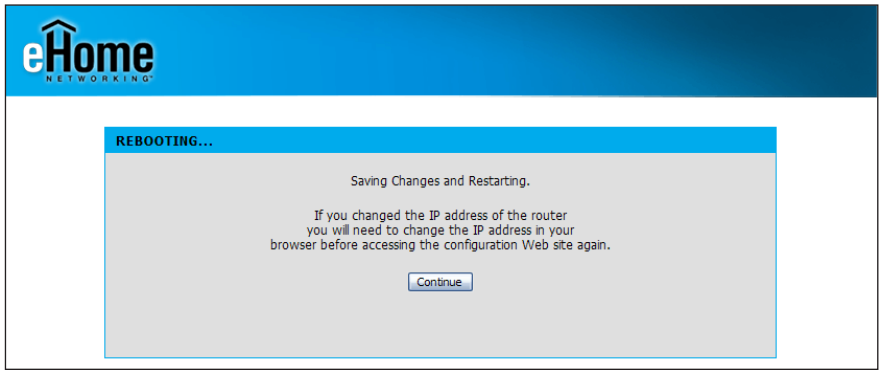
Select a wireless security setting and click **Next** to continue. (See p. 63 for more information on wireless security.)



Select a name for your wireless network (SSID) and click **Next** to continue.

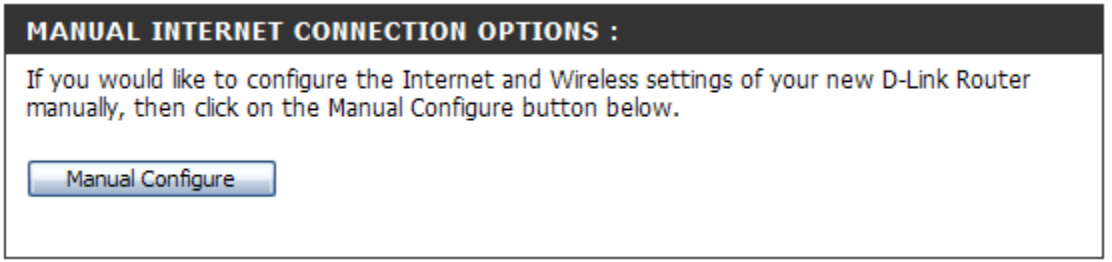


Click **Continue** to restart the router and keep the current changes.

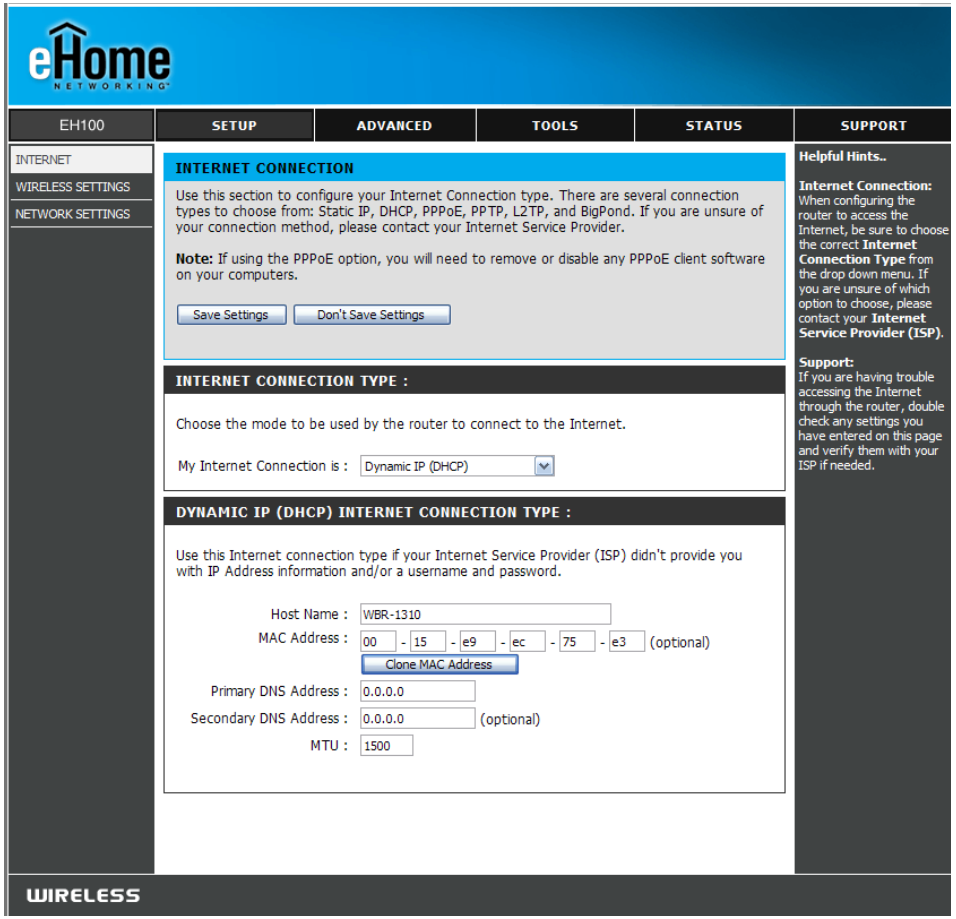


Manual Internet Setup

To manually configure the Internet connection settings, log into the EH100, and from the Setup page, select **Manual Configure**.



The Internet Connection setup screen will appear:

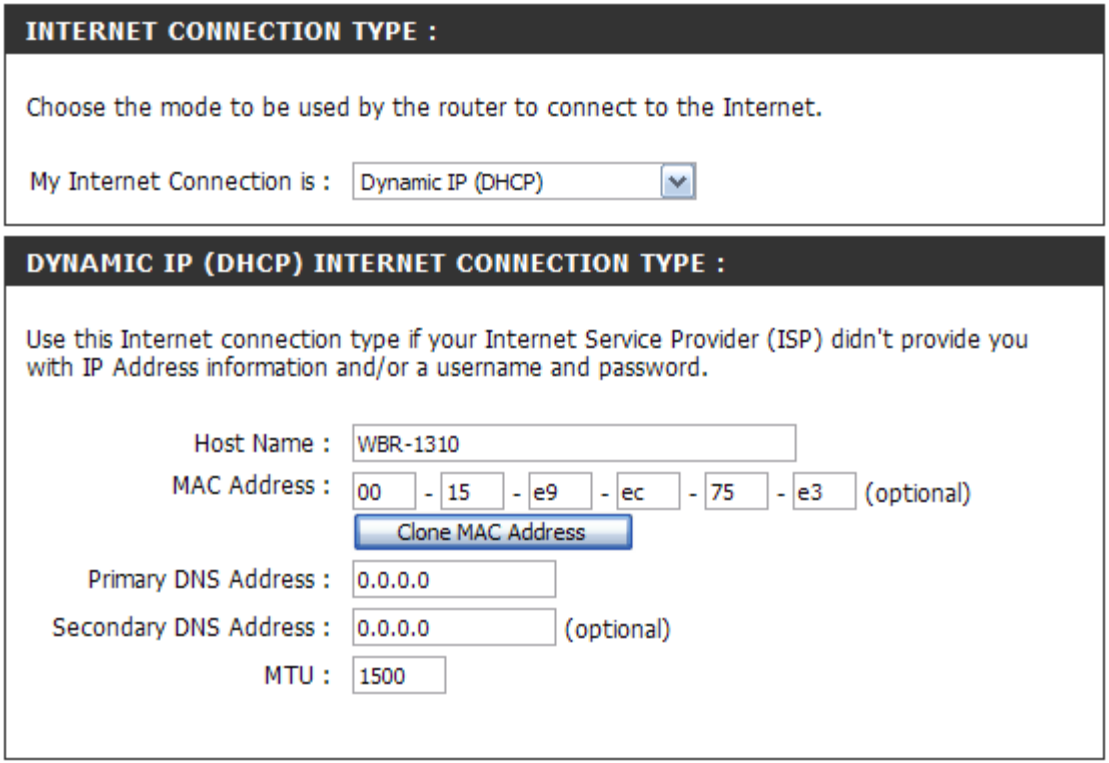


Internet Connection Setup
Dynamic IP (Cable)

Dynamic IP Address: Choose Dynamic IP Address to obtain IP Address information automatically from your ISP. Select this option if your ISP does not give you an IP address to use. This option is commonly used for Cable modem services.

Host Name: The Host Name is optional but may be required by some ISPs. The default host name is the device name of the Router and may be changed.

MAC Address: The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.



Clone MAC Address: You can use the **Clone MAC Address** button to copy the MAC address of your network adapter and replace the WAN MAC address with it. Some ISP's record the MAC address of the network adapter in the computer used to initially connect to their service. The ISP will then only grant Internet access to requests from a computer with this particular Mac Address.

DNS Addresses: Enter the Primary DNS server IP address assigned by your ISP.

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1500 is the default MTU.

Internet Connection Setup
PPPoE (DSL)

Choose PPPoE (Point to Point Protocol over Ethernet) if your ISP uses a PPPoE connection. Your ISP will provide you with a username and password. This option is typically used for DSL services. Make sure to remove your PPPoE software from your computer. The software is no longer needed and will not work through a router.

PPPoE: Select **Dynamic** (most common) or **Static**. Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses.

User Name: Enter your PPPoE user name.

Password: Enter your PPPoE password and then retype the password in the next box.

Service Name: Enter the ISP Service Name (optional).

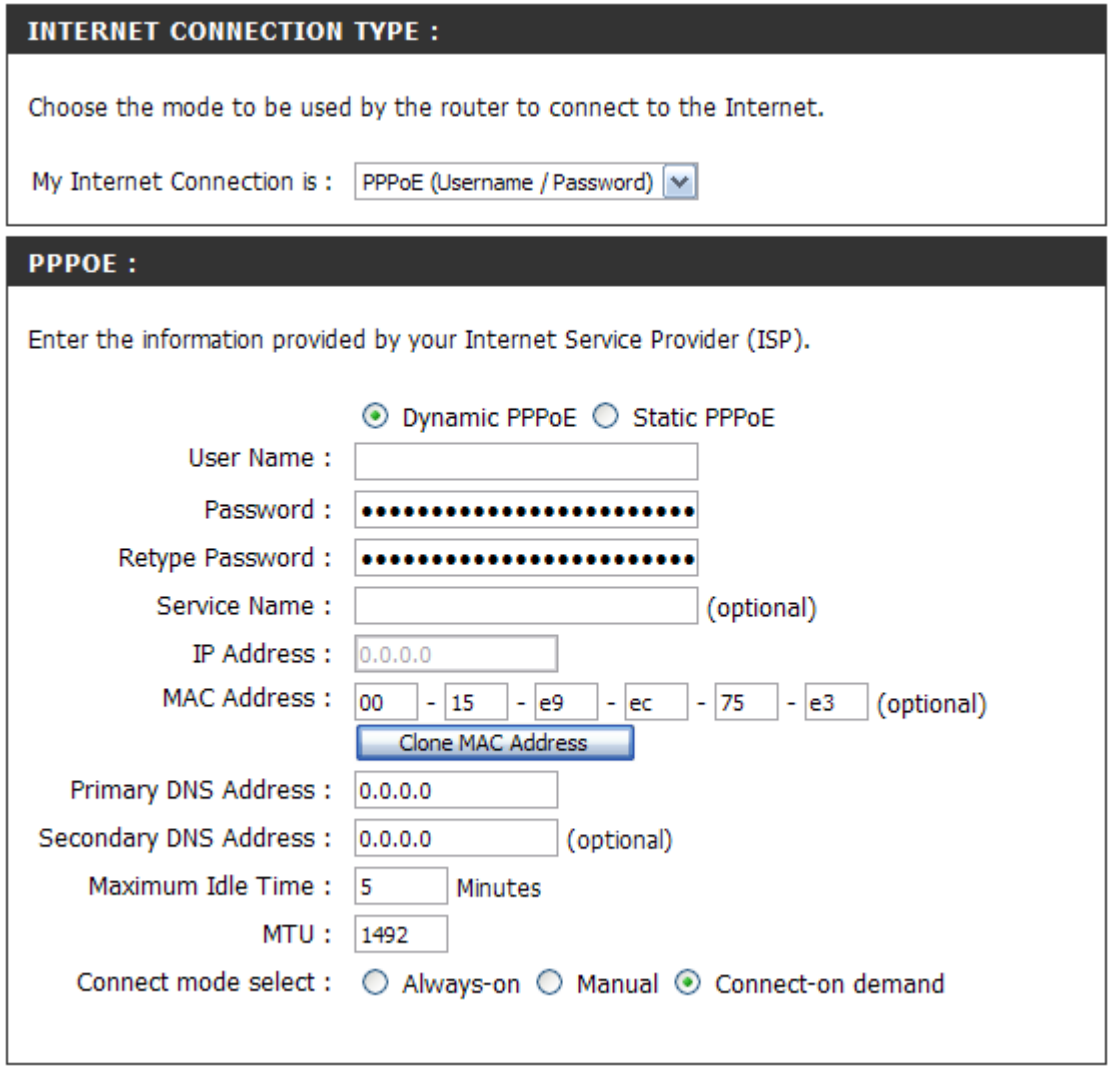
IP Address: Enter the IP address (Static PPPoE only).

DNS Addresses: Enter the Primary and Secondary DNS Server Addresses (Static PPPoE only).

Maximum Idle Time: Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable Auto-reconnect.

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

Connection Mode Select: Select either Always-on, Manual, or Connect-on demand.



Internet Connection Setup
PPTP

Choose PPTP (Point-to-Point-Tunneling Protocol) if your ISP uses a PPTP connection. Your ISP will provide you with a username and password. This option is used for some DSL services.

PPTP: Select **Dynamic** (most common) or **Static**. Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses.

IP Address: Enter the IP address (Static PPTP only).

Subnet Mask: Enter the Primary and Secondary DNS Server Addresses (Static PPTP only).

Gateway: Enter the Gateway IP Address provided by your ISP.

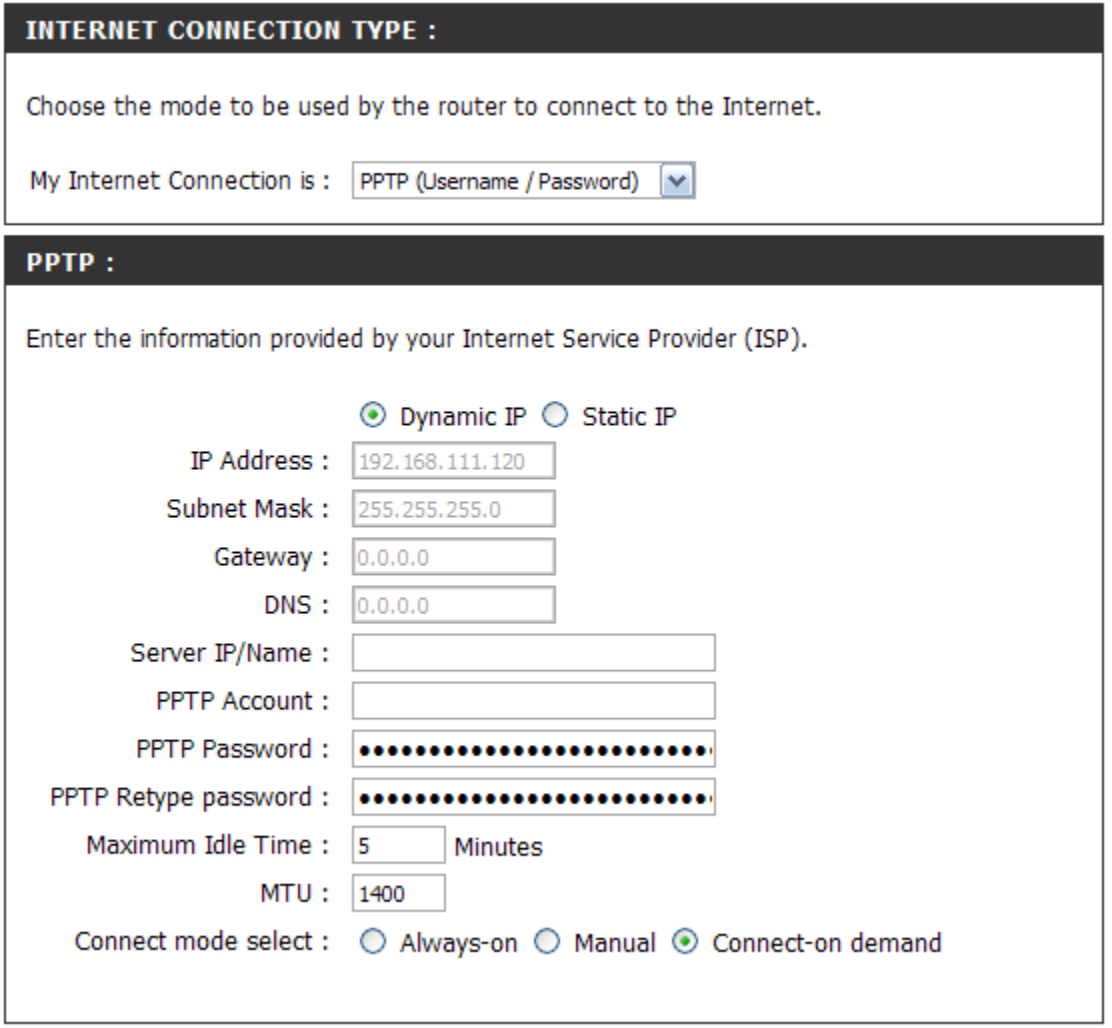
Server IP: Enter the Server IP provided by your ISP (optional).

PPTP Account: Enter your PPTP account name.

Maximum Idle Time: Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable Auto-reconnect.

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

Connect Mode: Select either Always-on, Manual, or Connect-on demand.



Internet Connection Setup
L2TP

Choose L2TP (Layer 2 Tunneling Protocol) if your ISP uses a L2TP connection. Your ISP will provide you with a username and password. This option is typically used for DSL services.

L2TP: Select **Dynamic** (most common) or **Static**. Select **Static** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses.

IP Address: Enter the IP address (Static L2TP only).

Subnet Mask: Enter the Primary and Secondary DNS Server Addresses (Static L2TP only).

Gateway: Enter the Gateway IP Address provided by your ISP.

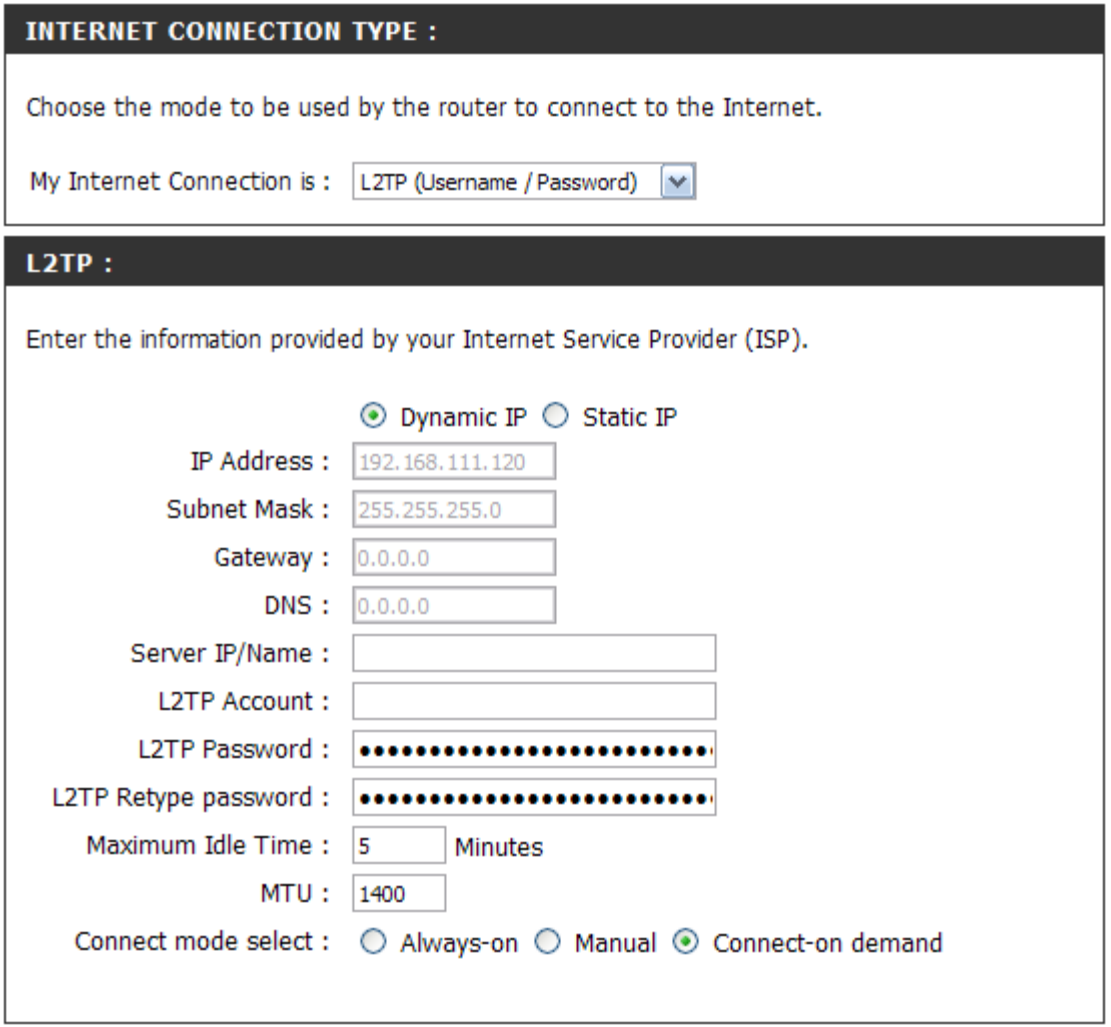
DNS: The DNS server information will be supplied by your ISP (Internet Service Provider.)

