

USER MANUAL

D-Link DWR-117/DWR-117 A1

3G/Wi-Fi 11N Router with miiCasa Home Gateway

3G及11N無線路由器支援雲端miiCasa 家用資料分享器



D-Link

WIRELESS

Preface

D-Link reserves the right to revise this publication and to make changes in the content hereof without obligation to notify any person or organization of such revisions or changes.

Manual Revisions

Revision	Date	Description
1.0	March 31, 2011	• First Draft.

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Package Contents

D-Link DWR-117 Wireless N Router	
Power Adapter	
Ethernet Cable	
CD-ROM	

Note: Using a power supply with a different voltage rating than the one included with the DWR-117 will cause damage and void the warranty for this product.

System Requirements

<p>Network Requirements</p>	<ul style="list-style-type: none"> • An Ethernet-based Cable or DSL modem • IEEE 802.11n-draft/g wireless clients • 10/100 Ethernet
<p>Web-based Configuration Utility Requirements</p>	<p>Computer with the following:</p> <ul style="list-style-type: none"> • Windows®, Macintosh, or Linux-based operating system • An installed Ethernet adapter <p>Browser Requirements:</p> <ul style="list-style-type: none"> • Internet Explorer 6.0 or higher • Mozilla 1.7.12 or higher • Firefox 1.5 or higher • Safari 1.0 or higher (with Java 1.3.1 or higher) • Flock 0.7.14 or higher • Opera 6.0 or higher <p>Windows® Users: Make sure you have the latest version of Java installed. Visit www.java.com to download the latest version.</p>
<p>CD Installation Wizard Requirements</p>	<p>Computer with the following:</p> <ul style="list-style-type: none"> • Windows® XP with Service Pack 3, Vista® or Windows® 7 • An installed Ethernet adapter • CD-ROM drive

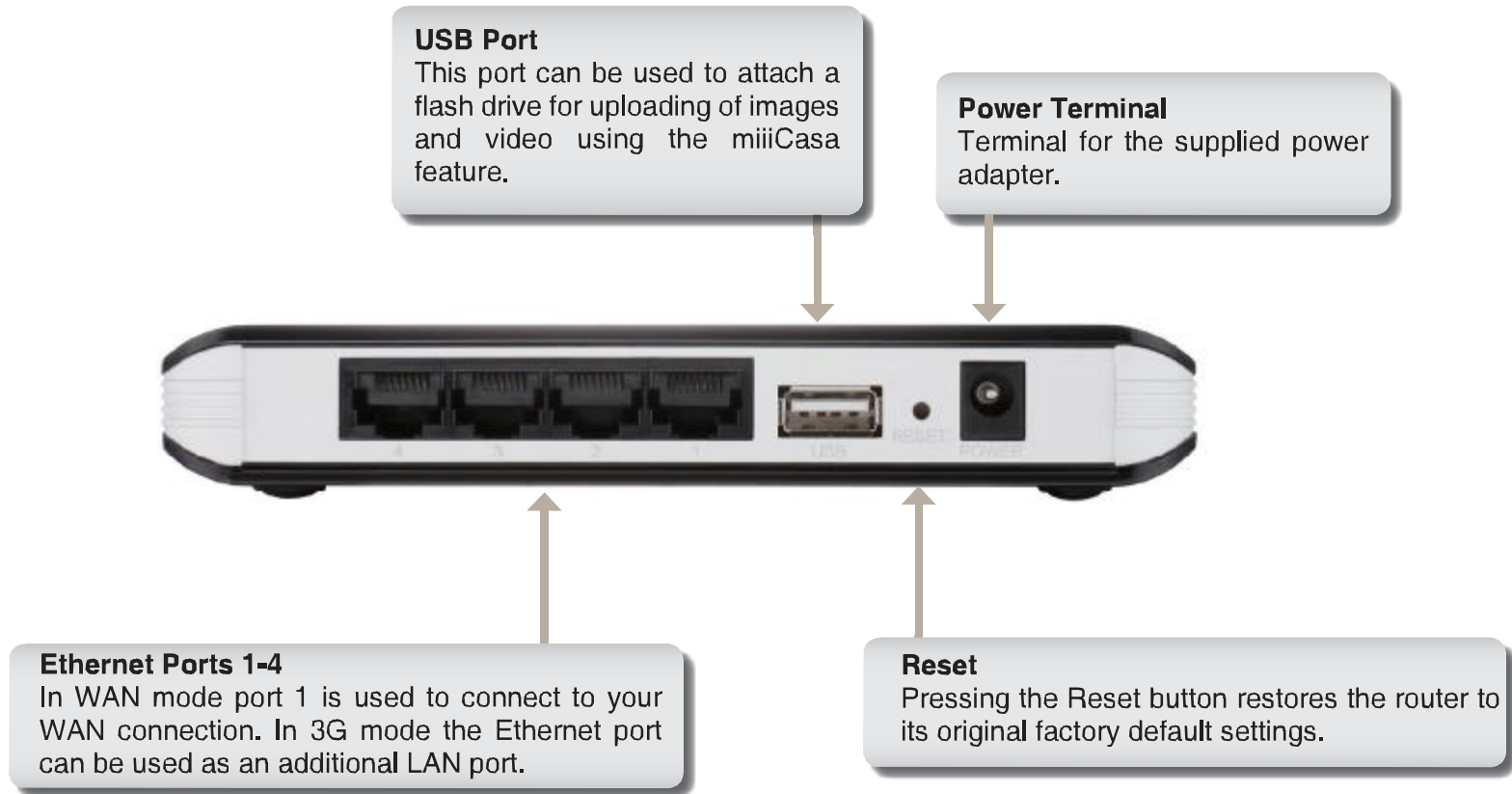
Features

- **Faster Wireless Networking** - The DWR-117 provides up to 300Mbps* wireless connection with other 802.11n wireless clients. This capability allows users to participate in real-time activities online, such as video streaming, online gaming, and real-time audio.
- **Compatible with 802.11g Devices** - The DWR-117 is still fully compatible with the IEEE 802.11g standard, so it can connect with existing 802.11g PCI, USB and FireWire adapters.
- **3G Internet Connection Support** - Connect a 3G USB dongle to the DWR-117 to access 3G Internet Services.
- **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, 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 DWR-117 can pass through VPN sessions. It supports multiple and concurrent IPSec and PPTP sessions, so users behind the DWR-117 can securely access corporate networks.
- **User-friendly Setup Wizard** - Through its easy-to-use Web-based user interface, the DWR-117 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 and Draft 802.11n 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.

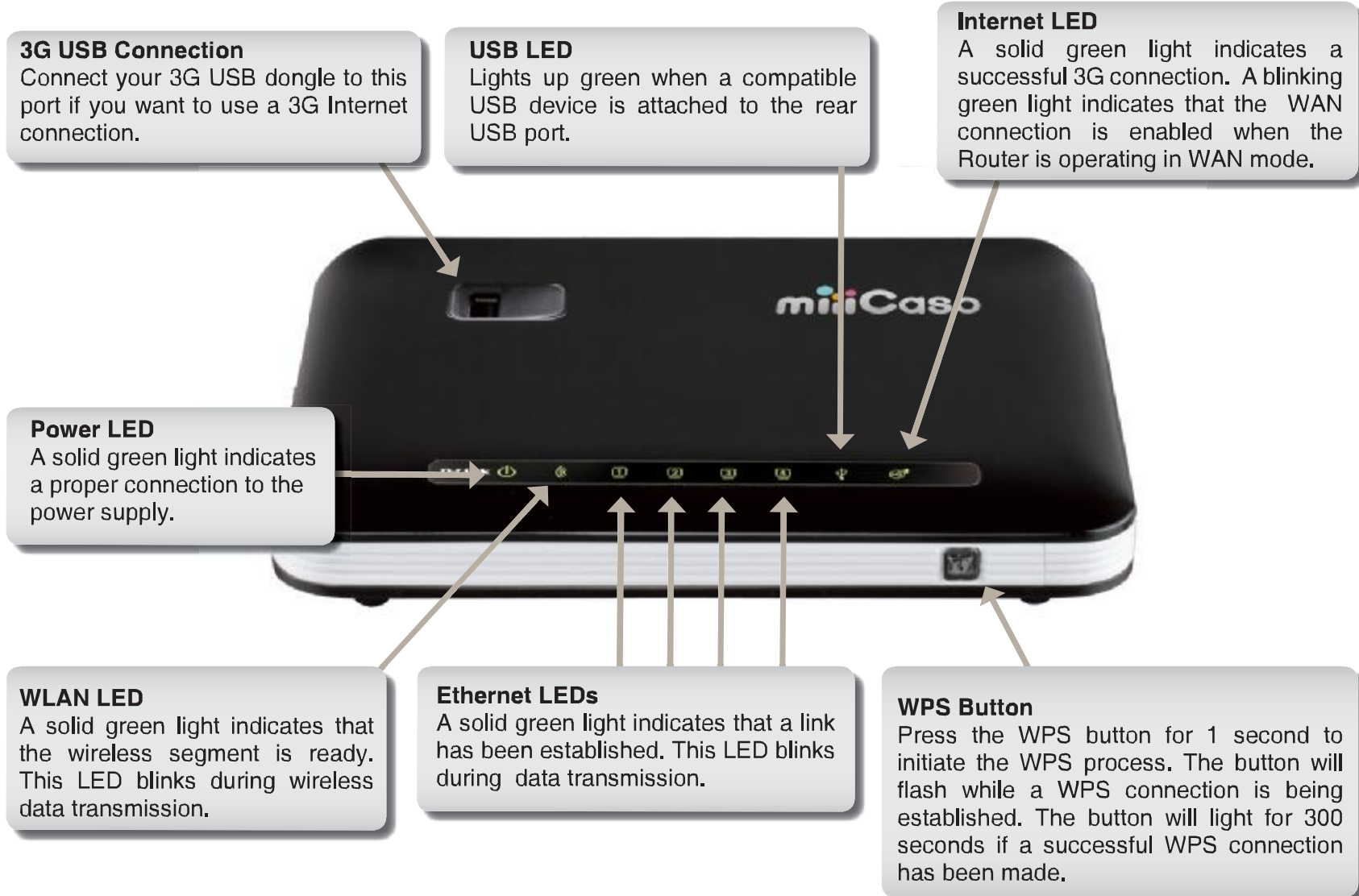
Hardware Overview

Rear View



Hardware Overview

Front View



Hardware Overview

Switching Between WAN Mode/3G Router Mode

The DWR-117 features a hardware switch that enables users to switch between WAN mode and 3G router mode.

When the DWR-117 is operating in WAN mode, WAN connectivity is achieved via the DWR-117's Ethernet port. In this mode LAN clients need to access the DWR-117 via the DWR-117's wireless connection. When the DWR-117 is operating in WAN mode, network connectivity is more resilient as Internet connectivity can be failed over to a backup 3G connection, if the main WAN connection fails.

When the DWR-117 is in 3G router mode, LAN clients can access the DWR-117 via the DWR-117's Ethernet connection, as well as via the wireless connection. In 3G router mode, if the 3G connection fails, Internet connectivity on the network will be lost.

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

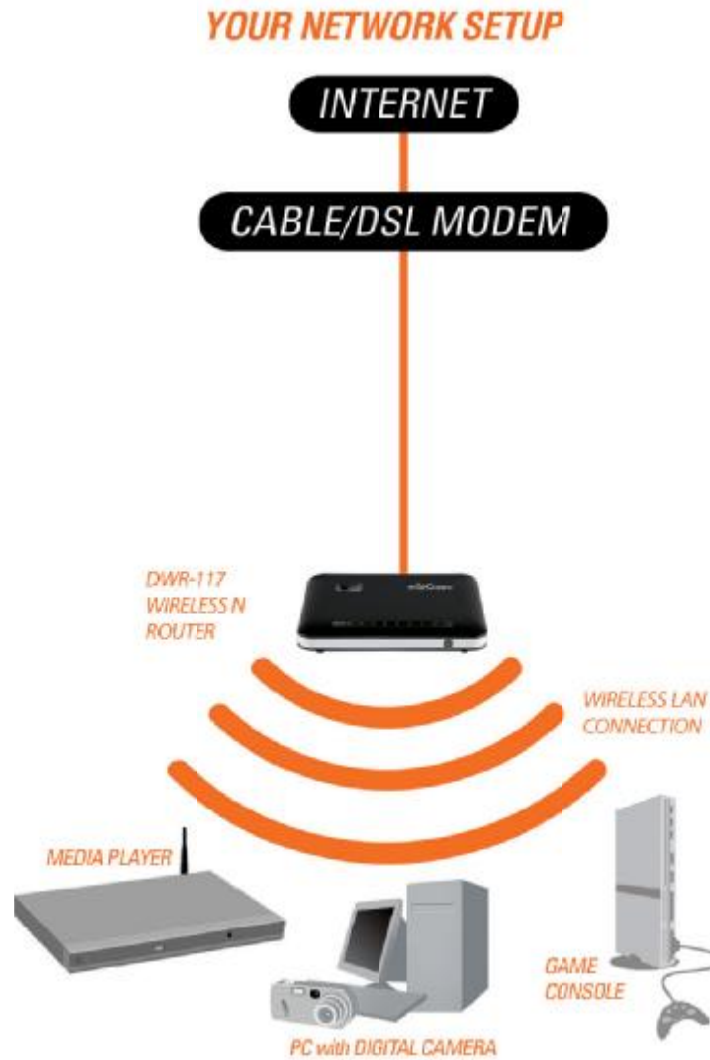
- Please configure the router with the computer that was last connected directly to your modem.
- You can only use the Ethernet port on your modem. If you were using the USB connection before using the router, then you must turn off your modem, disconnect the USB cable and connect an Ethernet cable to the Ethernet 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 D-Link 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 D-Link 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 is not in use.

Network Diagram WAN Connection



Network Diagram 3G Connection



Connect to Cable/DSL/Satellite Modem

If your Internet connection is provided using a cable/DSL/satellite modem, carry out the following procedure before connecting the router to a cable/DSL/satellite modem:

- Move the **WAN Mode/3G Router Mode switch** on the DWR-117 so that it is in the **3G Router Mode** position.
- Configure the wireless settings on the DWR-117 in 3G Router mode (see “Wireless Settings” on page 41 for more information).
- After configuring the wireless settings, move the **WAN Mode/3G Router Mode switch** so that it is in the **WAN Mode** position.

To connect 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 Ethernet port on the router.
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 50 seconds for the router to boot.
7. Turn on your computer.
8. Use the wireless connection on your computer to connect to the router, using the wireless settings you configured previously.
9. Verify the link lights on the router. The power light, Internet light, and the Wireless LAN light should be lit. If not, make sure your computer, modem, and router are powered on and verify the cable connections are correct.
10. Skip to “Configuration” on page 14 to configure your router.

Connect to a 3G Internet Service

If you are using a 3G USB dongle to connect to the Internet, please follow the steps below:

1. Move the **WAN Mode/3G Router Mode switch** on the DWR-117 so that it is in the **3G Router Mode** position.
2. Place the router in an open and central location. Do not plug the power adapter into the router.
3. 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.
4. Insert your 3G USB dongle into the DWR-117's 3G USB Internet connection.
5. Unplug the Ethernet cable (that connects your computer to your modem) from your computer and place it into the Ethernet port on the router.
6. Turn on or plug in your modem. Wait for the modem to boot (about 30 seconds).
7. Plug the power adapter to the router and connect to an outlet or power strip. Wait about 50 seconds for the router to boot.
8. Turn on your computer.
9. Verify the link lights on the router. The power light, Internet light, and the Wireless LAN light should be lit. If not, make sure your computer and router are powered on and verify the cable connections are correct.
10. Skip to "Configuration" on page 14 to configure your router.

Connect to Another Router

If you are connecting the D-Link 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:

- Move the **WAN Mode/3G Router Mode switch** on the DWR-117 so that it is in the **3G Router Mode** position.
- Disable UPnP™
- Disable DHCP
- Change the LAN IP address to an available address on your network. The Ethernet port 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 Ethernet 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 enter **admin** as the password. Click **Log In** to continue.
3. Click on **Advanced** and then click **Advanced Network**. Uncheck the Enable UPnP checkbox. Click **Save** to continue.
4. Click **Advanced Settings** and then click **Network Settings**. Uncheck the Enable DHCP Server server checkbox. Click **Save** to continue.
5. Under Router Settings, enter an available IP address and the subnet mask of your network. Click **Save** 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 into an Ethernet port on the router and connect it to your other router.
8. 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 D-Link 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).

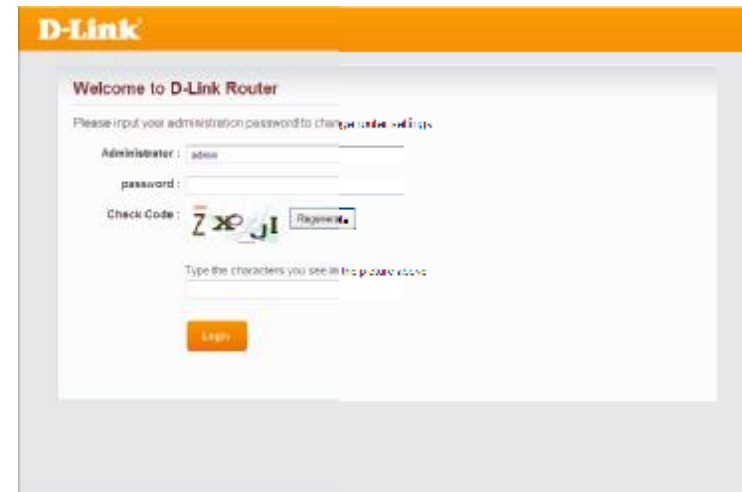


Type **Admin** in the **Administrator** field and then enter your password. The default password is **admin**.

Enter the five character check code. If you are unable to read the check code clearly, click **Regenerate** to get a new code.

