D-Link®

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User Manual

AC1900 Gigabit Wi-Fi Router

DIR-1950

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

Hardware	Revision	Date	Description
A1	v1.00	2019/08/08	Initial release

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Product Overview
Package Contents

	DIR-1950
DIR-1950	V
Quick Installation Guide	V
Quick Installation Card	V
Ethernet Cable (RJ45)	V
Power Adapter	V

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

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

System Requirements

Network Requirements	• An Ethernet-based cable, DSL or fiber modem • IEEE 802.11ac/n/g/b/a wireless clients • 10/100/1000 Ethernet
Web-based Configuration Utility Requirements	**Computer with the following:** • Windows®, Macintosh, or Linux-based operating system • An installed Ethernet adapter **Browser Requirements:** • Internet Explorer 10 or higher • Firefox 28 or higher • Safari 6 or higher • Chrome 28 or higher **Windows® Users:** Make sure you have the latest version of Java installed. Visit www.java.com to download the latest version.
D-Link Wi-Fi App Requirements	• iOS® or Android™ device (Please refer to the app's store page to check whether your device is compatible.)

Features

Need super-fast Wi-Fi for your wire-free, all-streaming house? With a powerful dual-core processor, the AC1900 Gigabit Wi-Fi Router packs in enough processing power to handle every networking task you throw at it. It's a powerful, intelligent home router with integrated voice assistant compatibility for Amazon Alexa and Google Assistant so you can control your network with voice commands.

Handle More with a High-Power Processor
With the DIR-1950, you're not only enjoying buffer-free gaming and lightning fast surfing, you're also enjoying features such as an optimizing QoS, an automatic firmware update system that ensures the latest features, and compatibility with voice assistants. All this is possible with the router's 1.25 GHz dual-core high-power processor, 128 MB of flash memory and 128 MB of RAM.

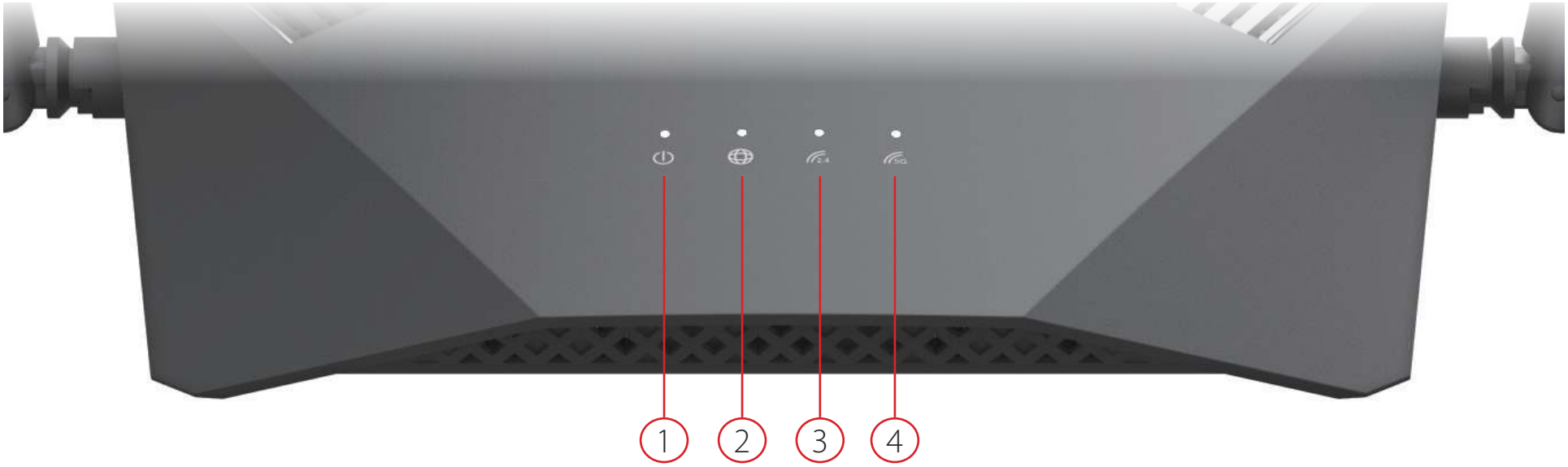
Enhanced Quality of Service Features
The built-in Quality of Service (QoS) engine allows you to prioritize important traffic to ensure that your favorite applications are receiving optimal bandwidth.

Always Up-to-Date with the Latest Features
The DIR-1950 will automatically check daily for updates to make sure that the device always has the latest features, and will install the update silently in the background. For an extra peace of mind, in the event of failure during the firmware update, the router will store a backup system image in the memory before proceeding with the update.

Easy to Set Up and Manage
Sharing your Internet connection doesn't have to be a complicated process; just download the free D-Link Wi-Fi app for your mobile device and follow the on-screen step-by-step instructions to set up your DIR-1950. You also have the option to use a web browser to access the setup wizard and to manage your router. Support for industry-standard Wi-Fi Protected Setup (WPS) lets you create encrypted connections to new devices by pressing a button.

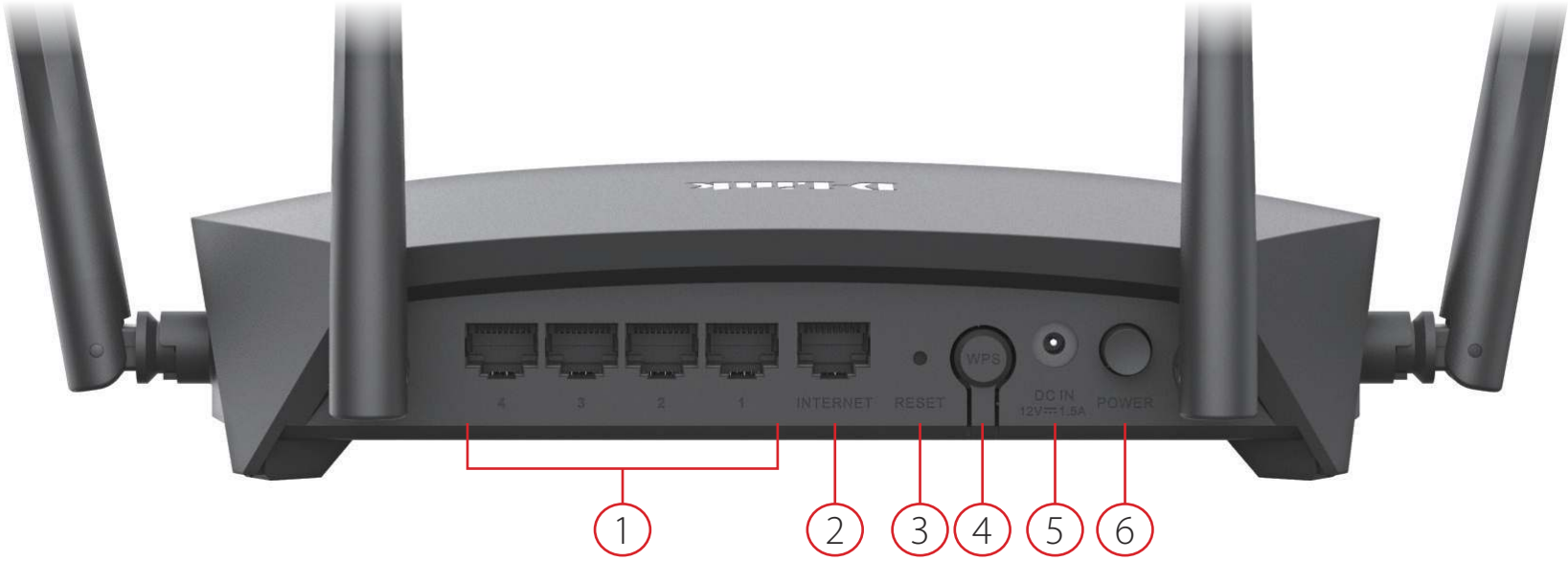
Hardware Overview

LED Indicators



1	**Power**	Solid White	The device is on and the system is healthy.
		Solid Orange	The device is booting up or performing the factory reset process.
		Blinking Orange	The device is under recovery mode.
2	**Internet**	Solid White	The Internet port connection is established.
		Solid Orange	The device cannot connect to the Internet.
		Blinking Orange	The device is undergoing the firmware upgrade process.
3	**Wireless (2.4 GHz)**	Solid White	The 2.4 GHz wireless band is enabled.
		Blinking White	The device is processing WPS.
4	**Wireless (5 GHz)**	Solid White	The 5 GHz wireless band is enabled.
		Blinking White	The device is processing WPS.

Back Panel



1	**Gigabit LAN Ports (1- 4)**	Connect Ethernet devices such as computers, switches, storage (NAS) devices, and game consoles.
2	**Gigabit WAN Port**	Using an Ethernet cable, connect your broadband modem to this port.
3	**Reset Button**	Insert a paperclip in the hole, wait for 10 seconds, and release to reset the router to default settings.
4	**WPS Button**	Press to start the WPS process and automatically create an encrypted connection to a WPS client.
5	**Power Connector**	Connector for the supplied power adapter.
6	**Power Button**	Press the power button to power the device on or off.

Installation

This section will walk you through the installation of your DIR-1950.

Before you Begin

- Placement of the router is very important. Do not place the router in an enclosed area such as a closet, cabinet, attic, or garage.
- Configure the router with the computer that was last connected directly to your Internet connection. Verify that it is connected to the Internet before connecting additional devices.
- If your ISP provided you with a modem/router combo, you will need to set it to "bridge" mode so the router can work properly. Please contact your ISP or refer to the user manual for your modem/router device.
- 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 Internet Service Provider (ISP) to change connection types (USB to Ethernet).
- If connecting to a DSL modem, make sure to have your DSL service information provided by your Internet Service Provider handy. This information is likely to include your DSL account's Username and Password. Your ISP may also supply you with additional WAN configuration settings which might be necessary to establish a connection.
- If you are connecting a considerable amount of networking equipment, it may be a good idea to take the time to label each cable or take a picture of your existing setup before making any changes.
- 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, 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.

Setup

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

- **D-Link Wi-Fi App** - Use your compatible Android or iOS device to install and configure your router. Refer to **D-Link Wi-Fi App Setup** on page **9.**
- **Hardware Setup** - This section explains how to setup your DIR-1950. Refer to **Hardware Setup** on page **11.**
- **D-Link Setup Wizard** - This wizard will launch when you log into the router by using your PC for the first time. Refer to **Setup Wizard** on page **14**.
- **Manual Setup** - Log in to the router to manually configure your router. Refer to **Configuration** on page **21**

D-Link Wi-Fi App Setup

The D-Link Wi-Fi app allows you to install and configure your DIR-1950 from your compatible Android or iOS device.

Note: *The screenshots may be different depending on your mobile device's OS version. The following steps show the iOS interface of the D-Link Wi-Fi app. If you are using an Android device, the appearance may be different from that of the screenshots, but the process is the same.*

Step 1
Search and install the free **D-Link Wi-Fi** app available on the App Store or on Google Play. You can also scan the QR code on the right, which will take you to the respective D-Link Wi-Fi app store page.

Download on the App Store

GET IT ON Google Play

Step 2
Launch the D-Link Wi-Fi app from the home screen of your device.

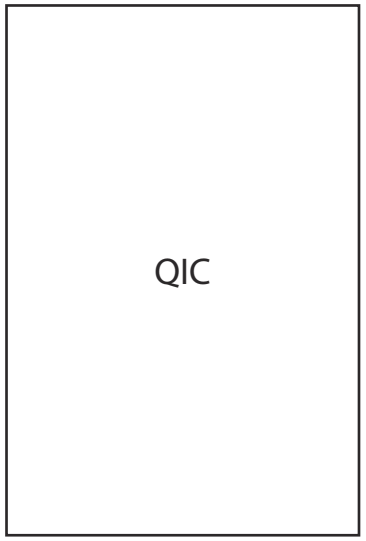
D-Link Wi-Fi

Step 3
Tap on the **Install New Device** button at the middle of the screen.



Step 4
Tap **Scan the QR code** to scan the setup QR code located in the Quick Installation Card and proceed to step 6. Alternatively, you can tap **Continue without scanning** to proceed to step 5.





Step 5
Select **Router** and select **DIR-1950** from the list of available devices. Tap **Next** to continue.

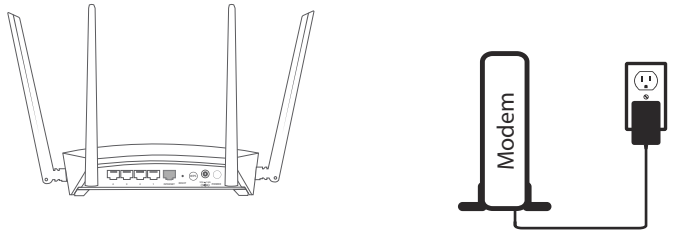




Step 6
You will now be guided through a step-by-step process for setting up your router. Simply follow the on-screen instructions to continue the installation and the configuration process.

Hardware Setup

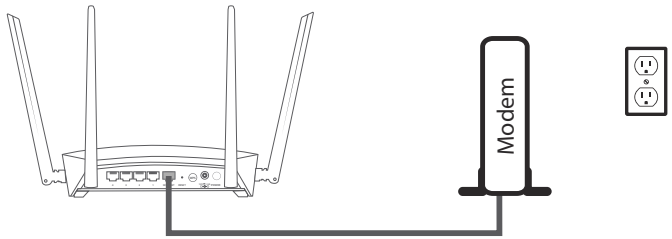
Step 1
Position your DIR-1950 near your Internet-connected modem. Place it in an open area for better wireless coverage.



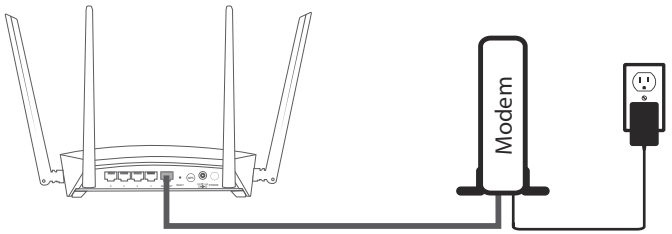
Step 2
Turn off and unplug the power to your cable or DSL broadband modem. This is required. In some cases, you may need to turn it off for up to five minutes.



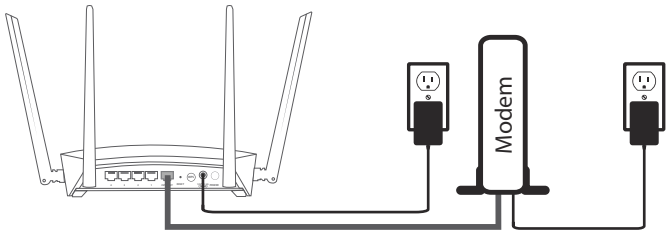
Step 3
Use the Ethernet cable to connect your modem to the port labelled **INTERNET** on the router.



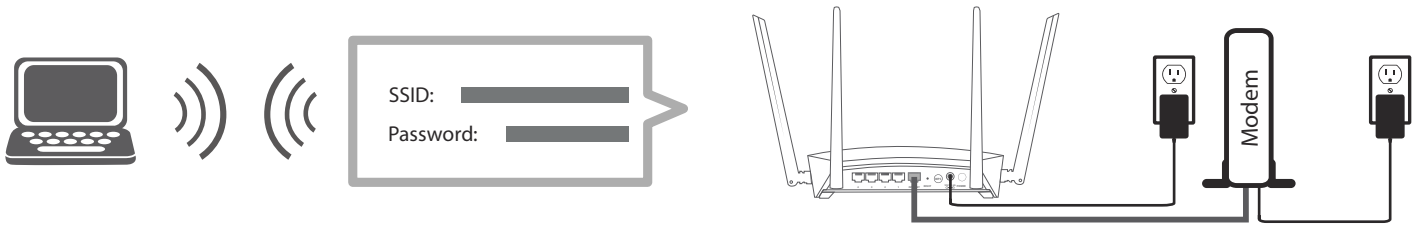
Step 4
Plug in and turn your modem back on and wait approximately one minute before proceeding.



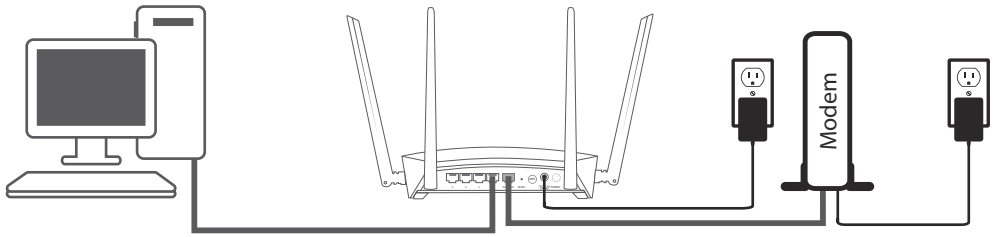
Step 5
Connect the supplied power adapter to the router and a power outlet, press the power button, and wait approximately one minute until the LED indicator on the front of the device changes from orange to solid white.



Step 6
If you are configuring the router wirelessly from a PC, connect to the Wi-Fi network printed on the label attached to the bottom of your router or in the Quick Installation Card.



If you are configuring the router from a PC with a wired Ethernet connection, plug one end of an Ethernet cable into the port labeled 1 on the back of the router, and the other end into the Ethernet port on your computer.



Step 7
If you are connecting to a broadband service that uses a dynamic connection (not PPPoE), you may be online already. Try opening a web browser and connecting to a website. If the website does not load, proceed to **Setup Wizard** on page **14**.

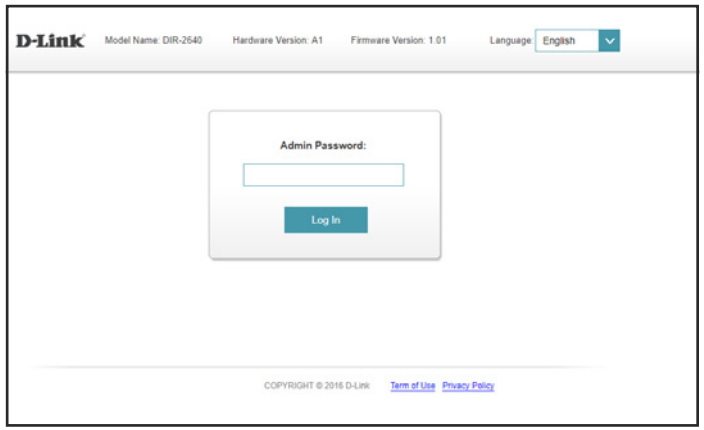
Setup Wizard

The setup wizard is designed to guide you through a step-by-step process to configure your new DIR-1950 and connect to the Internet via a wireless setup process.

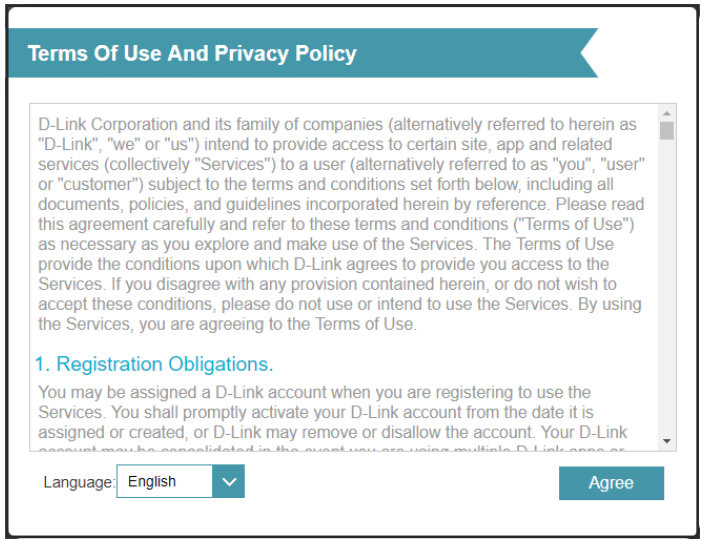
If this is your first time installing the router, open your web browser and enter **http://dlinkrouter.local./** in the address bar. Alternatively, enter the IP address of the router (default: **http://192.168.0.1**).



If this is your first time logging in to the and no connection has been established, the setup wizard will automatically appear instead of the log in page. If the setup process was not previously completed, then log in to the interface by leaving the password field blank.

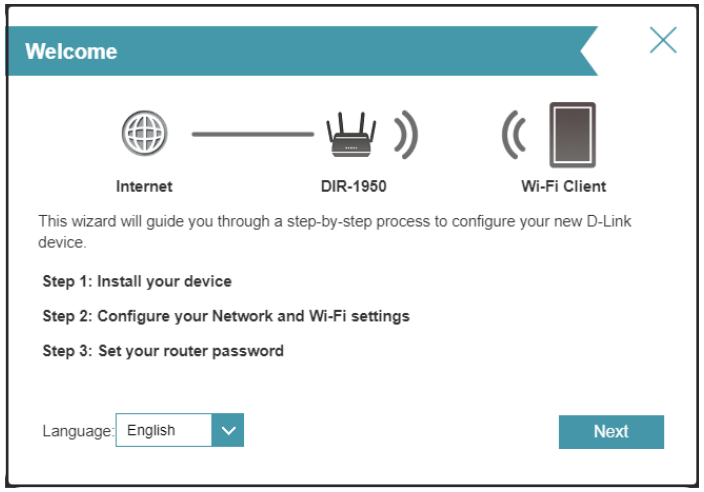


Agree to the Terms of Use and Privacy Policy before proceeding.

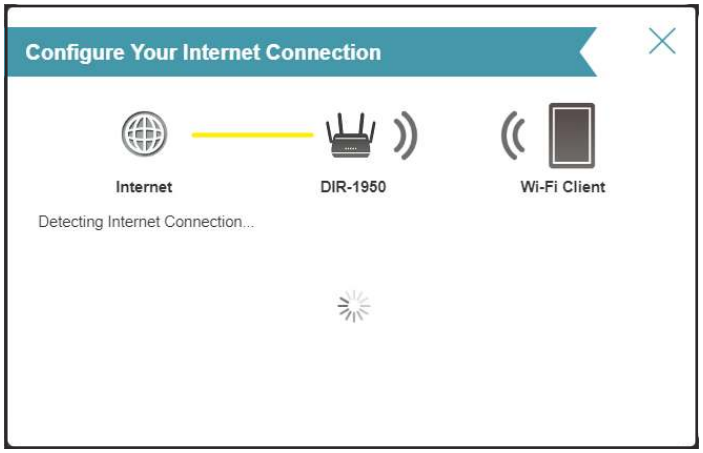


Follow the on-screen instructions to configure your new D-Link router and connect to the Internet.

Click **Next** to continue.

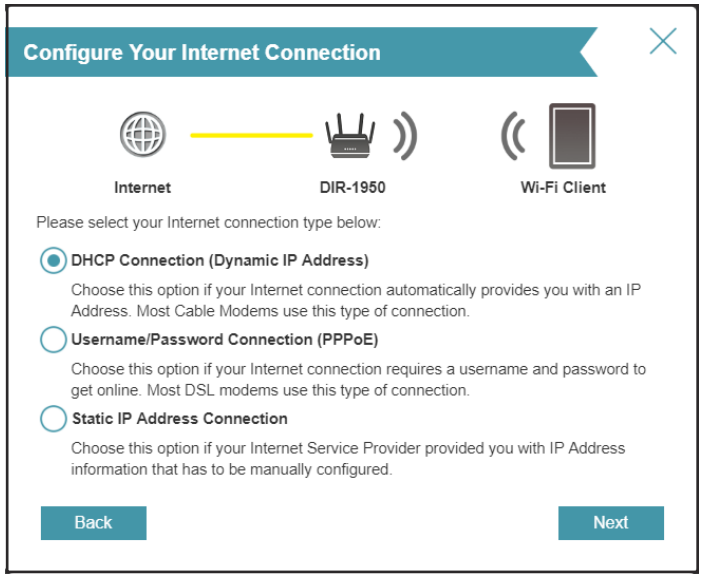


Please wait while your router detects your Internet connection type.



If the router 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).

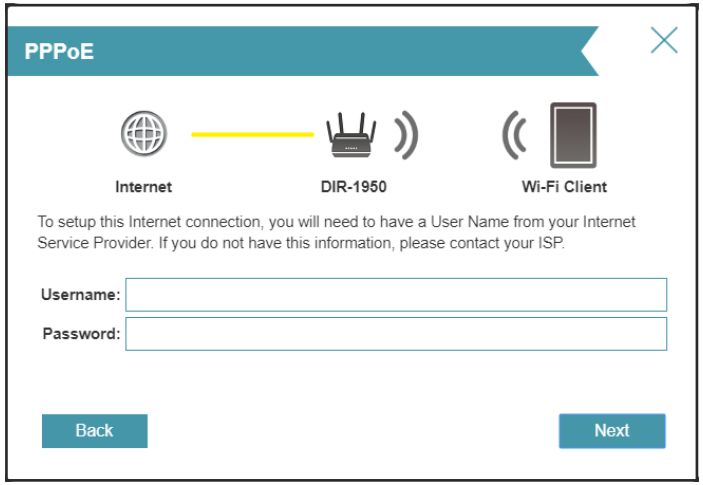
Click **Next** to continue.



If the router detected or you selected **PPPoE**, enter your PPPoE username and password. If you do not have this information, please contact your ISP.

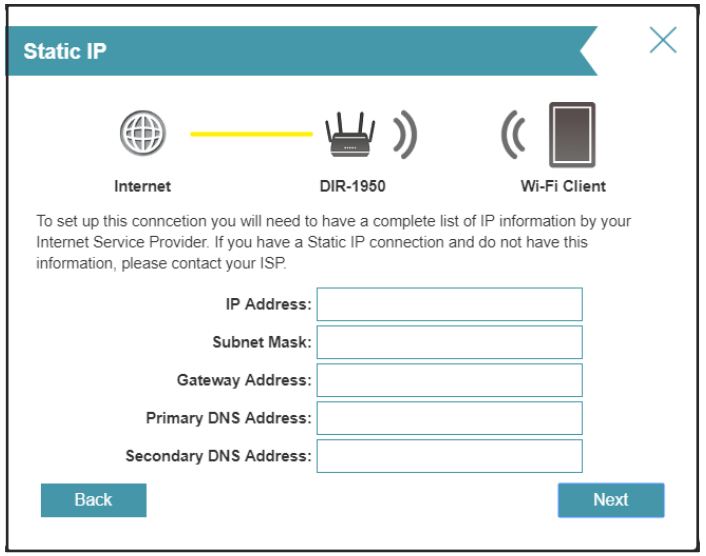
Click **Next** to continue.

Note: *Make sure to remove all other existing 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. If you do not have this information, please contact your ISP.

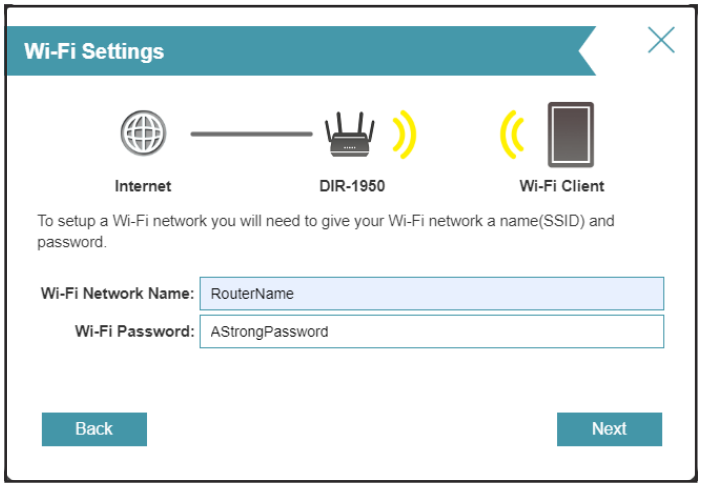
Click **Next** to continue.



Type in a **Wi-Fi Network Name** and **Wi-Fi Password** to setup your Wi-Fi network. Your wireless clients will need to have this passphrase to be able to connect to your wireless network.

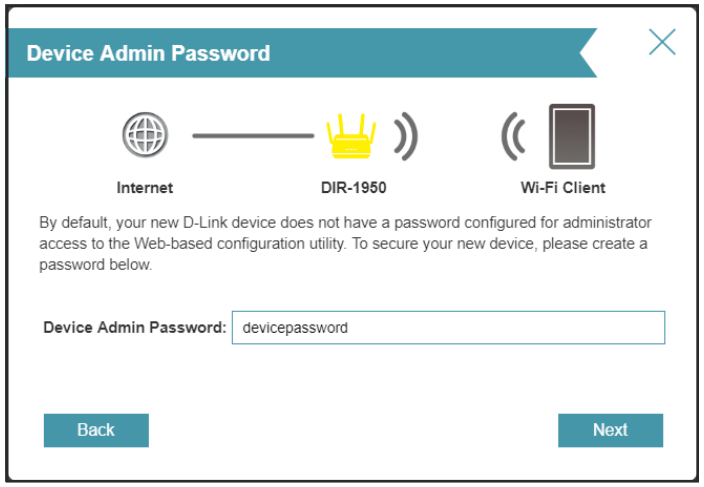
Click **Next** to continue.