Server IP: Enter the Server IP provided by your ISP (optional).

L2TP Account: Enter your L2TP account name.

L2TP Password: Enter your L2TP password and then retype the password in the next box.

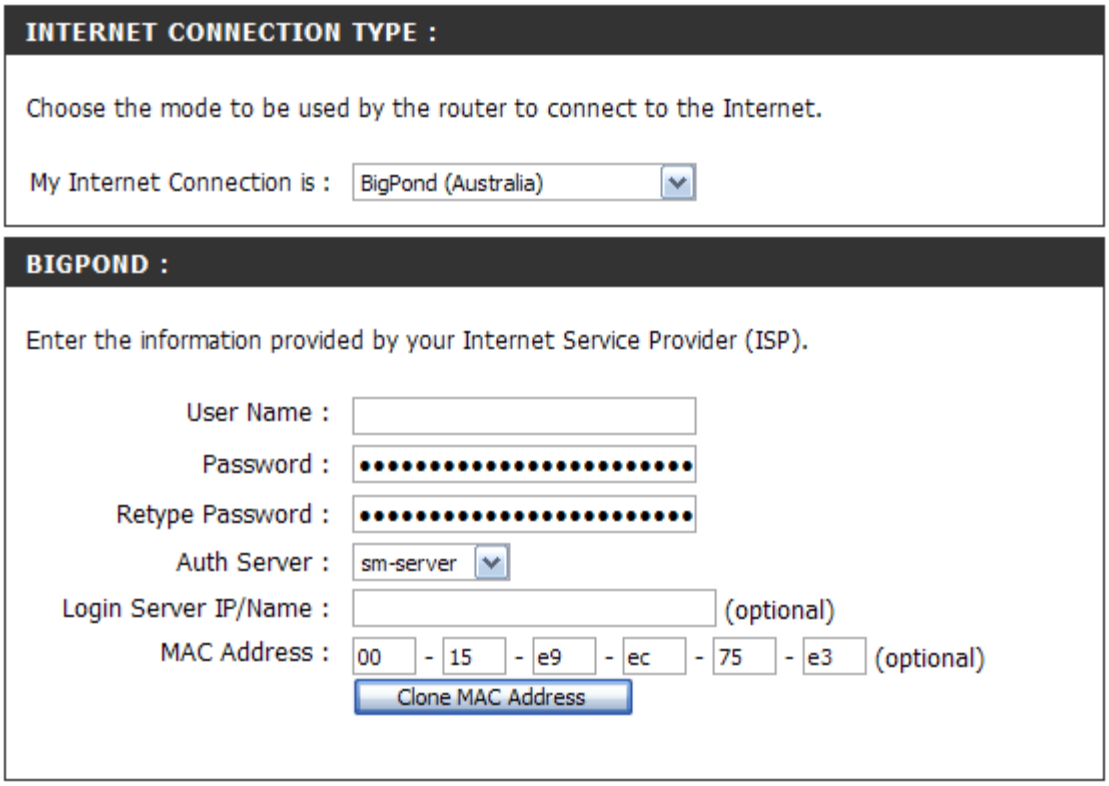
Maximum Idle Time: Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable Auto-reconnect.



MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

Connect Mode: Select either Always-on, Manual, or Connect-on demand.

Internet Connection Setup
Big Pond



User Name: Enter your Big Pond user name.

Password: Enter your Big Pond password and then retype the password in the next box.

Auth Server: Enter the IP address of the login server.

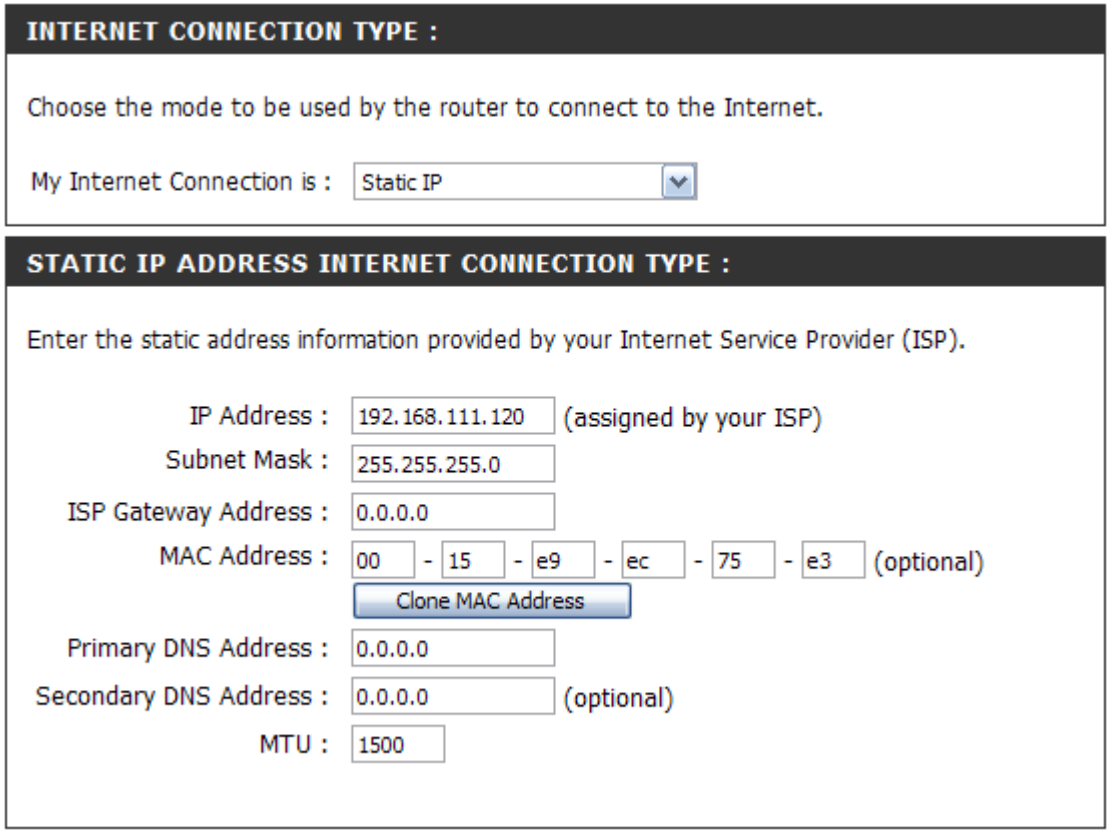
Login Server IP: Enter the IP address of the login server.

MAC Address: The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

Clone MAC Address: You can use the **Clone MAC Address** button to copy the MAC address of your network adapter and replace the WAN MAC address with it. Some ISP's record the MAC address of the network adapter in the computer used to initially connect to their service. The ISP will then only grant Internet access to requests from a computer with this particular Mac Address.

Internet Connection Setup
Static (assigned by ISP)

Select Static IP Address if all WAN IP information is provided to you by your ISP. You will need to enter in the IP address, subnet mask, gateway address, and DNS address(es) provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format.



IP Address: Enter the IP address assigned by your ISP.

Subnet Mask: Enter the Subnet Mask assigned by your ISP.

ISP Gateway: Enter the Gateway assigned by your ISP.

MAC Address: The default MAC Address is set to the WAN's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

Clone MAC Address: You can use the **Clone MAC Address** button to copy the MAC address of your network adapter and replace the WAN MAC address with it. Some ISP's record the MAC address of the network adapter in the computer used to initially connect to their service. The ISP will then only grant Internet access to requests from a computer with this particular Mac Address.

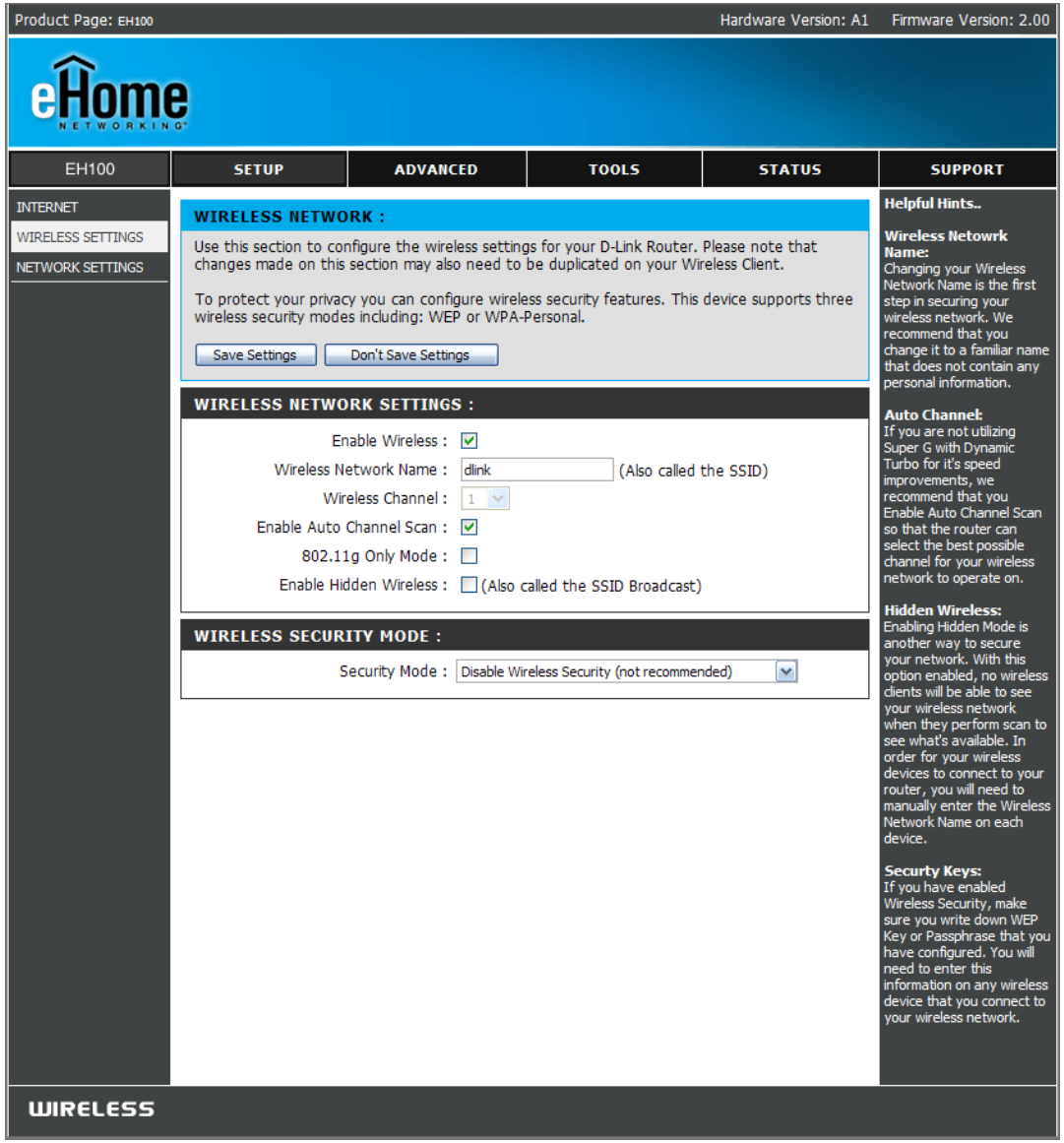
Primary DNS Address: Enter the Primary DNS server IP address assigned by your ISP.

Secondary DNS Address: Enter the Secondary DNS server IP address assigned by your ISP.

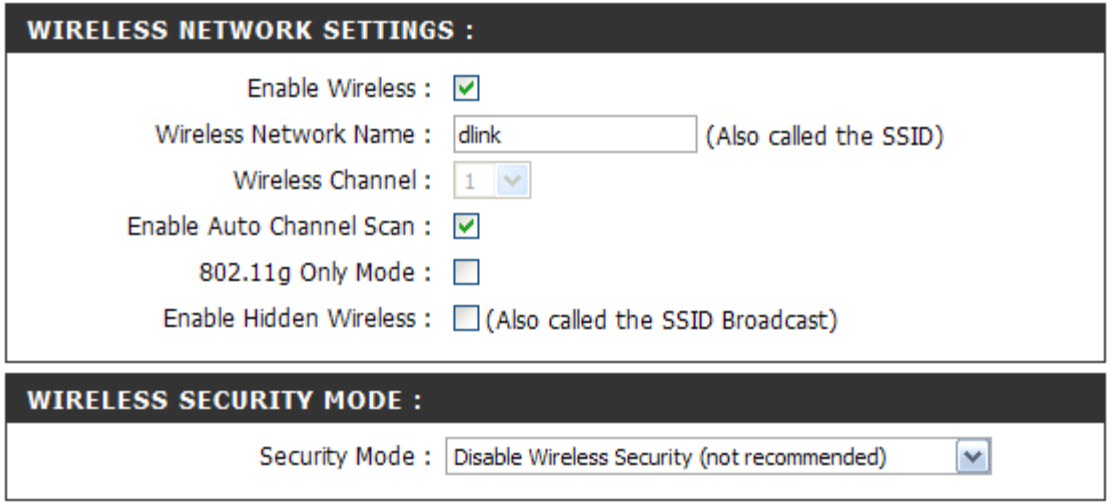
MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

Wireless Settings

The Wireless Settings page is used to configure the wireless settings for the router. Wireless security settings are also configured on this page.



Wireless Network Settings



Enable Wireless: Check the box to enable the wireless function. If you do not want to use wireless, uncheck the box to disable all the wireless functions.

Wireless Network Name: Service Set Identifier (SSID) is the name of your wireless network. Create a name using up to 32 characters. The SSID is case-sensitive.

Wireless Channel: Indicates the channel setting for the EH100. By default the channel is set to 6. The Channel can be changed to fit the channel setting for an existing wireless network or to customize the wireless network. The **Auto Channel Scan** setting can be selected to allow the EH100 to choose the channel with the least amount of interference.

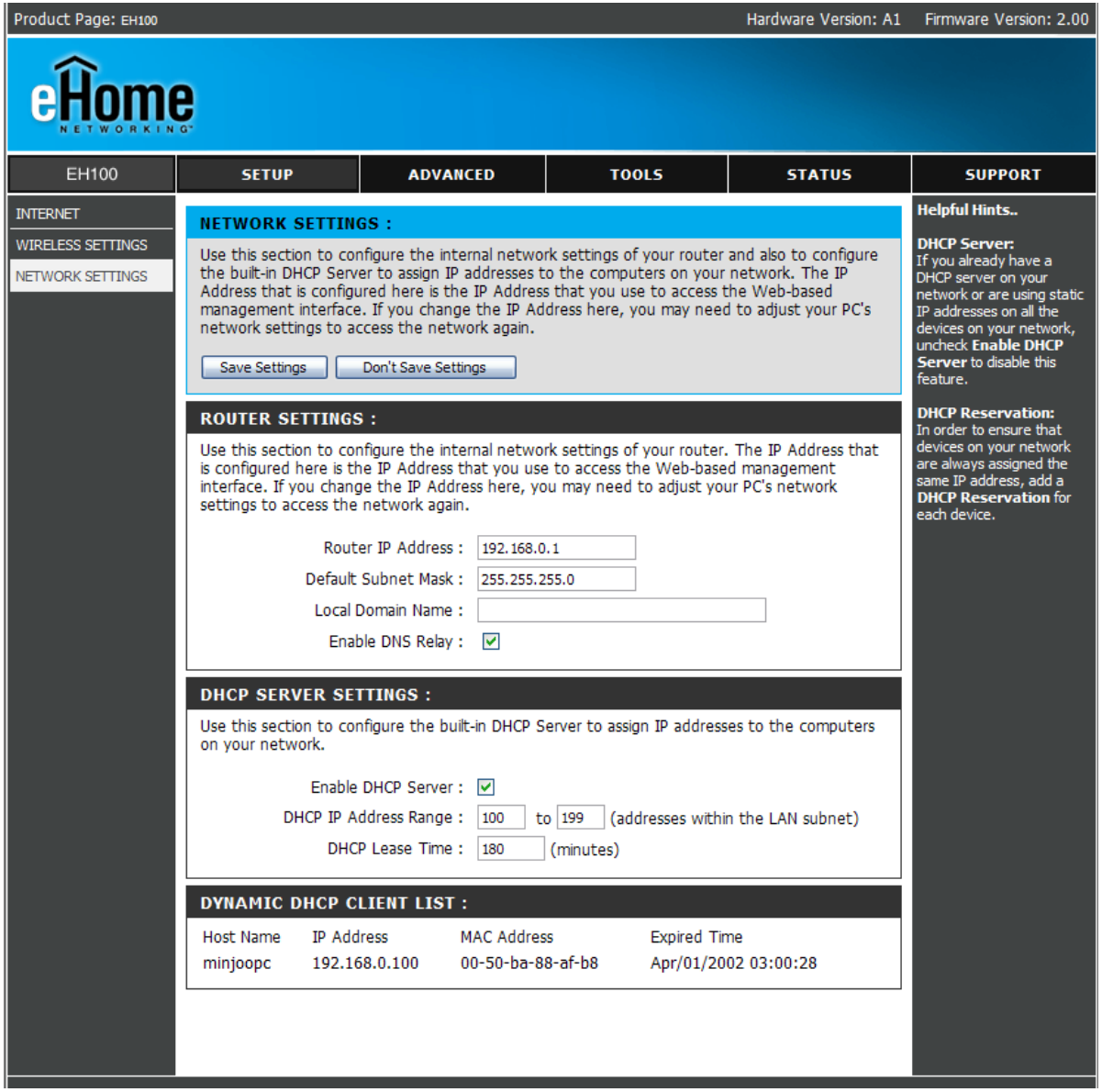
802.11g Only Mode: Enable this mode if your network is made up of purely 802.11g devices. If you have both 802.11b and 802.11g wireless clients, uncheck the box.

Enable Hidden Wireless: Check this option if you would not like the SSID of your wireless network to be broadcasted by the EH100. If this option is checked, the SSID of the EH100 will not be seen by Site Survey utilities so your wireless clients will have to know the SSID of your EH100 in order to connect to it.

Wireless Security Mode: Select a wireless security setting. Options are None, WEP, WPA, WPA2 or WPA-Auto. See p. 63 for a detailed explanation of the wireless security options.

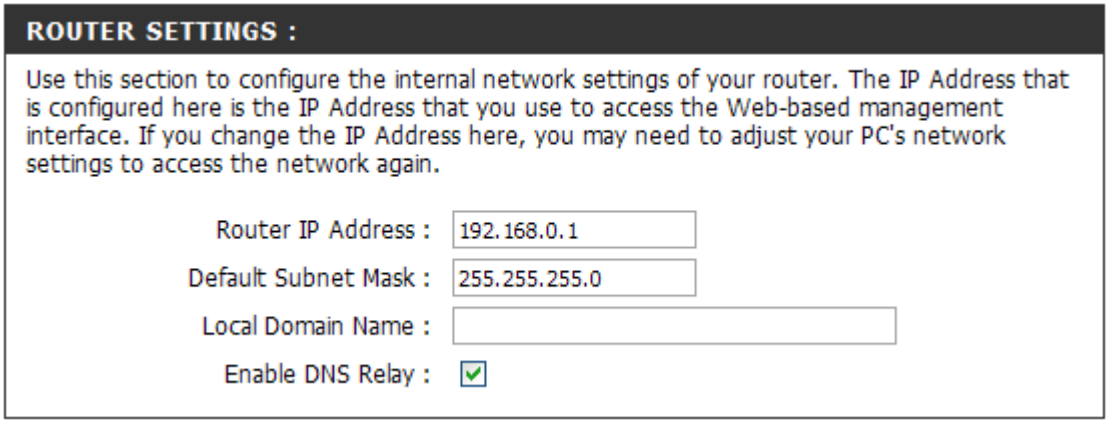
Network Settings

This section will allow you to change the local network settings of the router and to configure the DHCP settings.



Router Settings

This section will allow you to change the local network settings of the router and to configure the DHCP settings.



IP Address: Enter the IP address of the router. The default IP address is 192.168.0.1.

If you change the IP address, once you click Apply, you will need to enter the new IP address in your browser to get back into the configuration utility.

Subnet Mask: Enter the Subnet Mask. The default subnet mask is 255.255.255.0.

Local Domain: Enter the Domain name (Optional).

Enable DNS Relay: Check the box to transfer the DNS server information from your ISP to your computers. If unchecked, your computers will use the router for a DNS server.

Refer to the next page for DHCP information.

