



User Manual

AC1750 High Power Wi-Fi Gigabit Router

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
1.00	January 22, 2015	• Initial release

Trademarks

D-Link and the D-Link logo are trademarks or registered trademarks of D-Link Corporation or its subsidiaries in the United States or other countries. All other company or product names mentioned herein are trademarks or registered trademarks of their respective companies.

Apple®, Apple logo®, Safari®, iPhone®, iPad®, iPod touch® and Macintosh® are trademarks of Apple Inc., registered in the U.S. and other countries. App StoreSM is a service mark of Apple Inc. ChromeTM browser, Google PlayTM and AndroidTM are trademarks of Google Inc. Internet Explorer®, Windows® and the Windows logo are trademarks of the Microsoft group of companies.

Copyright © 2015 by D-Link Corporation, Inc. All rights reserved. This publication may not be reproduced, in whole or in part, without prior expressed written permission from D-Link Corporation, Inc.

Table of Contents

Product Overview	1	Internet.....	50
Package Contents.....	1	Wireless	53
System Requirements	2	Guest Zone	55
Introduction	3	Network.....	56
Features.....	4	Advanced	58
Hardware Overview.....	5	QoS Engine.....	58
Connections	5	Firewall Settings.....	59
LEDs	6	IPv4/IPv6 Rules	61
Installation	7	Port Forwarding	62
Before you Begin.....	7	Website Filter.....	63
Wireless Installation Considerations.....	8	Static Routes.....	64
Wall Mounting	9	IPv6	65
Manual Setup.....	10	Dynamic DNS	66
Getting Started	12	IPv6 Host	67
Setup Wizard	13	Management.....	68
QRS Mobile App.....	17	Time & Schedule	68
Configuration	22	Time	68
Home	23	Schedule	69
Internet.....	23	System Log.....	70
DIR-859	24	Admin	71
Connected Clients	25	System	72
Settings	26	Upgrade	73
Wizard	26	Statistics	74
Internet.....	26	Connect a Wireless Client to your Router	75
IPv6	35	WPS Button.....	75
		Windows® 8.....	76

WPA/WPA2	76
Windows® 7.....	78
WPA/WPA2	78
WPS.....	81
Windows Vista®	85
WPA/WPA2	86
Windows® XP.....	88
WPA/WPA2	89
Troubleshooting	91
Wireless Basics	95
What is Wireless?.....	96
Tips.....	98
Wireless Modes.....	99
Networking Basics	100
Check your IP address.....	100
Statically Assign an IP address	101
Wireless Security	102
What is WPA?	102
Technical Specifications	103
Regulatory Information	104

Package Contents



DIR-859 AC1750 High Power Wi-Fi Gigabit Router



Ethernet Cable



Power Adapter



Wi-Fi Configuration Note

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

Note: *Using a power supply with a different voltage rating than the one included with the DIR-859 will cause damage and void the warranty for this product.*

System Requirements

Network Requirements	<ul style="list-style-type: none">• An Ethernet-based cable or DSL modem• 802.11ac, n, g, b, or a wireless or Ethernet port
Web-based Configuration Utility Requirements	<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® 9 or higher• Firefox® 20 or higher• Safari 5.1 or higher• Chrome™ 25 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>

Introduction

The D-Link DIR-859 AC1750 High Power Wi-Fi Gigabit Router uses advanced AC technology to maximize the speed and range of your wireless signal to significantly outperform 802.11n and other 802.11ac devices. It also comes equipped with four Gigabit ports to provide speeds up to 10x faster than standard 10/100 ports. With the addition of advanced Quality of Service (QoS), data streams are separated, which helps organize and prioritize your network traffic so your video streaming, gaming, and VoIP calls run smoother over both your wired and wireless network.

The DIR-859 supports convenient set up options including QRS Mobile, which allows you to setup and configure the router using a mobile app. You can set up your router right from your sofa, no PC required. Add in an easy-to-use web interface and configuring your network is a quick and simple affair.

The DIR-859 AC1750 High Power Wi-Fi Gigabit Router provides incredible speeds, Gigabit ports, mobile setup, and terrific security features. To top it all off, the router has a stylish and innovative design and easy installation options.

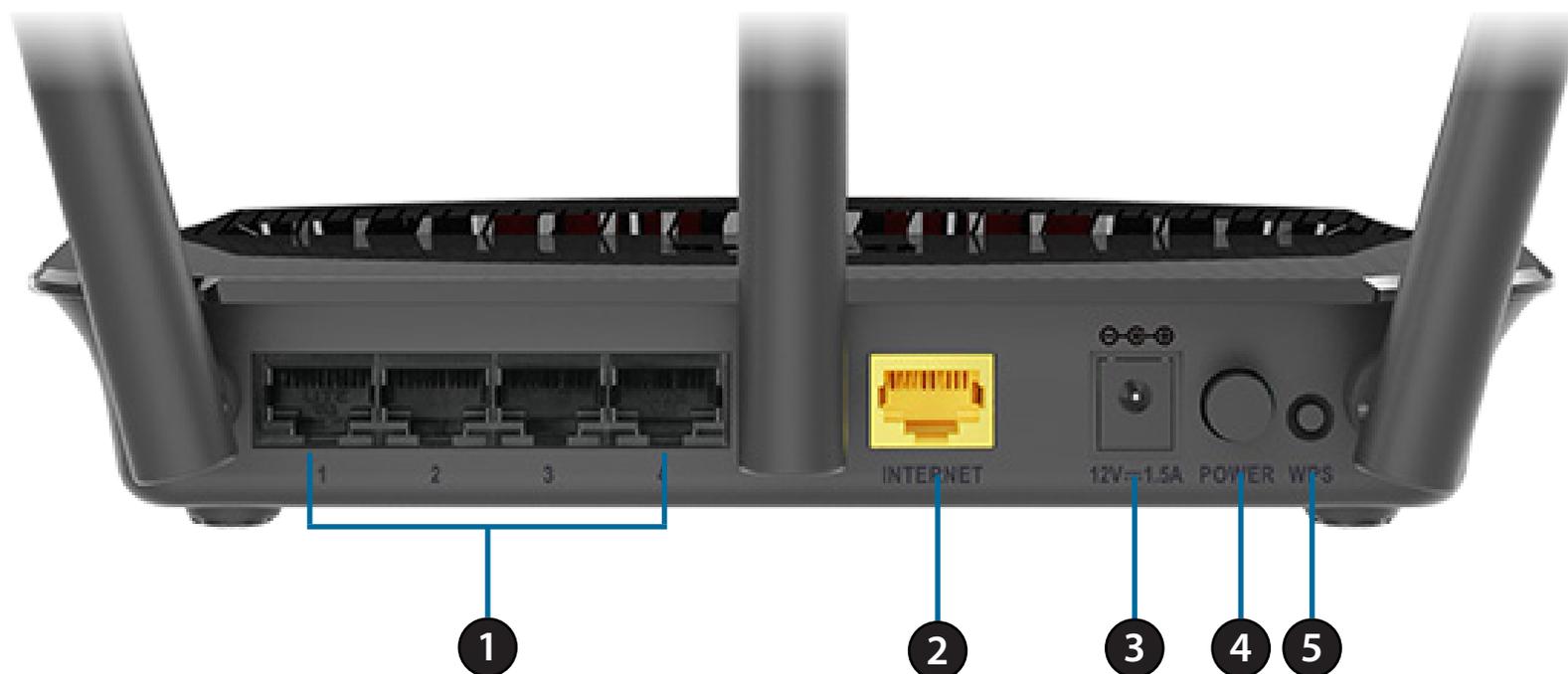
Features

- **Faster Wireless Networking** - The DIR-859 uses advanced AC to provide up to a full 1750 Mbps* wireless connection with concurrent 801.11ac and 802.11n wireless clients . It also operates on both the 2.4 GHz and 5 GHz bands to allow separation of traffic so users can participate in high-bandwidth activities, such as video streaming, online gaming, and real-time audio, without affecting low-priority traffic like email and web surfing.
- **Set Up On Your Mobile** - The DIR-859 supports the QRS Mobile app to let you set up the router using a mobile device.
- **Compatible with 802.11n/g/b/a Devices** - The DIR-859 is still fully compatible with the 802.11n, IEEE 802.11g and 802.11a standards, so it can connect with existing 802.11n, 802.11g, 802.11b, and 802.11a wireless devices.
- **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 DIR-859 can pass through VPN sessions. It supports multiple and concurrent IPsec and PPTP sessions, so users behind the DIR-859 can securely access corporate networks.
- **User-friendly Setup Wizard** - Through its easy-to-use web-based user interface, the DIR-859 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 802.11a, 802.11b, 802.11g, and 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

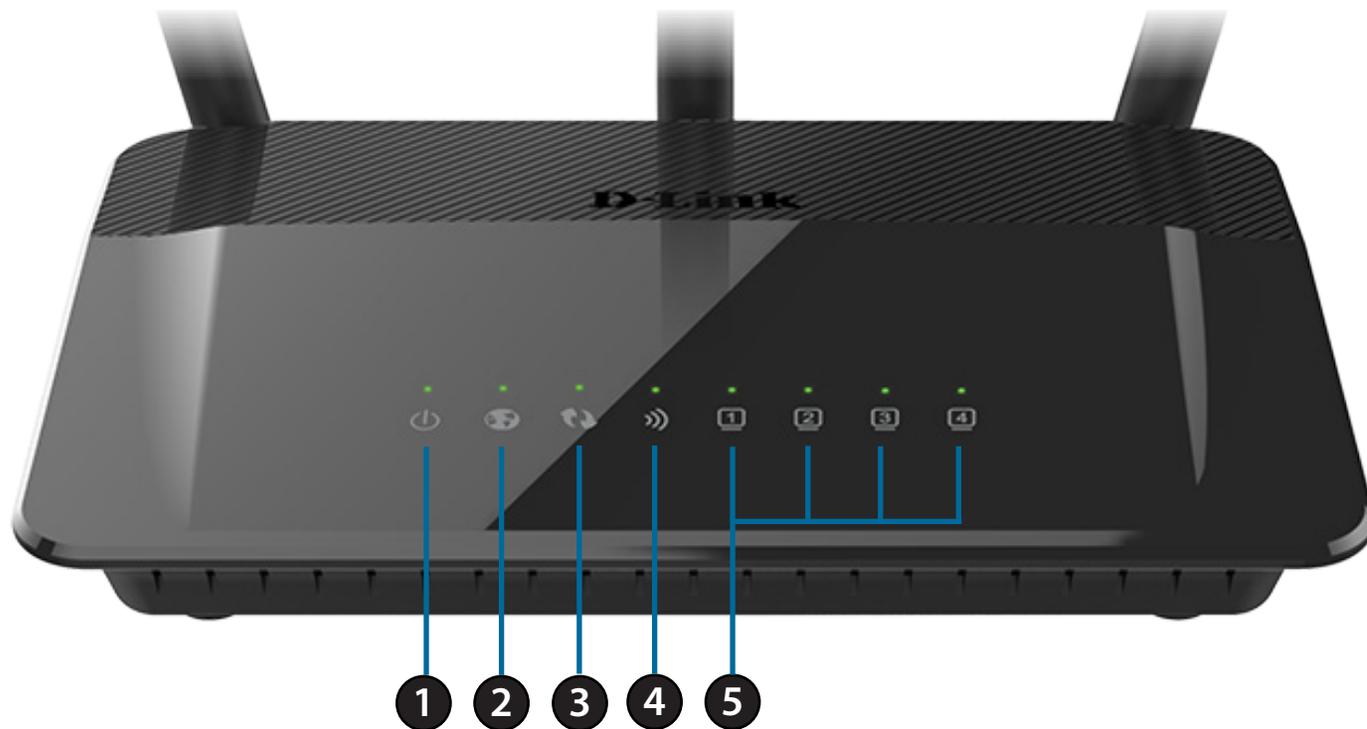
Connections



1	LAN Ports (1-4)	Connect Ethernet devices such as computers, switches, storage (NAS) devices and game consoles.
2	Internet Port	Using an Ethernet cable, connect your broadband modem to this port.
3	Power Receptor	Receptor for the supplied power adapter.
4	Power Button	Press the button to power on the device.
5	WPS Button	Press this button to initiate WPS with supported client devices.

Hardware Overview

LEDs



1	Power LED	A solid blue light indicates a proper connection to the power supply. The light will be a solid orange during boot up.
2	Internet LED	A solid light indicates connection on the Internet port. If the LED is orange, the connection is good but the router cannot connect to the Internet.
3	WPS LED	A solid light indicates that the WPS handshake has been completed. The light will blink while the WPS handshake is processing.
4	WLAN LED	A solid light indicates that the wireless segment is ready. The light will blink while data is being transmitted.
5	Ethernet LEDs 1-4	A solid light indicates a connection to an Ethernet-enabled computer on ports 1-4 respectively. The light will blink while data is being transmitted.

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 Internet 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 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 (0.5 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 2.4 GHz 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 2.4 GHz 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.

Wall Mounting

You can mount the DIR-859 on a wall or partition for ease and convenience.

To wall mount your device:

Step 1

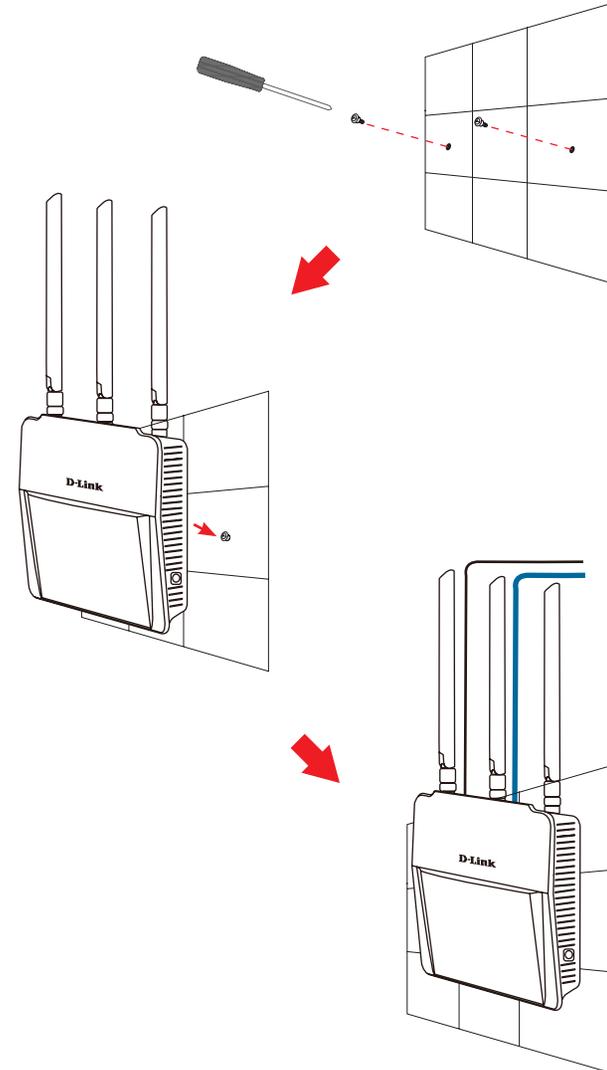
Screw the provided screws to the wall to which the router will be mounted.

Step 2

Place the mounting holes on the bottom of the device over the screws, and slide the device into place.

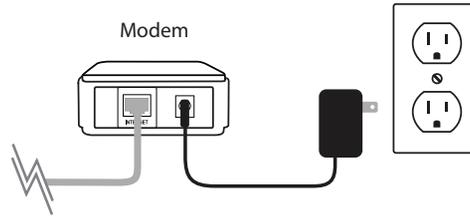
Step 3

Finally, connect the required cables to the device as outlined on page 10.



Manual Setup

1. Turn off and unplug your cable or DSL broadband modem. This is required.



2. Position your router close to your modem and a computer. Place the router in an open area of your intended work area for better wireless coverage.
3. Unplug the Ethernet cable from your modem (or existing router if upgrading) that is connected to your computer. Plug it into the LAN port labeled **1** on the back of your router. The router is now connected to your computer.



4. Plug one end of the included Ethernet cable that came with your router into the yellow port labeled INTERNET on the back of the router. Plug the other end of this cable into the Ethernet port on your modem.



5. Reconnect the power adapter to your cable or DSL broadband modem and wait for two minutes.
6. Connect the supplied power adapter into the power receptor on the back of the router and then plug it into a power outlet or surge protector. Press the power button and verify that the power LED is lit. Allow 1 minute for the router to boot up.



7. If you are connecting to a broadband service, you may be online already and further configuration will be optional.

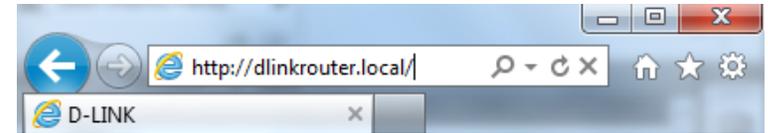
Getting Started

There are several different ways you can configure your router to connect to the Internet and connect to your clients:

- **D-Link Setup Wizard** - This wizard will launch when you log into the router for the first time. Refer to page 13.
- **QRS Mobile App** - Use your iPhone, iPad, or iPod touch to configure your router. Refer to page 17.
- **Manual Setup** - Log into the router and manually configure your router. Refer to page 22.

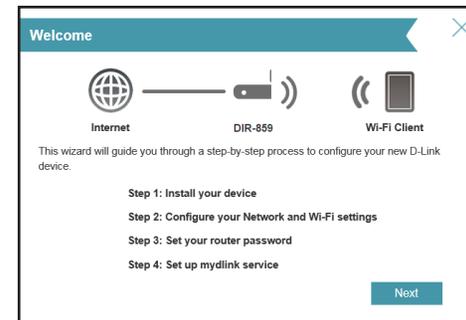
Setup Wizard

If this is your first time installing the router, open your web browser and enter **http://dlinkrouter.local/** in the address bar. Alternatively, enter the IP address of the router (default: **http://192.168.0.1**). Please refer to page 22.

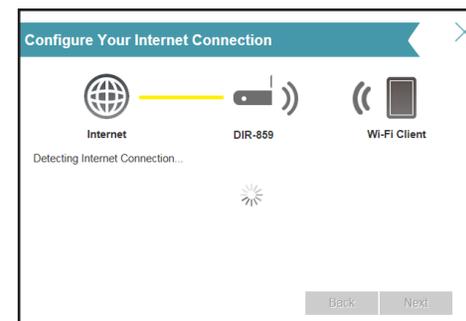


The wizard is designed to guide you through a step-by-step process to configure your new D-Link router and connect to the Internet.

Click **Next** to continue.

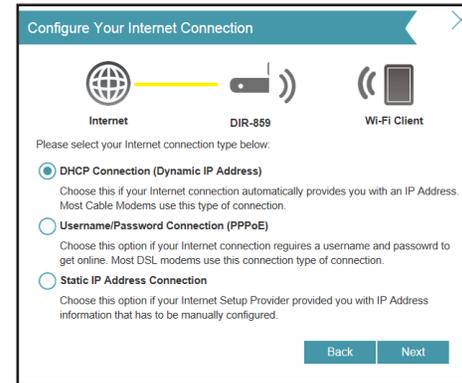


Please wait while your router detects your Internet connection type. If the router detects your Internet connection, you may need to enter your ISP information such as username and password.



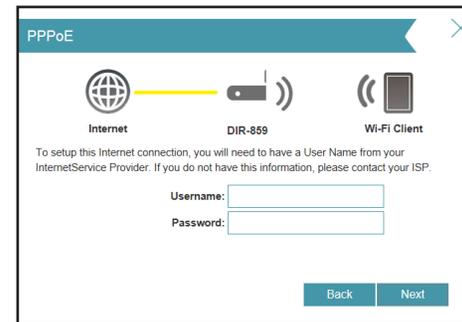
If the router does not detect a valid Internet connection, a list of connection types to choose from will be displayed.

Select your Internet connection type (this information can be obtained from your Internet service provider) and click **Next** to continue.

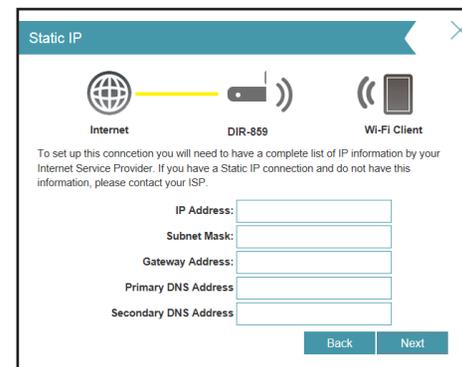


If the router detected or you selected **PPPoE**, enter your PPPoE username and password and click **Next** to continue.

