

D-Link AirPlus DI-614+

Enhanced 2.4 GHz Wireless Broadband Router

Manual

Rev. 070502

D-Link
Building Networks for People

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1. Package Contents



Contents of Package:

- **D-Link AirPlus DI-614+** Enhanced 2.4GHz Wireless Access Point
- Power Adapter – 5V DC, 2.5A
- Manual on CD
- Quick Installation Guide

Note: Using a power supply with a different voltage rating than the one included with the DI-614+ will cause damage and void the warranty for this product.

If any of the above items are missing, please contact your reseller.

System Requirements:

- Computer with a Windows, Macintosh, or Linux based operating system with an installed Ethernet adapter
- Internet Explorer or Netscape Navigator, version 4.0 or above, with JavaScript enabled

2. Introduction

The D-Link *AirPlus* DI-614+ Wireless Broadband Router is an enhanced 802.11b high-performance, wireless router. It is an ideal way to extend the reach and number of computers connected to your wireless network.

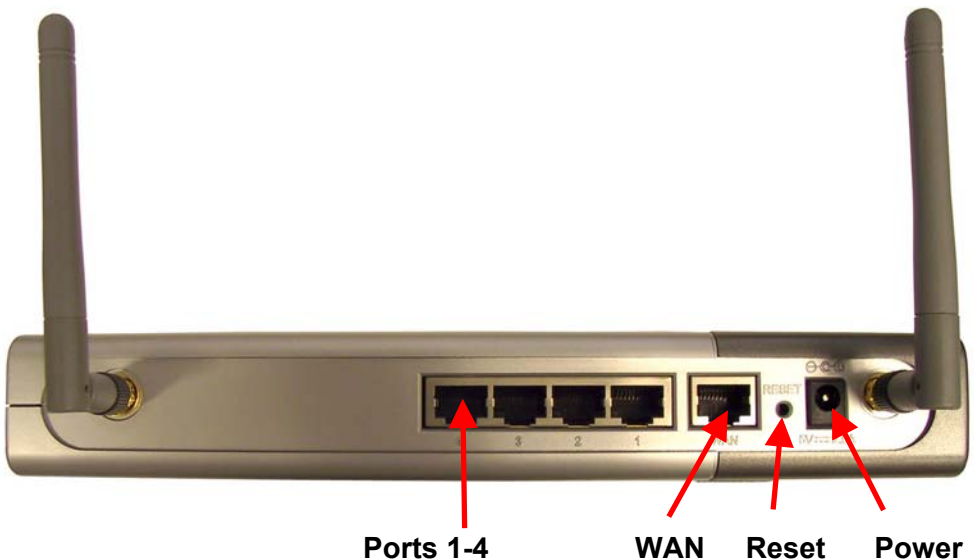
Unlike most 802.11b routers, the DI-614+ is capable of data transfer speeds up to 22 Mbps (compared to the standard 11 Mbps) when used with other D-Link *AirPlus* products such as the DWL-520+ Wireless PCI Adapter.

After completing the steps outlined in the *Quick Installation Guide* (included in your package) you will have the ability to share information and resources, such as files and printers, and enjoy the freedom that wireless networking delivers.

The DI-614+ is compatible with most popular operating systems, including Macintosh, Linux and Windows, and can be integrated into a large network. This Manual is designed to help you connect the Router and the D-Link *AirPlus* 2.4GHz Wireless Adapters into a network in Infrastructure mode. *Please take a look at the **Getting Started** section in this manual to see an example of an Infrastructure network using the DI-614+.*

This manual provides a quick introduction to wireless technology and its application as it relates to networking. Please take a moment to read through this manual and get acquainted with wireless technology.

Connections



Reset: Used to restore the DI-614+ to the factory default settings

Power: Connect one end of the included power adapter into the power port and the other end into the power outlet.

WAN: WAN port socket (CAT5 Ethernet RJ-45 cable.) Connect your Cable or DSL modem.

PORTS 1-4: LAN port sockets (CAT5 Ethernet RJ-45 cable.) The LED glows steadily when a port is connected to a hub, switch or network-adapter-equipped computer in the local area network.

Features and Benefits

- Connects multiple computers to a Broadband (Cable or DSL) modem to share the Internet connection
- Supports VPN pass-through, providing added security
- Advanced Firewall features
- DHCP server supported enables all networked computers to automatically receive IP addresses
- Up to 2x faster with other *AirPlus* products with speeds up to 22Mbps
- Web-based interface for Managing and Configuring
- Access Control to manage users on the network
- Supports special applications that require multiple connections
- Operates in the 2.4GHz frequency range
- Maximum reliability, throughput and connectivity with automatic data rate switching.
- Stronger network security with 256-bit encryption.

LEDS

M1 LED -

A solid light indicates that the DI-614+ is ready.

M2 LED -

A solid light indicates that the unit is defective.

WAN LED -

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



POWER LED -

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

WLAN LED -

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

LOCAL NETWORK LED -

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

3. Wireless Basics

D-Link *AirPlus* 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 D-Link *AirPlus* wireless family of products will allow you to 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 Access Point (AP) is a device used to provide this link.

People use wireless LAN technology for many different purposes:

Mobility - Productivity increases when people have access to data in any location within the operating range of the WLAN. Management decisions based on real-time information can significantly improve worker efficiency.

Low Implementation Costs – WLANs (Wireless Local Area Networks) are easy to set up, manage, change and relocate. Networks that frequently change, both physically and logically, can benefit from WLANs ease of implementation. WLANs can operate in locations where installation of wiring may be impractical.

Installation Speed and Simplicity - Installing a wireless LAN system can be fast and easy and can eliminate the need to pull cable through walls and ceilings.

Wireless Basics

Network Expansion - Wireless technology allows the network to go where wires cannot go.

Reduced Cost-of-Ownership - While the initial investment required for wireless LAN hardware might be higher than the cost of wired LAN hardware, overall installation expenses and life-cycle costs will be significantly lower. Long-term cost benefits are greatest in dynamic environments requiring frequent moves, adds, and changes.

Scalability – Wireless Local Area Networks (WLANs) can be configured in a variety of topologies to meet the needs of specific applications and installations. Configurations are easily changed and range from peer-to-peer networks suitable for a small number of users to full infrastructure networks of thousands of users that allow roaming over a broad area.