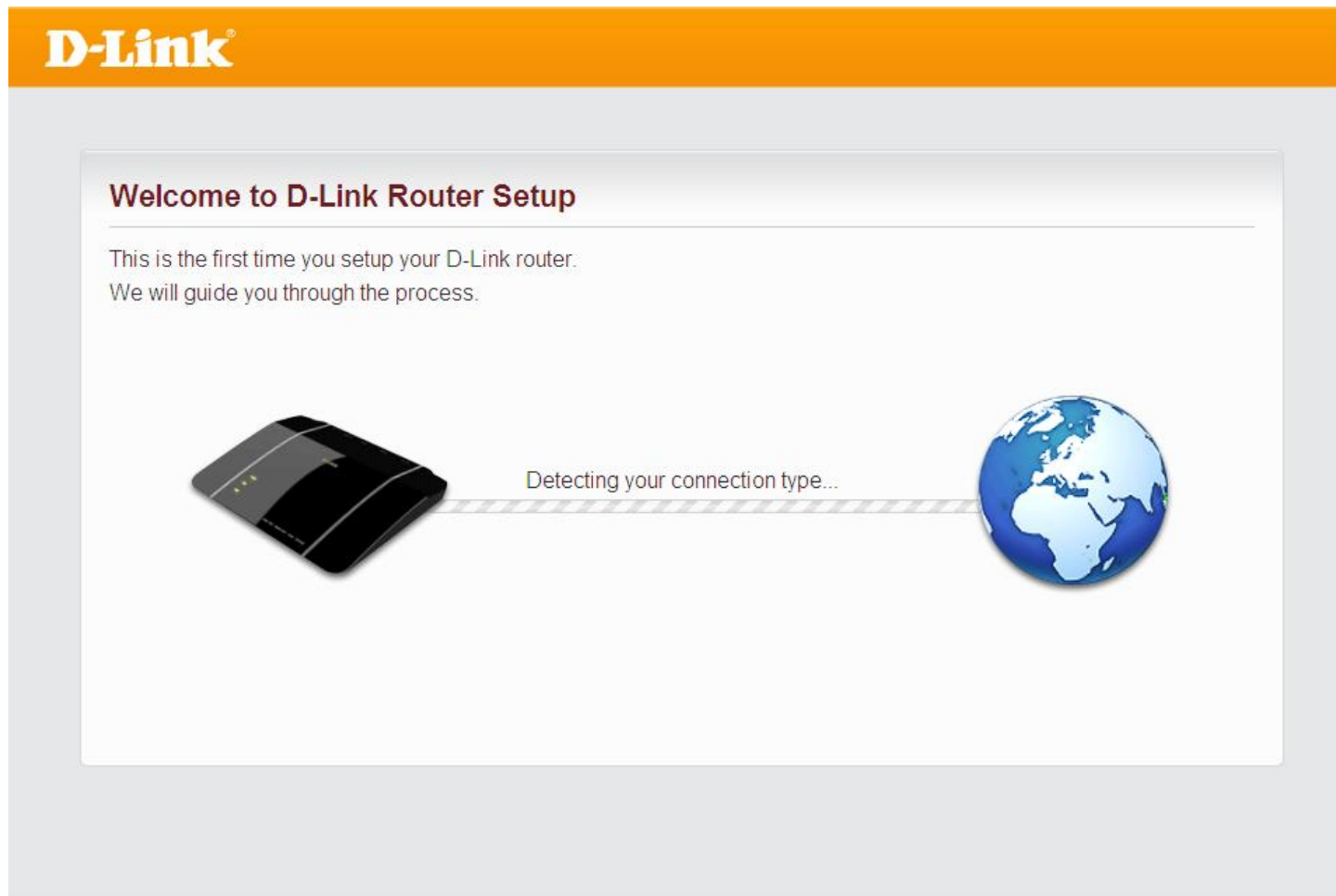
Click the **Login** button to log in to the router.

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



Web-based Configuration Utility

After you have logged in, the router will attempt to detect your connection type and you will be presented with the Internet Connection Setup Wizard for **3G Mode** or **WAN Mode**.



Internet Connection Setup Wizard (3G Mode)

Auto Config is enabled by default. If you wish to manually configure your 3G Internet Connection, uncheck **Auto Config** and enter the following details:

Country: Select the country you are in from the drop down menu.

ISP: Select your ISP from the drop down menu.

User Name: Enter your user name for the connection if you have one.

Password: Enter the password for the connection if you have one.

Dial Number: Your ISP will provide you with this specific code.

APN: This is the Access Point Name. If you want to give your connection a name, enter it here.

Authentication Protocol: Select from the drop down menu whether to use **PAP** or **CHAP** authentication. If you do not know what type of authentication you should use, leave it set to **Auto**.

SIM Card PIN Code: If your SIM card has a security PIN number, enter it here.

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

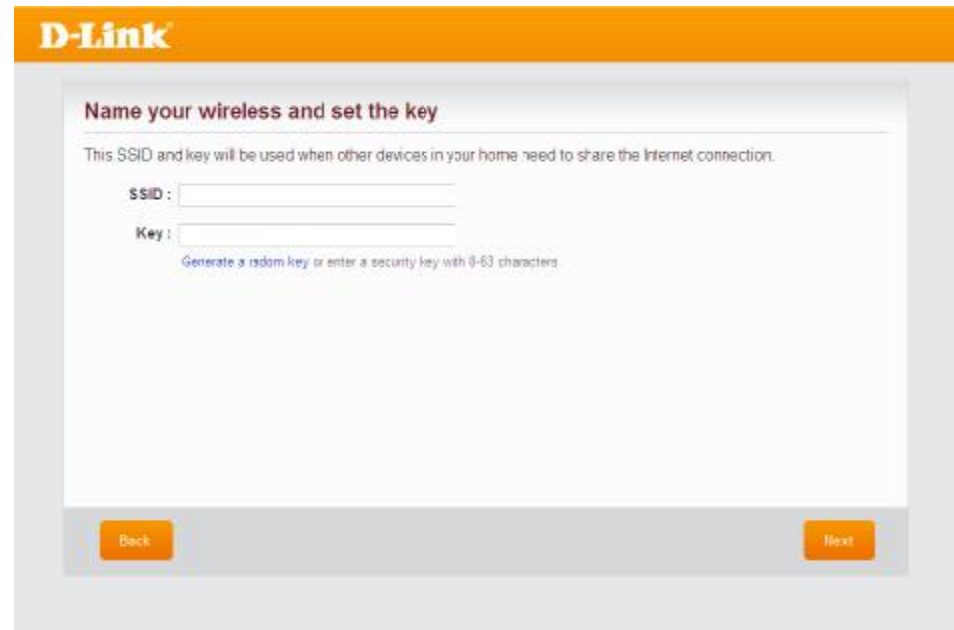
Click **Save** when you have entered the details and are ready to continue.

The screenshot shows the '3G Internet Connection' configuration window. At the top, it says 'Enter the information provided by your Internet Service Provider (ISP)'. Below this, there is a red warning message: 'The current WAN connection device mode is 3G only.' The form includes several fields: 'Auto Config' (checked), 'Country' (dropdown menu), 'ISP' (dropdown menu), 'User Name' (text field, optional), 'Password' (text field, optional), 'Dial Number' (text field), 'APN' (text field, optional), 'Authentication Protocol' (dropdown menu, set to 'Auto (PAP+CHAP)'), 'SIM Card PIN Code' (text field, optional), 'PIN Code Status' (checkbox), and 'MTU' (text field). At the bottom, there are 'Cancel' and 'Save' buttons.

SSID: Enter an SSID for your wireless access point. The SSID is a name that helps you to identify your wireless access point, for example, “Bedroom AP”.

Key: Enter a key which is between 8 and 63 characters. This key will be used as a security prompt whenever you try to connect to the wireless access point.

You can generate a random one by clicking “Generate a random key”.



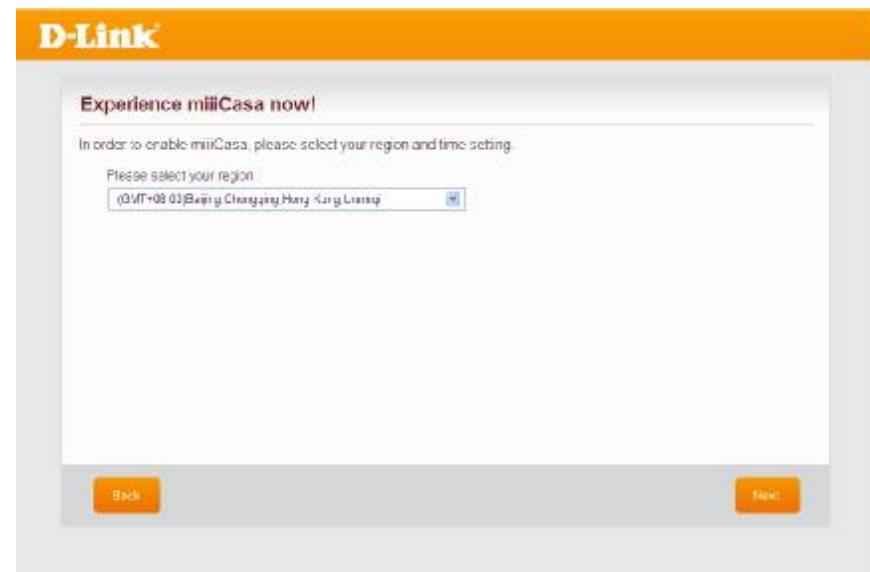
miiCasa offers 2 services: **miiCasa Space** and **miiCasa Apps**.

miiCasa Space offers a centralized place for all family members to easily and instantly store, manage and share home pictures and fun memories.

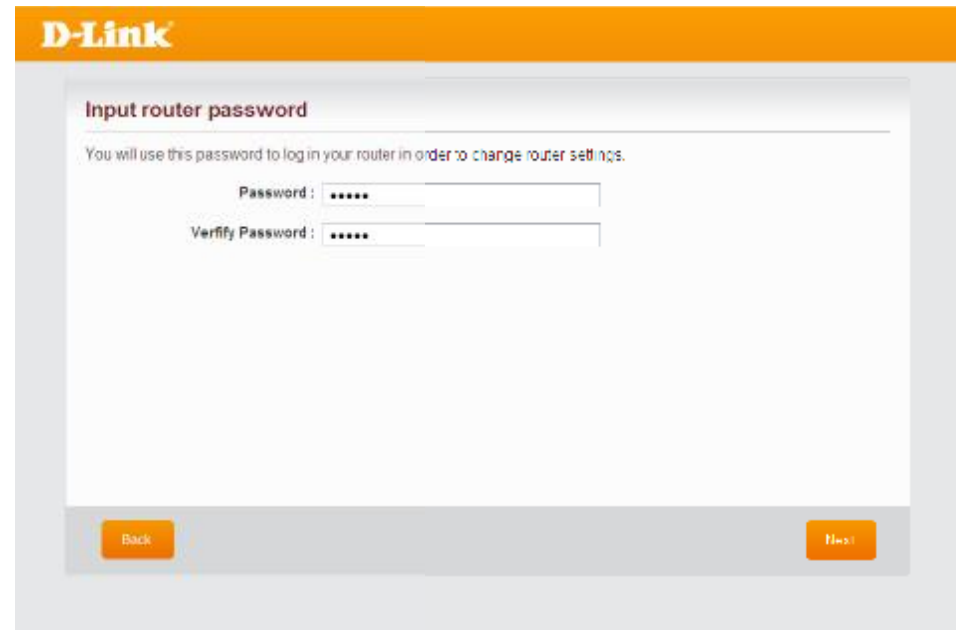
miiCasa Apps runs on any browser within the household, providing fun and useful applications to enrich your internet experience.

Choose whether you want to enable the miiCasa function of the router and click **Next** to continue.

If you choose to enable the miiCasa service, you are then prompted to select your current timezone. Select your timezone using the dropdown menu.



Enter an administrator password. This is the password that you are required to enter when you want to access the Web-based Configuration Utility. It is recommended that you change this from the default to ensure the security of your wireless network. Enter the password once more in the Verify Password field and click **Next** to continue.



The screenshot shows the D-Link web-based configuration utility interface. At the top, there is an orange header with the D-Link logo. Below the header, the main content area has a title "Input router password" in red. A message below the title reads: "You will use this password to log in your router in order to change router settings." There are two input fields: "Password" and "Verify Password", both containing five asterisks. At the bottom of the form, there are two orange buttons: "Back" on the left and "Next" on the right.

Click the Finish button to save your settings then restart the router by disconnecting and reconnecting the power source to the router. When the router comes back up, your internet connection will be automatically established and you can begin using the internet.

Internet Connection Setup Wizard (WAN Mode)

DHCP Connection (Dynamic IP Address)

If your Internet connection automatically provides you with an IP Address, select **DHCP Connection (Dynamic IP Address)**. Most cable modems use this type of connection. Click **Next** to continue.



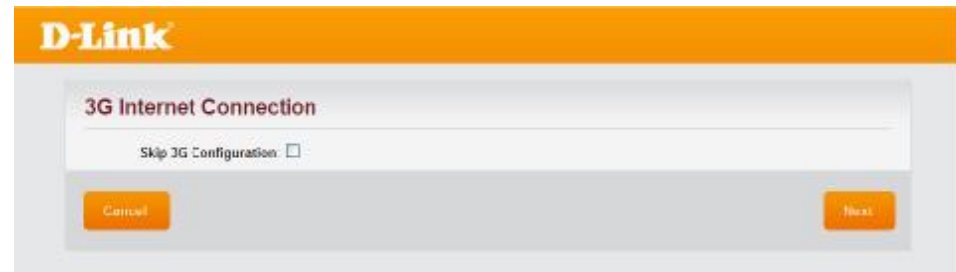
Make sure that you are connected to the D-Link Router with the PC that was originally connected to your broadband connection. Click the **Copy Your PC's MAC Address** button to have it imported automatically for you.

If your ISP requires you to enter a Host Name, enter it in the **Host Name** field. Click **Next** to continue.

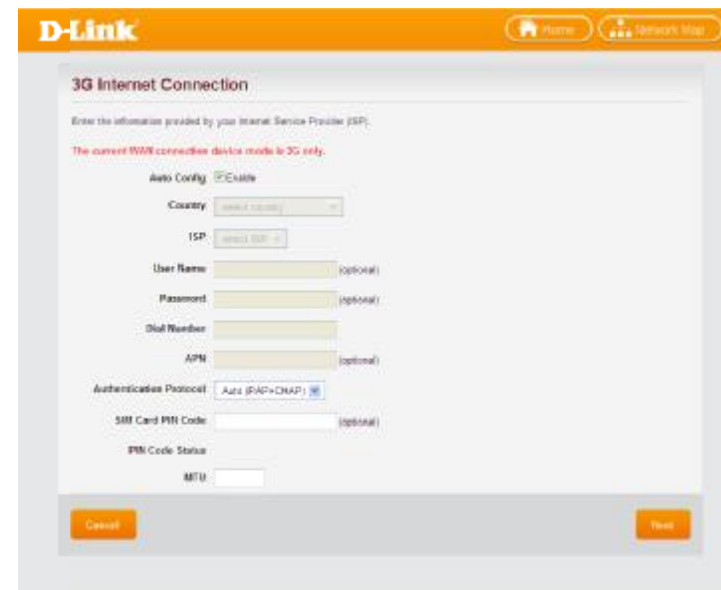


Section 3 - Configuration

If you want to setup a 3G connection also, uncheck the box and click **Next**. If you choose to skip the 3G configuration, the setup wizard will finish.



If you want to set up your 3G connection automatically, check Auto Config and click Next. To set it up manually, uncheck Auto Config. Refer to page 16 for further information on setting up the 3G internet connection. Click **Next** to continue.

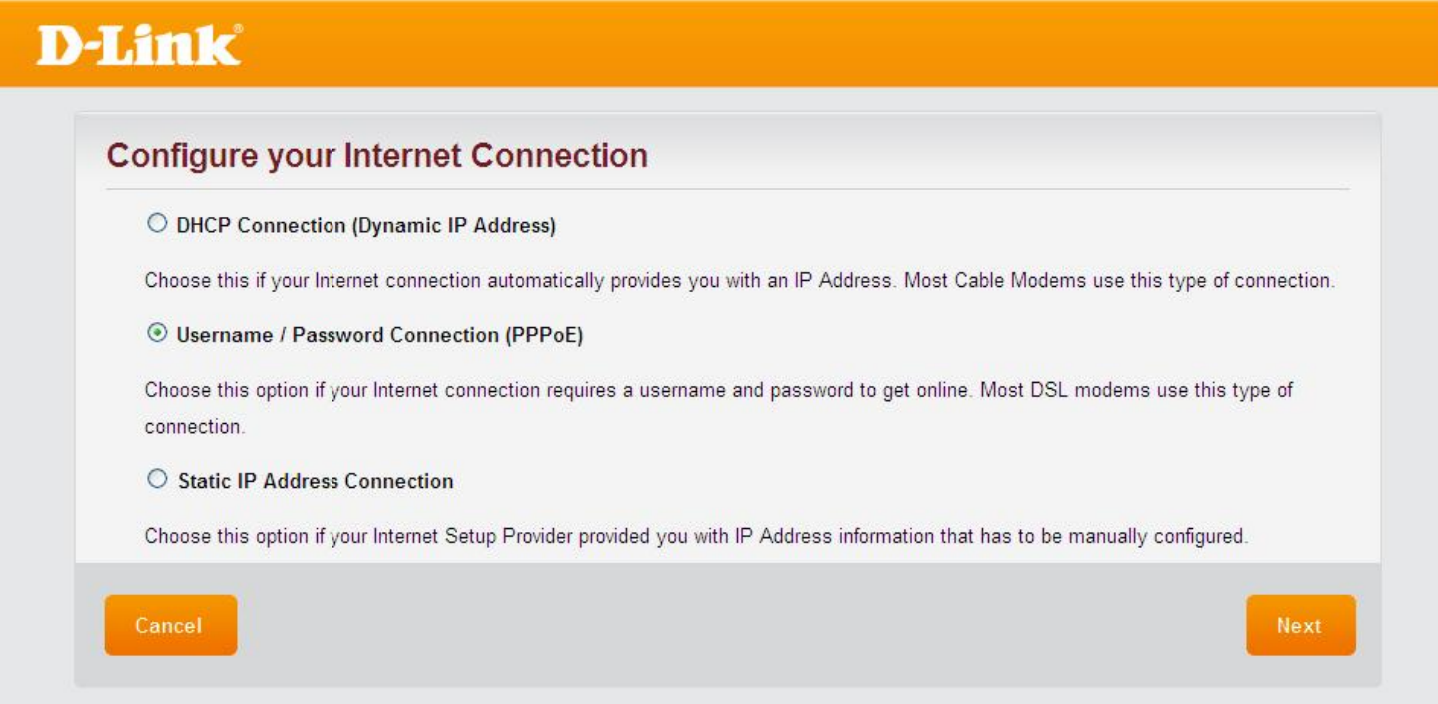


Click the Finish button to save your settings then restart the router by disconnecting and reconnecting the power source to the router. When the router comes back up, your internet connection will be automatically established and you can begin using the internet.

Internet Connection Setup Wizard (WAN Mode)

Username / Password Connection (PPPoE)

If your Internet connection requires a username and password to get online, select **Username / Password Connection (PPPoE)**. Most ADSL modems use this type of connection. Click **Next** to continue.



The screenshot shows a web-based configuration interface for a D-Link router. At the top, there is an orange header with the "D-Link" logo. Below the header, the main content area is titled "Configure your Internet Connection". There are three radio button options:

- DHCP Connection (Dynamic IP Address)
Choose this if your Internet connection automatically provides you with an IP Address. Most Cable Modems use this type of connection.
- Username / Password Connection (PPPoE)
Choose this option if your Internet connection requires a username and password to get online. Most DSL modems use this type of connection.
- Static IP Address Connection
Choose this option if your Internet Setup Provider provided you with IP Address information that has to be manually configured.

At the bottom of the form, there are two orange buttons: "Cancel" on the left and "Next" on the right.

Address Mode: Select whether your IP is dynamically assigned, i.e. a different IP address is assigned to you each time you connect, or your IP is a static one, i.e. fixed.

IP Address: If you chose Static IP, you will be able to enter your assigned IP address here.

User Name: Enter the PPPoE Username.

Password: Enter the PPPoE Password.

Verify Password: Enter the PPPoE Password once more for verification.

Service Name: If your ISP requires you to enter a Service Name, enter it here.

Click **Next** to continue.

If you want to setup a 3G connection also, uncheck the box and click **Next**. If you choose to skip the 3G configuration, the setup wizard will finish.

If you want to set up your 3G connection automatically, check Auto Config and click Next. To set it up manually, uncheck Auto Config. Refer to page 16 for further information on setting up the 3G internet connection. Click **Next** to continue.