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



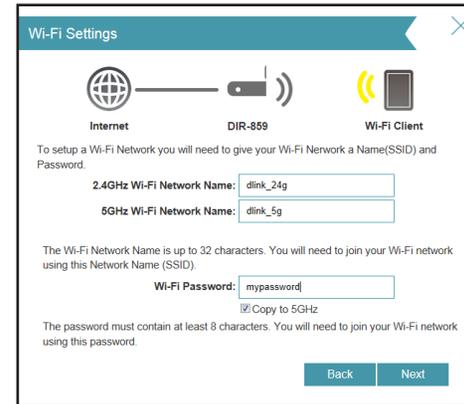
If the router detected or you selected **Static**, enter the IP and DNS settings supplied by your ISP. Click **Next** to continue.



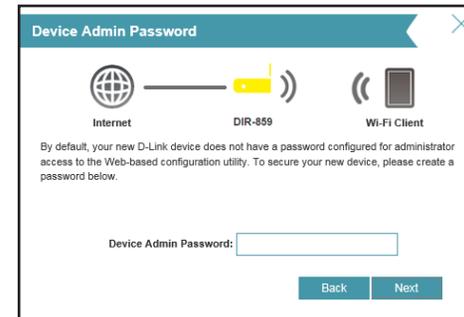
For both the 2.4 GHz and 5 GHz segments, create a Wi-Fi network name (SSID) using up to 32 characters.

Create a Wi-Fi password (between 8-63 characters). Your wireless clients will need to have this passphrase or key entered to be able to connect to your wireless network.

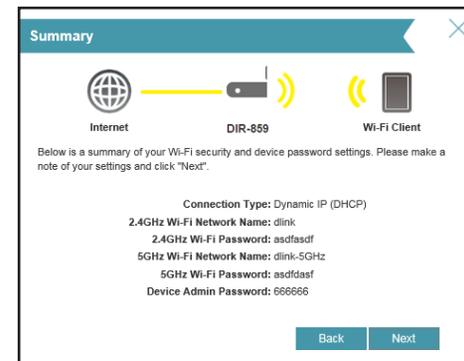
Click **Next** to continue.



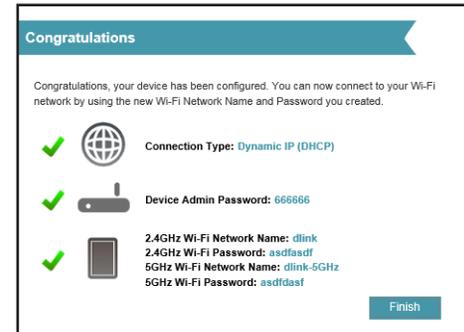
In order to secure the router, please enter a new password. You will be prompted for this password every time you want to use the router's web configuration utility. Click **Next** to continue.



The Summary window will display your settings. Click **Next** if you are satisfied, or click **Back** to make changes to them.



At the end of the wizard, you will be presented with a final summary of your settings. Click **Finish** to close the wizard.



QRS Mobile App

QRS Mobile app allows you to install and configure your router from your mobile device.

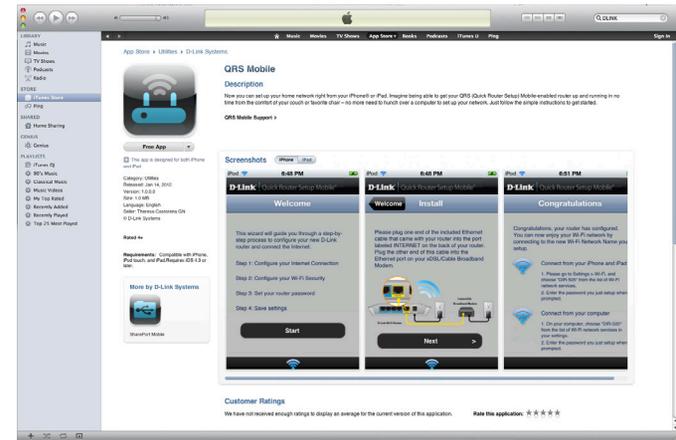
Step 1

Search for the free **QRS Mobile** App on the iTunes Store or Google Play.

For the iTunes Store, you may also scan this code to download.



For Google Play, you may also scan this code to download.



Step 2

Once your app is installed, you may now configure your router. Connect to the router wirelessly by going to your wireless utility on your device. Scan for the Wi-Fi name (SSID) as listed on the supplied info card. Select and then enter your Wi-Fi password.

D-Link DIR-836L Router Wi-Fi Configuration Note

Web browser link: http://dlinkrouter or http://192.168.0.1	Web browser link: http://dlinkrouter or http://192.168.0.1
Default configuration Username: "Admin" Password: "" (leave the field blank)	Your configuration Username: Admin Password:
Wi-Fi Name (SSID): dlink-a8fa	Wi-Fi Name (SSID):
Wi-Fi Password: akbdj19368	Wi-Fi Password:

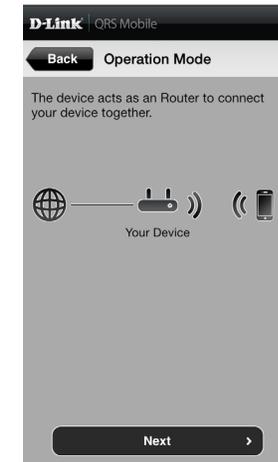
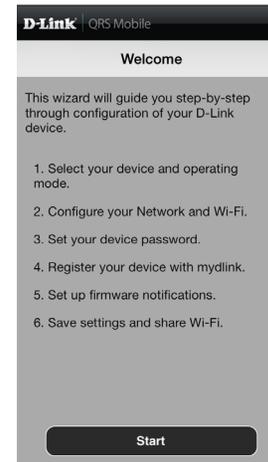
Step 3

Once you connect to the router, launch the QRS Mobile app from the Home screen of your device.



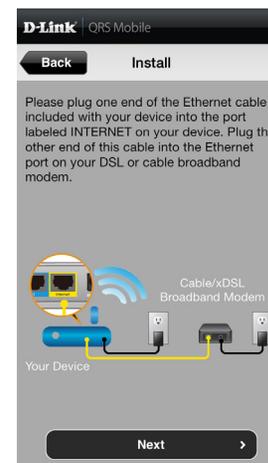
Step 4

You will see the welcome screen. Tap **Start** to proceed, then **Next** once the Operation Mode screen appears.



Step 5

At this point, please ensure that you the router is connected to a modem. Plug one end of the provided Ethernet cable into your DSL or cable modem, and plug the other end into the port marked INTERNET on the DIR-859. Tap **Next** to automatically detect your Internet connection and proceed to the next step.



Step 6

You will be prompted to set up each wireless frequency band in turn; the 2.4 GHz band followed by the 5 GHz band.

Firstly, enter a network name (SSID) of your choice, or leave it unchanged to accept the default SSID. Each wireless band can be assigned its own SSID.

Secondly, choose a Wi-Fi password of at least 8 characters. Any device trying to connect to the router wirelessly will need to enter this password the first time it connects.

Finally, tap **Next** to proceed.

Step 7

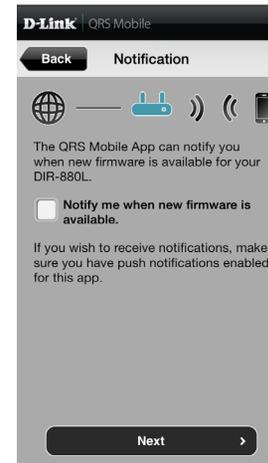
Enter the administrator password of your choice. Unlike the Wi-Fi password, this password is only required when you need to configure the router. See page 22 for details of when this password is used. Tap **Next** to proceed.



Step 8

If you wish to receive push notifications whenever a new firmware update is available, check the **Notify me when new firmware is available** box and tap **Next**.

Otherwise, just tap **Next** to proceed.

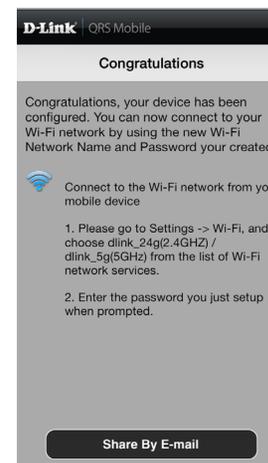
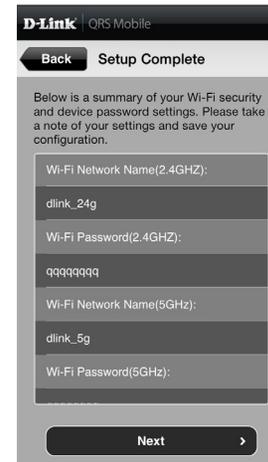


Step 10

You will be presented with a summary of your chosen settings. If you wish to make any changes, tap **Back** to step back through the previous pages.

Otherwise, tap **Next** to complete the setup.

Congratulations, your device has been successfully configured! You may now exit the QRS app.



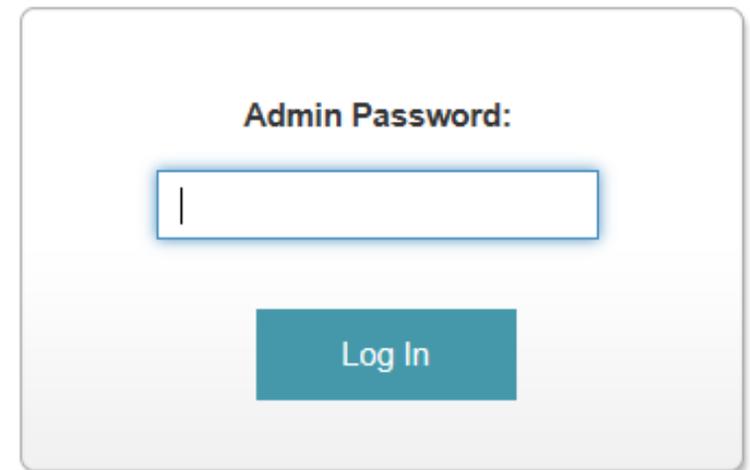
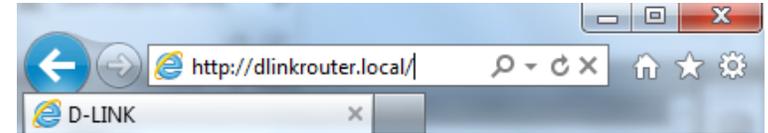
Configuration

To access the configuration utility, open a web-browser such as Internet Explorer and enter **http://dlinkrouter.local**.

Windows and Mac users may also connect by typing the IP address of the router (by default this is **http://192.168.0.1**) in the address bar.

Enter your password. If you previously followed the setup wizard (see page 13), please use the admin password you entered during the wizard. Otherwise, leave the password blank. Click **Log In** to proceed.

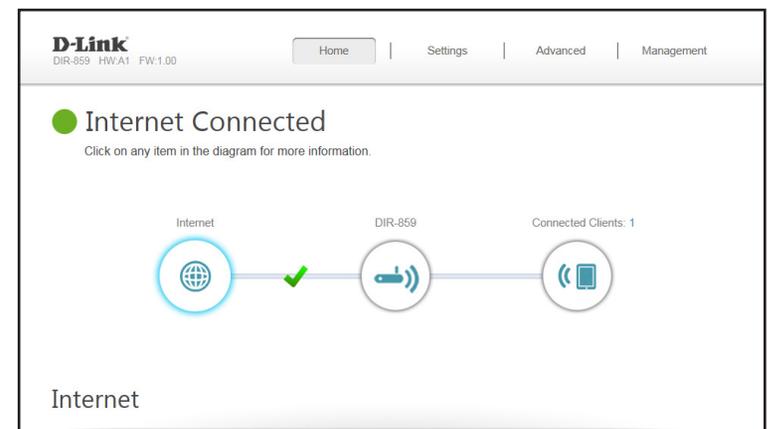
Note: If you cannot remember your password and cannot log in, press the reset button (see "Troubleshooting" on page 91) to restore the router to its default settings.



The router's home page will open displaying its current connection status.

The bar at the top of the page has quick access to Settings and Management functions. You may quickly jump back Home at any time.

Note: The system will automatically log out after a period of inactivity.



Home

The Home page displays the current status of the router in the form of an interactive diagram. You can click each icon to display information about each part of the network at the bottom of the screen. The menu bar at the top of the page will allow you to quickly navigate to other pages.

Internet

The Home page displays whether or not the router is currently connected to the Internet. If it is disconnected, click **Click to repair** to bring up the setup wizard (see page 13).

To bring up more details about your Internet connection, click on the **Internet** icon. Click **IPv4** or **IPv6** to see details of the IPv4 connection and IPv6 connection respectively.

Click **Release** to disconnect from the Internet. If you do this and wish to reconnect, click **Renew**.

To reconfigure the Internet settings, refer to page 26.



D-Link
DIR-859 HW:A1 FW:1.00

Home | Settings | Advanced | Management

Internet Connected
Click on any item in the diagram for more information.

Internet DIR-859 Connected Clients: 1

Internet

		IPv4 / IPv6	
Cable Status:	Connected	MAC Address:	00:11:22:33:44:52
Connection Type:	Dynamic IP (DHCP)	IP Address:	172.17.5.138
Network Status:	Connected	Subnet Mask:	255.255.255.0
Connection Uptime:	2 Day 2 Hour 31 Min 42 Sec	Default Gateway:	172.17.5.254
		Primary DNS Server:	192.168.168.249
		Secondary DNS Server:	192.168.168.201

Release IP Address

Go to settings

DIR-859

Click on the **DIR-859** icon to view details about the router and its wireless settings.

Here you can see the router's current wireless settings, as well as its MAC address and IPv4/IPv6 addresses.

To reconfigure the network settings, either click **Go to settings** on the lower left, or click **Settings** (at the top of the page) and then **Network** on the menu that appears. Refer to page 56.

To reconfigure the wireless settings, either click **Go to settings**, on the lower right, or click **Settings** (at the top of the page) and then **Wireless** on the menu that appears. Refer to page 53.

The screenshot displays the D-Link DIR-859 web interface. At the top, the navigation bar includes 'Home', 'Settings', 'Advanced', and 'Management'. The main content area features a green status indicator for 'Internet Connected' with a sub-note: 'Click on any item in the diagram for more information.' Below this is a network diagram showing 'Internet' connected to 'DIR-859', which is in turn connected to 'Connected Clients: 1'. The 'DIR-859' section provides detailed network and wireless settings:

Network Type	Status	Wi-Fi Name (SSID)	Password
IPv4 Network	Enabled	clink	asdfsdf
IPv6 Network	Enabled	clink-5GHz	asdfsdf

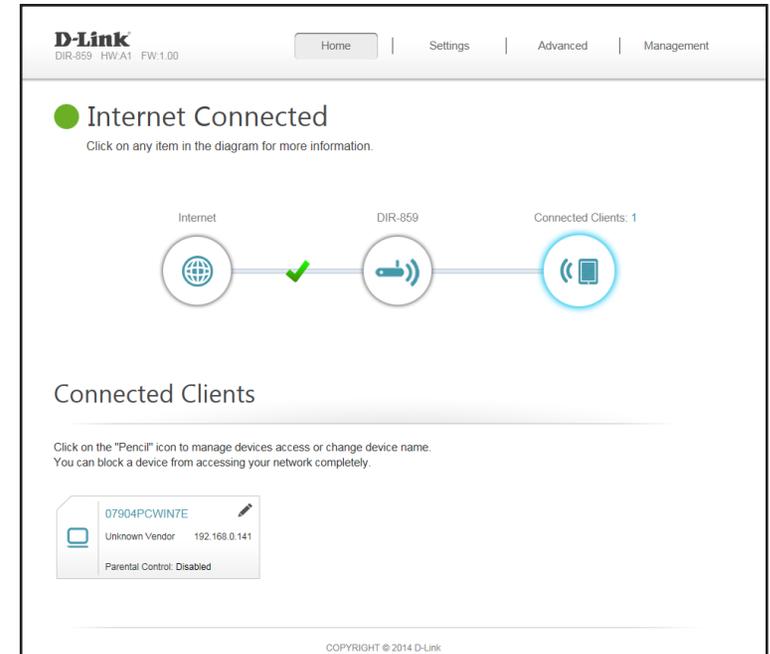
Additional network details for IPv4 and IPv6 are listed below their respective status indicators. 'Go to settings' links are provided for both network types.

Connected Clients

Click on the **Connected Clients** icon to view details about the router and its wireless settings.

On this page you can see all the clients currently connected to the router, and their IP addresses.

To edit each client's settings, click the pencil icon on the client you want to edit.



Name: Enter a custom name for this client.

Vendor: Displays the vendor of the device.

IP Address: Enter a specific IP address for this client.

Reserve IP: Enable to reserve this IP address for this client.

Parental Control: Enable or disable parental control.

Click **Save** when you are done.

Settings Wizard

In the Settings menu on the bar on the top of the page, click **Wizard** to open the setup wizard. This is the same wizard that appears when you start the router for the first time. Refer to page 13 for details.

Internet

In the Settings menu on the bar on the top of the page, click **Internet** to see the Internet configuration options.

My Internet Connection Is: Choose your Internet connection type from the drop-down menu. You will be presented with the appropriate options for your connection type. Click **Advanced Settings...** to expand the list and see all of the options.

For **Dynamic IP (DHCP)** refer to page 27.

For **Static IP** refer to page 28.

For **PPPoE** refer to page 29.

For **PPTP** refer to page 30.

For **L2TP** refer to page 32.

For **DS-Lite** refer to page 34.

To configure an IPv6 connection, click the **IPv6** link. Refer to page 35.

Dynamic IP (DCHP)

Select **Dynamic IP (DHCP)** to obtain IP address information automatically from your Internet Service Provider (ISP). Select this option if your ISP does not give you an IP address to use.

Host Name: The host name is optional but may be required by some ISPs. Leave it blank if you are not sure.

Primary DNS Server: Enter the primary DNS server IP address assigned by your ISP. This address is usually obtained automatically from your ISP.

Secondary DNS Server: Enter the secondary DNS server IP address assigned by your ISP. This address is usually obtained automatically from your ISP.

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

MAC Address Clone: The default MAC address is set to the Internet port's physical interface MAC address on the router. You can use the drop-down menu to replace the Internet port's MAC address with the MAC address of a connected client.

Click **Save** when you are done.

The screenshot displays the D-Link router's web interface for configuring the Internet connection. At the top, the D-Link logo and model number (DIR-859) are visible. The navigation menu includes 'Home', 'Settings', 'Advanced', and 'Management'. The main heading is 'Internet', with a sub-heading 'Settings >> Internet'. The 'My Internet Connection is:' dropdown menu is set to 'Dynamic IP (DHCP)'. Below this, there are input fields for 'Host Name' (containing 'dlinkrouter'), 'Primary DNS Server', and 'Secondary DNS Server'. The 'MTU' dropdown menu is set to 'Auto'. The 'Mac Address Clone' field contains the address '00:11:22:33:44:52' and has a dropdown menu labeled '<< MAC Address'. A 'Save' button is located at the top right of the settings area. The footer of the page reads 'COPYRIGHT © 2014 D-Link'.

Static IP

Select **Static IP** if your IP information is provided by your Internet service provider (ISP).

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

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

Default Gateway: Enter the default gateway address provided by your ISP.

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

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

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

MAC Address Clone: The default MAC address is set to the Internet port's physical interface MAC address on the router. You can use drop-down menu to replace the Internet port's MAC address with the MAC address of a connected client.

Click **Save** when you are done.

The screenshot shows the D-Link router's web interface for configuring the Internet connection. The page title is "Internet" and it includes a navigation bar with "Home", "Settings", "Advanced", and "Management". A globe icon is next to the title. Below the title, there is a brief instruction: "Use this section to configure your Internet Connection type. There are several connection types to choose from Static IP, DHCP, PPPoE, PPTP, L2TP and DS-Lite. 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." The "Settings >> Internet" breadcrumb is visible. There are two buttons: "IPv6" and "Save". The "My Internet Connection is:" dropdown menu is set to "Static IP". Below this, there are input fields for "IP Address:", "Subnet Mask:", "Default Gateway:", and "Primary DNS Server:". There is also a "Secondary DNS Server:" field. The "MTU:" dropdown menu is set to "Auto". The "Mac Address Clone:" field contains the value "00:11:22:33:44:52" and a dropdown menu is set to "<< MAC Address". An "Advanced Settings..." link is located to the right of the "Primary DNS Server:" field. The footer of the page reads "COPYRIGHT © 2014 D-Link".

PPPoE

Select **PPPoE** if your Internet connection requires you to enter a username and password. This information is provided by your Internet service provider (ISP).