D-Link AirPlus Wireless Family of LAN products include:

- ◆ Enhanced 2.4GHz Wireless Cardbus Adapters used with laptop computers (DWL-650+)
- ◆ Enhanced 2.4GHz Wireless PCI cards used with desktop computers (DWL-520+)
- ◆ Enhanced 2.4GHz Wireless Router and Access Point (DI-614+,DWL-900AP+)

The DI-614+ is also compatible with the D-Link Air 802.11b family of products, which include:

- ◆ 2.4GHz Wireless Cardbus Adapters used with laptop computers (DWL-650)
- ◆ 2.4GHz Wireless PCI cards used with desktop computers (DWL-520)
- ◆ Wireless Router/Access Point/Print Servers (DI-713P)
- ◆ Wireless Access Points (DWL-1000AP, DWL-900AP)

Standards - Based Technology

The IEEE standard-based technology assures that the D-Link *AirPlus* Products are interoperable with existing compatible 2.4GHz wireless technology. This means you will be able to transfer large files quickly or even watch a movie in MPEG format over your network without noticeable delays. The technology works by using multiple frequencies in the 2.4GHz range at speeds up to 22 Mbps. D-Link *AirPlus* products will automatically

Wireless Basics

sense the best possible connection speed to ensure the greatest speed and range possible with the technology.

Installation Considerations

Designed to go up to 1,312 feet (400 meters) outdoors and up to 328 feet (100 meters) indoors, D-Link *AirPlus* DI-614+ lets you access your network with your laptop computer from virtually anywhere. Keep in mind, however, that the number, thickness and location of walls, ceilings or other objects that the wireless signals must pass thru may limit 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 range is to follow these basic guidelines:

1. Keep the number of walls and ceilings between the wireless Access Point and your receiving device (e.g., the DWL-650+) to a minimum - Each wall or ceiling can reduce your D-Link *Air* Wireless product's range from 3-90 feet (1-30 meters.) Position your Access Points, Residential Gateways, and computers so that the number of walls or ceilings is minimized.
2. Be aware of the direct line between Access Points, Residential Gateways (routers) and computers. 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! Try to make sure that the Access Points and adapters are positioned so that the signal will travel straight through a wall or ceiling 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, and computers with wireless adapters so that the signal passes through drywall or open doorways and not other materials.
4. Make sure that the device's antenna is positioned for best reception by using the software signal strength tools included with your product.
5. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that may generate extreme RF noise.

For the average home, signal range should not be an issue. If you experience low or no signal strength in areas of your home that you wish to access, consider positioning the Access Point in a location directly between the computers with wireless adapters. Additional Access Points can be connected to provide better coverage in rooms where the signal does not appear as strong as desired.

4. Getting Started

Right out of the box, with its default settings, the DI-614+ will automatically connect with other D-Link Air or AirPlus products.

For the price of a single IP Address from your Broadband Internet Service provider you can share the Internet with all the computers on your local network, without sacrificing speed or security, using D-Link AirPlus networking products.

IP ADDRESS

Please note: If you have a DHCP-capable router, such as the D-Link DI-614+, there is no need to assign an IP Address.

If you need to assign IP Addresses to the computers on the network, please remember that the **IP Address for each computer must be in the same IP Address range as all the computers in the network**, and the Subnet mask must be exactly the same for all the computers in the network.

For example: If the first computer is assigned an IP Address of 192.168.0.2 with a Subnet Mask of 255.255.255.0, then the second computer can be assigned an IP Address of 192.168.0.3 with a Subnet Mask of 255.255.255.0, etc.

IMPORTANT: If computers or other devices are assigned the same IP Address, one or more of the devices may not be visible on the network.

The **Infrastructure Network** example shown on the following page contains the following D-Link network devices:

A wireless Broadband Router - **D-Link AirPlus DI-614+**

A laptop computer with a wireless adapter - **D-Link AirPlus DWL-650+**

A desktop computer with a wireless adapter - **D-Link AirPlus DWL-520+**

A Cable modem - **D-Link DCM-200**

***DHCP** stands for **Dynamic Host Configuration Protocol**.
It is a protocol for assigning dynamic IP addresses “automatically.”
With a DHCP-capable gateway/router, there is
no need to manually assign an IP address.*

Getting Started

Setting Up an Infrastructure Network

Please refer to the following sections of this manual for additional information about setting up a network:

Networking Basics- learn how to check your IP Address; share printers and files.

Using the Configuration Utility- learn the settings you must use on each computer in your network for successful communication.

Troubleshooting- learn how to check for the proper installation of the network adapters' drivers and other tips for troubleshooting the network.



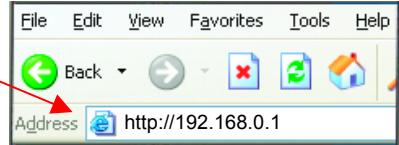
Please remember that **D-Link AirPlus** wireless devices are pre-configured to connect together, right out of the box, with the default settings.

- 1** You will need a broadband Internet access (Cable/DSL) subscription.
- 2** Consult with your Cable/DSL provider for proper installation of the modem.
- 3** Connect the modem to the DI-614+ Wireless Broadband Router. See the **Quick Installation Guide** included with the router.
- 4** If you are including a desktop computer in your network, you can install the **D-Link DFE-530TX+** Ethernet NIC adapter into the desktop computer. See the **Quick Installation Guide** included with the DFE-530TX+.
- 5** Install the drivers for the wireless network adapter (such as the **D-Link AirPlus DWL-650+**) into the laptop computer. See the **Quick Installation Guide** included with the DWL-650+.

5. Using the Configuration Menu

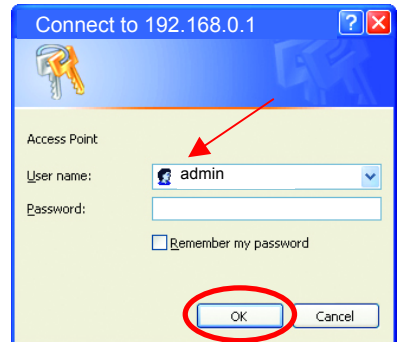
Whenever you want to configure your network or the DI-614+, you can access the Configuration Utility by opening the web-browser and typing in the IP Address of the DI-614+. The DI-614+ default IP Address is shown below:

- Open the web browser
- Type in the **IP Address** of the Access Point



(The IP Address shown in the example above is the default setting. If you have changed the IP Address of the DI-614+ to conform to a network, then input that IP Address in the web browser, instead of the default IP Address shown.)

- Type **admin** in the **User Name** field (lower case)
- Leave the **Password** blank
- Click **OK**



Setup Wizard

The Setup Wizard page is the first page that appears when logging into the web-based management interface. The Setup Wizard is a utility used to quickly configure the DI-614+. It will guide you through four quick and basic steps to help you connect to your ISP. You will be connected to your ISP (Internet Service Provider) and have Internet access within minutes.

Home > Wizard

The screenshot shows the configuration interface for a D-Link DI-614+ Enhanced 2.4GHz Wireless Router. The page title is "DI-614+ Enhanced 2.4GHz Wireless Router". The navigation tabs are "Home", "Advanced", "Tools", "Status", and "Help". The "Home" tab is selected, and the sub-section is "Setup Wizard".