Note: *The router's Smart Connect feature presents a single wireless network. When connecting clients to an extension network, they will be automatically added to the best band, either 2.4 GHz or 5 GHz. To disable the Smart Connect feature and individually configure 2.4 GHz and 5 GHz networks, refer to* ***Wireless*** *on page* ***56.***



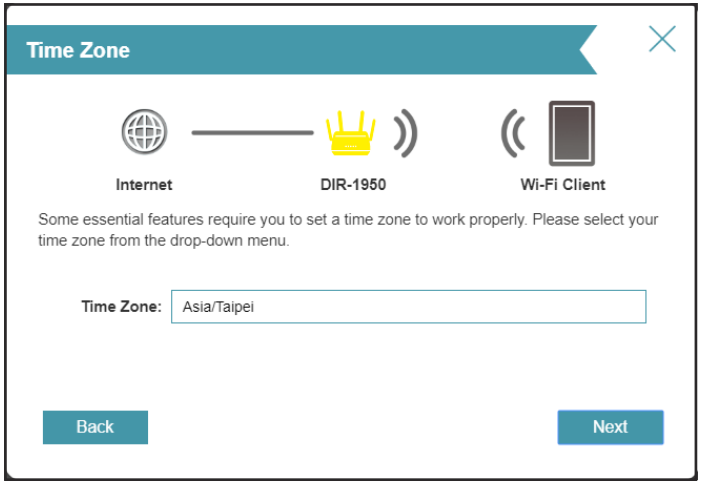
In order to better protect the router's configuration access, please enter a password. You will be prompted for this password every time you want to use the router's web configuration utility.

Click **Next** to continue.



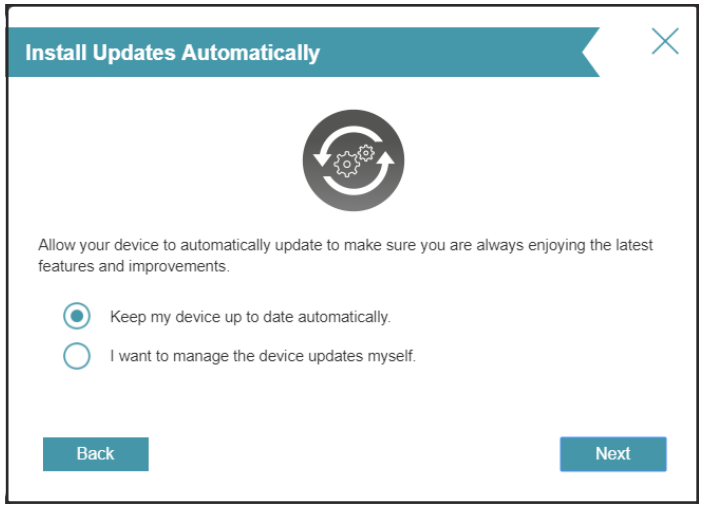
Select your time zone from the drop-down menu.

Click **Next** to continue.



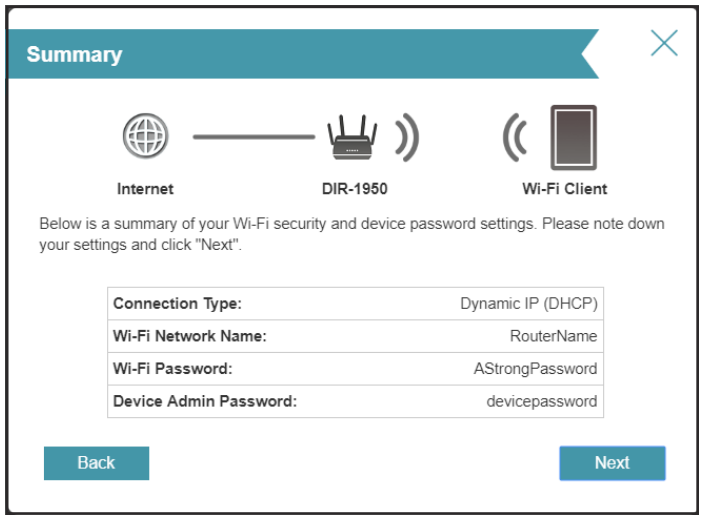
Keeping your router's firmware up-to-date provides you with the latest features over the air. Choose whether to keep your device up-to-date automatically or to manage the device updates by yourself.

Click **Next** to continue.



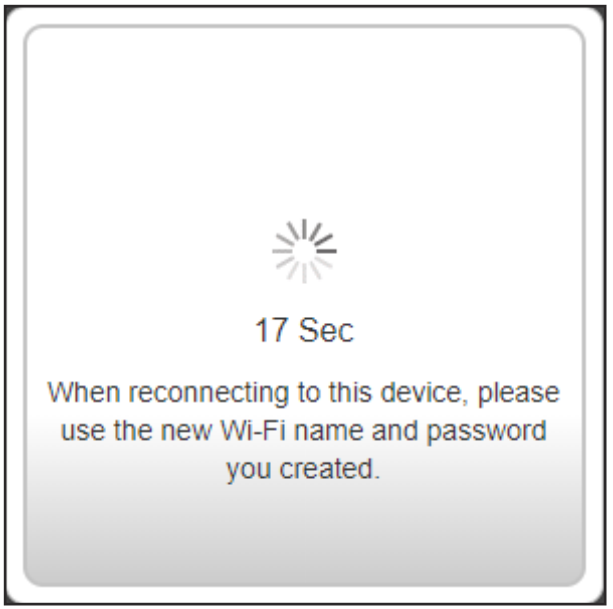
You will be presented with a summary of your settings.

Click **Next** to finalize the settings or **Back** to make changes.



Please wait while the device settings are saved.

Do not turn off or unplug your router during this time.

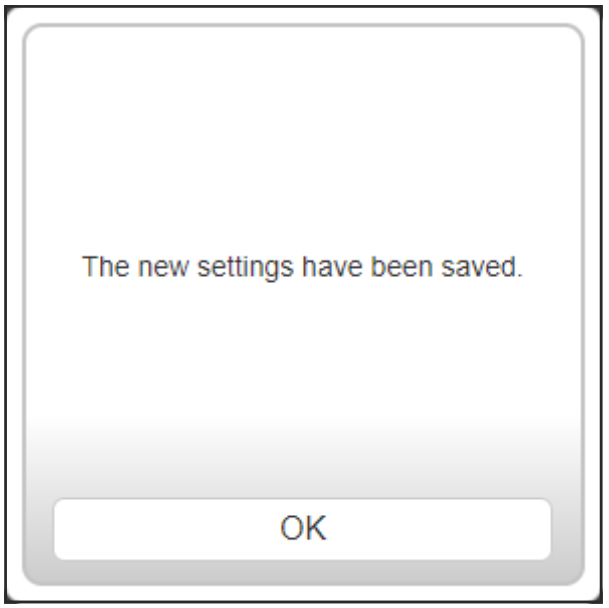


Your new settings have been saved and your router is now configured.

Click **OK** to close the Setup Wizard.

Congratulations, your device has been successfully configured!

You can log in to the configuration utility by inputting the Admin Password.



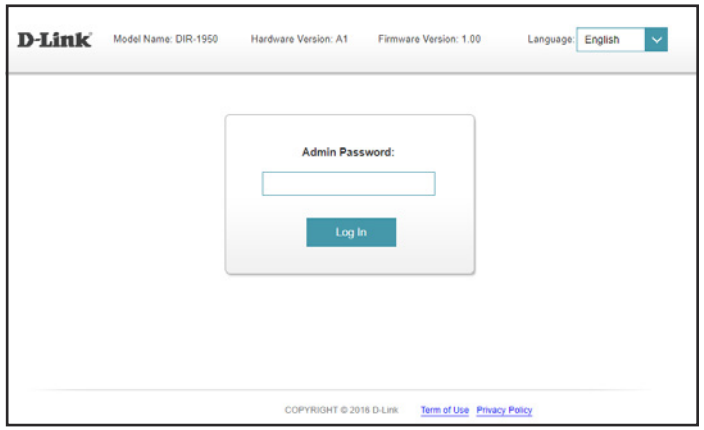
Configuration

To access the configuration utility, open your web-browser and enter **http://dlinkrouter.local./** or you 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, please use the admin password you entered during the wizard. Otherwise, leave the password blank. Click **Log In** to proceed.

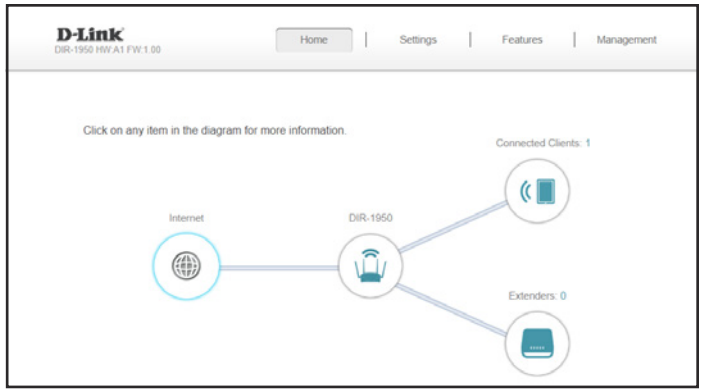
Note: *If you cannot remember your password and cannot log in, use a paperclip to press the recessed **Reset** button on the back of the device for longer than 10 seconds to restore the router to its default settings.*



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**, **Features** and **Management** functions. You can 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.

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, refer to the **Setup Wizard** on page **14** for more information.



Internet

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

To reconfigure the Internet settings, refer to **Internet - IPv4** on page **29**



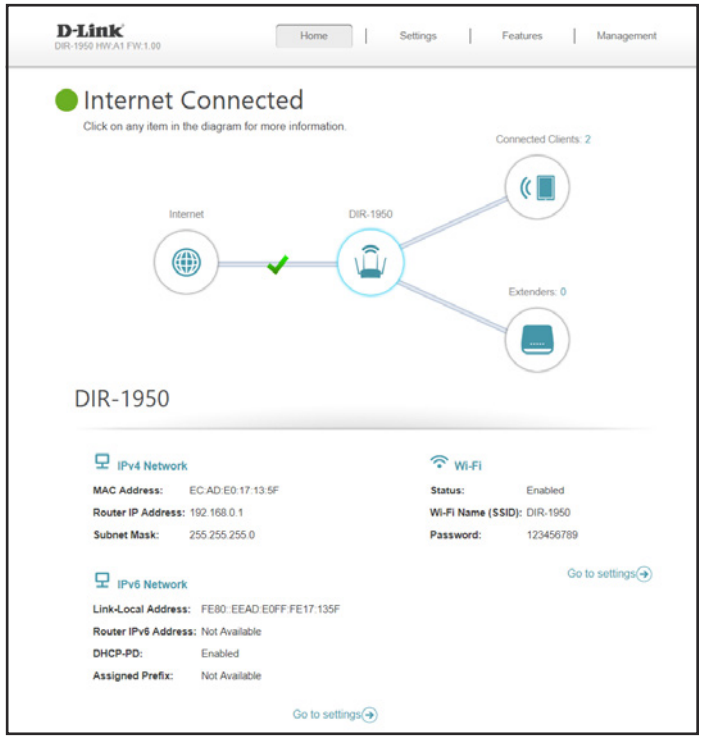
DIR-1950

Click on the **DIR-1950** icon to view details about the router and its wireless settings.

Here you can see the router's current Wi-Fi network name and password, as well as the router's MAC address, IPv4 address, and IPv6 address.

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 **Network** on page **62** for more information.

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 **Wireless** on page **56** for more information.



Connected Clients

Click on the **Connected Clients** icon to view details about the connected clients to the router and their 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.



Edit Rule

Name Enter a custom name for this client.

Vendor Displays the vendor of the client.

MAC Address Displays the MAC address of the client.

IP Address Displays the current IP address of the client.

Reserve IP Enable to reserve an IP address for the client.

IP Address (Reserved) Specify an IP address for the router's DHCP server to assign.

Parental Control Enable Parental Control for the client to specify whether it is allowed network access.

Schedule Use the drop-down menu to select the time schedule that the Parental Controls will be enabled for. The schedule may be set to Always OFF meaning that the client will always be blocked from accessing the network, or you can create your own schedules in the Schedules section to specify the times that the client is allowed to access the network. Refer to **Time & Schedule - Schedule** on page **81** for more information.

Click **Save** when you are done.



Extenders

Click on the **Extenders** icon to view details about the connected extenders to the router and their wireless settings.

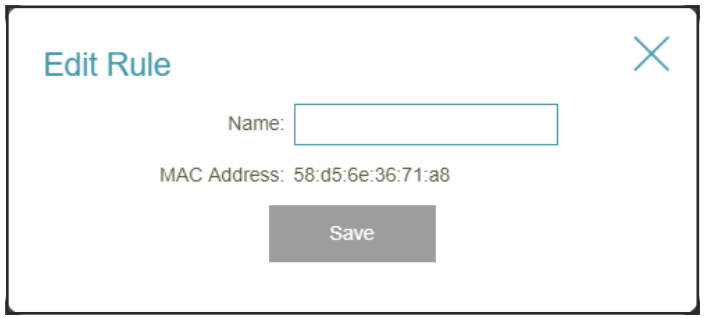
On this page you can see all the extenders currently connected to the router, and configure them.



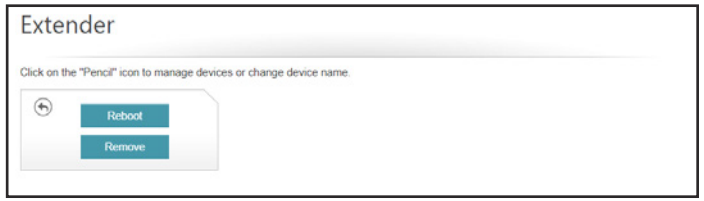
To edit each extender's settings, click the pencil icon on the extender you want to edit.

Edit Rule	
Name	Enter a custom name for this extender.
MAC Address	Displays the MAC address of the extender.

Click **Save** when you are done.



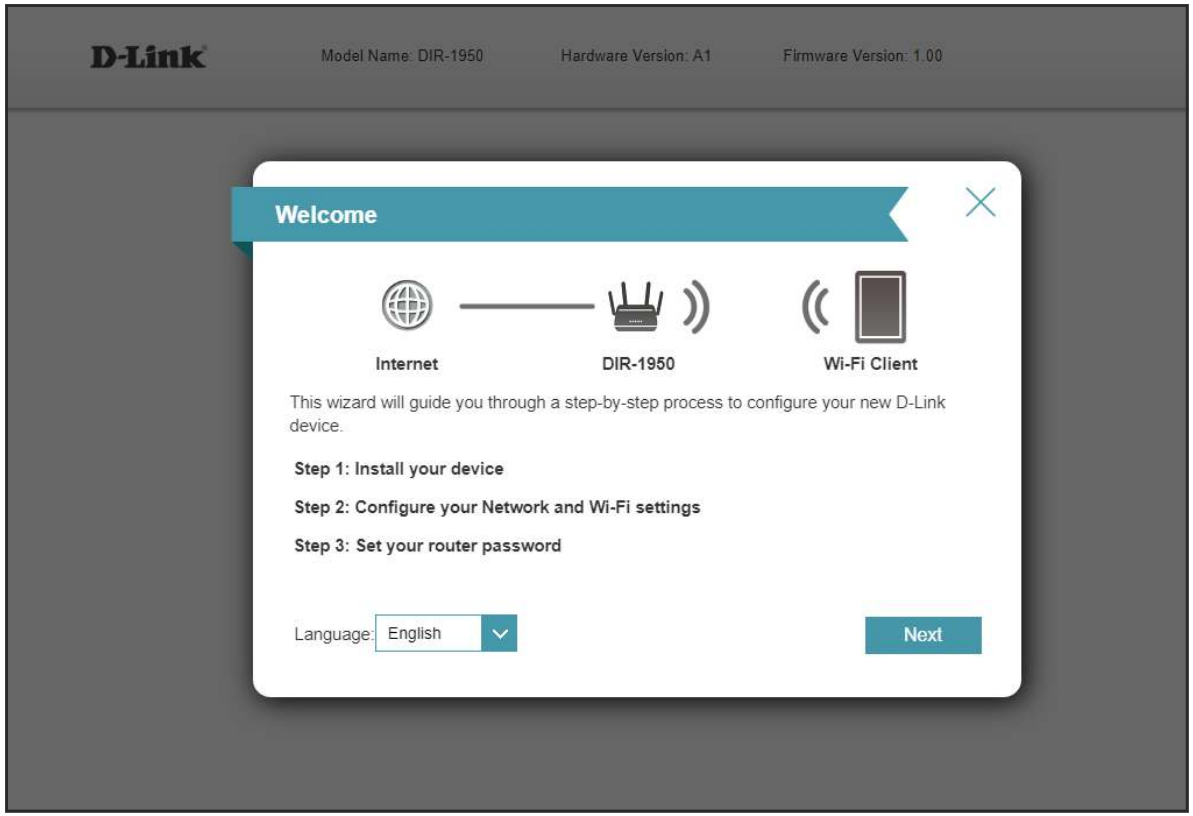
Click the settings cog on the bottom right of the extender you wish to configure to either **Reboot** the device or to **Remove** the device from the network.



Settings
Wizard

In the Settings menu on the bar at 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 **Setup Wizard** on page **14** for details.

Note: *When the Wizard is opened, the router will disconnect from the internet.*



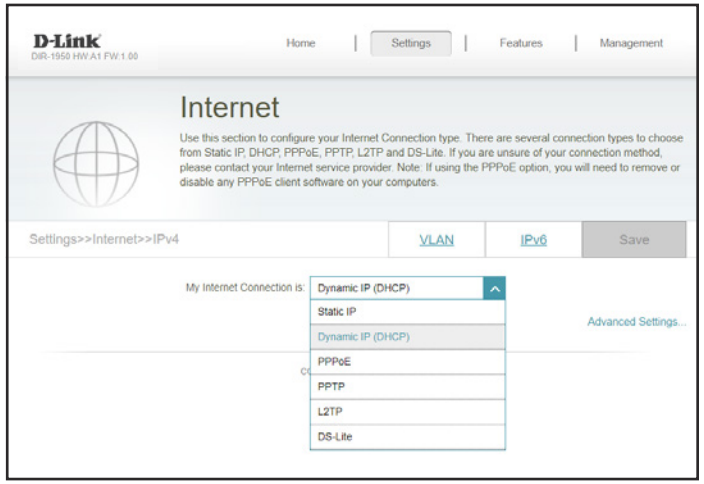
Internet - IPv4

In the Settings menu on the bar at the top of the page, click **Internet** to see the Internet configuration options for the IPv4 connection details.

To configure the IPv6 Internet and network connection details, click the **IPv6** link. Refer to **Internet - IPv6** on page **39**
To configure the VLAN connection details, click the **VLAN** link. Refer to **Internet - VLAN** on page **54**

Click **Save** at any time to save the changes you have made on this page.

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.



For **IPv4 - Dynamic IP (DHCP)** refer to page **30**

For **IPv4 - Static IP** refer to page **31**

For **IPv4 - PPPoE** refer to page **32**

For **IPv4 - PPTP** refer to page **34**

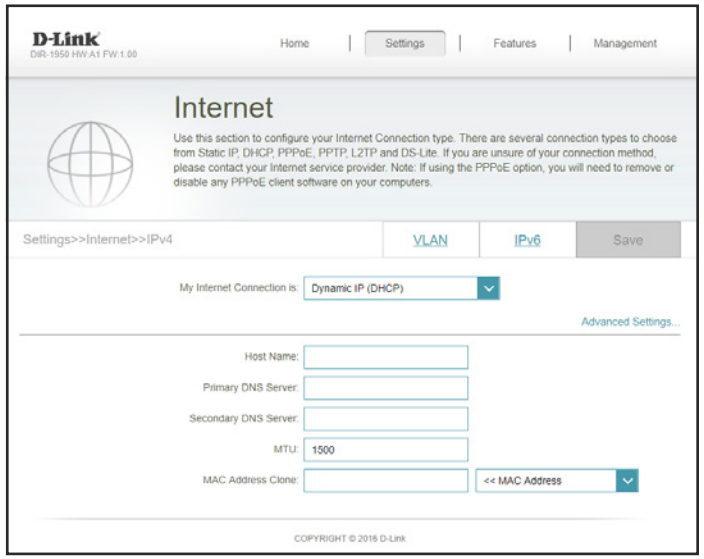
For **IPv4 - L2TP** refer to page **36**

For **IPv4 - DS-Lite** refer to page **38**

IPv4 - Dynamic IP (DHCP)

Select **Dynamic IP (DHCP)** to obtain IP address information automatically from your Internet Service Provider (ISP). Select this option if your ISP does not specify an IP address to use. Click **Save** at any time to save the changes you have made on this page.

Advanced Settings...	
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.



IPv4 - Static IP

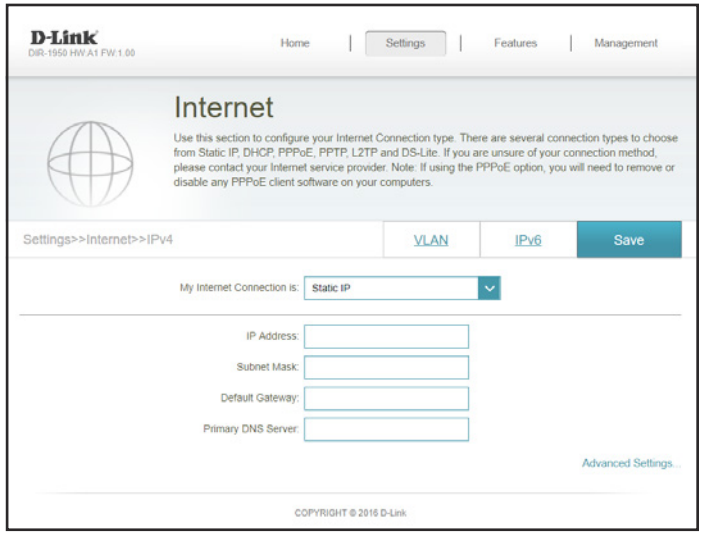
Select **Static IP** if your IP information is provided by your Internet Service Provider (ISP). Click **Save** at any time to save the changes you have made on this page.

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.

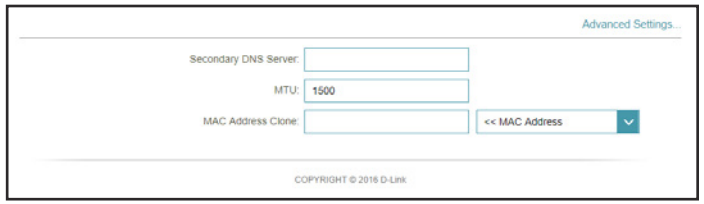


Advanced Settings...

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

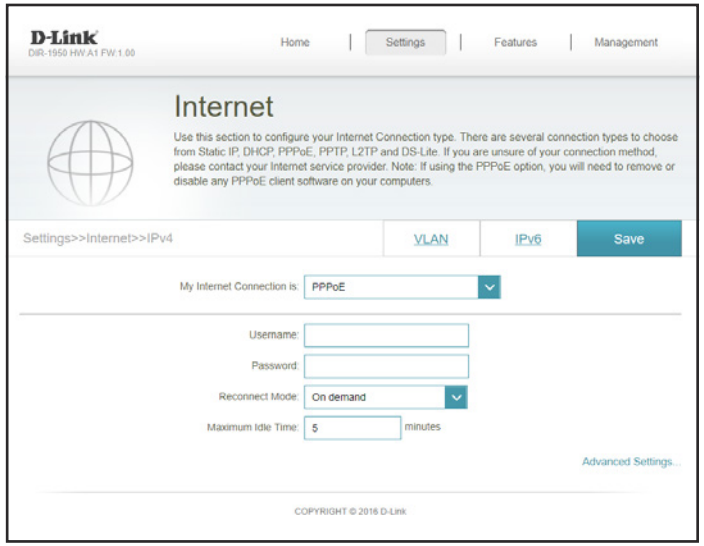
MTU Maximum Transmission Unit - you may need to change the MTU for optimal performance with your ISP.

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



IPv4 - PPPoE

Select **PPPoE** if your ISP provides and requires you to enter a PPPoE username and password in order to connect to the Internet. Click **Save** at any time to save the changes you have made on this page.



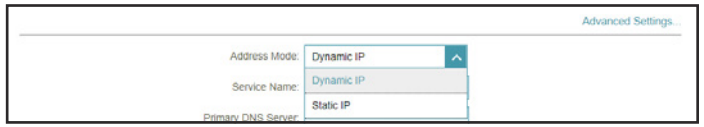
Username Enter the username provided by your ISP.

Password Enter the password provided by your ISP.

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

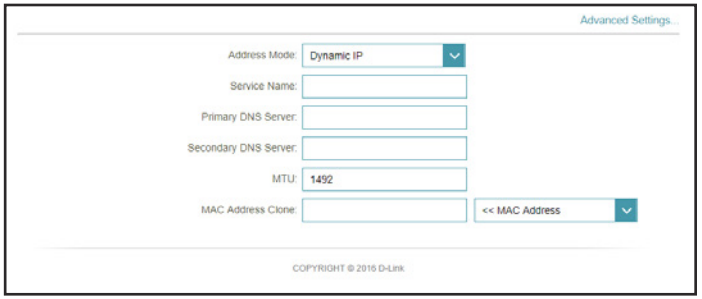
Maximum Idle Time Configurable when **On Demand** is selected. Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, select **Always on** as the reconnect mode.

Advanced Settings...



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**.

Advanced Settings... - Dynamic IP



Address Mode Shows your chosen address mode.

Service Name Enter the ISP service name (optional)

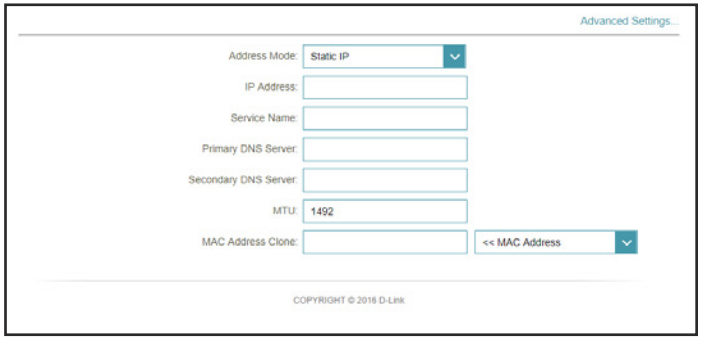
Primary DNS Server Enter the primary DNS server IP address assigned by your ISP.

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.

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.

Advanced Settings... - Static IP



Address Mode Displays your chosen address mode.

IP Address Enter the IP address provided by your ISP.

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.

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.

IPv4 - 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. Click **Save** at any time to save the changes you have made on this page.

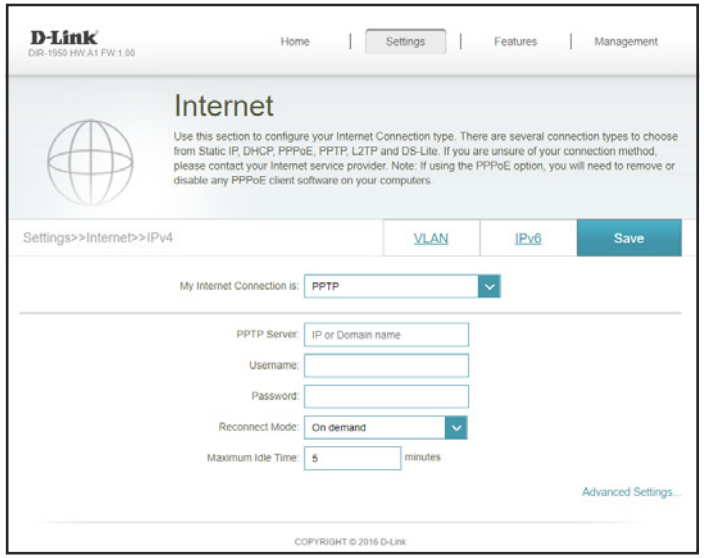
PPTP Server Enter the PPTP server IP address provided by your ISP.

Username Enter the username provided by your ISP.

Password Enter the password provided by your ISP.

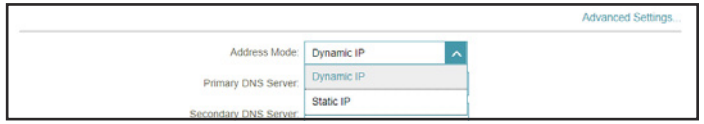
Reconnect Mode Select either **Always on**, **On Demand**, or **Manual**.