Username: Enter the username provided by your ISP.

Password: Enter the password provided by your ISP.

Reconnect Mode: Select either **Always-on**, **On-Demand**, or **Manual**.

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

Address Mode: Select **Static IP** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses. In most cases, select **Dynamic IP**.

IP Address: Enter the IP address provided by your ISP (Static IP only).

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

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

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

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

Click **Save** when you are done.

The screenshot shows the D-Link web interface for the DIR-859 router. The page is titled "Internet" and includes a navigation menu with "Home", "Settings", "Advanced", and "Management". The "Settings" menu is active. The main content area is for configuring the Internet connection. It features a "My Internet Connection is:" dropdown menu set to "PPPoE". Below this are input fields for "Username:" and "Password:". The "Reconnect Mode:" dropdown is set to "On demand". The "Maximum Idle Time:" is set to "5" minutes. There is a link for "Advanced Settings...". The "Address Mode:" dropdown is set to "Dynamic IP". Below this are input fields for "Service Name:", "Primary DNS Server:", and "Secondary DNS Server:". The "MTU:" dropdown is set to "Auto". A "Save" button is located in the top right corner of the configuration area. The footer of the page reads "COPYRIGHT © 2014 D-Link".

PPTP

Choose **PPTP** (Point-to-Point-Tunneling Protocol) if your Internet Service Provider (ISP) uses a PPTP connection. Your ISP will provide you with a username and password.

PPTP Server IP Address: Enter the PPTP server IP address provided by your ISP.

Username: Enter the username provided by your ISP.

Password: Enter the password provided by your ISP.

Reconnect Mode: Select either **Always-on**, **On-Demand**, or **Manual**.

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

Address Mode: Select **Static IP** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses. In most cases, select **Dynamic IP**.

PPTP IP Address: Enter the IP address provided by your ISP (Static IP only).

PPTP Subnet Mask: Enter the subnet mask provided by your ISP (Static IP only).

PPTP Gateway IP Address: Enter the gateway IP address provided by your ISP (Static IP only).

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

The screenshot displays the D-Link web interface for configuring Internet settings. The page title is "Internet". The navigation bar includes "Home", "Settings", "Advanced", and "Management". The main content area shows the "My Internet Connection is:" dropdown menu set to "PPTP". Below this, there are input fields for "PPTP Server IP Address", "Username", and "Password". The "Reconnect Mode" dropdown menu is set to "On demand", and the "Maximum Idle Time" is set to "5 minutes". At the bottom, the "Address Mode" dropdown menu is set to "Dynamic IP", with input fields for "Primary DNS Server" and "Secondary DNS Server", and an "MTU" dropdown menu set to "Auto". A "Save" button is located in the top right corner of the settings area.

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

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

Click **Save** when you are done.

The screenshot displays the 'Internet' configuration page in the D-Link web interface. At the top, there is a navigation bar with 'Home', 'Settings', 'Advanced', and 'Management' tabs. The main heading is 'Internet', accompanied by a globe icon and a descriptive paragraph. Below this, a breadcrumb trail reads 'Settings >> Internet'. A 'Save' button is located in the top right corner. The configuration is divided into two sections. The first section, for PPTP, includes a dropdown for 'My Internet Connection is:' set to 'PPTP', input fields for 'PPTP Server IP Address:', 'Username:', and 'Password:', a dropdown for 'Reconnect Mode:' set to 'On demand', and an input field for 'Maximum Idle Time:' set to '5' minutes. The second section, for Dynamic IP, includes a dropdown for 'Address Mode:' set to 'Dynamic IP', input fields for 'Primary DNS Server:' and 'Secondary DNS Server:', and a dropdown for 'MTU:' set to 'Auto'. An 'Advanced Settings...' link is positioned between the two sections. The footer contains the copyright notice 'COPYRIGHT © 2014 D-Link'.

L2TP

Choose **L2TP** (Layer 2 Tunneling Protocol) if your Internet Service Provider (ISP) uses a L2TP connection. Your ISP will provide you with a username and password.

L2TP Server IP Address: Enter the L2TP server IP address provided by your ISP.

Username: Enter the username provided by your ISP.

Password: Enter the password provided by your ISP.

Reconnect Mode: Select either **Always-on**, **On-Demand**, or **Manual**.

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

Address Mode: Select **Static IP** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses. In most cases, select **Dynamic IP**.

L2TP IP Address: Enter the IP address provided by your ISP (Static IP only).

L2TP Subnet Mask: Enter the subnet mask provided by your ISP (Static IP only).

L2TP Gateway IP Address: Enter the gateway IP address provided by your ISP (Static IP only).

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

The screenshot displays the D-Link web interface for configuring the Internet connection. The page title is "Internet". The navigation bar includes "Home", "Settings", "Advanced", and "Management". The main content area shows the "My Internet Connection is:" dropdown menu set to "L2TP". Below this are input fields for "L2TP Server IP Address", "Username", and "Password". The "Reconnect Mode:" dropdown menu is set to "On demand", and the "Maximum Idle Time:" is set to "5 minutes". At the bottom, the "Address Mode:" dropdown menu is set to "Dynamic IP", with fields for "Primary DNS Server", "Secondary DNS Server", and "MTU" set to "Auto". A "Save" button is visible in the top right corner.

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

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

Click **Save** when you are done.

D-Link
DIR-859 HWA1 FW:1.00

Home | Settings | Advanced | Management

Internet

Use this section to configure your Internet Connection type. There are several connection types to choose from Static IP, DHCP, PPPoE, PPTP, L2TP and DS-Lite. 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.

Settings >> Internet IPv6 **Save**

My Internet Connection is:

L2TP Server IP Address:

Username:

Password:

Reconnect Mode:

Maximum Idle Time: minutes

[Advanced Settings...](#)

Address Mode:

Primary DNS Server:

Secondary DNS Server:

MTU:

COPYRIGHT © 2014 D-Link

DS-Lite

DS-Lite is an IPv6 connection type. After selecting DS-Lite, the following parameters will be available for configuration:

DS-Lite Configuration: Select **DS-Lite DHCPv6** to let the router allocate the AFTR IPv6 address automatically. Select **Manual Configuration** to enter the AFTR IPv6 address manually.

AFTR IPv6 Address: If you selected Manual Configuration above, enter the AFTR IPv6 address used here.

B4 IPv4 Address: Enter the B4 IPv4 address value used here.

WAN IPv6 Address: Once connected, the WAN IPv6 address will be displayed here.

IPv6 WAN Default Gateway: Once connected, the IPv6 WAN default gateway address will be displayed here.

Click **Save** when you are done.

The screenshot shows the D-Link router's web interface for configuring the Internet connection. The page title is "Internet" and it includes a navigation menu with "Home", "Settings", "Advanced", and "Management". The "Settings" menu is active, and the "IPv6" tab is selected. The "Save" button is visible in the top right corner. The main configuration area shows "My Internet Connection is:" set to "DS-Lite". Below this, "DS-Lite Configuration:" is set to "DS-Lite DHCPv6 Option". The "B4 IPv4 Address:" is set to "192.0.0.". The "WAN IPv6 Address:" and "IPv6 WAN Default Gateway:" are both set to "Not Available". A "Copyright © 2014 D-Link" notice is at the bottom.

IPv6

To configure an IPv6 connection, click the **IPv6** link. To return to the IPv4 settings, click **IPv4**.

My Internet Connection Is: Choose your IPv6 connection type from the drop-down menu. You will be presented with the appropriate options for your connection type. Click **Advanced Settings...** to expand the list and see all of the options.

For **Auto Detection** refer to page 36.

For **Static IPv6** refer to page 38.

For **Auto Configuration (SLAAC/DHCPv6)** refer to page 40.

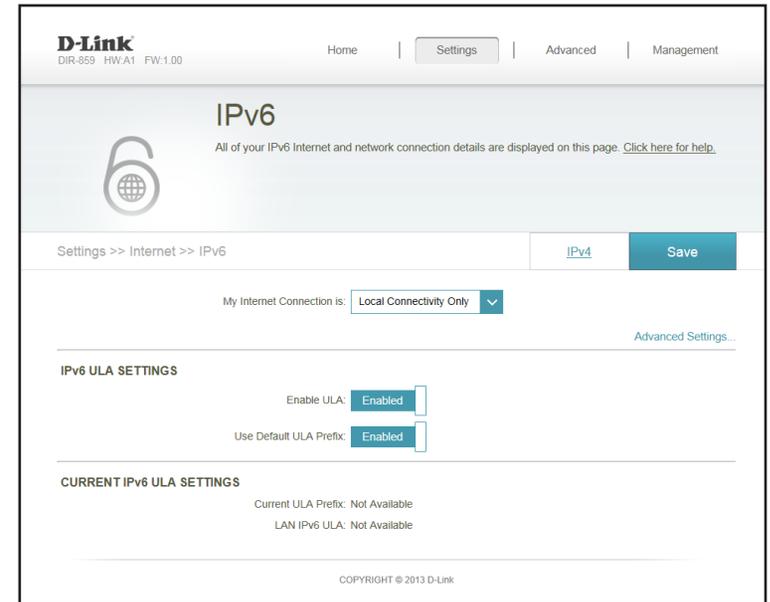
For **PPPoE** refer to page 42.

For **IPv6 in IPv4 Tunnel** refer to page 44.

For **6 to 4** refer to page 46.

For **6rd** refer to page 47.

For **Local Connectivity Only** refer to page 49.



Auto Detection

This is a connection method where the ISP assigns your IPv6 address when your router requests one from the ISP's server. Some ISPs require you to make some settings on your side before your router can connect to the IPv6 Internet.

DNS Type: Select either **Obtain DNS server address automatically** or **Use the following DNS address**.

Primary DNS Server: If you selected **Use the following DNS address** above, enter the primary DNS server address.

Secondary DNS Server: If you selected **Use the following DNS address** above, enter the secondary DNS server address.

Enable DHCP-PD: Enable or disable prefix delegation services.

LAN IPv6 Address: If you disabled DHCP-PD, enter the LAN (local) IPv6 address for the router.

LAN IPv6 Link-Local Address: Displays the router's LAN link-local address.

Enable Automatic IPv6 Address Assignment: Enable or disable the Automatic IPv6 Address Assignment feature.

Enable Automatic DHCP-PD in LAN: Enable or disable automatic DHCP-PD services.

The screenshot shows the D-Link IPv6 configuration interface. At the top, there are navigation links for Home, Settings, Advanced, and Management. The main heading is "IPv6" with a sub-note: "All of your IPv6 Internet and network connection details are displayed on this page. [Click here for help.](#)" Below this, there is a breadcrumb trail: "Settings >> Internet >> IPv6" and a "Save" button. The "My Internet Connection is:" dropdown is set to "Auto Detection". Under "IPv6 DNS SETTINGS", the "DNS Type:" dropdown is set to "Use the following DNS", with empty input fields for "Primary DNS Server:" and "Secondary DNS Server:". Under "LAN IPv6 ADDRESS SETTINGS", the "Enable DHCP-PD:" toggle is set to "Enabled", and the "LAN IPv6 Link-Local Address:" is "Not Available". Under "ADDRESS AUTOCONFIGURATION SETTINGS", the "Enable Automatic IPv6 Address Assignment:" and "Enable Automatic DHCP-PD in LAN:" toggles are both set to "Enabled". The "Autoconfiguration Type:" dropdown is set to "SLAAC+Stateless DHCP", and the "Router Advertisement Lifetime:" is set to an empty field followed by "minutes". A copyright notice "COPYRIGHT © 2013 D-Link" is at the bottom.

Auto Configuration Type: Select **Stateful (DHCPv6)**, **SLAAC + RDNSS** or **SLAAC + Stateless DHCPv6**.

Router Advertisement Lifetime: Enter the IPv6 address lifetime (in minutes).

Click **Save** when you are done.

The screenshot displays the IPv6 configuration interface on a D-Link router. At the top, the D-Link logo and model information (DIR-859 HW:A1 FW:1.00) are visible, along with navigation links for Home, Settings, Advanced, and Management. The main heading is "IPv6" with a sub-message: "All of your IPv6 Internet and network connection details are displayed on this page. [Click here for help.](#)"

The breadcrumb trail is "Settings >> Internet >> IPv6". There are tabs for "IPv4" and "Save".

Under "My Internet Connection is:", the dropdown menu is set to "Auto Detection".

The "IPv6 DNS SETTINGS" section includes a "DNS Type:" dropdown set to "Use the following DNS", with input fields for "Primary DNS Server:" and "Secondary DNS Server:".

The "LAN IPv6 ADDRESS SETTINGS" section has a toggle for "Enable DHCP-PD:" set to "Enabled" and "LAN IPv6 Link-Local Address:" set to "Not Available". A link for "Advanced Settings..." is present.

The "ADDRESS AUTOCONFIGURATION SETTINGS" section includes:

- "Enable Automatic IPv6 Address Assignment:" set to "Enabled"
- "Enable Automatic DHCP-PD in LAN:" set to "Enabled"
- "Autoconfiguration Type:" dropdown set to "SLAAC+Stateless DHCP"
- "Router Advertisement Lifetime:" input field set to "0" minutes

At the bottom, the copyright notice "COPYRIGHT © 2013 D-Link" is displayed.

Static IPv6

Select **Static IP** if your IPv6 information is provided by your Internet service provider (ISP).

Use Link-Local Address: Enable or disable a link-local address.

IPv6 Address: If you disabled **Use Link-Local Address**, enter the address supplied by your ISP.

Subnet Prefix Length: If you disabled **Use Link-Local Address**, enter the subnet prefix length supplied by your ISP.

Default Gateway: Enter the default gateway for your IPv6 connection.

Primary DNS Server: Enter the primary DNS server address.

Secondary DNS Server: Enter the secondary DNS server address.

LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

LAN IPv6 Link-Local Address: Displays the router's LAN link-local address.

Enable Automatic IPv6 Address Assignment: Check to enable the Automatic IPv6 Address Assignment feature.

The screenshot displays the IPv6 configuration interface for a D-Link DIR-859 router. The page title is 'IPv6' and it includes a breadcrumb trail: 'Settings >> Internet >> IPv6'. There are tabs for 'IPv4' and 'Save'. The configuration is as follows:

- My Internet Connection:** Static IPv6 (selected from a dropdown)
- Use Link-Local Address:** Enabled (checkbox checked)
- Default Gateway:** (empty text field)
- Primary DNS Server:** (empty text field)
- Secondary DNS Server:** (empty text field)

LAN IPv6 ADDRESS SETTINGS

- LAN IPv6 Address:** (empty text field) /64
- LAN IPv6 Link-Local Address:** Not Available

[Advanced Settings...](#)

ADDRESS AUTOCONFIGURATION SETTINGS

- Enable Automatic IPv6 Address Assignment:** Enabled (checkbox checked)
- Autoconfiguration Type:** SLAAC+Stateless DHCP (selected from a dropdown)
- Router Advertisement Lifetime:** 60 minutes

COPYRIGHT © 2013 D-Link

Auto Configuration Type: Select **Stateful (DHCPv6)**, **SLAAC + RDNSS** or **SLAAC + Stateless DHCPv6**.

Router Advertisement Lifetime: Enter the IPv6 address lifetime (in minutes).

Click **Save** when you are done.

The screenshot displays the IPv6 configuration interface for a D-Link DIR-859 router. The page title is "IPv6" and it includes a navigation menu with "Home", "Settings", "Advanced", and "Management". The breadcrumb trail is "Settings >> Internet >> IPv6". The "My Internet Connection Is" dropdown is set to "Static IPv6". The "Use Link-Local Address" toggle is "Enabled". There are input fields for "Default Gateway", "Primary DNS Server", and "Secondary DNS Server". The "LAN IPv6 ADDRESS SETTINGS" section shows "LAN IPv6 Address" as an empty field followed by "/64" and "LAN IPv6 Link-Local Address" as "Not Available". The "ADDRESS AUTOCONFIGURATION SETTINGS" section shows "Enable Automatic IPv6 Address Assignment" as "Enabled", "Autoconfiguration Type" as "SLAAC+Stateless DHCP", and "Router Advertisement Lifetime" as "60 minutes". A "Save" button is located in the top right corner. The footer contains "COPYRIGHT © 2013 D-Link".

Auto Configuration (SLAAC/DHCPv6)

This is a connection method where the ISP assigns your IPv6 address when your router requests one from the ISP's server. Some ISPs require you to make some settings on your side before your router can connect to the IPv6 Internet.

DNS Type: Select either **Obtain DNS server address automatically** or **Use the following DNS address**.

Primary DNS Server: If you selected **Use the following DNS address** above, enter the primary DNS server address.

Secondary DNS Server: If you selected **Use the following DNS address** above, enter the secondary DNS server address.

Enable DHCP-PD: Enable or disable prefix delegation services.

LAN IPv6 Address: If you disabled DHCP-PD, enter the LAN (local) IPv6 address for the router.

LAN IPv6 Link-Local Address: Displays the router's LAN link-local address.

Enable Automatic IPv6 Address Assignment: Enable or disable the Automatic IPv6 Address Assignment feature.

Enable Automatic DHCP-PD in LAN: Enable or disable automatic DHCP-PD services.

The screenshot displays the IPv6 configuration interface for a D-Link DIR-859 router. The page is titled 'IPv6' and includes a navigation menu with 'Home', 'Settings', 'Advanced', and 'Management'. The breadcrumb trail shows 'Settings >> Internet >> IPv6'. The 'My Internet Connection' is set to 'Auto Configuration'. The 'IPv6 DNS SETTINGS' section shows 'DNS Type' set to 'Obtain a DNS server'. The 'LAN IPv6 ADDRESS SETTINGS' section shows 'Enable DHCP-PD' as 'Enabled' and 'LAN IPv6 Link-Local Address' as 'Not Available'. The 'ADDRESS AUTOCONFIGURATION SETTINGS' section shows 'Enable Automatic IPv6 Address Assignment' and 'Enable Automatic DHCP-PD in LAN' both as 'Enabled', 'Autoconfiguration Type' as 'SLAAC+Stateless DHCP', and 'Router Advertisement Lifetime' as 0 minutes. A 'Save' button is visible in the top right corner.

Auto Configuration Type: Select **Stateful (DHCPv6)**, **SLAAC + RDNSS** or **SLAAC + Stateless DHCPv6**.

Router Advertisement Lifetime: Enter the IPv6 address lifetime (in minutes).

Click **Save** when you are done.

The screenshot displays the IPv6 configuration interface for a D-Link DIR-859 router. The page title is "IPv6" and it includes a navigation menu with "Home", "Settings", "Advanced", and "Management". The main content area is titled "IPv6" and contains the following sections:

- Settings >> Internet >> IPv6**: A breadcrumb trail with a "Save" button.
- My Internet Connection Is:** A dropdown menu set to "Auto Configuration".
- IPv6 DNS SETTINGS**: A section with "DNS Type:" set to "Obtain a DNS server".
- LAN IPv6 ADDRESS SETTINGS**: A section with "Enable DHCP-PD:" set to "Enabled" and "LAN IPv6 Link-Local Address:" set to "Not Available".
- ADDRESS AUTOCONFIGURATION SETTINGS**: A section with "Enable Automatic IPv6 Address Assignment:" set to "Enabled", "Enable Automatic DHCP-PD in LAN:" set to "Enabled", "Autoconfiguration Type:" set to "SLAAC+Stateless DHCP", and "Router Advertisement Lifetime:" set to 0 minutes.

At the bottom of the page, there is a copyright notice: "COPYRIGHT © 2013 D-Link".

PPPoE

Select **PPPoE** if your Internet connection requires you to enter a username and password. This information is provided by your Internet service provider (ISP).

PPPoE Session: Choose **Share with IPv4** to re-use your IPv4 PPPoE username and password, or **Create a new session**.

Username: If you selected **Create a new session** above, enter the PPPoE username provided by your ISP here.

Password: If you selected **Create a new session** above, enter the PPPoE password provided by your ISP here.

Address Mode: Select **Static IP** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses. In most cases, select **Dynamic IP**.

IP Address: Enter the IP address provided by your ISP (Static IP only).

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

DNS Type: Select either **Obtain DNS server address automatically** or **Use the following DNS address**.

Primary DNS Server: If you selected **Use the following DNS address** above, enter the primary DNS server address.

Secondary DNS Server: If you selected **Use the following DNS address** above, enter the secondary DNS server address.

Enable DHCP-PD: Enable or disable prefix delegation services.