On the left sidebar, there are five buttons: "Wizard" (highlighted in yellow), "Wireless", "WAN", "LAN", and "DHCP".

The main content area contains the following text:

The DI-614+ is an Wireless Broadband Router ideal for home networking and small business networking. The setup wizard will guide you to configure the DI-614+ to connect to your ISP (Internet Service Provider). The DI-614+'s easy setup will allow you to have Internet access within minutes. Please follow the setup wizard step by step to configure the DI-614+.

Below the text is a "Run Wizard" button. In the bottom right corner, there is a "Help" icon (a red circle with a white plus sign) and the word "Help" below it.

Wireless

Wireless Settings are settings for the (Access Point) Portion of the Wireless Router. Allow you to change the wireless settings to fit an existing wireless network or to customize your wireless network.

Home > Wireless

The screenshot shows the configuration interface for a D-Link DI-614+ Enhanced 2.4GHz Wireless Router. The page title is "DI-614+ Enhanced 2.4GHz Wireless Router". The navigation tabs are "Home", "Advanced", "Tools", "Status", and "Help". The "Home" tab is selected, and the sub-section is "Wireless Settings".

On the left sidebar, there are five buttons: "Wizard", "Wireless" (highlighted in yellow), "WAN", "LAN", and "DHCP".

The main content area contains the following text:

Wireless Settings
These are the wireless settings for the AP(Access Point)Portion.

SSID : default

Channel : 6

WEP : Enabled Disabled

WEP Encryption : 64Bit

Key Type : HEX

Passphrase :

Key1 : 0000000000

Key2 : 0000000000

Key3 : 0000000000

Key4 : 0000000000

At the bottom right, there are three icons: a green checkmark, a yellow 'X', and a red plus sign. Below these icons are the labels "Apply", "Cancel", and "Help".

SSID

Service Set Identifier (SSID) is the name designated for a specific wireless local area network (WLAN). The SSID's factory default setting is "**default**". The SSID can be easily changed to connect to an existing wireless network or to establish a new wireless network.

Channel

Indicates the channel setting for the DI-614+. 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.

WEP

Wired Equivalent Protocol (WEP) is a wireless security protocol for Wireless Local Area Networks (WLAN). WEP provides security by encrypting the data that is sent over the WLAN. The DI-614+ supports 3 levels of WEP Encryption: 64Bit encryption, 128Bit encryption, and 256Bit encryption. WEP is **disabled** by default. The WEP setting can be changed to fit an existing wireless network or to customize your wireless network.

Key Type

The Key Types that are supported by the DI-614+ are HEX (Hexadecimal) and ASCII (American Standard Code for Information Interchange.) The Key Type can be changed to fit an existing wireless network or to customize your wireless network.

Passphrase

Enter a passphrase (HEX or ASCII characters) and the DI-614+ will automatically generate the keys 1-4 when the "Generate" button is pressed.

KEYS

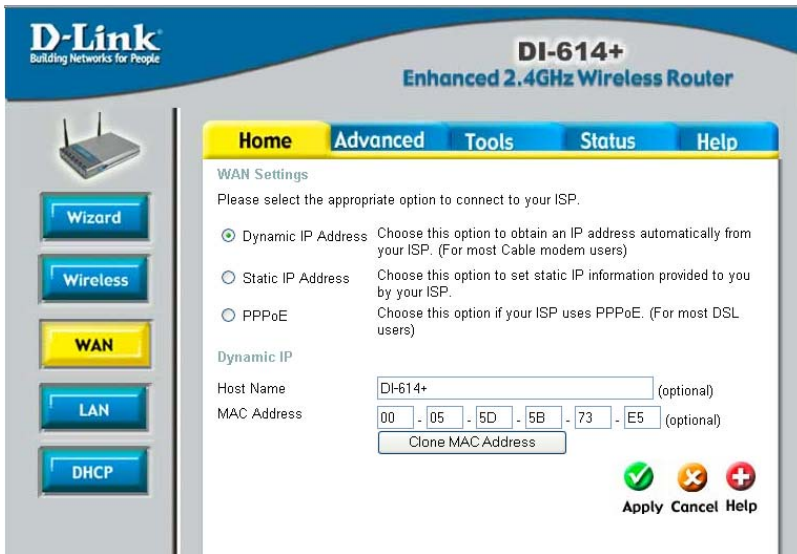
Keys 1-4 allow you to easily change wireless encryption settings to maintain a secure network. Simply select the specific key to be used for encrypting wireless data on the network.

WAN

WAN is short for Wide Area Network. The WAN settings can be referred to as the Public settings. All IP information in the WAN settings are public IP addresses which are accessible on the Internet.

The WAN settings consist of three options: **Dynamic IP Address**, **Static IP Address**, and **PPPoE**. Select the appropriate option and fill in the information needed to connect to your ISP.

Home > WAN



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Home Advanced Tools Status Help

WAN Settings

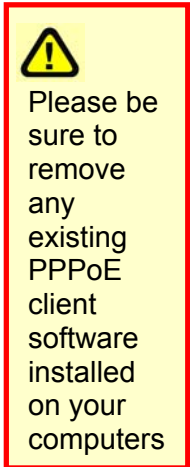
Please select the appropriate option to connect to your ISP.

- Dynamic IP Address** Choose this option to obtain an IP address automatically from your ISP. (For most Cable modem users)
- Static IP Address** Choose this option to set static IP information provided to you by your ISP.
- PPPoE** Choose this option if your ISP uses PPPoE. (For most DSL users)

Dynamic IP

Host Name (optional)

MAC Address (optional)



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 any IP numbers to use. This option is commonly used for Cable modem services.

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

MAC Address: The default MAC address is set to the WAN's physical interface MAC address on the Broadband Router. You can use the "Clone MAC Address" button to copy the MAC address of the Ethernet Card installed by your ISP and replace the WAN MAC address with this MAC address. It is not recommended that you change the default MAC address unless required by your ISP.

Static IP Address

The screenshot shows the configuration interface for a D-Link DI-614+ Enhanced 2.4GHz Wireless Router. The page is titled "DI-614+ Enhanced 2.4GHz Wireless Router" and has a navigation menu with "Home", "Advanced", "Tools", "Status", and "Help". The "Advanced" tab is selected, and the "WAN Settings" section is active. The "Static IP Address" option is selected with a radio button. Below this, there are input fields for "IP Address", "Subnet Mask", "ISP Gateway Address", "Primary DNS Address", and "Secondary DNS Address", all containing "0.0.0.0". The "IP Address" field has a note "(assigned by your ISP)" and the "Secondary DNS Address" field has a note "(optional)". At the bottom right, there are three buttons: "Apply" (with a green checkmark), "Cancel" (with a red X), and "Help" (with a red plus sign).

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Home Advanced Tools Status Help

WAN Settings
Please select the appropriate option to connect to your ISP.