D-Link Home Network Map

3G Internet Connection

Enter the information provided by your Internet Service Provider (ISP)

The current WAN connection device mode is 3G only.

Auto Config: Enable

Country:

ISP:

User Name: (optional)

Password: (optional)

Dial Number:

APN: (optional)

Authentication Protocol:

SIM Card PIN Code: (optional)

PIN Code Status:

MTU:

Cancel Next

Click the Finish button to save your settings then restart the router by disconnecting and reconnecting the power source to the router. When the router comes back up, your internet connection will be automatically established and you can begin using the internet.

Internet Connection Setup Wizard (WAN Mode)

Static IP Address Connection

If your ISP has provided you with IP Address information that has to be manually configured, select **Static IP Address Connection**.

Click **Next** to continue.

The screenshot shows a configuration page titled "Static IP Address Internet Connection Type". Below the title is a sub-header: "Enter the static address information provided by your Internet Service Provider (ISP)". The form contains several input fields: "IP Address" (0 0 0 0), "Subnet Mask" (0 0 0 0), "Default Gateway" (0 0 0 0), "Primary DNS Server" (168 95 1 1), "Secondary DNS Server" (168 95 192 1 (optional)), "MTU" (1492), and "MAC Address" (00 - 52 - 40 - E1 - 00 - 01). A button labeled "Clone your PC's MAC Address" is located below the MAC address field.

IP Address: Enter your assigned IP Address.

Subnet Mask: Enter the subnet mask provided by your ISP.

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

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

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

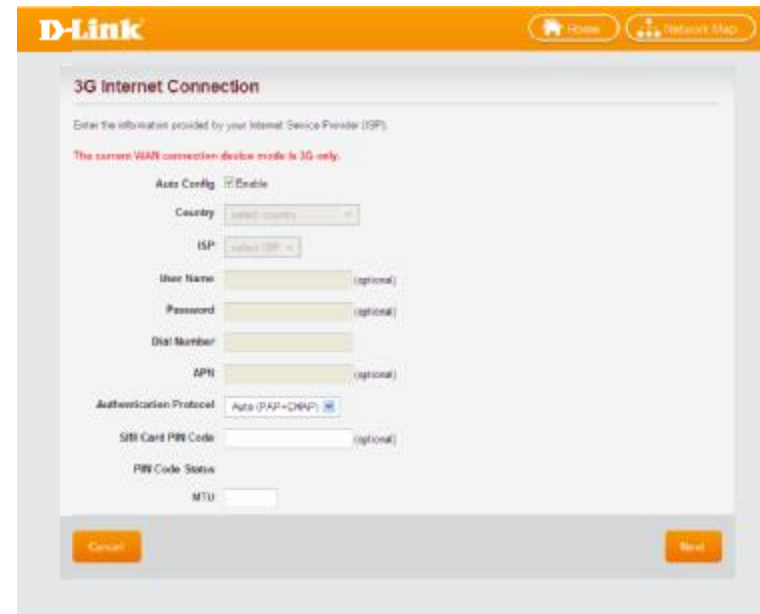
Click **Next** to continue.

The screenshot shows a D-Link configuration page titled "Set Static IP Address Connection". Below the title is a sub-header: "To set up this connection you will need to have a complete list of IP information provided by your Internet Service Provider. If you have a Static IP connection and do not have this information, please contact your ISP." The form contains several input fields: "IP Address" (0 0 0 0), "Subnet Mask" (0 0 0 0), "Gateway Address" (0 0 0 0), "Primary DNS Address" (), and "Secondary DNS Address" () (optional). At the bottom of the form are two buttons: "Cancel" and "Next".

If you want to setup a 3G connection also, uncheck the box and click **Next**. If you choose to skip the 3G configuration, the setup wizard will finish.



If you want to set up your 3G connection automatically, check Auto Config and click Next. To set it up manually, uncheck Auto Config. Refer to page 16 for further information on setting up the 3G internet connection. Click **Next** to continue.



Click the Finish button to save your settings then restart the router by disconnecting and reconnecting the power source to the router. When the router comes back up, your internet connection will be automatically established and you can begin using the internet.

Router Home Screen

When you have completed the Internet Connection Setup Wizard, each time you log into the router, the Home Screen is displayed. Here you can configure basic settings at ease or if required, access Advanced Mode where you can configure every option on the DWR-117. Additionally, the Home Screen provides a link to view a map of your network.



Internet Configuration

To modify the Internet connection settings, click the Internet icon from the Home Screen. Refer to pages 16-26 for details for your specific connection type.

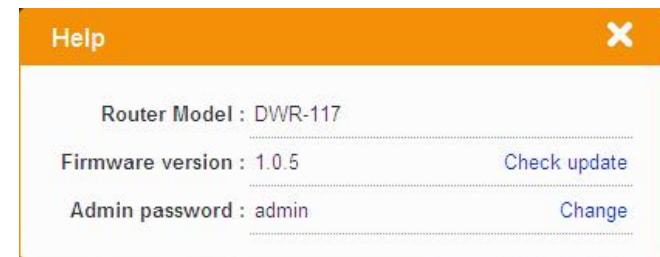


Basic Router Administration

You can easily change the router password or check for firmware updates by selecting the icon of the DWR-117 from the Home Screen.



The Help window is displayed showing you the model number of your router, the firmware version it is running and the Administrator password. To check the D-Link website for a firmware update, click **Check update**. You can also change the administrator password by clicking **Change** next to the Admin password field. See page 57 for further information on changing the Administrator password.



Wi-Fi Security Setup Wizard

To configure the Wi-Fi security settings of your router, click the **Wi-Fi** icon from the Home Screen.



Wireless Network Name (SSID):

Enter a name up to 32 characters in length to identify your wireless network.

Automatically assign a network key (Recommended):

Selecting this option will automatically assign a randomly generated security key to your wireless access point.

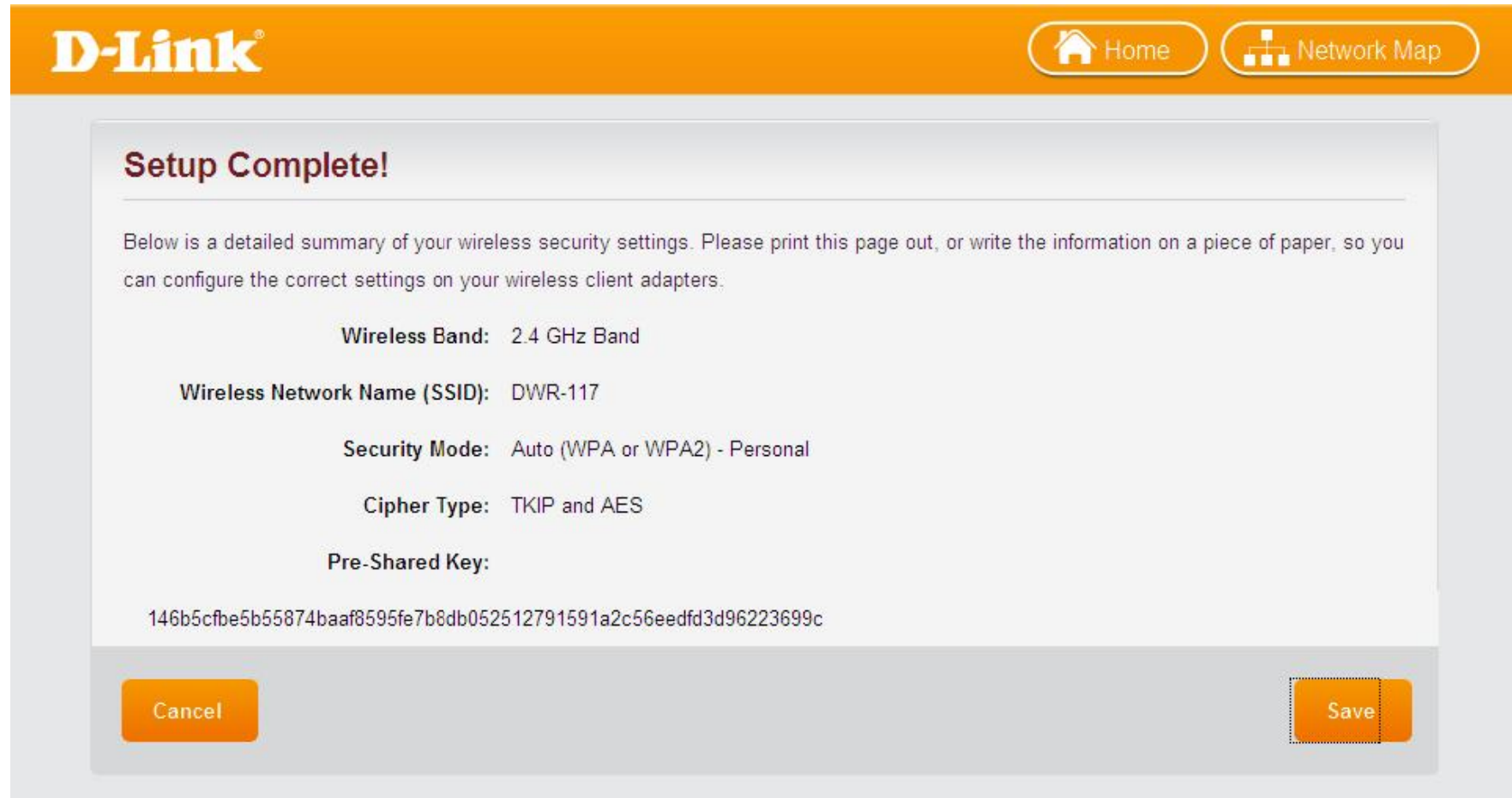
Manually assign a network key:

Selecting this option will allow you to enter your own security key.



Automatic network key assignment


If you select to automatically assign a security key, the following screen is displayed indicating that the wizard has completed and showing a summary of the settings you have selected. Click **Save** to save the settings.



The screenshot shows the D-Link web interface with an orange header bar. On the left is the D-Link logo, and on the right are two buttons: 'Home' with a house icon and 'Network Map' with a network diagram icon. The main content area has a light gray background and features a white box with a red border. Inside this box, the text reads: 'Setup Complete!' followed by a horizontal line. Below the line, it says: 'Below is a detailed summary of your wireless security settings. Please print this page out, or write the information on a piece of paper, so you can configure the correct settings on your wireless client adapters.' The settings listed are: 'Wireless Band: 2.4 GHz Band', 'Wireless Network Name (SSID): DWR-117', 'Security Mode: Auto (WPA or WPA2) - Personal', 'Cipher Type: TKIP and AES', and 'Pre-Shared Key: 146b5cfbe5b55874baaf8595fe7b8db052512791591a2c56eedfd3d96223699c'. At the bottom of the white box are two orange buttons: 'Cancel' on the left and 'Save' on the right.

Manual network key assignment

If you select to manually assign a network key, the following screen is displayed prompting you to enter your desired network security key. Click **Next** to continue.



D-Link Home Network Map

Step 2: Set your Wireless Security Password

You have selected your security level - you will need to set a wireless security password.

The WPA (Wi-Fi Protected Access) key must meet one of following guidelines:

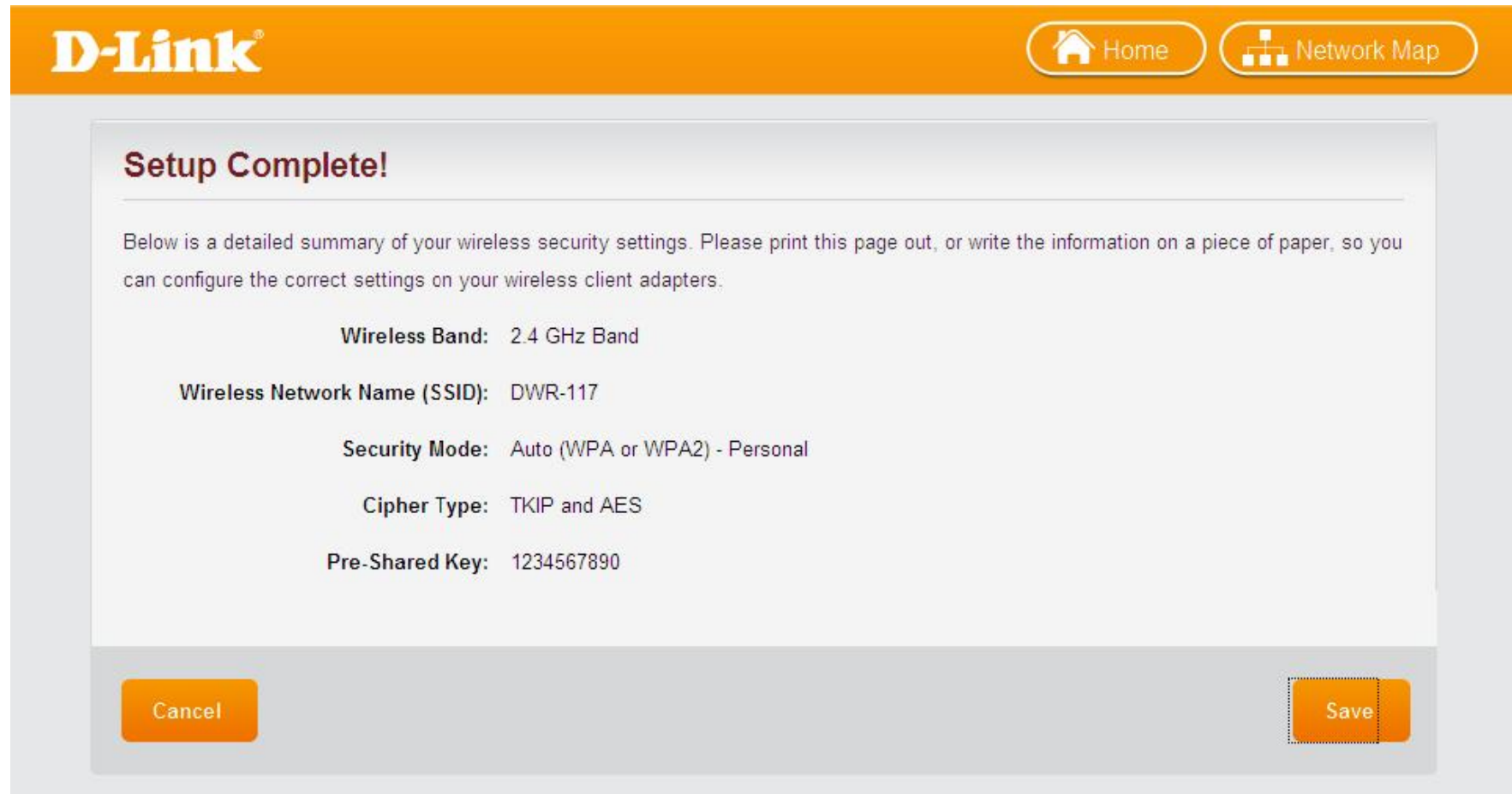
- Between 8 and 63 characters (A longer WPA key is more secure than a short one)
- Exactly 64 characters using 0-9 and A-F

Wireless Security Password:

Note: You will need to enter the same password as keys in this step into your wireless clients in order to enable proper wireless communication.

Cancel Next

The following screen is displayed indicating that the wizard has completed and showing a summary of your selections. Click **Save** to save the settings.



The screenshot shows the D-Link configuration interface. At the top left is the D-Link logo. At the top right are two buttons: 'Home' with a house icon and 'Network Map' with a network diagram icon. The main content area has a light gray background and contains the following text:

Setup Complete!

Below is a detailed summary of your wireless security settings. Please print this page out, or write the information on a piece of paper, so you can configure the correct settings on your wireless client adapters.

Wireless Band: 2.4 GHz Band

Wireless Network Name (SSID): DWR-117

Security Mode: Auto (WPA or WPA2) - Personal

Cipher Type: TKIP and AES

Pre-Shared Key: 1234567890

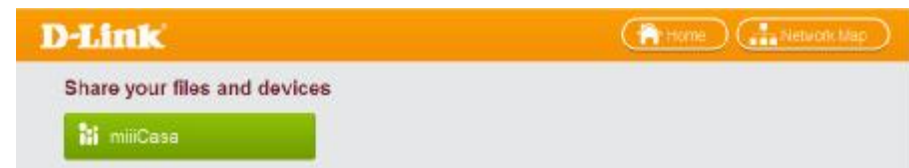
At the bottom of the main content area, there are two buttons: 'Cancel' on the left and 'Save' on the right. The 'Save' button is highlighted with a dashed border.

miiiCasa Setup

miiiCasa provides a fun and easy way to share all sorts of media, such as photos or videos with your friends and family. To setup the miiiCasa service, click the miiiCasa icon from the Home Screen.



Click the **miiiCasa** icon to continue.

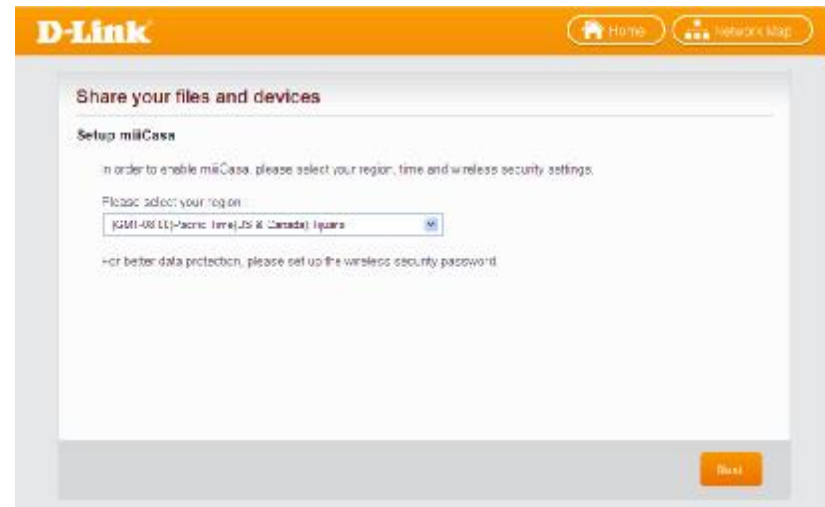


The Privacy Policy and Terms of Service are displayed. Select whether you wish to enable the miiiCasa service or disable it using the radio buttons. Click **Save & Exit** when you have made your selection.



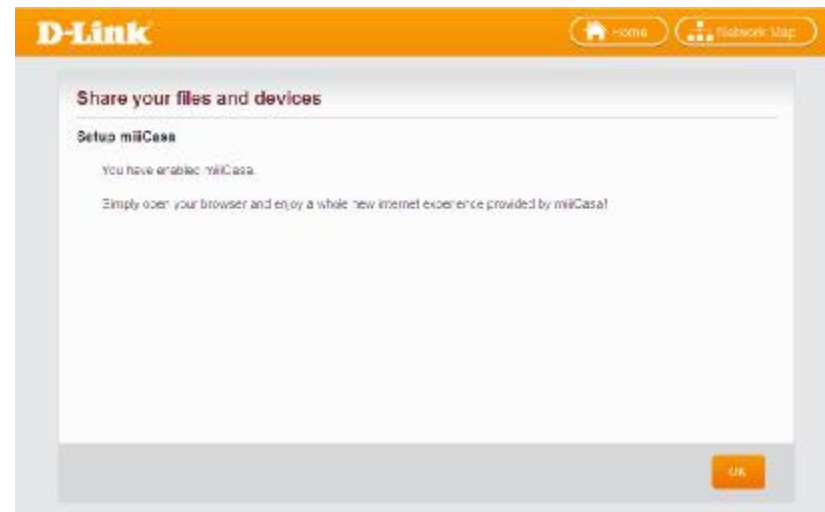
If you chose to enable miiCasa, you are prompted to select your time zone.