The screenshot displays the IPv6 configuration interface for a D-Link DIR-859 router. The page is titled "IPv6" and includes a navigation menu with "Home", "Settings", "Advanced", and "Management". The main content area is divided into several sections:

- My Internet Connection:** Set to "PPPoE".
- PPPoE Session:** Set to "Share with IPv4".
- Address Mode:** Set to "Dynamic IP".
- MTU:** Set to "1492" bytes.
- IPv6 DNS SETTINGS:** DNS Type is set to "Obtain a DNS server".
- LAN IPv6 ADDRESS SETTINGS:** "Enable DHCP-PD" is set to "Enabled". "LAN IPv6 Link-Local Address" is "Not Available".
- ADDRESS AUTOCONFIGURATION SETTINGS:**
 - "Enable Automatic IPv6 Address Assignment" is "Enabled".
 - "Enable Automatic DHCP-PD in LAN" is "Enabled".
 - "Autoconfiguration Type" is set to "SLAAC+Stateless DHCP".
 - "Router Advertisement Lifetime" is set to "0" minutes.

At the bottom of the page, there is a copyright notice: "COPYRIGHT © 2013 D-Link".

LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

LAN IPv6 Link-Local Address: Displays the router's LAN link-local address.

Enable Automatic IPv6 Address Assignment: Enable or disable the Automatic IPv6 Address Assignment feature.

Auto Configuration Type: Select **Stateful (DHCPv6)**, **SLAAC + RDNSS** or **SLAAC + Stateless DHCPv6**.

Router Advertisement Lifetime: Enter the IPv6 address lifetime (in minutes).

Click **Save** when you are done.

The screenshot shows the IPv6 configuration interface of a D-Link router. At the top, there are navigation links for Home, Settings, Advanced, and Management. The main heading is "IPv6" with a sub-message: "All of your IPv6 Internet and network connection details are displayed on this page. [Click here for help.](#)" Below this, there is a breadcrumb trail: "Settings >> Internet >> IPv6" and a "Save" button. The configuration is organized into several sections:

- My Internet Connection:** Set to "PPPoE".
- PPPoE Session:** Set to "Share with IPv4".
- Address Mode:** Set to "Dynamic IP".
- MTU:** Set to "1492" bytes.
- IPv6 DNS SETTINGS:** DNS Type is set to "Obtain a DNS server".
- LAN IPv6 ADDRESS SETTINGS:** "Enable DHCP-PD" is set to "Enabled". "LAN IPv6 Link-Local Address" is "Not Available". There is a link for "Advanced Settings...".
- ADDRESS AUTOCONFIGURATION SETTINGS:** "Enable Automatic IPv6 Address Assignment" is "Enabled". "Enable Automatic DHCP-PD in LAN" is "Enabled". "Autoconfiguration Type" is set to "SLAAC+Stateless DHCP". "Router Advertisement Lifetime" is set to "minutes".

At the bottom of the page, it says "COPYRIGHT © 2013 D-Link".

IPv6 in IPv4 Tunnel

The user can configure the IPv6 connection to run in IPv4 Tunnel mode. IPv6 over IPv4 tunneling encapsulates IPv6 packets in IPv4 packets so that IPv6 packets can be sent over an IPv4 infrastructure.

Remote IPv4 Address: Enter the IPv4 remote address you will use.

Remote IPv6 Address: Enter the IPv6 remote address you will use.

Local IPv4 Address: Enter the IPv4 local address you will use.

Local IPv6 Address: Enter the IPv6 local address you will use.

Subnet Prefix Length: Enter the subnet prefix length supplied by your ISP.

DNS Type: Select either **Obtain DNS server address automatically** or **Use the following DNS address**.

Primary DNS Server: If you selected **Use the following DNS address** above, enter the primary DNS server address.

Secondary DNS Server: If you selected **Use the following DNS address** above, enter the secondary DNS server address.

Enable DHCP-PD: Enable or disable prefix delegation services.

LAN IPv6 Address: If you disabled DHCP-PD, enter the LAN (local) IPv6 address for the router.

The screenshot shows the D-Link IPv6 configuration interface. At the top, there is a navigation bar with 'Home', 'Settings', 'Advanced', and 'Management'. The main heading is 'IPv6' with a sub-note: 'All of your IPv6 Internet and network connection details are displayed on this page. [Click here for help.](#)'

The configuration is for 'IPv6 in IPv4 Tunnel' mode. The settings are as follows:

- My Internet Connection is:** IPv6 in IPv4 Tunnel (selected)
- Remote IPv4 Address:** (empty text box)
- Remote IPv6 Address:** (empty text box)
- Local IPv4 Address:** 172.17.5.47
- Local IPv6 Address:** (empty text box)
- Subnet Prefix Length:** (empty text box)

IPv6 DNS SETTINGS

- DNS Type:** Obtain a DNS server (selected)

LAN IPv6 ADDRESS SETTINGS

- Enable DHCP-PD:** Enabled (checkbox)
- LAN IPv6 Link-Local Address:** Not Available

ADDRESS AUTOCONFIGURATION SETTINGS

- Enable Automatic IPv6 Address Assignment:** Enabled (checkbox)
- Enable Automatic DHCP-PD in LAN:** Enabled (checkbox)
- Autoconfiguration Type:** SLAAC+Stateless DHCP (selected)
- Router Advertisement Lifetime:** 60 minutes

At the bottom right, there is a link for 'Advanced Settings...' and a copyright notice: 'COPYRIGHT © 2013 D-Link'.

LAN IPv6 Link-Local Address: Displays the router's LAN link-local address.

Enable Automatic IPv6 Address Assignment: Enable or disable the Automatic IPv6 Address Assignment feature.

Enable Automatic DHCP-PD in LAN: Enable or disable automatic DHCP-PD services.

Auto Configuration Type: Select **Stateful (DHCPv6)**, **SLAAC + RDNSS** or **SLAAC + Stateless DHCPv6**.

Router Advertisement Lifetime: Enter the IPv6 address lifetime (in minutes).

Click **Save** when you are done.

The screenshot shows the IPv6 configuration interface for a D-Link DIR-859 router. The page is titled "IPv6" and includes a "Save" button. The configuration is organized into several sections:

- My Internet Connection:** Set to "IPv6 in IPv4 Tunnel".
- Remote IPv4 Address:** (Empty text box)
- Remote IPv6 Address:** (Empty text box)
- Local IPv4 Address:** 172.17.5.47
- Local IPv6 Address:** (Empty text box)
- Subnet Prefix Length:** (Empty text box)
- IPv6 DNS SETTINGS:** DNS Type: "Obtain a DNS server"
- LAN IPv6 ADDRESS SETTINGS:** Enable DHCP-PD: "Enabled"; LAN IPv6 Link-Local Address: "Not Available"
- ADDRESS AUTOCONFIGURATION SETTINGS:** Enable Automatic IPv6 Address Assignment: "Enabled"; Enable Automatic DHCP-PD in LAN: "Enabled"; Autoconfiguration Type: "SLAAC+Stateless DHCP"; Router Advertisement Lifetime: "60" minutes

At the bottom of the page, it says "COPYRIGHT © 2013 D-Link".

6to4

In this section the user can configure the IPv6 6 to 4 connection settings. 6to4 is an IPv6 address assignment and automatic tunneling technology that is used to provide unicast IPv6 connectivity between IPv6 sites and hosts across the IPv4 Internet.

6 to 4 Address: Displays the 6 to 4 address.

6 to 4 Relay: Enter the 6 to 4 relay supplied by your ISP.

Primary DNS Server: Enter the primary DNS server address.

Secondary DNS Server: Enter the secondary DNS server address.

LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

LAN IPv6 Link-Local Address: Displays the router's LAN link-local address.

Enable Automatic IPv6 Address Assignment: Check to enable the Automatic IPv6 Address Assignment feature.

Auto Configuration Type: Select **Stateful (DHCPv6)**, **SLAAC + RDNSS** or **SLAAC + Stateless DHCPv6**.

Router Advertisement Lifetime: Enter the IPv6 address lifetime (in minutes).

Click **Save** when you are done.

The screenshot shows the D-Link IPv6 configuration interface. At the top, there is a navigation bar with 'Home', 'Settings', 'Advanced', and 'Management'. The main heading is 'IPv6' with a sub-header: 'All of your IPv6 Internet and network connection details are displayed on this page. [Click here for help.](#)' Below this, there is a breadcrumb trail: 'Settings >> Internet >> IPv6'. A 'Save' button is visible in the top right corner. The 'My Internet Connection is:' dropdown is set to '6to4'. The '6to4 Address' is displayed as '172.17.5.47'. There are input fields for '6to4 Relay', 'Primary DNS Server', and 'Secondary DNS Server'. Under the 'LAN IPv6 ADDRESS SETTINGS' section, the 'LAN IPv6 Address' is shown as 'FFFF:FFFF:FFFF: :1 /64' and the 'LAN IPv6 Link-Local Address' is 'Not Available'. An 'Advanced Settings...' link is present. The 'ADDRESS AUTOCONFIGURATION SETTINGS' section shows 'Enable Automatic IPv6 Address Assignment' checked, 'Autoconfiguration Type' set to 'SLAAC+Stateless DHCP', and 'Router Advertisement Lifetime' set to a blank field with 'minutes' as the unit. The footer contains 'COPYRIGHT © 2013 D-Link'.

6rd

In this section the user can configure the IPv6 6rd connection settings.

Assign IPv6 Prefix: Currently unsupported.

Primary DNS Server: Enter the primary DNS server address.

Secondary DNS Server: Enter the secondary DNS server address.

Enable Hub and Spoke Mode: Enable if you want to minimize the number of routes to the destination by using a hub and spoke method of networking.

6rd Configuration: Choose the **6rd DHCPv4 Option** to automatically discover and populate the data values, or **Manual Configuration** to enter the settings yourself.

6rd IPv6 Prefix: Enter the 6rd IPv6 prefix and mask length supplied by your ISP (manual configuration only).

6rd Border Relay IPv4 Address: Enter the 6rd border relay IPv4 address settings supplied by your ISP (manual configuration only).

LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

LAN IPv6 Link-Local Address: Displays the router's LAN link-local address.

The screenshot shows the D-Link IPv6 configuration interface. At the top, there's a navigation bar with 'Home', 'Settings', 'Advanced', and 'Management'. The main header displays 'IPv6' and a sub-header: 'All of your IPv6 Internet and network connection details are displayed on this page. [Click here for help.](#)'

The configuration area is titled 'Settings >> Internet >> IPv6' and includes a 'Save' button. The 'My Internet Connection Is:' dropdown is set to '6rd'. Below this are input fields for 'Assign IPv6 Prefix', 'Primary DNS Server', and 'Secondary DNS Server'.

The '6RD MANUAL CONFIGURATION' section has 'Enable Hub and Spoke Mode' set to 'Enabled' and '6rd Configuration' set to '6rd DHCPv4 Option'.

The 'LAN IPv6 ADDRESS SETTINGS' section shows 'LAN IPv6 Address: Not Available' and 'LAN IPv6 Link-Local Address: Not Available', with a link to 'Advanced Settings...'.

The 'ADDRESS AUTOCONFIGURATION SETTINGS' section has 'Enable Automatic IPv6 Address Assignment' set to 'Enabled', 'Autoconfiguration Type' set to 'SLAAC+Stateless DHCP', and 'Router Advertisement Lifetime' set to a blank field with 'minutes' as the unit.

At the bottom, it says 'COPYRIGHT © 2013 D-Link'.

Enable Automatic IPv6 Address Assignment: Check to enable the Automatic IPv6 Address Assignment feature.

Auto Configuration Type: Select **Stateful (DHCPv6)**, **SLAAC + RDNSS** or **SLAAC + Stateless DHCPv6**.

Router Advertisement Lifetime: Enter the IPv6 address lifetime (in minutes).

Click **Save** when you are done.

The screenshot shows the IPv6 configuration interface for a D-Link DIR-859. The page is titled "IPv6" and includes a navigation menu with "Home", "Settings", "Advanced", and "Management". The main content area is divided into several sections:

- Settings >> Internet >> IPv6:** A breadcrumb trail with a "Save" button.
- My Internet Connection Is:** A dropdown menu set to "6rd".
- Assign IPv6 Prefix:** An empty text input field.
- Primary DNS Server:** An empty text input field.
- Secondary DNS Server:** An empty text input field.
- 6RD MANUAL CONFIGURATION:**
 - Enable Hub and Spoke Mode:** A toggle switch set to "Enabled".
 - 6rd Configuration:** A dropdown menu set to "6rd DHCPv4 Option".
- LAN IPv6 ADDRESS SETTINGS:**
 - LAN IPv6 Address:** Not Available
 - LAN IPv6 Link-Local Address:** Not Available
 - [Advanced Settings...](#)
- ADDRESS AUTOCONFIGURATION SETTINGS:**
 - Enable Automatic IPv6 Address Assignment:** A toggle switch set to "Enabled".
 - Autoconfiguration Type:** A dropdown menu set to "SLAAC+Stateless DHCP".
 - Router Advertisement Lifetime:** An empty text input field followed by "minutes".

At the bottom of the page, there is a copyright notice: "COPYRIGHT © 2013 D-Link".

Local Connectivity Only

Local Connectivity Only allows you to set up an IPv6 connection that will not connect to the Internet.

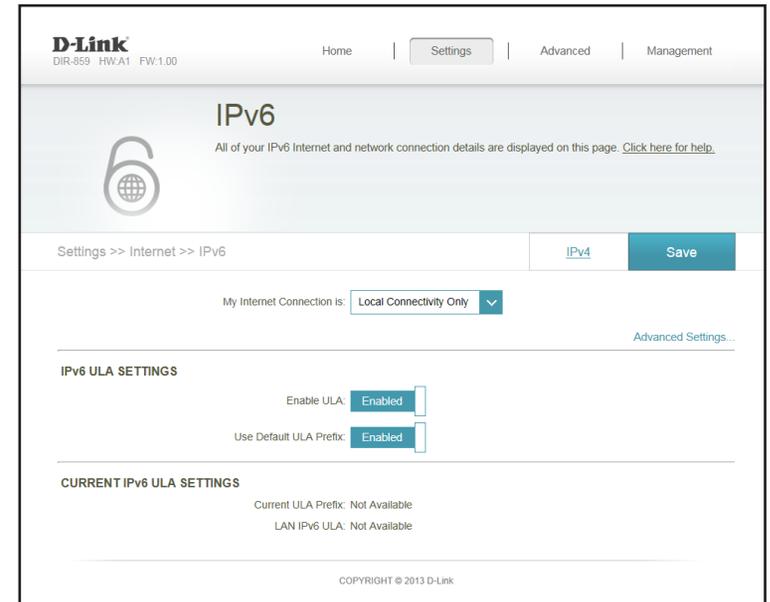
Enable ULA: Click here to enable Unique Local IPv6 Unicast Addresses settings.

Use Default ULA Prefix: Checking this box will automatically configure the ULA prefix for the default setting.

ULA Prefix: If you wish to choose your own ULA prefix, enter it here.

Current IPv6 ULA Settings: This section will display the current settings for your IPv6 ULA.

Click **Save** when you are done.



The screenshot shows the D-Link IPv6 configuration interface. At the top, the D-Link logo and model information (DIR-859 HW:A1 FW:1.00) are visible, along with navigation tabs for Home, Settings, Advanced, and Management. The main heading is 'IPv6', with a sub-note: 'All of your IPv6 Internet and network connection details are displayed on this page. [Click here for help.](#)' Below this, a breadcrumb trail reads 'Settings >> Internet >> IPv6'. There are two tabs: 'IPv4' and 'Save'. A dropdown menu for 'My Internet Connection is:' is set to 'Local Connectivity Only'. A link for 'Advanced Settings...' is present. Under the 'IPv6 ULA SETTINGS' section, there are two checkboxes: 'Enable ULA' and 'Use Default ULA Prefix', both of which are checked. The 'CURRENT IPv6 ULA SETTINGS' section shows 'Current ULA Prefix: Not Available' and 'LAN IPv6 ULA: Not Available'. A copyright notice 'COPYRIGHT © 2013 D-Link' is at the bottom.

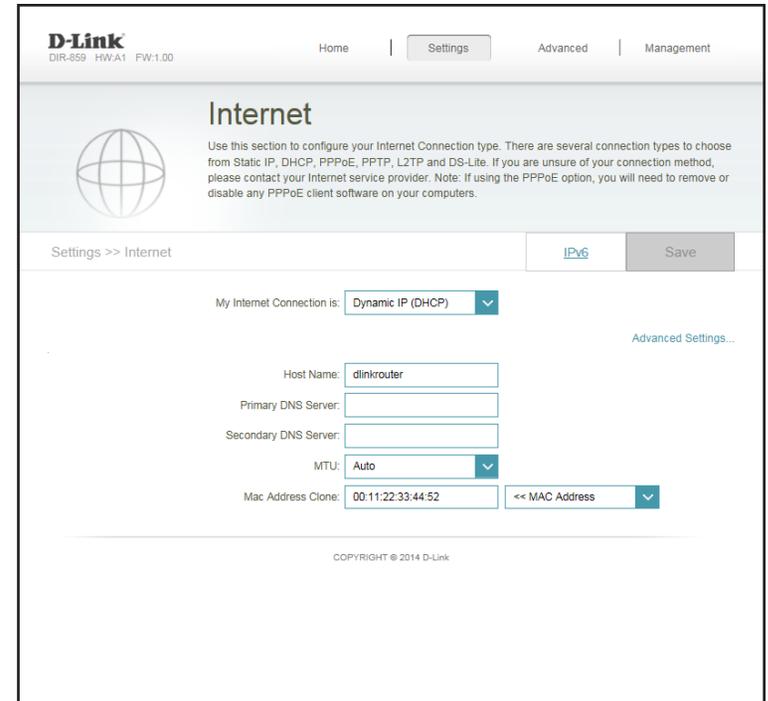
Internet

In the Settings menu on the bar on the top of the page, click **Internet** to see the Internet configuration options.

My Internet Connection Is: Choose your Internet connection type from the drop-down menu. You will be presented with the appropriate options for your connection type. Click **Advanced Settings...** to expand the list and see all of the options.

For **Dynamic IP (DHCP)** refer to page 51.

For **Static IP** refer to page 52.



The screenshot shows the D-Link DIR-859 Internet configuration page. The page title is "Internet" and it includes a navigation bar with "Home", "Settings", "Advanced", and "Management". The "Settings" menu is active. The page content includes a "My Internet Connection is:" dropdown menu set to "Dynamic IP (DHCP)". Below this are fields for "Host Name" (dlinkrouter), "Primary DNS Server", "Secondary DNS Server", "MTU" (Auto), and "Mac Address Clone" (00:11:22:33:44:52). There is also a "<< MAC Address" dropdown menu. The page footer contains the text "COPYRIGHT © 2014 D-Link".

Dynamic IP (DCHP)

Select **Dynamic IP (DHCP)** to obtain IP address information automatically from your Internet Service Provider (ISP). Select this option if your ISP does not give you an IP address to use.

Host Name: The host name is optional but may be required by some ISPs. Leave it blank if you are not sure.

Primary DNS Server: Enter the primary DNS server IP address assigned by your ISP. This address is usually obtained automatically from your ISP.

Secondary DNS Server: Enter the secondary DNS server IP address assigned by your ISP. This address is usually obtained automatically from your ISP.

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

Click **Save** when you are done.

The screenshot displays the D-Link router's web interface for configuring the Internet connection. The page title is "Internet" and it includes a "Save" button. The "My Internet Connection is:" dropdown menu is set to "Dynamic IP (DHCP)". Below this, there are input fields for "Host Name" (containing "dlinkrouter"), "Primary DNS Server", and "Secondary DNS Server". The "MTU" dropdown is set to "Auto". The "Mac Address Clone" field contains "00:11:22:33:44:52" and has a dropdown menu set to "<< MAC Address". The page also features a "Settings >> Internet" breadcrumb, an "IPv6" link, and a "Save" button. A copyright notice "COPYRIGHT © 2014 D-Link" is visible at the bottom.

Static IP

Select **Static IP** if your IP information is provided by your Internet service provider (ISP).

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

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

Default Gateway: Enter the default gateway address provided by your ISP.

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

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

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

Click **Save** when you are done.

The screenshot shows the D-Link DIR-859 web interface. At the top, there is a navigation bar with 'Home', 'Settings', 'Advanced', and 'Management'. The 'Settings' tab is active. Below the navigation bar, the page title is 'Internet'. A globe icon is on the left, and a paragraph of text explains the configuration options. Below this, there is a breadcrumb 'Settings >> Internet' and a 'Save' button. The main configuration area includes a dropdown menu for 'My Internet Connection is:' set to 'Static IP'. Below this are input fields for 'IP Address', 'Subnet Mask', 'Default Gateway', and 'Primary DNS Server'. There is also a 'Secondary DNS Server' field. The 'MTU' is set to 'Auto' via a dropdown menu. The 'Mac Address Clone' field contains '00:11:22:33:44:52' and a dropdown menu set to '<< MAC Address'. An 'Advanced Settings...' link is visible on the right side of the form. The footer of the page reads 'COPYRIGHT © 2014 D-Link'.