Maximum Idle Time Configurable when **On Demand** is selected. Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, select **Always on** as the reconnect mode.

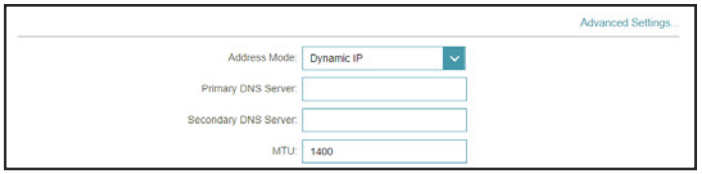


Advanced Settings...

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**.



Advanced Settings... - Dynamic IP



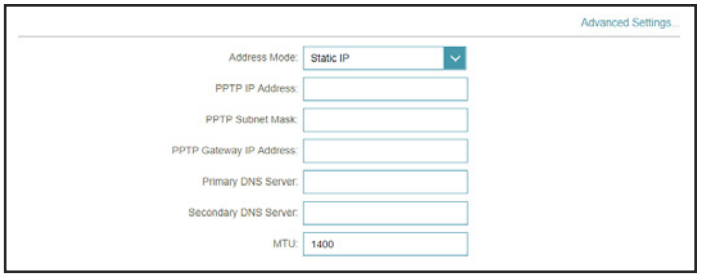
Address Mode Shows your chosen address mode.

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.

Advanced Settings... - Static IP



Address Mode Displays your chosen address mode.

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

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

PPTP Gateway IP Address Enter the gateway IP address provided by your ISP.

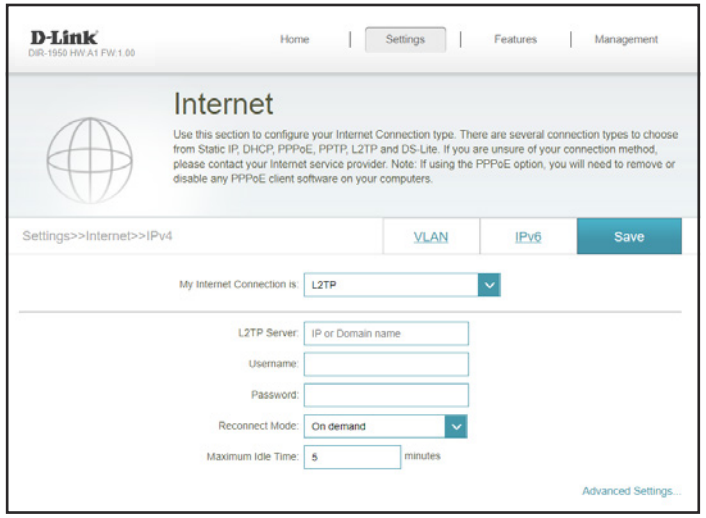
Primary DNS Server Enter the primary DNS server IP address assigned by your ISP.

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.

IPv4 - 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. Click **Save** at any time to save the changes you have made on this page.



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

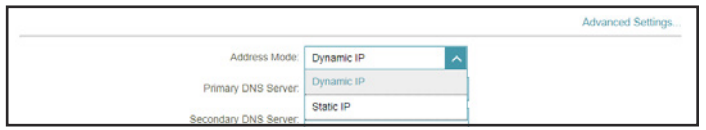
Username Enter the username provided by your ISP.

Password Enter the password provided by your ISP.

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

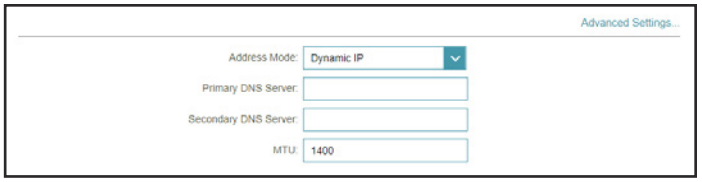
Maximum Idle Time Configurable when **On Demand** is selected. Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, select **Always on** as the reconnect mode.

Advanced Settings...



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**.

Advanced Settings... - Dynamic IP



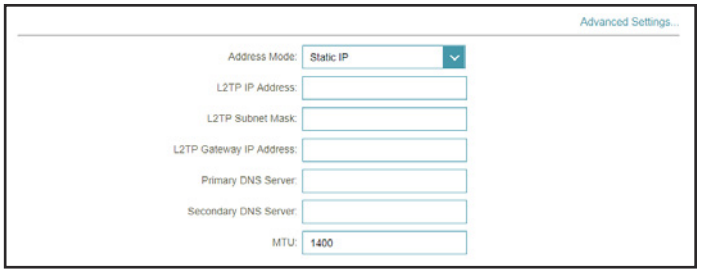
Address Mode Shows your chosen address mode.

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.

Advanced Settings... - Static IP



Address Mode Shows your chosen address mode.

L2TP IP Address Enter the IP address provided by your ISP.

L2TP Subnet Mask Enter the subnet mask provided by your ISP.

L2TP Gateway IP Address Enter the gateway IP address provided by your ISP.

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

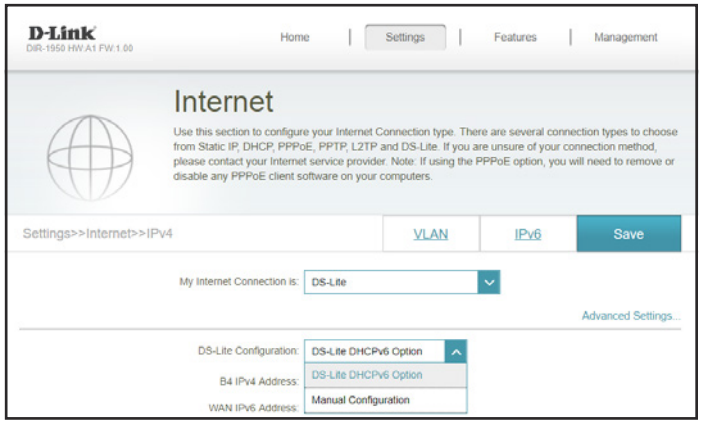
Secondary DNS Server Enter the secondary DNS server IP address assigned by your ISP.

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

IPv4 - DS-Lite

DS-Lite is an IPv6 connection type. After selecting DS-Lite, the following parameters will be available for configuration. Click **Save** at any time to save the changes you have made on this page.

Advanced Settings...



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

Advanced Settings... - DS-Lite DHCPv6 Option

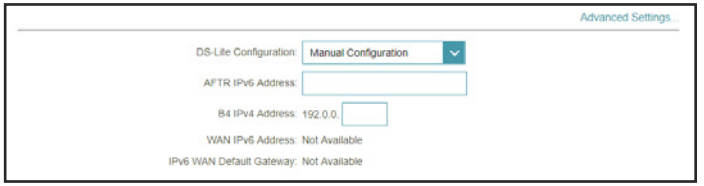


B4 IPv4 Address Enter the B4 IPv4 address value used here.

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

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

Advanced Settings... - Manual Configuration Option



AFTR IPv6 Address 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.

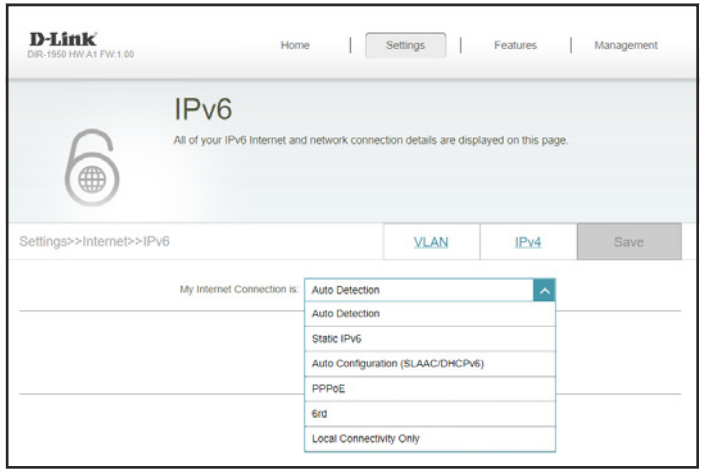
Internet - IPv6

In the Settings menu on the bar at the top of the page, click **Internet** to see the Internet configuration options for the IPv4 connection details, then click the **IPv6** link to access the configuration options for the IPv6 connection details.

To configure the IPv4 Internet and network connection details, click the **IPv4** link. Refer to **Internet - IPv4** on page **29**
To configure the VLAN connection details, click the **VLAN** link. Refer to **Internet - VLAN** on page **54**

Click **Save** at any time to save the changes you have made on this page.

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.



For **IPv6 - Auto Detection** refer to page **40**

For **IPv6 - Static IPv6** refer to page **42**

For **IPv6 - Auto Configuration (SLAAC/DHCPv6)** refer to page **44**

For **IPv6 - PPPoE** refer to page **47**

For **IPv6 - 6rd** refer to page **51**

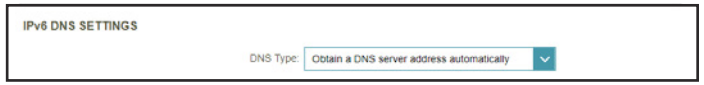
For **IPv6 - Local Connectivity Only** refer to page **53**

IPv6 - Auto Detection

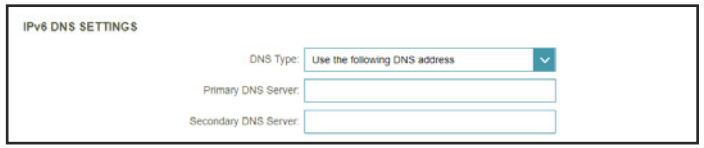
Select **Auto Detection** to automatically detect the IPv6 connection method used by your Internet Service Provider (ISP). If Auto Detection fails, you can manually select another IPv6 connection type. Click **Save** at any time to save the changes you have made on this page.



IPv6 DNS Settings



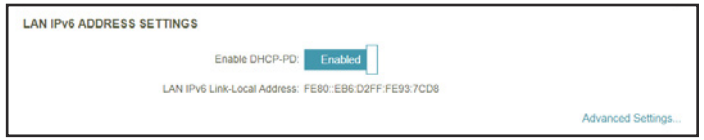
DNS Type — Select either **Obtain DNS server address automatically** or **Use the following DNS address**.



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

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

LAN IPv6 Address Settings



Enable DHCP-PD — Enable or disable DHCP Prefix Delegation.

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

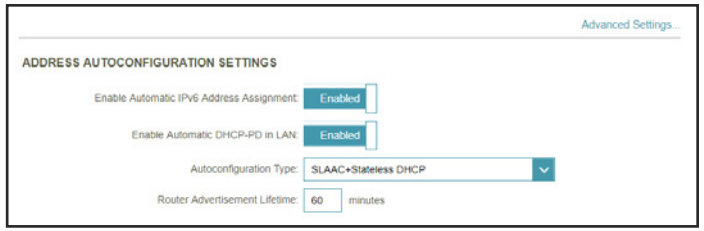
*If **Enable DHCP-PD** is disabled, these additional parameters are available for configuration:*



LAN IPv6 Address — Enter a valid LAN IPv6 address.

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

Advanced Settings... - Address Autoconfiguration Settings

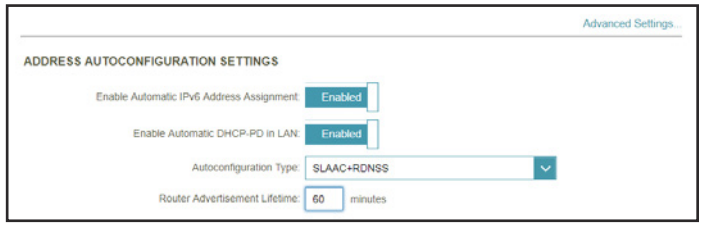


Enable Automatic IPv6 Address Assignment — Enable or disable the Automatic IPv6 Address Assignment feature.

Enable Automatic DHCP-PD in LAN — Enable or disable DHCP-PD for other IPv6 routers connected to the LAN interface.

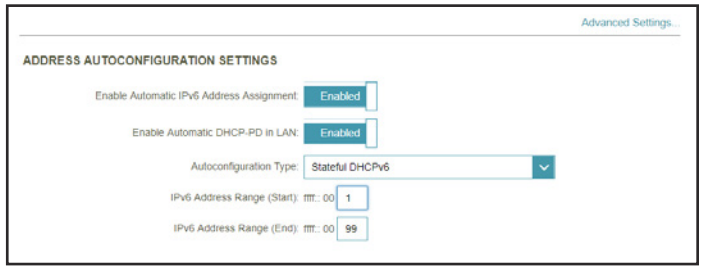
Autoconfiguration Type — Select **SLAAC+RDNSS**, **SLAAC+Stateless DHCP**, or **Stateful DHCPv6**.

*If you selected **SLAAC+RDNSS** or **SLAAC+Stateless DHCP** as the Autoconfiguration Type:*



Router Advertisement Lifetime — Enter the router advertisement lifetime (in minutes).

*If you selected **Stateful DHCPv6** as the Autoconfiguration Type:*

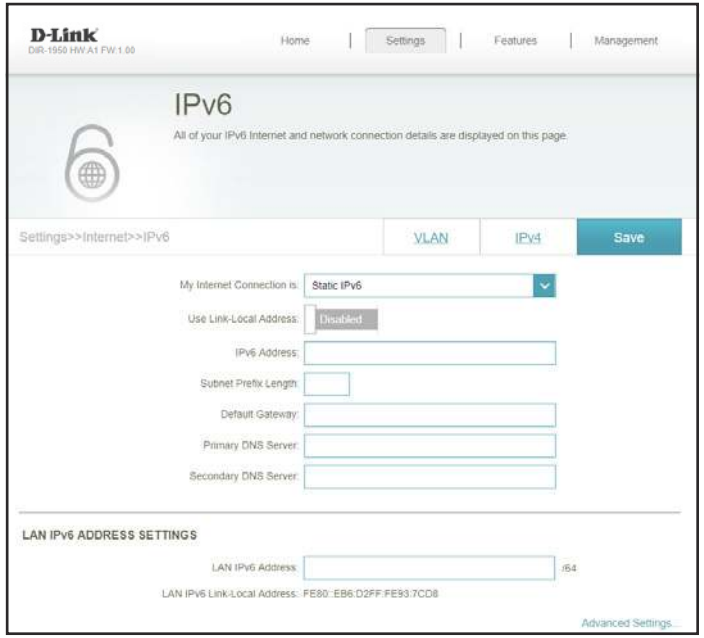


IPv6 Address Range (Start) — Enter the starting IPv6 address for the DHCP server's IPv6 assignment.

IPv6 Address Range (End) — Enter the ending IPv6 address for the DHCP server's IPv6 assignment.

IPv6 - Static IPv6

Select **Static IP** if your IPv6 information is provided by your Internet Service Provider (ISP). Click **Save** at any time to save the changes you have made on this page.



Use Link-Local Address — Enable or disable link-local address use.

IPv6 Address — Configurable when **Use Link-Local Address** is disabled. Enter the address supplied by your ISP.

Subnet Prefix Length — Configurable when **Use Link-Local Address** is disabled. 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 Settings

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.

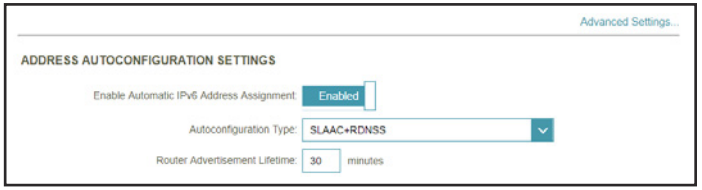
Advanced Settings... - Address Autoconfiguration Settings



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

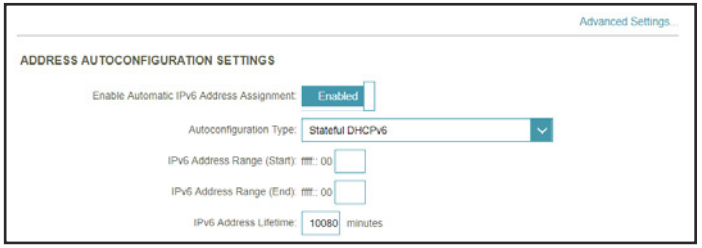
Autoconfiguration Type Select **SLAAC+RDNSS**, **SLAAC+Stateless DHCP**, or **Stateful DHCPv6**.

*If you selected **SLAAC+RDNSS** or **SLAAC+Stateless DHCP** as the Autoconfiguration Type:*



Router Advertisement Lifetime Enter the router advertisement lifetime (in minutes).

*If you selected **Stateful DHCPv6** as the Autoconfiguration Type:*



IPv6 Address Range (Start) Enter the starting IPv6 address for the DHCP server's IPv6 assignment.

IPv6 Address Range (End) Enter the ending IPv6 address for the DHCP server's IPv6 assignment.

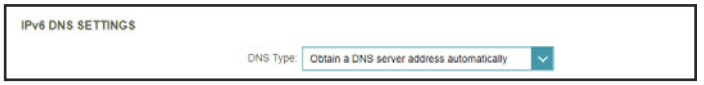
IPv6 Address Lifetime Enter the IPv6 address lifetime (in minutes).

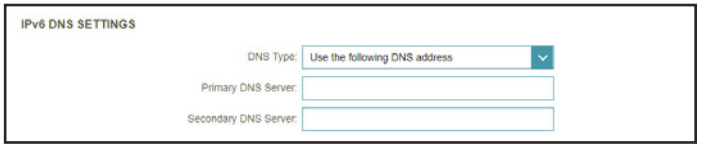
IPv6 - Auto Configuration (SLAAC/DHCPv6)

Select **Auto Configuration** if your ISP assigns your IPv6 address when your router requests one from the ISP's server. Some ISPs require you to adjust settings on your side before your router can connect to the IPv6 Internet. Click **Save** at any time to save the changes you have made on this page.



IPv6 DNS Settings





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**, enter the primary DNS server address.

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

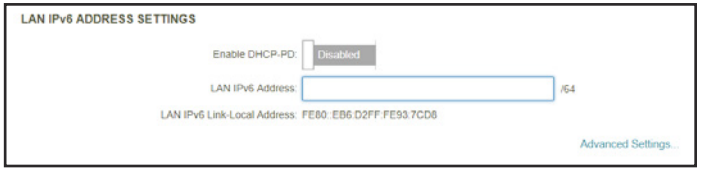
LAN IPv6 Address Settings



Enable DHCP-PD Enable or disable prefix delegation services.

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

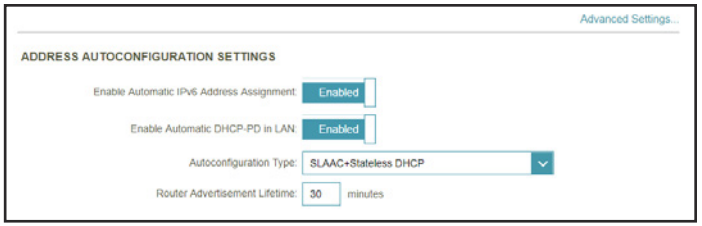
*If **Enable DHCP-PD** is disabled, these additional parameters are available for configuration:*



LAN IPv6 Address Enter a valid LAN IPv6 address.

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

Advanced Settings... - Address Autoconfiguration Settings

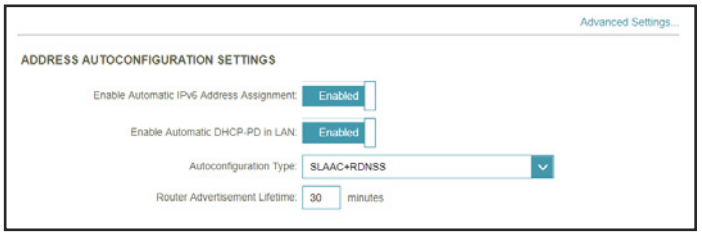


Enable Automatic IPv6 Address Assignment — Enable or disable the Automatic IPv6 Address Assignment feature.

*If **Enable DHCP-PD** is enabled in the previous LAN IPv6 Address Settings:*

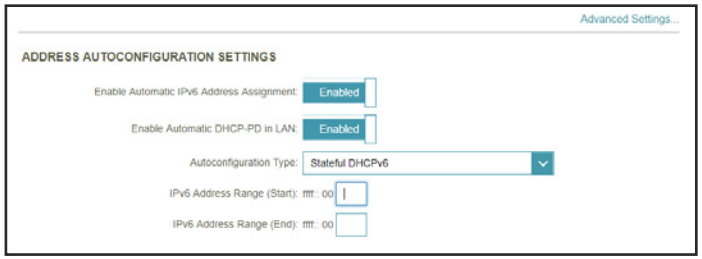
Enable Automatic DHCP-PD in LAN — Enable or disable DHCP-PD for other IPv6 routers connected to the LAN interface.

Autoconfiguration Type — Select **SLAAC+RDNSS**, **SLAAC+Stateless DHCP**, or **Stateful DHCPv6**.



*If you selected **SLAAC+RDNSS** or **SLAAC+Stateless DHCP** as the Autoconfiguration Type:*

Router Advertisement Lifetime — Enter the router advertisement lifetime (in minutes).

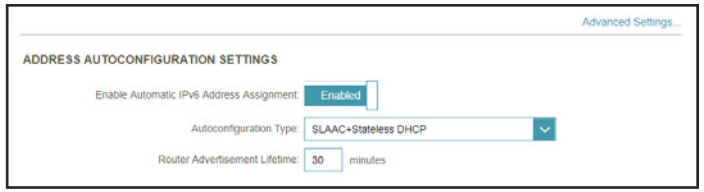


*If you selected **Stateful DHCPv6** as the Autoconfiguration Type:*

IPv6 Address Range (Start) — Enter the starting IPv6 address for the DHCP server's IPv6 assignment.

IPv6 Address Range (End) — Enter the ending IPv6 address for the DHCP server's IPv6 assignment.

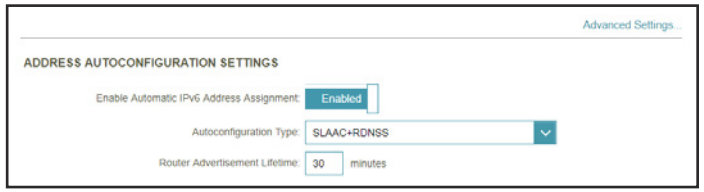
Advanced Settings... - Address Autoconfiguration Settings



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

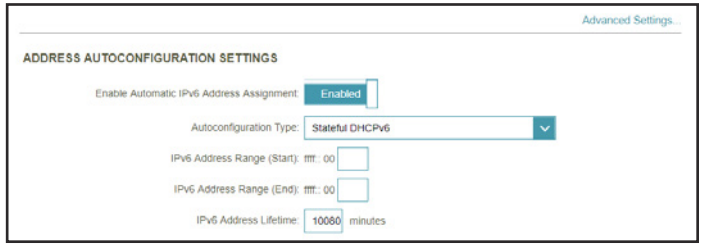
*If **Enable DHCP-PD** is disabled in the previous LAN IPv6 Address Settings:*

Autoconfiguration Type — Select **SLAAC+RDNSS**, **SLAAC+Stateless DHCP**, or **Stateful DHCPv6**.



*If you selected **SLAAC+RDNSS** or **SLAAC+Stateless DHCP** as the Autoconfiguration Type:*

Router Advertisement Lifetime — Enter the router advertisement lifetime (in minutes).



*If you selected **Stateful DHCPv6** as the Autoconfiguration Type:*

IPv6 Address Range (Start) — Enter the starting IPv6 address for the DHCP server's IPv6 assignment.

IPv6 Address Range (End) — Enter the ending IPv6 address for the DHCP server's IPv6 assignment.

IPv6 Address Lifetime — Enter the IPv6 address lifetime (in minutes).

IPv6 - PPPoE

Select **PPPoE** if your ISP provides and requires you to enter a PPPoE username and password in order to connect to the Internet. Click **Save** at any time to save the changes you have made on this page.

PPPoE Session Create a new PPPoE session.

Username Enter the username provided by your ISP.

Password Enter the password provided by your ISP.

Address Mode Select either **Dynamic IP** or **Static IP**.

IP Address Configurable if Static IP is chosen. Enter the IP address provided by your ISP.

Service Name Enter the ISP service name (optional).

Reconnect Mode Select either **Always On** or **Manual**.

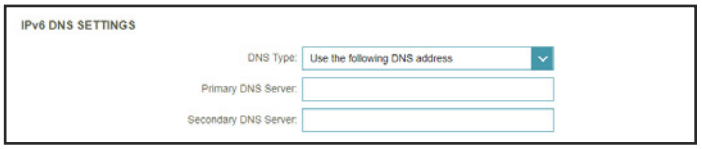
MTU Maximum Transmission Unit - you may need to change the MTU for optimal performance with your ISP.



IPv6 DNS Settings



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**, enter the primary DNS server address.

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

LAN IPv6 Address Settings



Enable DHCP-PD Enable or disable prefix delegation services.

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

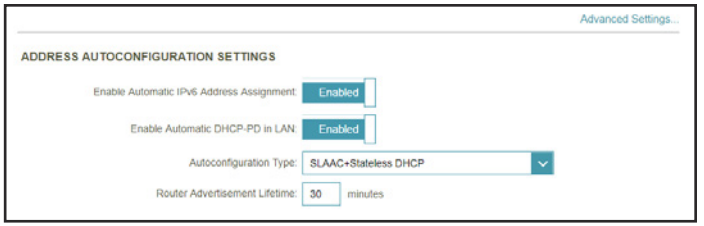
*If **Enable DHCP-PD** is disabled, these additional parameters are available for configuration:*



LAN IPv6 Address Enter a valid LAN IPv6 address.

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

Advanced Settings... - Address Autoconfiguration Settings

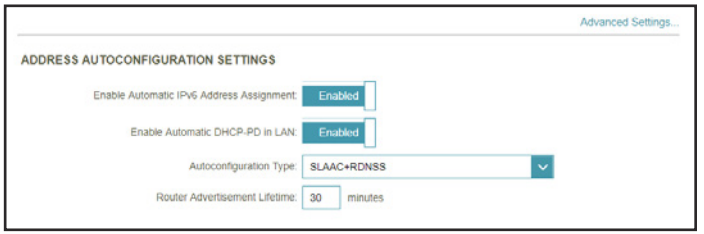


Enable Automatic IPv6 Address Assignment — Enable or disable the Automatic IPv6 Address Assignment feature.

*If **Enable DHCP-PD** is enabled in the previous LAN IPv6 Address Settings:*

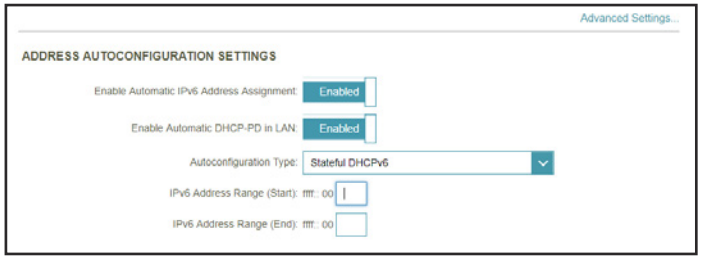
Enable Automatic DHCP-PD in LAN — Enable or disable DHCP-PD for other IPv6 routers connected to the LAN interface.

Autoconfiguration Type — Select **SLAAC+RDNSS**, **SLAAC+Stateless DHCP**, or **Stateful DHCPv6**.



*If you selected **SLAAC+RDNSS** or **SLAAC+Stateless DHCP** as the Autoconfiguration Type:*

Router Advertisement Lifetime — Enter the router advertisement lifetime (in minutes).

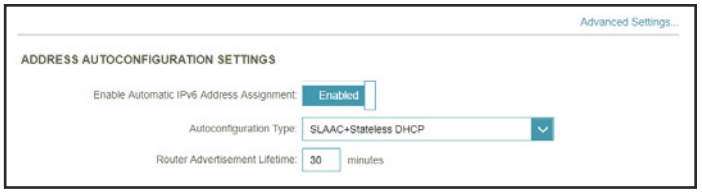


*If you selected **Stateful DHCPv6** as the Autoconfiguration Type:*

IPv6 Address Range (Start) — Enter the starting IPv6 address for the DHCP server's IPv6 assignment.

IPv6 Address Range (End) — Enter the ending IPv6 address for the DHCP server's IPv6 assignment.