DHCP Server Settings

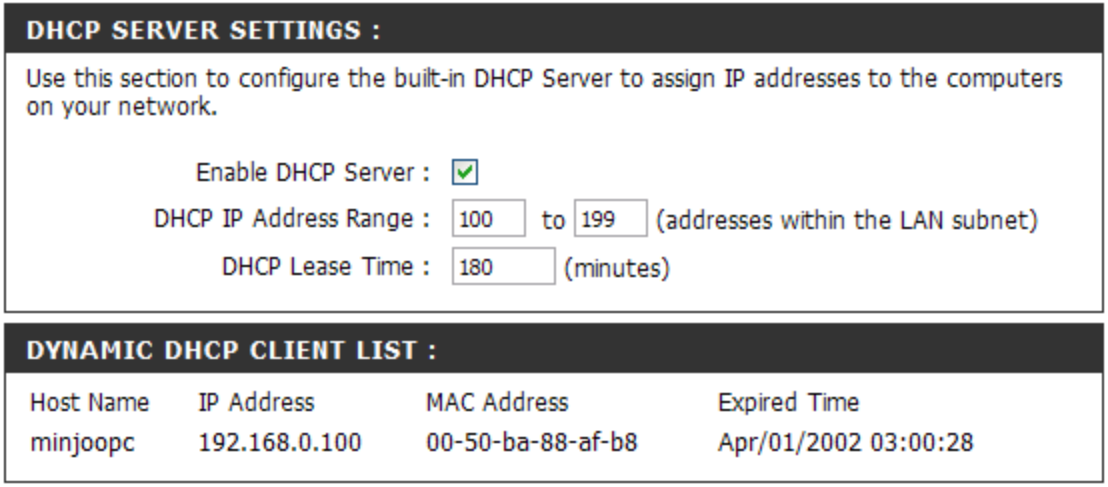
DHCP stands for Dynamic Host Control Protocol. The EH100 has a built-in DHCP server. The DHCP Server will automatically assign an IP address to the computers on the LAN/private network. Be sure to set your computers to be DHCP clients by setting their TCP/IP settings to "Obtain an IP Address Automatically." When you turn your computers on, they will automatically load the proper TCP/IP settings provided by the EH100. The DHCP Server will automatically allocate an unused IP address from the IP address pool to the requesting computer. You must specify the starting and ending address of the IP address pool.

Enable DHCP Server: Check the box to enable the DHCP server on your router. Uncheck to disable this function.

DHCP IP Address Range: Enter the starting and ending IP addresses the DHCP server will assign.

DHCP Lease Time: The length of time for the IP address lease. Enter the Lease time in minutes.

DHCP Client List: Displays a list of current DHCP clients Host Name, IP address, MAC Address, and when the lease expires.



Advanced
Port Forwarding

The EH100 can be configured as a virtual server so that remote users accessing Web or FTP services via the public IP address can be automatically redirected to local servers in the LAN (Local Area Network).

The EH100 firewall feature filters out unrecognized packets to protect your LAN network so all computers networked with the EH100 are invisible to the outside world. If you wish, you can make some of the LAN computers accessible from the Internet by enabling Port Forwarding. Depending on the requested service, the EH100 redirects the external service request to the appropriate server within the LAN network.

The EH100 is also capable of port-redirection meaning incoming traffic to a particular port may be redirected to a different port on the server computer.

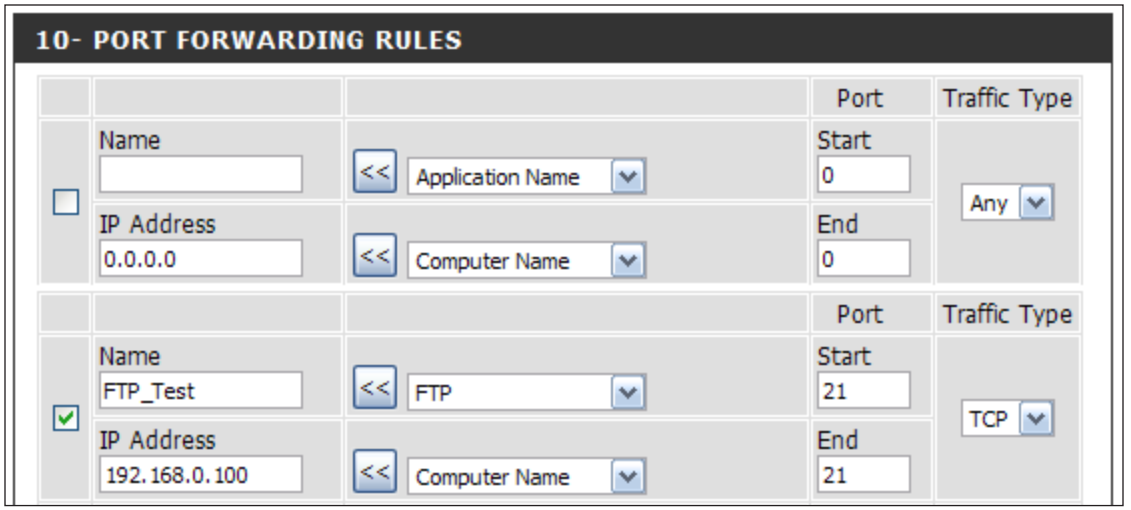
To create a Port Forwarding rule, check the box to enable the rule, and fill in the required configuration fields.

Name: Enter a name for the rule.

IP Address: Enter the IP address of the computer on your local network that you want to allow the incoming service to.

Application Name: Select the Application Name drop down menu for a list of pre-defined applications. If you select one of the pre-defined applications, you must then click the arrow next to the Application Name menu to automatically fill in the Port and Traffic Type fields.

Computer Name: Select your computer by name from a list of DHCP clients in the Computer Name drop down menu. This is an alternative to manually entering the IP address.



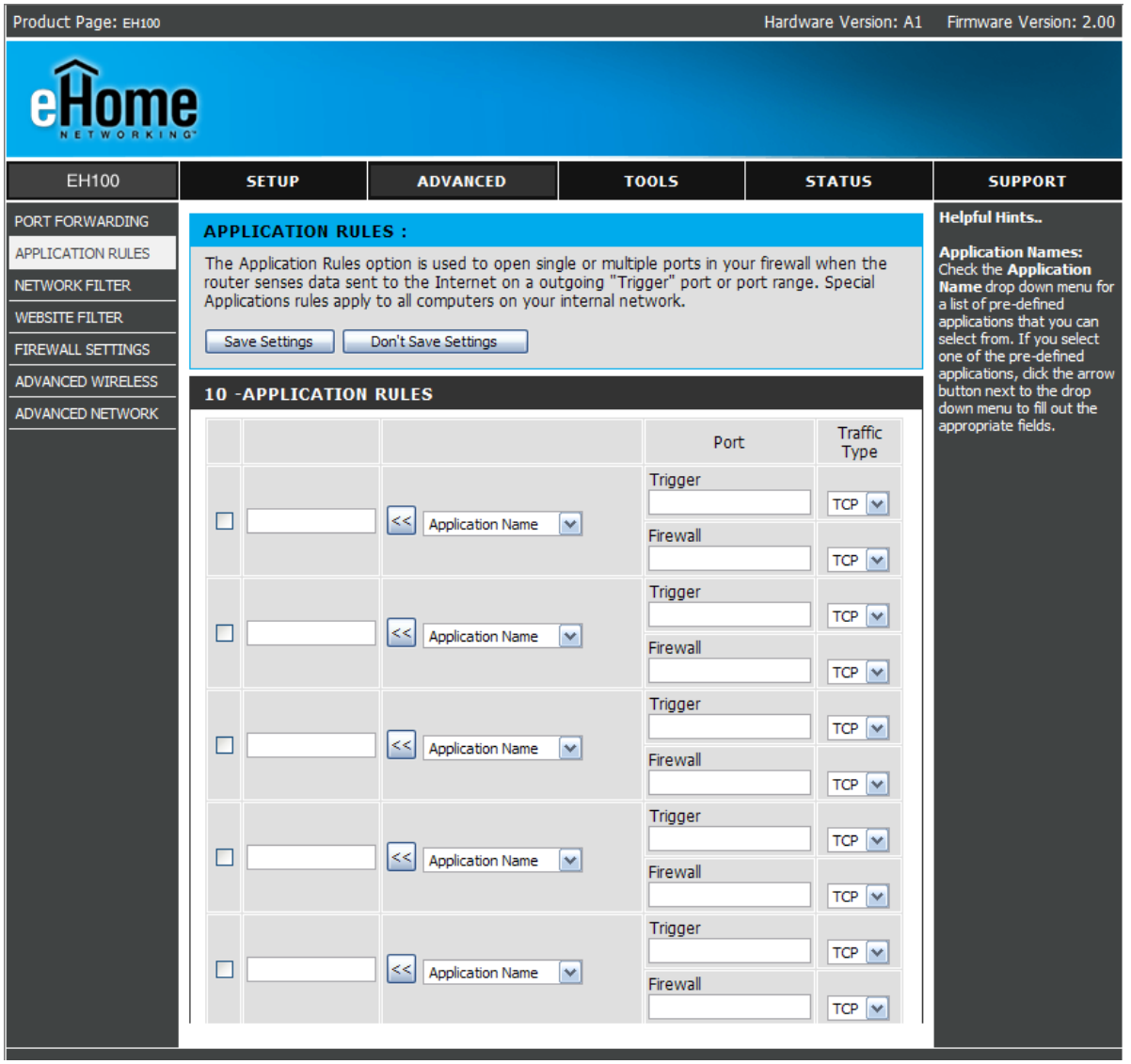
Port: Enter the Start port and End port that you want to forward. When only forwarding one port, enter the port number in both fields.

Traffic Type: Select **TCP**, **UDP**, or **Both**.

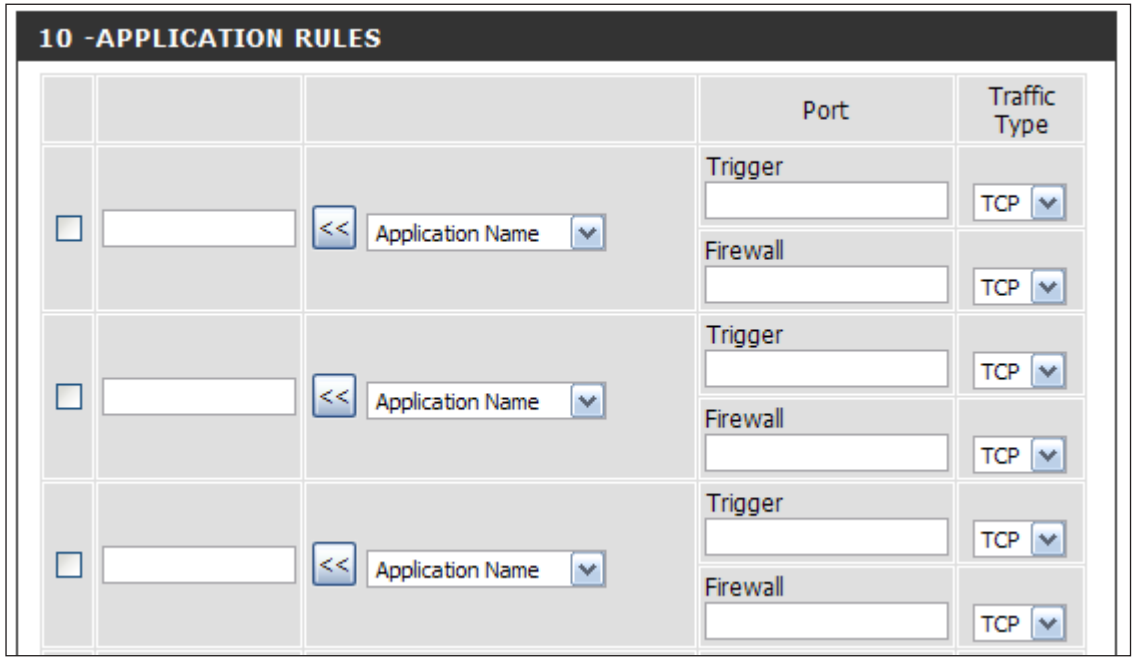
Application Rules

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications have difficulties working through NAT (Network Address Translation). Special Applications makes some of these applications work with the EH100. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger Port" field, select the protocol type as TCP or UDP, then enter the public ports associated with the trigger port to open them for inbound traffic.

The EH100 provides some predefined applications in the table on the bottom of the web page. Select the application you want to use and enable it.



To create an Application rule, check the box to enable the rule, and fill in the required configuration fields.



Name: Enter a name for the rule.

Application Name: Select the Application Name drop down menu for a list of pre-defined applications. If you select one of the pre-defined applications, you must then click the arrow next to the Application Name menu to automatically fill in the Port and Traffic Type fields.

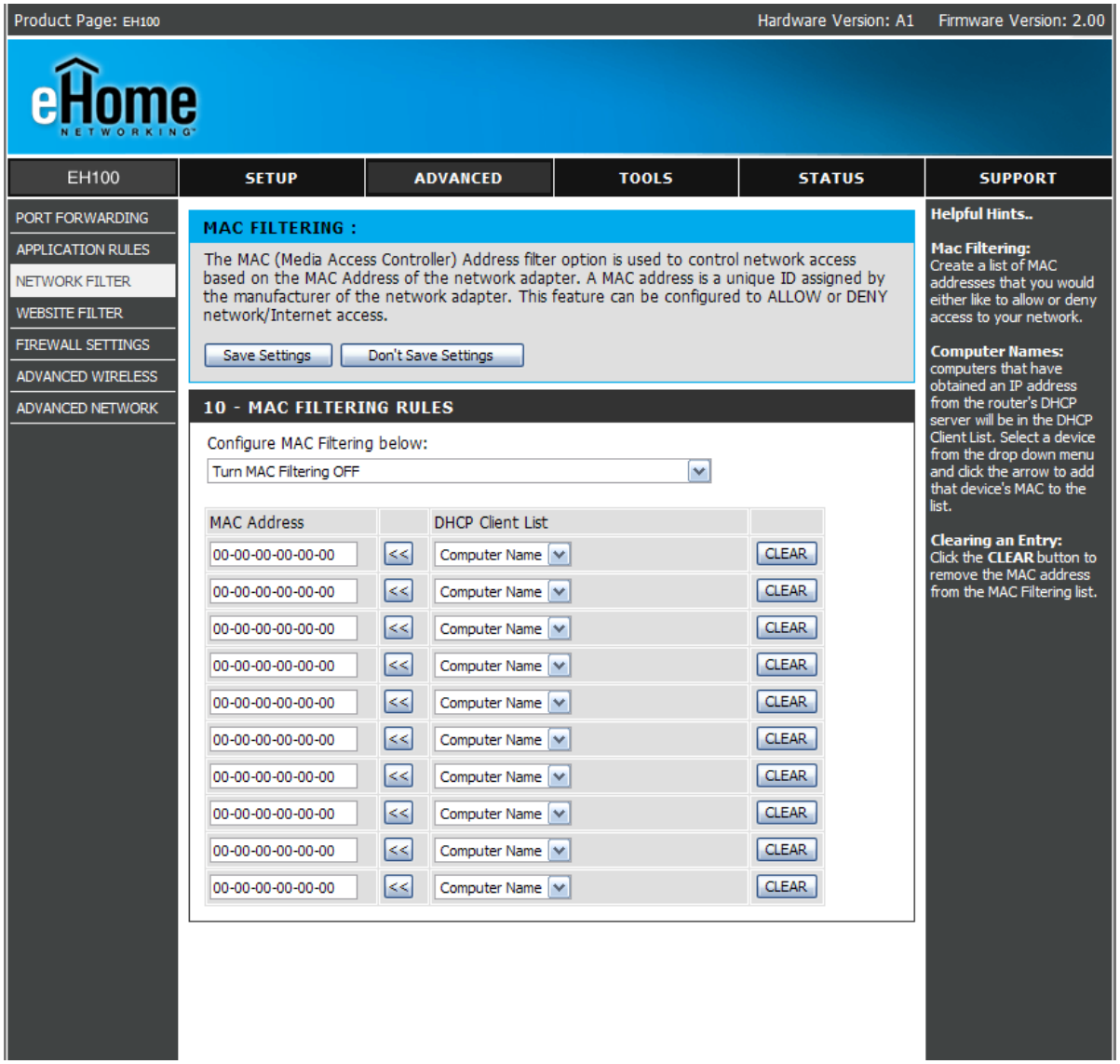
Trigger Port: This is the port used to trigger the application. It can be either a single port or a range of ports.

Firewall Port: This is the port number on the WAN side that will be used to access the application. You may define a single port or a range of ports. You can use a comma to add multiple ports or port ranges.

Traffic Type: Select **TCP**, **UDP**, or **Both**.

Network Filters

Use MAC (Media Access Control) Filters to allow or deny LAN (Local Area Network) computers by their MAC addresses from accessing the Network. You can either manually add a MAC address or select the MAC address from the list of clients that are currently connected to the Broadband Router.

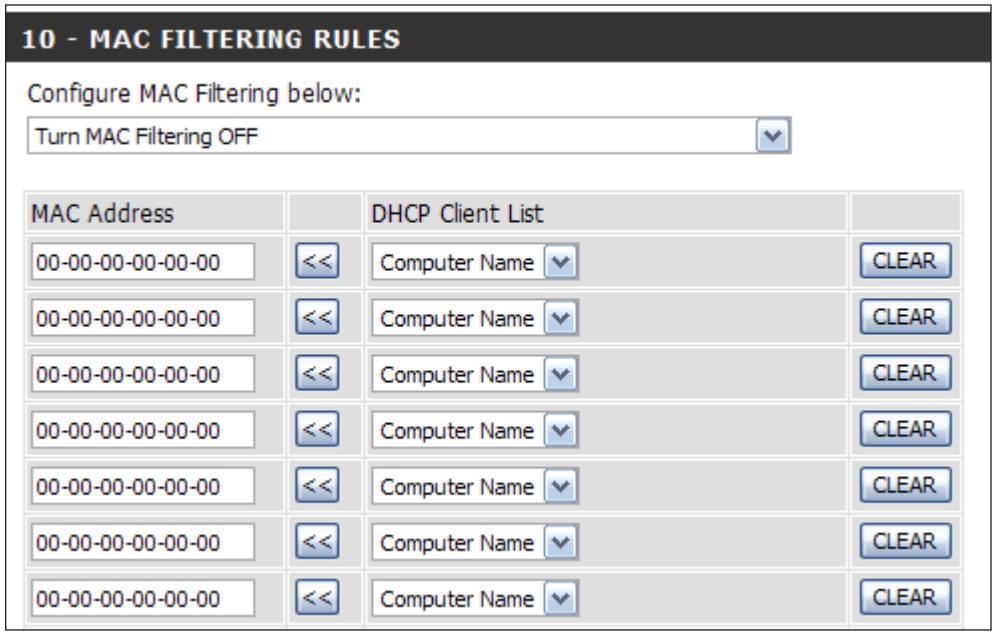


To create an Network Filter rule, check the box to enable the rule, and fill in the required configuration fields.

Configure MAC Filter: Select Turn MAC Filtering OFF, allow MAC addresses listed below, or deny MAC addresses listed below.

MAC Address: Enter the MAC address you would like to filter. To find the MAC address on a computer, please refer to the Networking Basics section in this manual.

DHCP Client: Select a DHCP client from the drop-down menu and click **Clone** to copy that MAC Address.



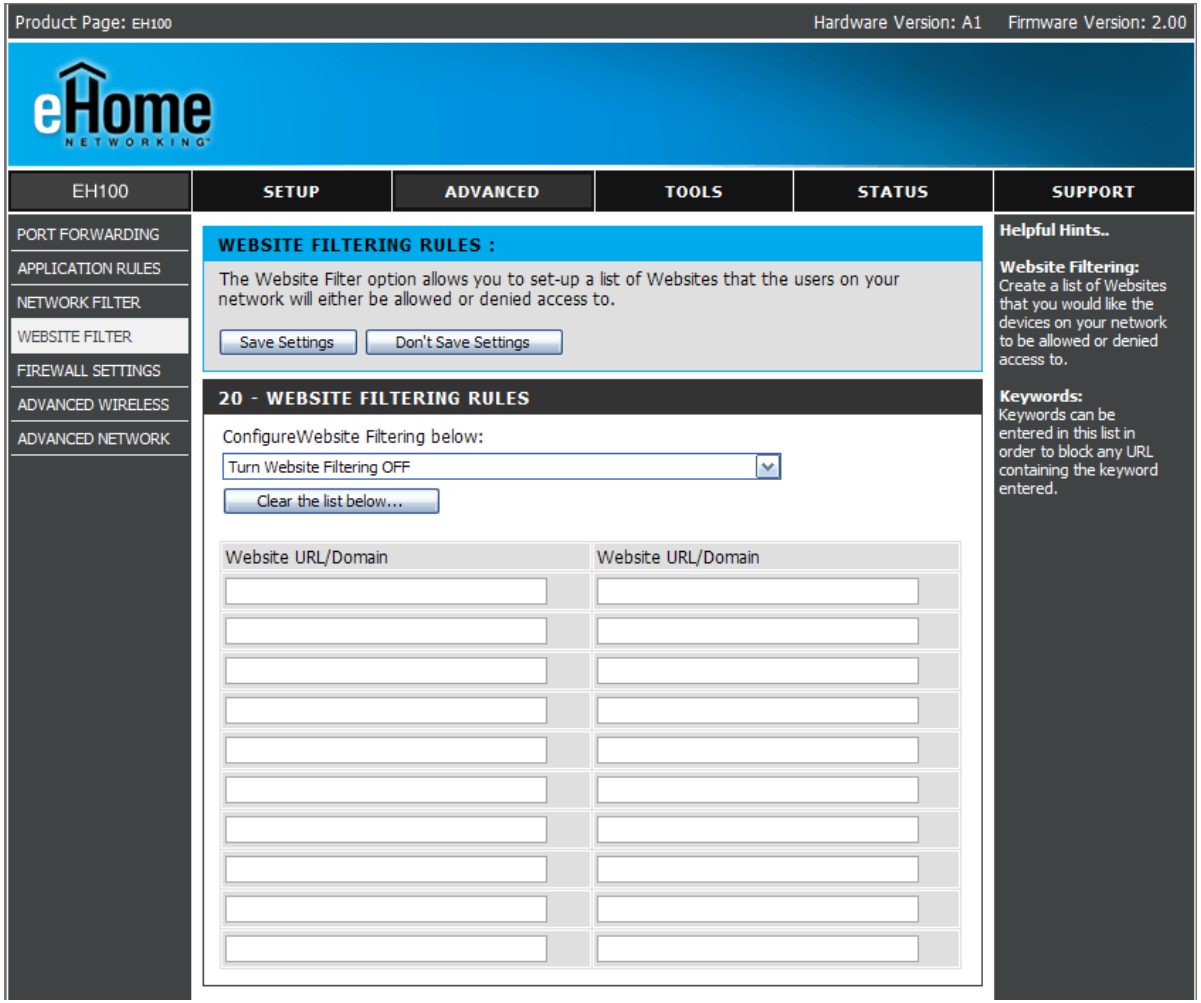
Website Filters

URL and domain blocking are used to deny LAN computers from accessing specific web sites by the URL or domain. A URL is a specially formatted text string that defines a location on the Internet. If any part of the URL contains the blocked word, the site will not be accessible and the web page will not display.