Click **Next** to continue



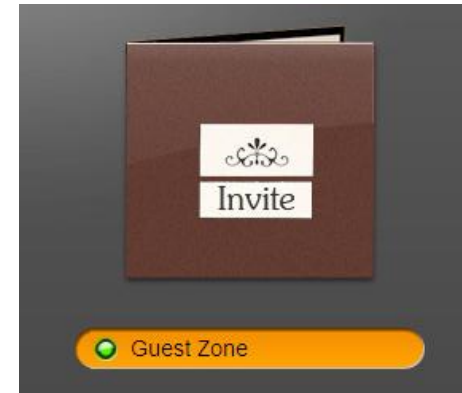
The following screen is displayed indicating that you have enabled miiCasa. You can begin using miiCasa by re-opening your browser.

Click **OK** to continue.

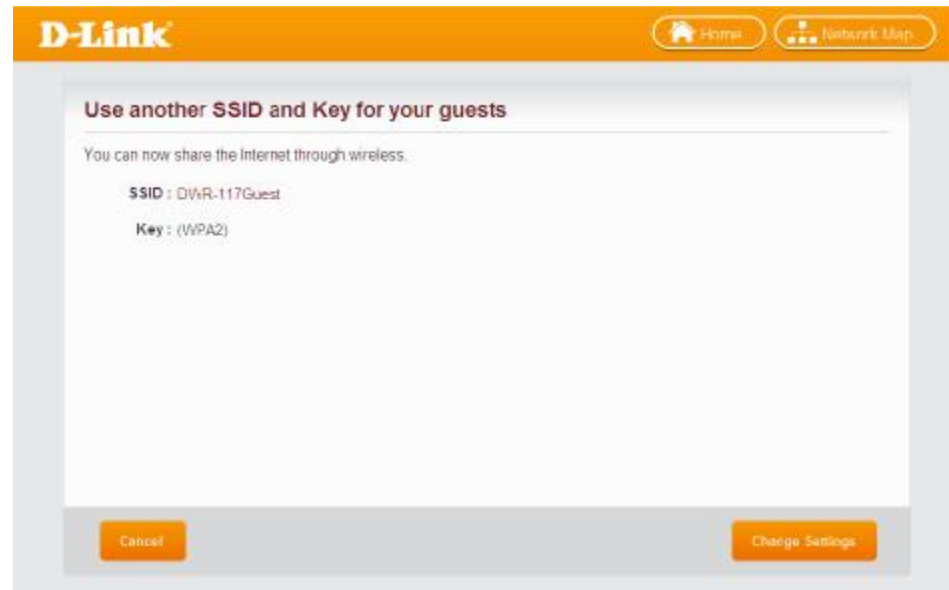


Guest Zone

If you want to allow guests to use your wireless access point without revealing your administrator password, click the **Guest Zone** icon

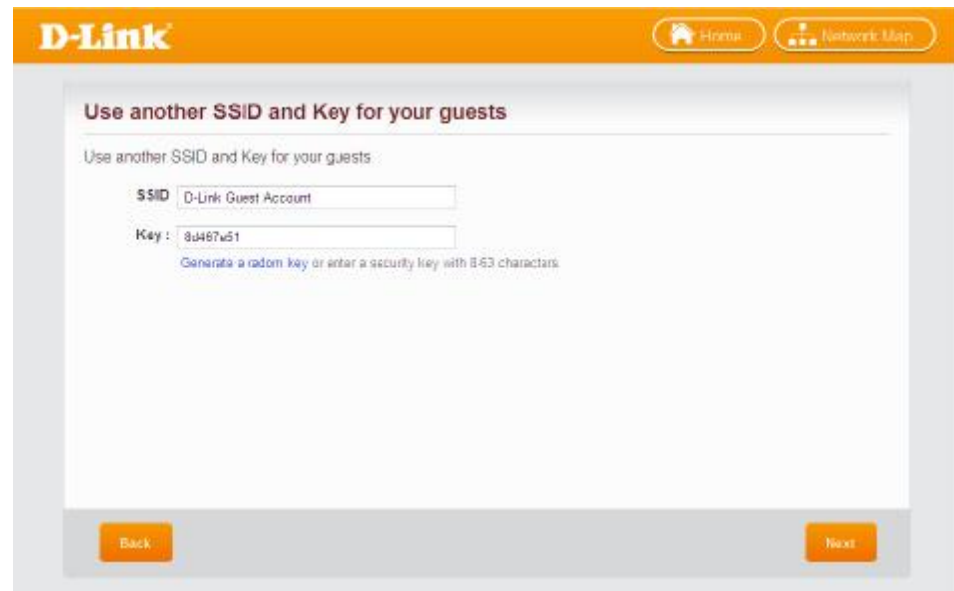


The following screen is displayed showing you the current settings. Click **Change Settings** to continue.



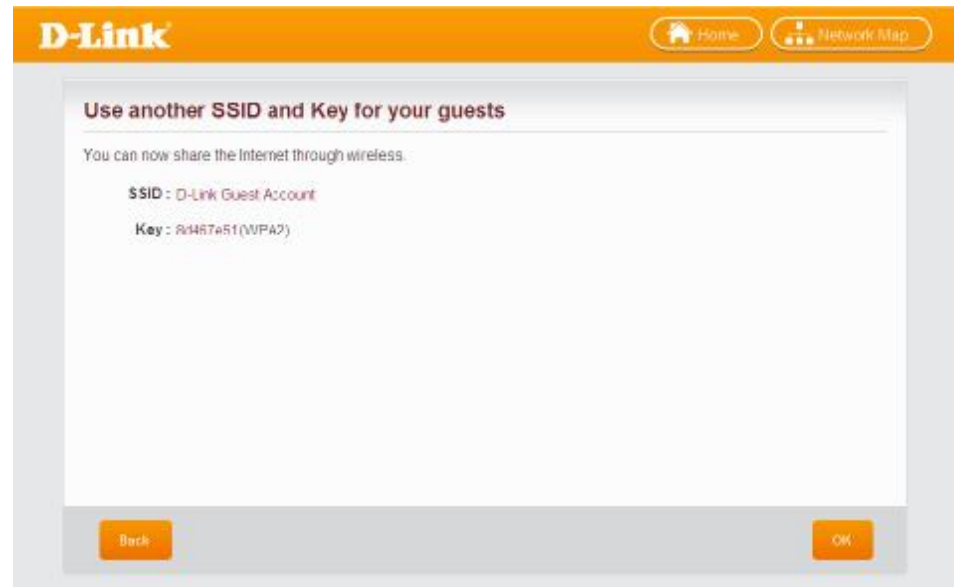
SSID: Enter the SSID for the guest account.

Key: Enter the network security key for the guest account or click **Generate a random key** to have one created for you automatically. The network security key should be a minimum of 8 characters and a maximum of 63 characters.



The screenshot shows the D-Link configuration interface. At the top, there is a navigation bar with the D-Link logo, a Home button, and a Network Map button. The main heading is "Use another SSID and Key for your guests". Below this, there is a sub-heading "Use another SSID and Key for your guests". There are two input fields: "SSID" with the value "D-Link Guest Account" and "Key" with the value "8d487e51". Below the key field, there is a link that says "Generate a random key or enter a security key with 8-63 characters". At the bottom of the form, there are two buttons: "Back" and "Next".

The following screen is displayed summarizing the settings you have entered. Click **OK** to create the guest account.




The screenshot shows the D-Link configuration interface. At the top, there is a navigation bar with the D-Link logo, a Home button, and a Network Map button. The main heading is "Use another SSID and Key for your guests". Below this, there is a sub-heading "You can now share the Internet through wireless.". There are two lines of text: "SSID : D-Link Guest Account" and "Key : 8d487e51 (WPA2)". At the bottom of the form, there are two buttons: "Back" and "OK".

Network Map

From the Home Screen, click **Network Map** in the top right corner to display an overview of the devices you have connected, their IP addresses and MAC addresses.



The screenshot displays the D-Link Network Map interface. At the top left is the D-Link logo, and at the top right is a Home button. The main area is titled "Network Map" and shows a diagram of a D-Link DWR-117 router connected to the Internet. Below the diagram is a table with the following data:

Name	IP Address	MAC
 admin-00nxvww4d	192.168.0.101	00:50:BA:DA:01:23


Click the  icon to display more detailed Device Information. See page 68 for more information.

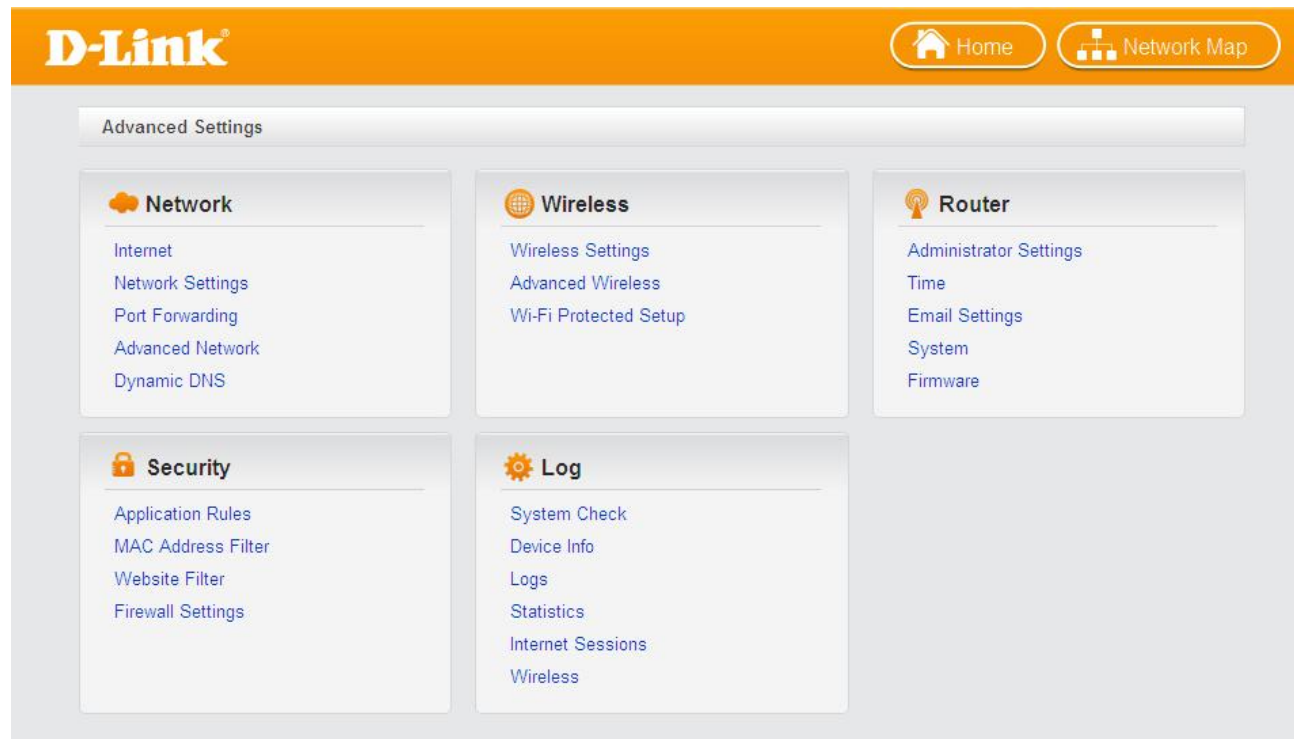
Advanced Mode

If you would like to configure more advanced settings, select **Advanced Mode** from the top right of the Home Screen.



The Advanced Settings main screen is displayed. Choose a function to view settings and make configurational changes.

At any of the Advanced Settings pages, you will see the  icon in the top right corner. Clicking this will provide contextual help for the page you are on.



Internet

Use this section to configure your Internet Connection type. There are several connection types to choose from: Static IP, DHCP, PPPoE. If you are unsure of your connection method, please contact your Internet Service Provider.

Note: If using the PPPoE option, you will need to remove or disable any PPPoE client software on your computers.

My Internet Connection is: Select Static IP, DHCP or PPPoE

Enable WAN Failover: Checking this will enable the router to use a WAN connection in 3G mode the event that the 3G connection is dropped.



If you select Static IP, the WAN section of the Internet page changes to request Static IP Address information.

IP Address: Enter your assigned IP Address.

Subnet Mask: Enter the subnet mask provided by your ISP.

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

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

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

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

MAC Address: Enter the MAC Address of the network adapter which is connected to the router.

Static IP Address Internet Connection Type

Enter the static address information provided by your Internet Service Provider (ISP).

IP Address: 0 0 0 0

Subnet Mask: 0 0 0 0

Default Gateway: 0 0 0 0

Primary DNS Server: 168 95 1 1

Secondary DNS Server: 168 95 192 1 (optional)

MTU: 1492

MAC Address: 00 - 52 - 40 - E1 - 00 - 01

Clone your PC's MAC Address

If you select Dynamic IP, the WAN section of the Internet page changes to request Dynamic IP Address information.

Host Name: Enter the host name if required by your ISP.

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

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

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

MAC Address: Enter the MAC Address of the network adapter which is connected to the router or click **Clone your PC's MAC Address** to have it entered for you automatically.

The screenshot shows the 'Dynamic IP (DHCP) Internet Connection Type' configuration page. It includes a title bar, a descriptive note, and several input fields: 'Host Name' (text box), 'Primary DNS Server' (IP address field with default 168.95.1.1), 'Secondary DNS Server' (IP address field with default 168.95.162.1 and '(optional)' label), 'MTU' (text box with default 1492), and 'MAC Address' (MAC address field with default 00-52-40-E1-00-01). A button labeled 'Clone your PC's MAC Address' is located below the MAC address field.

If you select PPPoE, the WAN section of the Internet page changes to request PPPoE information.

Address Mode: Select whether your IP is dynamically assigned, i.e. a different IP address is assigned to you each time you connect, or your IP is a static one, i.e. fixed.

IP Address: If you chose Static IP, you will be able to enter your assigned IP address here.

User Name: Enter the PPPoE Username.

Password: Enter the PPPoE Password.

Verify Password: Enter the PPPoE Password once more for verification.

Service Name: If your ISP requires you to enter a Service Name, enter it here.

Reconnect Mode: **Always-on** will allow the router to keep the internet connection alive. **Manual** means that you must re-establish the connection yourself when it drops and **On demand** means that the router will drop the connection but automatically reconnect when a request for an internet resource is made by a client.

Maximum Idle Time: Select the time before which the router will drop the internet connection. Selecting 0 effectively disables this function.

DNS Mode: Select whether to use your ISPs DNS Servers or if you want to use your own, you should select **Enter DNS Manually**.

Primary DNS

Server: Enter the Primary DNS server address provided by your ISP.

Secondary DNS

Server: Enter the Secondary DNS server address provided by your ISP.

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

MAC Address: Enter the MAC Address of the network adapter which is connected to the router or click **Clone your PC's MAC Address** to have it entered for your automatically.

If your router is in 3G mode, the 3G Internet Connection section will be available for you to configure. Please refer to page 16 for more information.

Network Settings

Use this section to configure the internal network settings of your router and also to configure the built-in DHCP server to assign IP addresses to computers on your network. The IP address that is configured here is the IP address that you use to access the Web-based management interface. If you change the IP address in this section, you may need to adjust your PC's network settings to access the network again.

Router Settings

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

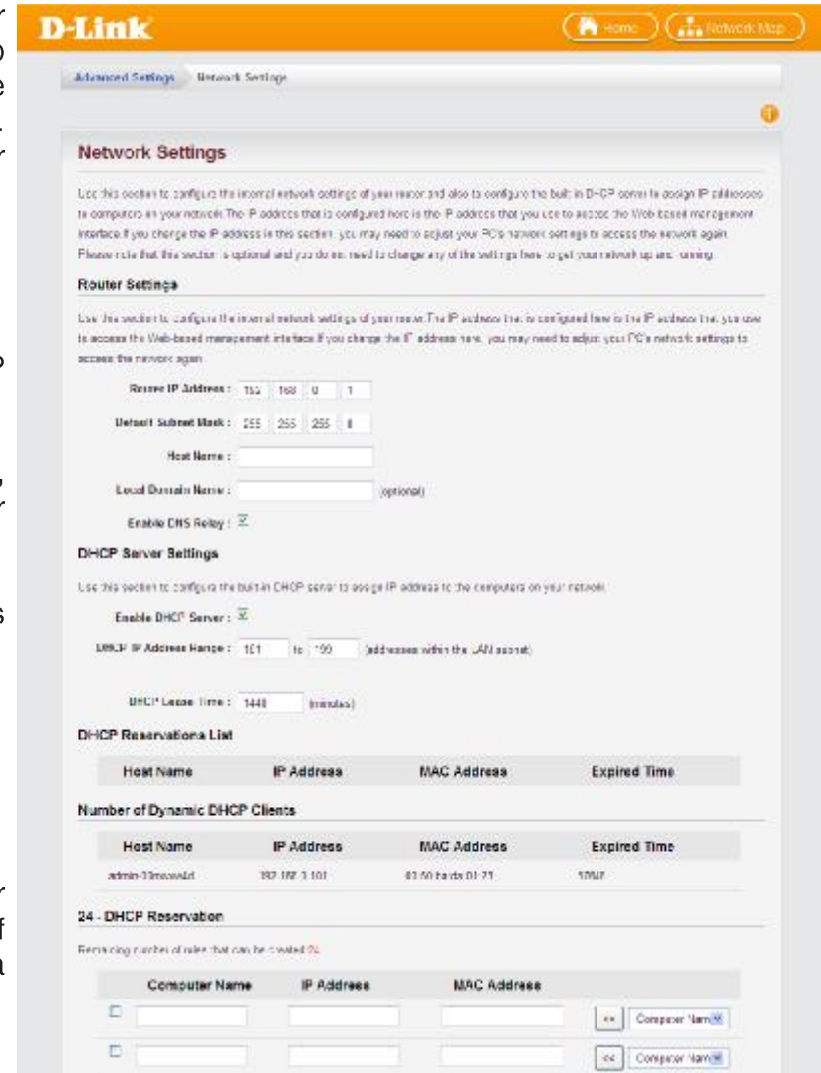
If you change the IP address, once you click **Apply**, you will need to enter the new IP address in your browser to get back into the configuration utility.

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

Host Name: Enter the Host Name of the router.

Local Domain Name: Enter the Domain name (Optional).

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



Enable DHCP Server: Check this box to set the router up as a DHCP Server. The DHCP Server will assign internal IP addresses to connected DHCP clients allowing you to have multiple devices connected to the Internet.

DHCP IP Address Range: Enter the range for the last octet of the DHCP IP Addresses. This may be 1, 2 or 3 digits.

DHCP Lease Time: Enter the length of time in minutes that the DHCP IP Addresses will be reserved for a particular client.

DHCP Server Settings

DHCP stands for Dynamic Host Control Protocol. The DWR-117 has a built-in DHCP server. The DHCP Server will automatically assign an IP address to the computers on the LAN/private network. If you are going to use the DHCP server, 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 DWR-117. 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.