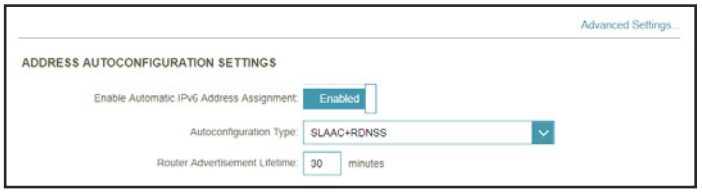
Advanced Settings... - Address Autoconfiguration Settings



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

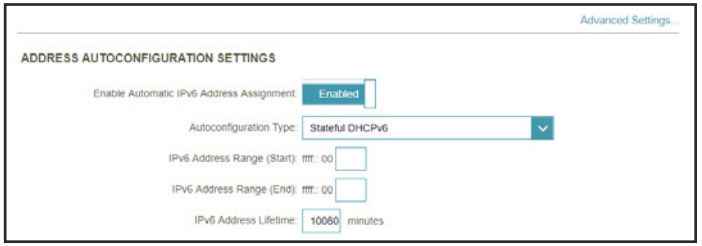
*If **Enable DHCP-PD** is disabled in the previous LAN IPv6 Address Settings:*

Autoconfiguration Type Select **SLAAC+RDNSS**, **SLAAC+Stateless DHCP**, or **Stateful DHCPv6**.



*If you selected **SLAAC+RDNSS** or **SLAAC+Stateless DHCP** as the Autoconfiguration Type:*

Router Advertisement Lifetime Enter the router advertisement lifetime (in minutes).



*If you selected **Stateful DHCPv6** as the Autoconfiguration Type:*

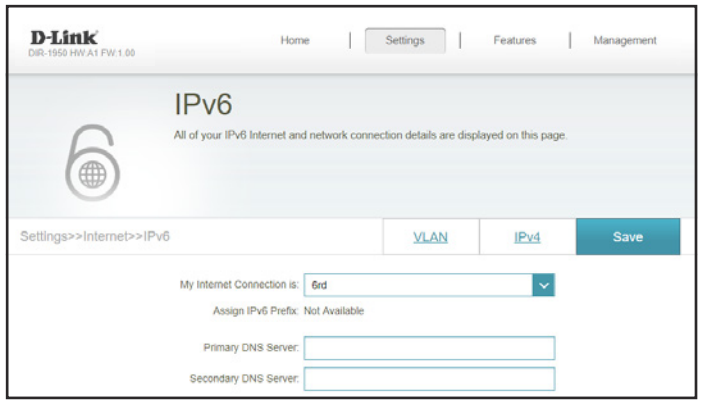
IPv6 Address Range (Start) Enter the starting IPv6 address for the DHCP server's IPv6 assignment.

IPv6 Address Range (End) Enter the ending IPv6 address for the DHCP server's IPv6 assignment.

IPv6 Address Lifetime Enter the IPv6 address lifetime (in minutes).

IPv6 - 6rd

In this section the user can configure the IPv6 **6rd** connection settings. Click **Save** at any time to save the changes you have made on this page.

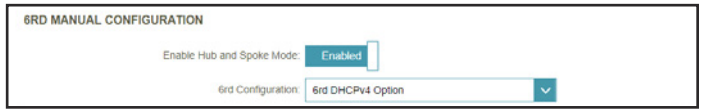


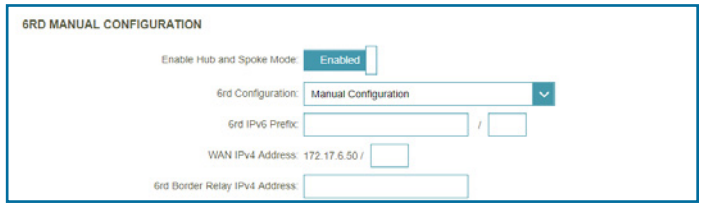
Assign IPv6 Prefix Currently unsupported.

Primary DNS Server Enter the primary DNS server address.

Secondary DNS Server Enter the secondary DNS server address.

6rd Manual Configuration





Enable Hub and Spoke Mode Enable this option 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.

*If you selected **Manual Configuration** as the 6rd Configuration:*

6rd IPv6 Prefix Enter the 6rd IPv6 prefix and mask length supplied by your ISP.

WAN IPv4 Address Displays the router's IPv4 address.

6rd Border Relay IPv4 Address Enter the 6rd border relay IPv4 address settings supplied by your ISP.

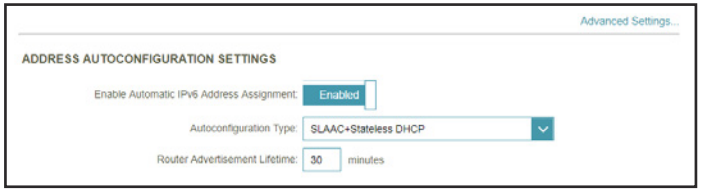
LAN IPv6 Address Settings



LAN IPv6 Address — Displays the router's LAN IPv6 Address link-local address.

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

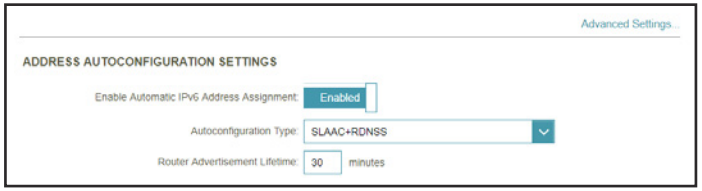
Advanced Settings... - Address Autoconfiguration Settings



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

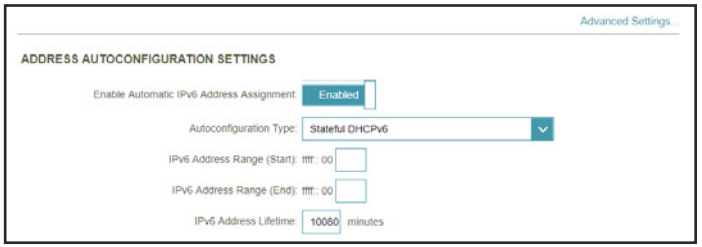
Autoconfiguration Type — Select **SLAAC+RDNSS**, **SLAAC+Stateless DHCP**, or **Stateful DHCPv6**.

*If you selected **SLAAC+RDNSS** or **SLAAC+Stateless DHCP** as the Autoconfiguration Type:*



Router Advertisement Lifetime — Enter the router advertisement lifetime (in minutes).

*If you selected **Stateful DHCPv6** as the Autoconfiguration Type:*



IPv6 Address Range (Start) — Enter the starting IPv6 address for the DHCP server's IPv6 assignment.

IPv6 Address Range (End) — Enter the ending IPv6 address for the DHCP server's IPv6 assignment.

IPv6 Address Lifetime — Enter the IPv6 address lifetime (in minutes).

IPv6 - Local Connectivity Only

Local Connectivity Only allows you to set up an IPv6 connection that will not connect to the Internet. Click **Save** at any time to save the changes you have made on this page.



Advanced Settings... - IPv6 ULA Settings



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

Use Default ULA Prefix Enable this option to use the default ULA prefix.

ULA Prefix Configurable if you disable Use Default ULA Prefix. Enter your own ULA prefix.

Advanced Settings... - Current IPv6 ULA Settings



Current ULA Prefix Displays the current ULA prefix.

LAN IPv6 ULA Displays the LAN's IPv6 ULA.

Internet - VLAN

In the Settings menu on the bar at the top of the page, click **Internet** to see the Internet configuration options for the IPv4 connection details, then click the **VLAN** link to access the configuration options for the VLAN connection details.

VLAN allows for services such as Triple-Play to be used, and divides a network into segments that can only be accessed by other devices in the same VLAN.

To configure the IPv4 Internet and network connection details, click the **IPv4** link. Refer to **Internet - IPv4** on page **29**
To configure the IPv6 Internet and network connection details, click the **IPv6** link. Refer to **Internet - IPv6** on page **39**

Click **Save** at any time to save the changes you have made on this page.

Status Click to enable or disable the Triple-Play VLAN feature. More configuration options will be available if the Status is enabled.



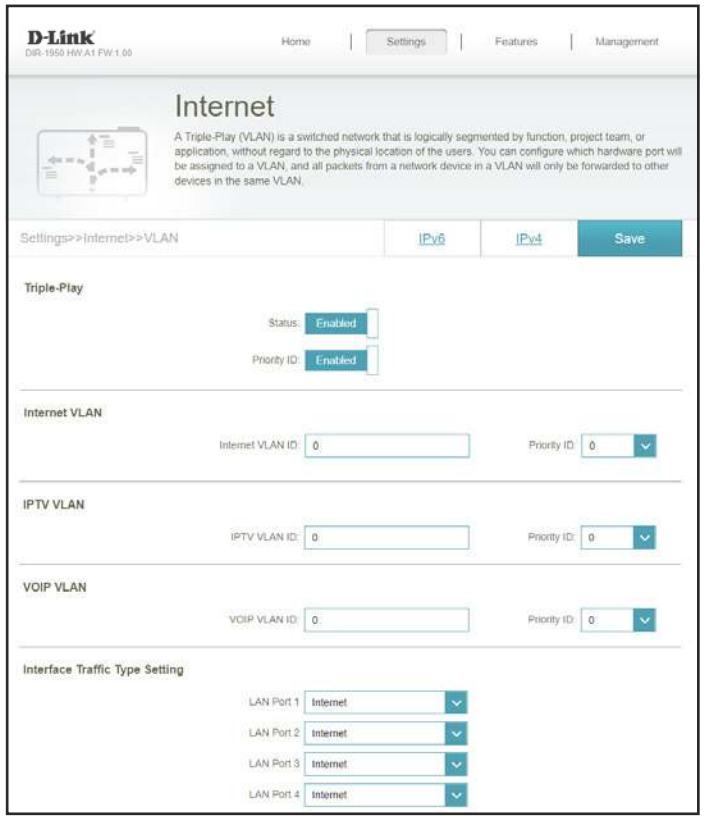
*If Triple-Play Status is **Enabled**:*

Priority ID Enable or disable traffic priority ID for the Internet, IPTV, and VoIP VLANs. If Priority ID is enabled, Priority ID options are available for configuration. Select a priority ID from the drop-down menus to assign to the corresponding VLAN. Higher priority ID traffic takes precedence over traffic with a low priority ID tag.

Internet VLAN ID Enter the VLAN ID for your Internet connection, as provided by your ISP.

IPTV VLAN ID Enter the VLAN ID for your IPTV service, as provided by your ISP.

VOIP VLAN ID Enter the VLAN ID for your VoIP network, as provided by your ISP.



Interface Traffic Type Setting

LAN Port 1-4 From the drop-down menu, you can select the type of connection (Internet, IPTV, or Voice over IP) coming from the WAN connection to each interface on the router.

Wireless

In the Settings menu on the bar at the top of the page, click **Wireless** to see your wireless network settings for your DIR-1950.

Click **Save** at any time to save the changes you have made on this page.



Smart Connect

Status — Enable or disable the Smart Connect Feature. When enabled, only a few configuration options are available to simplify configuration.

*If Smart Connect is Status is **Enabled**:*

Wireless

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

Password — Create a WiFi password. Wireless clients will need to enter this password to successfully connect to the network.

Wireless - Advanced Settings...

Security Mode — Choose **None** or **WPA/WPA2-Personal (**recommended).

Transmission Power — Select the desired wireless transmission power.

Schedule — Use the drop-down menu to select the time schedule that the rule will be enabled for. The schedule may be set to Always Enable, or you can create your own schedules in the Schedules section. Refer to **Time & Schedule - Schedule** on page **81** for more information.

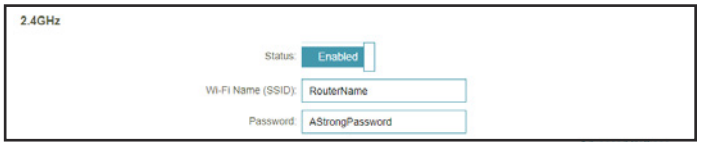
Smart Connect

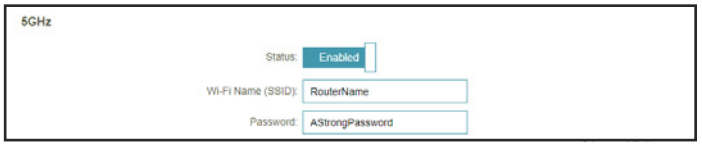


Status Enable or disable the Smart Connect Feature. When disabled, 2.4GHz and 5GHz configuration options become available.

*If Smart Connect is Status is **Disabled**:*

2.4GHz / 5GHz





Status Enable or disable the 2.4GHz / 5GHz wireless network.

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

Password Create a WiFi password. Wireless clients will need to enter this password to successfully connect to the network.

2.4GHz / 5GHz - Advanced Settings...

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

802.11 Mode (2.4GHz) Select the desired wireless networking standards to use. The available options for the 2.4 GHz wireless network are **Mixed 802.11b/g/n, Mixed 802.11g/n**, or **802.11n only**.

802.11 Mode (5GHz) Select the desired wireless networking standards to use. The available options for the 5 GHz wireless network are **Mixed 802.11a/n/ac, Mixed 802.11n/ac, Mixed 802.11a/n, 802.11ac only, Mixed 802.11a only,** or **802.11n only**.

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

Transmission Power Select the desired wireless transmission power.

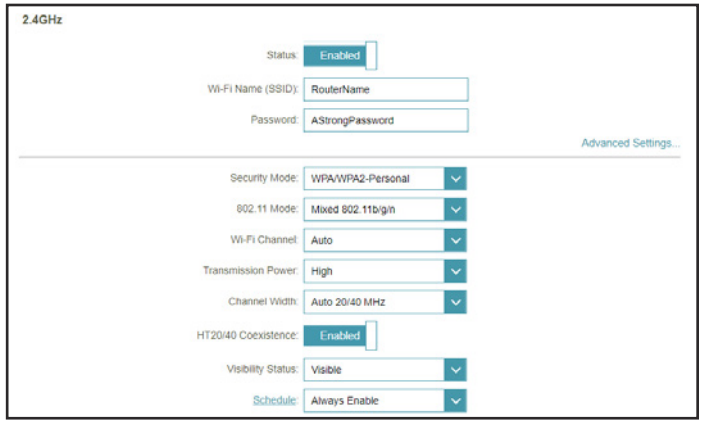
Channel Width (2.4GHz) Select **Auto 20/40** if you are using both 802.11n and non-802.11n devices, or select **20 MHz** if you are not using any 802.11n devices.

Channel Width (5GHz) Select **Auto 20/40/80** if you are using 802.11ac, 802.11n, and 802.11a devices, select **Auto 20/40** if you are using 802.11n and 802.11a devices, or select **20 MHz** if you are using 802.11a devices.

HT20/40 Coexistence (2.4GHz) Enable or disable HT20/40 Coexistence.

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

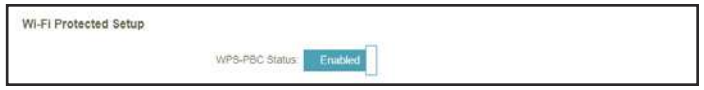
Schedule Use the drop-down menu to select the time schedule that the rule will be enabled for. The schedule may be set to **Always Enable**, or you can create your own schedules in the **Schedules** section. Refer to **Time & Schedule - Schedule** on page **81** for more information.





Wi-Fi Protected Setup

The easiest way to connect your wireless devices to the router is with Wi-Fi Protected Setup (WPS).



WPS-PBC Status Enable or disable WPS-PBC (Push Button Configuration) functionality.

Guest Zone

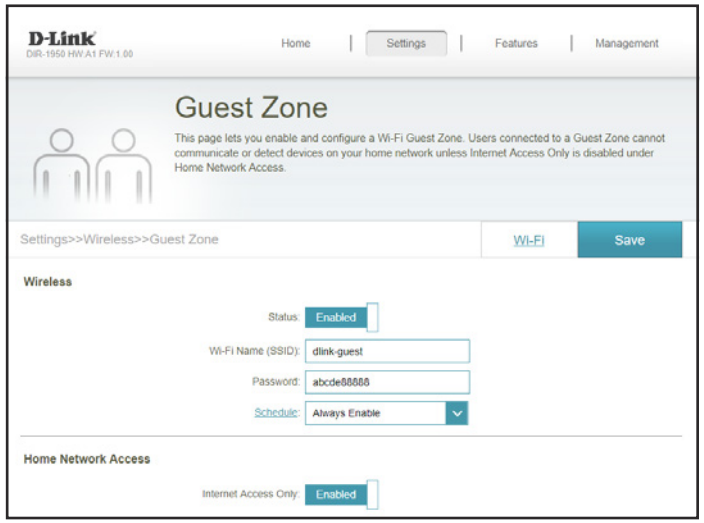
In the Settings menu on the bar at the top of the page, click **Wireless** to see your wireless network settings for your DIR-1950. Then click the link to **Guest Zone** to configure your guest zone settings.

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.

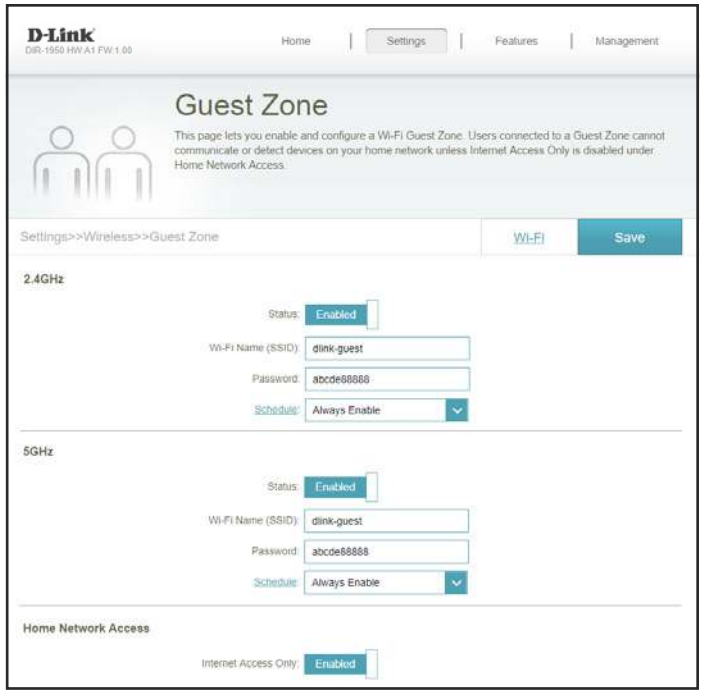
Click **Save** at any time to save the changes you have made on this page.

*If Smart Connect is Status is **Enabled** in the previous Wireless settings:*

Wireless	
Status	Enable or disable the Guest Zone feature. The status is disabled by default.
Wireless Name (SSID)	Create a name for your wireless network using up to 32 characters.
Password	Create a WiFi password.
Schedule	Use the drop-down menu to select the time schedule that the rule will be enabled for. The schedule may be set to **Always Enable**, or you can create your own schedules in the **Schedules** section. Refer to **Time & Schedule - Schedule** on page **81** for more information.
Home Network Access	
Internet Access Only	Enabling this option will confine connectivity to the Internet, preventing guests from accessing other local network devices.



*If Smart Connect is Status is **Disabled** in the previous Wireless settings:*



2.4 GHz / 5GHz

Status Enable or disable the Guest Zone feature. The status is disabled by default.

Wireless Name (SSID) Create a name for your wireless network using up to 32 characters.

Password Create a WiFi password.

Schedule Use the drop-down menu to select the time schedule that the rule will be enabled for. The schedule may be set to **Always Enable**, or you can create your own schedules in the **Schedules** section. Refer to **Time & Schedule - Schedule** on page **81** for more information.

Home Network Access

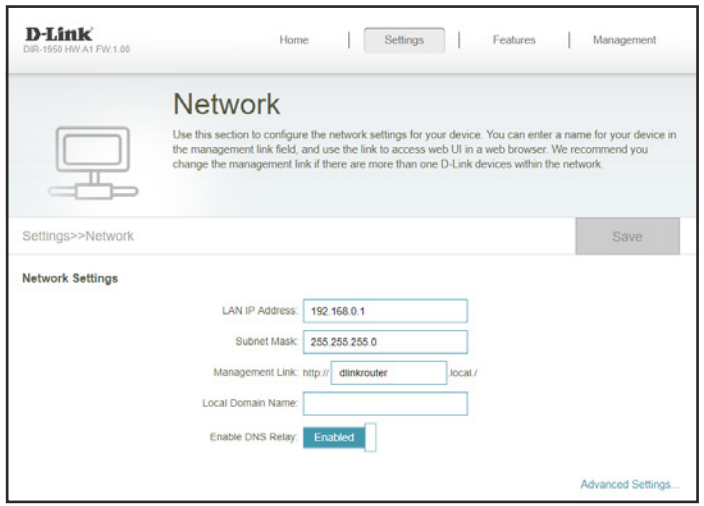
Internet Access Only Enabling this option will confine connectivity to the Internet, preventing guests from accessing other local network devices.

Network

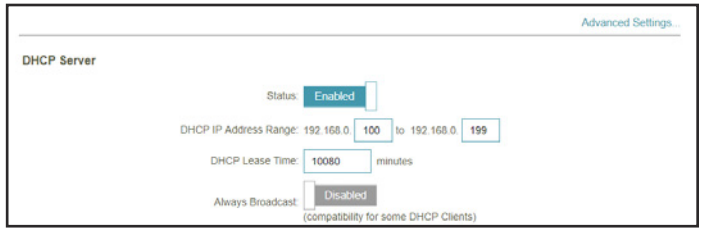
In the Settings menu on the bar at the top of the page, click **Network** to change the local network settings of the router and to configure the DHCP settings.

Click **Save** at any time to save the changes you have made on this page.

Network Settings	
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/.** 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.



DHCP Server



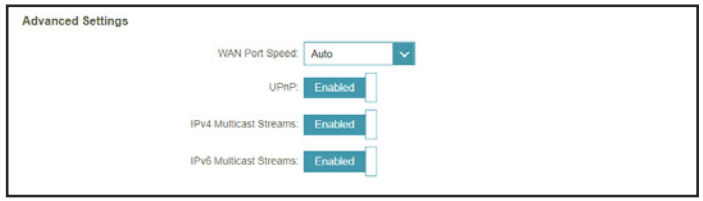
Status Enable or disable the DHCP server.

DHCP IP Address Range Enter the starting and ending IP addresses for the DHCP server's IP assignment. **Note**: *If you statically assign IP addresses to your computers or devices, make sure the IP addresses are outside of this range or you may have an IP conflict.*

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

Always Broadcast Enable this feature to broadcast your network's DHCP server to LAN/WLAN clients.

Advanced Settings



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 Streams Enable to allow IPv4 multicast traffic to pass through the router from the Internet. This is enabled by default.

IPv6 Multicast Streams Enable to allow IPv6 multicast traffic to pass through the router from the Internet. This is enabled by default.

Features
QoS Engine

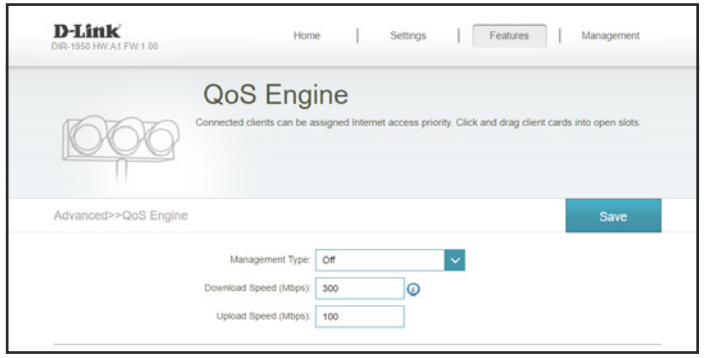
In the Features menu on the bar at the top of the page, click **QoS Engine** to configure connected clients Internet access priority.

Click **Save** at any time to save the changes you have made on this page.

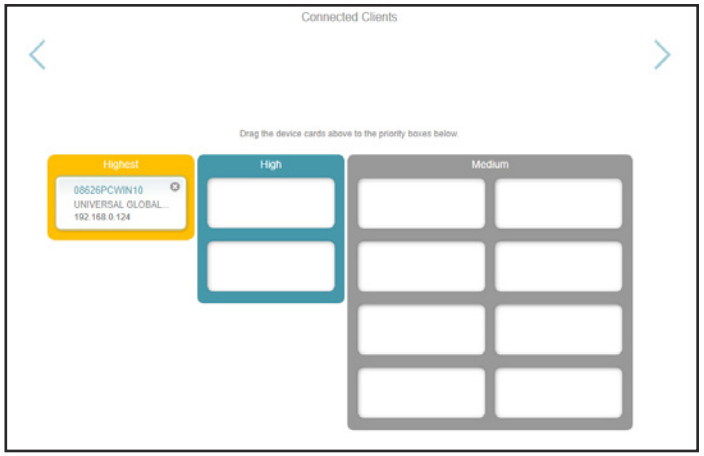
Management Type Use the drop-down menu to select the Management Type that the rule will be enabled for. This may be set to **Off** or **Manage By Device.**

Download Speed (Mbps) Set the download speed based on your ISP subscription plan in order to adjust the QoS engine.

Upload Speed (Mbps) Set the upload speed based on your ISP subscription plan in order to adjust the QoS engine.



This **Quality of Service (QoS) Engine** 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.



Under **Connected Clients**, 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.

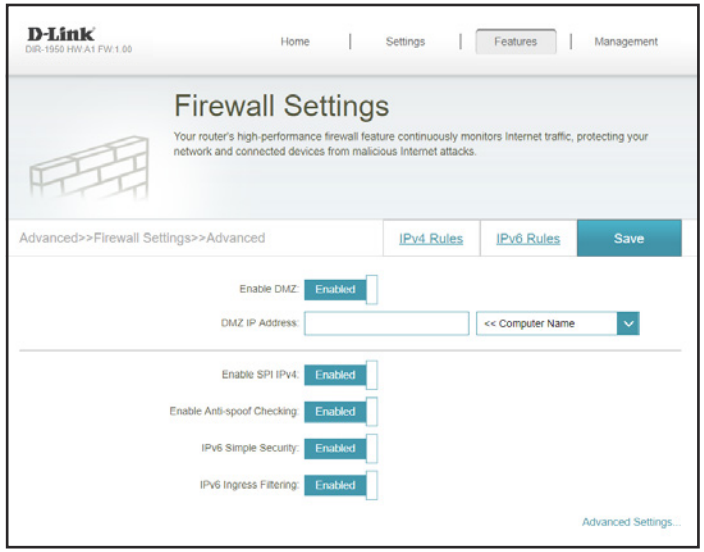
To assign a priority level to a device, drag the device card from the All Devices list over an empty slot and release the mouse button. The card will remain in the slot. If you want to remove a priority assignment from a device and return it to the All Devices list, click the cross icon in the top right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

Firewall Settings - Advanced

In the Features menu on the bar at the top of the page, click **Firewall** to configure the router's firewall settings. The firewall feature protects your network from malicious attacks over the Internet.

To configure the IPv4 firewall rules, click the **IPv4 Rules** link. Refer to **Firewall Settings - IPv4/IPv6 Rules** on page **68**
To configure the IPv6 firewall rules, click the **IPv6 Rules** link. Refer to **Firewall Settings - IPv4/IPv6 Rules** on page **68**

Click **Save** at any time to save the changes you have made on this page.



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.

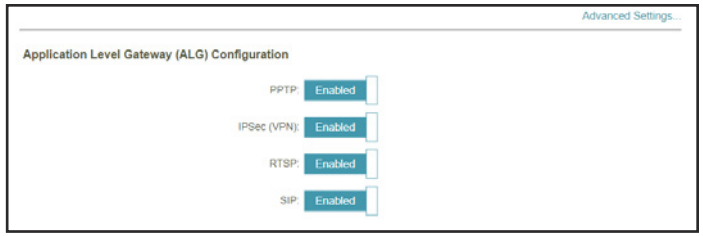
Enable SPI IPv4 — Enabling Stateful Packet Inspection (SPI) better protects against cyber attacks by validating that the traffic passing through the session conforms to the protocol.

Enable Anti-spoof Checking — Enable this feature to better 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.

Advanced Settings... - Application Level Gateway (ALG) Configuration



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.

Firewall Settings - IPv4/IPv6 Rules

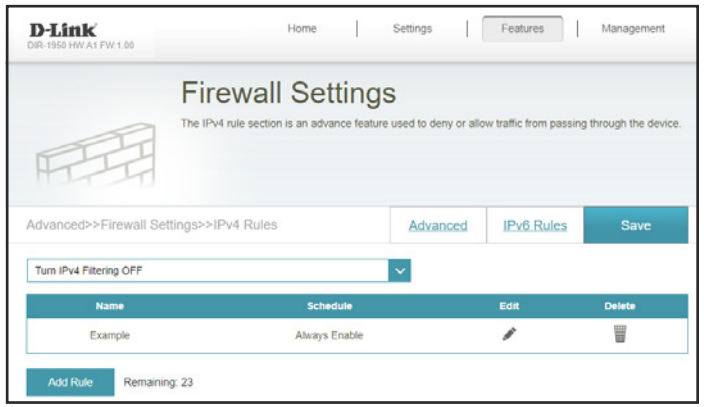
In the Features menu on the bar at the top of the page, click **Firewall** to configure the router's firewall settings, then click the **IPv4 Rules** link or the **IPv6 Rules** link to configure what kind of traffic is allowed to pass through the network.