To use this feature, enter the text string to be blocked and click **Save Settings**. The text to be blocked will appear in the list. To delete the entries, just click **Clear the list below**.

Configure Website Filter: Select "Turn off website filters", "Turn on website filtering and ALLOW computers access to ONLY these sites", or "Turn on website filtering and DENY computers access to ONLY these sites".

Website URL/ Domain: Enter the keywords or URLs that you want to block (or allow). Any URL with the keyword in it will be blocked.

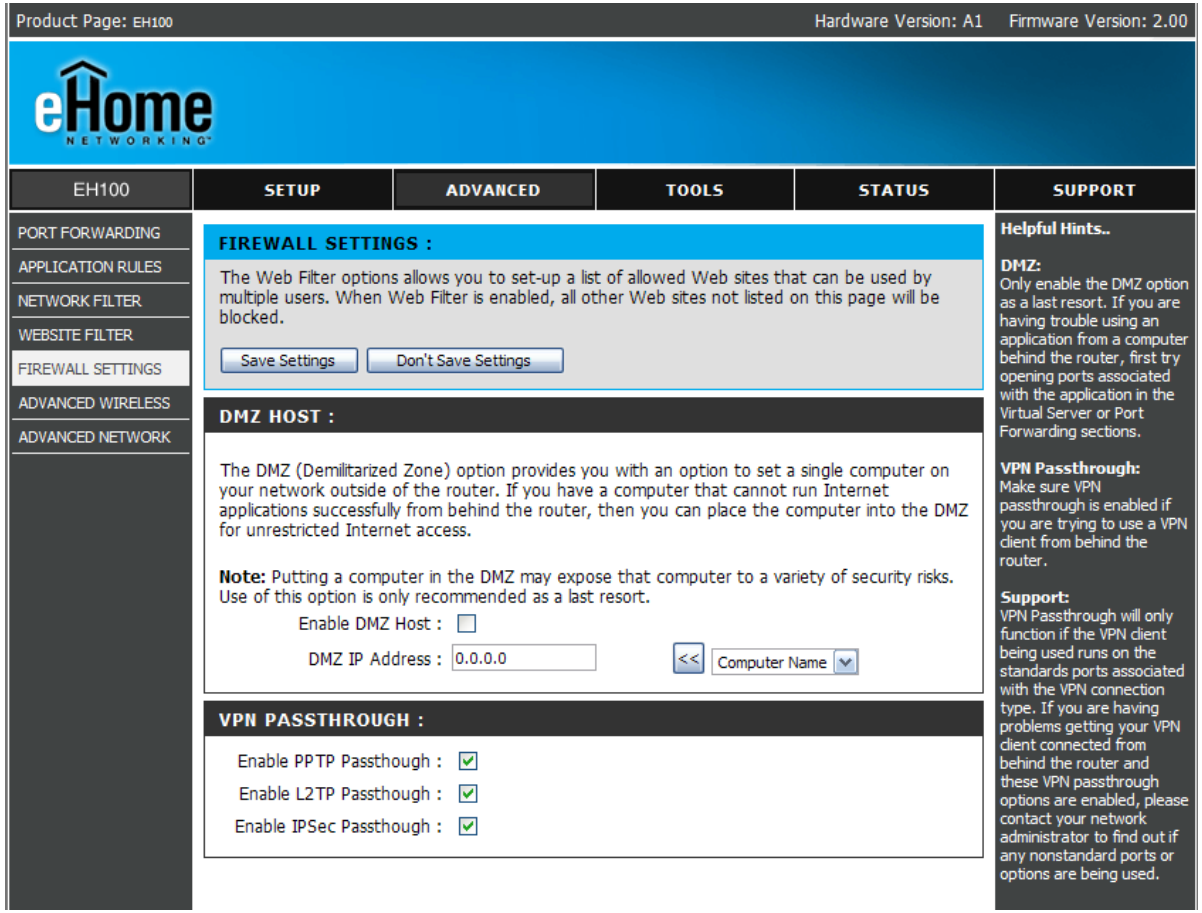


Firewall Settings

This section will allow you to setup a DMZ host and to enable VPN passthrough.

If you have a client PC that cannot run Internet applications properly from behind the EH100, then you can set the client up for unrestricted Internet access. It allows a computer to be exposed to the Internet. This feature is useful for gaming purposes. Enter the IP address of the internal computer that will be the DMZ host. Adding a client to the DMZ (Demilitarized Zone) may expose your local network to a variety of security risks, so only use this option as a last resort.

VPN Passthrough is enabled by default for PPTP, L2TP, and IPSec VPN connections. This allows VPN sessions to be established from the LAN succesfully through the NAT router.



Enable DMZ Host: Check this box to enable DMZ.

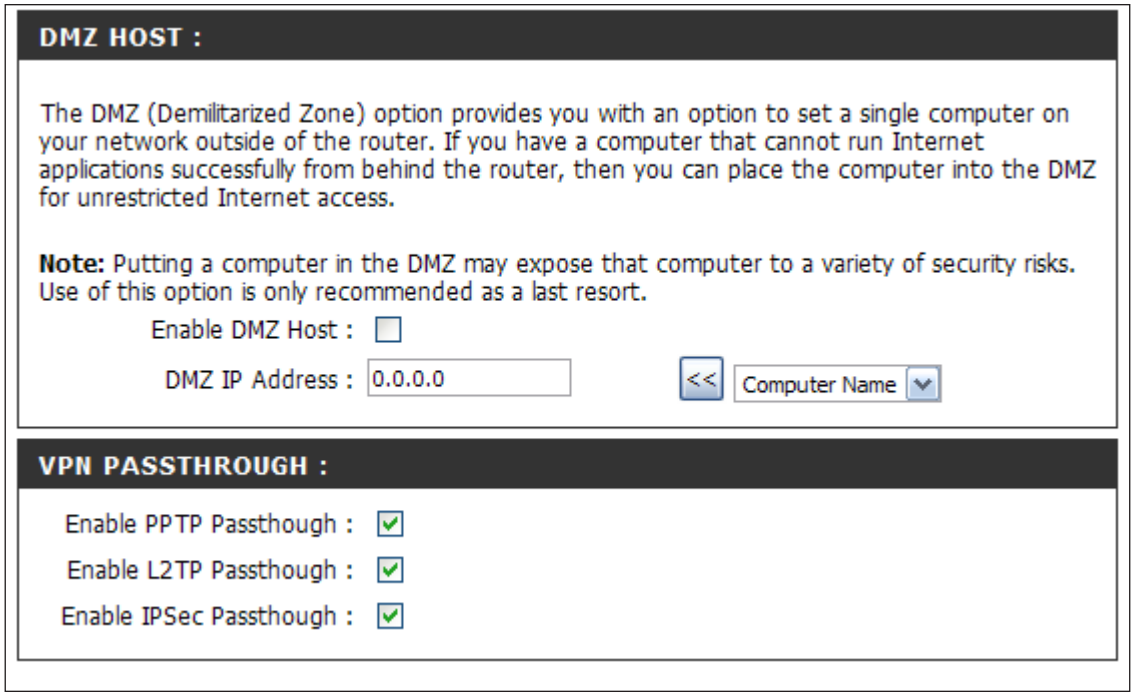
DMZ IP Address: Enter the IP address of the computer you would like to open all ports to.

Computer Name: Choose a DHCP client from the drop down menu.

Enable PPTP Passthrough: Check this box to allow PPTP VPN traffic to pass through the router to your VPN client.

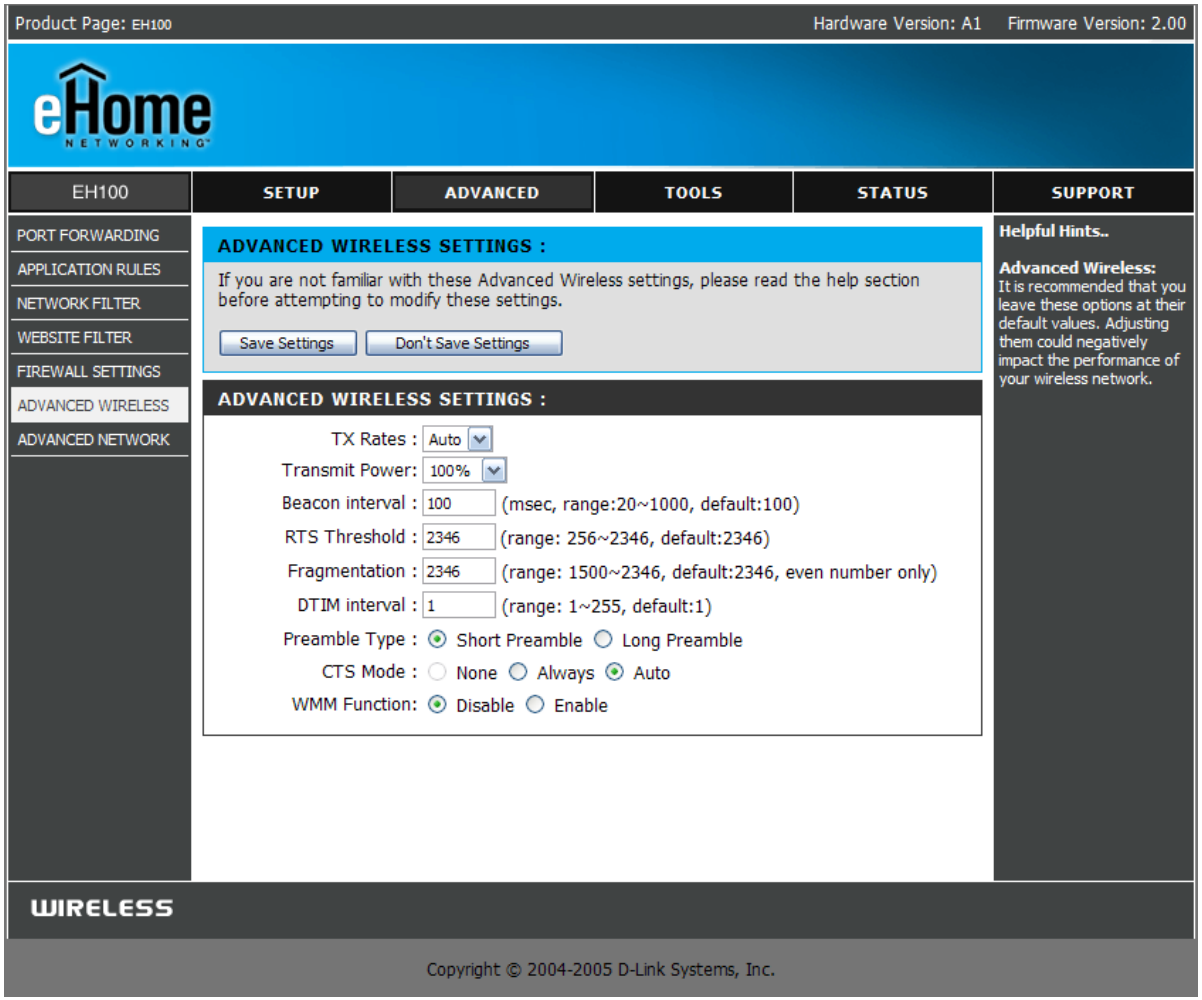
Enable L2TP Passthrough: Check this box to allow L2TP VPN traffic to pass through the router to your VPN client.

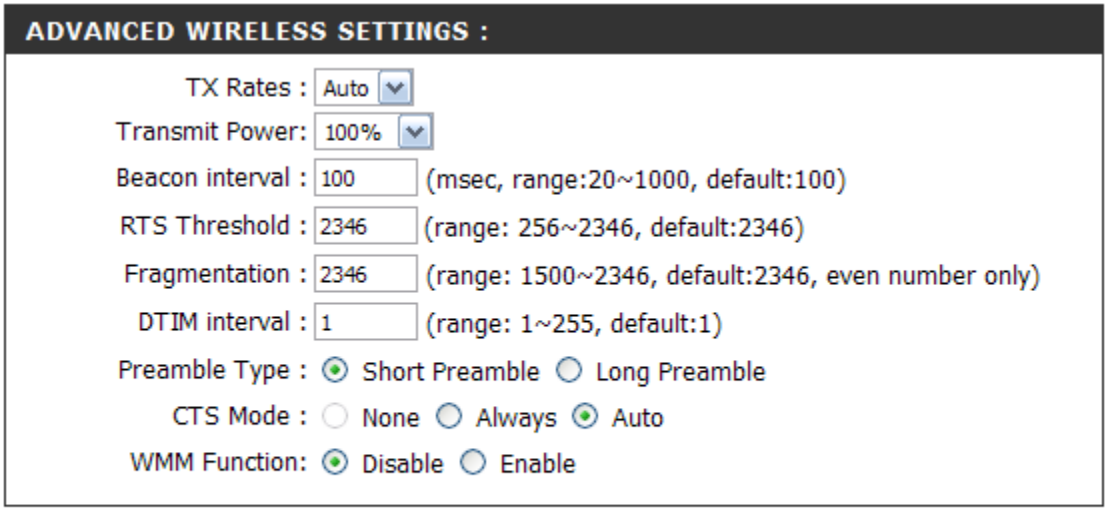
Enable IPSec Passthrough: Check this box to allow IPSec VPN traffic to pass through the router to your VPN client.



Advanced Wireless Settings

This section contains advanced wireless configuration options. It is recommended that these options remain at their default values, as improperly adjusting them can have a negative effect on your wireless network perfomance. If you want to modify these settings and are unfamiliar with them, refer to the explainations below or the Support menu of the router.





TX Rate: Select the basic transfer rates based on the speed of wireless adapters on your wireless network. It is strongly recommended to keep this setting to **Auto**.

Transmit Power: Set the transmit power of the antennas.

Beacon Interval: Beacons are packets sent by an Access Point to synchronize a wireless network. Specify a value. 100 is the default setting and is recommended.

RTS Threshold: This value should remain at its default setting of 2432. If inconsistent data flow is a problem, only a minor modification should be made.

Fragmentation: The fragmentation threshold, which is specified in bytes, determines whether packets will be fragmented. Packets exceeding the 2346 byte setting will be fragmented before transmission. 2346 is the default setting.

DTIM Interval: (Delivery Traffic Indication Message) 3 is the default setting. A DTIM is a countdown informing clients of the next window for listening to broadcast and multicast messages.

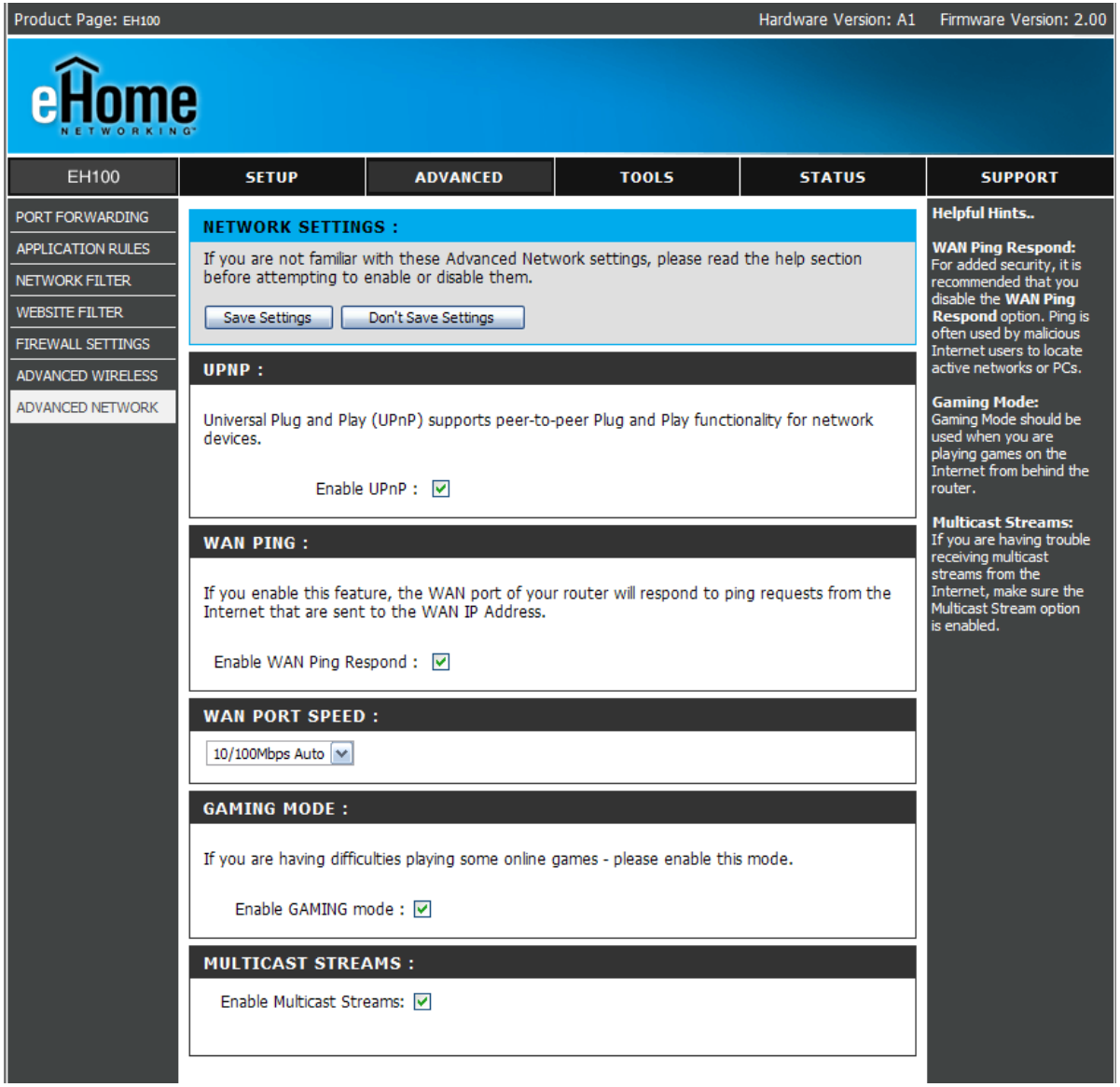
Preamble Type: Select Short or Long Preamble. The Preamble defines the length of the CRC block (Cyclic Redundancy Check is a common technique for detecting data transmission errors) for communication between the wireless router and the roaming wireless network adapters. Auto is the default setting. Note: High network traffic areas should use the shorter preamble type.

CTS Mode: CTS (Clear To Send) is a function used to minimize collisions among wireless devices on a wireless local area network (LAN). CTS will make sure the wireless network is clear before a wireless client attempts to send wireless data. Enabling CTS will add overhead and may lower wireless through put. **None:** CTS is typically used in a pure 802.11g environment. If CTS is set to “None” in a mixed mode environment populated by 802.11b clients, wireless collisions may occur frequently. **Always:** CTS will always be used to make sure the wireless LAN is clear before sending data. **Auto:** CTS will monitor the wireless network and automatically decide whether to implement CTS based on the amount of traffic and collisions that occurs on the wireless network.

WMM Function: WMM is QoS for your wireless network. Enable this option to improve the quality of video and voice applications for your wireless clients.

Advanced Network Settings

This section contains configuration options for UPnP settings, enabling or disabling the ability to ping the WAN IP address, setting the WAN port speed, enabling or disabling Gaming Mode and Multicast Streams. A futher explanation of these options is below.