DHCP Server Settings

Use this section to configure the built-in DHCP server to assign IP address to the computers on your network.

Enable DHCP Server:

DHCP IP Address Range: to (addresses within the LAN subnet)

DHCP Lease Time: (minutes)

Enable DHCP

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

DHCP IP Address

Range: Enter the range for the last octet of the IP addresses for the DHCP server's IP assignment. This may be 1, 2 or 3 digits.

Note: If you manually assign IP addresses to your computers or devices, make sure the IP addresses are outside of this range or you may have an IP conflict.

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

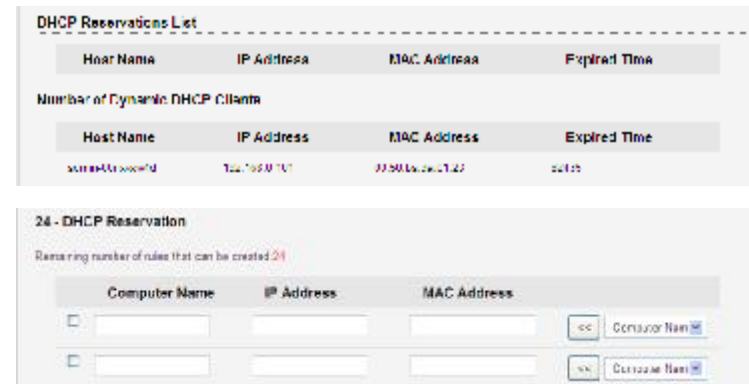
DHCP Reservation

If you want a computer or device to always have the same IP address assigned, you can create a DHCP reservation. The router will assign the IP address only to that computer or device.

Configure the parameters, as described below, to create a new DHCP Reservation.

Note: This IP address must be within the DHCP IP Address Range.

- DHCP Reservations List:** Displays a list of the DHCP reservations that have been configured on the router.
- Number of Dynamic DHCP Clients:** In this section, you can see information about the LAN devices that are currently being leased IP addresses.
- Computer Name:** Enter the computer name or select a computer name from the drop-down menu on the right-hand side and click <<.
- IP Address:** Enter the IP address you want to assign to the computer or device. This IP Address must be within the DHCP IP Address Range.
- MAC Address:** Enter the MAC address of the computer or device.



When you have finished configuring the above settings, check the boxes next to the DHCP Reservation entries you want to add to the DHCP Reservations List and click the **Save** button at the bottom of the window to save your entries and activate your reservations.

Port Forwarding

Port Forwarding is a feature that allows you to open a single port or a range of ports and redirect the data received through those ports to a single PC on your network.

Name: Enter a name for the rule or select an application from the drop-down menu. Select an application and click << to populate the fields.

IP Address: Enter the IP address of the computer on your local network that you want to allow the incoming service to. If your computer is receiving an IP address automatically from the router (DHCP), your computer will be listed in the “Computer Name” drop-down menu. Select your computer and click <<.

Public Port/Private Port: Enter the range of ports that you want to open next to the Private Port and Public Port fields. The private and public ports are usually the same. The private ports are the ports being used by the application on the computer within your local network, and the public ports are the ports seen from the Internet side.

Traffic Type: Use the drop-down menu to select whether **TCP**, **UDP**, or **All** types of traffic are being used for the port forwarding rule.

Schedule: Select a schedule for when the Port Forwarding Rule will be enabled. The schedule may be set to **Always**, which will allow the particular service to always be enabled. You can create your own times in the **Tools > Schedules** section.

The screenshot shows the D-Link web interface for Port Forwarding. At the top, there's a navigation bar with 'D-Link' logo, 'Home', and 'Network Map' buttons. Below that, there's a breadcrumb trail: 'Advanced Settings > Port Forwarding'. The main heading is 'Port Forwarding'. A descriptive paragraph explains the feature: 'This option is used to open multiple ports or a range of ports in your router and redirect data through those ports to a single PC on your network. This feature allows you to enter ports in the format, Port Ranges (100-150). This option is only applicable to the INI LHNCE session.' Below this is a section titled '24-Port Forwarding Rules' with a note: 'Remaining number of rules that can be created 24'. The main area contains a table with five columns: 'name', 'IP Address', 'Public Port', 'Private Port', and 'Traffic Type'. There are three rows of input fields. Each row starts with a checkbox, followed by a 'name' field with a '<<' button and a dropdown menu. The first row has 'Application name' selected, the second has 'Computer Name', and the third has 'Application name'. The 'Public Port' and 'Private Port' fields are empty, and the 'Traffic Type' dropdown is set to 'all'.

Advanced Network Settings

These options are for advanced users who wish to change the LAN settings. We do not recommend changing these settings from the factory default. Changing these settings may affect the behavior of your network.

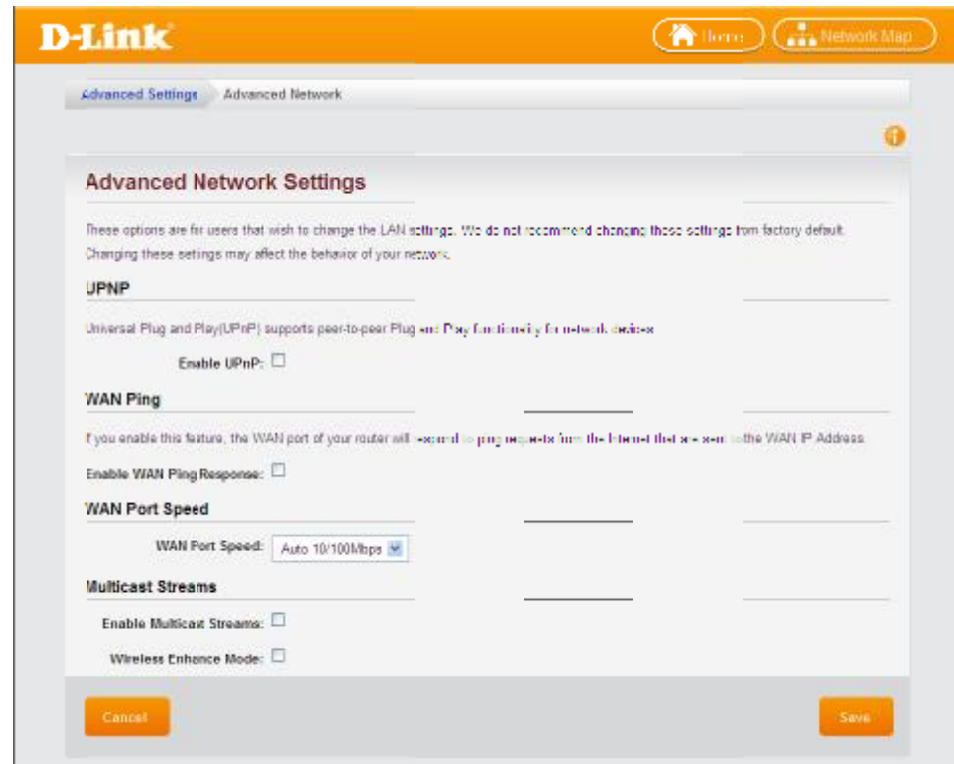
UPNP: To use the Universal Plug and Play (UPnP™) feature check the **Enable UPNP** box. UPNP provides compatibility with networking equipment, software and peripherals.

WAN Ping: If you enable this feature, the WAN port of your router will respond to ping requests from the Internet that are sent to the WAN IP Address.

WAN Port Speed: Select the speed that the WAN port will operate at. You can choose between **10Mbps**, **100Mbps** or **Auto 10/100Mbps**.

Enable Multicast Streams: Check the **Enable Multicast Streams** box to allow multicast traffic to pass through the router from the Internet.

Wireless Enhance Mode: Check the **Wireless Enhance Mode** box to enable the router to forward all multicast streams from the Internet to the wireless station using a unicast stream. This feature helps improve the quality of multimedia applications for wireless users.



Dynamic DNS

The Dynamic DNS feature allows you to host a server (Web, FTP, Game Server etc) using a domain name that you have purchased with your dynamically assigned IP address. Most broadband Internet Service Providers assign dynamic (changing) IP addresses. Using a DDNS service provider, your friends can enter your host name to connect to your server no matter what your IP address is.

Enable DDNS: Check this box to enable the Dynamic DNS function. If you do not enable this, none of the following options will be configurable.

Server Address: Select from the drop down menu which Dynamic DNS hosting service you want to use. For more information on this, go to www.dlinkddns.com

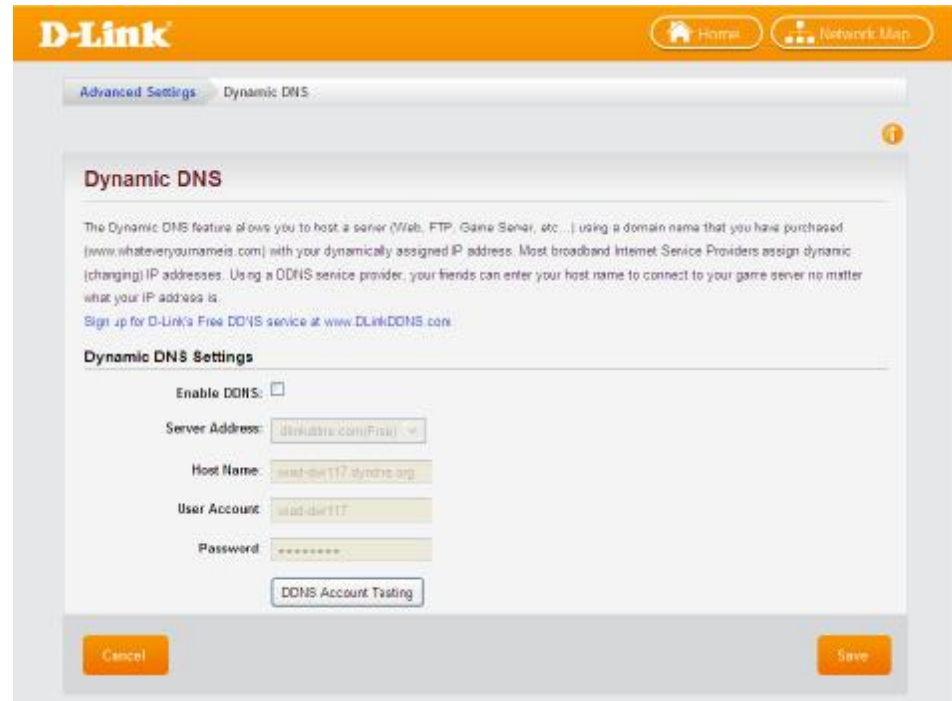
Host Name: Enter the DDNS Host Name, e.g. `wiad-dwr117.dyndns.org`

User Account: Enter the user account name e.g. `wiad-dwr117`

Password: Enter the password for the user account.

DDNS Account

Testing: Click this button to test the settings you have entered.



The screenshot shows the D-Link Dynamic DNS configuration interface. At the top, there is a navigation bar with the D-Link logo and buttons for 'Home' and 'Network Map'. Below this is a breadcrumb trail: 'Advanced Settings > Dynamic DNS'. The main content area is titled 'Dynamic DNS' and contains an informational paragraph explaining the feature. Below the text is a 'Dynamic DNS Settings' section with the following fields: 'Enable DDNS' (unchecked checkbox), 'Server Address' (dropdown menu showing 'dlinkddns.com(Free)'), 'Host Name' (text input with 'wiad-dwr117.dyndns.org'), 'User Account' (text input with 'wiad-dwr117'), and 'Password' (password input field with masked characters). A 'DDNS Account Testing' button is located below the password field. At the bottom of the form are 'Cancel' and 'Save' buttons.

Wireless Network

Use this section to configure the wireless settings for your D-Link router. Please note that changes made in this section may also need to be duplicated on your wireless client.

To protect your privacy, you can configure wireless security features. This device supports three wireless security modes: WEP, WPA and WPA2.

Wireless Network Settings

Enable Wireless: Check this box to enable the wireless radio in your router.

Wireless Network Name: Also called the Service Set Identifier (SSID), this 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 DWR-117. By default the channel is set to **Auto Scan**. The channel can be changed to suit the environment the router operates in so as to reduce interference with other devices operating on the same channel.

WMM Enable: WMM (Wi-Fi Multimedia) is QoS for your wireless network. Check this box to improve the quality of video and voice applications for your wireless clients. This feature is not available in 802.11n configurations.

Enable Hidden Wireless: Enabling Hidden Mode is another way to secure your network. With this option enabled, no wireless clients will be able to see your wireless network when they perform a scan to see what's available. In order for your wireless devices to connect to your router, you will need to manually enter the Wireless Network Name on each device.

The screenshot shows the D-Link router's configuration interface for the Wireless Network. The page title is "Wireless Network" and it includes a "Wireless Network Settings" section. The settings are as follows:

- Enable Wireless:**
- Wireless Network Name:** DWR-117 (Also called the SSID)
- Wireless Channel:** Auto Scan (recommended) (Current: CH)
- WMM Enable:** (Wireless QoS)
- Enable Hidden Wireless:** (Also called the SSID Broadcast)
- Wireless Security Mode:** Security Mode: Enable WPA/WPA2 Wireless Security (Advanced)
- WPA Setting:** WPA/WPA2 requires stations to use high grade encryption and authentication.
 - Cipher Type:** AUTO(THRESHOLD)
 - PSK/EAP:** PSK
 - Network Key:** (8-63 ASCII or 64 HEX)

Buttons for "Cancel" and "Save" are visible at the bottom of the form.

Wireless Security Mode

Security Mode: Select from the drop down menu whether to disable security, use WEP or use WPA/WPA2 wireless security.

WEP Setting

WEP is the wireless encryption standard. To use it you must enter the same key(s) into the router and the wireless stations. For 64-bit keys, you must enter 10 hex digits into each key box. For 128-bit keys you must enter 26 hex digits into each key box. A hex digit is either a number from 0 to 9 or a letter from A to F. For the most secure use of WEP, set the authentication type to 'Shared Key' when WEP is enabled. You may also enter any text string into a WEP key box, in which case it will be converted into a hexadecimal key using the ASCII values of the characters. A maximum of 5 text characters can be entered for the 64-bit keys and a maximum of 13 characters for 128-bit keys.

WEP

WEP is the wireless encryption standard. To use it you must enter the same key(s) into the router and the wireless stations. For 64-bit keys you must enter 10 hex digits into each key box. For 128-bit keys you must enter 26 hex digits into each key box. A hex digit is either a number from 0 to 9 or a letter from A to F. For the most secure use of WEP, set the authentication type to 'Shared Key' when WEP is enabled.

You may also enter any text string into a WEP key box, in which case it will be converted into a hexadecimal key using the ASCII values of the characters. A maximum of 5 text characters can be entered for 64-bit keys, and a maximum of 13 characters for 128-bit keys.

Authentication: Open

WEP Encryption: 64 bits

Default WEP Key: WEP Key 1

WEP Key:

Authentication: Select whether the network will be **Open** or **Shared**. If you select Open, any device can authenticate to the router. If you select Shared, only devices with the WEP key can successfully authenticate.

WEP Encryption: Select the level of encryption you would like. 64-bit is the default setting but you may change it to 128-bit.

Default WEP Key: Select from the drop down menu which WEP Key you want to configure.

WEP Key: Enter the WEP Key for the selected WEP key number. You must enter at least 5 ASCII characters or 10 hexadecimal digits for a 64-bit or 128-bit WEP encryption key.

WPA Setting


Cipher Type: Choose between AES or TKIP. This setting defaults to Auto (TKIP / AES) allowing both ciphers to work.

PSK / EAP: Select whether to use a Pre-Shared Key (**PSK**) or the Extensible Authentication Protocol (**EAP**). A RADIUS server is required if you select EAP.



The screenshot shows the 'WPA Setting' configuration page. At the top, it states 'WPA/WPA2 requires stations to use high grade encryption and authentication.' Below this, there are three main settings: 'Cipher Type' is set to 'AUTO(TKIP/AES)', 'PSK / EAP' is set to 'PSK', and 'Network Key' is a text field filled with asterisks. Below the Network Key field, it specifies '(8-63 ASCII or 64 HEX)'.

Network Key: Enter the network key which you will be required to enter to join the wireless network. The key must be between 8 and 63 ASCII characters or 64 HEX.



The screenshot shows the 'WPA Setting' configuration page with 'PSK / EAP' set to 'EAP'. Below this, there are three input fields: 'RADIUS Server IP Address' (a four-part dotted box), 'Port' (a single text box), and 'Shared Secret' (a single text box).

RADIUS Server IP

Address: Enter the IP address of your RADIUS server.

Port: Enter the port number of your RADIUS server.

Shared Secret: A shared secret is a case-sensitive text string used to validate communications between two RADIUS devices. Enter the shared secret.

Click **Save** to save your settings.

Advanced Wireless Settings

These options are for users that wish to change the behavior of their 802.11n wireless radio from the standard settings. We do not recommend changing these settings from the factory defaults. Incorrect settings may impact the performance of your wireless radio. The default settings should provide the best wireless radio performance in most environments.

Transmitting Power: Set the transmit power of the antennas.

Beacon Period: 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. The default setting is 1. 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. Note: High network traffic areas should use the **Short Preamble** type.

The screenshot shows the D-Link Advanced Wireless settings page. The page title is "Advanced Wireless settings". Below the title, there is a warning message: "These options are for users that wish to change the behavior of their 802.11n wireless radio from the standard settings. We do not recommend changing these settings from the factory defaults. Incorrect settings may impact the performance of your wireless radio. The default settings should provide the best wireless radio performance in most environments." Below the warning, there is a section titled "Advanced Wireless settings" with the following options:

- Transmitting Power: 100%
- Beacon Interval: 100 (range: 20-1000, default: 100)
- RTS Threshold: 2346 (range: 255-2346, default: 2346)
- Fragmentation: 2346 (range: 1020-2346, default: 2346, even number only)
- DTIM Interval: 1 (range: 1-255, default: 1)
- Preamble Type: Short Preamble Long Preamble
- Wireless Mode: 802.11 Mixed(n/g/b)
- Band Width: 20.40 MHz(Auto)
- Short Guard Interval:

At the bottom of the page, there are two buttons: "Cancel" and "Save".

Wireless Mode: Use the drop-down menu to select the wireless modes you want to enable on the router. The available options are **802.11n only**, **802.11 Mixed(g/b)**, and **802.11 Mixed(n/g/b)**.

Band Width: Select whether to operate at **20MHz** or **20/40MHz**.

Short Guard Interval: Check this box to reduce the guard interval time therefore increasing the data capacity. However, it's less reliable and may create higher data loss.

Click **Save** to save your settings.