To configure the Firewall Advanced settings, click the **Advanced** link. Refer to **Firewall Settings - Advanced** on page **66**

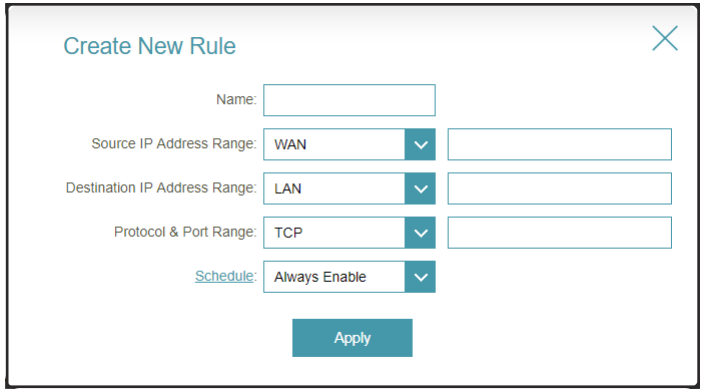
Click **Save** at any time to save the changes you have made on this page.

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 the trash can icon in the Delete column. If you wish to edit a rule, click on the pencil icon in the Edit column. If you wish to create a new rule, click the **Add Rule** button.



*If you clicked on **Edit** or **Add 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. 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. Using the drop-down menu, specify whether it is a **WAN** or **LAN** IP address.

Protocol & 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 for. The schedule may be set to **Always Enable**, or you can create your own schedules in the **Schedules** section. Refer to **Time & Schedule - Schedule** on page **81** for more information.

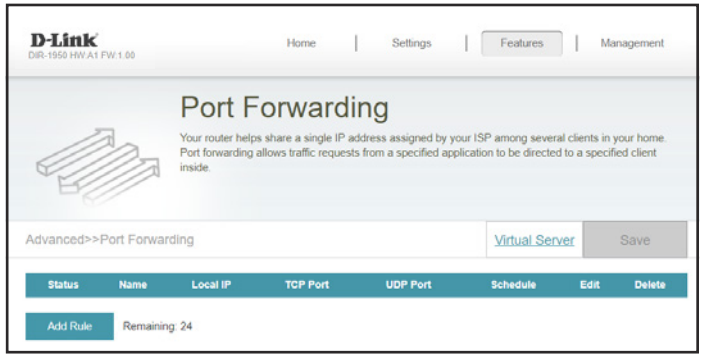
Port Forwarding

In the Features menu on the bar at the top of the page, click **Port Forwarding** 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.

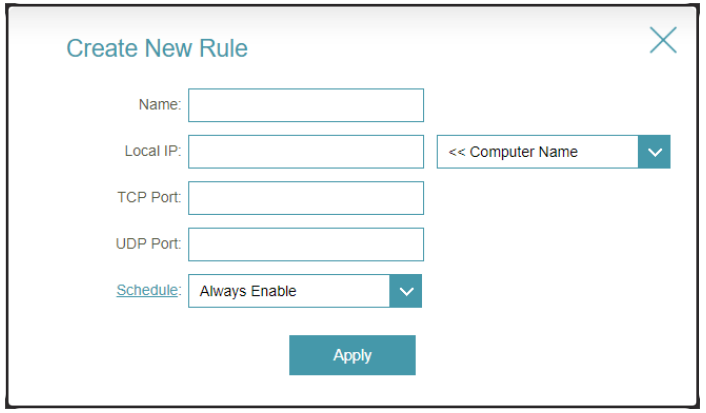
To configure the Virtual Server settings, click the **Virtual Server** link. Refer to **Port Forwarding - Virtual Server** on page **72**

Click **Save** at any time to save the changes you have made on this page.

If you wish to remove a rule, click on the trash can icon in the Delete column. If you wish to edit a rule, click on the pencil icon in the Edit column. If you wish to create a new rule, click the **Add Rule** button.



*If you clicked on **Edit** or **Add 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 for. The schedule may be set to **Always Enable**, or you can create your own schedules in the **Schedules** section. Refer to **Time & Schedule - Schedule** on page **81** for more information.

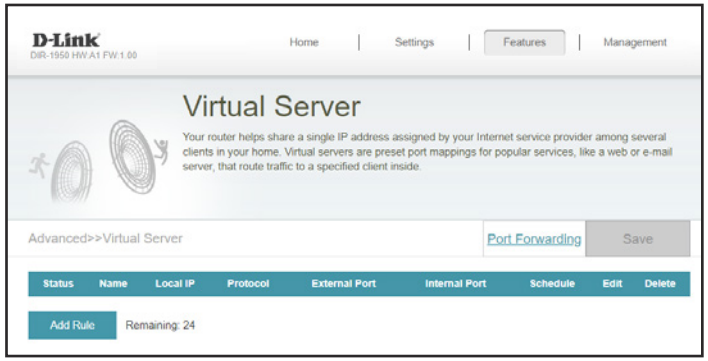
Port Forwarding - Virtual Server

In the Features menu on the bar at the top of the page, click **Port Forwarding** then click the **Virtual Server** link to configure its settings and specify a single public port on your router for redirection to an internal LAN IP address and Private LAN port. This might be necessary for certain applications to connect through the router.

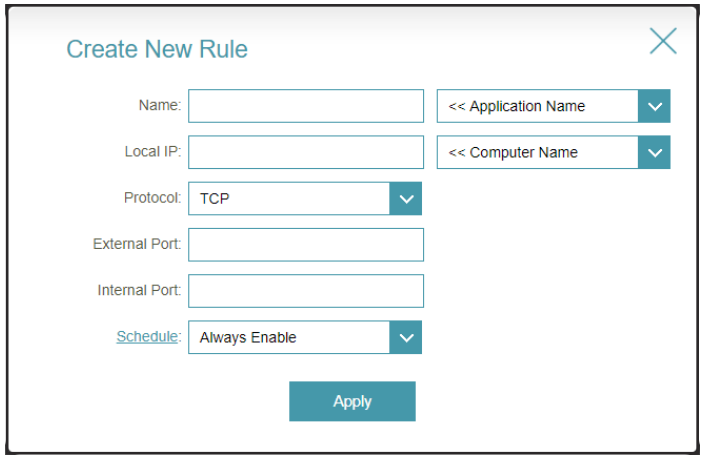
To configure the Port Forwarding settings, click the **Port Forwarding** link. Refer to **Port Forwarding** on page **70**

Click **Save** at any time to save the changes you have made on this page.

If you wish to remove a rule, click on the trash can icon in the Delete column. If you wish to edit a rule, click on the pencil icon in the Edit column. If you wish to create a new rule, click the **Add Rule** button.



*If you clicked on **Edit** or **Add Rule**, the following options will appear:*



Name Enter a name for the rule. Alternatively, select the protocol/ Application Name from the drop-down menu.

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.

Protocol Select the protocol of the traffic to allow or deny (**TCP, UDP, Both, or Other**).

Protocol Number If you entered **Other** above, enter the protocol number.

External Port Enter the public port you want to open.

Internal Port Enter the private port you want to open.

Schedule Use the drop-down menu to select the time schedule that the rule will be enabled for. The schedule may be set to **Always Enable**, or you can create your own schedules in the **Schedules** section. Refer to **Time & Schedule - Schedule** on page **81** for more information.

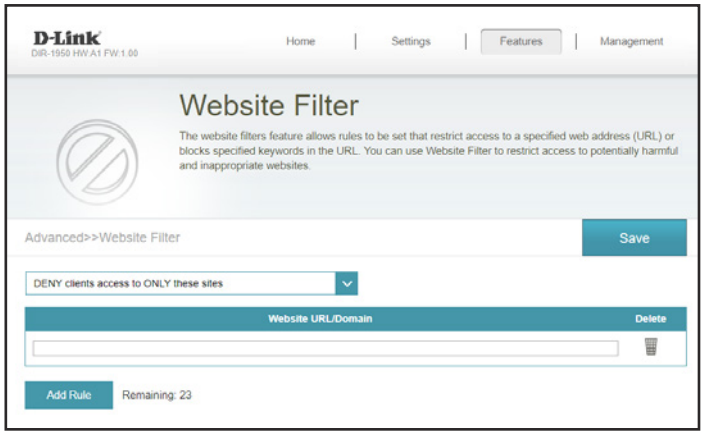
Website Filter

In the Features menu on the bar at the top of the page, click **Website Filter.** The website filters feature allows rules to be set that restrict access to a specified web address (URL) or blocks specified keywords in the URL. You can use Website Filter to restrict access to potentially harmful and inappropriate websites.

Click **Save** at any time to save the changes you have made on this page.

To begin, use the drop-down menu to select whether you want to **ALLOW** or **DENY** the access to the listed sites.

If you wish to remove a Website URL/Domain, click on the trash can icon in the Delete column. If you wish to list a new site to allow or deny access to, click the **Add Rule** button.



Static Route - IPv4

In the Features menu on the bar at the top of the page, click **Static Route** to define custom routes, controlling how data traffic is moved around your network.

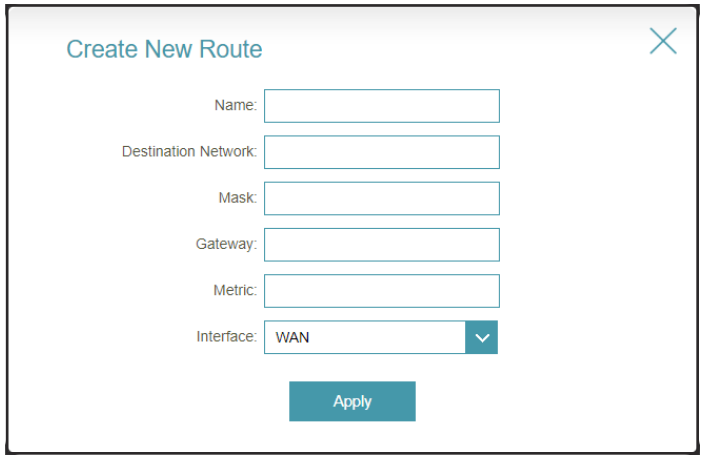
To configure the Static Route IPv6 settings, click the **IPv6** link. Refer to **Static Route - IPv6** on page **76**

Click **Save** at any time to save the changes you have made on this page.

If you wish to remove a route, click on the trash can icon in the Delete column. If you wish to edit a route, click on the pencil icon in the Edit column. If you wish to create a new route, click the **Add Route** button.



*If you clicked on **Edit** or **Add Rule**, the following options will appear:*



Name Enter a name for the rule.

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

Mask Enter the subnet mask of the route.

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

Metric Enter a route metric value ranging from **0** to **15**. This value indicates the cost of using this route.

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

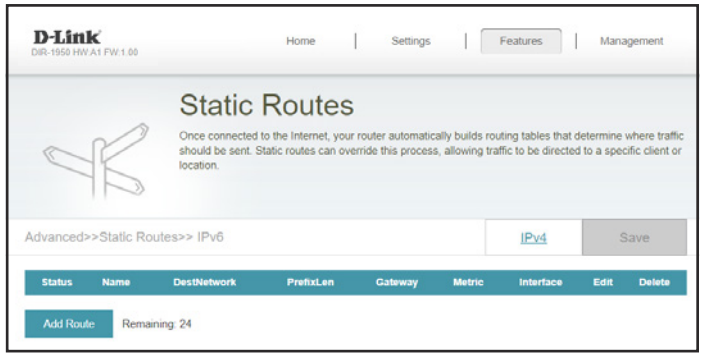
Static Route - IPv6

In the Features menu on the bar at the top of the page, click **Static Route** to access the IPv4 Static Route settings, then click **IPv6** to configure the IPv6 Static Routes.

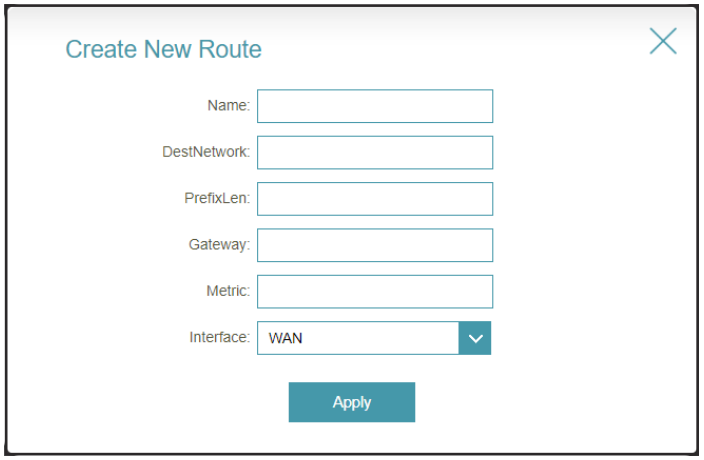
To configure the Static Route IPv4 settings, click the **IPv4** link. Refer to **Static Route - IPv4** on page **75**

Click **Save** at any time to save the changes you have made on this page.

If you wish to remove a route, click on the trash can icon in the Delete column. If you wish to edit a route, click on the pencil icon in the Edit column. If you wish to create a new route, click the **Add Route** button.



*If you clicked on **Edit** or **Add 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 your next hop gateway to be taken when this route is used.

Metric Enter a route metric value ranging from **0** to **15**. This value indicates the cost of using this route.

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

Dynamic DNS

In the Features menu on the bar at the top of the page, click **Dynamic DNS**. This setting allows your router to associate an easy-to-remember domain name such as [YourDomainName].com with the regularly changing IP address assigned by your Internet Service provider. This feature is helpful when running a virtual server.

Click **Save** at any time to save the changes you have made on this page.

Enable Dynamic DNS Enable or disable dynamic DNS. Enabling this feature will reveal further configuration options.

Status Displays the current dynamic DNS connection status.

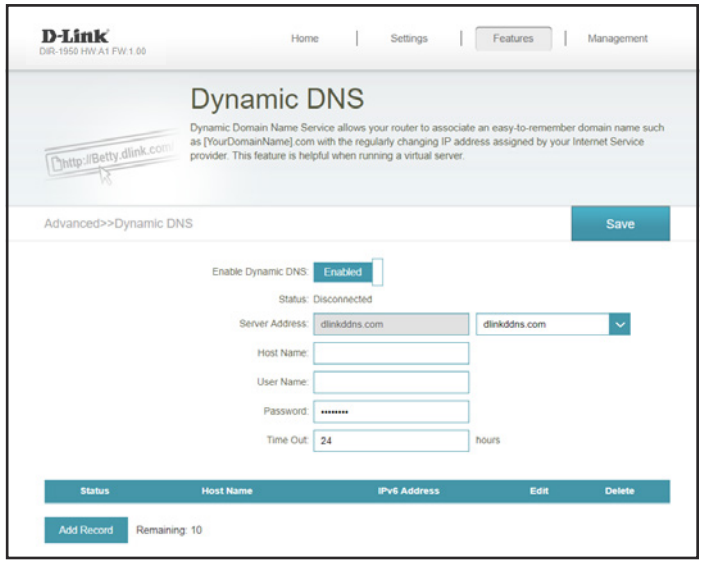
Server Address Enter the address of your dynamic DNS server, or select one from the drop-down menu.

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

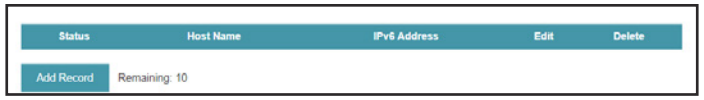
User Name Enter your dynamic DNS username.

Password Enter your dynamic DNS password.

Time Out Enter a time out time (in hours).



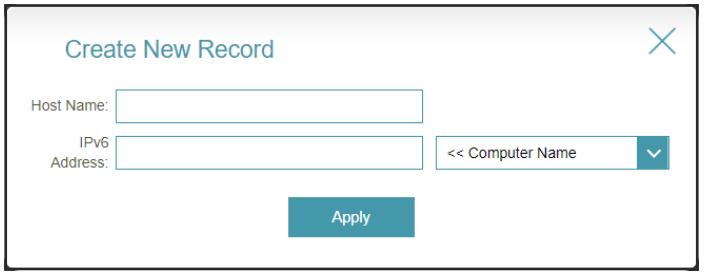
At the bottom of the page are the IPv6 host settings.



If you wish to remove a record, click on the trash can icon in the Delete column. If you wish to edit a record, click on the pencil icon in the Edit column. If you wish to create a new record, click the **Add Record** button.

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.



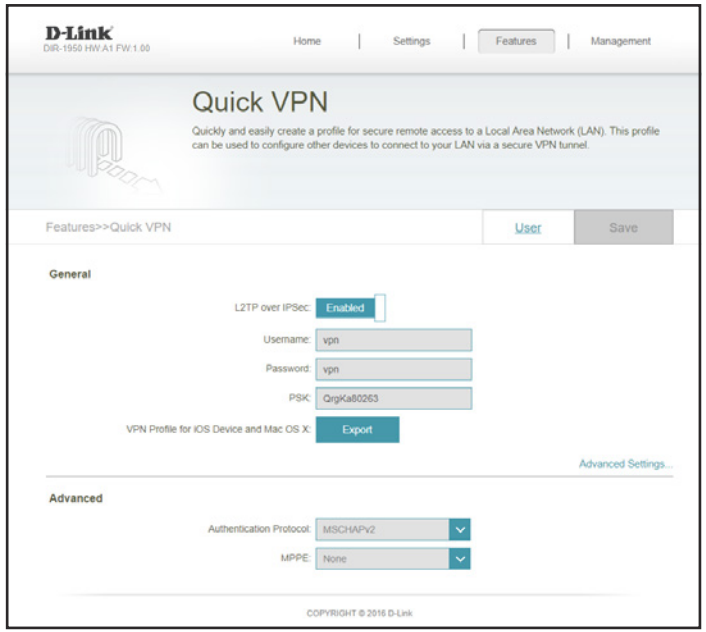
Quick VPN

In the Features menu on the bar at the top of the page, click **Quick VPN**. This page will help you configure the Quick VPN feature of your router. For more information, refer to **Quick VPN** on page **103**. Before proceeding, ensure that your Internet connection is working properly. We recommend configuring Dynamic DNS before proceeding with Quick VPN setup. If your router is assigned an IP address from your ISP using DHCP, it may frequently change, requiring clients credentials to be set up again and a simple DDNS address will be easier than an IP address.

To configure the User settings and create, manage, and delete user accounts with user-defined access to certain router services, click the **User** link. Refer to **User** on page **86**

Click **Save** at any time to save the changes you have made on this page.

L2TP over IPSec	Enable or disable the Quick VPN server.
Username	Enter a username between 1 and 20 characters.
Password	Enter a password between 1 and 20 characters.
PSK	Enter a passkey between 6 and 64 characters.
VPN Profile for iOS Device and MAC OS X	Click export to save the VPN profile settings file for iOS devices or Mac OS X.
Advanced Settings...	
Authentication Protocol	Choose the authentication protocol type: **MSCHAPv2, PAP,** or **CHAP**. **MSCHAPv2** is the default.
MPPE	Select the encryption cipher strength: **None, RC4-40, or RC4-128.RC4-128** is the default.



Management
Time & Schedule - Time

In the Management menu on the bar at the top of the page, click **Time & Schedule**. 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 and the Network Time Protocol (NTP) server.

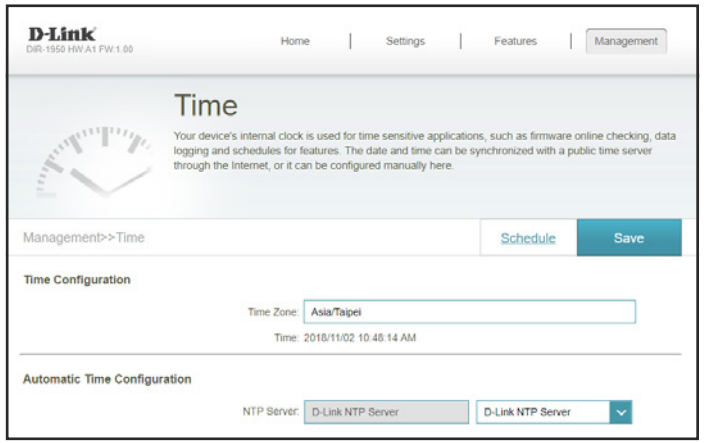
To configure the Schedule settings, click the **Schedule** link. Refer to **Time & Schedule - Schedule** on page **81**

Click **Save** at any time to save the changes you have made on this page.

Time Configuration

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

Time Displays the current date and time of the router.



Automatic Time Configuration

NTP Server Select from the drop-down menu to either use the D-Link NTP Server to synchronize the time and date for your router, or choose Manual to set the NTP server's IP address.



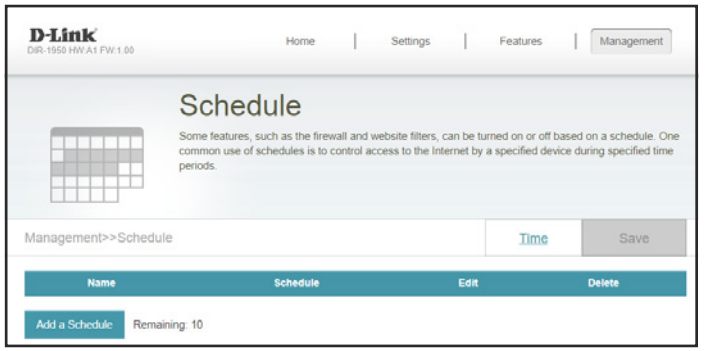
Time & Schedule - Schedule

In the Management menu on the bar at the top of the page, click **Time & Schedule** to access the Time page, then click the **Schedule** link. The **Schedule** page allows you to control some of the router functions through a pre-configured schedule.

To configure the Time settings, click the **Time** link. Refer to **Time & Schedule - Time** on page **80**

Click **Save** at any time to save the changes you have made on this page.

If you wish to remove a schedule, click on the trash can icon in the Delete column. If you wish to edit a schedule, click on the pencil icon in the Edit column. If you wish to create a new schedule, click the **Add a Schedule** button.

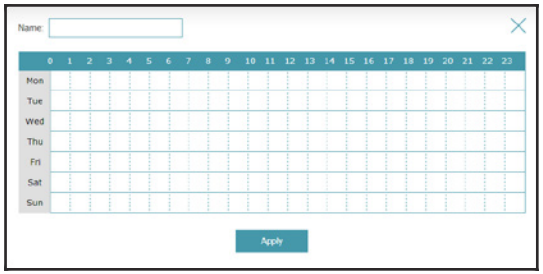


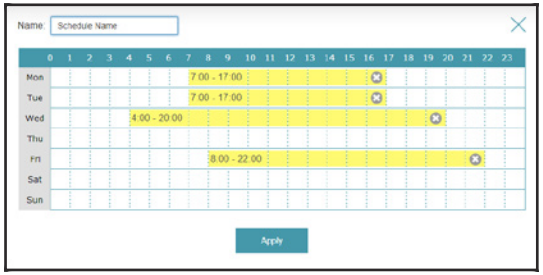
First, enter the name of your schedule in the **Name** field.

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 starting hour and drag to the ending 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 **Apply** when you are done.



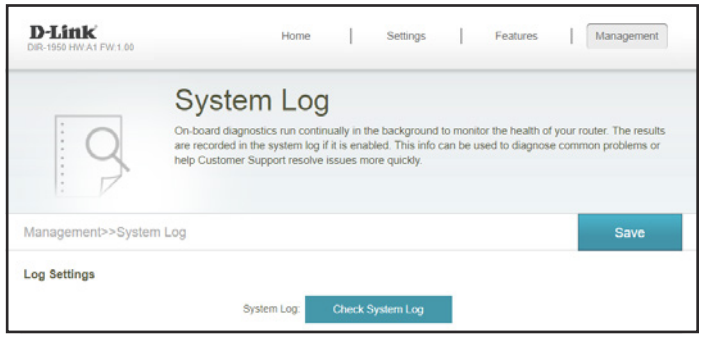


System Log

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

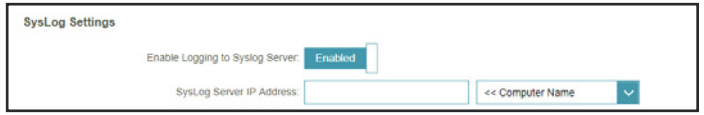
Click **Save** at any time to save the changes you have made on this page.

Log Settings



System Log — Click the **Check System Log** button to download a text file containing the system log.

SysLog Settings



Enable Logging to Syslog Server — Check this box to send the router logs to a SysLog Server.

SysLog Server IP Address — Configurable if **Enable Logging to Syslog Server** is enabled. 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.

Email Settings

Enable E-mail Notification Enable this option if you want the logs to be automatically sent to an email address.

*If you enabled **Enable E-mail Notification**, the following options will appear:*

From E-mail Address Enter the email address your SysLog messages will be sent from.

To E-mail Address Enter the email address your SysLog messages will be sent to.

SMTP Server Address Enter your SMTP server address.

SMTP Server Port Enter your SMTP server port.

Enable Authentication Check this box if your SMTP server requires authentication.

Account Name Enter your SMTP account name.

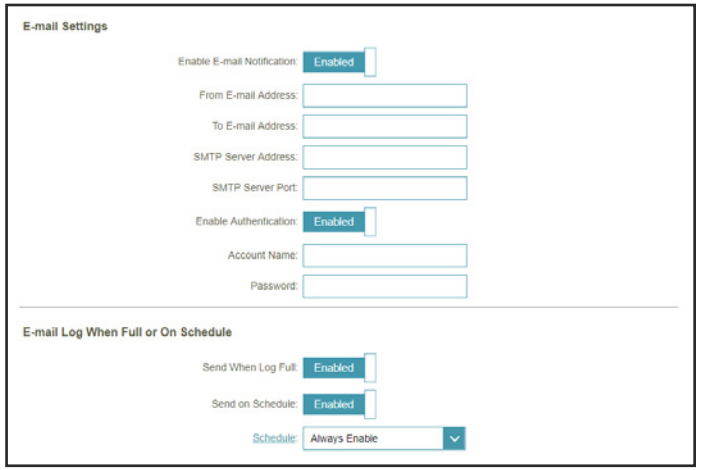
Password Enter your SMTP account's password.

E-mail Log When Full or On Schedule

Send When Log Full If enabled, this option will set the router to send the log when it is full.

Send on Schedule If enabled, this option will set the router to send according to a set schedule.

Schedule If you enable Send On Schedule, use the drop-down menu to select a schedule to apply. The schedule may be set to Always Enable, or you can create your own schedules in the Schedules section. Refer to **Time & Schedule - Schedule** on page **81** for more information.



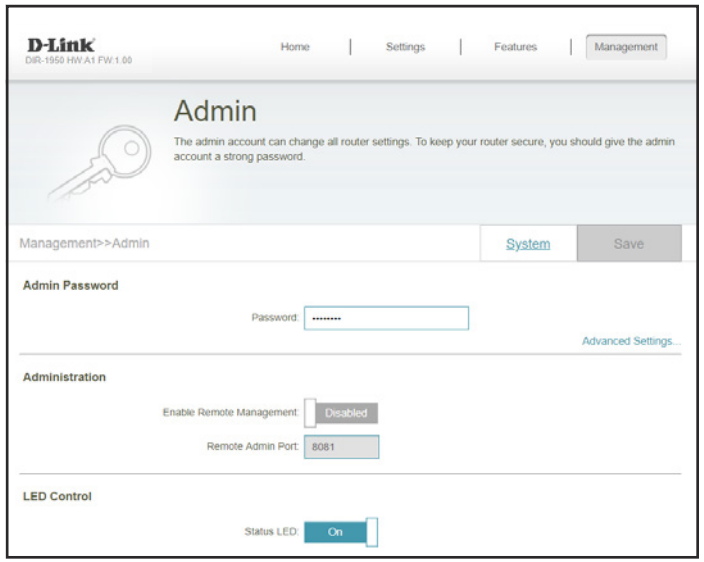
System Admin - Admin

In the Management menu on the bar at the top of the page, click **System Admin** to access the Admin page. This page will allow you to change the administrator (Admin) password.

To configure the System settings, click the **System** link. Refer to **System Admin - System** on page **85**

Click **Save** at any time to save the changes you have made on this page.

Admin Password	
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 or the D-Link Wi-Fi app.
Advanced Settings... - Administration	
Enable Remote Management	Click the toggle to enable remote management for your router.
Remote Admin Port	Specify the port number for accessing the web configuration settings UI.
LED Control	
Status LED	Turn the LED status lights on or off.