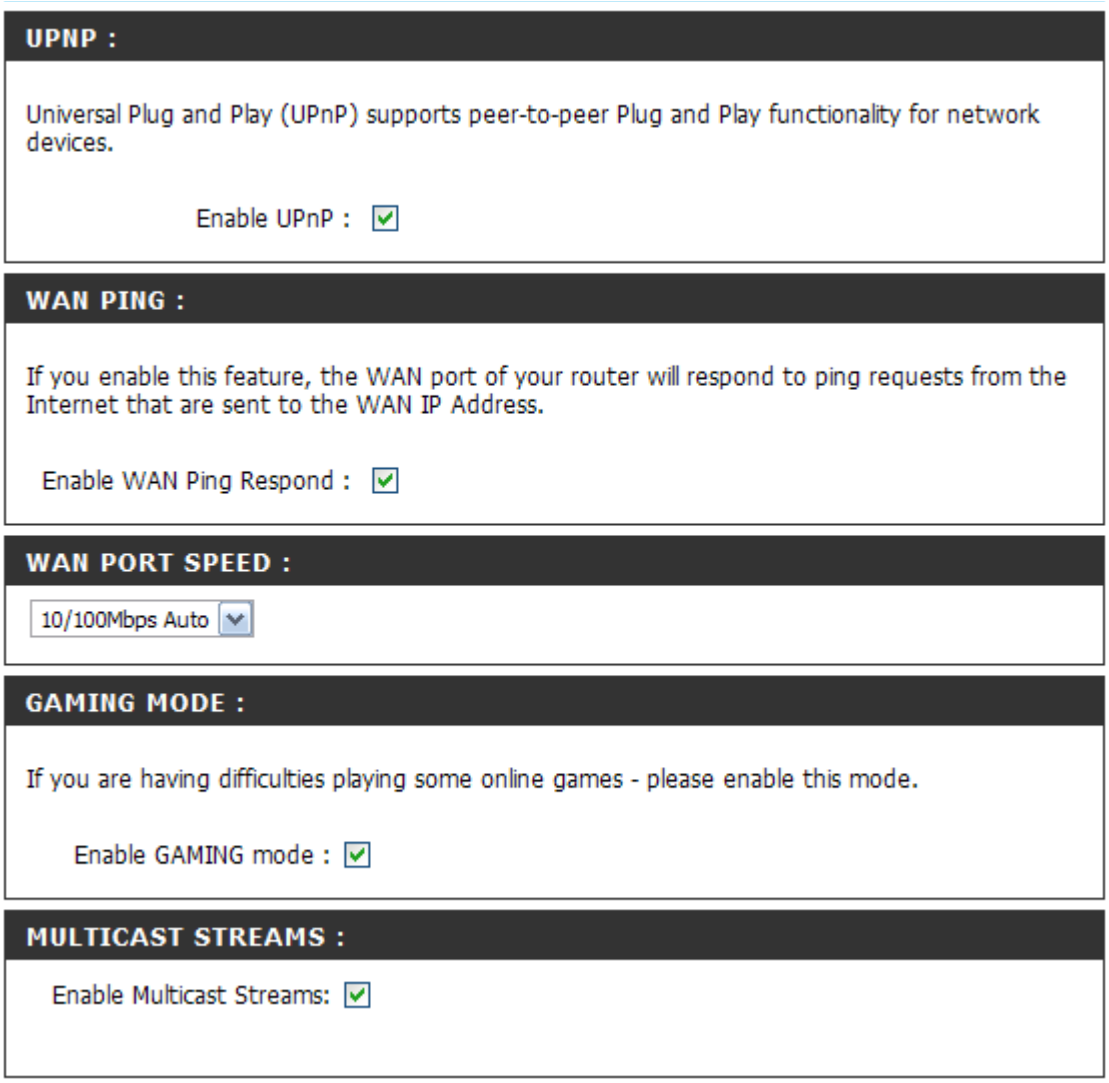
UPnP Settings: To use the Universal Plug and Play (UPnP™) feature click on **Enabled**. UPNP provides compatibility with networking equipment, software and peripherals.

WAN Ping: Unchecking the box will not allow the EH100 to respond to pings. Blocking the Ping may provide some extra security from hackers. Check the box to allow the WAN port to be "pinged".

WAN select to 10/100 Mbps: You may set the port speed of the WAN port to 10Mbps, 100Mbps, or auto. Some older cable or DSL modems may require you to set the port speed to 10Mbps.

Gaming Mode: Gaming mode allows a form of pass-through for certain Internet Games. If you are using Xbox, Playstation2 or a PC, make sure you are using the latest firmware and Gaming Mode is enabled. To utilize Gaming Mode, click the box. If you are not using a Gaming application, it is recommended that you Disable Gaming Mode.

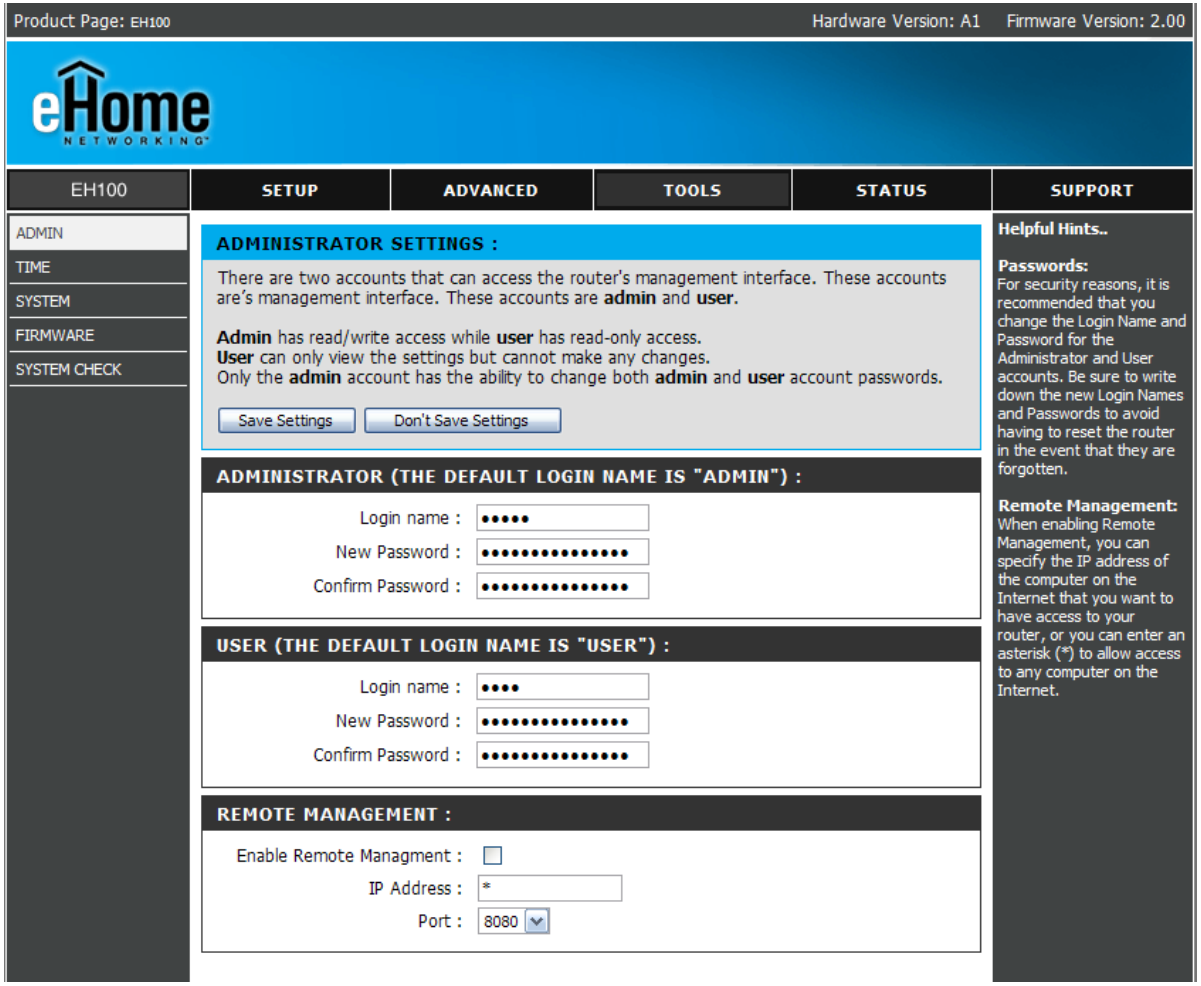
Multicast streams: Check the box to allow multicast traffic to pass through the router from the Internet.



Tools

Administrator Settings

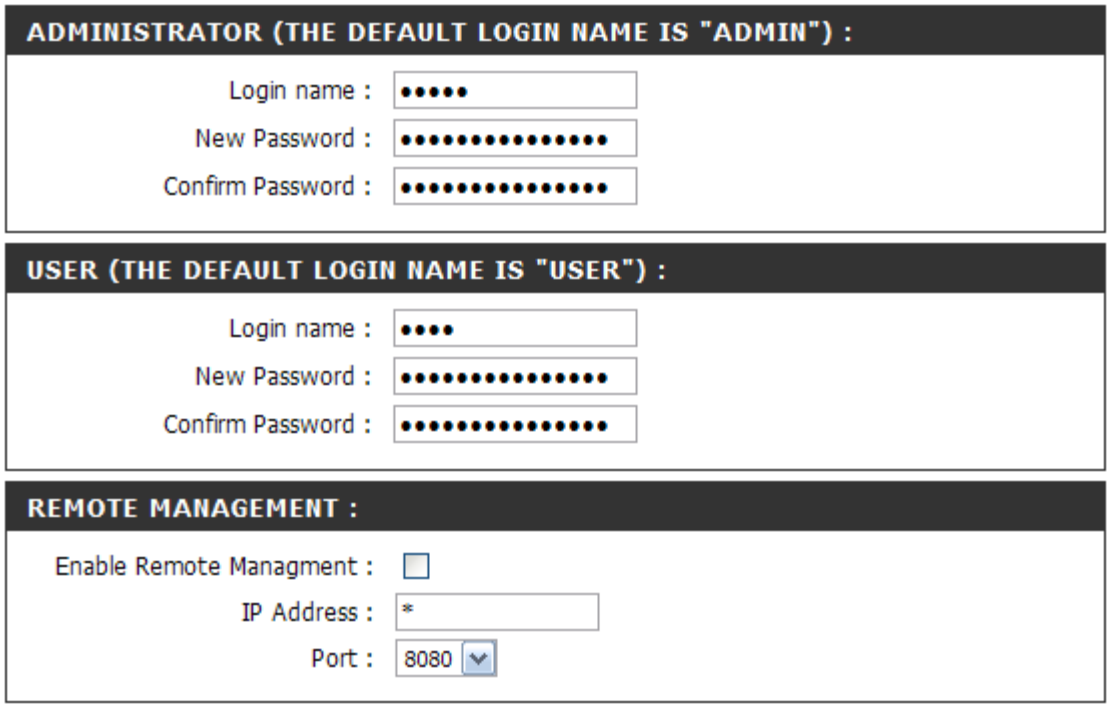
This page will allow you to change the Administrator and User passwords. You can also enable Remote Management. There are two accounts that can access the management interface through the web browser. The accounts are admin and user. Admin has read/write access while user has read-only access. User can only view the settings but cannot make any changes. Only the admin account has the ability to change both admin and user account passwords.



Administrator Password: Enter the new password for the Administrator login. The administrator can make changes to the settings.

User Password: Enter the new password for the User login. If you login as the User, you can only see the settings, but cannot change them.

Remote Management: Remote management allows the EH100 to be configured from the Internet by a web browser. A username and password is still required to access the Web-Management interface. In general, only a member of your network can browse the built-in web pages to perform Administrator tasks. This feature enables you to perform Administrator tasks from the remote (Internet) host.



IP Address: The Internet IP address of the computer that has access to the Broadband Router. If you input an asterisk (*) into this field, then any computer will be able to access the Router. Putting an asterisk (*) into this field would present a security risk and is not recommended.

Port: The port number used to access the EH100.

Example: http://x.x.x.x:8080 whereas x.x.x.x is the WAN IP address of the EH100 and 8080 is the port used for the Web-Management interface.

Time Settings

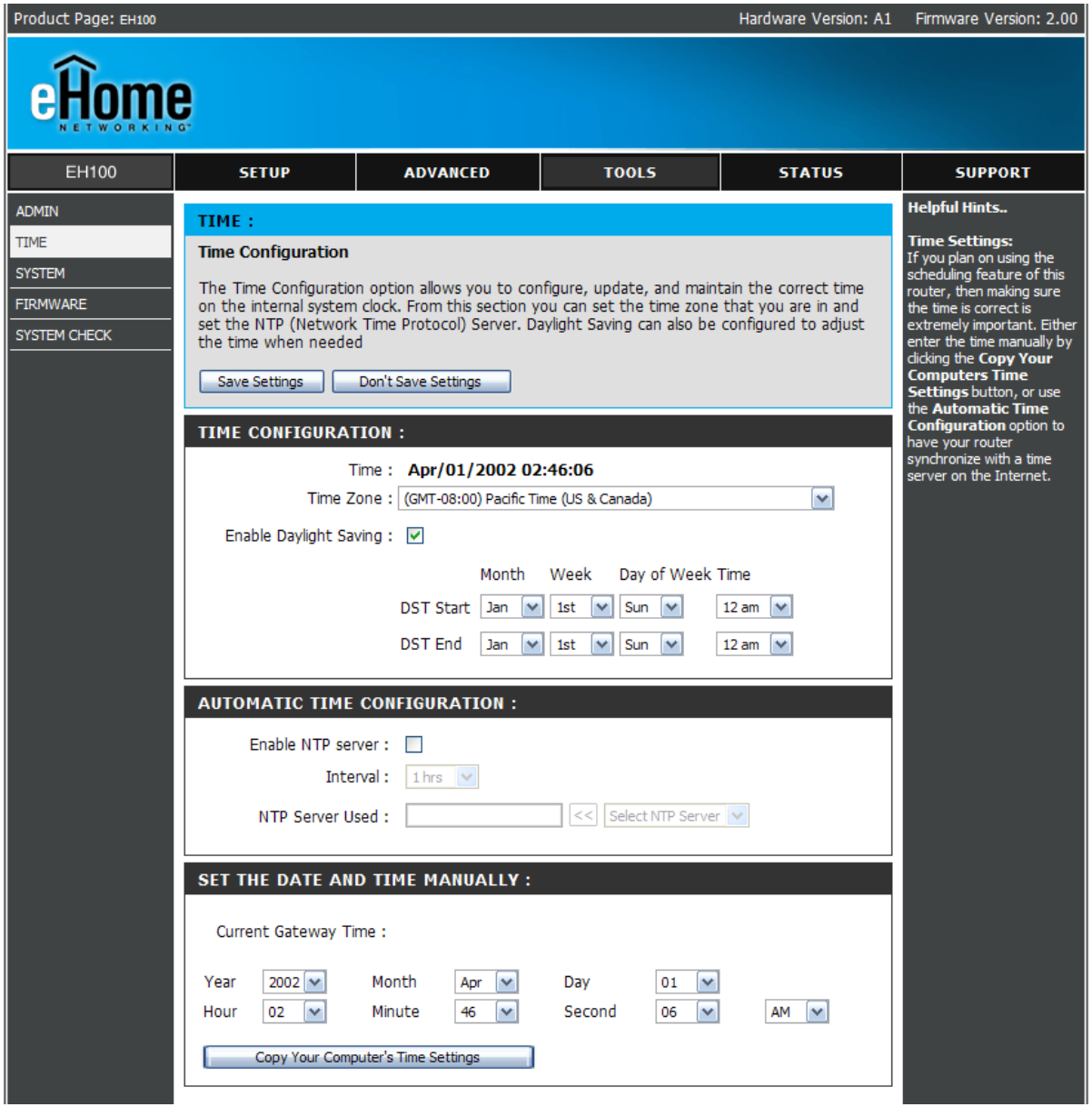
This page contains options for setting the time on the EH100 router. You can synchronize the router with an NTP server to update the time or set the time manually. The EH100 has support for daylight savings.

Time Zone: Select the Time Zone from the drop-down menu.

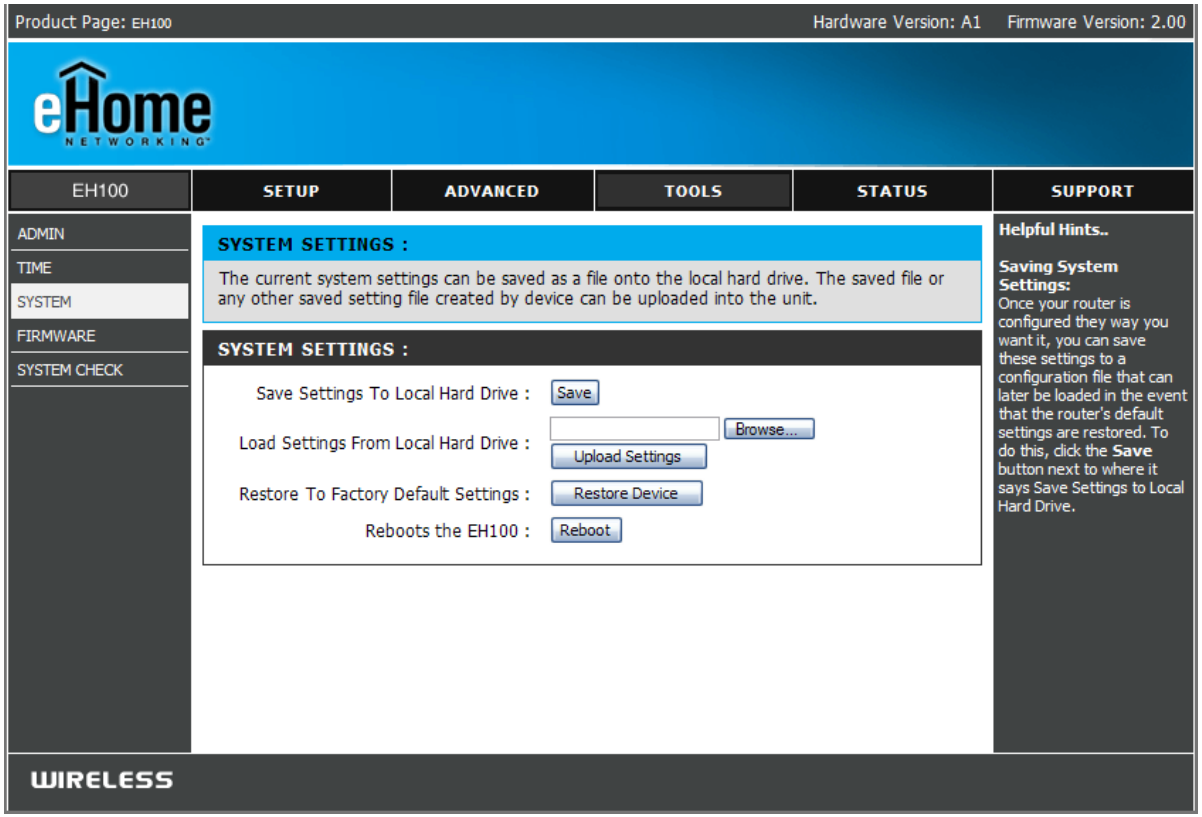
Daylight Saving: Check the box to enable Daylight Saving Time. Enter a start date and an end date for daylight saving time.

Automatic: NTP is short for Network Time Protocol. NTP synchronizes computer clock times in a network of computers. This field is optional.

Manual: To manually input the time, enter the values in these fields for the Year, Month, Day, Hour, Minute, and Second. Click Set Time.



System Settings



Save Settings to Local Hard Drive: Use this option to save the current router configuration settings to a file on the hard disk of the computer you are using. First, click the **Save** button. You will then see a file dialog, where you can select a location and file name for the settings.

Load Settings from Local Hard Drive: Use this option to load previously saved router configuration settings. First, click the **Browse** control to find a previously save file of configuration settings. Then, click the **Load** button to transfer those settings to the router.

Restore to Factory Default Settings: This option will restore all configuration settings back to the settings that were in effect at the time the router was shipped from the factory. Any settings that have not been saved will be lost, including any rules that you have created. If you want to save the current router configuration settings, click the **Save** button above.

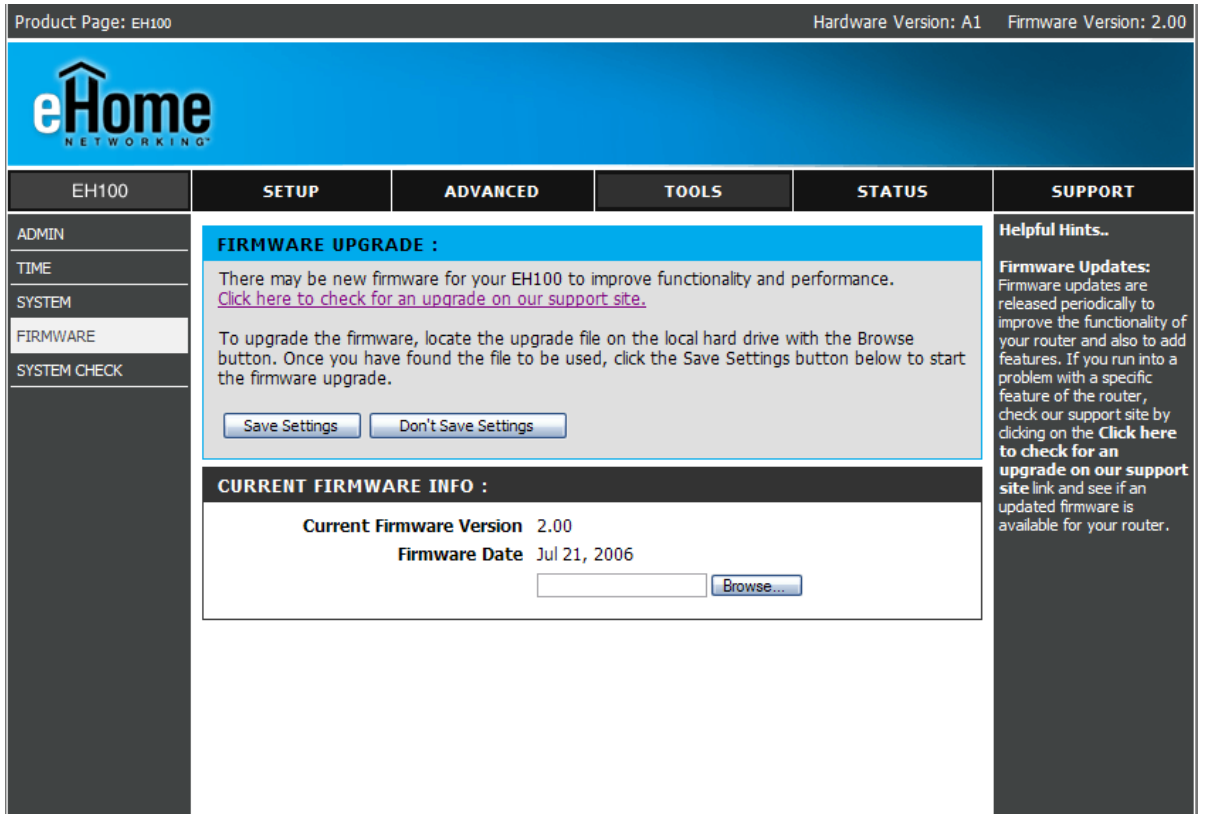
Reboot: Reboots the EH100.