Dynamic IP Address Choose this option to obtain an IP address automatically from your ISP. (For most Cable modem users)

Static IP Address Choose this option to set static IP information provided to you by your ISP.

PPPoE Choose this option if your ISP uses PPPoE. (For most DSL users)

Static IP

IP Address (assigned by your ISP)

Subnet Mask

ISP Gateway Address

Primary DNS Address

Secondary DNS Address (optional)

Apply Cancel Help

Choose 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 IP 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: Public IP address provided by your ISP.

Subnet Mask: Subnet mask provided by your ISP.

ISP Gateway Address: Public IP address of your ISP that you are connecting to.

Primary DNS Address: Primary DNS (Domain Name Server) IP provided by your ISP

Secondary DNS Address: optional

PPPoE

Please be sure to remove any Client Software program on your computer before you start your configuration of the DI-614+ Router.

Choose PPPoE (Point to Point Protocol over Ethernet) if your ISP uses PPPoE connection. Your ISP will provide you with a username and password. This option

The screenshot shows the configuration interface for a D-Link DI-614+ Enhanced 2.4GHz Wireless Router. The 'WAN' tab is selected in the left sidebar. The 'WAN Settings' section is active, displaying options for connecting to an ISP. The 'Dynamic IP Address' option is selected. Below this, there are fields for 'User Name', 'Password', 'Retype Password', 'Service Name', 'IP Address', 'Primary DNS Address', 'Secondary DNS Address', 'Maximum Idle Time', 'MTU', and 'Auto-reconnect'. The 'Dynamic PPPoE' radio button is selected under the 'PPPoE' heading. The 'Apply' button is highlighted in green.

is typically used for DSL services. Select Dynamic PPPoE to obtain an IP address automatically for your PPPoE connection. Select Static PPPoE to use a static IP address for your PPPoE connection.

Dynamic PPPoE: PPPoE connection where you will receive an IP address automatically from your ISP

Static PPPoE: PPPoE connection where you have an assigned (static) IP address

User Name: Your PPPoE username provided by your ISP

Password: Your PPPoE password provided by your ISP

Retype Password: Re-enter PPPoE password

Service Name: Enter the service name provided by your ISP. (optional)

IP Address: This option is only available for Static PPPoE. Enter in the static IP address for the PPPoE connection.

Primary DNS Address: Primary DNS IP provided by your ISP

Secondary DNS Address: optional

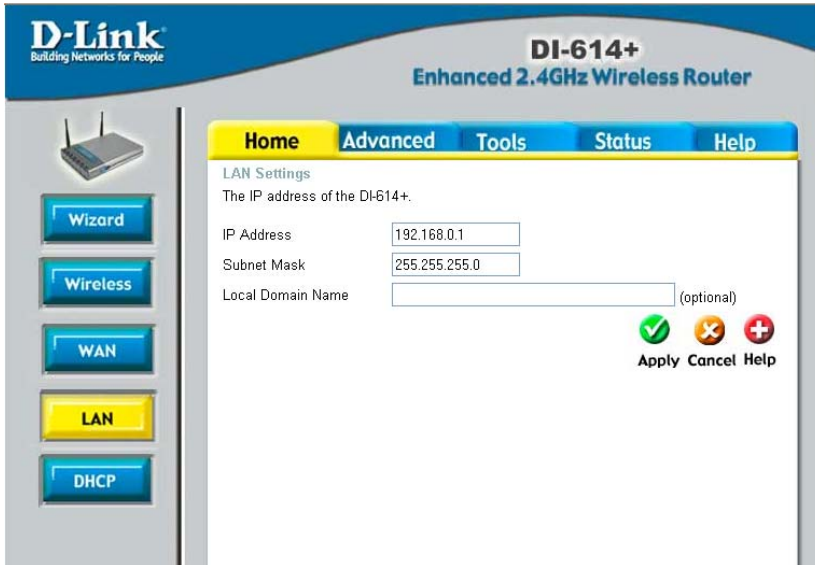
Maximum Idle time: The amount of time of inactivity before disconnecting your PPPoE session. Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the defined

Maximum Idle Time, then the connection will be dropped. Either set this to zero or enable Auto-reconnect to disable this feature.

MTU: MTU stands for Maximum Transmission Unit. For PPPoE connections, you may need to change the MTU settings in order to work correctly with your ISP.

Auto-reconnect: If enabled, the Broadband Router will automatically connect to your ISP after your system is restarted or if the connection is dropped.

HOME > LAN

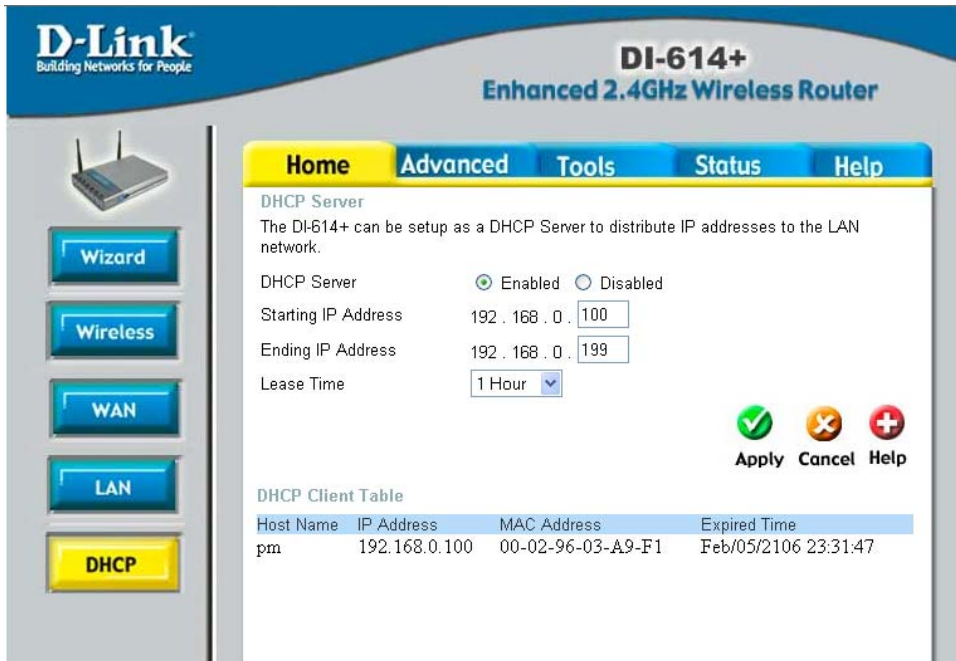


LAN is short for Local Area Network. This is considered your internal network. These are the IP settings of the LAN interface for the DI-614+. These settings may be referred to as Private settings. You may change the LAN IP address if needed. The LAN IP address is private to your internal network and cannot be seen on the Internet.

IP Address: The IP address of the LAN interface. The default IP address is 192.168.0.1.