System Admin - System

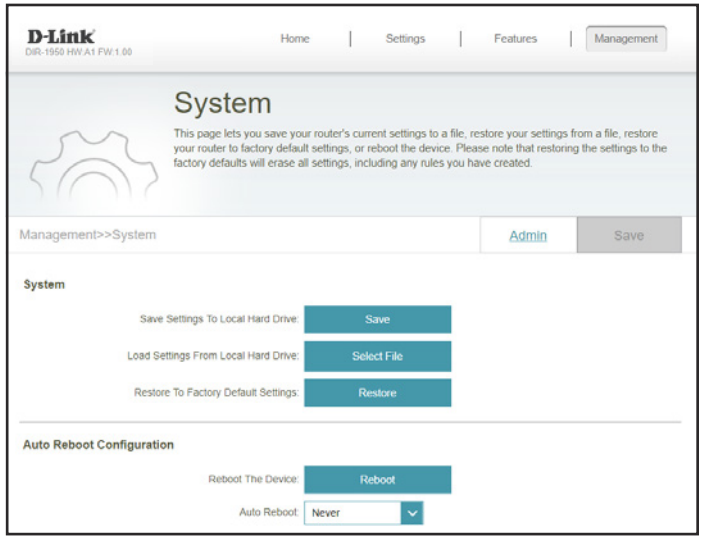
In the Management menu on the bar at the top of the page, click **System Admin** to access the Admin page, then click **System**. This page allows you to save the router's current configuration, load a previously saved configuration, reset the router to its factory default settings, or reboot the router.

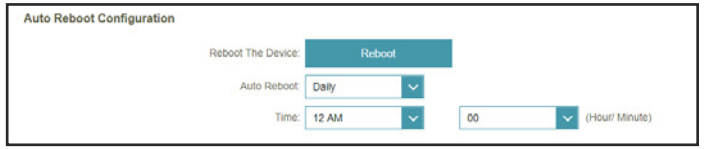
To configure the Admin settings, click the **Admin** link. Refer to **System Admin - Admin** on page **84**

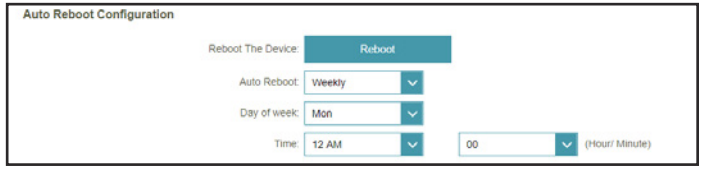
Click **Save** at any time to save the changes you have made on this page.

System	
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 a previously saved router configuration file. This will overwrite the router's current configuration.
Restore to Factory Default Settings	This option will restore the router back to the default configurations stored in the firmware. 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.

Auto Reboot Configuration	
Reboot the Device	Click to reboot the router immediately.
Auto Reboot	You may set the router to automatically reboot at a set time. The options are **Never, Daily,** or **Weekly**. You may set the hour, the minute, and the day you wish to have the router automatically reboot at.





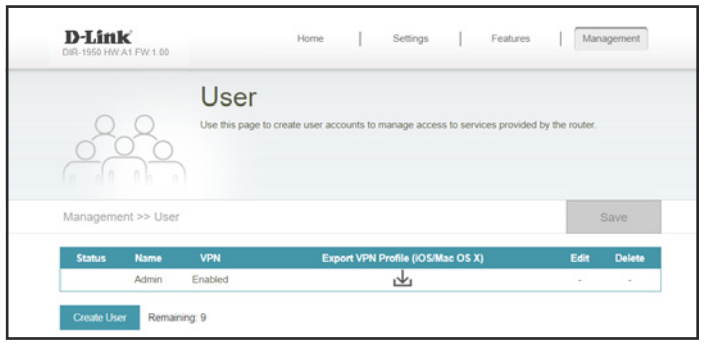


User

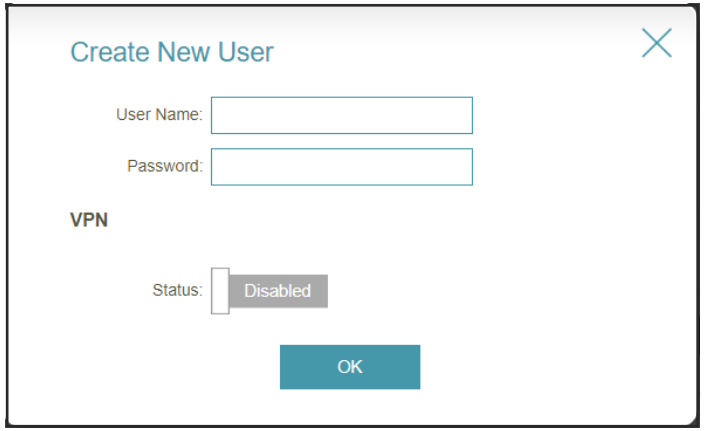
In the Management menu on the bar at the top of the page, click **User**. The User section is used to create, manage, and delete user accounts with user-defined access to certain router services.

Click **Save** at any time to save the changes you have made on this page.

If you wish to remove a user, click on the trash can icon in the Delete column. If you wish to edit a user, click on the pencil icon in the Edit column. If you wish to create a new user, click the **Create User** button.



User Name	Enter a username for the new user account.
Password	Enter a password for the new user account.
VPN	
Status	Enable or disable Virtual Private Network (VPN) functionality for this user.

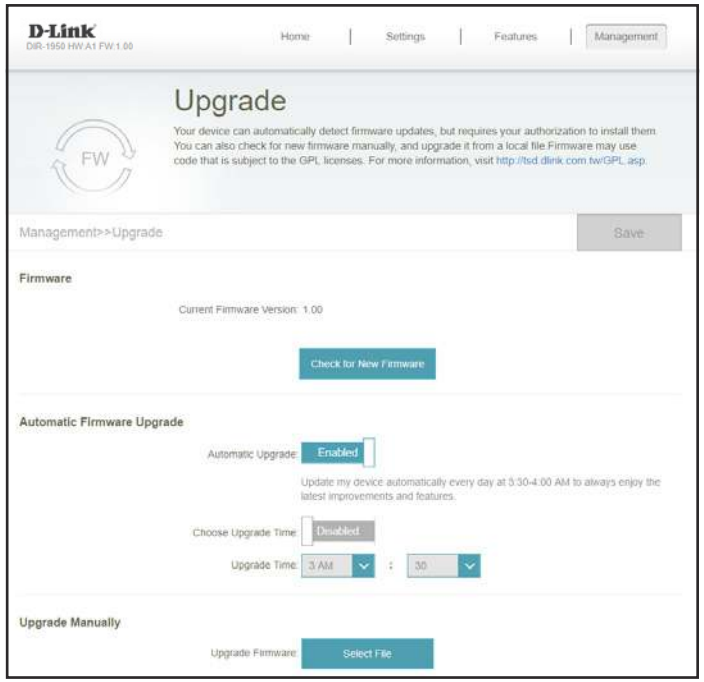


Upgrade

In the Management menu on the bar at the top of the page, click **Upgrade**. This page will allow you to upgrade the router's firmware, either automatically or manually. To manually upgrade the firmware, you must first download the relevant file from **http://support.dlink.com**.

Click **Save** at any time to save the changes you have made on this page.

Firmware	
Current Firmware Version	The current firmware's version 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.
Automatic Firmware Upgrade	
Automatic Upgrade	If enabled, the router will automatically check for and upgrade to the newest firmware.
Choose Upgrade Time	Enable this function to set the router to automatically upgrade its firmware at a set time.
Upgrade Time	Configurable if **Choose Upgrade Time** is enabled. Set the hour and minute to automatically upgrade by using the drop-down menus.
Upgrade Firmware	
Upgrade Firmware	If you wish to upgrade manually, first download the firmware file you wish to upgrade to. Next, click the **Select File** button and browse to the file to install the new firmware.



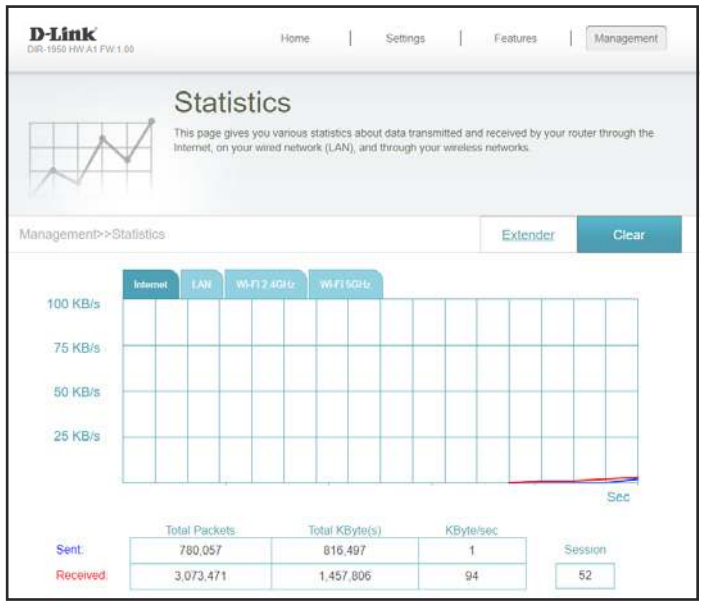
Statistics

In the Management menu on the bar at the top of the page, click **Statistics**. On the Statistics page you can view the amount of packets that pass through the router on the Internet, LAN, Wi-Fi 2.4 GHz and Wi-Fi 5GHz networks.

To view the Extender statistics, click the **Extender** link. Refer to **Statistics - Extender** on page **89**

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** near the top of the page.

The traffic counter will reset if the device is rebooted.



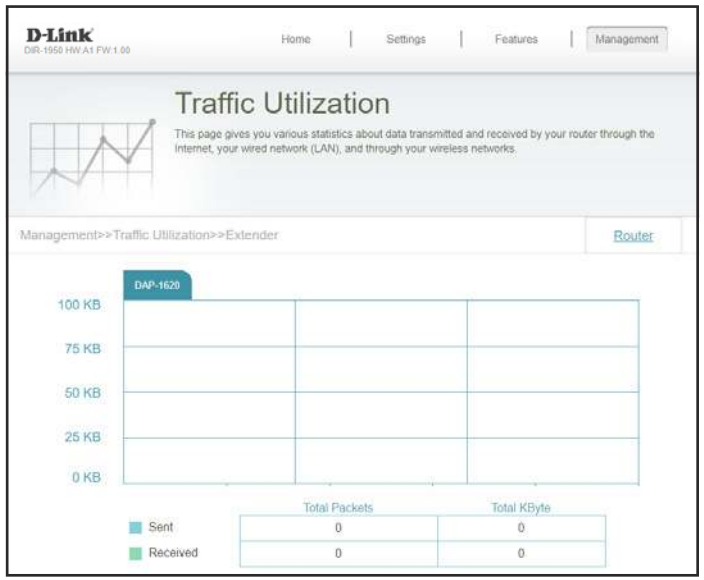
Statistics - Extender

In the Management menu on the bar at the top of the page, click **Statistics** to access the Statistics page, then click **Extender**. This page lets you view the amount of packets that pass through connected extenders.

To view the router's statistics, click the **Router** link. Refer to **Statistics** on page **88**

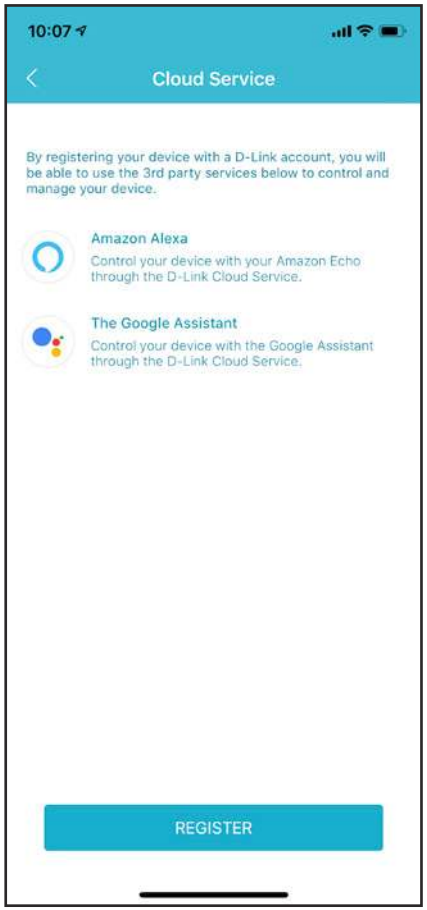
Click the tabs at the top of the graph to view different extenders if you have more than one connected. The graph will update in real time.

The traffic counter will reset if the device is rebooted.



Third Party Services

With the DIR-1950, you can command your router's functionality with your voice through Amazon Alexa and the Google Assistant, enabling you to control your network with voice commands. Features include enabling and disabling your Wi-Fi guest zone without having to go into the UI, rebooting the router and checking your router for firmware upgrades. In order to use third party services to control and manage your device, please register your device with D-Link Cloud Service.



Registering a D-Link Cloud Service Account

In order to use third party services to control and manage your device, you will first need to register your device with D-Link Cloud Service. Follow the steps below if you do not have a D-Link Cloud Service account.

Step 1
Launch the **D-Link Wi-Fi** app.

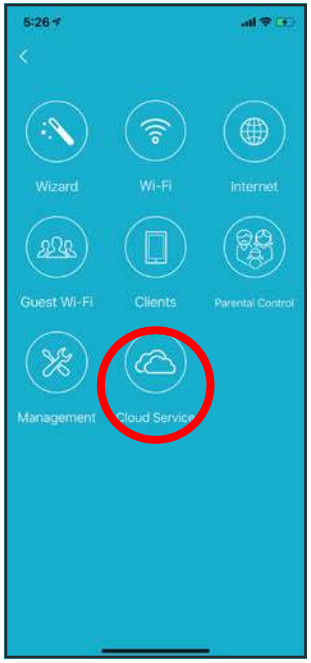


D-Link Wi-Fi

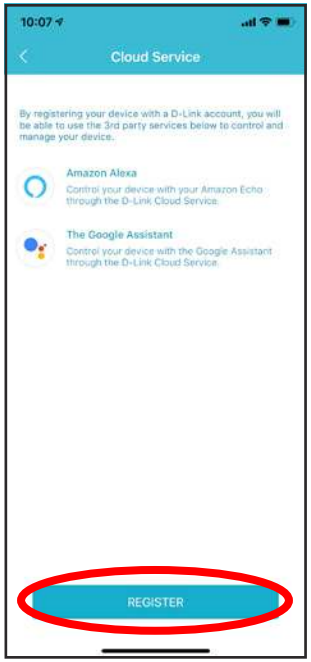
Step 2
Tap the settings gear icon on the top right corner of the screen.



Step 3
Tap the **Cloud Service** icon.

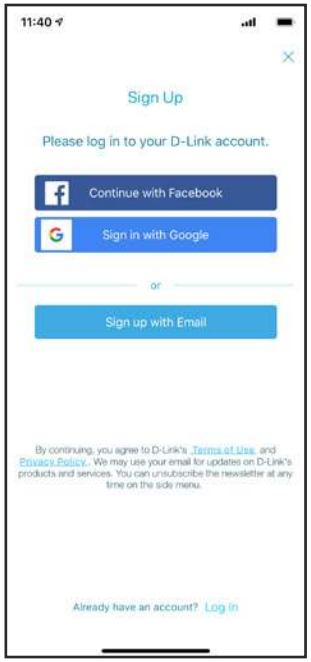


Step 4
Tap the **Register** button.



Step 5

In this menu, you can sign up for a D-Link account using Facebook, Google or an Email address. If you already have a D-Link account, you can tap the **Log In** link at the bottom of the screen to be redirected to the login page.



Amazon Alexa Setup

You will need the Amazon Alexa app, an Amazon account, an Amazon Alexa device and a D-Link Cloud Service account to use this feature.

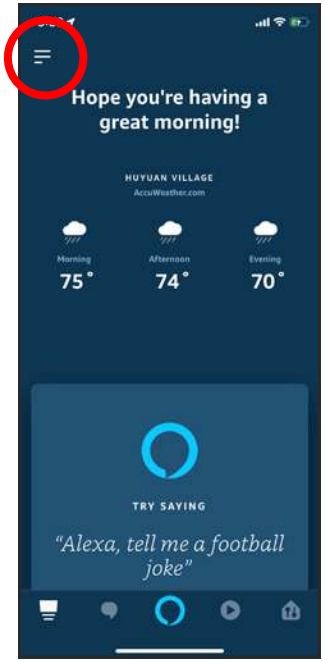
Note: *The screenshots may be different depending on your mobile device's OS version. The following steps show the iOS interface. If you are using an Android device, the appearance may be different from that of the screenshots, but the process is the same.*

Step 1
Launch the **Amazon Alexa** app.

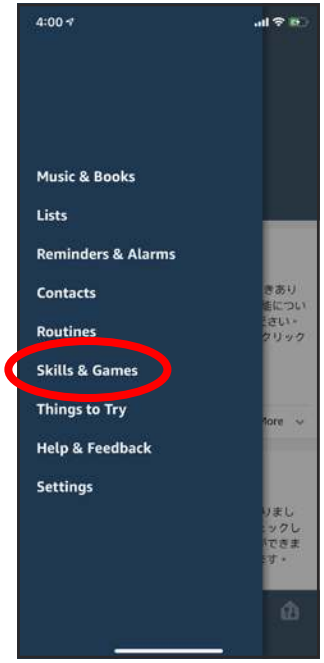


Amazon Alexa

Step 2
Tap the menu icon on the top left-hand corner of the home screen.



Step 3
Tap on **Skills & Games**.



Step 4
Search for "D-Link Wi-Fi". Tap on the search result.



Step 5
Tap **Enable** to link the skill.



Step 6
Sign in using your D-Link account details.



Step 7

Congratulations! D-Link Wi-Fi has been successfully linked as a skill for your Amazon device. Close the window by tapping **Done** on the top left corner of the screen. Refer to **Amazon Alexa Voice Commands** on page **98** for tasks that you can ask your Amazon Alexa to perform.



Amazon Alexa Voice Commands

With D-Link Wi-Fi enabled as a skill for Alexa, you can ask Alexa to do any of these tasks:

Task	Command
Enable the guest zone.	“Alexa, ask D-Link Wi-Fi to enable my guest zone.”
Disable the guest zone.	“Alexa, ask D-Link Wi-Fi to disable my guest zone.”
Find out the guest zone credentials.	"Alexa, ask D-Link Wi-Fi what are my guest network credentials.”
Reboot the router.	"Alexa, ask D-Link Wi-Fi to reboot the router."
Upgrade the router.	“Alexa, ask D-Link Wi-Fi to upgrade my router.”

The Google Assistant Setup

You will need the Google Assistant app, a Google account and a D-Link Cloud Service account to use this feature.

Note: *The screenshots may be different depending on your mobile device's OS version. The following steps show the iOS interface. If you are using an Android device, the appearance may be different from that of the screenshots, but the process is the same.*

Step 1
Launch the **Google Assistant** app.

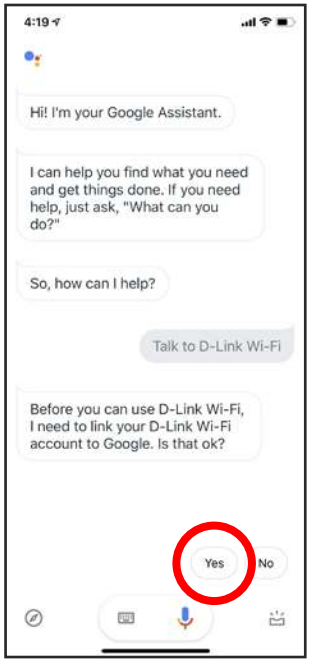


Assistant

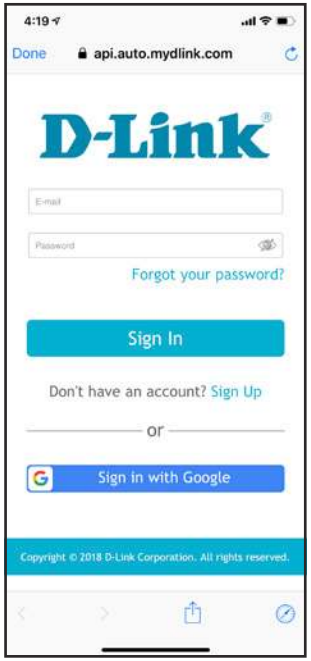
Step 2
Tell your Google Assistant to "**Talk to D-Link Wi-Fi**."



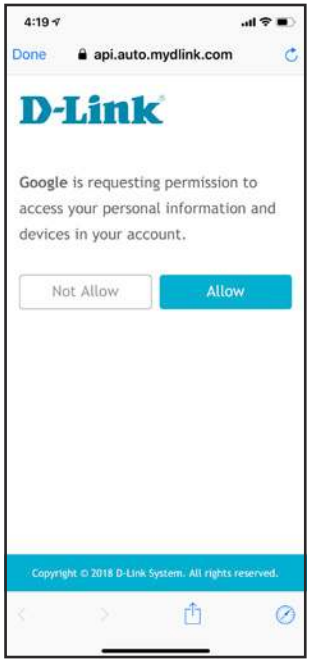
Step 3
Tap **Yes**.



Step 4
Sign in using your D-Link account details.



Step 5
Tap **Allow** to continue setup..



Step 6
Congratulations! D-Link Wi-Fi has been successfully linked to your Google Assistant. Refer to **The Google Assistant Voice Commands** on page **102** for tasks that you can ask your Google Assistant to perform.



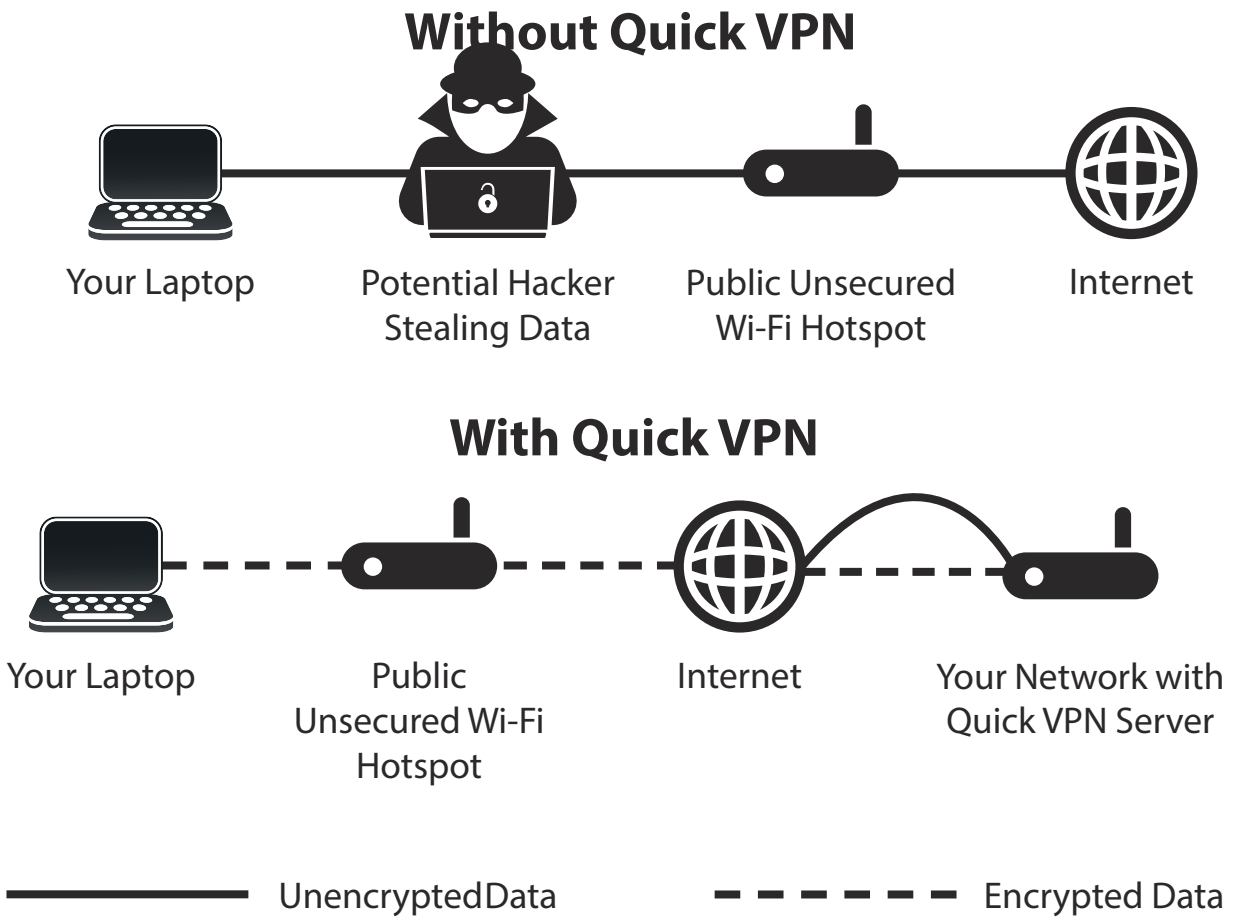
The Google Assistant Voice Commands

With D-Link Wi-Fi enabled as a skill for the Google Assistant, you can ask your Google Assistant to do any of these tasks:

Task	Command
Enable the guest zone.	“OK Google, talk to D-Link Wi-Fi to enable my guest zone.”
Disable the guest zone.	“OK Google, talk to D-Link Wi-Fi to disable my guest zone.”
Find out the guest zone credentials.	"OK Google, talk to D-Link Wi-Fi to tell me my guest zone credentials.”
Reboot the router.	"OK Google, talk to D-Link Wi-Fi to reboot the router."
Upgrade the router.	“OK Google, talk to D-Link Wi-Fi to upgrade my router.”

Quick VPN

This router is equipped with D-Link's Quick VPN technology. Virtual Private Networking (VPN) creates a connection between devices across the Internet. Using Quick VPN allows you to more securely connect your computer or mobile device to places with free, untrusted Wi-Fi hotspots in places like coffee shops and hotels by encrypting and relaying it through your home Internet connection. This extra 'hop' reduces the chances of hackers stealing your information, such as logins, passwords, and credit card numbers. When traveling, Quick VPN lets you watch sports and use video streaming services without experiencing blackouts or filtering. You can surf the whole Internet unfiltered and unblocked, just as you would at home.



Important Information

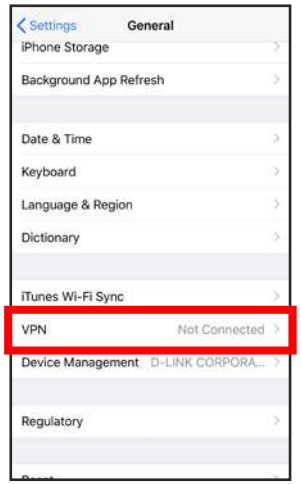
The following instructions explain and help you to configure your D-Link Quick VPN enabled router and devices to create a Virtual Private Network (VPN). This feature is provided for advanced users who wish to connect remotely and use their router's Internet connection to add a layer of security while using untrusted networks. Configure the Quick VPN Server on your router first and then set up client devices to connect through your router's WAN connection.

- Quick VPN only provides an added layer of security against specific types of snooping attacks and does not guarantee complete data integrity or protection. Only traffic in the tunnel between your router and device will be encrypted, WAN traffic will leave your D-Link Quick VPN enabled router unencrypted.
- Keep your Quick VPN Username, Password, and Passkey safe. Keep your Quick VPN Username, Password, and Passkey safe. It is recommended that you change these credentials periodically.
- A device connected via Quick VPN tunnel may experience lower data throughput and higher latency due to a number of factors including: Internet conditions, local and remote network Wi-Fi and WAN bandwidth limitations, and increased latency. This may negatively impact real time voice and video communication.
- Quick VPN supports up to five concurrent VPN client sessions using the same login and password are supported. Quick VPN uses L2TP/IPsec with MSCHAPv2, PAP, or CHAP authentication.
- You device may warn you that your information may be intercepted, since you control the Quick VPN server, you may ignore this.
- UDP Ports 500, 4500, 1701 and IP Port 50 must be open in order for Quick VPN to work.
- L2TP/IPsec VPN usage may be restricted in some countries and on some networks. If you have trouble using Quick VPN on some networks, but not others and are not violating network access rules, try contacting your ISP or network administrator.
- Devices connected via Quick VPN are assigned addresses on a separate subnet (ex. 192.168.1.x). Some network resources may be unavailable when connecting via Quick VPN.
- If your Internet connection uses DHCP, it is strongly recommended that you first set up Dynamic DNS (DDNS), such as D-Link DDNS, to eliminate the need to reconfigure client devices in the event your ISP assigns you a new WAN IP address.

iOS Devices
VPN Setup Instructions

This section provides Quick VPN setup instructions for iOS devices. Refer to **Quick VPN** on page **79** for your router setup instructions.

Go into **Settings** on your compatible iOS device.
Scroll to and tap **General**.
Scroll to and tap **VPN**.



Tap **Add VPN Configuration...**



You should see a pop up window asking you to fill out the details of your VPN connection.

Type: Choose **IPSec**. Tap **Back** to return to the Add Configuration page.