Wireless

In the Settings menu on the bar on the top of the page, click **Wireless** to see the wireless configuration options. To configure the router's guest zone, click the **Guest Zone** link. Refer to page 55 for details. Click **Advanced Settings...** to expand the list and see all of the options. The following options apply to both the 2.4 GHz and the 5 GHz wireless frequency bands:

Status: Enable or disable the wireless frequency band.

Wi-Fi Name (SSID): Create a name for your wireless network using up to 32 characters.

Password: Create a password to use for wireless security. Wireless clients will need to enter this password to successfully connect to the network.

Security Mode: Choose **None**, **WEP**, or **WPA/WPA2-(Personal)** (recommended).

802.11 Mode: Select the desired wireless networking standards to use. The available options will depend on the wireless frequency band, as well as the currently selected security mode.

Wi-Fi Channel: Select the desired channel. The default is **Auto** (recommended).

Transmission Power: Select the desired wireless transmission power.

Channel Width: Select **Auto 20/40** if you are using both 802.11n and non-802.11n wireless devices, or select **20 MHz** if you are not using any 802.11n wireless clients.

HT20/40 Coexistence: Enable this option to reduce interference from other wireless networks in your area. If the channel width is operating at 40 MHz and there is another wireless network's channel over-lapping and causing interference, the router will automatically change to 20 MHz.

The screenshot displays the 'Wireless' configuration page for a D-Link DIR-859 router. The page is divided into sections for 2.4GHz and 5GHz wireless bands. The 2.4GHz section is currently active and shows the following settings:

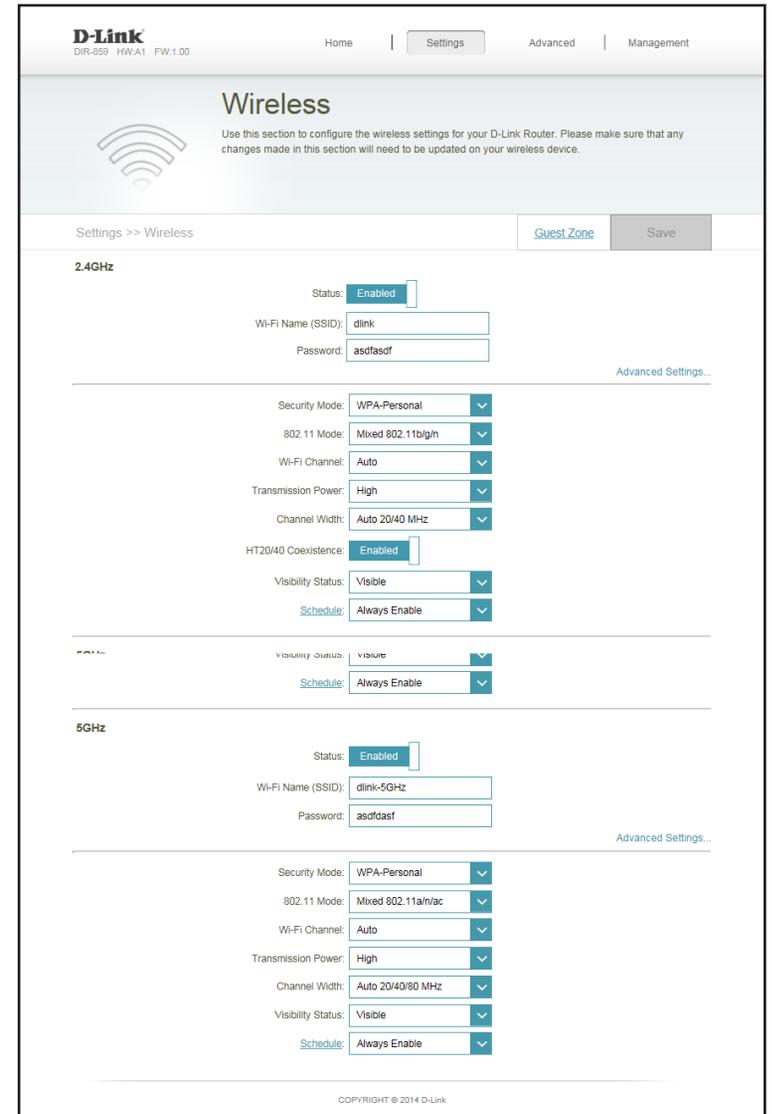
- Status:** Enabled
- Wi-Fi Name (SSID):** dlink
- Password:** asdfasdf
- Security Mode:** WPA-Personal
- 802.11 Mode:** Mixed 802.11b/g/n
- Wi-Fi Channel:** Auto
- Transmission Power:** High
- Channel Width:** Auto 20/40 MHz
- HT20/40 Coexistence:** Enabled
- Visibility Status:** Visible
- Schedule:** Always Enable

The 5GHz section is partially visible below, showing similar settings for Status, Wi-Fi Name (SSID), Password, Security Mode, 802.11 Mode, Wi-Fi Channel, Transmission Power, Channel Width, HT20/40 Coexistence, Visibility Status, and Schedule.

Visibility Status: The default setting is **Visible**. Select **Invisible** if you do not want to broadcast the SSID of your wireless network.

Schedule: Use the drop-down menu to select the time schedule that the rule will be enabled on. The schedule may be set to **Always Enable**, or you can create your own schedules in the **Schedules** section (refer to page 69).

Click **Save** when you are done.



Guest Zone

The guest zone feature will allow you to create temporary zones that can be used by guests to access the Internet. These zones will be separate from your main wireless network. You may configure different zones for the 2.4 GHz and 5 GHz wireless bands.

In the Settings menu on the bar on the top of the page, click **Wireless**, then click the **Guest Zone** link. Click **Advanced Settings...** to expand the list and see all of the options. The following options apply to both the 2.4 GHz and the 5 GHz wireless frequency bands:

Status: Enable or disable the guest zone for each wireless frequency band.

Wi-Fi Name (SSID): Enter a wireless network name (SSID) that is different from your main wireless network.

Password: Create a password to use for wireless security. Wireless clients will need to enter this password to successfully connect to the guest zone.

Internet Access Only: Enabling this option will confine connectivity to the Internet, disallowing guests from accessing other local network devices.

Click **Save** when you are done.

The screenshot shows the D-Link web interface for configuring the Guest Zone. At the top, the navigation bar includes 'Home', 'Settings', 'Advanced', and 'Management'. The 'Settings' menu is expanded to show 'Wireless' and 'Guest Zone'. The 'Guest Zone' page has a breadcrumb trail: 'Settings >> Wireless >> Guest Zone'. There are two tabs: 'Wi-Fi' and 'Save'. The configuration is divided into three sections: 2.4GHz, 5GHz, and Home Network Access. For 2.4GHz, the Status is 'Enabled', the Wi-Fi Name (SSID) is 'dlink-guest', and the Password field is empty. For 5GHz, the Status is 'Enabled', the Wi-Fi Name (SSID) is 'dlink-5GHz-guest', and the Password field is empty. Under Home Network Access, the Internet Access Only option is 'Enabled'. A copyright notice 'COPYRIGHT © 2013 D-Link' is at the bottom.

Network

This section will allow you to change the local network settings of the router and to configure the DHCP settings. In the Settings menu on the bar on the top of the page, click **Network**. Click **Advanced Settings...** to expand the list and see all of the options.

LAN 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 **Save**, you will need to enter the new IP address in your browser to get back into the configuration utility.

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

Management Link: The default address to access the router's configuration is **http://dlinkrouter.local**. Here, you can replace **dlinkrouter** with a name of your choice.

Local Domain Name: Enter the domain name (optional).

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

Status: Enable or disable the DHCP server.

DHCP IP Address Range: Enter the starting and ending IP addresses for the DHCP server's IP assignment.

Note: If you statically (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.

D-Link
DIR-859 HW:V1 FW:1.00

Home | Settings | Advanced | Management

Network

Use this section to configure the network settings for your device. You can enter a name for your device in the management link field, and use the link to access web UI in a web browser. We recommend you change the management link if there are more than one D-Link devices within the network. [Click here for help.](#)

Settings >> Network Save

Network Settings

LAN IP Address:

Subnet Mask:

Management Link:

Local Domain Name:

Enable DNS Relay: Enabled [Advanced Settings...](#)

DHCP Server

Status: Enabled

DHCP IP Address Range: to

DHCP Lease Time: minutes

Always Broadcast: Disabled
(compatibility for some DHCP Clients)

Advanced Settings

WAN Port Speed: ▼

UPnP: Enabled

IPv4 Multicast Streams: Disabled

IPv6 Multicast Streams: Disabled

COPYRIGHT © 2013 D-Link

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

Always Broadcast: Enable this feature to broadcast your networks DHCP server to LAN/WLAN clients.

WAN Port Speed: You may set the port speed of the Internet port to 10 Mbps, 100 Mbps, 1000 Mbps, or Auto (recommended).

UPnP: Enable or disable Universal Plug and Play (UPnP). UPnP provides compatibility with networking equipment, software and peripherals.

IPv4 Multicast Stream: Enable to allow IPv4 multicast traffic to pass through the router from the Internet.

IPv6 Multicast Stream: Enable to allow IPv6 multicast traffic to pass through the router from the Internet.

Click **Save** when you are done.

The screenshot displays the 'Network' configuration page for a D-Link DIR-859 router. The page is organized into several sections: 'Network Settings', 'DHCP Server', and 'Advanced Settings'. In the 'Network Settings' section, the LAN IP Address is set to 192.168.0.1, the Subnet Mask is 255.255.255.0, the Management Link is http://dlinkrouter.local/, and the Local Domain Name is empty. The 'Enable DNS Relay' checkbox is checked. The 'DHCP Server' section shows the Status as 'Enabled', the DHCP IP Address Range as 192.168.0.100 to 192.168.0.199, the DHCP Lease Time as 10080 minutes, and the 'Always Broadcast' checkbox as 'Disabled'. The 'Advanced Settings' section includes 'WAN Port Speed' set to 'Auto', 'UPnP' checked, and both 'IPv4 Multicast Streams' and 'IPv6 Multicast Streams' set to 'Disabled'. A 'Save' button is located in the top right corner of the settings area.

Advanced QoS Engine

This section will allow you to prioritize particular clients over others, so that those clients receive higher bandwidth. For example, if one client is streaming a movie and another is downloading a non-urgent file, you might wish to assign the former device a higher priority than the latter so that the movie streaming is not disrupted by the traffic of the other devices on the network.

In the Features menu on the bar on the top of the page, click **QoS Engine**.

Under All Devices, you will see device cards representing each connected client. If some are off-screen, you can use the < and > buttons to scroll through the cards.

A maximum of **one** device can be assigned **Highest** priority.

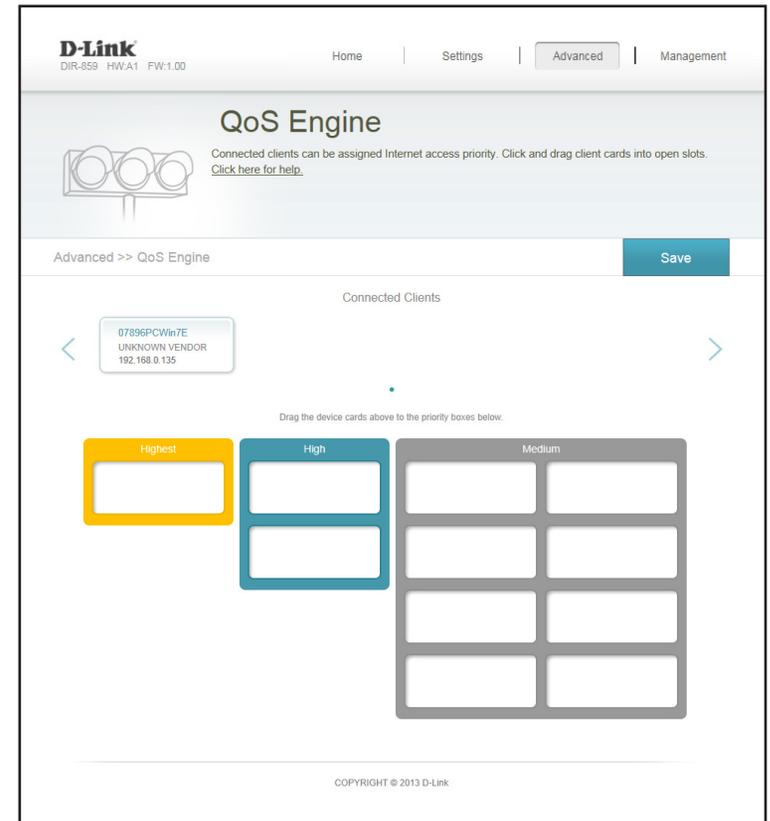
A maximum of **two** devices can be assigned **High** priority.

A maximum of **eight** devices can be assigned **Medium** priority.

If no devices are explicitly assigned a priority, they will all be treated with equal priority. If some devices are not assigned a priority and others are, the unassigned devices will be treated with the lowest priority.

To assign a priority level to a device, drag the device card from the All Devices list over an empty slot and release the mouse button. The card will remain in the slot. If you want to remove a priority assignment from a device and return it to the All Devices list, click the cross icon in the top right of the device card.

Click **Save** when you are done.



Firewall Settings

The router's firewall protects your network from malicious attacks over the Internet. In the Advanced menu on the bar on the top of the page, click **Firewall Settings**. Click **Advanced Settings...** to expand the list and see all of the options.

Enable DMZ: Enable or disable Demilitarized Zone (DMZ). This completely exposes the client to threats over the Internet, and is not recommended in ordinary situations.

DMZ IP Address: If you enabled DMZ, enter the IP address of the client you wish to expose, or use the drop-down menu to quickly select it.

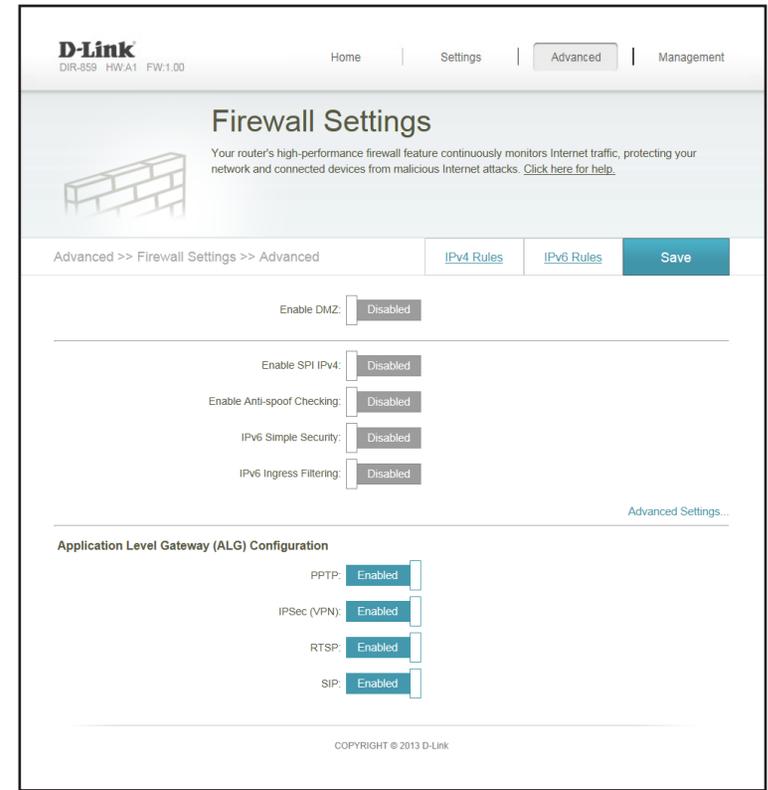
Enable SPI IPv4: Enabling Stateful Packet Inspection (SPI) helps to prevent cyber attacks by validating that the traffic passing through the session conforms to the protocol.

Enable Anti-Spoof Checking: Enable this feature to protect your network from certain kinds of "spoofing" attacks.

IPv6 Simple Security: Enable or disable IPv6 simple security.

IPv6 Ingress Filtering: Enable or disable IPv6 ingress filtering.

PPTP: Allows multiple machines on the LAN to connect to their corporate network using the PPTP protocol.



IPSec (VPN): Allows multiple VPN clients to connect to their corporate network using IPSec. Some VPN clients support traversal of IPSec through NAT. This Application Level Gateway (ALG) may interfere with the operation of such VPN clients. If you are having trouble connecting with your corporate network, try turning this ALG off. Please check with the system administrator of your corporate network whether your VPN client supports NAT traversal.

RTSP: Allows applications that uses Real Time Streaming Protocol (RTSP) to receive streaming media from the Internet.

SIP: Allows devices and applications using VoIP (Voice over IP) to communicate across NAT. Some VoIP applications and devices have the ability to discover NAT devices and work around them. This ALG may interfere with the operation of such devices. If you are having trouble making VoIP calls, try turning this ALG off.

Click **Save** when you are done.

The screenshot displays the D-Link Firewall Settings interface. At the top, the D-Link logo and model information (DIR-859 HW:A1 FW:1.00) are visible, along with navigation links for Home, Settings, Advanced, and Management. The main heading is "Firewall Settings", accompanied by a brief description of the firewall's function and a "Click here for help" link. Below this, there are tabs for "IPv4 Rules" and "IPv6 Rules", and a prominent "Save" button. The settings are organized into sections: "Advanced >> Firewall Settings >> Advanced" and "Application Level Gateway (ALG) Configuration". In the first section, five settings are listed, each with a "Disabled" toggle: "Enable DMZ", "Enable SPI IPv4", "Enable Anti-spoof Checking", "IPv6 Simple Security", and "IPv6 Ingress Filtering". An "Advanced Settings..." link is located to the right of these settings. In the second section, four settings are listed, each with an "Enabled" toggle: "PPTP", "IPSec (VPN)", "RTSP", and "SIP". The footer of the page contains the text "COPYRIGHT © 2013 D-Link".

IPv4/IPv6 Rules

The IPv4/IPv6 Rules section is an advanced option that lets you configure what kind of traffic is allowed to pass through the network. To configure the IPv4 rules, from the Firewall Settings page click **IPv4 Rules**. To configure IPv6 rules, from the Firewall Settings page click **IPv6 Rules**. To return to the main Firewall Settings page, click **Security Check**.

To begin, use the drop-down menu to select whether you want to **ALLOW** or **DENY** the rules you create. You can also choose to turn filtering **OFF**.

If you wish to remove a rule, click on its trash can icon in the Delete column. If you wish to edit a rule, click on its pencil icon in the Edit column. If you wish to create a new rule, click the **Add Rules** button. Click **Save** when you are done. If you edit or create a rule, the following options will appear:

Name: Enter a name for the rule.

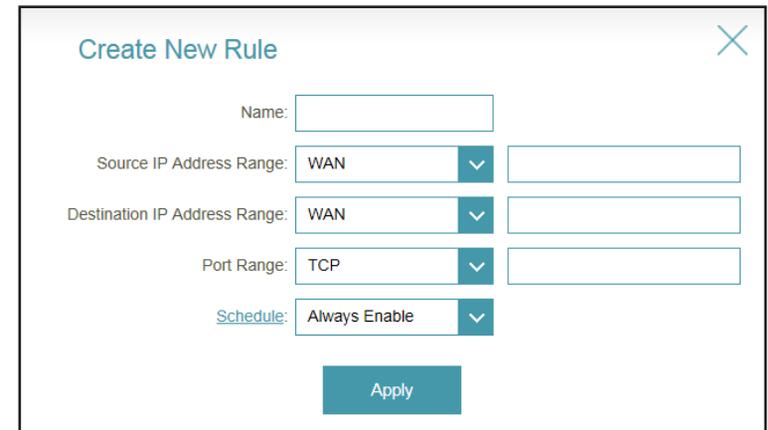
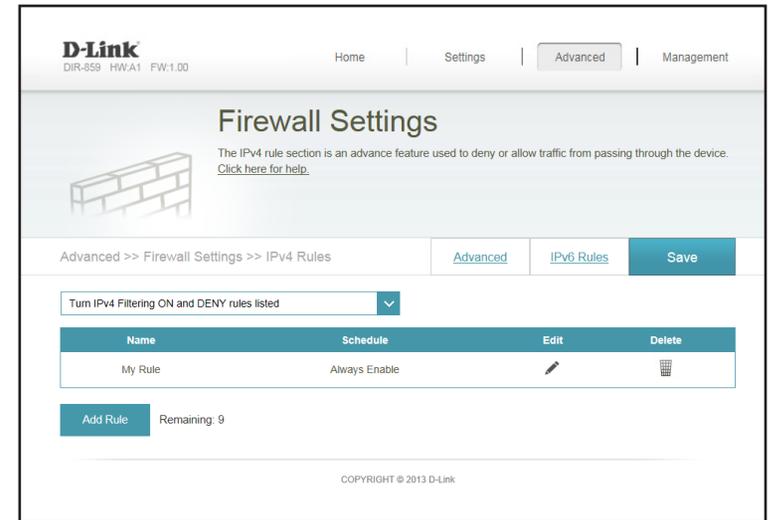
Source IP Address Range: Enter the source IP address range that the rule will apply to, and using the drop-down menu, specify whether it is a **WAN** or **LAN** IP address.