Subnet Mask: The subnet mask of the LAN interface. The default subnet mask is 255.255.255.0.

Local Domain Name: This field is optional. Enter in the your local domain name.



DHCP

DHCP stands for Dynamic Host Control Protocol. The DI-614+ 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 DI-614+. 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.

Starting IP address: The starting IP address for the DHCP server’s IP assignment.

Ending IP address: The ending IP address for the DHCP server’s IP assignment.

Lease Time: The length of time for the IP lease.

ADVANCED > VIRTUAL SERVER

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Home **Advanced** Tools Status Help

Virtual Server

Virtual Server is used to allow Internet users access to LAN services.

Enabled Disabled

Name

Private IP

Protocol Type

Private Port

Public Port

Schedule Always

From time : AM to : AM

day to

Virtual Servers List **Apply Cancel Help**

Name	Private IP	Protocol	Schedule	
<input type="checkbox"/> Virtual Server FTP	0.0.0.0	TCP 21/21	always	
<input type="checkbox"/> Virtual Server HTTP	0.0.0.0	TCP 80/80	always	
<input type="checkbox"/> Virtual Server HTTPS	0.0.0.0	TCP 443/443	always	
<input type="checkbox"/> Virtual Server DNS	0.0.0.0	UDP 53/53	always	
<input type="checkbox"/> Virtual Server SMTP	0.0.0.0	TCP 25/25	always	
<input type="checkbox"/> Virtual Server POP3	0.0.0.0	TCP 110/110	always	
<input type="checkbox"/> Virtual Server Telnet	0.0.0.0	TCP 23/23	always	
<input type="checkbox"/> IPSec	0.0.0.0	UDP 500/500	always	
<input type="checkbox"/> PPTP	0.0.0.0	TCP 1723/1723	always	

Virtual Server

The DI-614+ 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 DI-614+ firewall feature filters out unrecognized packets to protect your LAN network so all computers networked with the DI-614+ are invisible to the outside world. If you wish, you can make some of the LAN computers accessible from the Internet by enabling *Virtual Server*. Depending on the requested service, the DI-614+ redirects the external service request to the appropriate server within the LAN network.

The DI-614+ is also capable of port-redirection meaning incoming traffic to a particular port may be redirected to a different port on the server computer.

Each virtual services that are created will be listed at the bottom of the screen in the Virtual Servers List. There are already pre-defined virtual services already in the table. You may use them by enabling them and assigning the server IP to use that particular virtual service.

Name: The name referencing the virtual service.

Private IP: The server computer in the LAN (Local Area Network) that will be providing the virtual services.

Private Port: The port number of the service used by the Private IP computer.

Protocol Type: The protocol used for the virtual service.

Public Port: The port number on the WAN side that will be used to access the virtual service.

Schedule: The schedule of time when the virtual service will be enabled. The schedule may be set to Always, which will allow the particular service to always be enabled. If it is set to Time, select the time frame for the service to be enabled. If the system time is outside of the scheduled time, the service will be disabled.

Example #1:

If you have a Web server that you wanted Internet users to access at all times, you would need to enable it. Web (HTTP) server is on LAN (Local Area Network) computer 192.168.0.25. HTTP uses port 80, TCP.

Name: Web Server

Private IP: 192.168.0.25



Protocol Type: TCP

Private Port: 80

Public Port: 80

Schedule: always

Virtual Servers List

Name	Private IP	Protocol	Schedule	
<input checked="" type="checkbox"/> Virtual Server HTTP	192.168.0.25	TCP 80/80	always	 



Click on this icon to edit the virtual service.



Click on this icon to delete the virtual service.

Example #2:

If you have an FTP server that you wanted Internet users to access by WAN port 2100 and only during the weekends, you would need to enable it as such. FTP server is on LAN computer 192.168.0.30. FTP uses port 21, TCP.

Name: FTP Server

Private IP: 192.168.0.30

Protocol Type: TCP

Private Port: 21

Public Port: 2100

Schedule: From: 01:00AM to 01:00AM, Sat to Sun

- All Internet users who want to access this FTP Server must connect to it from port 2100. This is an example of port redirection and can be useful in cases where there are many of the same servers on the LAN network.

ADVANCED > APPLICATIONS

The screenshot shows the D-Link DI-614+ Enhanced 2.4GHz Wireless Router web interface. The 'Advanced' tab is selected, and the 'Special Application' configuration page is displayed. The page includes a sidebar with navigation buttons for Virtual Server, Applications, Filters, Firewall, DMZ, and Performance. The main content area has tabs for Home, Advanced, Tools, Status, and Help. The 'Special Application' section includes a description, a status toggle (Enabled/Disabled), and form fields for Name, Trigger Port, Trigger Type, Public Port, and Public Type. Below this is a 'Special Applications List' table with columns for NAME, Trigger, and Public, listing various applications like Battle.net, Dialpad, ICU II, MSN Gaming Zone, PC-to-Phone, and Quick Time 4. At the bottom right of the list are 'Apply', 'Cancel', and 'Help' buttons.

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Home **Advanced** Tools Status Help

Special Application
Special Application is used to run applications that require multiple connections.

Enabled Disabled

Name:

Trigger Port: -

Trigger Type:

Public Port:

Public Type:

Special Applications List

NAME	Trigger	Public	
<input type="checkbox"/> Battle.net	6112	6112	<input type="button" value="⊕"/> <input type="button" value="⊖"/>
<input type="checkbox"/> Dialpad	7175	51200-51201,51210	<input type="button" value="⊕"/> <input type="button" value="⊖"/>
<input type="checkbox"/> ICU II	2019	2000-2038,2050-2051,2069,2085,3010-3030	<input type="button" value="⊕"/> <input type="button" value="⊖"/>
<input type="checkbox"/> MSN Gaming Zone	47624	2300-2400,28800-29000	<input type="button" value="⊕"/> <input type="button" value="⊖"/>
<input type="checkbox"/> PC-to-Phone	12053	12120,12122,24150-24220	<input type="button" value="⊕"/> <input type="button" value="⊖"/>
<input type="checkbox"/> Quick Time 4	554	6970-6999	<input type="button" value="⊕"/> <input type="button" value="⊖"/>

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 DI-614+. 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 DI-614+ provides some predefined applications in the table on the bottom of the web page. Select the application you want to use and enable it. **Note!** Only one PC can use each Special Application tunnel.

Trigger Name: This is the name referencing the special application.

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

Trigger Type: This is the protocol used to trigger the special application.

Public 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.

Public Type: This is the protocol used for the special application.

Schedule: This is the schedule of time when the special application will be enabled.

Filters

Filters are used to deny or allow LAN (Local Area Network) computers from accessing the Internet.

The DI-614+ can be setup to deny internal computers by their IP or MAC addresses. The DI-614+ can also block users from accessing restricted web sites.