Wi-Fi Protected Setup

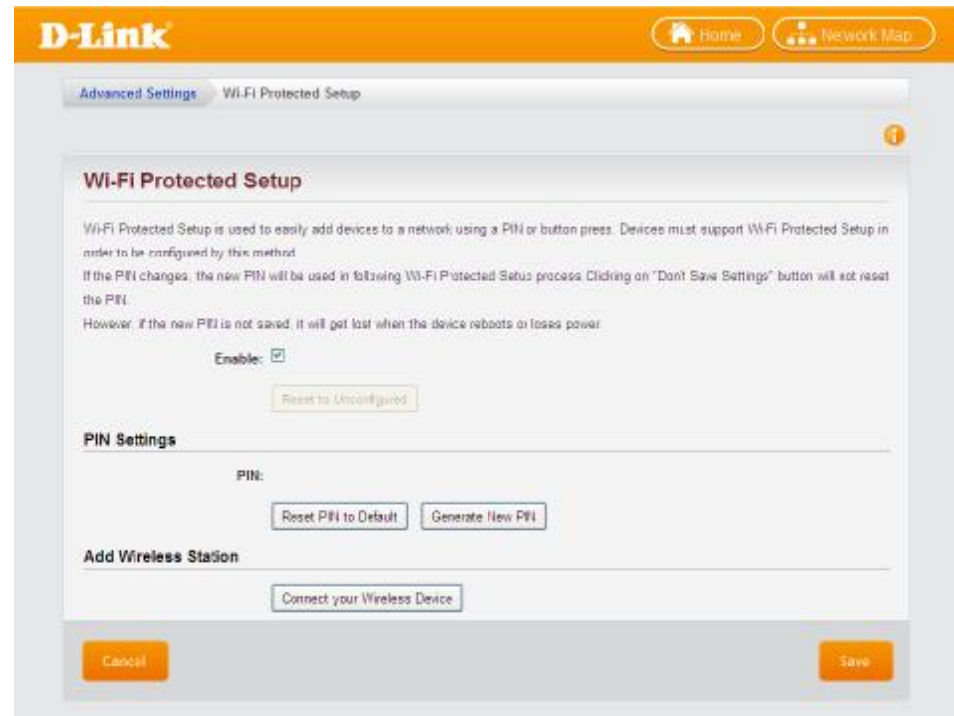
Wi-Fi Protected Setup is used to easily add devices to a network using a PIN or button press. Devices must support Wi-Fi Protected Setup in order to be configured by this method.

If the PIN changes, the new PIN will be used in the following Wi-Fi Protected Setup process. Clicking the “Don’t Save Settings” button will not reset the PIN. However, if the PIN is not saved, it will be lost when the device reboots or loses power.

Enable: Check the enable box to turn on Wi-Fi Protected Setup.

PIN Settings: Click **Reset PIN to Default** to restore the PIN to the factory default one. If you want to change the PIN, you can click **Generate New PIN** to create a new one.

Add Wireless Station: Click the button to start the wizard that sets up the WPA function. Please refer to Section 4-Wireless security “Adding a wireless device with the WPS wizard” for more information.



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.

Admin Password: Enter and confirm a new password for the Administrator Login Name. The administrator can make changes to the settings.

Enable Graphical Authentication: Check this box to enable graphical authentication. You will be required to enter a CAPTCHA prompt each time you login to the router. The purpose of this function is to prevent unauthorized access to your router by a bot.

Enable Remote Management: Remote management allows the DWR-117 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.

Remote Admin Port: The port number used to access the DWR-117.
Example: `http://x.x.x.x:8080` whereas x.x.x.x is the Internet IP address of the DWR-117 and 8080 is the port used for the Web Management interface.

The screenshot shows the D-Link Administrator Settings page. The page has a header with the D-Link logo and navigation links for Home and Network Map. The main content area is titled 'Administrator Settings' and includes a warning message about the 'admin' account. Below the warning, there are two password input fields for 'Admin Password' and 'Verify Password'. Under the 'Administrator' section, there are three checkboxes: 'Enable Graphical Authentication', 'Enable Remote Management', and 'Remote Admin Port'. The 'Remote Admin Port' field is currently empty. At the bottom of the page, there are 'Cancel' and 'Save' buttons.

Time Settings

The Time Configuration option allows you to configure, update, and maintain the correct time on the internal system clock. From this section you can set the time zone that you are in and set the Time Server. Daylight Saving can also be configured to automatically adjust the time when needed.

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

Enable Daylight Saving: If you are in a region that observes daylight saving time, check the box to enable the router to automatically adjust the time.

Sync your Computer's Time Settings: Click this button to set the device's time the same to local PC.

Automatically synchronize with D-Link's Internet time server: Check the box to enable the device to automatically synchronize with a D-Link NTP Server. NTP stands for Network Time Protocol. NTP synchronizes computer clock times in a network of computers. This will only connect to a server on the Internet, not a local server.

NTP Server Used: Select one of the D-Link NTP Servers from the drop-down menu. The DIR-412 will then synchronize it's clock to be the same time as the D-Link Internet time server. Click the **Update Now** button to synchronize with the D-Link Internet time server immediately.

Set the Time and Date Manually: To manually input the time, use the drop-down menus to enter the values in these fields for the Year, Month, Day, Hour, Minute, and Second. You must uncheck the **Automatically synchronize with D-Link's Internet time server** box to be able to configure this.

Click **Save** to save your settings.

E-mail Settings

The Email feature can be used to send the system log files, router alert messages, and firmware update notification to your e-mail address.

From Email Address: This e-mail address will appear as the sender when you receive a log file or firmware upgrade notification via e-mail.

To Email Address: Enter the e-mail address where you want the e-mail sent.

Email Subject: Enter a subject for the e-mails that will be sent from the Router.

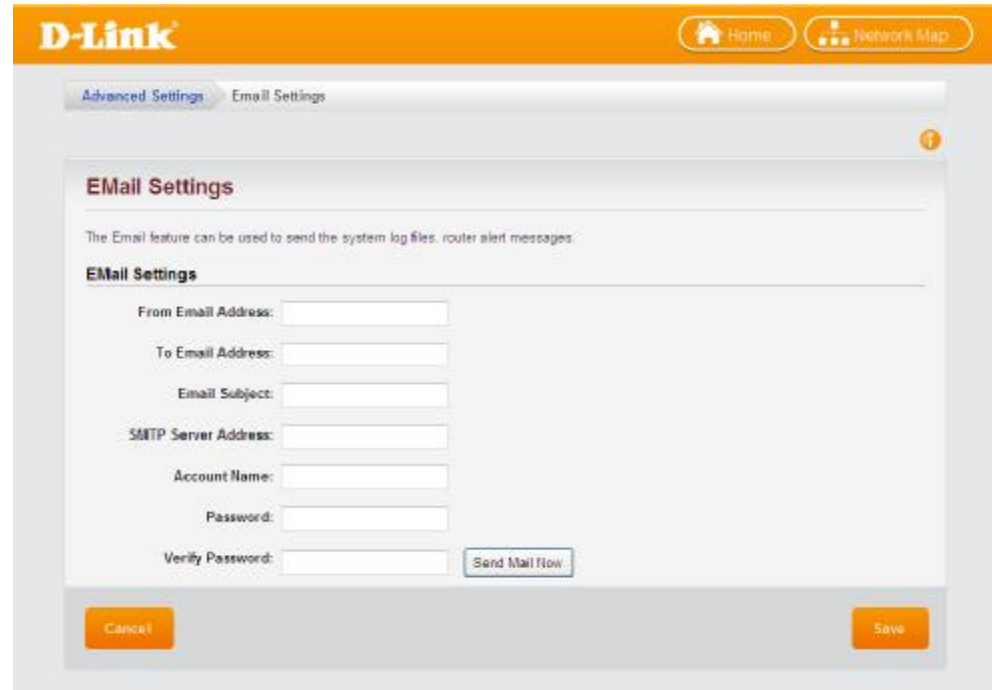
SMTP Server Address: Enter the IP address of the SMTP server for sending email.

Account Name: Enter your account name for sending e-mail.

Password: Enter the password associated with the account.
Re-type the password associated with the account in the **Verify Password** field.

Send Mail Now: Click the **Send Mail Now** button to send a test message from the Router to the specified e-mail address.

Click **Save** to save your settings.



The screenshot shows the D-Link web interface for configuring email settings. At the top, there is a navigation bar with the D-Link logo and buttons for 'Home' and 'Network Map'. Below this, a breadcrumb trail shows 'Advanced Settings' and 'Email Settings'. The main content area is titled 'EMail Settings' and includes a descriptive paragraph: 'The Email feature can be used to send the system log files, router alert messages:'. Below this, there are several input fields: 'From Email Address:', 'To Email Address:', 'Email Subject:', 'SMTP Server Address:', 'Account Name:', 'Password:', and 'Verify Password:'. A 'Send Mail Now' button is located to the right of the 'Verify Password' field. At the bottom of the form, there are 'Cancel' and 'Save' buttons.

System Settings

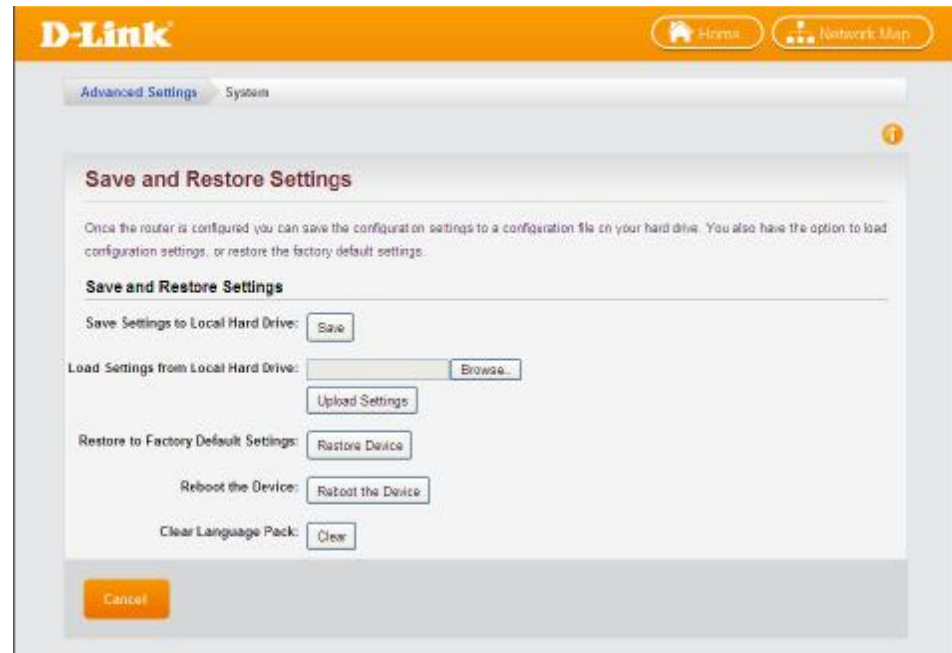
Save Settings to Local Hard Drive: Use this option to save the current router configuration settings to a file on the hard disk of the computer you are using. First, click the **Save** button. You will then see a file dialog, where you can select a location and file name for the settings.

Load Settings from Local Hard Drive: Use this option to load previously saved router configuration settings. First, use the **Drive: 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: Click the **Restore** button to 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, use the **Save** button above.

Reboot the Device: Click to reboot the router.

Clear Language Pack: Click the **Clear** button to restore the device back to the English interface version and remove other languages installed for the system web pages.



Firmware Update

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 D-Link support site for firmware updates at <http://support.dlink.com>. You can download firmware upgrades to your hard drive from the D-Link support site.

Firmware Information: Displays the current firmware version and date.

You can also check the availability of a new firmware version online. If so, download the new firmware to your hard drive.

Firmware Upgrade: After you have downloaded the new firmware, click the **Browse** control to locate the firmware update on your hard drive. Click **Upload** to complete the firmware upgrade.

Language Pack Upgrade: This function allows the user to transfer the language of the GUI from English to their own language by upgrading the language pack. Click the **Browse** control to locate the desired language pack on your hard drive. Click **Upload** to complete the language pack upgrade.

The screenshot shows the D-Link router's web interface for the Firmware Update section. At the top, there is a navigation bar with 'D-Link' logo, 'Home', and 'Network Map' buttons. Below this, there are tabs for 'Advanced Settings' and 'Firmware'. The main content area is titled 'Firmware Update' and contains the following text:

There may be new firmware for your router to improve functionality and performance.
[Click here to check for an upgrade on our support site.](#)

To upgrade the firmware, locate the upgrade file on the local hard drive with the Browse button. Once you have found the file to be used, click the Upload button to start the firmware upgrade. The language pack allows you to change the language of the user interface on the router. We suggest that you upgrade your current language pack if you upgrade the firmware. This ensures that any changes in the firmware are displayed correctly. To upgrade the language pack, locate the upgrade file on the local hard drive with the Browse button. Once you have found the file to be used, click the Upload button to start the language pack upgrade.

Firmware Information

Current Firmware Version: 1.0.5
 Firmware Date: 2011-05-17 10:22

Check Online Now for Latest Firmware Version:

Firmware Upgrade

Note: Some firmware upgrades need the configuration options to the factory defaults. Before performing an upgrade, be sure to save the current configuration.

To upgrade the firmware, locate the upgrade file on the local hard drive with the Browse button. Once you have found the file to be used, click the Upload button to start the firmware upgrade. The language pack allows you to change the language of the user interface on the router. We suggest that you upgrade your current language pack if you upgrade the firmware. This ensures that any changes in the firmware are displayed correctly. To upgrade the language pack, locate the upgrade file on the local hard drive with the Browse button. Once you have found the file to be used, click the Upload button to start the language pack upgrade.

Upload:

Language Pack Upgrade

Upload:

At the bottom left, there is a button.

Application Rules

The Application Rules option is used to open single or multiple ports in your firewall when the router senses data sent to the Internet on an outgoing “Trigger” port or port range. Special Application rules apply to all computers on your internet network.

Name: Enter a name for the rule you are creating. This name can be whatever you like so that it will be easy to remember what the rule does.

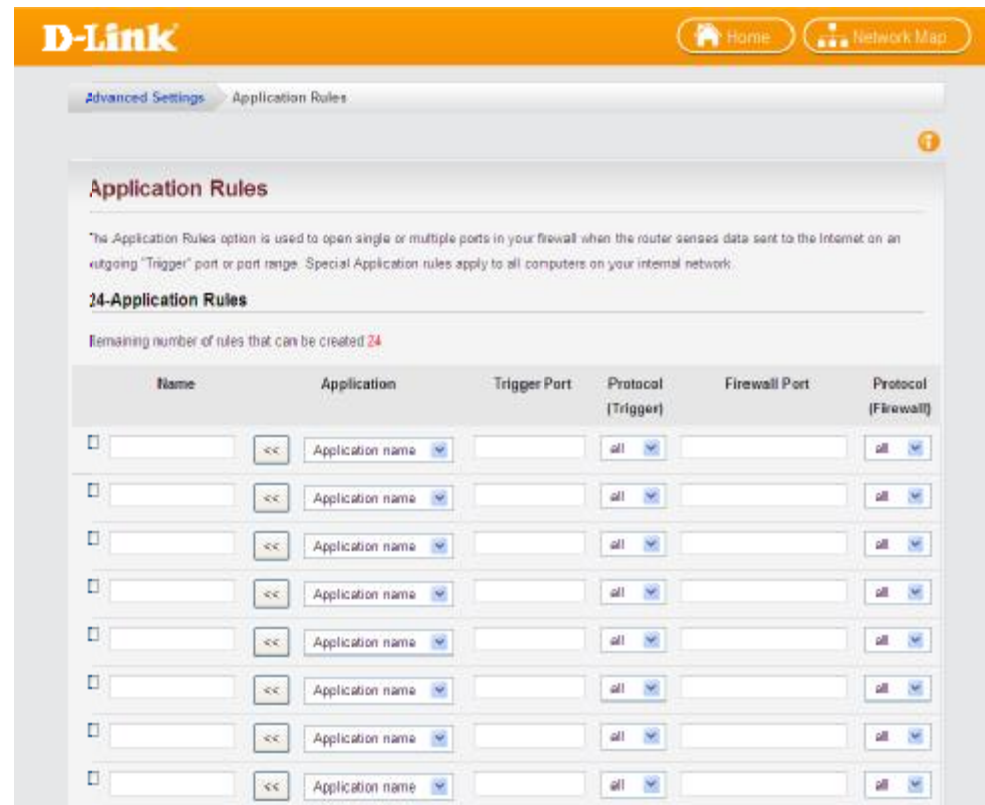
Application: This drop-down menu contains a list of some common applications. If you want to create a rule for one of the applications listed, select it and click << to add the port information automatically.

Trigger Port: Enter the port number on which the application will try to communicate out of the router.

Protocol (Trigger): Select whether the application communicates out using **TCP** or **UDP**. If you are unsure, select **all**.

Firewall Port: Enter the port to open on the firewall. This may be different to the Trigger port if the application communicates back to the router using a different incoming port.

Protocol (Firewall): Select whether the application communicates in using **TCP** or **UDP**. If you are unsure, select **all**.



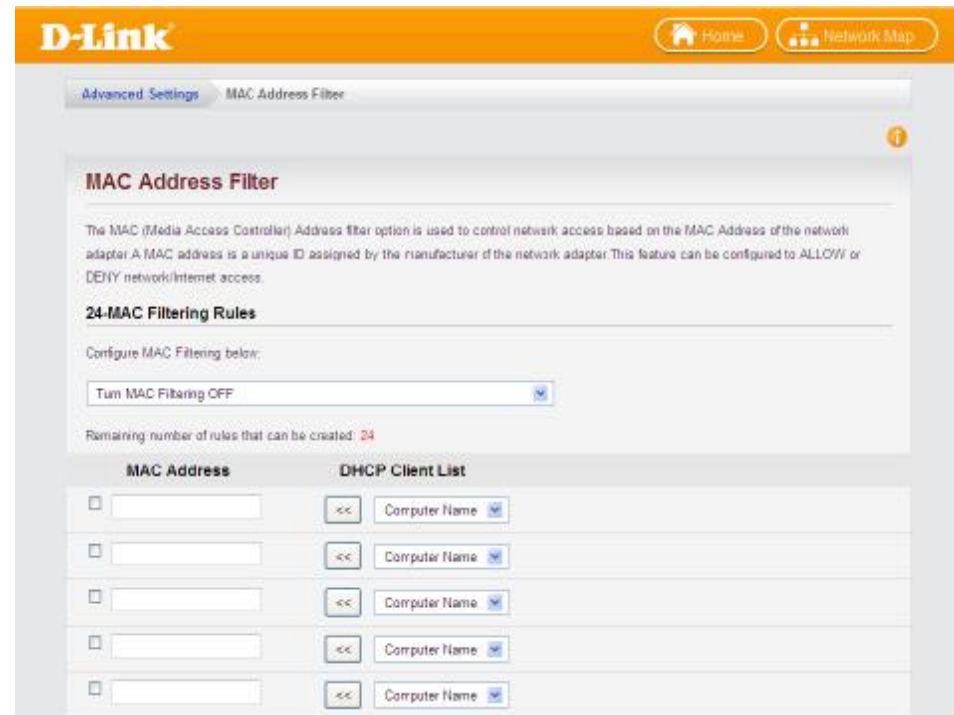
MAC Address Filter

The MAC (Media Access Controller) Address filter option is used to control network access based on the MAC Address of the network adapter. A MAC address is a unique ID assigned by the manufacturer of the network adapter. This feature can be configured to ALLOW or DENY network/internet access.

Configure MAC Filtering below: Select whether to **Turn MAC Filtering OFF**, Turn MAC Filtering on and **ALLOW** computers listed to access the network or **Turn MAC Filtering ON** and **DENY** computers listed to access the network.

MAC Address: Enter the MAC address of the adapter of the desired machine. It should be entered in the format of 12:34:AB:CD:56:78.