Destination IP Address Range: Enter the destination IP address range that the rule will apply to, and using the drop-down menu, specify whether it is a **WAN** or **LAN** IP address.

Port Range: Select the protocol of the traffic to allow or deny (**Any**, **TCP**, or **UDP**) and then enter the range of ports that the rule will apply to.

Schedule: Use the drop-down menu to select the time schedule that the rule will be enabled on. The schedule may be set to **Always Enable**, or you can create your own schedules in the **Schedules** section (refer to page 69).

Click **OK** when you are done.



Port Forwarding

Port forwarding allows you to specify a port or range of ports to open for specific devices on the network. This might be necessary for certain applications to connect through the router. In the Advanced menu on the bar on the top of the page, click **Port Forwarding**.

If you wish to remove a rule, click on its trash can icon in the Delete column. If you wish to edit a rule, click on its pencil icon in the Edit column. If you wish to create a new rule, click the **Add Rules** button. Click **Save** when you are done. If you edit or create a rule, the following options will appear:

Name: Enter a name for the rule.

Local IP: Enter the IP address of the computer on your local network that you want to allow the incoming service to. Alternatively, select the device from the drop-down menu.

TCP Port: Enter the TCP ports that you want to open. You can enter a single port or a range of ports. Separate ports with a comma (for example: 24,1009,3000-4000).

UDP Port: Enter the UDP ports that you want to open. You can enter a single port or a range of ports. Separate ports with a comma (for example: 24,1009,3000-4000).

Schedule: Use the drop-down menu to select the time schedule that the rule will be enabled on. The schedule may be set to **Always Enable**, or you can create your own schedules in the **Schedules** section (refer to page 69).

Click **OK** when you are done.

The screenshot shows the D-Link router's web interface for Port Forwarding. At the top, there's a navigation bar with 'Home', 'Settings', 'Advanced', and 'Management'. The main heading is 'Port Forwarding' with a sub-heading 'Your router helps share a single IP address assigned by your ISP among several clients in your home. Port forwarding allows traffic requests from a specified application to be directed to a specified client inside. [Click here for help.](#)' Below this, there's a table with columns: Status, Name, Local IP, TCP Port, UDP Port, Schedule, Edit, and Delete. The table contains one rule named 'My Rule' with Local IP 192.168.0.135, TCP Port 5970, UDP Port 5970, and Schedule 'Always Enable'. There are buttons for 'Add Rule' and 'Save'. A copyright notice 'COPYRIGHT © 2013 D-Link' is at the bottom.

The screenshot shows the 'Create New Rule' dialog box. It has a close button (X) in the top right corner. The fields are: Name (text input), Local IP (text input with a drop-down menu showing '<< Computer Name'), TCP Port (text input), UDP Port (text input), and Schedule (drop-down menu showing 'Always Enable'). There is an 'Apply' button at the bottom.

Website Filter

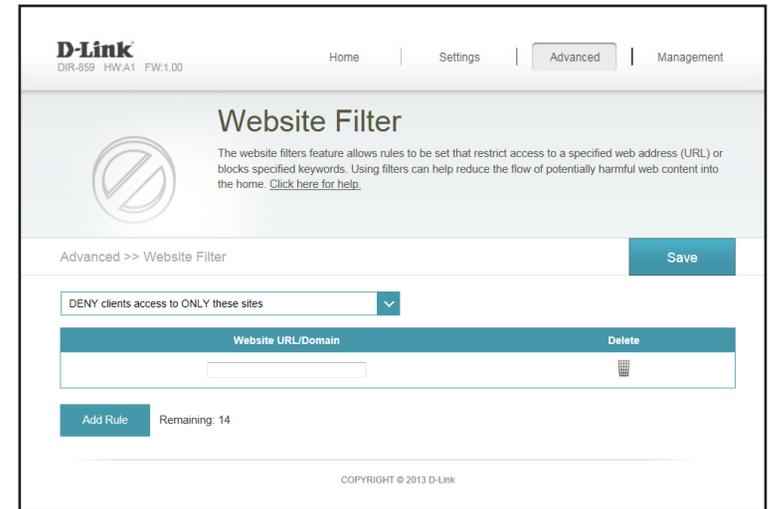
The website filter settings allow you to block access to certain web sites. You can either create a list of sites to block, or create a list of sites to allow (with all other sites being blocked).

In the Advanced menu on the bar on the top of the page, click **Website Filter**.

If you want to create a list of sites to block, select **DENY computers access to ONLY these sites** from the drop-down menu. All other sites will be accessible. If you want to specify a list of sites to allow, select **ALLOW computers access to ONLY these sites** from the drop-down menu. All other sites will be blocked.

You may specify a maximum of fifteen web sites. To add a new site to the list, click **Create New Rule**. Next, under Website URL/Domain enter the URL or domain. If you wish to remove a rule, click on its trash can icon in the Delete column. If you wish to edit a rule, simply replace the URL or domain.

Click **Save** when you are done.



Static Routes

The Static Routes section allows you to define custom routes to control how data traffic is moved around your network.

In the Advanced menu on the bar on the top of the page, click **Static Routes**. To configure IPv6 rules, click **IPv6** and refer to page 65. To return to the main IPv4 static routes page, click **IPv4**.

If you wish to remove a rule, click on its trash can icon in the Delete column. If you wish to edit a rule, click on its pencil icon in the Edit column. If you wish to create a new rule, click the **Add Rules** button. Click **Save** when you are done. If you edit or create a rule, the following options will appear:

Name: Enter a name for the rule.

Destination IP: Enter the IP address of packets that will take this route.

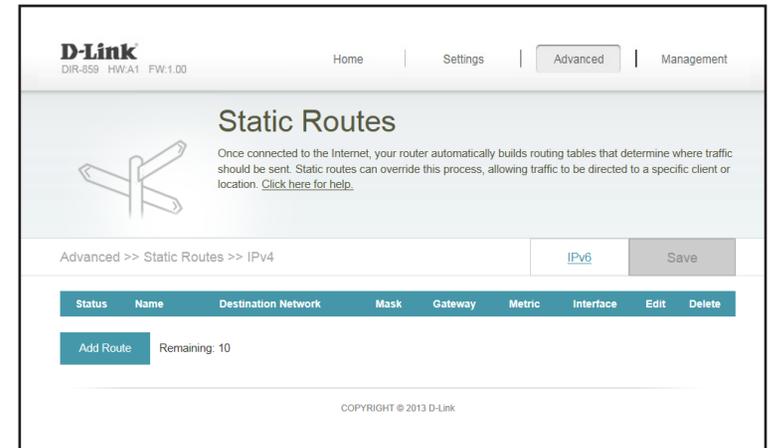
Netmask: Enter the netmask of the route.

Gateway: Enter your next hop gateway to be taken if this route is used.

Metric: The route metric is a value from 1 to 16 that indicates the cost of using this route. A value 1 is the lowest cost and 15 is the highest cost.

Interface: Select the interface that the IP packet must use to transit out of the router when this route is used.

Click **OK** when you are done.



Create New Route

Name:

Destination Network:

Mask:

Gateway:

Metric:

Interface:

IPv6

To configure IPv6 rules, on the Static Routes page click **IPv6**. To return to the main IPv4 static routes page, click **IPv4**.

If you wish to remove a rule, click on its trash can icon in the Delete column. If you wish to edit a rule, click on its pencil icon in the Edit column. If you wish to create a new rule, click the **Add Rules** button. Click **Save** when you are done. If you edit or create a rule, the following options will appear:

Name: Enter a name for the rule.

DestNetwork: This is the IP address of the router used to reach the specified destination.

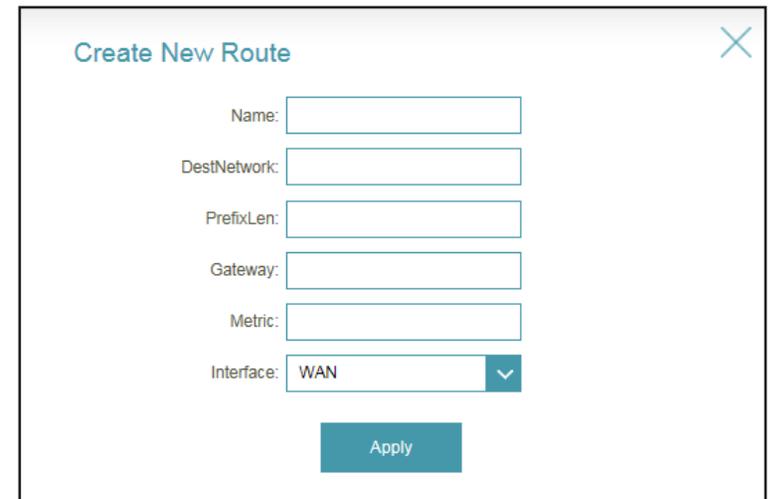
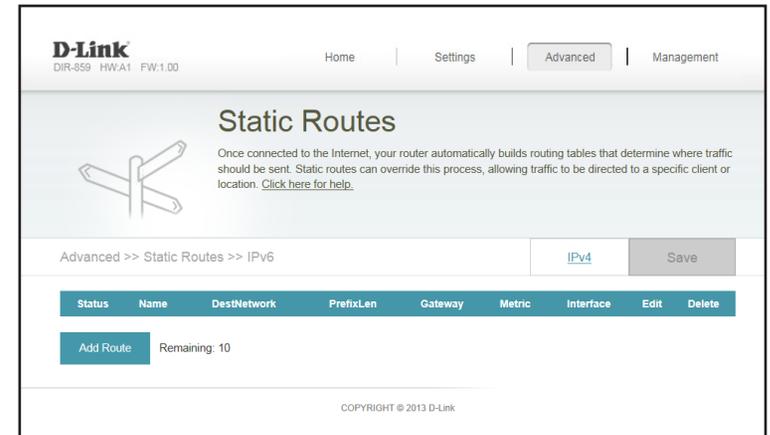
PrefixLen: Enter the IPv6 address prefix length of the packets that will take this route.

Gateway: Enter the IP address of the gateway.

Metric: Enter the metric value for this rule here.

Interface: Select the interface that the IP packet must use to transit out of the router when this route is used.

Click **OK** when you are done.



Dynamic DNS

Most Internet Service Providers (ISPs) assign dynamic (changing) IP addresses. Using a dynamic DNS service provider, people can enter your domain name in their web browser to connect to your server no matter what your IP address is.

In the Advanced menu on the bar on the top of the page, click **Dynamic DNS**.

Enable Dynamic DNS: Enabling dynamic DNS will reveal further configuration options.

Status: Displays the current dynamic DNS connection status.

Server Address: Enter the address of your dynamic DNS server, or select one from the drop-down menu.

Host Name: Enter the host name that you registered with your dynamic DNS service provider.

User Name: Enter your dynamic DNS username.

Password: Enter your dynamic DNS password.

Time Out: Enter a timeout time (in hours).

Click **Save** when you are done.

At the bottom of the page are the IPv6 host settings. To configure an IPv6 dynamic DNS host, refer to page 67.

The screenshot shows the D-Link Dynamic DNS configuration interface. At the top, there's a navigation bar with 'Home', 'Settings', 'Advanced', and 'Management'. The 'Dynamic DNS' section is active, showing a description of the service. Below this, there are several configuration options:

- Enable Dynamic DNS:** A toggle switch set to 'Enabled'.
- Status:** Displayed as 'Disconnected'.
- Server Address:** A text input field containing 'dyndns.com' and a dropdown menu also showing 'dyndns.com'.
- Host Name:** An empty text input field.
- User Name:** An empty text input field.
- Password:** An empty text input field.
- Time Out:** A text input field containing '24' followed by 'hours'.

Below the configuration fields is a table with the following structure:

Status	Host Name	IPv6 Address	Edit	Delete
<input type="button" value="Add Record"/> Remaining: 10				

At the bottom of the page, there is a copyright notice: 'COPYRIGHT © 2013 D-Link'.

IPv6 Host

The IPv6 host settings are found at the bottom of the Dynamic DNS page.

If you wish to remove a rule, click on its trash can icon in the Delete column. If you wish to edit a rule, click on its pencil icon in the Edit column. If you wish to create a new rule, click the **Add Rules** button. Click **Save** when you are done. If you edit or create a rule, the following options will appear:

Host Name: Enter the host name that you registered with your dynamic DNS service provider.

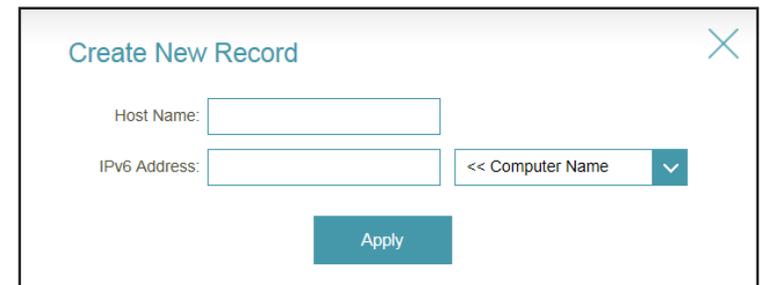
IPv6 Address: Enter the IPv6 address of the dynamic DNS server. Alternatively, select the server device in the drop-down menu.

Click **OK** when you are done.



Status	Host Name	IPv6 Address	Edit	Delete
Add Record	Remaining: 10			

COPYRIGHT © 2013 D-Link



Create New Record

Host Name:

IPv6 Address: << Computer Name

Apply

Management Time & Schedule Time

The Time page allows you to configure, update, and maintain the correct time on the internal system clock. From here you can set the time zone, the Network Time Protocol (NTP) server, and enable or disable daylight saving time.

In the Management menu on the bar on the top of the page, click **Time & Schedule**.

Time Zone: Select your time zone from the drop-down menu.

Time: Displays the current date and time of the router.

Daylight Saving: Enable or disable daylight saving time.

Update Time Using an NTP Server: Enable or disable to allow an NTP server on the Internet to synchronize the time and date with your router. If you enable this option, select an NTP server from the drop-down menu. To configure the router's time and date manually, disable this option and use the drop-down menus that appear to input the time and date.

Click **Save** when you are done.

To configure and manage your schedules, click **Schedule** and refer to page 69.

The screenshot displays the D-Link router's web interface for Time Configuration. At the top, the D-Link logo and model information (DIR-859 HW:1.1 FW:1.00) are visible, along with navigation links for Home, Settings, Advanced, and Management. The main heading is "Time", with a sub-heading explaining that the router's internal clock is used for data logging and schedules, and can be synchronized with a public time server or set manually. Below this, there are two main sections: "Time Configuration" and "Automatic Time Configuration".

Time Configuration:

- Time Zone: (GMT-05:00) Eastern Time (US & Canada) [dropdown menu]
- Time: 2014/01/24 03:58:45 AM
- Enable Daylight Saving: Disabled [checkbox]

Automatic Time Configuration:

- Update Time Using an NTP Server: Enabled [checkbox]
- NTP Server: D-Link NTP Server [dropdown menu]

At the bottom of the page, there is a "COPYRIGHT © 2013 D-Link" notice. The interface includes a breadcrumb trail "Management >> System Time" and buttons for "Schedule" and "Save".

Schedule

Some configuration rules can be set according to a pre-configured schedule. To create, edit, or delete schedules, from the Time page click **Schedule**. To return to the Time page, click **Time**.

If you wish to remove a rule, click on its trash can icon in the Delete column. If you wish to edit a rule, click on its pencil icon in the Edit column. If you wish to create a new rule, click the **Add Rules** button. Click **Save** when you are done. If you edit or create a rule, the following screen will appear:

First, enter the name of your schedule in the **Name** field.

Each box represents one hour, with the time at the top of each column. To add a time period to the schedule, simply click on the start hour and drag to the end hour. You can add multiple days to the schedule, but only one period per day.

To remove a time period from the schedule, click on the cross icon.

Click **OK** when you are done.

Management >> Schedule

Name	Schedule	Edit	Delete
Work	Monday : 8:00 - 19:00 Tuesday : 8:00 - 19:00 Wednesday : 8:00 - 19:00 Thursday : 8:00 - 19:00 Friday : 8:00 - 18:00		

Add Rule Remaining: 9

COPYRIGHT © 2013 D-Link

Name:

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Mon																								
Tue																								
Wed																								
Thu																								
Fri																								
Sat																								
Sun																								

Apply

Name:

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Mon									8:00 - 19:00															
Tue									8:00 - 19:00															
Wed									8:00 - 19:00															
Thu									8:00 - 19:00															
Fri									8:00 - 18:00															
Sat																								
Sun																								

Apply

System Log

The router keeps a running log of events. This log can be sent to a Syslog server, and sent to your email address. In the Management menu on the bar on the top of the page, click **System Log**.

Enable Logging to Syslog Server: Check this box to send the router logs to a SysLog Server. If this is disabled, there will be no other options on this page.

Syslog Server IP Address: Enter the IP address for the Syslog server. If the Syslog server is connected to the router, select it from the drop-down menu to automatically populate the field.

Enable Email Notification: If you want the logs to be automatically sent to an email address, enable this option.

Enter the settings for your email account. These are obtained from your email service provider.

Send When Log Full: If email notification is enabled, this option will set the router to send the log by email when the log is fully.

Send On Schedule: This option can be enabled to send an email according to a pre-configured schedule. See below.

Schedule: If **Send On Schedule** is enabled, use the drop-down menu to select the time schedule that the rule will be enabled on. The schedule may be set to **Always Enable**, or you can create your own schedules in the **Schedules** section (refer to page 69).

Click **Save** when you are done.

The screenshot shows the D-Link System Log configuration interface. At the top, there is a navigation bar with 'Home', 'Settings', 'Advanced', and 'Management' (selected). Below the navigation bar, the page title is 'System Log'. A brief description states: 'On-board diagnostics run continually in the background to monitor the health of your router. The results are recorded in the system log if it is enabled. This info can be used to diagnose common problems or help Customer Support resolve issues more quickly. Click here for help.' Below this, there is a 'Save' button. The main configuration area is divided into two sections: 'SysLog Settings' and 'E-mail Settings'. In 'SysLog Settings', 'Enable Logging to Syslog Server' is set to 'Enabled'. The 'SysLog Server IP Address' field is empty, and the 'Computer Name' dropdown menu is set to '<< Computer Name'. In 'E-mail Settings', 'Enable E-mail Notification' is set to 'Enabled'. The 'From E-mail Address', 'To E-mail Address', and 'SMTP Server Address' fields are empty. The 'SMTP Server Port' is set to '25'. 'Enable Authentication' is set to 'Enabled'. The 'Account Name' and 'Password' fields are empty. At the bottom, the 'E-mail Log When Full or On Schedule' section has 'Send When Log Full' and 'Send on Schedule' both set to 'Disabled'. A copyright notice 'COPYRIGHT © 2013 D-Link' is visible at the bottom of the page.

Admin

This page will allow you to change the administrator (Admin) password and enable remote management.

In the Management menu on the bar on the top of the page, click **Admin**.

Password: Enter a new password for the administrator account. You will need to enter this password whenever you configure the router using a web browser.

Enable Graphical Authentication (CAPTCHA): Enables a challenge-response test to require users to type letters or numbers from a distorted image displayed on the screen to prevent online hackers and unauthorized users from gaining access to your router's network settings.

Enable HTTPS Server: Check to enable HTTPS to connect to the router securely. This means to connect to the router, you must enter **https://192.168.0.1** instead of **http://192.168.0.1**.

Enable Remote Management: Remote management allows the DIR-859 to be configured from the Internet by a web browser. A password is still required to access the web management interface.

Remote Admin Port: The port number used to access the DIR-859 is used in the URL. Example: **Port:** **http://x.x.x.x:8080** where x.x.x.x is the Internet IP address of the DIR-859 and 8080 is the port used for the web management interface. If you enable **HTTPS Server**, you must enter **https://** as part of the URL to access the router remotely.