IP Filters

Use IP Filters to deny LAN IP addresses from accessing the Internet.

You can deny specific port numbers or all ports for

ADVANCED > FILTERS

The screenshot shows the 'Advanced > Filters' configuration page for a D-Link DI-614+ Enhanced 2.4GHz Wireless Router. The 'IP Filters' section is active, showing options to enable or disable filters. A table lists existing IP filter rules.

IP Filter List	IP Range	Protocol	Schedule	Apply	Cancel	Help
<input type="checkbox"/>	*	TCP 20-21	always			
<input type="checkbox"/>	*	TCP 80	always			
<input type="checkbox"/>	*	TCP 443	always			
<input type="checkbox"/>	*	UDP 53	always			
<input type="checkbox"/>	*	TCP 25	always			
<input type="checkbox"/>	*	TCP 110	always			
<input type="checkbox"/>	*	ICMP 8	always			
<input type="checkbox"/>	*	TCP 23	always			

the specific IP address.

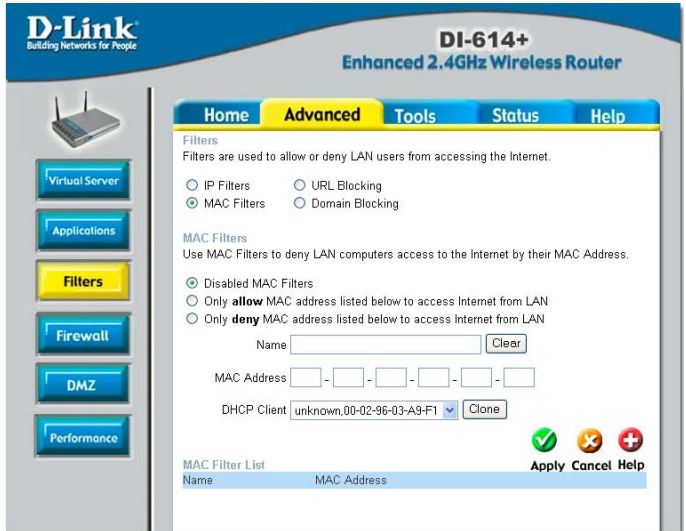
IP: The IP address of the LAN computer that will be denied access to the Internet.

Port: The single port or port range that will be denied access to the Internet.

Schedule: This is the schedule of time when the IP Filter will be enabled.

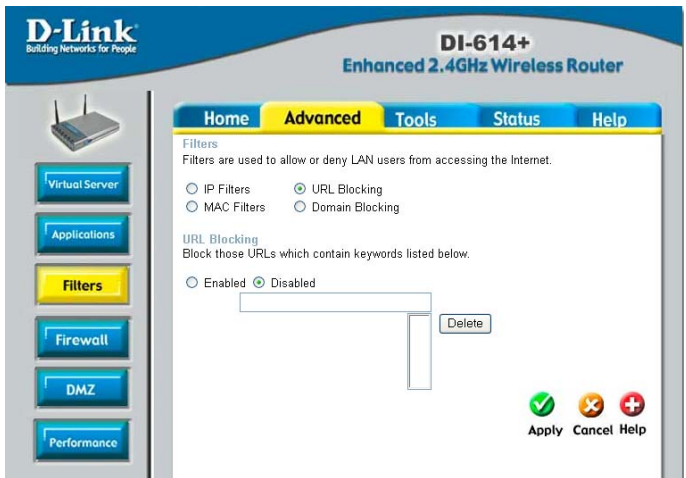
MAC Filters

Use MAC (Media Access Control) Filters to allow or deny LAN (Local Area Network) computers by their MAC addresses from accessing the Internet. 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.



URL Blocking

URL Blocking is used to deny LAN computers from accessing specific web sites by its URL. 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.



Domain Blocking

Domain Blocking is used to allow or deny LAN (Local Area Network) computers from accessing specific domains on the Internet. Domain blocking will deny all requests to a specific domain such as http and ftp. It can also allow computers to access specific sites and deny all other sites.

The screenshot shows the web interface of a D-Link DI-614+ Enhanced 2.4GHz Wireless Router. The interface is in the 'Advanced' configuration mode. On the left sidebar, there are navigation buttons for 'Virtual Server', 'Applications', 'Filters' (highlighted in yellow), 'Firewall', 'DMZ', and 'Performance'. The main content area is titled 'Domain Blocking' and contains the following elements:

- Filters:** A section with the text 'Filters are used to allow or deny LAN users from accessing the Internet.' and three radio button options: 'IP Filters', 'URL Blocking', and 'Domain Blocking' (which is selected).
- Domain Blocking:** A section with a radio button for 'Disabled' (selected) and two other options: 'Allow users to access all domains except "Blocked Domains"' and 'Deny users to access all domains except "Permitted Domains"'. The 'Deny' option is currently selected.
- Permitted Domains:** A text input field with a 'Delete' button to its right.
- Blocked Domains:** A text input field with a 'Delete' button to its right.
- Footer:** Three icons representing 'Apply' (checkmark), 'Cancel' (X), and 'Help' (plus sign), with the text 'Apply Cancel Help' below them.

ADVANCED > FIREWALL

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Home **Advanced** Tools Status Help

Firewall Rules
Firewall Rules can be used to allow or deny traffic from passing through the DI-614+.

Enabled Disabled

Name:

Action: Allow Deny

Interface: IP Range Start: IP Range End: Protocol: Port Range: -

Source: *

Destination: * TCP -

Schedule: Always
 From time : : AM to : : AM
day to

Firewall Rules List

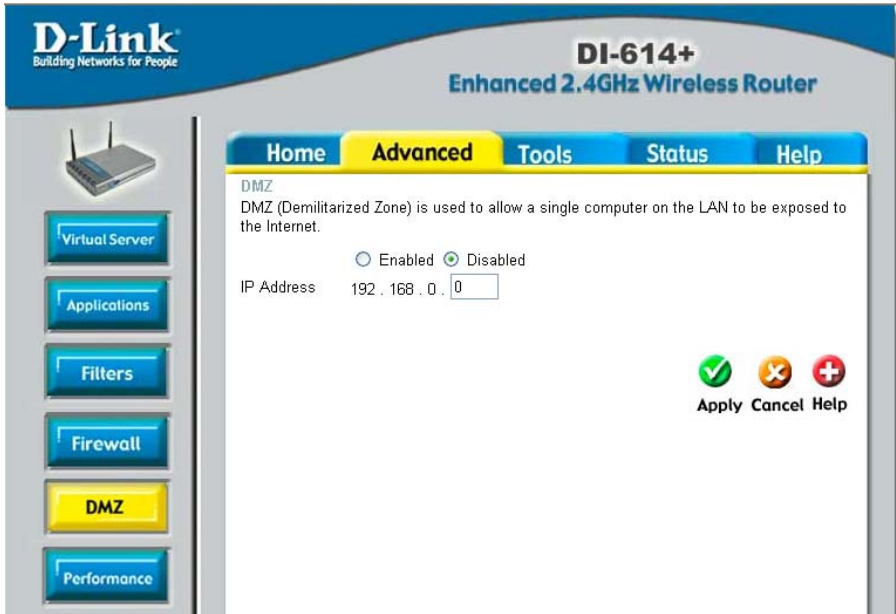
Action	Name	Source	Destination	Protocol	
<input checked="" type="checkbox"/>	Allow	Allow to Ping WAN port	WAN,*	LAN,192.168.0.1	ICMP,8 <input type="button" value=""/>
<input checked="" type="checkbox"/>	Deny	Default	*,*	LAN,*	IP (0),*
<input checked="" type="checkbox"/>	Allow	Default	LAN,*	*,*	IP (0),*