Update Firmware

You can upgrade the firmware of the Router here. Make sure the firmware you want to use is on the local hard drive of the computer. Click on **Browse** to locate the firmware file to be used for the update. Please check the eHome website for firmware updates at http://www.ehomeproducts.net. You can download firmware upgrades to your hard drive from the eHome site.

Firmware Upgrade: Click on the link in this screen to find out if there is an updated firmware; if so, download the new firmware to your hard drive.

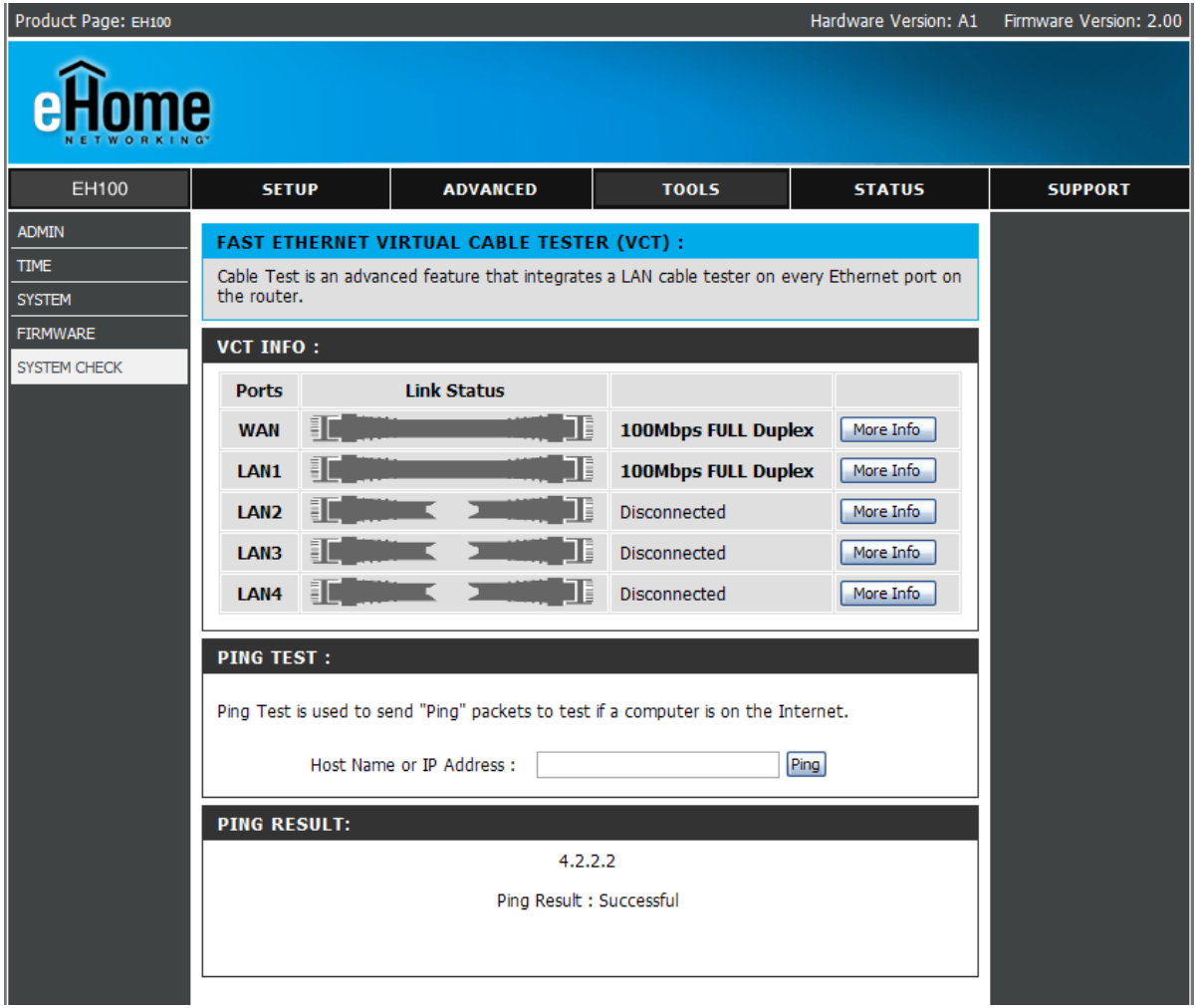
Browse: After you have downloaded the new firmware, click **Browse** in this window to locate the firmware update on your hard drive. Click **Save Settings** to complete the firmware upgrade.



System Check

Virtual Cable Tester (VCT) Info: VCT is an advanced feature that integrates a LAN cable tester on every Ethernet port on the router. Through the graphical user interface (GUI), VCT can be used to remotely diagnose and report cable faults such as opens, shorts, swaps, and impedance mismatch. This feature significantly reduces service calls and returns by allowing users to easily troubleshoot their cable connections.

Ping Test: The Ping Test is used to send Ping packets to test if a computer is on the Internet. Enter the IP Address that you wish to Ping, and click **Ping**.



Status

Device Info

This page displays the current information for the EH100. It will display the LAN, WAN, and Wireless information.

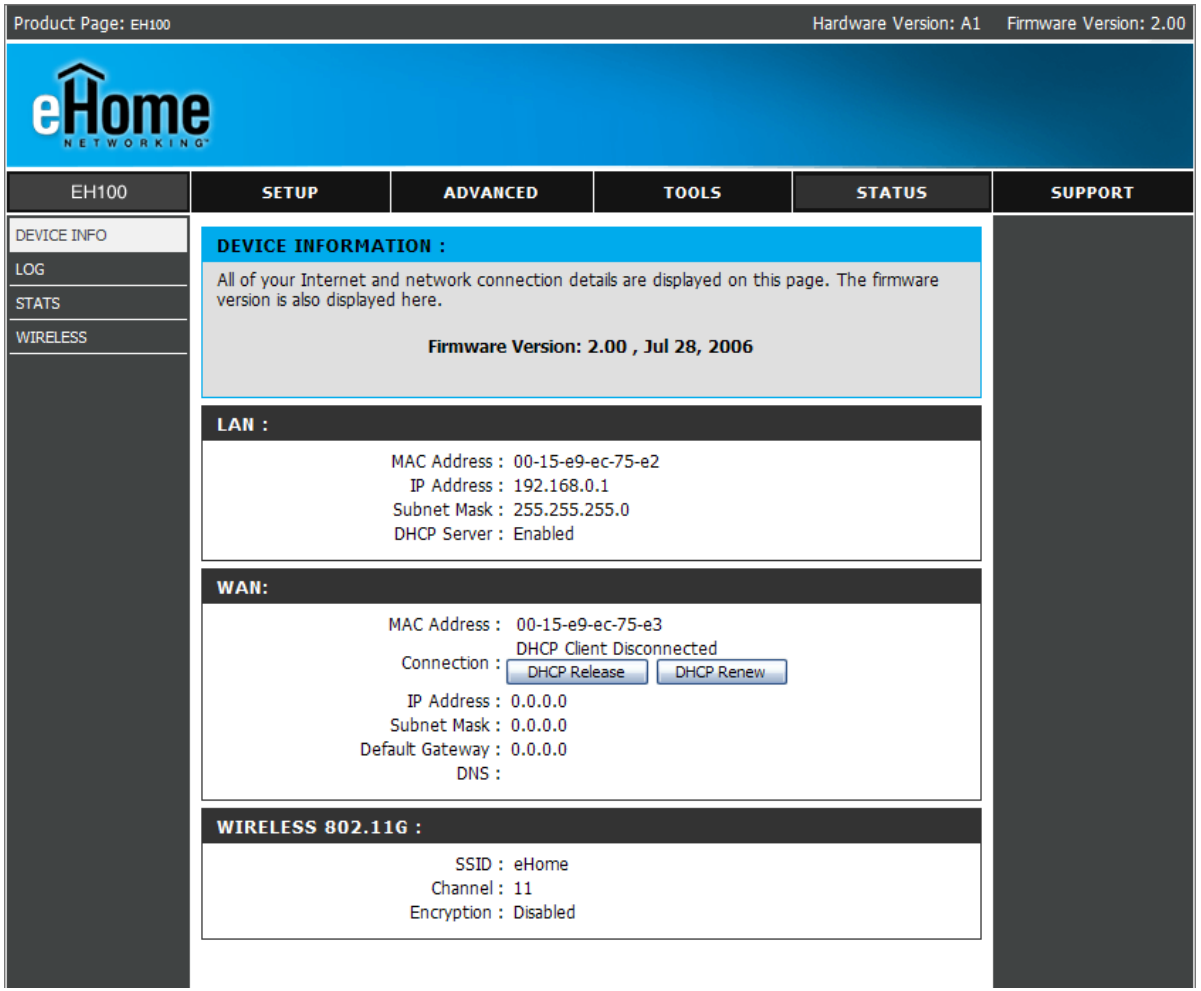
If your WAN connection is set up for a Dynamic IP address then a **Release** button and a **Renew** button will be displayed. Use **Release** to disconnect from your ISP and use **Renew** to connect to your ISP.

If your WAN connection is set up for PPPoE, a **Connect** button and a **Disconnect** button will be displayed. Use **Disconnect** to drop the PPPoE connection and use **Connect** to establish the PPPoE connection.

LAN: Displays the MAC address and the private (local) IP settings for the router.

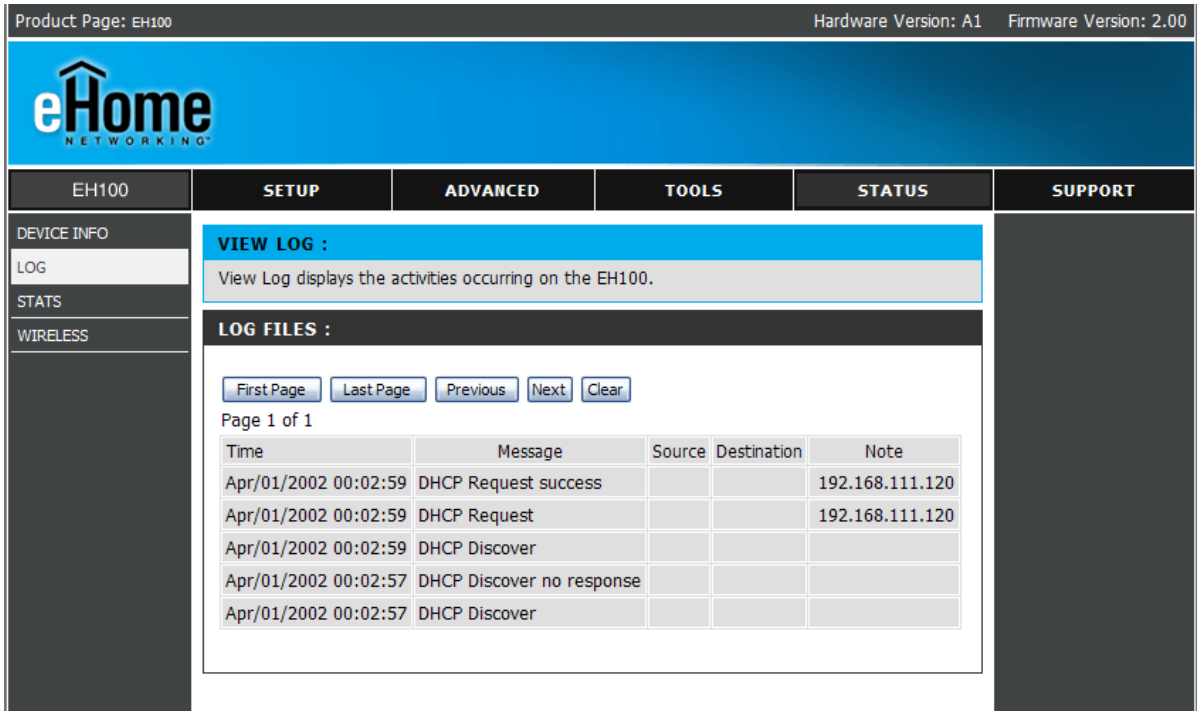
WAN: Displays the MAC address and the public IP settings for the router.

Wireless 802.11G: Displays the wireless MAC address and your wireless settings such as SSID and Channel.



Log

The EH100 router keeps a running log of events and activities occurring on the router. If the device is rebooted, the logs are automatically cleared.

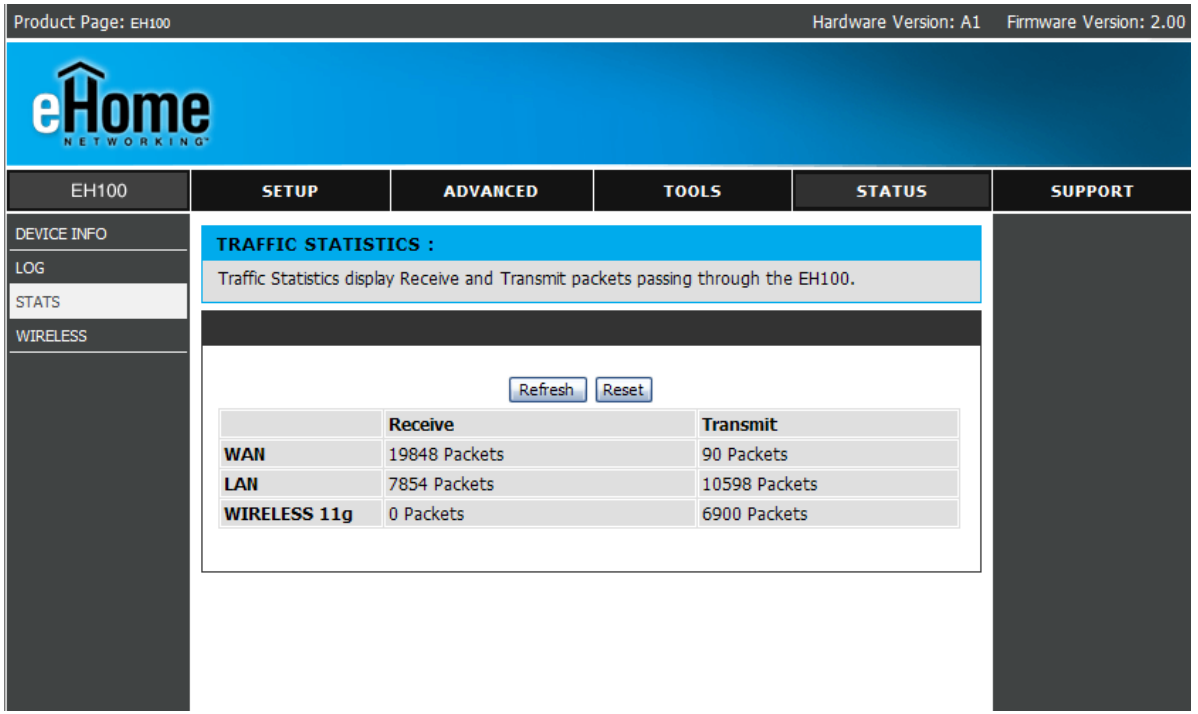


Stats

The screen below displays the Traffic Statistics. Here you can view the amount of packets that pass through the EH100 on the WAN, LAN, and Wireless network. The traffic counter will reset if the device is rebooted.

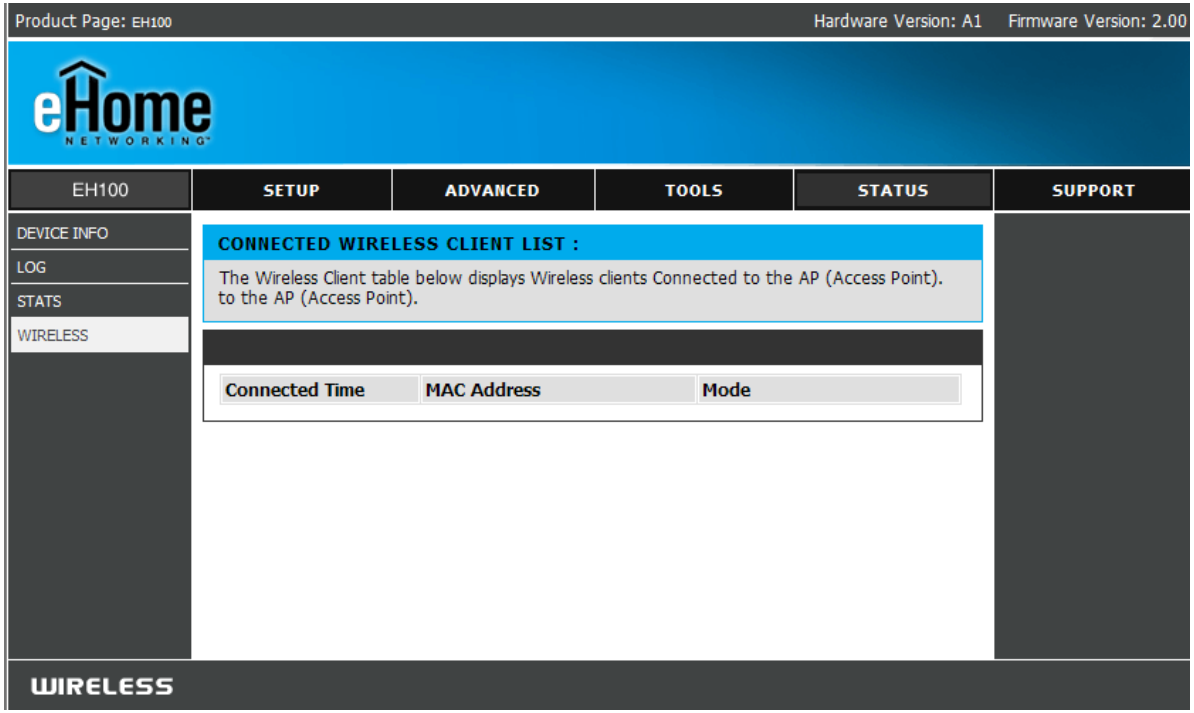
Refresh Click Refresh to refresh the Traffic Statistics display.

Reset Click Reset to reset the Traffic Statistics.



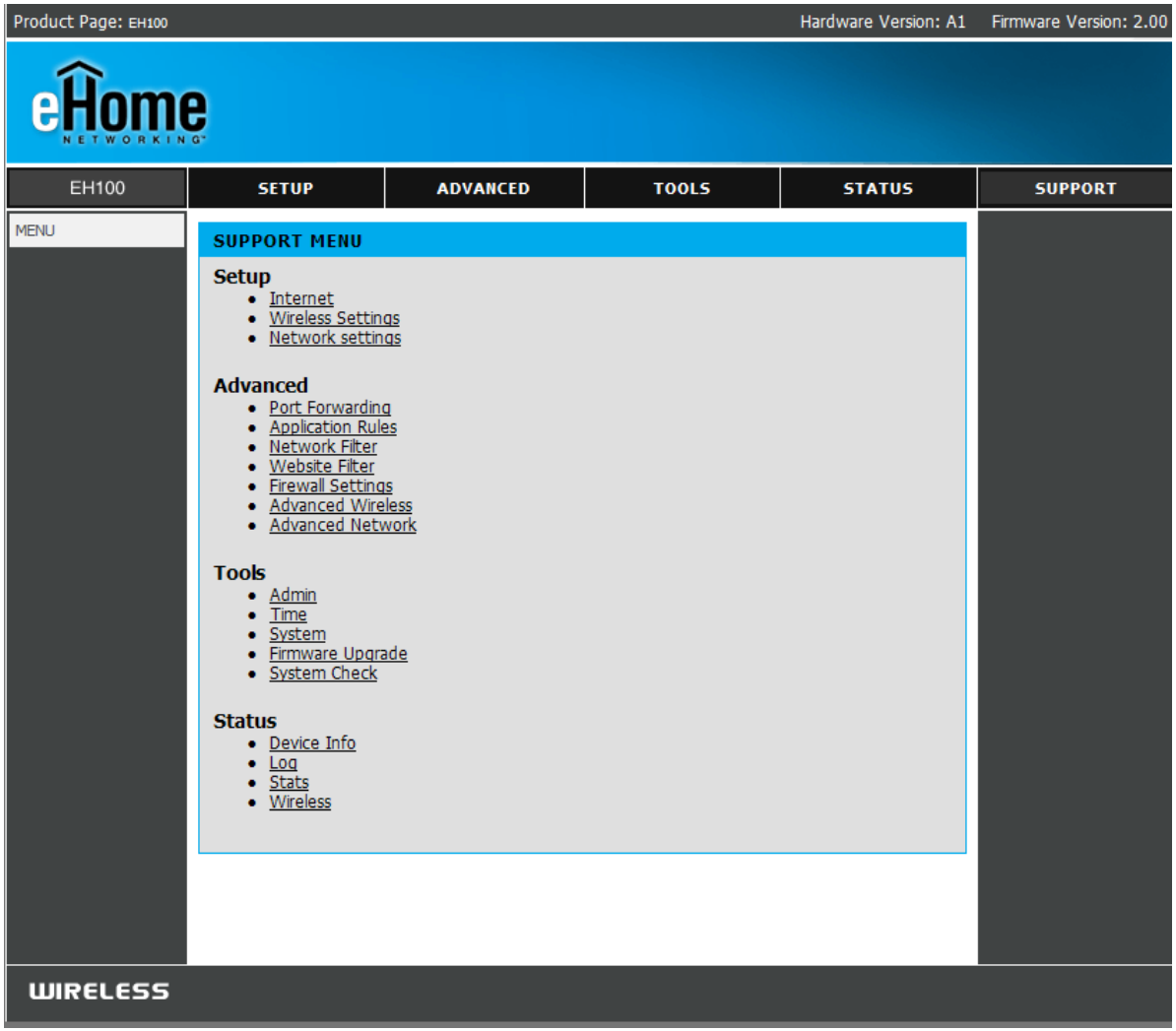
Wireless Stats

The wireless client table displays a list of current connected wireless clients. This table also displays the connection time and MAC address of the connected wireless client.