Click **Save** when you are done.

To load, save, or reset settings, or reboot the router, click **System** and refer to page 72.

The screenshot shows the D-Link DIR-859 Admin interface. At the top, there is a navigation bar with 'Home', 'Settings', 'Advanced', and 'Management' (selected). Below the navigation bar, the page title is 'Admin'. A key icon is displayed next to the title. A message states: 'The admin account can change all router settings, while other user accounts can only view some settings. To keep your router secure, you should give the admin account a strong password. [Click here for help.](#)'

The main content area is divided into sections:

- Admin Password:** Contains a 'Password' field with a masked input (dots), an 'Enable Graphical Authentication (CAPTCHA)' toggle set to 'Disabled', and an 'Advanced Settings...' link.
- Administration:** Contains three settings:
 - 'Enable HTTPS Server' toggle set to 'Enabled'.
 - 'Enable Remote Management' toggle set to 'Disabled'.
 - 'Remote Admin Port' field with an empty input box and a 'Use HTTPS' toggle set to 'Disabled'.

At the bottom of the page, there is a 'COPYRIGHT © 2013 D-Link' notice. On the right side of the page, there are 'System' and 'Save' buttons.

System

This page allows you to save the router's current configuration, load a previously saved configuration, reset the router to its factory default settings, or reboot the router.

From the Admin page click **System**. To return to the Admin page, click **Admin**.

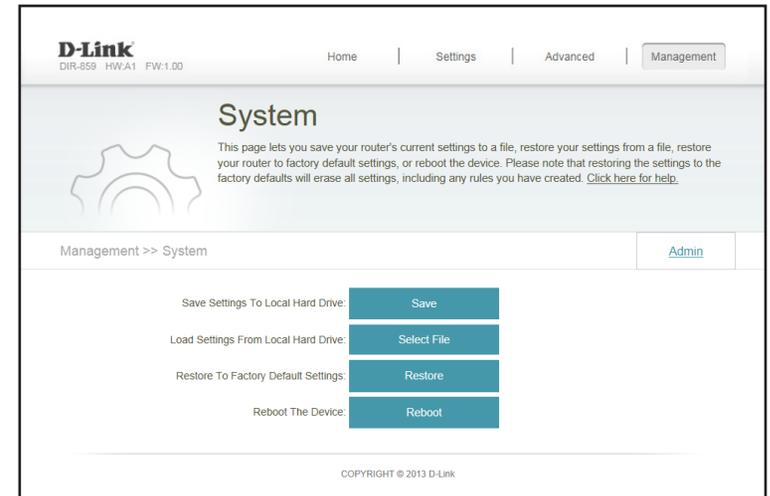
Save Settings To Local Hard Drive: This option will save the current router configuration settings to a file on your computer.

Load Settings From Local Hard Drive: This option will load previously saved router configuration file. This will overwrite the router's current configuration.

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

Reboot The Device: Click to reboot the router.

Click **Save** when you are done.



Upgrade

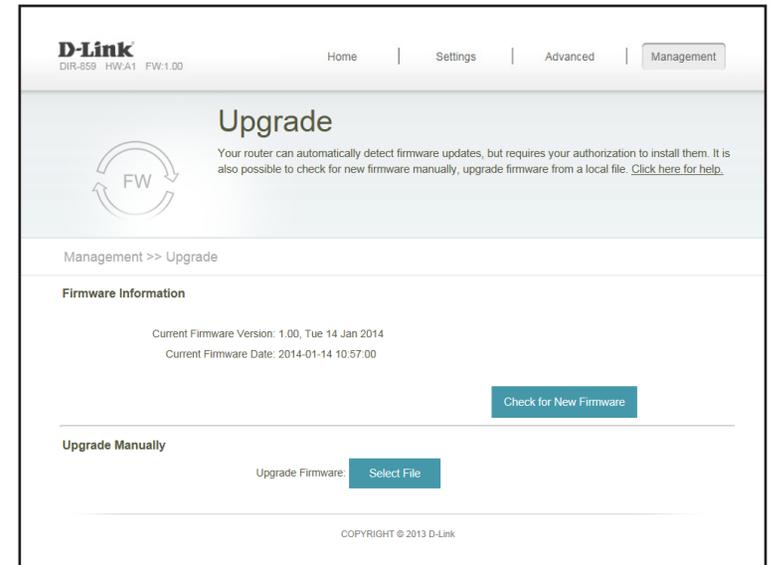
This page will allow you to upgrade the router's firmware or language pack, either automatically or manually. To manually upgrade the firmware or language pack, you must first download the relevant file from <http://support.dlink.com>.

In the Management menu on the bar on the top of the page, click **Upgrade**.

Firmware Information: The current firmware's version and date will be displayed.

Check for New Firmware: Click this button to prompt the router to automatically check for a new firmware version. If a newer version is found, it will prompt you to install it.

Upgrade Firmware: If you wish to upgrade manually, first download the firmware file you wish to upgrade to. Next, click the **Upgrade Firmware** button and browse to the file to install the new firmware. You can also browse to a language pack file to install a new language pack.



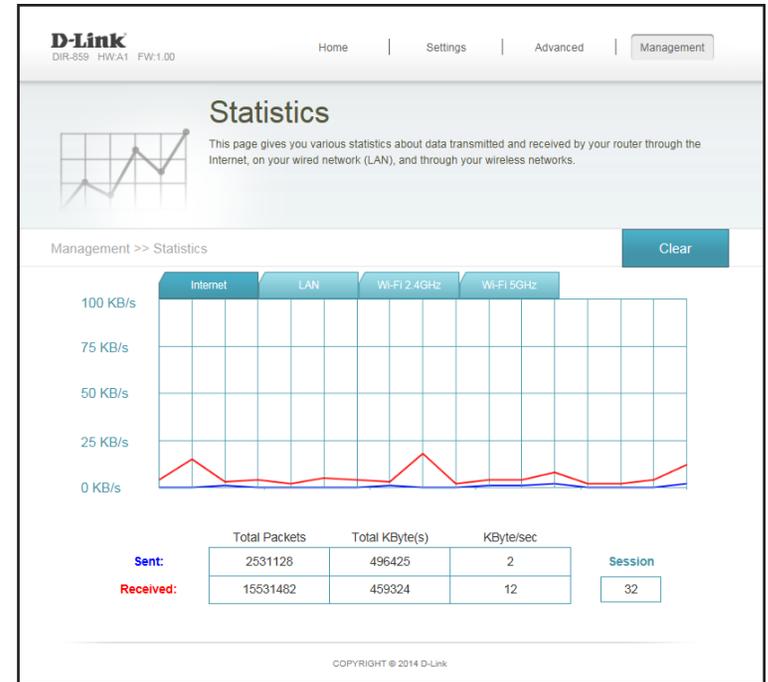
Statistics

On the Statistics page you can view the amount of packets that pass through the router on the WAN, LAN, and wireless segments.

In the Management menu on the bar on the top of the page, click **Statistics**.

You can view the **Internet**, **LAN**, **Wi-Fi 2.4 GHz**, or **Wi-Fi 5 GHz** by clicking on the respective tabs at the top. The graph will update in real time. To clear the information on the graph, click **Clear**.

The traffic counter will reset if the device is rebooted.



Connect a Wireless Client to your Router

WPS Button

The easiest and most secure way to connect your wireless devices to the router is with WPS (Wi-Fi Protected Setup). Most wireless devices such as wireless adapters, media players, Blu-ray DVD players, wireless printers and cameras will have a WPS button (or a software utility with WPS) that you can press to connect to the DIR-859 router. Please refer to your user manual for the wireless device you want to connect to make sure you understand how to enable WPS. Once you know, follow the steps below:

Step 1 - Press the WPS button on the DIR-859 for about 1 second. The Internet LED on the front will start to blink.



Step 2 - Within 2 minutes, press the WPS button on your wireless client (or launch the software utility and start the WPS process).

Step 3 - Allow up to 1 minute for your connection to be configured. Once the Internet light stops blinking, you will be connected and your wireless connection will be secure with WPA2.

Windows® 8

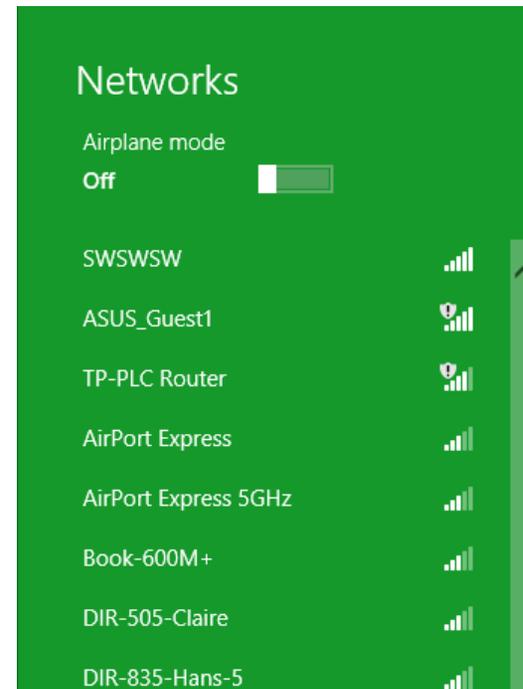
WPA/WPA2

It is recommended that you 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 (Wi-Fi password) being used.

To join an existing network, locate the wireless network icon in the taskbar next to the time display.



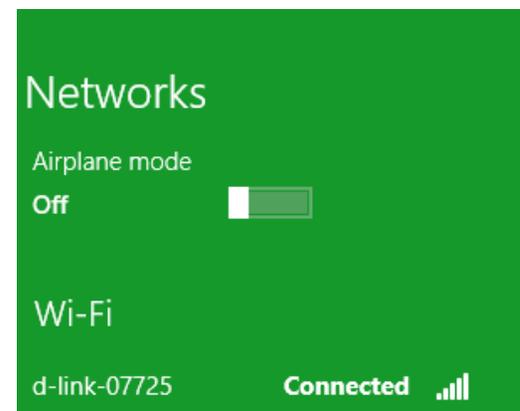
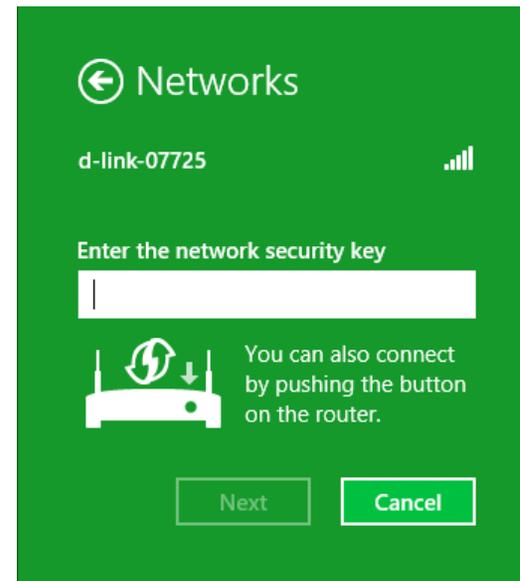
Clicking on this icon will display a list of wireless networks that are within connecting proximity of your computer. Select the desired network by clicking on the network name.



You will then be prompted to enter the network security key (Wi-Fi password) for the wireless network. Enter the password into the box and click **Next**.

If you wish to use Wi-Fi Protected Setup (WPS) to connect to the router, you can also press the WPS button on your router during this step to enable the WPS function.

When you have established a successful connection to a wireless network, the word **Connected** will appear next to the name of the network to which you are connected to.



Windows® 7

WPA/WPA2

It is recommended that you 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. Click on the wireless icon in your system tray (lower-right corner).



Wireless Icon

2. The utility will display any available wireless networks in your area.

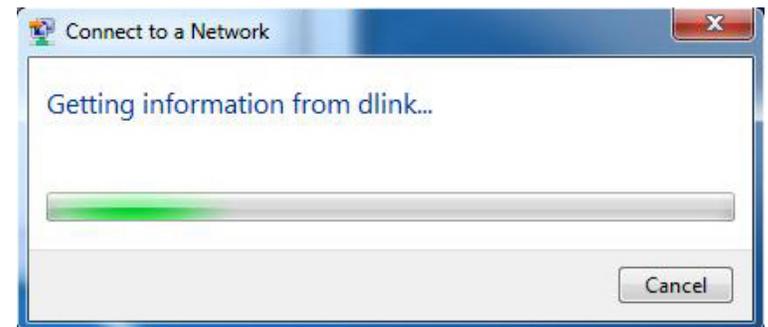


3. Highlight the wireless connection with Wi-Fi name (SSID) you would like to connect to and click the **Connect** button.

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



4. The following window appears while your computer tries to connect to the router.



5. Enter the same security key or passphrase (Wi-Fi password) that is on your router and click **Connect**. You can also connect by pushing the WPS button on the router.

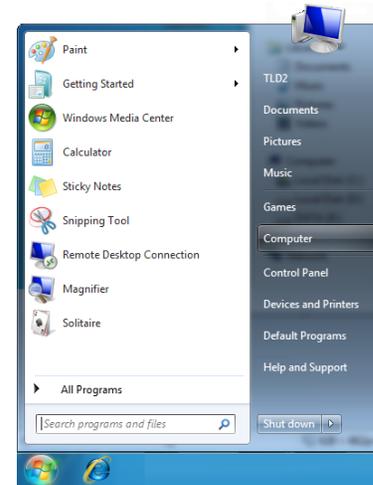
It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the security settings are correct. The key or passphrase must be exactly the same as the one on the wireless router.



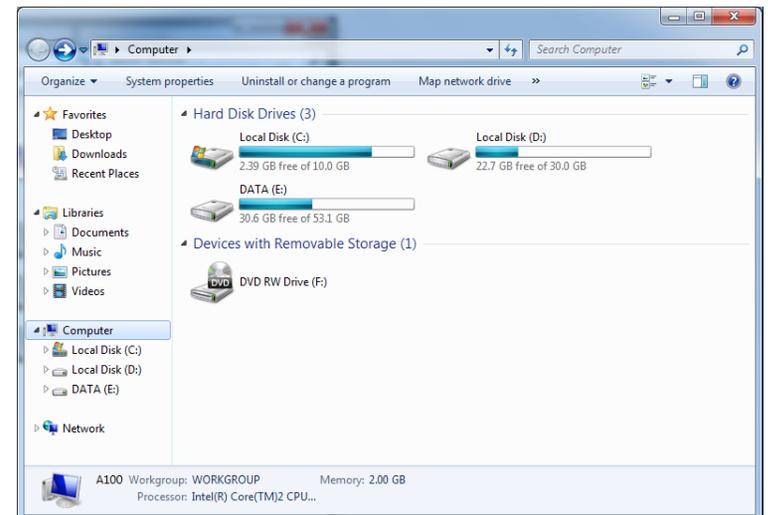
WPS

The WPS feature of the DIR-859 can be configured using Windows® 7. Carry out the following steps to use Windows® 7 to configure the WPS feature:

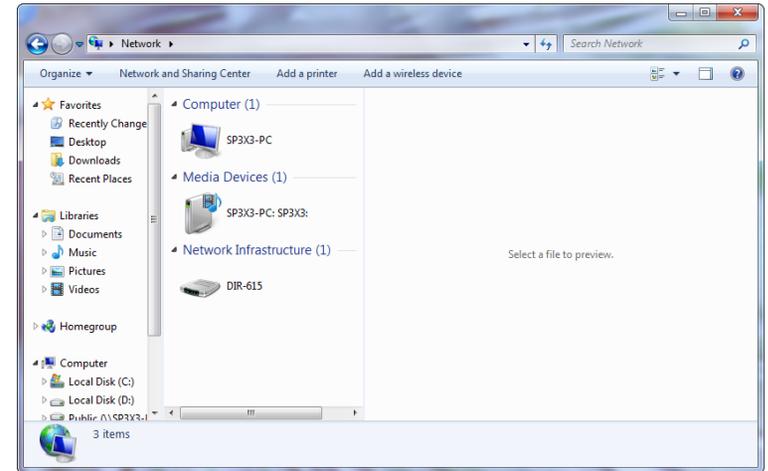
1. Click the **Start** button and select **Computer** from the Start menu.



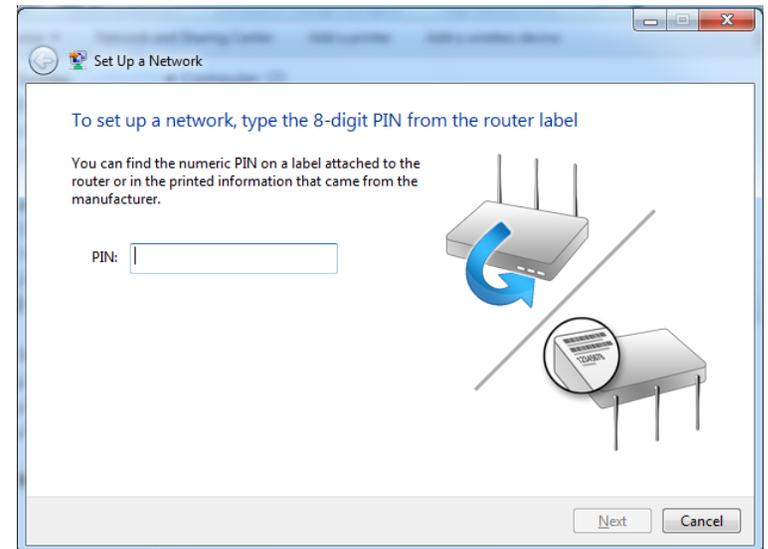
2. Click **Network** on the left side.



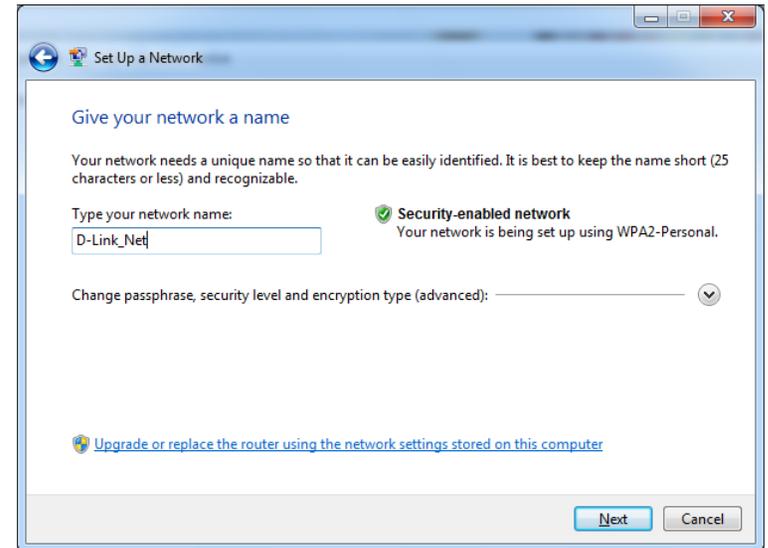
3. Double-click the DIR-859.



4. Input the WPS PIN number (on the router label) in the **Setup > Wireless Setup** menu in the router's web UI) and click **Next**.

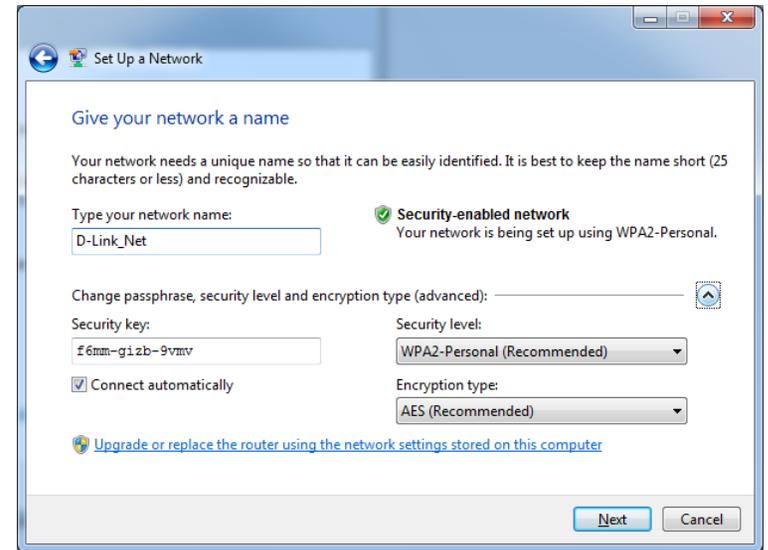


5. Type a name to identify the network.



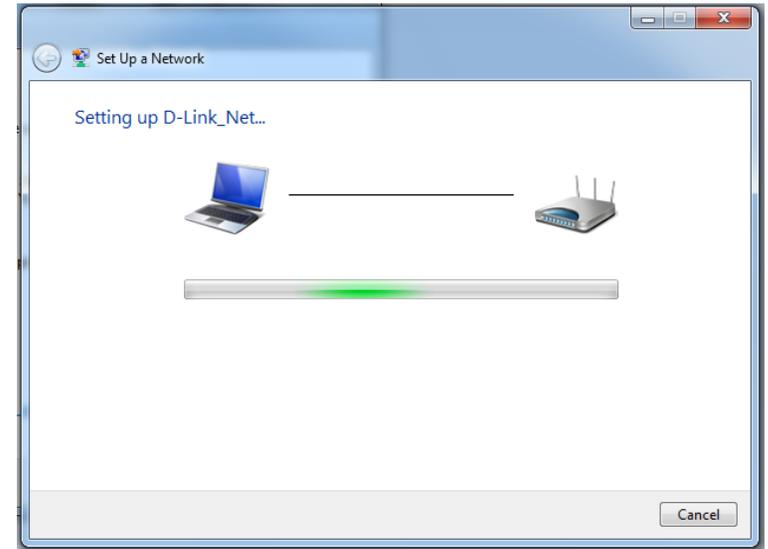
6. To configure advanced settings, click the  icon.