Firewall Rules is an advance feature used to deny or allow traffic from passing through the Broadband Router. It works in the same way as IP Filters with additional settings. You can create more detailed access rules for the DI-614+. When virtual services are created and enabled, it will also display in Firewall Rules. Firewall Rules contains all network firewall rules pertaining to IP (Internet Protocol).

In the **Firewall Rules List** at the bottom of the screen, the priorities of the rules are from top (highest priority) to bottom (lowest priority.)

Note: The DI-614+ MAC Address filtering rules have precedence over the Firewall Rules.

ADVANCED > DMZ



If you have a client PC that cannot run Internet applications properly from behind the DI-614+, then you can set the client up to 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.

Admin

At this page, the DI-614+ administrator can change the system password. There are two accounts that can access the Broadband Router's Web-Management interface. They 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.

TOOLS > ADMIN



Remote Management

Remote Management allows the DI-614+ 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: Internet IP address of the computer that has access to the Broadband Router. **It is not recommended that you set the IP address to * (star), because this allows any Internet IP address to access the Broadband Router, which could result in a loss of security for your network.** If you elect to **enable** Remote Management, enter the IP Address of your remote location.

Port: Select the port number used to access the Broadband Router.

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

TOOLS > TIME

Time

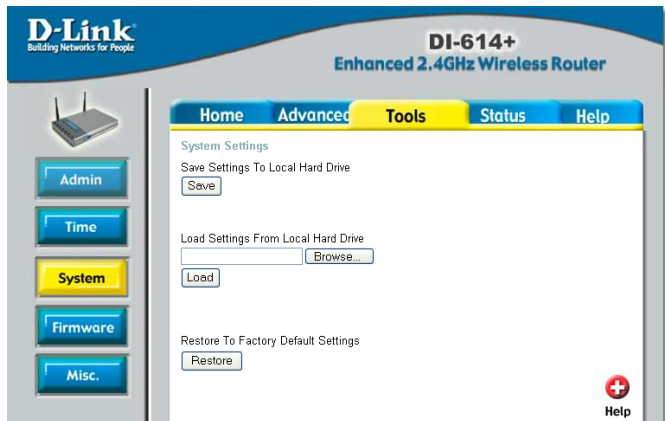
The system time is the time used by the DI-614+ for scheduling services. You can manually set the time or connect to a NTP (Network Time Protocol) server. If an NTP server is set, you will only need to set the time zone. If you manually set the time, you may also set Daylight Saving dates and the system time will automatically adjust on those dates.



TOOLS > SYSTEM

System Settings

The current system settings can be saved as a file onto the local hard drive. The saved file or any other saved setting file can be loaded back on the Broadband Router. To reload a system settings file, click on Browse to browse the

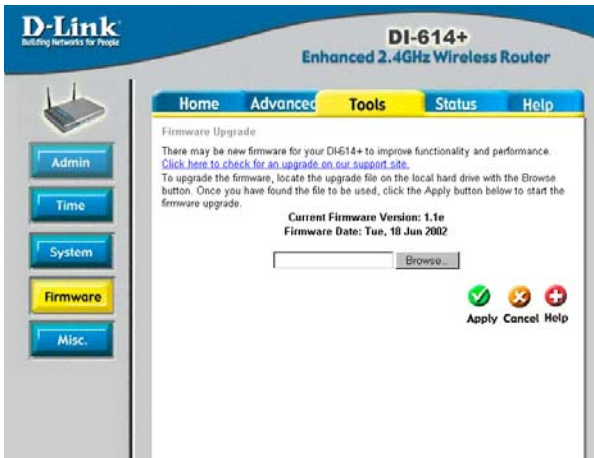


local hard drive and locate the system file to be used. You may also reset the Broadband Router back to factory settings by clicking on **Restore**.

Firmware Upgrade

You can upgrade the firmware of the Broadband Router at this page. Make sure the firmware you want to use is on the local hard drive of the computer. Click on Browse to browse the local hard drive and locate the firmware to be used for the update. Please check the D-Link support site for firmware updates at <http://support.dlink.com>.

TOOLS > FIRMWARE



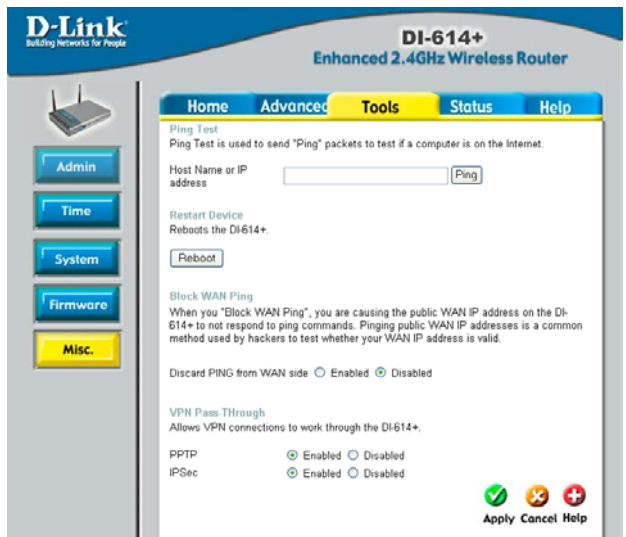
TOOLS > MISC

Miscellaneous Items

These are additional tools and features of the Broadband Router.

Ping Test

This useful diagnostic utility can be used to check if a computer is on the Internet. It sends ping packets and listens for replies from the specific host.



Restart Device

If for any reason the Broadband Router is not responding correctly, you may want to restart the Broadband Router.

Block WAN Ping

When you “Block WAN Ping”, will not respond to ping commands from the Internet. Pinging public WAN IP addresses is a common method used by hackers to test whether your WAN IP address is valid.

Discard PING from WAN side: By enabling this option, the DI-614+ will not reply to ping (ICMP) request packets from the Internet.