Support

The Support page contains an index of links to help topics for each function of the EH100.



Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The EH100 offers the following types of security:

- WPA2 (Wi-Fi Protected Access 2)
- WPA (Wi-Fi Protected Access)
- WEP (Wired Equivalent Privacy)
- WPA2-PSK (Pre-Shared Key)
- WPA-PSK (Pre-Shared Key)

What is WEP?

WEP stands for Wired Equivalent Privacy. It is based on the IEEE 802.11 standard and uses the RC4 encryption algorithm. WEP provides security by encrypting data over your wireless network so that it is protected as it is transmitted from one wireless device to another.

To gain access to a WEP network, you must know the key. The key is a string of characters that you create. When using WEP, you must determine the level of encryption. The type of encryption determines the key length. 128-bit encryption requires a longer key than 64-bit encryption. Keys are defined by entering in a string in HEX (hexadecimal - using characters 0-9, A-F) or ASCII (American Standard Code for Information Interchange – alphanumeric characters) format. ASCII format is provided so you can enter a string that is easier to remember. The ASCII string is converted to HEX for use over the network. Four keys can be defined so that you can change keys easily.

Configure WEP

It is recommended to enable encryption on your wireless router before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1). Click on **Wireless Settings** on the left side.

2. Next to *Security Mode*, select **Enable WEP Security**.

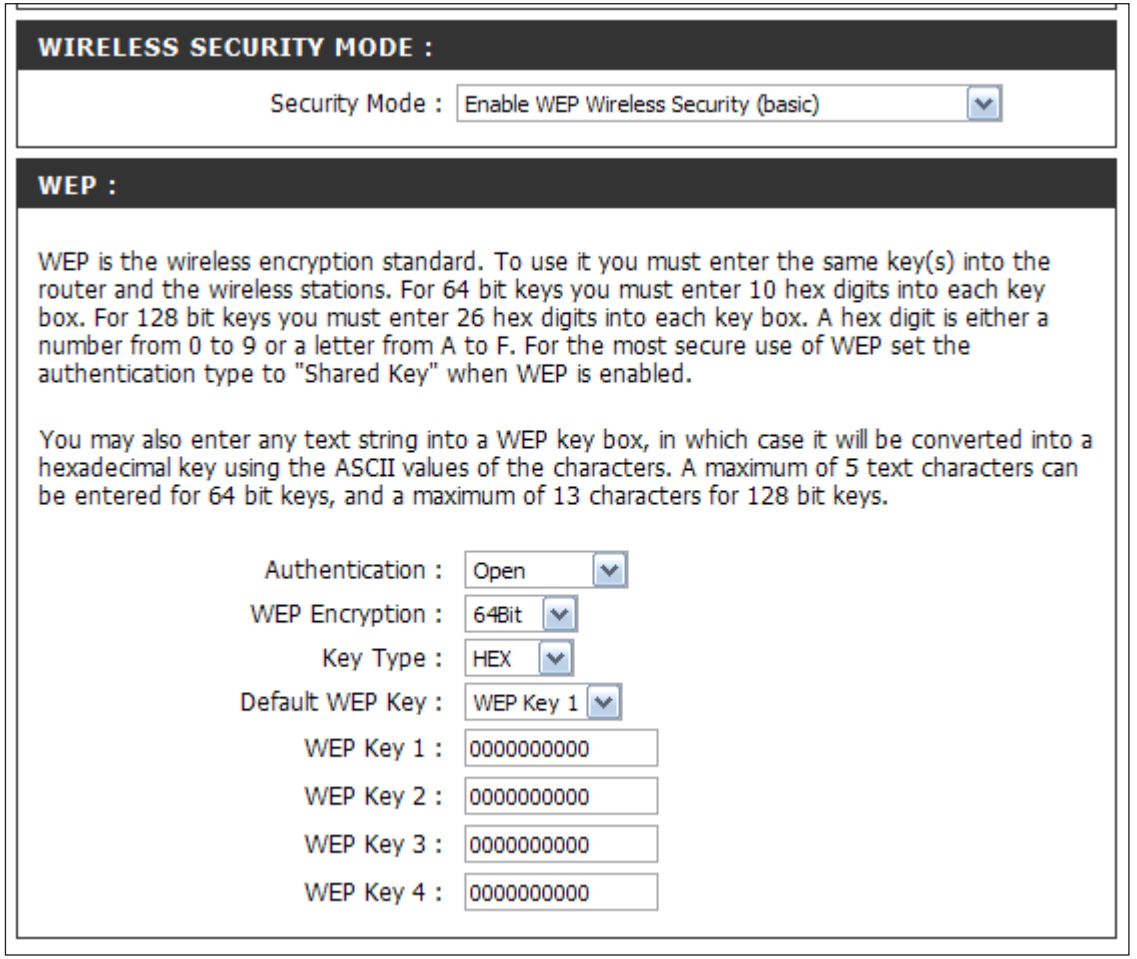
3. Next to *Authentication*, select **Shared Key**.

4. Select either **64-bit** or **128-bit** encryption from the drop-down menu next to *WEP Encryption*.

5. Next to *Key Type*, select either **Hex** or **ASCII**.

   Hex (recommended) - Letters A-F and numbers 0-9 are valid.

   ASCII - All numbers and letters are valid.



6. Next to *Key 1*, enter a WEP key that you create. Make sure you enter this key exactly on all your wireless devices. You may enter up to 4 different keys.

7. Click **Save Settings** to save your settings. If you are configuring the router with a wireless adapter, you will lose connectivity until you enable WEP on your adapter and enter the same WEP key as you did on the router.

What is WPA?

WPA, or Wi-Fi Protected Access, is a Wi-Fi standard that was designed to improve the security features of WEP (Wired Equivalent Privacy).

The 2 major improvements over WEP:

- Improved data encryption through the Temporal Key Integrity Protocol (TKIP). TKIP scrambles the keys using a hashing algorithm and, by adding an integrity-checking feature, ensures that the keys haven't been tampered with. WPA2 is based on 802.11i and uses Advanced Encryption Standard (AES) instead of TKIP.

- User authentication, which is generally missing in WEP, through the extensible authentication protocol (EAP). WEP regulates access to a wireless network based on a computer's hardware-specific MAC address, which is relatively simple to be sniffed out and stolen. EAP is built on a more secure public-key encryption system to ensure that only authorized network users can access the network.

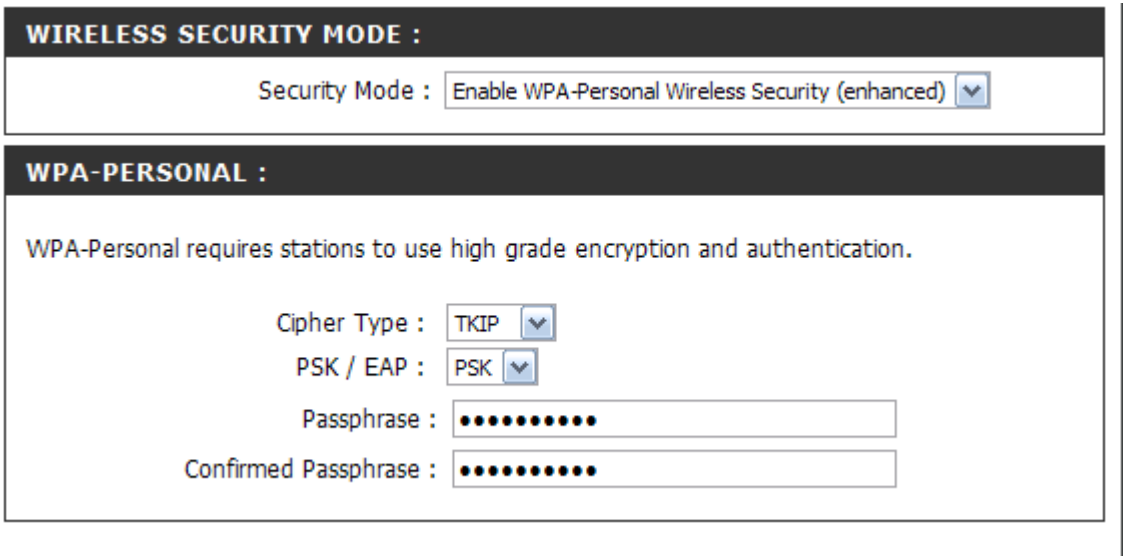
WPA-PSK/WPA2-PSK uses a passphrase or key to authenticate your wireless connection. The key is an alpha-numeric password between 8 and 63 characters long. The password can include symbols (!?*&_) and spaces. This key must be the exact same key entered on your wireless router or access point.

WPA/WPA2 incorporates user authentication through the Extensible Authentication Protocol (EAP). EAP is built on a more secure public key encryption system to ensure that only authorized network users can access the network.

Configure WPA-PSK

It is recommended to enable encryption on your wireless router before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1). Click on **Wireless Settings** on the left side.



2. Next to *Security Mode*, select **Enable WPA-Personal Security** or **Enable WPA2-Personal Security**.

3. Next to *Cipher Mode*, select **TKIP, AES,** or **Auto**.

4. Next to *PSK/EAP*, select **PSK**.

5. Next to *Passphrase*, enter a key (passphrase). The key is an alpha-numeric password between 8 and 63 characters long. The password can include symbols (!?*&_) and spaces. Make sure you enter this key exactly the same on all other wireless clients.

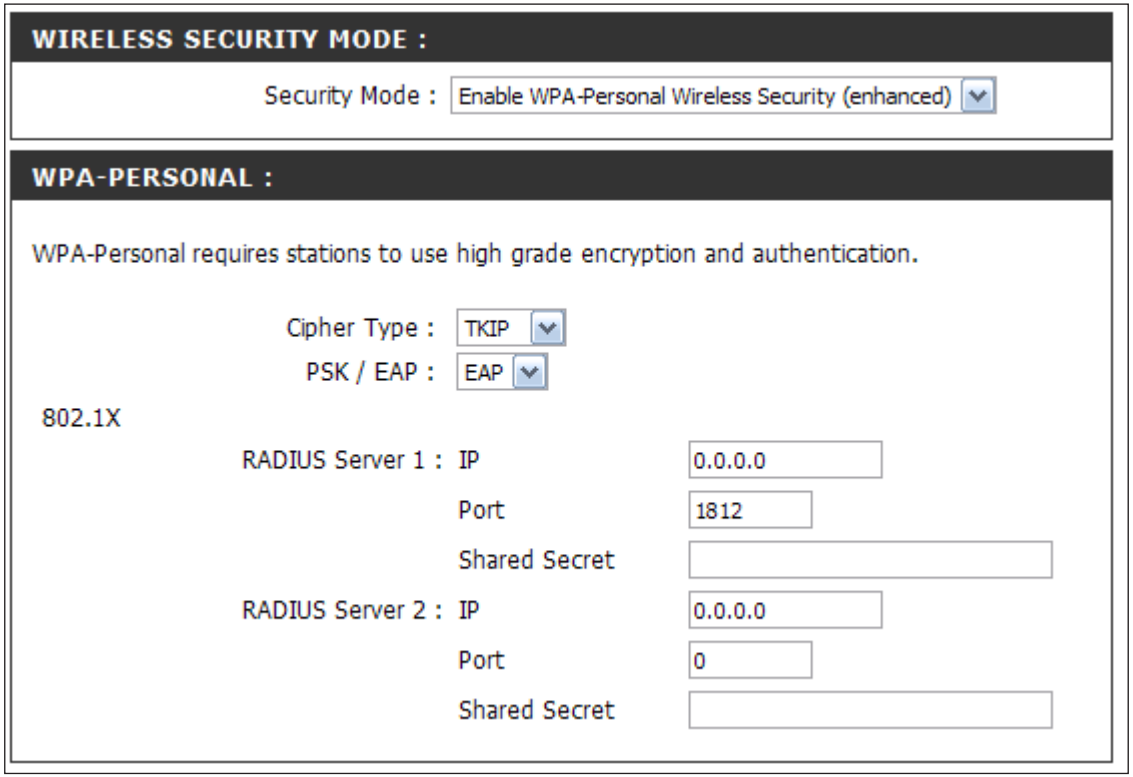
6. Enter the passphrase again next to *Confirmed Passphrase*.

7. Click **Save Settings** to save your settings. If you are configuring the router with a wireless adapter, you will lose connectivity until you enable WPA-PSK (or WPA2-PSK) on your adapter and enter the same passphrase as you did on the router.

Configure WPA (RADIUS)

It is recommended to enable encryption on your wireless router before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the router (192.168.0.1). Click on **Wireless Settings** on the left side.



2. Next to *Security Mode*, select **Enable WPA-Personal Security** or **Enable WPA2-Personal Security**.

3. Next to *Cipher Mode*, select **TKIP, AES,** or **Auto**.

4. Next to *PSK/EAP*, select **EAP**.

5. Next to *RADIUS Server 1* enter the IP Address of your RADIUS server.

6. Next to *Port*, enter the port you are using with your RADIUS server. 1812 is the default port.

7. Next to *Shared Secret*, enter the security key.

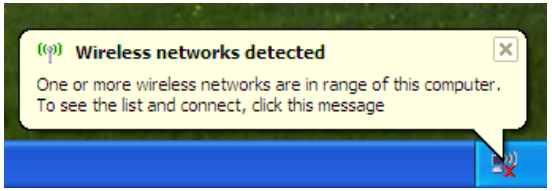
8. If you have a secondary RADIUS server, enter its IP address, port, and secret key.

9. Click **Apply Settings** to save your settings.

Connect to a Wireless Network Using Windows® XP

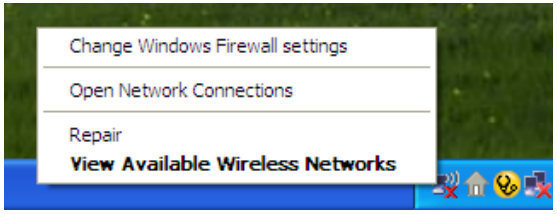
Windows® XP users may use the built-in wireless utility (Zero Configuration Utility). The following instructions are for Service Pack 2 users. If you are using another company's utility or Windows® 2000, please refer to the user manual of your wireless adapter for help with connecting to a wireless network. Most utilities will have a "site survey" option similar to the Windows® XP utility as seen below.

If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

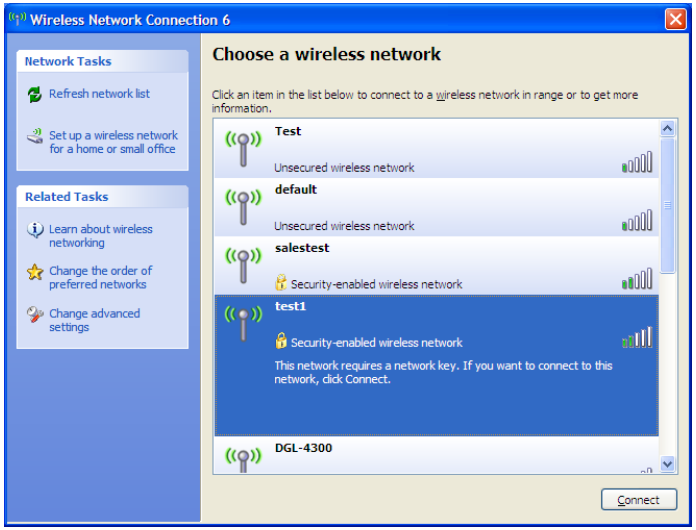


or

Right-click on the wireless computer icon in your system tray (lower-right corner next to the time). Select **View Available Wireless Networks**.



The utility will display any available wireless networks in your area. Click on a network (displayed using the SSID) and click the **Connect** button.

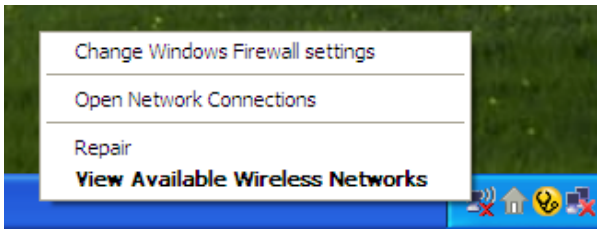


If you get a good signal but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.

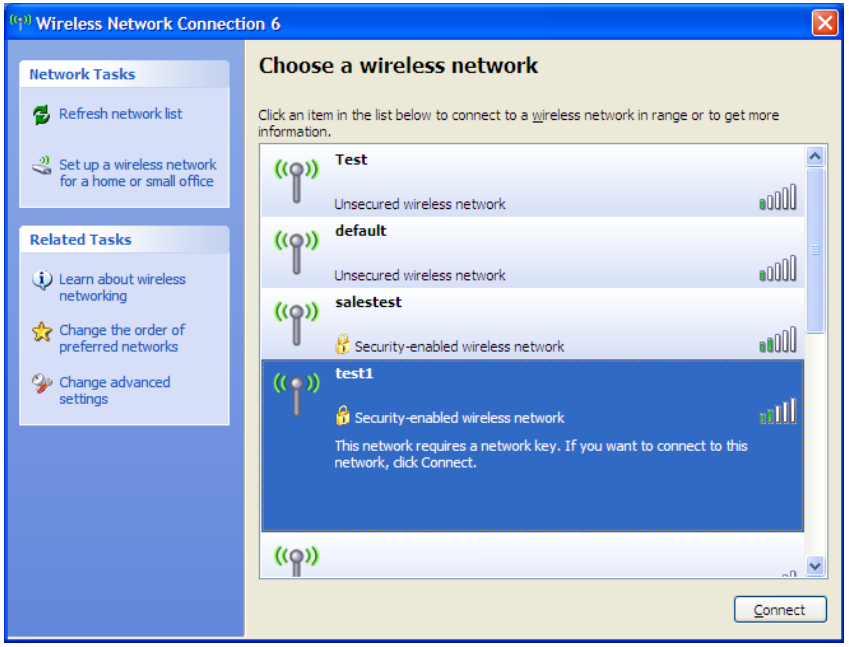
Configure WEP

It is recommended to enable WEP on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WEP key being used.

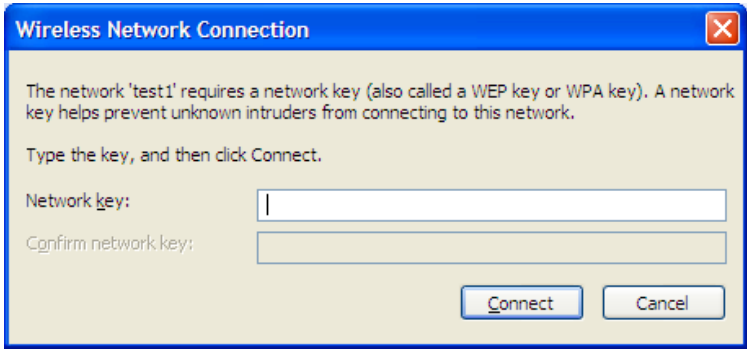
1. Open the Windows® XP Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower-right corner of screen). Select **View Available Wireless Networks**.



2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



3. The **Wireless Network Connection** box will appear. Enter the same WEP key that is on your router and click **Connect**.

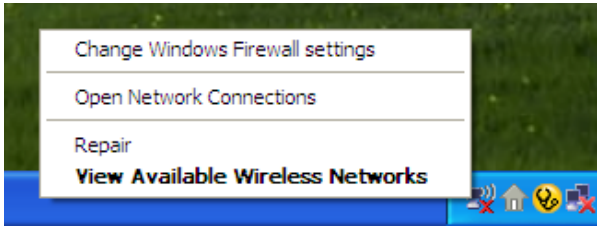


It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the WEP settings are correct. The WEP key must be exactly the same as on the wireless router.