Click **Next** to continue.



7. The following window appears while the Router is being configured.

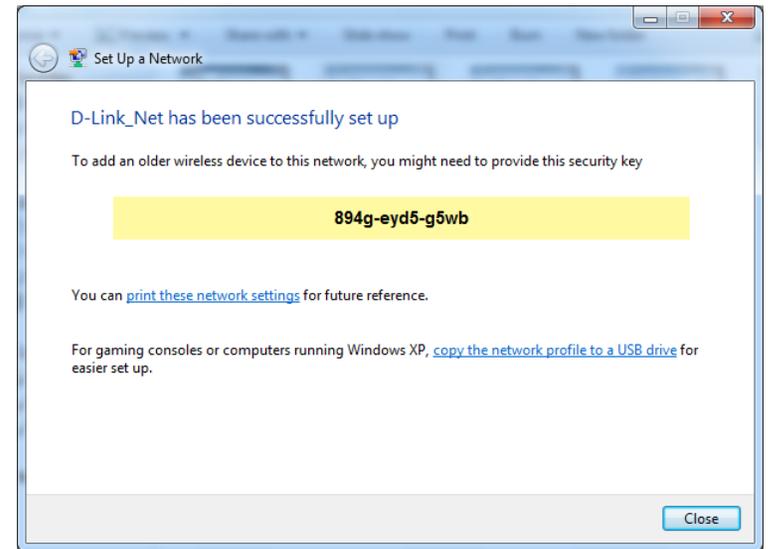
Wait for the configuration to complete.



8. The following window informs you that WPS on the router has been set up successfully.

Make a note of the security key as you may need to provide this security key if adding an older wireless device to the network in the future.

9. Click **Close** to complete WPS setup.



Windows Vista®

Windows Vista® users may use the built-in wireless utility. If you are using another company's wireless utility, please refer to the user manual of your wireless adapter for help connecting to a wireless network. Most wireless utilities will have a "site survey" option similar to the Windows Vista® utility as seen below.

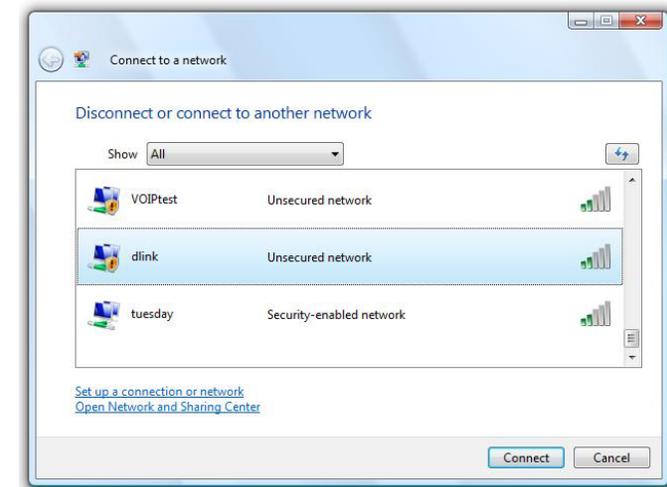
If you receive the **Wireless Networks Detected** bubble, click on the center of the bubble to access the utility.

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.



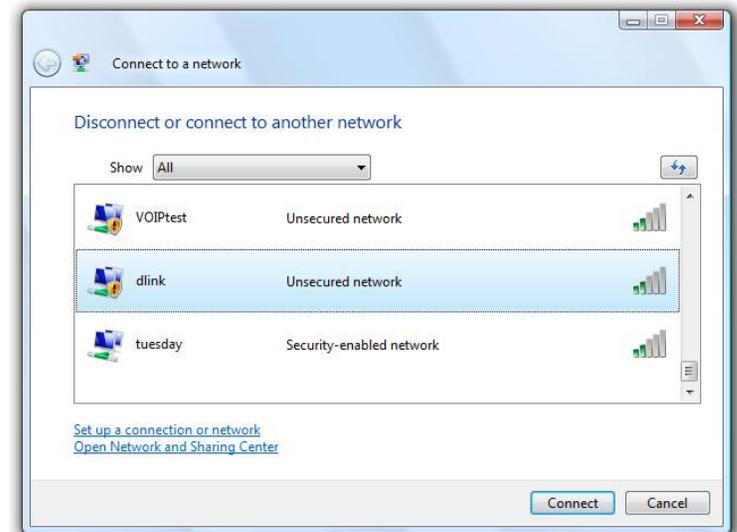
WPA/WPA2

It is recommended that you 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**.

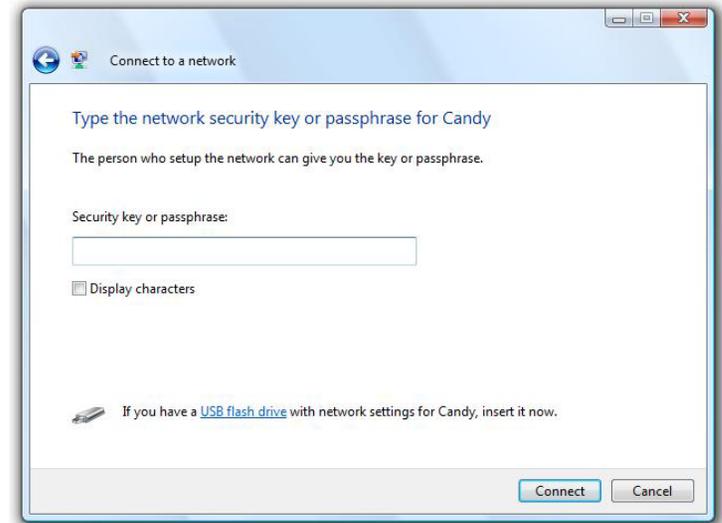


2. Highlight the Wi-Fi name (SSID) you would like to connect to and click **Connect**.



3. Enter the same security key or passphrase (Wi-Fi password) 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 the one on the wireless router.



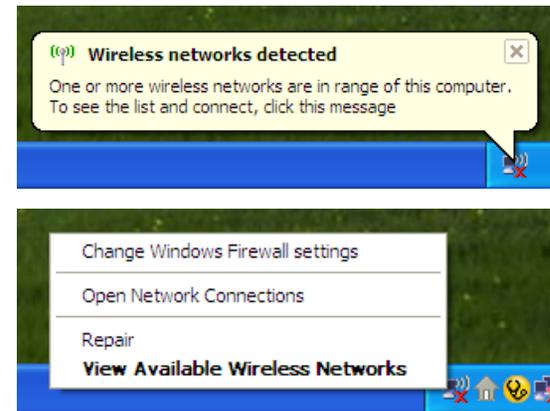
Windows® XP

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, 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.

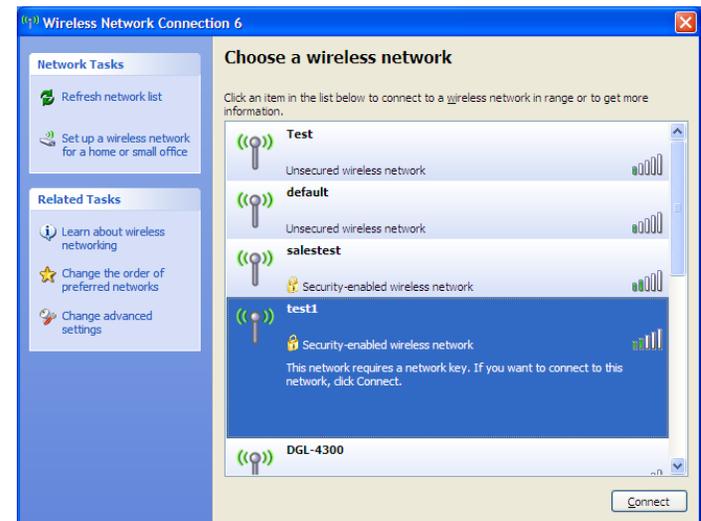
or

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 Wi-Fi network (displayed using the SSID) and click the **Connect** button.

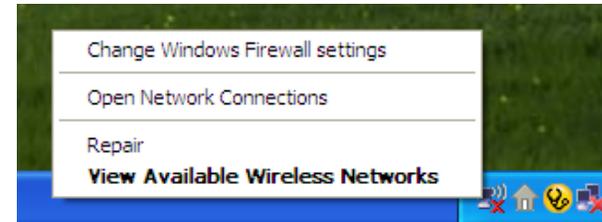
If you get a good signal but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



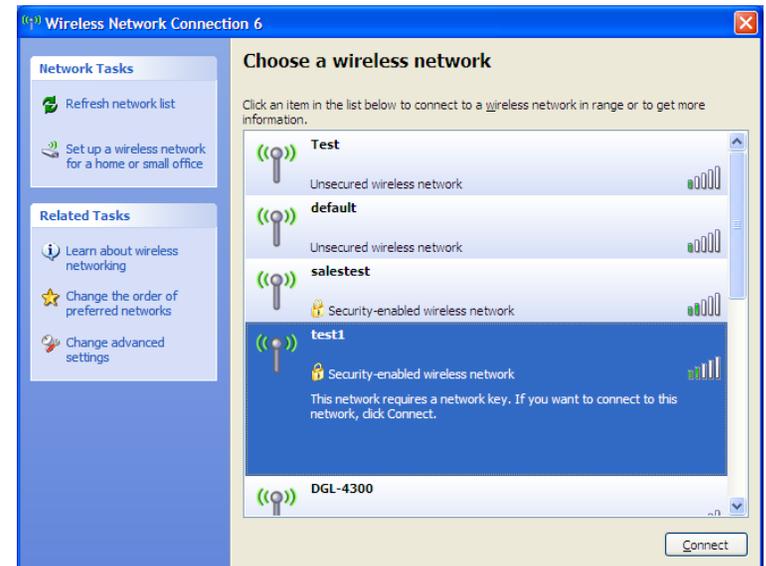
WPA/WPA2

It is recommended to enable WPA 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 WPA 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**.

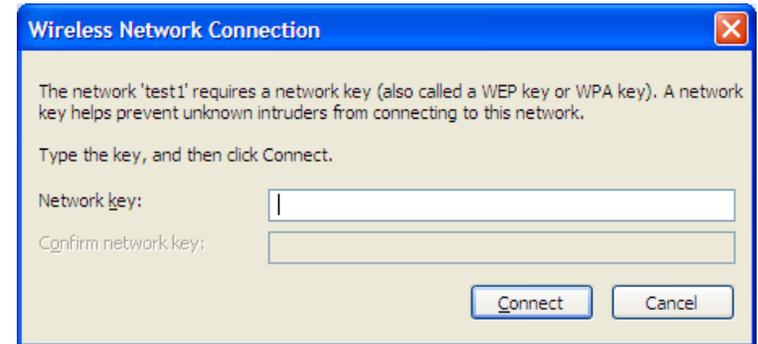


2. Highlight the Wi-Fi network (SSID) you would like to connect to and click **Connect**.



3. The **Wireless Network Connection** box will appear. Enter the WPA-PSK Wi-Fi password 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 Wi-Fi password 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 DIR-859. Read the following descriptions if you are having problems. The examples below are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to these 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, nor do you 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:
 - Microsoft Internet Explorer® 9 or higher
 - Mozilla Firefox® 20 or higher
 - Google™ Chrome 25 or higher
 - Apple Safari 5.1 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 ZoneAlarm, BlackICE, 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 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. 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, leave the password box empty.

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

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

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, XP, Vista®, and 7 users type in **cmd**) and press **Enter** (or click **OK**).
- Once the window opens, you'll need to do a special ping. Use the following syntax:

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

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

```
C:\>ping yahoo.com -f -l 1482
Pinging yahoo.com [66.94.234.13] with 1482 bytes of data:
Packet needs to be fragmented but DF set.
Ping statistics for 66.94.234.13:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping yahoo.com -f -l 1472
Pinging yahoo.com [66.94.234.13] with 1472 bytes of data:
Reply from 66.94.234.13: bytes=1472 time=93ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=109ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=125ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=203ms TTL=52
Ping statistics for 66.94.234.13:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 93ms, Maximum = 203ms, Average = 132ms
C:\>
```

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

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

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

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

Wireless Basics

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 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 similarly to how cordless phones work, through radio signals that 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 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, university 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. This 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 Uses/Benefits

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

Small Office and Home Office Uses/Benefits

- 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 the 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 your 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 the 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 DIR-859 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

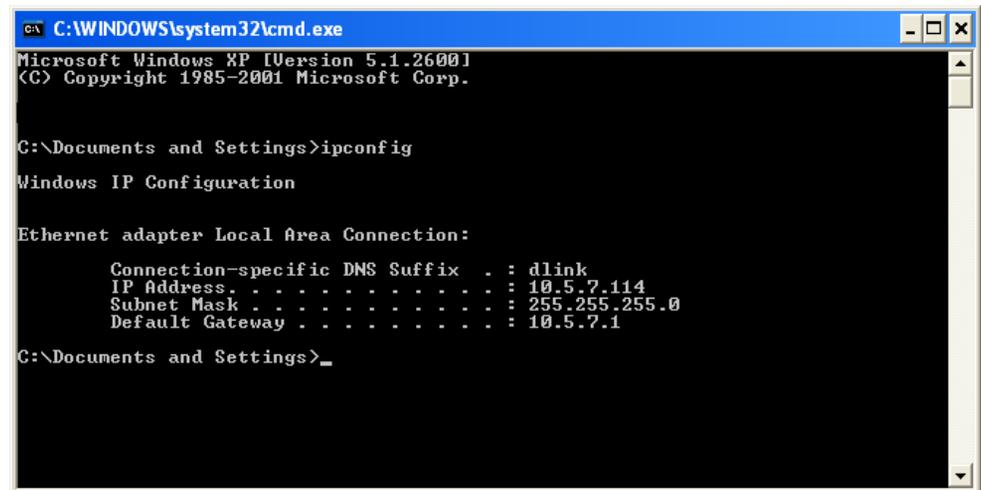
After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

Click on **Start > Run**. In the run box type **cmd** and click **OK**. (Windows® 7/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® 7 - Click on **Start > Control Panel > Network and Internet > Network and Sharing Center.**
 - 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.**

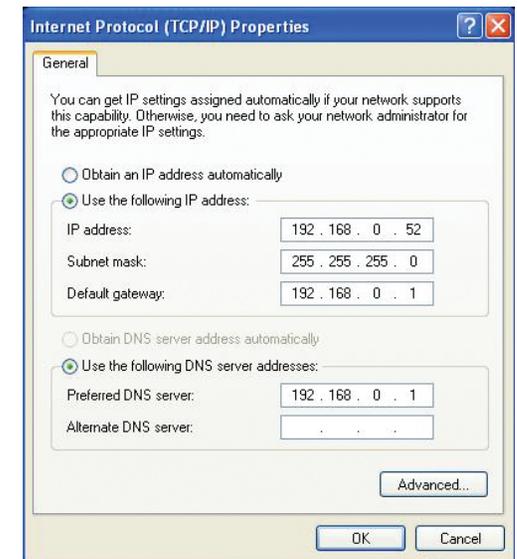
Step 3
Highlight **Internet Protocol (TCP/IP)** and click **Properties.**

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 the Default Gateway the same as the LAN IP address of your router (I.E. 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.



Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DIR-859 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 (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.

Technical Specifications

Device Interfaces

- 802.11 a/b/g/n/ac wireless LAN
- Four 10/100/1000 Gigabit LAN ports
- 10/100/1000 Gigabit WAN port

Antenna Types

- Three dual-band dipole antennas

Standards

- IEEE 802.11ac
- IEEE 802.11n
- IEEE 802.11g
- IEEE 802.11b
- IEEE 802.11a
- IEEE 802.3
- IEEE 802.3u

Security

- WPA™ - Personal/Enterprise
- WPA2™ - Personal/Enterprise
- Wi-Fi Protected Setup (WPS) PIN/PBC

Power

- Input: 100 to 240 V AC, 50/60 Hz
- Output: 12 V / 1.5 A

Operating Temperature

- 0 to 40 °C (32 to 104 °F)

Humidity

- 95% maximum (non-condensing)

Certifications

- FCC Class B
- CE Class B
- IPv6 Ready
- Wi-Fi Protected Setup (WPS)
- Wi-Fi Multimedia (WMM)
- Compatible with Windows 8

Dimensions

- L = 246.9 mm (9.72 inches)
- W = 190.4 mm (7.50 inches)
- H = 47.2 mm (1.86 inches)

Regulatory Information

Caution: Do not remove the plug and connect it to a power outlet by itself; always attach the plug to the power adaptor first before connecting it to a power outlet.

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.

Non-modifications Statement:

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

Caution:

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.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures.

Note:

The country code selection is for non-US model only and is not available to all US model. Per FCC regulation, all Wi-Fi product marketed in US must fixed to US operation channels only.

RF Frequency Requirements:

This device is for indoor use only when using all channels in the 5.150-5.250 GHz, 5.725-5.850 GHz frequency ranges. High power radars are allocated as primary users of the 5.150-5.250 GHz, 5.725-5.850 GHz bands. These radar stations can cause interference with and/or damage this device. This device will not operate on channels which overlap the 5600-5650 MHz band. It is restricted in indoor environments only.

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 25 cm between the radiator and your body.

Customer Information:

- (1) This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On bottom of this equipment is a label that contains, among other information, a product identifier of 0. If requested, this number must be provided to the telephone company.
- (2) If this equipment 0 causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also you will be advised of your right to file a complaint with the FCC if you believe it is necessary.
- (3) The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modification to maintain uninterrupted service.
- (4) If you experience trouble with this equipment, you disconnect it from the network until the problem has been corrected or until you are sure that the equipment is not malfunctioning.
- (5) Please follow instructions for repairing if any (e.g. battery replacement section); otherwise do not alternate or repair any parts of device except specified.
- (6) Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service

commission or corporation commission for information.

(7) If the telephone company requests information on what equipment is connected to their lines, inform them of:

- (a) The telephone number that this unit is connected to,
- (b) The ringer equivalence number 0
- (c) The USOC jack required 0 and
- (d) The FCC Registration Number 0

Items (b) and (d) are indicated on the label. The ringer equivalence number (REN) is used to determine how many devices can be connected to your telephone line. In most areas, the sum of the RENs of all devices on any one line should not exceed five (5.0). If too many devices are attached, they may not ring properly.

(8) If your home has specially wired alarm equipment connected to the telephone line, ensure the installation of this equipment does not disable alarm equipment, consult your telephone company or a qualified installer.

Safety Warning:

CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions.

ATTENTION: Risque d'explosion si la batterie est remplacée par un type incorrect. Jetez les piles usagées selon les instructions.

Industry Canada Statement:

This device complies with Industry Canada licence-exempt RSS standard(s). 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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Caution:

(i) the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.

Avertissement:

(i) les dispositifs fonctionnant dans la bande 5150-5250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.

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 20 cm between the radiator & your body.

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.

Warning

This unit is to be used with a power supply, P/N AMS3-1201500FV , AMS3-1201500FU or WA-18Q12R-ABBE APD-G-1/ APD-K-1.

Avertissement

Cet appareil doit être utilisé avec une source de courant, modèle AMS3-1201500FV , AMS3-1201500FU or WA-18Q12R-ABBE APD-G-1/ APD-K-1.

CAUTION: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

ATTENTION: Risque d'explosion si la batterie est remplacée par un type incorrect. Jetez les piles usagées selon les instructions.