VPN Pass-Through

The Broadband Router supports VPN (Virtual Private Network) pass-through for both PPTP (Point-to-Point Tunneling Protocol) and IPSec (IP Security). Once VPN pass-through is enabled, there is no need to open up virtual services. Multiple VPN connections can be made through the Broadband Router. This is useful when you have many VPN clients on the LAN network.

Device Information

This page in the Configuration Utility displays the current information for the Broadband Router. It will display the WAN, LAN, and MAC address information.

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

STATUS > DEVICE INFO

The screenshot shows the configuration utility interface for a D-Link DI-614+ Enhanced 2.4GHz Wireless Router. The page title is "STATUS > DEVICE INFO". The interface includes a navigation menu with buttons for "Home", "Advanced", "Tools", "Status" (selected), and "Help". A sidebar on the left contains buttons for "Device Info" (selected), "Log", "Stats", and "Wireless". The main content area displays "Device Information" for the router, including:

- Device Information:** Firmware Version: 1.1, Thu, 30 May 2002
- LAN:**
 - MAC Address: 00-05-5D-5B-73-E4
 - IP Address: 192.168.0.1
 - Subnet Mask: 255.255.255.0
 - DHCP Server: Enabled
- WAN:**
 - MAC Address: 00-05-5D-5B-73-E5
 - Connection: DHCP Client Disconnected
 - Buttons: DHCP Release, DHCP Renew
 - IP Address: 0.0.0.0
 - Subnet Mask: 0.0.0.0
 - Default Gateway: 0.0.0.0
 - DNS: (empty)
- Wireless:**
 - MAC Address: 00-05-5D-5A-60-17
 - SSID: default
 - Channel: 6
 - WEP: Disabled

A "Help" icon is visible in the bottom right corner of the interface.

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

This page allows you to observe the DI-614+'s working status:

WAN

- **IP Address:** WAN/Public IP Address
- **Subnet Mask:** WAN/Public Subnet Mask
- **Gateway:** WAN/Public Gateway IP Address
- **Domain Name Server:** WAN/Public DNS IP Address
- **Wan Status:** WAN Connection Status

LAN

- **IP Address:** LAN/Private IP Address of the DI-614+
- **Subnet Mask:** LAN/Private Subnet Mask of the DI-614+

Firmware version: Displays the current firmware version

WAN MAC Address: Displays the WAN port MAC/hardware address

LAN MAC Address: Displays the LAN port MAC/hardware address

Log

The Broadband Router keeps a running log of events and activities occurring on the Router. If the device is rebooted, the logs are automatically cleared. You may save the log files under Log Settings.

First Page - The first page of the log.

Last Page - The last page of the log.

Previous - Moves back one log page.

Next - Moves forward one log page.

Clear - Clears the logs completely.

Log Settings - Brings up the page to configure the logs.

STATUS > LOG

The screenshot shows the D-Link DI-614+ Enhanced 2.4GHz Wireless Router's Status > Log page. The page has a blue header with the D-Link logo and the router model. Below the header is a navigation bar with tabs for Home, Advanced, Tools, Status, and Help. The Status tab is selected. The main content area shows a log table with the following data:

Time	Message	Source	Destination	Note
Feb/06/2106 02:21:33	DHCP Discover			
Feb/06/2106 02:21:17	DHCP Discover			
Feb/06/2106 02:21:08	DHCP Discover			
Feb/06/2106 02:21:04	DHCP Discover			
Feb/06/2106 02:21:03	DHCP Discover no response			
Feb/06/2106 02:21:02	DHCP Discover			
Feb/06/2106 02:20:29	DHCP Discover			
Feb/06/2106 02:20:12	DHCP Discover			
Feb/06/2106 02:20:03	DHCP Discover			
Feb/06/2106 02:19:59	DHCP Discover			

Log Settings

Not only does the Broadband Router display the logs of activities and events, it can be setup to send these logs to another location.

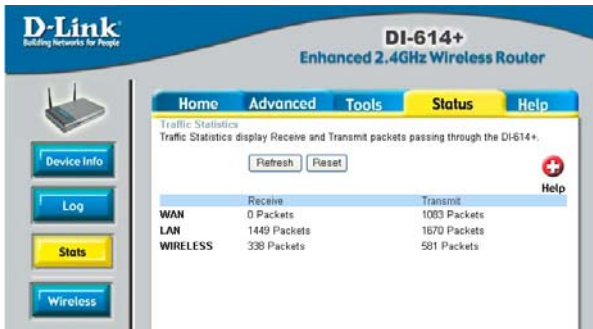
SMTP Server - The address of the SMTP server that will be used to send the logs.

Send to - The email address the logs will be sent to. Click on Email Log Now to send the email.

Traffic Statistics

The Broadband Router keeps statistic of traffic that passes through it. You are able to view the amount of packets that passes through the Router on both the WAN port and the LAN port. The traffic counter will reset if the device is rebooted.

STATUS > STATS



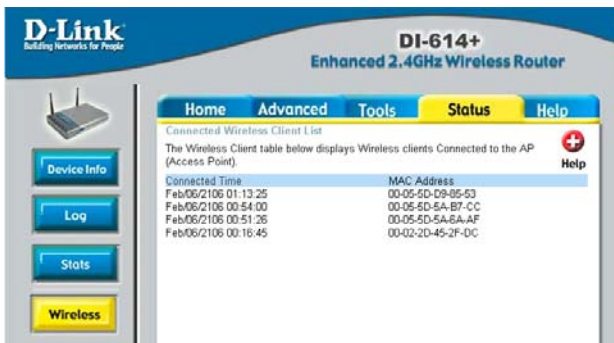
The screenshot shows the 'Status > Stats' page of the D-Link DI-614+ Enhanced 2.4GHz Wireless Router. The page title is 'Traffic Statistics' and it includes a description: 'Traffic Statistics display Receive and Transmit packets passing through the DI-614+'. There are 'Refresh' and 'Reset' buttons. A table shows the following data:

	Receive	Transmit
WAN	0 Packets	1083 Packets
LAN	1449 Packets	1670 Packets
WIRELESS	338 Packets	581 Packets

Connected Wireless Clients List

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

STATUS > WIRELESS



The screenshot shows the 'Status > Wireless' page of the D-Link DI-614+ Enhanced 2.4GHz Wireless Router. The page title is 'Connected Wireless Client List' and it includes a description: 'The Wireless Client table below displays Wireless clients Connected to the AP (Access Point)'. There is a 'Help' button. A table shows the following data:

Connected Time	MAC Address
Feb/06/2106 01:13:25	00-05-5D-D9-05-53
Feb/06/2106 00:54:00	00-05-5D-5A-B7-CC
Feb/06/2106 00:51:26	00-05-5D-5A-6A-AF
Feb/06/2106 00:16:45	00-02-20-45-2F-DC