Description: For reference purposes only, used to differentiate between multiple VPN connections.

Server: Enter the IP/DDNS address of your Quick VPN server.

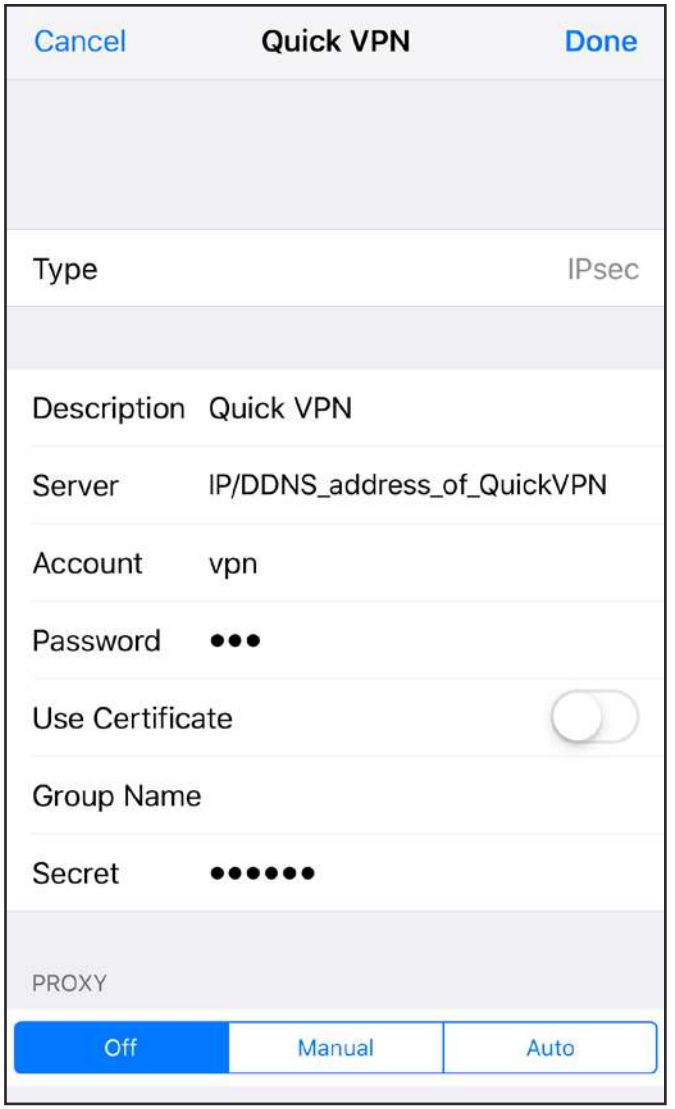
Account: Enter the Username used to authenticate login to VPN server

Password: Enter Password used to authenticate login to VPN server

Secret: Enter your Passkey (PSK).

Tap **Done** at the top right corner of the page to finish adding the configuration.

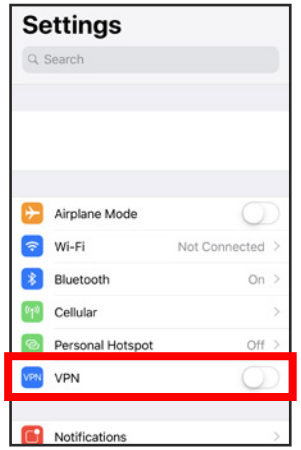
Your iOS device is now configured to connect to your Quick VPN server.



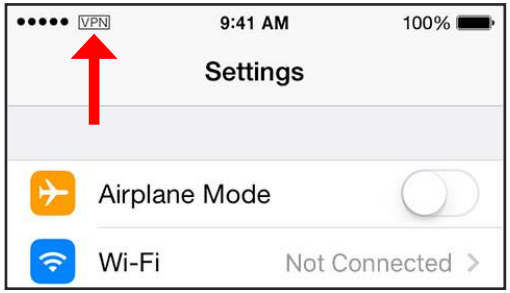
Connect or Disconnect

To connect or disconnect from to your Quick VPN server, open **Settings** and tap the button next to **VPN**.





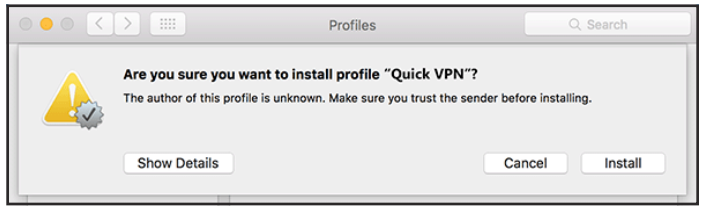
The VPN icon will appear in the notification area at the top of your screen indicating that your device is currently connected to the Quick VPN server.



Mac OS X
VPN Setup Instructions

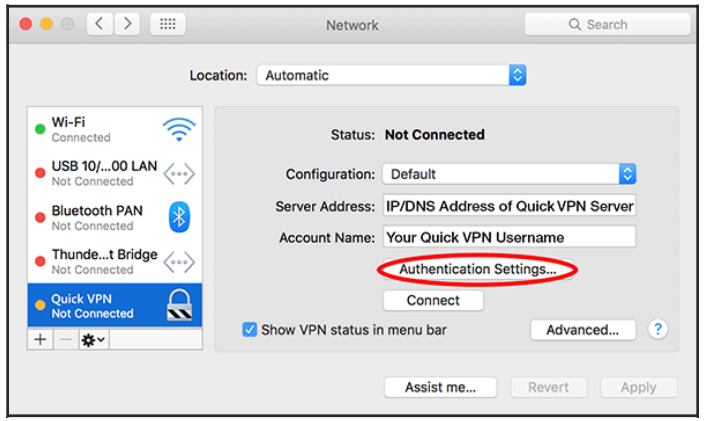
This section provides Quick VPN setup instructions for OS X using the **Export** Profile function. Refer to **Quick VPN** on page **79** for your router setup instructions.

Open the exported profile. The Install Profile dialogue will appear; click **Continue** and **Install**.

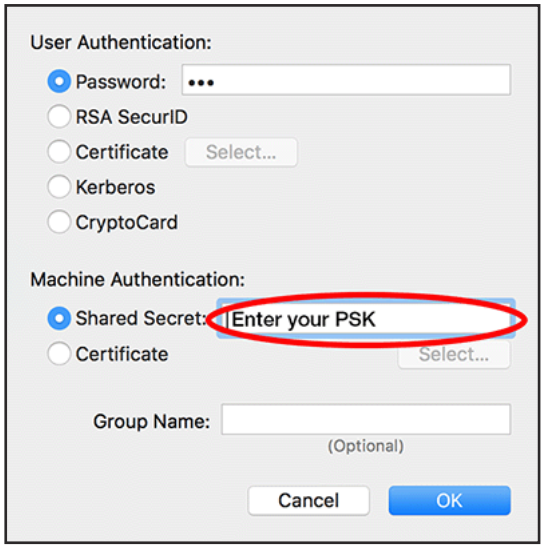


Enter your user account password when prompted. Close the **Profiles** dialogue.

Go to > **System Preferences**... > **Network** and select the Quick VPN connection and click **Authentication Settings**.



Enter your **Passkey** in the **Shared Secret** text box and click **OK, Apply,** then **OK**.

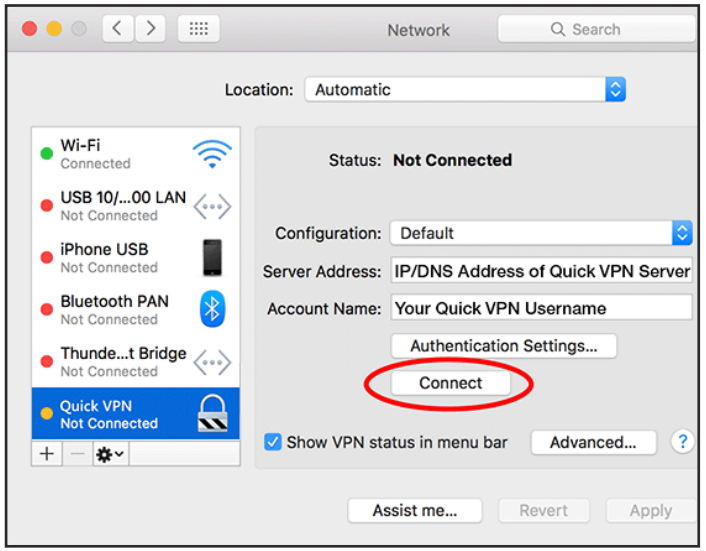


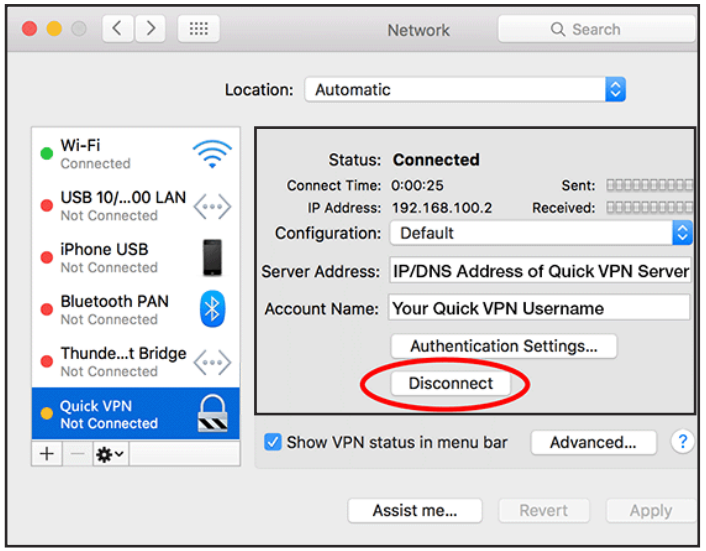
Your Mac is now configured to connect to your Quick VPN server.

Connect or Disconnect

To connect to or disconnect from your Quick VPN server, go to > **System Preferences**... > **Network**.

Select the Quick VPN connection and click on the **Connect** or **Disconnect** button.



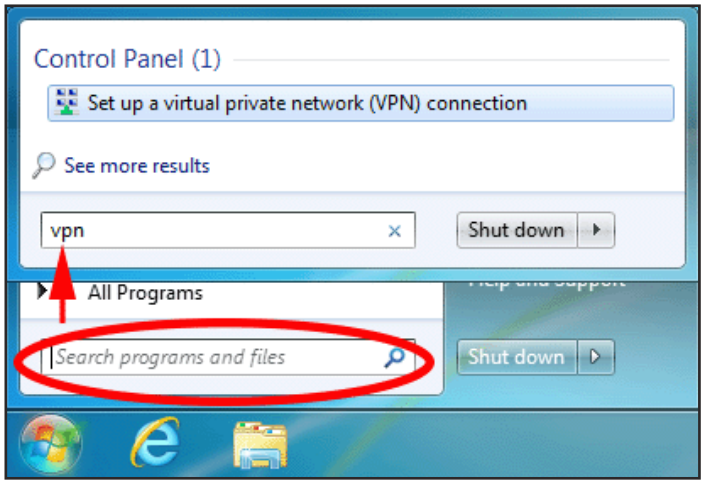


Windows 7
VPN Setup Instructions

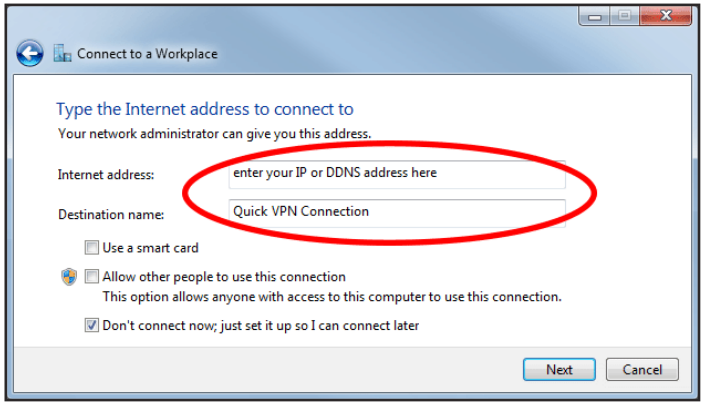
This section provides Quick VPN setup instructions for Windows 7. Refer to **Quick VPN** on page **79** for your router setup instructions.

Click the **Start** button and type **vpn** into the **Search programs and files** box.

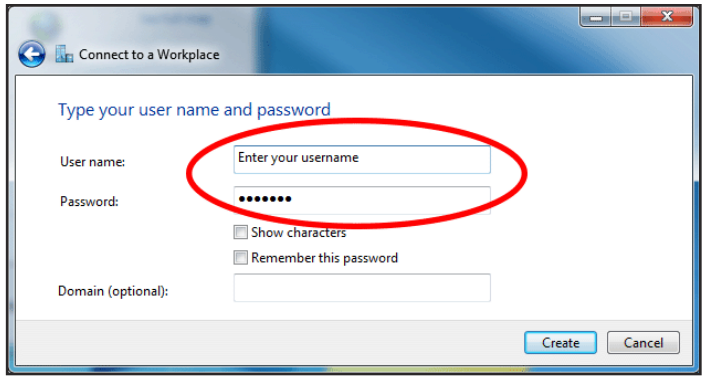
Select **Set up a virtual private network (VPN) connection.**



Enter the **IP/DDNS address** of your Quick VPN server in the **Internet address** box, create a name for your connection in the **Destination Name**, check **Don't Connect now; just set it up so I can connect later**, and click **Next**.

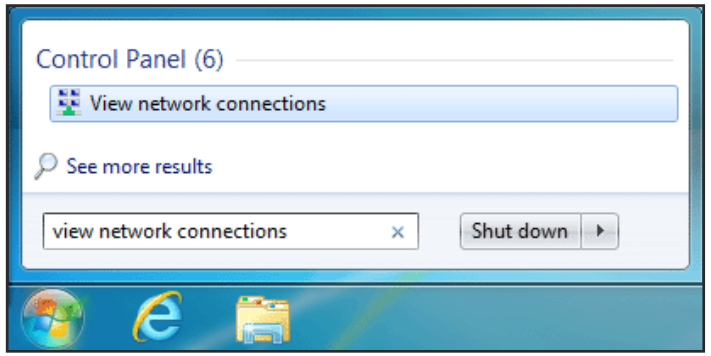


Enter your **Username**. If you would like windows to save your password, enter your **Password** and check **Remember this password**. Click **Create** to continue.



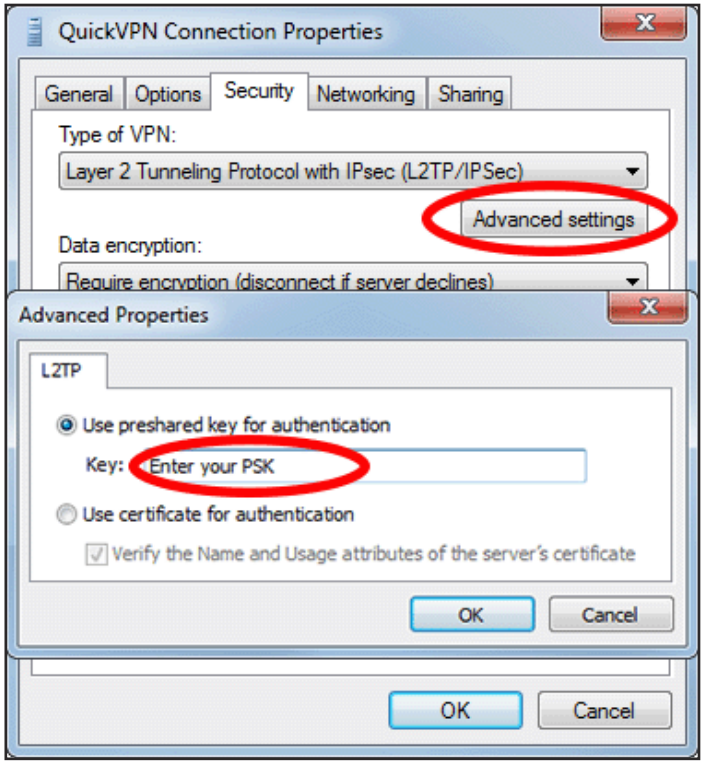
<u>Do not click **Connect Now**.</u>

Click **Close**. Click the **Start** button and type **view network connections** into the **Search programs and files** text box. Select **View network connections.**



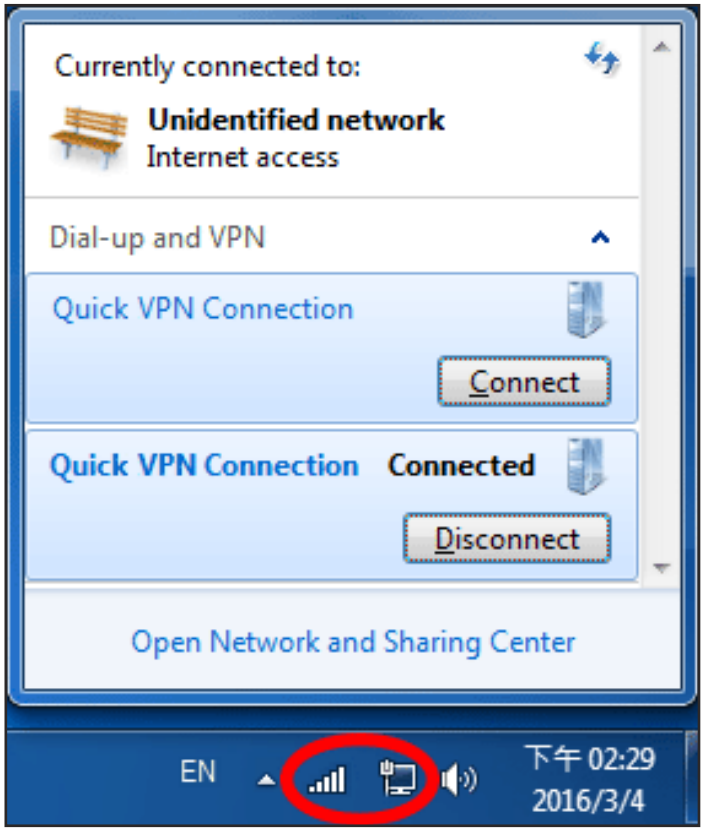
Click **Advanced settings.** Enter your **Passkey** in the **Key** text box under **Use preshared key for authentication**. Click **OK** to close **Advanced Properties** and click **OK** to close **Quick VPN Connection Properties.**

Your Windows 7 system is now configured to connect to your Quick VPN server.



Connect or Disconnect

To connect to or disconnect from your Quick VPN server, click on the **Network Settings** icon in the notification area of the Windows taskbar and from the **Dial Up and VPN** section click on your Quick VPN connection and click on the **Connect** or **Disconnect** button.



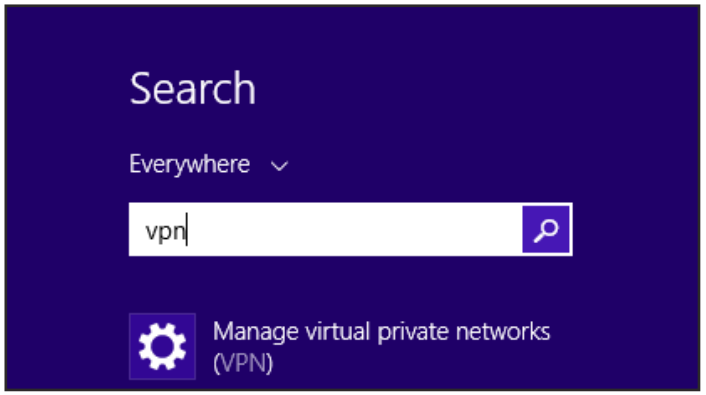
Windows 8.1/8
VPN Setup Instructions

This section provides Quick VPN setup instructions for Windows 8.1/8. Refer to **Quick VPN** on page **79** for your router setup instructions.

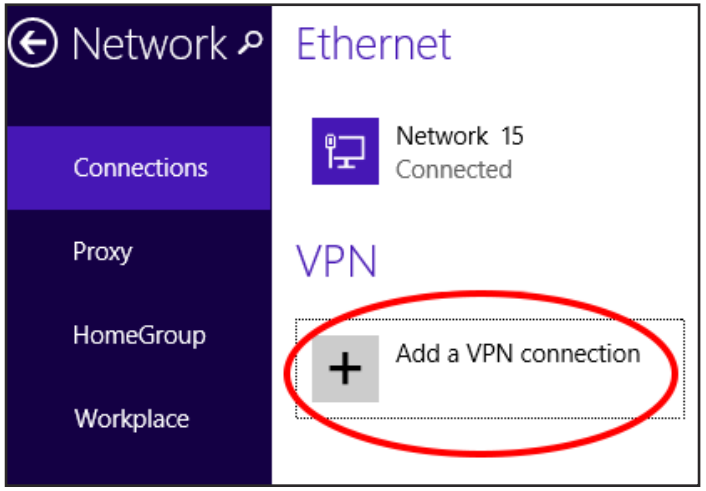
This section provides Quick VPN setup instructions for Windows 8.1/8.

Click the **Start** button and type **vpn**.

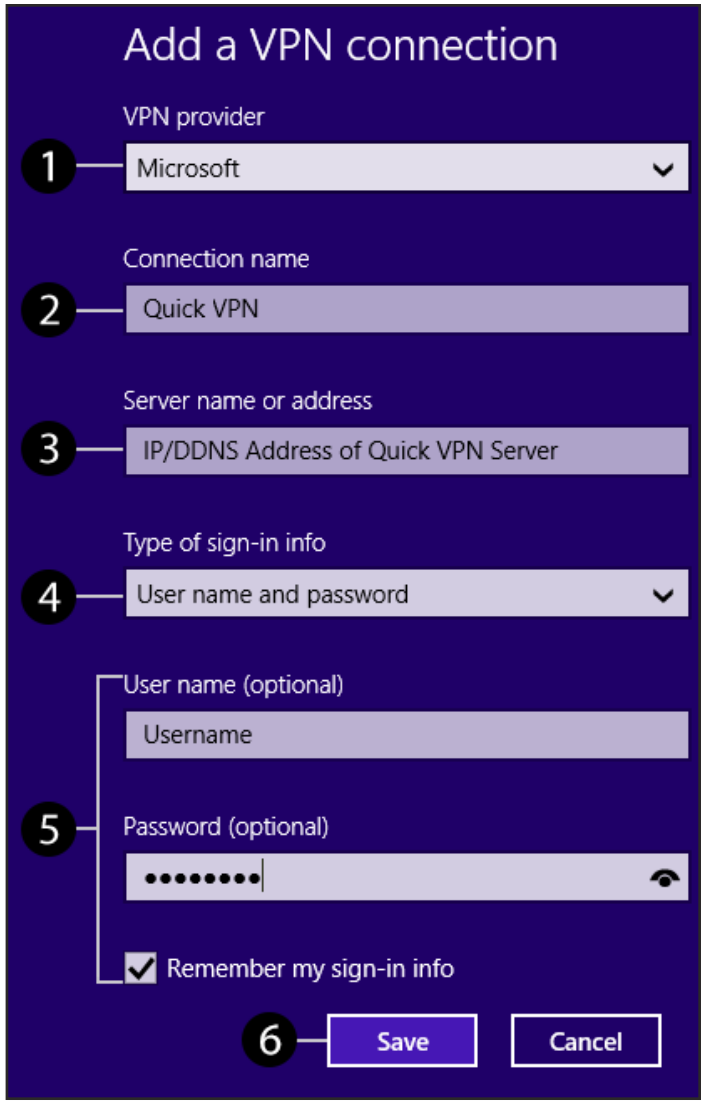
Select **Manage virtual private networks.**



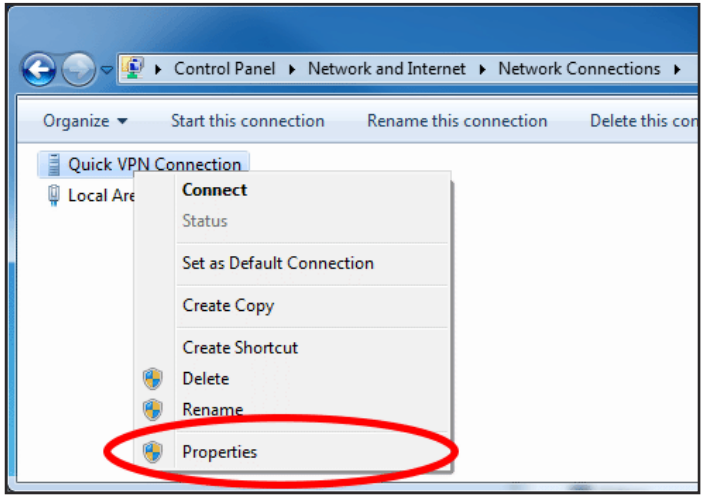
From the Network Settings page, click **Add a VPN Connection**.



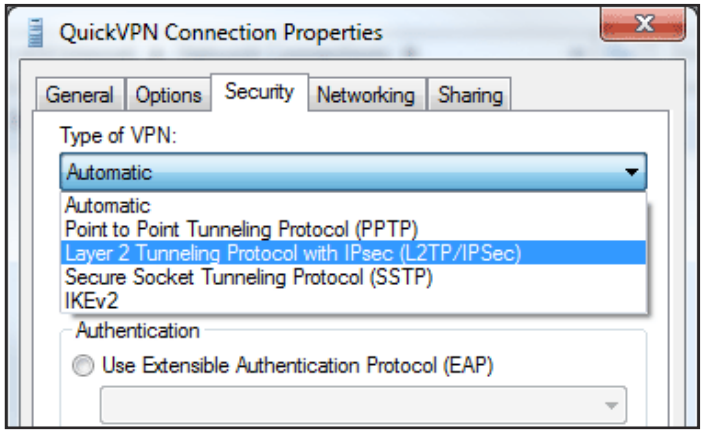
1. Select **Microsoft** from **VPN Provider**.
2. Create a name for your VPN connection.
3. Enter your **IP/DDNS address** of your Quick VPN server.
4. Select **User name and password** from **Type of sign-in info**.
5. If you would like windows to remember your sign-in information, enter your **User name, Password,** and select **Remember my sign-in info**
6. Choose **Save**.



Right-click on the Quick VPN Connection you just created and left-click on **Properties**.

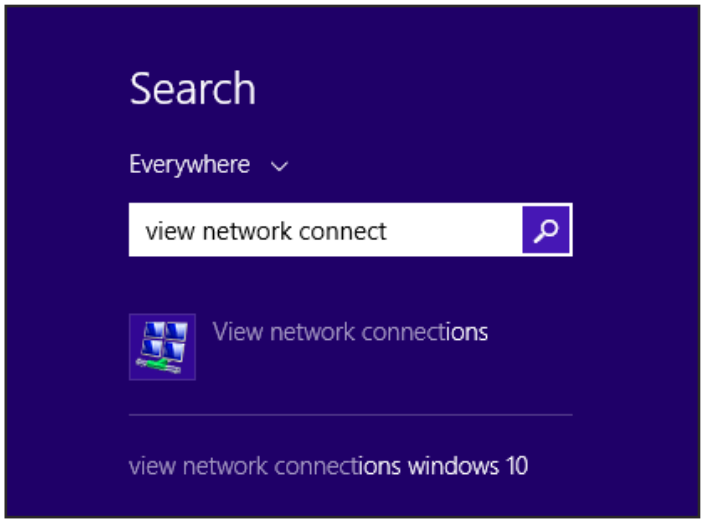


Select the **Security** tab. For the **Type of VPN**, select **Layer 2 Tunneling with IPsec (L2TP/IPSec).**



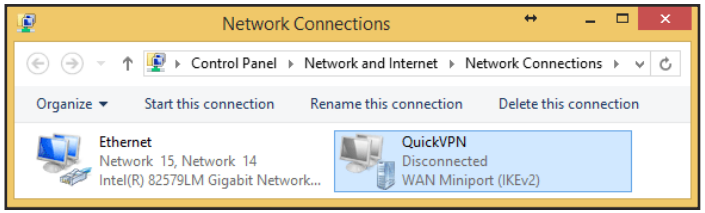
Click the **Start** button and type **view network connections**.

Select **View network connections.**



Right-click your **Quick VPN Connection** and left-click **Properties**.
Select the **Security** tab.