DHCP Client List: If the machine you want to create a rule for is a DHCP client, it will be listed in the drop-down menu. To easily add it to the list, select it from the menu and click << to have the MAC added for you automatically.

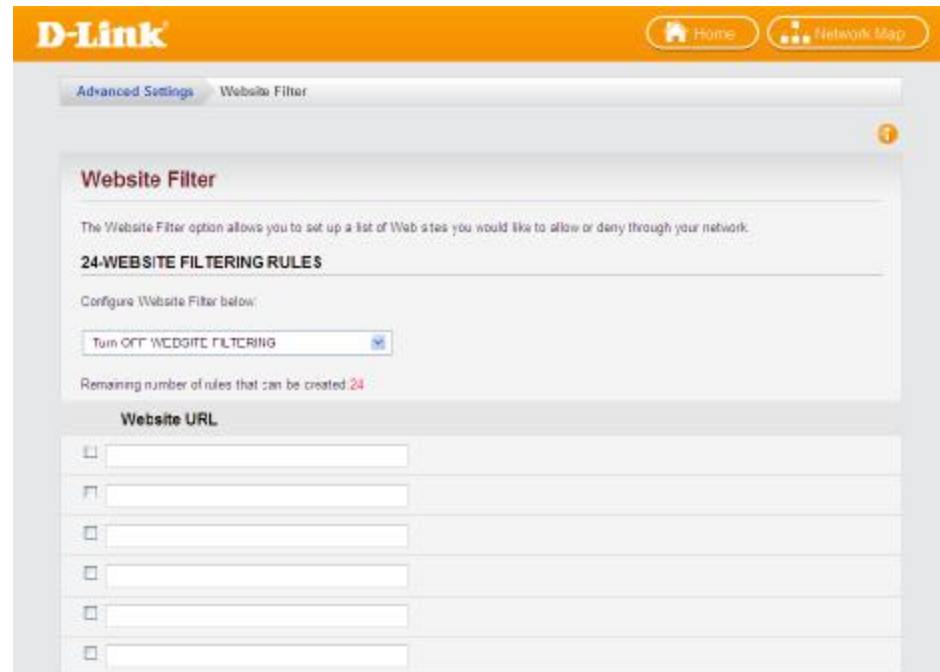


Website Filters

Website Filters are used to allow you to set up a list of allowed Web sites that can be used by multiple users through the network. To use this feature select to **Allow** or **Deny**, enter the domain or website and click **Add**, and then click **Save Settings**.

Configure Website Filter Below: Select **Deny** or **Allow** computers access to only these sites.

Website URL: Enter the URLs that you want to allow or deny.



Firewall Settings

A firewall protects your network from the outside world. The D-Link DWR-117 offers a firewall type functionality. The SPI feature helps prevent cyber attacks. Sometimes you may want a computer exposed to the outside world for certain types of applications. If you choose to expose a computer, you can enable DMZ. DMZ is short for Demilitarized Zone. This option will expose the chosen computer completely to the outside world.

Enable SPI: SPI (Stateful Packet Inspection, also known as dynamic packet filtering) helps to prevent cyber attacks by tracking more state per session. It validates that the traffic passing through the session conforms to the protocol.

DMZ IP Address: Check the **Enable DMZ** box and specify the IP address of the computer on the LAN that you want to have unrestricted Internet communication in the **DMZ IP Address** field. Use the drop-down menu to specify a host that currently has a DHCP lease from the DWR-117. If this computer has obtained its IP address automatically using DHCP, it is a good idea to make a static reservation on the **Network Settings** page so that the IP address of the DMZ machine does not change.

Firewall Rules: Use this section to create rules that deny or allow traffic from passing through the device. See the following page for information on how to create firewall rules.

The screenshot shows the 'Firewall & DMZ Settings' page in the D-Link web interface. The page is titled 'D-Link' and has navigation links for 'Home' and 'Network Map'. The main heading is 'FIREWALL & DMZ SETTINGS'. Below this, there is a brief explanation of firewall rules and DMZ. The 'Firewall Settings' section has a checkbox for 'Enable SPI' which is checked. The 'DMZ Host' section has a checkbox for 'Enable DMZ' which is unchecked. Below this, there are two input fields for 'DMZ IP Address': one is a text box with a '+' icon, and the other is a dropdown menu currently showing 'Computer 1'. The '24-Firewall Rules' section shows a table with columns for Name, Action, Source IP (Start:End), Dest IP (Start:End), Protocol, and Dest Port Range. There are two rows in the table, both with 'Allow' action and 'All' protocol. The remaining number of rules that can be created is 24.

Name	Action	Source IP (Start:End)	Dest IP (Start:End)	Protocol	Dest Port Range
<input type="checkbox"/>	Allow			All	
<input type="checkbox"/>	Allow			All	

To create a firewall rule, configure the parameters as described below:

Name: Enter a name for the firewall rule.

Action: Use the drop-down menu to specify if the router should **Allow** or **Deny** traffic matching the firewall rule.

Source IP (Start/End): Enter the IP addresses of the machines where the packets will originate. If you are entering a single IP address, enter it in both the Start and End fields.

Dest IP (Start/End): Enter the IP addresses of the machines where the packets will arrive. If you are entering a single IP address, enter it in both the Start and End fields.

Protocol: Use the drop-down menu to select the protocol that will be used for the firewall rule (TCP, UDP, ICMP, or ALL).

Dest Port Range: You can restrict which ports this rule will apply to in these fields.

24-Firewall Rules						
Remaining number of rules that can be created: 24						
	Name	Action	Source IP(Start:End)	Dest IP(Start:End)	Protocol	Dest Port Range
<input type="checkbox"/>		All			All	
<input type="checkbox"/>		All			All	
<input type="checkbox"/>		All			All	

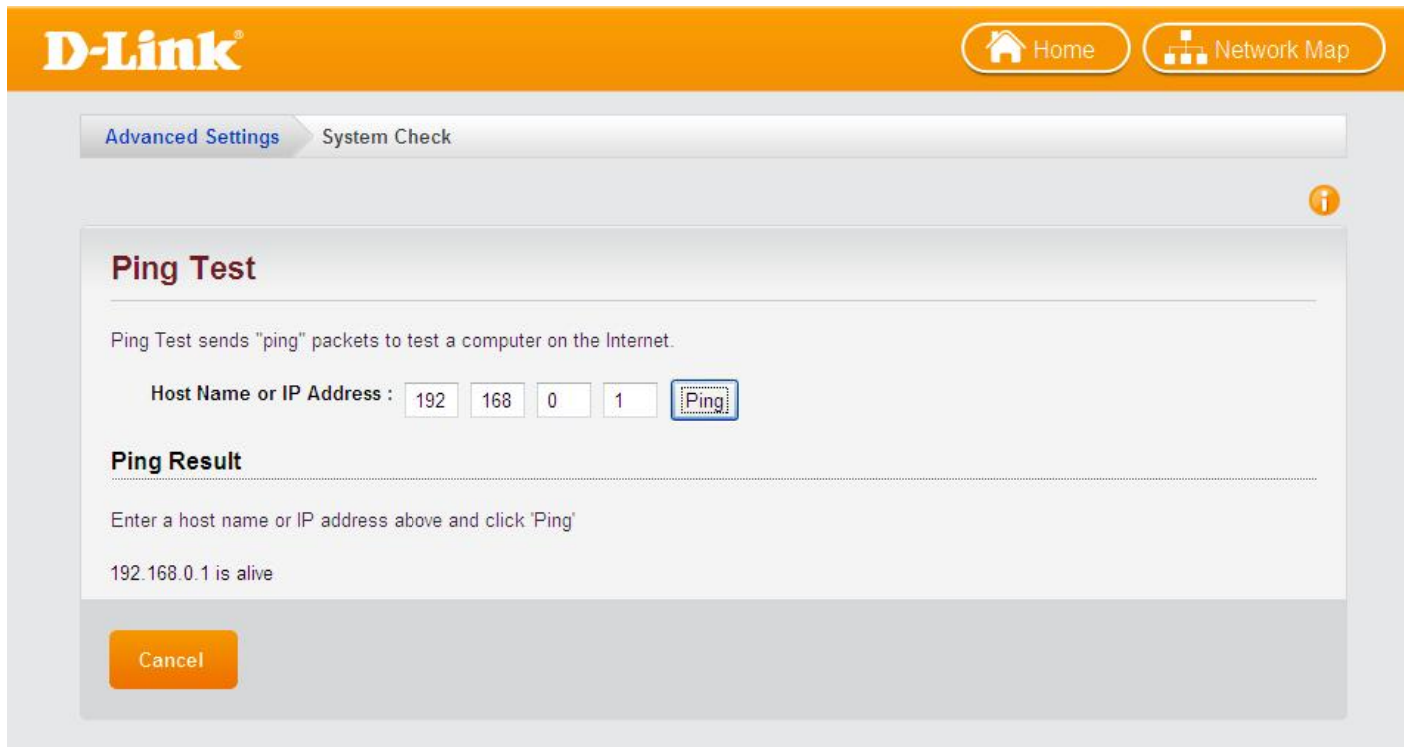
System Check

The System Check feature allows you to verify the physical connectivity on both the LAN and Internet interface.

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**.

The results of your ping attempts will be displayed here.

Ping Result:



Device Information

This page displays the current information for the DWR-117. It will display the LAN, WAN (Internet), 3G WAN (Internet) and Wireless information.

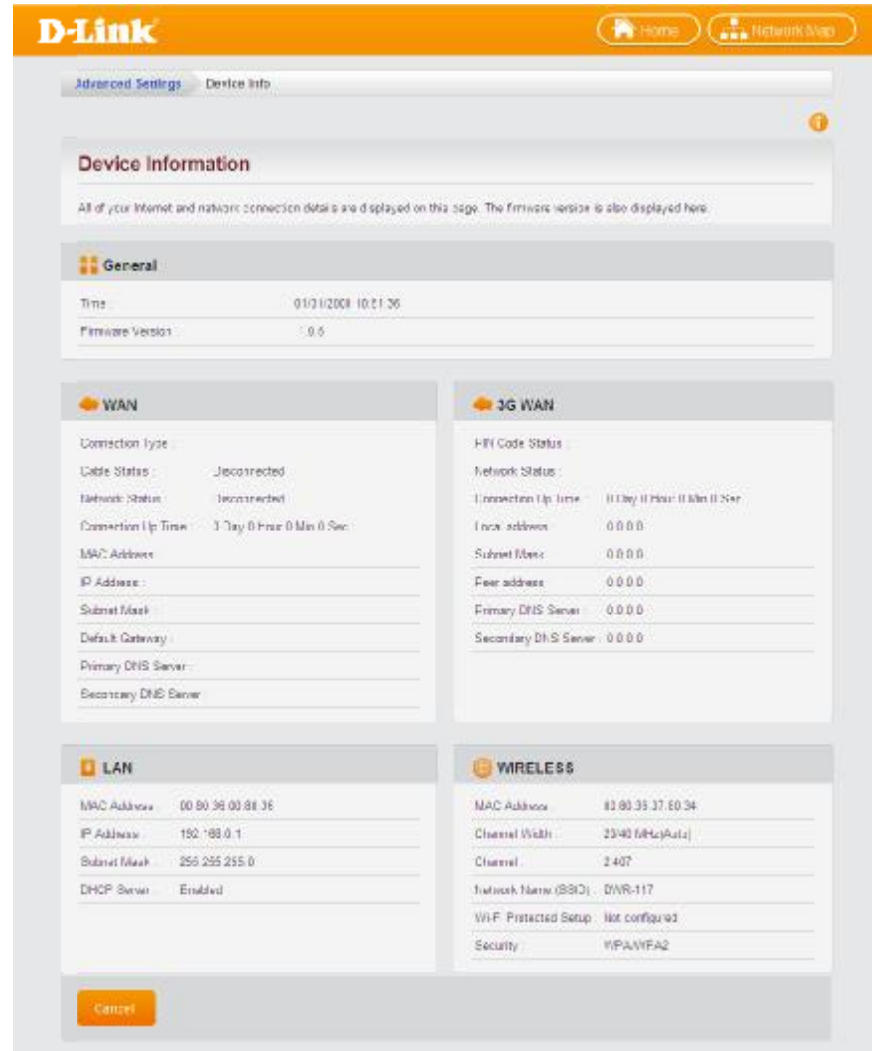
See the following for more information.

General: Displays the router's time and firmware version.

3G WAN/WAN: Displays the MAC address and the public IP settings for the router.

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

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



Logs

The router automatically logs (records) events of possible interest in its internal memory. If there isn't enough internal memory for all events, logs of older events are deleted but logs of the latest events are retained. The Logs option allows you to view the router logs. You can define what types of events you want to view and the level of the events to view. This router also has external Syslog Server support so you can send the log files to a computer on your network that is running a Syslog utility.

Save Log File: Click the **Save** button to save the file to your hard drive.

Log Level: There are three levels of message importance: Informational, Warning, and Critical. Use the radio buttons to select the levels that should be displayed in the log.

First Page: Click this button to view the first page of the log file.

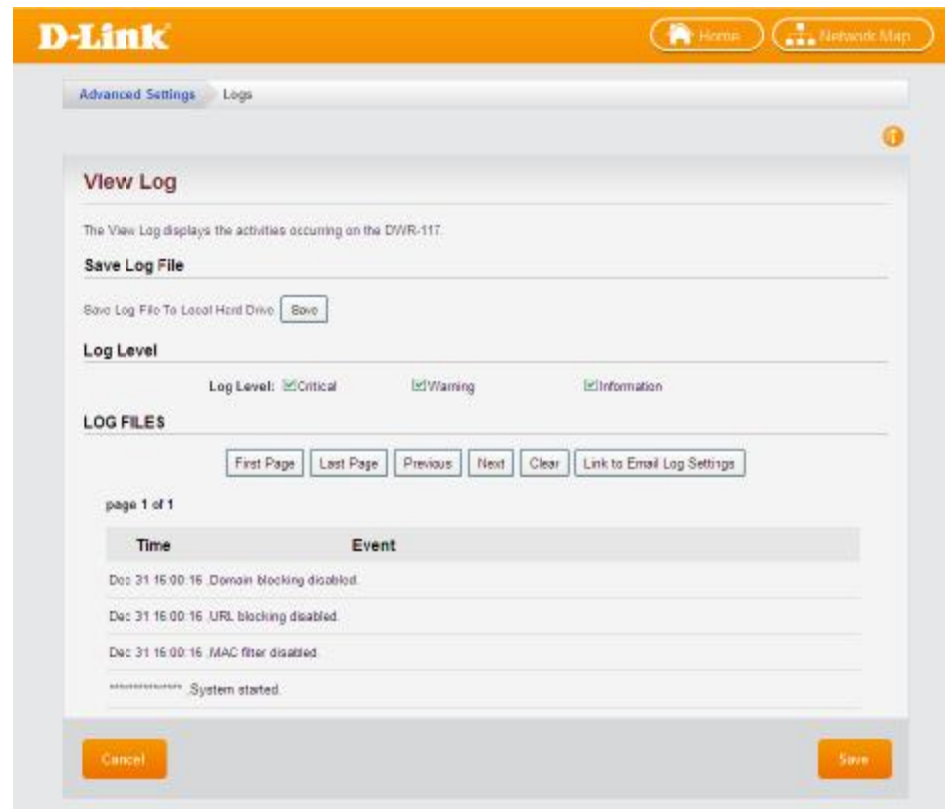
Last Page: Click this button to view the last page of the log file.

Previous: Click this button to view the previous page of the log file.

Next: Click this button to view the next page of the log file.

Clear: Clears all of the log contents.

Link to Email Log Settings: The user can click the button to “link to email log settings” and save the logs to a local hard drive or to a Syslog server.



Statistics

The screen below displays the Traffic Statistics. Here you can view the amount of packets that pass through the DWR-117 on the Internet, LAN and Wireless connections. The traffic counter will reset if the device is rebooted.

D-Link Home Network Map

Advanced Settings > Statistics

Traffic Statistics

Traffic Statistics display Receive and Transmit packets passing through the Device.

	Receive	Transmit
Internet	0 Packets	2 Packets
LAN	39494 Packets	39920 Packets
WIRELESS 11n	3055233 Packets	222664 Packets

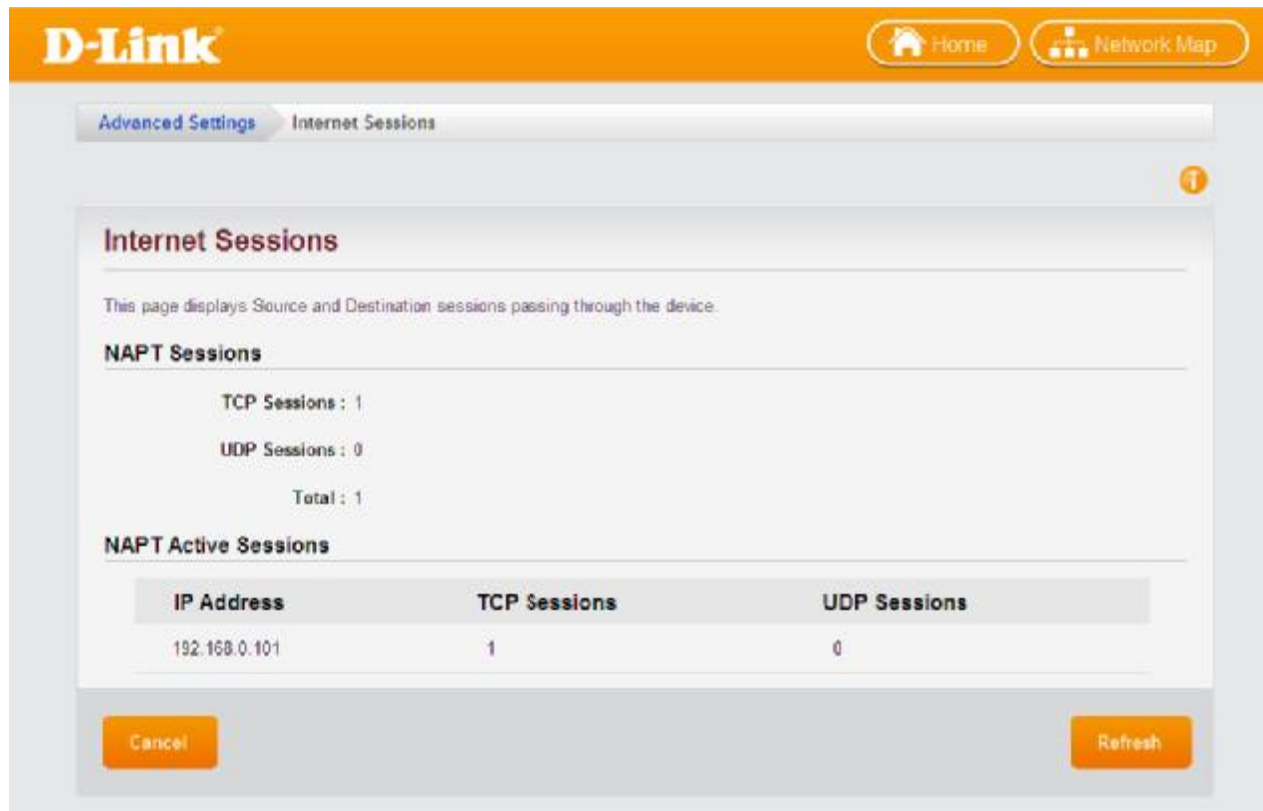
Cancel Refresh

Internet Sessions

The Internet Sessions page displays full details of active Internet sessions through your router. An Internet session is a conversation between a program or application on a LAN-side computer and a program or application on a WAN-side computer.