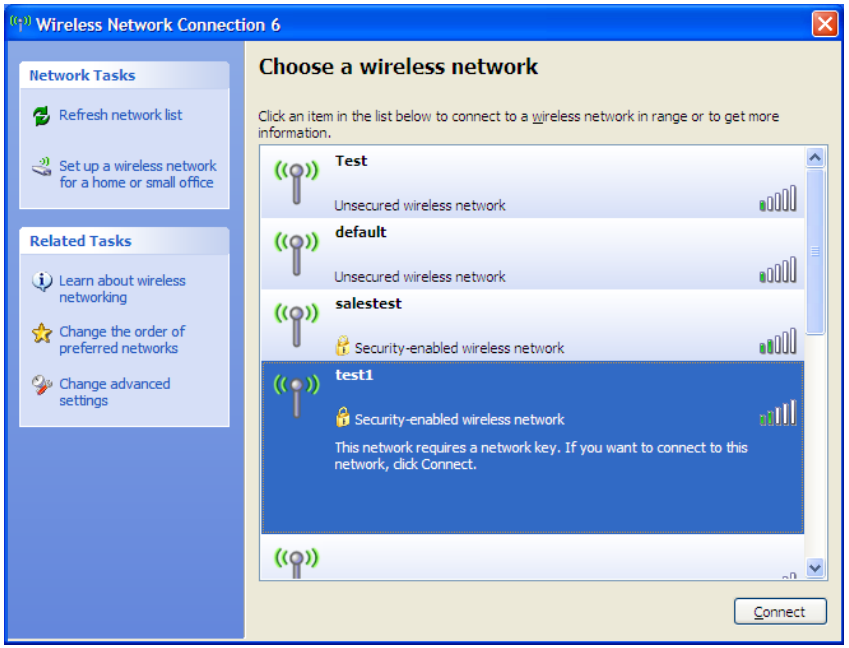
Configure WPA-PSK

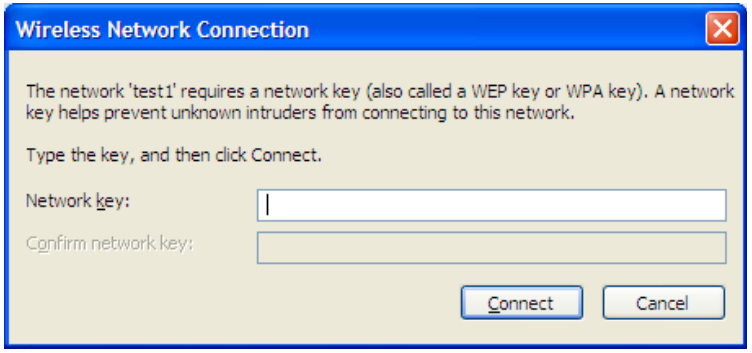
It is recommended to enable WEP on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the WEP key being used.

1. Open the Windows® XP Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower-right corner of screen). Select **View Available Wireless Networks**.



2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.





3. The **Wireless Network Connection** box will appear. Enter the WPA-PSK passphrase and click **Connect**.

It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the WPA-PSK settings are correct. The WPA-PSK passphrase must be exactly the same as on the wireless router.

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the EH-100. Read the following descriptions if you are having problems. (The examples below are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.)

1. Why can't I access the web-based configuration utility?

When entering the IP address of the eHome router (192.168.0.1 for example), you are not connecting to a website on the Internet or have to be connected to the Internet. The device has the utility built-in to a ROM chip in the device itself. Your computer must be on the same IP subnet to connect to the web-based utility.

- Make sure you have an updated Java-enabled web browser. We recommend the following:
  - Internet Explorer 5.5 or higher
  - Netscape 6 or higher
  - Mozilla 1.2.1 (5.0) or higher
  - Opera 6.0 or higher
  - Safari 1.0 or higher (with Java 1.3.1 or higher)
  - Camino 0.7 or higher
  - Firefox 1.0 or higher

- Verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable or connect to a different port on the device if possible. If the computer is turned off, the link light may not be on.

- Disable any internet security software running on the computer. Software firewalls such as Zone Alarm, Black Ice, Sygate, Norton Personal Firewall, and Windows® XP firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.

- Configure your Internet settings:

    - Go to **Start** > **Settings** > **Control Panel**. Double-click the **Internet Options** Icon. From the **Security** tab, click the button to restore the settings to their defaults.

    - Click the **Connection** tab and set the dial-up option to Never Dial a Connection. Click the LAN Settings button. Make sure nothing is checked. Click **OK**.

    - Go to the **Advanced** tab and click the button to restore these settings to their defaults. Click **OK** three times.

    - Close your web browser (if open) and open it.

- Access the web management. Open your web browser and enter the IP address of your eHome router in the address bar. This should open the login page for your the web management.

- If you still cannot access the configuration, unplug the power to the router for 10 seconds and plug back in. Wait about 30 seconds and try accessing the configuration. If you have multiple computers, try connecting using a different computer.

2. What can I do if I forgot my password?

If you forgot your password, you must reset your router. Unfortunately this process will change all your settings back to the factory defaults.

To reset the router, locate the reset button (hole) on the rear panel of the unit. With the router powered on, use a paperclip to hold the button down for 10 seconds. Release the button and the router will go through its reboot process. Wait about 30 seconds to access the router. The default IP address is 192.168.0.1. When logging in, the username is **admin** and leave the password box empty.

3. Why can't I connect to certain sites or send and receive emails when connecting through my router?

If you are having a problem sending or receiving email, or connecting to secure sites such as eBay, banking sites, and Hotmail, we suggest lowering the MTU in increments of ten (Ex. 1492, 1482, 1472, etc).

Note: AOL DSL+ users must use MTU of 1400.

To find the proper MTU Size, you'll have to do a special ping of the destination you're trying to go to. A destination could be another computer, or a URL.

- Click on **Start** and then click **Run**.
- Windows® 95, 98, and ME users type in **command** (Windows® NT, 2000, and XP users type in **cmd**) and press **Enter** (or click **OK**).
- Once the window opens, you'll need to do a special ping. Use the following syntax:

  ping [url] [-f] [-l] [MTU value]

Example: **ping yahoo.com -f -l 1472**

```
C:\>ping yahoo.com -f -l 1482

Pinging yahoo.com [66.94.234.13] with 1482 bytes of data:

Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.

Ping statistics for 66.94.234.13:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  0ms, Average =  0ms

C:\>ping yahoo.com -f -l 1472

Pinging yahoo.com [66.94.234.13] with 1472 bytes of data:

Reply from 66.94.234.13: bytes=1472 time=93ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=109ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=125ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=203ms TTL=52

Ping statistics for 66.94.234.13:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 93ms, Maximum =  203ms, Average =  132ms

C:\>
```

You should start at 1472 and work your way down by 10 each time. Once you get a reply, go up by 2 until you get a fragmented packet. Take that value and add 28 to the value to account for the various TCP/IP headers. For example, lets say that 1452 was the proper value, the actual MTU size would be 1480, which is the optimum for the network we're working with (1452+28=1480).

Once you find your MTU, you can now configure your router with the proper MTU size.

To change the MTU rate on your router follow the steps below:

- Open your browser, enter the IP address of your router (192.168.0.1) and click **OK**.
- Enter your username (admin) and password (blank by default). Click **OK** to enter the web configuration page for the device.
- Click on the **Home** tab and click the **WAN** button.
- To change the MTU enter the number in the MTU field and click the **Apply** button to save your settings.
- Test your email. If changing the MTU does not resolve the problem, continue changing the MTU in increments of ten.

Wireless Basics

eHome wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home, business or public access wireless networks. Strictly adhering to the IEEE standard, the eHome wireless family of products will allow you to securely access the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking delivers.

A wireless local area network (WLAN) is a cellular computer network that transmits and receives data with radio signals instead of wires. Wireless LANs are used increasingly in both home and office environments, and public areas such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are helping people to work and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial for many users.

Wireless users can use the same applications they use on a wired network. Wireless adapter cards used on laptop and desktop systems support the same protocols as Ethernet adapter cards.

Under many circumstances, it may be desirable for mobile network devices to link to a conventional Ethernet LAN in order to use servers, printers or an Internet connection supplied through the wired LAN. A Wireless Router is a device used to provide this link.

What is Wireless?

Wireless or Wi-Fi technology is another way of connecting your computer to the network without using wires. Wi-Fi uses radio frequency to connect wirelessly, so you have the freedom to connect computers anywhere in your home or office network.

How does wireless work?

Wireless works similar to how cordless phone work, through radio signals to transmit data from one point A to point B. But wireless technology has restrictions as to how you can access the network. You must be within the wireless network range area to be able to connect your computer. There are two different types of wireless networks Wireless Local Area Network (WLAN), and Wireless Personal Area Network (WPAN).

Wireless Local Area Network (WLAN)

In a wireless local area network, a device called an Access Point (AP) connects computers to the network. The access point has a small antenna attached to it, which allows it to transmit data back and forth over radio signals. With an indoor access point as seen in the picture, the signal can travel up to 300 feet. With an outdoor access point the signal can reach out up to 30 miles to serve places like manufacturing plants, industrial locations, college and high school campuses, airports, golf courses, and many other outdoor venues.

Wireless Personal Area Network (WPAN)

Bluetooth is the industry standard wireless technology used for WPAN. Bluetooth devices in WPAN operate in a range up to 30 feet away.

Compared to WLAN the speed and wireless operation range are both less than WLAN, but in return it doesn’t use

nearly as much power which makes it ideal for personal devices, such as mobile phones, PDAs, headphones, laptops, speakers, and other devices that operate on batteries.

Who uses wireless?

Wireless technology as become so popular in recent years that almost everyone is using it, at home and in the office.

Home

- Gives everyone at home broadband access
- Surf the web, check email, instant message, and etc
- Gets rid of the cables around the house
- Simple and easy to use

Small Office and Home Office

- Stay on top of everything at home as you would at office
- Remotely access your office network from home
- Share Internet connection and printer with multiple computers
- No need to dedicate office space

Where is wireless used?

Wireless technology is expanding everywhere not just at home or office. People like the freedom of mobility and it's becoming so popular that more and more public facilities now provide wireless access to attract people. The wireless connection in public places is usually called "hotspots".

Using a eHome Cardbus Adapter with your laptop, you can access the hotspot to connect to Internet from remote locations like Airports, Hotels, Coffee Shops, Libraries, Restaurants, and Convention Centers.

Wireless network is easy to setup, but if you're installing it for the first time it could be quite a task not knowing where to start. That's why we've put together a few setup steps and tips to help you through the process of setting up a wireless network.

Tips

Here are a few things to keep in mind, when you install a wireless network.

Centralize your router or Access Point

Make sure you place the router/access point in a centralized location within your network for the best performance. Try to place the router/access point as high as possible in the room, so the signal gets dispersed throughout your home. If you have a two-story home, you may need a repeater to boost the signal to extend the range.

Eliminate Interference

Place home appliances such as cordless telephones, microwaves, and televisions as far away as possible from the router/access point. This would significantly reduce any interference that the appliances might cause since they operate on same frequency.

Security

Don't let you next-door neighbors or intruders connect to your wireless network. Secure your wireless network by turning on the WPA or WEP security feature on the router. Refer to product manual for detail information on how to set it up.

Wireless Modes

There are basically two modes of networking:

- **Infrastructure** – All wireless clients will connect to an access point or wireless router.
- **Ad-Hoc** – Directly connecting to another computer, for peer-to-peer communication, using wireless network adapters on each computer.

An Infrastructure network contains an Access Point or wireless router. All the wireless devices, or clients, will connect to the wireless router or access point.

An Ad-Hoc network contains only clients, such as laptops with wireless cardbus adapters. All the adapters must be in Ad-Hoc mode to communicate.

Networking Basics

Check your IP address

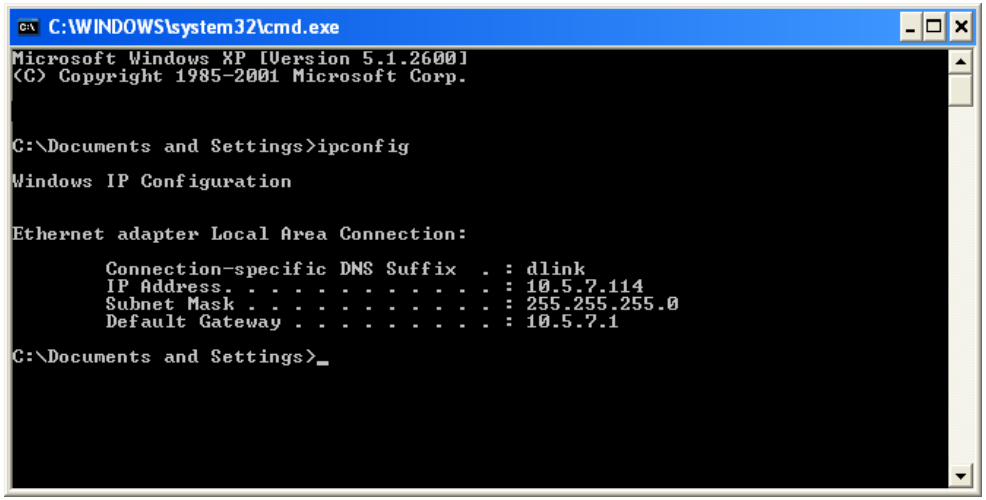
After you install your network adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

Click on **Start** > **Run**. In the run box type ***cmd*** and click **OK**.

At the prompt, type ***ipconfig*** and press **Enter**.

This will display the IP address, subnet mask, and the default gateway of your adapter.

If the address is 0.0.0.0, check your adapter installation, security settings, and the settings on your router. Some firewall software programs may block a DHCP request on newly installed adapters.



If you are connecting to a wireless network at a hotspot (e.g. hotel, coffee shop, airport), please contact an employee or administrator to verify their wireless network settings.

Statically Assign an IP address

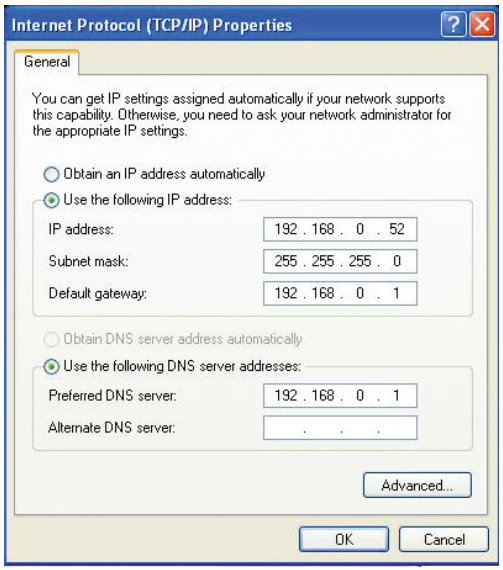
If you are not using a DHCP capable gateway/router, or you need to assign a static IP address, please follow the steps below:

Step 1
Windows® XP - Click on **Start** > **Control Panel** > **Network Connections**.
Windows® 2000 - From the desktop, right-click **My Network Places** > **Properties**.

Step 2
Right-click on the **Local Area Connection** which represents your network adapter and select **Properties**.

Step 3
Highlight **Internet Protocol (TCP/IP)** and click **Properties**.

Step 4
Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.



Example: If the router´s LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99. Make sure that the number you choose is not in use on the network. Set Default Gateway the same as the LAN IP address of your router (192.168.0.1).

Set Primary DNS the same as the LAN IP address of your router (192.168.0.1). The Secondary DNS is not needed or you may enter a DNS server from your ISP.

Step 5
Click OK twice to save your settings.

Technical Specifications

Standards

- IEEE 802.11g
- IEEE 802.11b
- IEEE 802.3
- IEEE 802.3u

Wireless Signal Rates*

- 54Mbps
- 48Mbps
- 36Mbps
- 24Mbps
- 18Mbps
- 12Mbps
- 11Mbps
- 9Mbps
- 6Mbps
- 5.5Mbps
- 2Mbps
- 1Mbps

Security

- WPA - Wi-Fi Protected Access (TKIP, MIC, IV Expansion, Shared Key Authentication)
- 802.1x
- 64/128-bit WEP

Modulation Technology

Orthogonal Frequency Division Multiplexing (OFDM)

Receiver Sensitivity

- 54Mbps OFDM, 10% PER,-68dBm)
- 48Mbps OFDM, 10% PER,-68dBm)
- 36Mbps OFDM, 10% PER,-75dBm)
- 24Mbps OFDM, 10% PER,-79dBm)
- 18Mbps OFDM, 10% PER,-82dBm)
- 12Mbps OFDM, 10% PER,-84dBm)
- 11Mbps CCK, 8% PER,-82dBm)
- 9Mbps OFDM, 10% PER,-87dBm)
- 6Mbps OFDM, 10% PER,-88dBm)
- 5.5Mbps CCK, 8% PER,-85dBm)
- 2Mbps QPSK, 8% PER,-86dBm)
- 1Mbps BPSK, 8% PER,-89dBm)

VPN Pass Through/ Multi-Sessions

- PPTP
- L2TP
- IPSec

Device Management

- Web-based Internet Explorer v6 or later; Netscape Navigator v6 or later; or other Java-enabled browsers
- DHCP Server and Client

Wireless Frequency Range

2.4GHz to 2.462GHz

Wireless Operating Range2

- Indoors - up to 328 ft. (100 meters)
- Outdoors- up to 1312 ft. (400 meters)

Wireless Transmit Power

15dBm ± 2dBm

External Antenna Type

Single detachable reverse SMA

Advanced Firewall Features

- NAT with VPN Pass-through
- MAC Filtering
- IP Filtering
- URL Filtering
- Domain Blocking

Operating Temperature
32°F to 131°F (0°C to 55°C)

Humidity
95% maximum (non-condensing)

Safety and Emissions
FCC

LEDs

- Power
- Status
- WAN
- WLAN (Wireless Connection)
- LAN (10/100)

Dimensions

- L = 5.6 (142mm)
- W = 4.3 (109mm)
- H = 1.2 inches (31mm)

Weight
7.8 oz (0.22kg)

Warranty
Sixty (60) days

* Maximum wireless signal rate derived from IEEE Standard 802.11g specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental factors will adversely affect wireless signal range.

Contacting Technical Support

eHome provides free technical support for customers within the United States and within Canada for the duration of the warranty period on this product. U.S. and Canadian customers can contact eHome technical support online at http://www.ehomeproducts.net.

Before you contact technical support, please have the following ready:

- Model number of the product (e.g. EH100)
- Hardware Revision (located on the label on the bottom of the router (e.g. rev A1))
- Serial Number (s/n number located on the label on the bottom of the router).

You can find software updates and user documentation on the eHome website as well as frequently asked questions and answers to technical issues.

Warranty

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. (“D-Link”) provides this Limited Warranty:

- Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and
- Only for products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, or addresses with an APO or FPO.

Limited Warranty:

D-Link warrants that the hardware portion of the D-Link product described below (“Hardware”) will be free from material defects in workmanship and materials under normal use from the date of original retail purchase of the product, for the period set forth below (“Warranty Period”), except as otherwise stated herein.

- Hardware (excluding power supplies and fans): Sixty (60) days
- Power supplies and fans: Sixty (60) days
- Spare parts and spare kits: Sixty (60) days

The customer’s sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link’s option, to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund the actual purchase price paid. Any repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement hardware need not be new or have an identical make, model or part. D-Link may, at its option, replace the defective Hardware or any part thereof with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement hardware will be warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer, and is subject to the same limitations and exclusions. If a material defect is incapable of correction, or if D-Link determines that it is not practical to repair or replace the defective Hardware, the actual price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware or part thereof that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

Limited Software Warranty:

D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days ("Software Warranty Period"), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Software Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software or to refund the portion of the actual purchase price paid that is attributable to the Software. Except as otherwise agreed by DLink in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Replacement Software will be warranted for the remainder of the original Warranty Period and is subject to the same limitations and exclusions. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

Non-Applicability of Warranty:

The Limited Warranty provided hereunder for Hardware and Software portions of D-Link's products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product and in that case, the product is being sold "As-Is" without any warranty whatsoever including, without limitation, the Limited Warranty as described herein, notwithstanding anything stated herein to the contrary.

Submitting A Claim:

The customer shall return the product to the original purchase point based on its return policy. In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow DLink to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.

- The customer must obtain a Case ID Number from D-Link Technical Support at 1-???-???-????, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form and entering the assigned Case ID Number at https://rma.dlink.com/.

- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. DLink will only replace the defective portion of the product and will not ship back any accessories.

- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer and shipped to D-Link Systems, Inc., 17595 Mt. Herrmann, Fountain Valley, CA 92708. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer. D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

What Is Not Covered:

The Limited Warranty provided herein by D-Link does not cover:
Products that, in D-Link's judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; and Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product.

While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited Warranty.

Disclaimer of Other Warranties:

EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED "AS-IS" WITHOUT ANY WARRANTY OF ANY KIND WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.

IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO THE DURATION OF THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

Limitation of Liability:

TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOSS OF REVENUE OR PROFIT, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, FAILURE OF OTHER EQUIPMENT OR COMPUTER PROGRAMS TO WHICH D-LINK'S PRODUCT IS CONNECTED WITH, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NONCONFORMING PRODUCT. THE MAXIMUM LIABILITY OF D-LINK UNDER THIS WARRANTY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT COVERED BY THE WARRANTY. THE FOREGOING EXPRESS WRITTEN WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ANY OTHER WARRANTIES OR REMEDIES, EXPRESS, IMPLIED OR STATUTORY.

Governing Law:

This Limited Warranty shall be governed by the laws of the State of California. Some states do not allow exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the foregoing limitations and exclusions may not apply. This Limited Warranty provides specific legal rights and you may also have other rights which vary from state to state.

Trademarks:

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CE Mark Warning:

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

FCC Statement:

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 communication. 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 into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

For detailed warranty information applicable to products purchased outside the United States, please contact the corresponding local D-Link office.

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