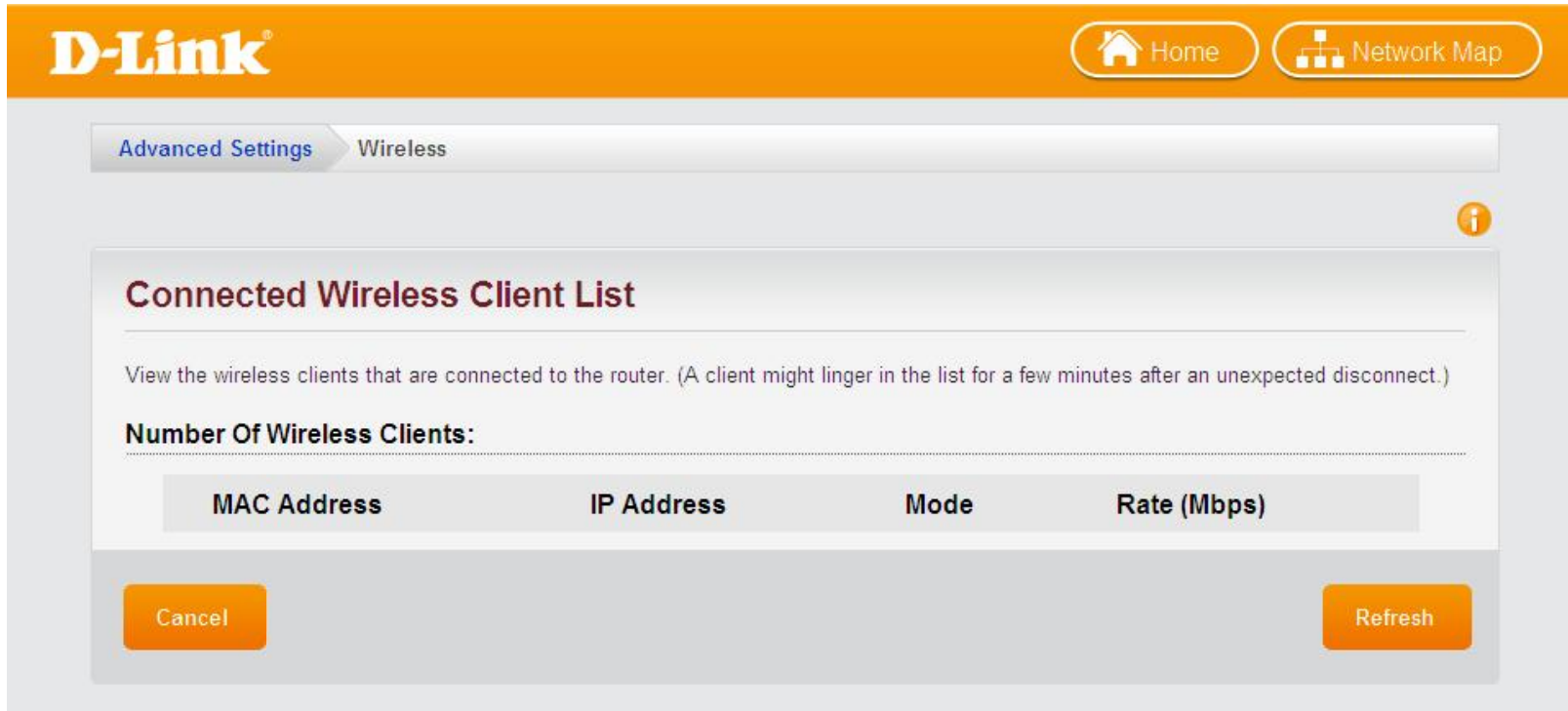
NAPT Sessions: Displays information about the NAPT Sessions on the router. Including the number of TCP Sessions, the number of UDP Sessions, and the combined number TCP and UDP NAPT Sessions.

NAPT Active Sessions: Displays the IP address of the local application and the TCP/UDP packets being sent by the source IP address for each NAPT Active Session.



Wireless

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 clients.



Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DWR-117 offers the following types of security:

- WPA2 (Wi-Fi Protected Access 2)
- WPA (Wi-Fi Protected Access)
- WPA2-PSK(Pre-Shared Key)
- WPA-PSK (Pre-Shared Key)

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.

Adding a Wireless Device with the WPS Wizard

From the **Advanced Settings** screen, select **Wi-Fi Protected Setup** then click **Connect your Wireless Device**.



Select **Auto** to add a wireless client using WPS (Wi-Fi Protected Setup). Once you select **Auto** and click **Connect**, you will have a 120 second time limit to apply the settings to your wireless client(s) and successfully establish a connection.



If you select **Manual**, a settings summary screen will appear. Write down the security key and enter this on your wireless clients.

PIN: Select this option to use PIN method. In order to use this method you must know the wireless client's 8 digit PIN and click **Connect**.



PBC: Select this option to use PBC (Push Button) method to add a wireless client. Click **Connect**.

Configure WPA-Personal (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 **Advanced** and then click **Wireless Settings**.

2. Select **Enable WPA/WPA2 Wireless Security (enhanced)** from the *Security Mode* drop-down menu.

3. Select **Auto(TKIP/AES)**, **TKIP**, or **AES** from the *Cipher Type* drop-down menu. If you have wireless clients that use both types, use **TKIP/AES**.

4. Select **PSK** from the *PSK / EAP* drop-down menu.

5. Enter a key (passphrase) in the *Network Key* field. The key is entered as a pass-phrase in either ASCII or HEX format. If using ASCII format the pass-phrase must be between 8-63 characters. If using HEX format the pass-phrase must be 64 characters. The ASCII or HEX pass-phrase must be the same at both ends of the wireless connection.

6. 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 on your adapter and enter the same passphrase as you did on the router.



Configure WPA-Enterprise (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 **Advanced** and then click **Wireless Settings**.

2. Select **Enable WPA/WPA2 Wireless Security (Enhanced)** from the *Security Mode* drop-down menu.

3. Select **Auto(TKIP/AES)**, **TKIP**, or **AES** from the *Cipher Type* drop-down menu. If you have wireless clients that use both types, use **TKIP/AES**.

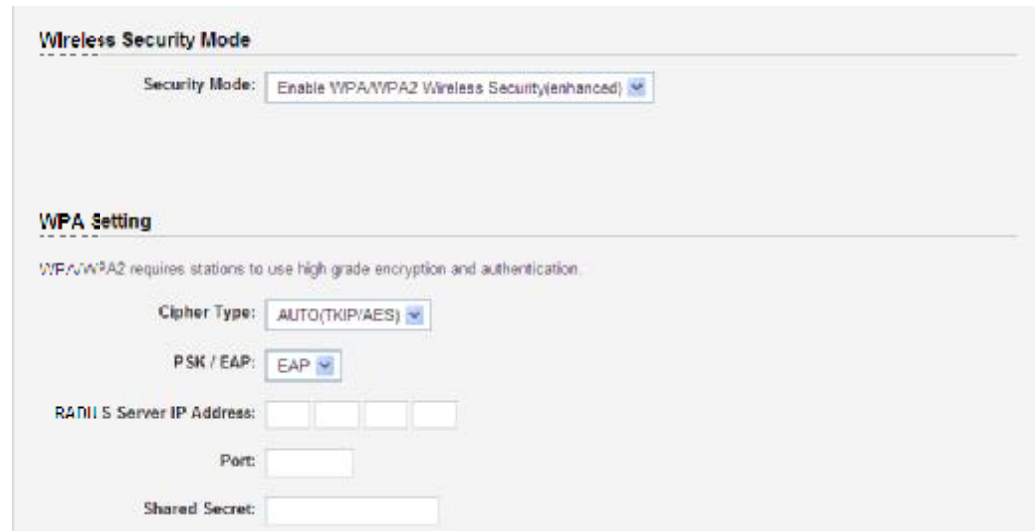
4. Select **EAP** from the *PSK / EAP* drop-down menu.

5. Enter the IP Address of your RADIUS server in the *RADIUS Server IP Address* field.

6. Enter the port you are using with your RADIUS server in the *Port* field.

7. Enter the security key in the *Shared Secret* field.

8. 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-Enterprise (RADIUS) on your adapter and enter the same passphrase as you did on the router.



Connect to a Wireless Network Using Windows Vista® and Windows® 7

Windows Vista® or Windows® 7 users may use the built-in wireless utility. 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 Vista® 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 **Connect to a network**.



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.



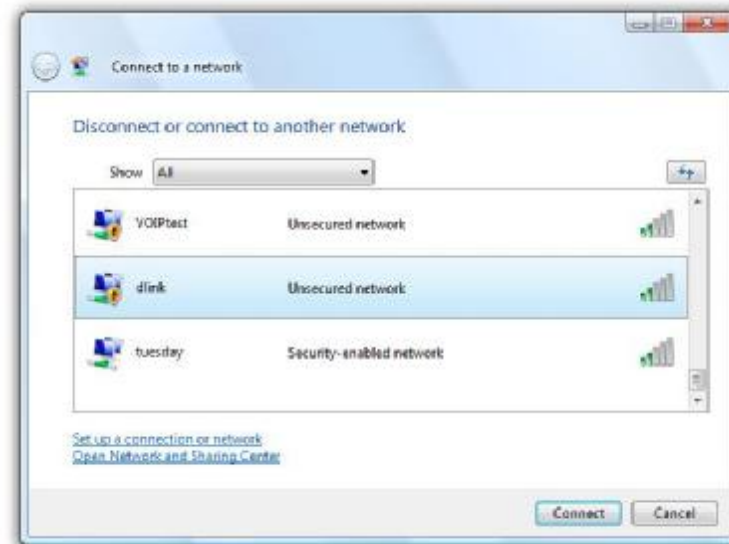
Configure WPA/WPA2

It is recommended to enable wireless security (WPA/WPA2) 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 security key or passphrase being used.

1. Open the Windows Vista® Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower right corner of screen). Select **Connect to a network**.



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



3. Enter the same security key or passphrase 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 security settings are correct. The key or passphrase must be exactly the same as on the wireless router.

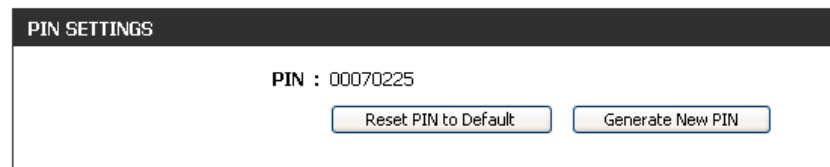


Connect Using WCN 2.0

The router supports Wi-Fi protection, referred to as WCN 2.0 in Windows Vista® and Windows® 7. The following instructions for setting this up depends on whether you are using Windows Vista® to configure the router or third party software.

When you first set up the router, Wi-Fi protection is disabled and unconfigured. To enjoy the benefits of Wi-Fi protection, the router must be both enabled and configured. There are three basic methods to accomplish this: use Windows Vista's built-in support for WCN 2.0, use software provided by a third party, or manually configure.

If you are running Windows Vista®, log into the router and click the **Enable** checkbox in the **Advanced > Wi-Fi Protected Setup** window. Use the Current PIN that is displayed in the **PIN Settings** section of **Advanced > Wi-Fi Protected Setup** window or choose to click the **Generate New PIN** button or **Reset PIN to Default** button.



If you are using third party software to set up Wi-Fi Protection, carefully follow the directions. When you are finished, proceed to the next section to set up the newly-configured router.

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.

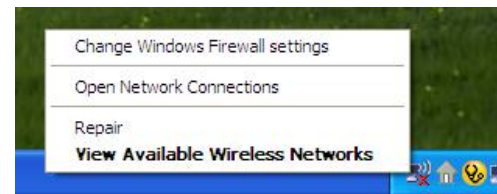
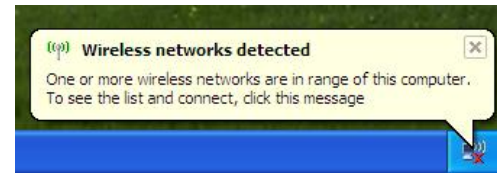
If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

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.

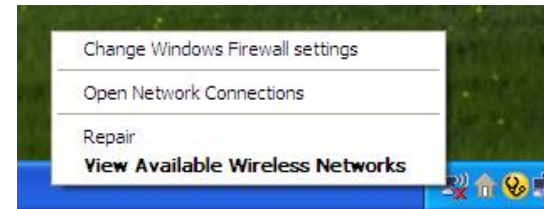
If you get a good signal but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



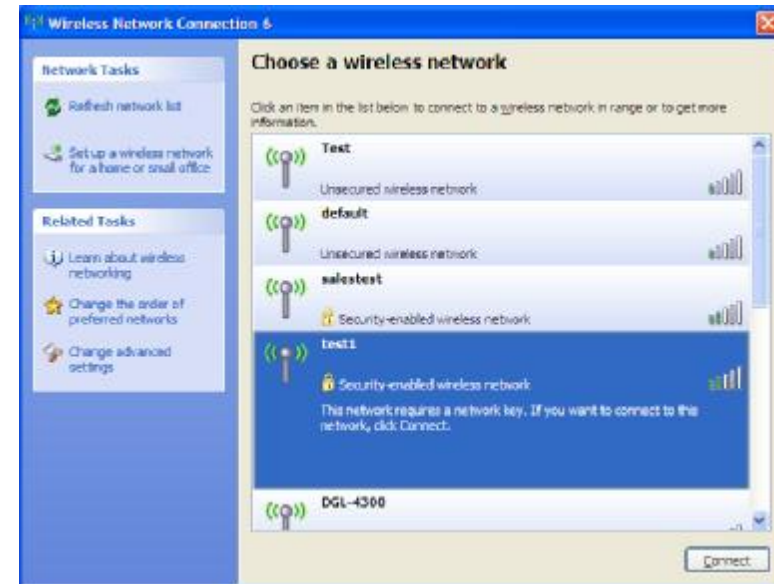
Configure WPA-PSK

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**.

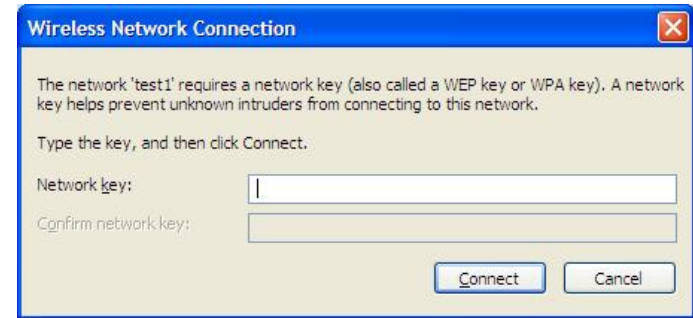


2. Highlight the wireless network (SSID) you would like to connect to and click **Connect**.



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 DWR-117. 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 screen shots 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 D-Link 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 7.0 or higher
 - Opera 8.5 or higher
 - Safari 1.2 or higher (with Java 1.3.1 or higher)
 - Firefox 3.0 or higher
 - Google Chrome 8.0 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 D-Link 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 e-mails when connecting through my router?

If you are having a problem sending or receiving e-mail, 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**

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.

```
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:\>
```

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 **Setup>Internet** and then click **Manual Internet Connection Setup**.
- To change the MTU enter the number in the **MTU** field and click **Save Settings** to save your settings.
- Test your e-mail. If changing the MTU does not resolve the problem, continue changing the MTU in increments of ten.

Wireless Basics

D-Link 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 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.

Why D-Link Wireless?

D-Link is the worldwide leader and award winning designer, developer, and manufacturer of networking products. D-Link delivers the performance you need at a price you can afford. D-Link has all the products you need to build your 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 has become so popular in recent years that almost everyone is using it, whether it's for home, office, business, D-Link has a wireless solution for it.

Home

- Gives everyone at home broadband access
- Surf the web, check e-mail, 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 D-Link 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, such as two or more DWR-117 wireless network Cardbus adapters.

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

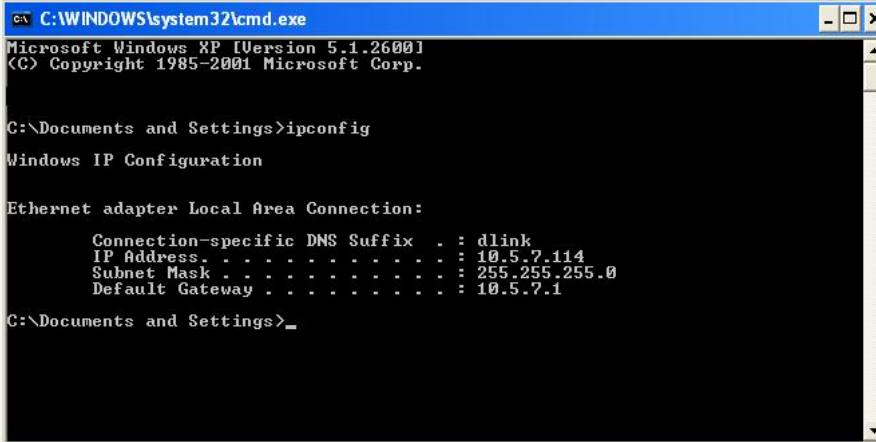
After you install your adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

Click on **Start > Run**. In the run box type **cmd** and click **OK**. (Windows Vista® users type **cmd** in the **Start Search** box.)

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.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix . : dlink
    IP Address . . . . . : 10.5.7.114
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.5.7.1

C:\Documents and 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 Vista® - Click on **Start > Control Panel > Network and Internet > Network and Sharing Center > Manage Network Connections.**

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.



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Federal Communication Commission Interference 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 communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one 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.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The following four 3G cards have passed co-located EMF/RF exposure tests with this device and can be used with this device. Other 3G cards may or may not comply with the FCC rules. Please consult your manufacturer before purchase.

The EUT can be applied with one 3G 1XEV-DO Card and the following three different models can be chosen; therefore emission tests are added for simultaneously transmitting between the wireless LAN and 3G 1XEV-DO function. The emission tests have been performed at the worst channel of both the WLAN and 3G 1XEV-DO, and recorded in the report.

Brand name	Model name	FCC ID	NCC ID
D-Link	DWM-156	KA2WWM156	CCAF103G0240T1
D-Link	DWM-152	KA2WWM152	CCAF093G0230T6
HUAWEI	E180	QISE180	CCAHD083G0160T0

Industry Canada Statement

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:

1) this device may not cause interference and

2) this device must accept any interference, including interference that may cause undesired operation of the device

This device has been designed to operate with an antenna having a maximum gain of **2.91dBi**. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the EIRP is not more than required for successful communication.

IMPORTANT NOTE:

IC Radiation Exposure Statement:

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

Ce dispositif a été conçu pour fonctionner avec une antenne ayant un gain maximal de dB [**2.91**]. Une antenne à gain plus élevé est strictement interdite par les règlements d'Industrie Canada. L'impédance d'antenne requise est de 50 ohms.

NOTE IMPORTANTE: (Pour l'utilisation de dispositifs mobiles)

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

以下警語適用台灣地

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。