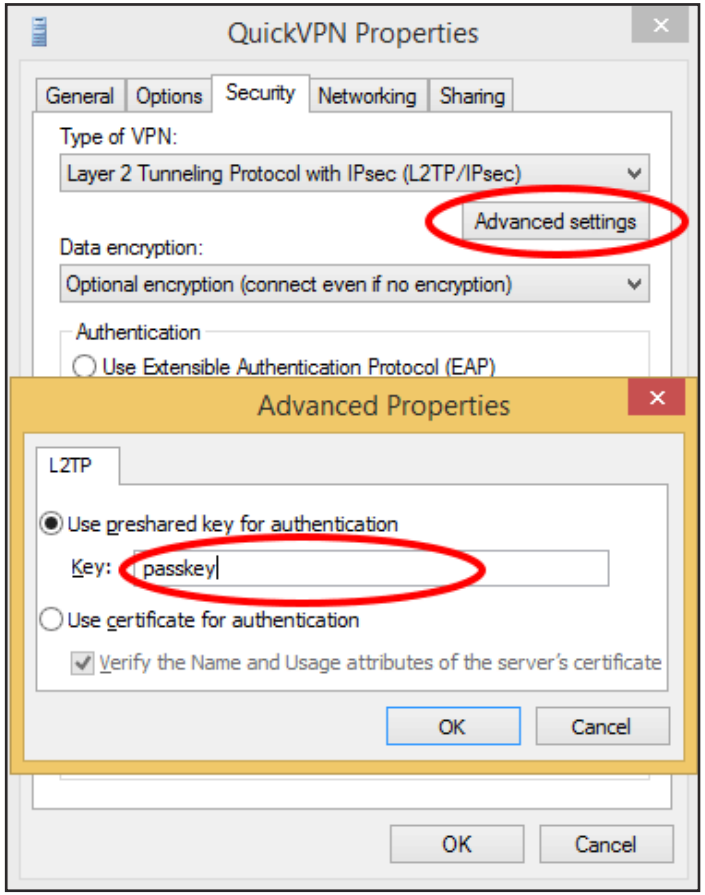
For the **Type of VPN**, select **Layer 2 Tunneling with IPsec (L2TP/IPSec).**



Click **Advanced settings.** Enter your **Passkey** in the **Key** text box under **Use preshared key for authentication**.

Click **OK** to close **Advanced Properties** and click **OK** to close **Quick VPN Properties.**

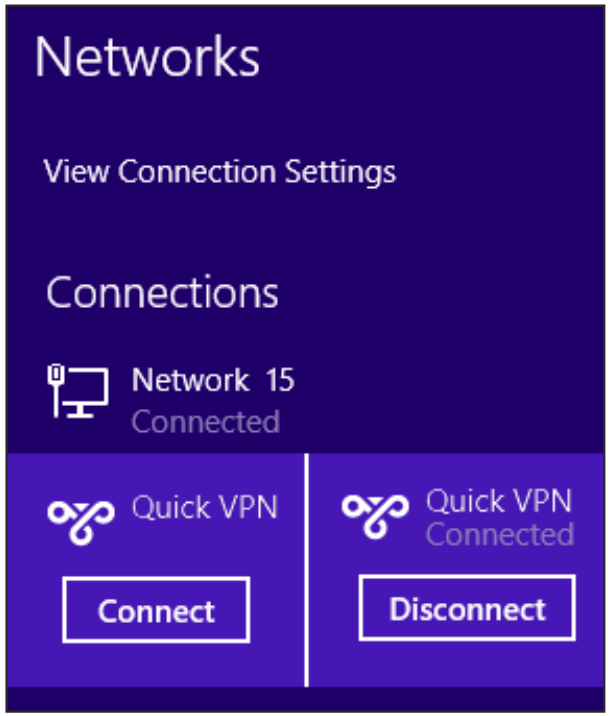
Your Windows 8.1/8 system is now configured to connect to your Quick VPN server.



Connect or Disconnect

To connect to or disconnect from your Quick VPN server, click on the **Network Settings** icon in the notification area of the Windows taskbar. Click on your Quick VPN connection and click on the **Connect** or **Disconnect** button.



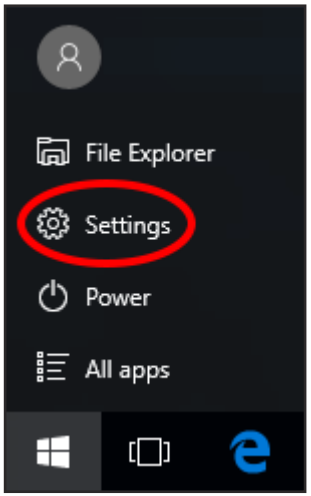


Windows 10
VPN Setup Instructions

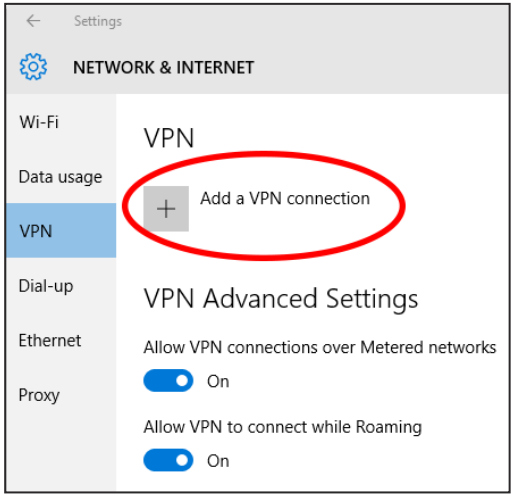
This section provides Quick VPN setup instructions for Windows 7. Refer to **Quick VPN** on page **79** for your router setup instructions.

This section provides Quick VPN setup instructions for Windows 10.

Click **Start > Settings** > **Network & Internet** > **Network and Sharing Center > VPN > Add a VPN Connection**.



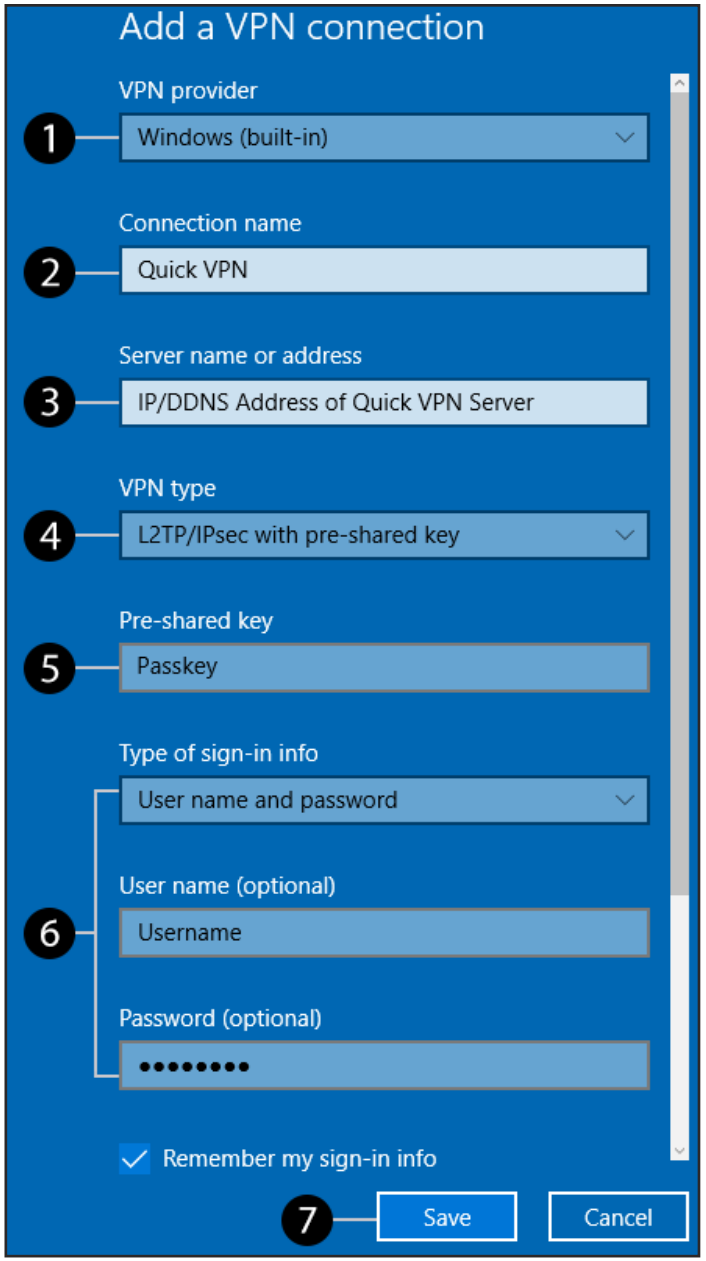




1. Select **Windows (built-in)** from the **VPN Provider** drop down menu.
2. Create a name for your VPN connection.
3. Enter your **IP/DDNS address** of your Quick VPN server.
4. Select **L2TP/IPSec with pre-shared key** from **VPN type**.
5. Enter the **Passkey.**
6. Select **User name and password** from **Type of sign-in info**.

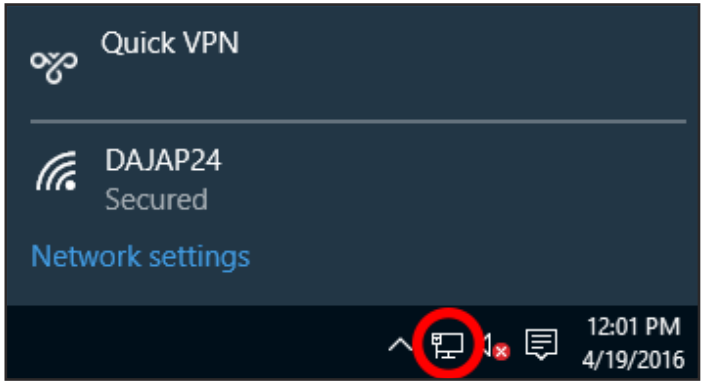
   If you would like windows to remember your sign-in information, enter your **User name, Password,** and select **Remember my sign-in info**
7. Choose **Save**.

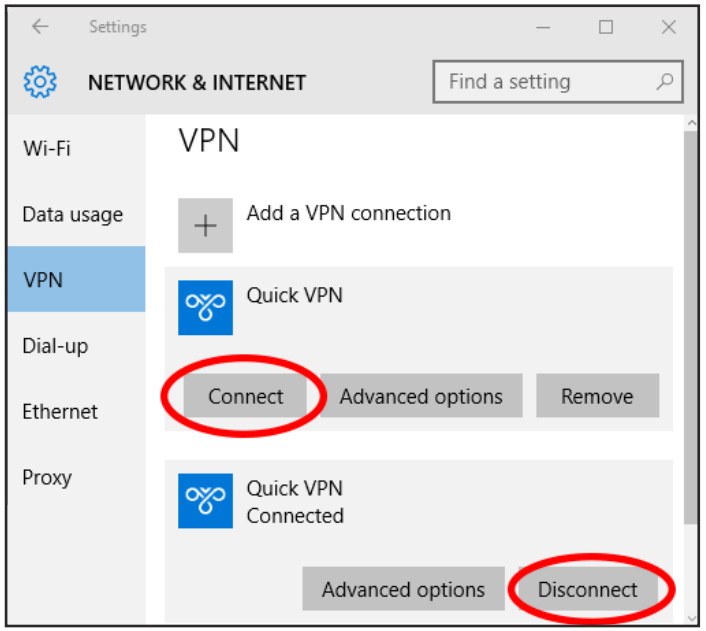
Your Windows 10 system is now configured to connect to your Quick VPN server.



Connect or Disconnect

To connect to or disconnect from your Quick VPN server, click on the **Network Settings** icon in the notification area of the Windows taskbar and click on your Quick VPN connection. The **Network & Internet** Settings page will open. Click on the **Connect** or **Disconnect** button.



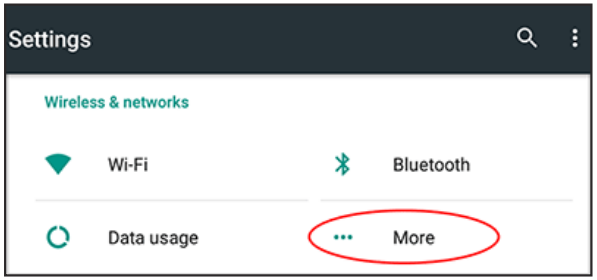


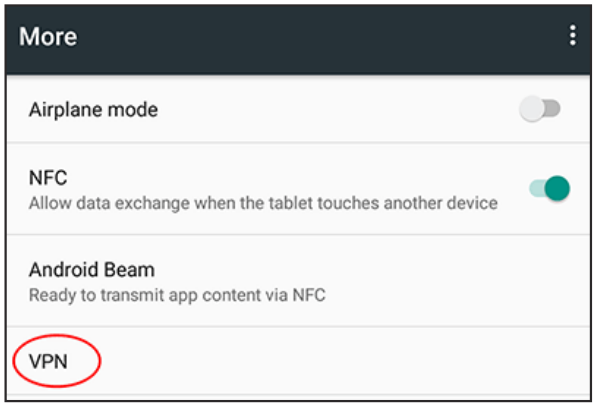
Android
VPN Setup Instructions

This section provides Quick VPN setup instructions for Android devices. Your device's screens may vary. Refer to **Quick VPN** on page **79** for your router setup instructions.

Go to **Settings** > **More** from the **Wireless & networks** > **VPN** > **+**



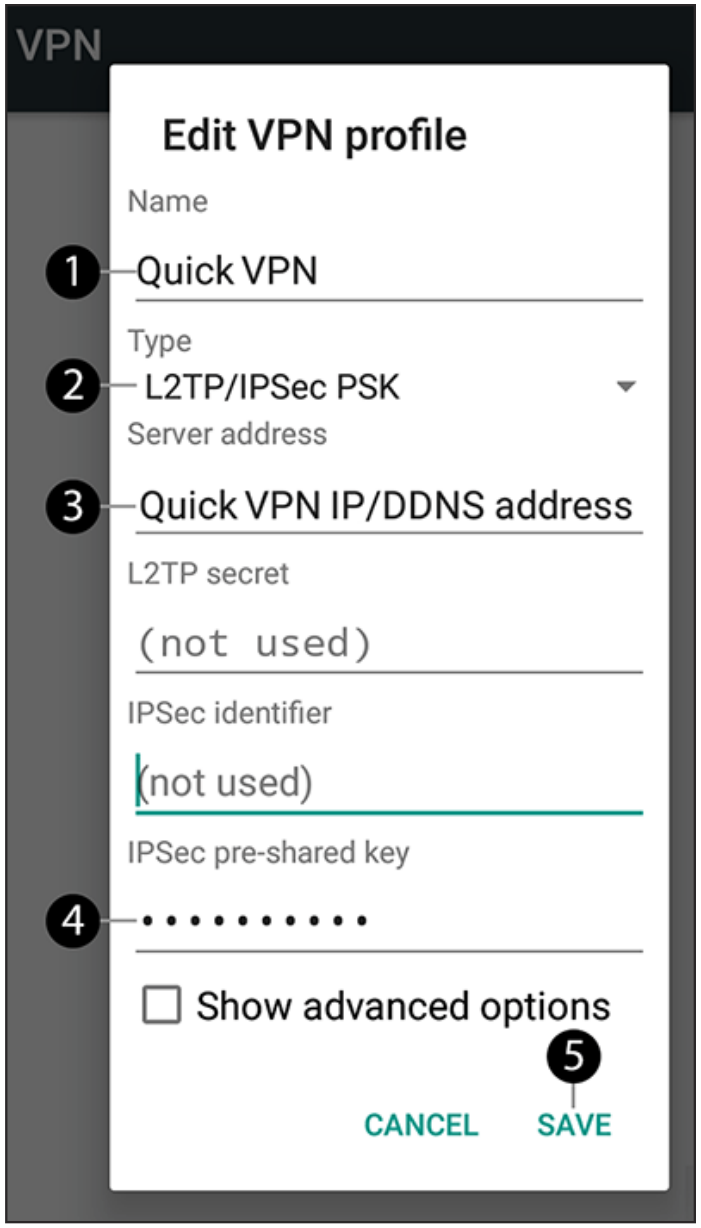






1. Enter a name for your VPN connection.
2. Select **L2TP/IPSec** PSK for **Type.**
3. Enter the **IP/DDNS address** of your Quick VPN server.
4. Enter your **Passkey** in **IPSec pre-shared key** field.
5. Choose **Save**.

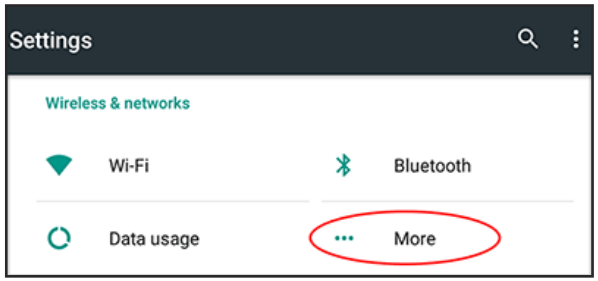
Your Android device is now configured to connect to your Quick VPN server.

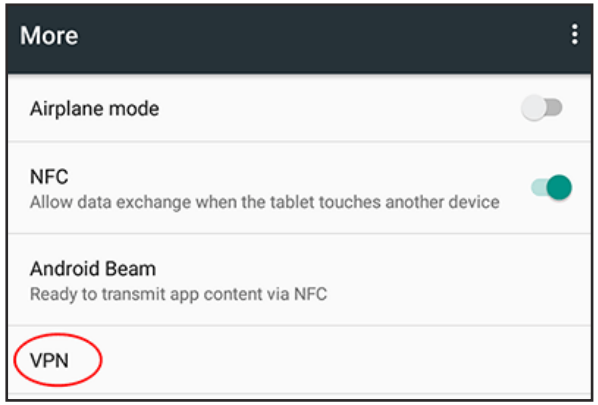


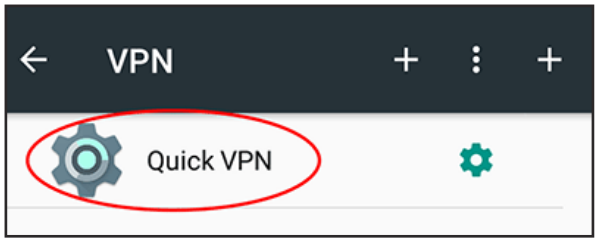
Connect or Disconnect

To connect to or disconnect from your Quick VPN server, go to **Settings** > **More** from the **Wireless & networks** > **VPN** and select the **Quick VPN** connection you created.

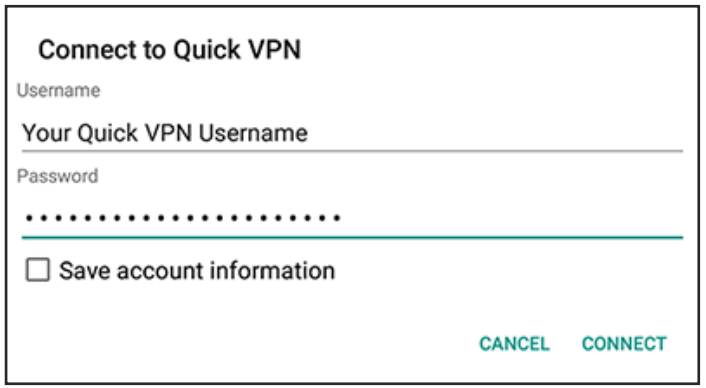




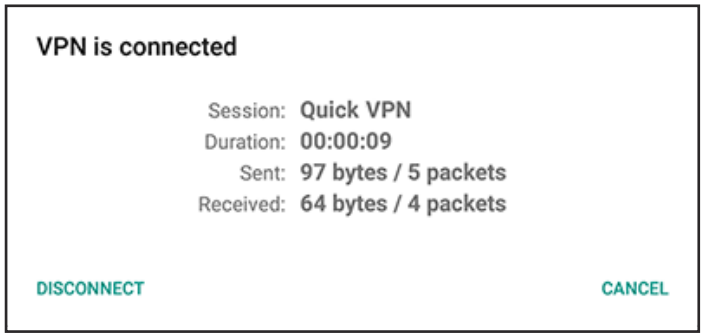




To connect, enter your **Username** and **Password** and select **CONNECT**.



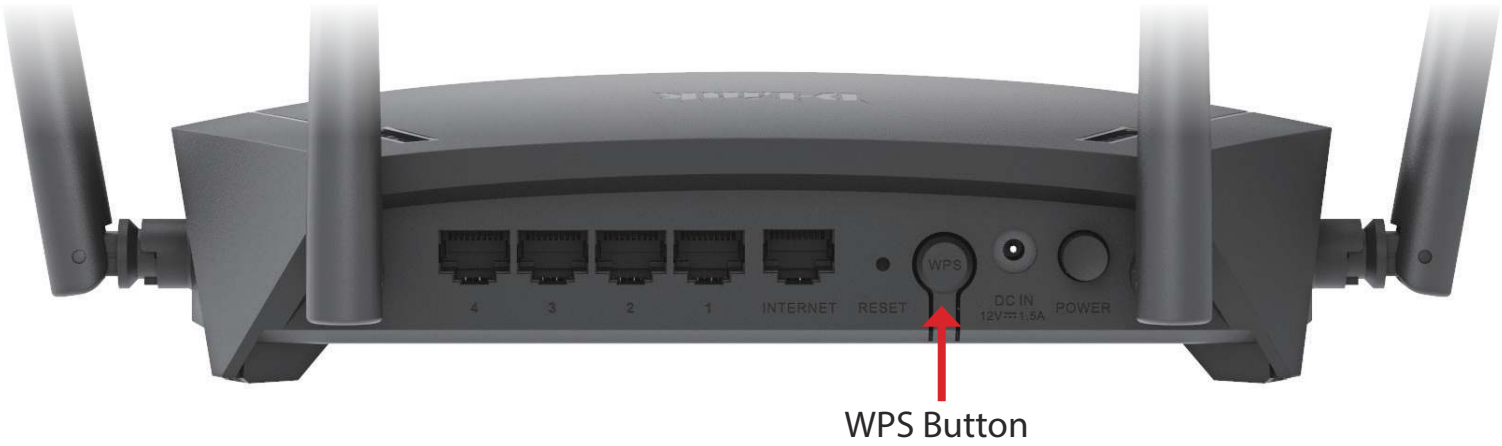
To disconnect, select **DISCONNECT**.



Connect a Wireless Client to your Router
WPS Button

The easiest 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 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 router for about 1 second. The wireless LEDs will start to blink.

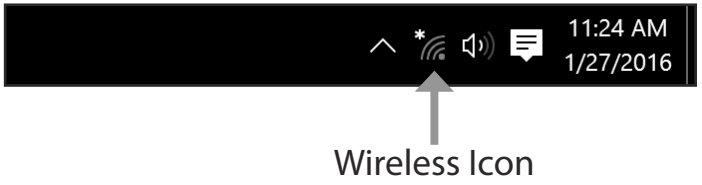


Step 2 - Within 2 minutes, press the WPS button on your wireless device (or launch the software utility and start the WPS process).

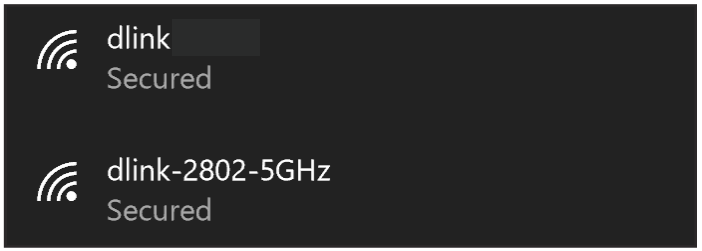
Step 3 - Allow up to 1 minute for your connection to be configured. Once the Internet light stops blinking, you will be connected and your wireless connection will use WPA2.

Windows® 10

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



Clicking on this icon will display a list of wireless networks which are within range of your computer. Select the desired network by clicking on the SSID.

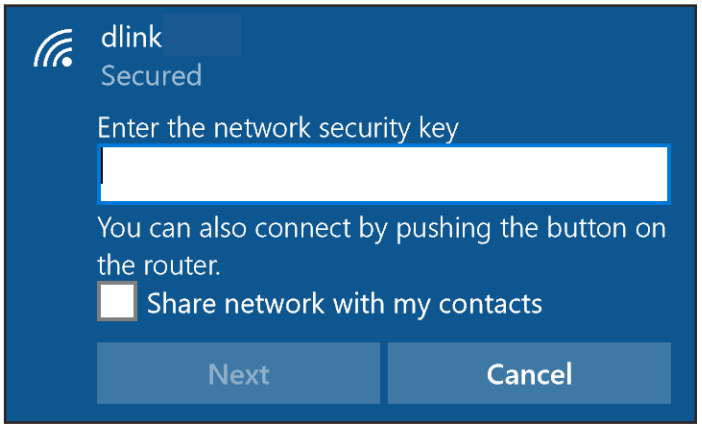


To connect to the SSID, click **Connect.**

To automatically connect with the router when your device next detects the SSID, check the **Connect Automatically** check box**.**



You will then be prompted to enter the Wi-Fi password (network security key) for the wireless network. Enter the password into the box and click **Next** to connect to the network. Your computer will now automatically connect to this wireless network when it is detected.

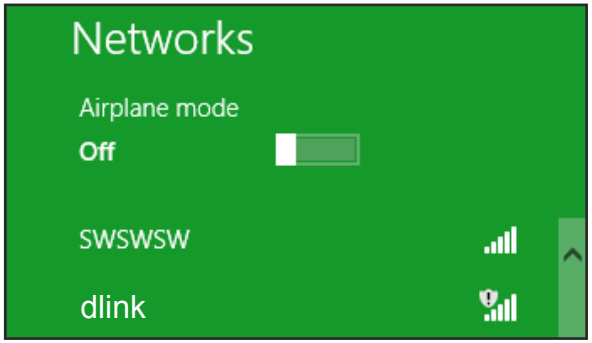


Windows® 8 - WPA/WPA2

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

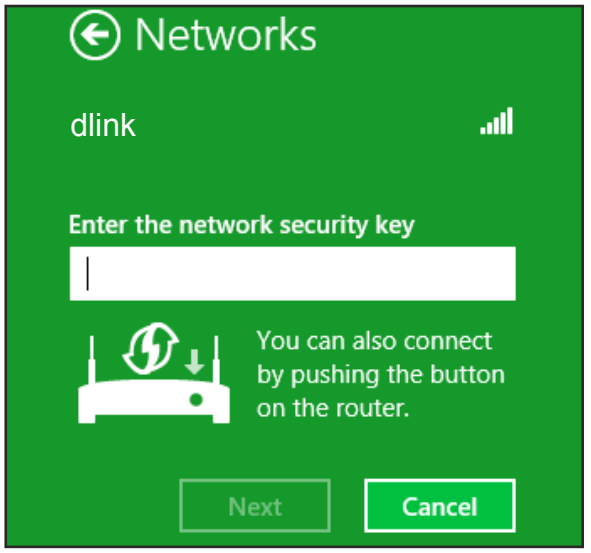


Clicking on this icon will display a list of wireless networks which are within connecting proximity of your computer. Select the extender's network by clicking on the network name.

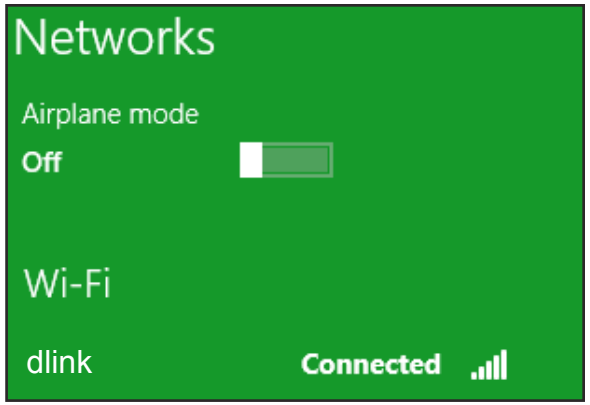


You will then be prompted to enter the network security key (Wi-Fi password) for the wireless network. Enter the password into the box and click **Next**.

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 at this point to enable the WPS function.



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



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 WiFi password or passphrase being used.

Click on the wireless icon in your system tray (lower-right corner).



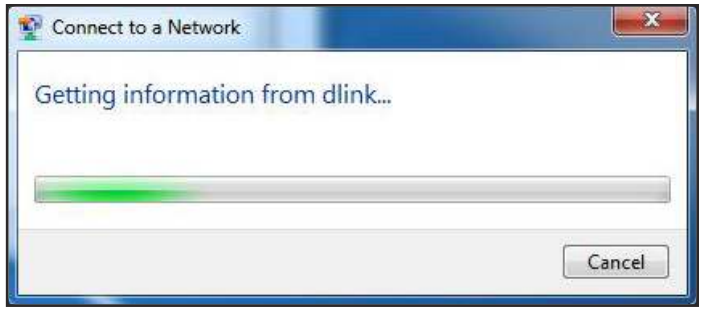
The utility will display any available wireless networks in your area.

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 **Networking Basics** on page **141** for more information.



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



Enter the same security key or passphrase (Wi-Fi password) that is on your router and click **OK**. 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.



Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the router. Read the following descriptions if you are having problems.

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® 10 or higher
  - Mozilla Firefox 28 or higher
  - Google™ Chrome 28 or higher
  - Apple Safari 6 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 and Norton Personal 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 recessed 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.

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 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 as 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 USB 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.

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 wireless network USB 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.

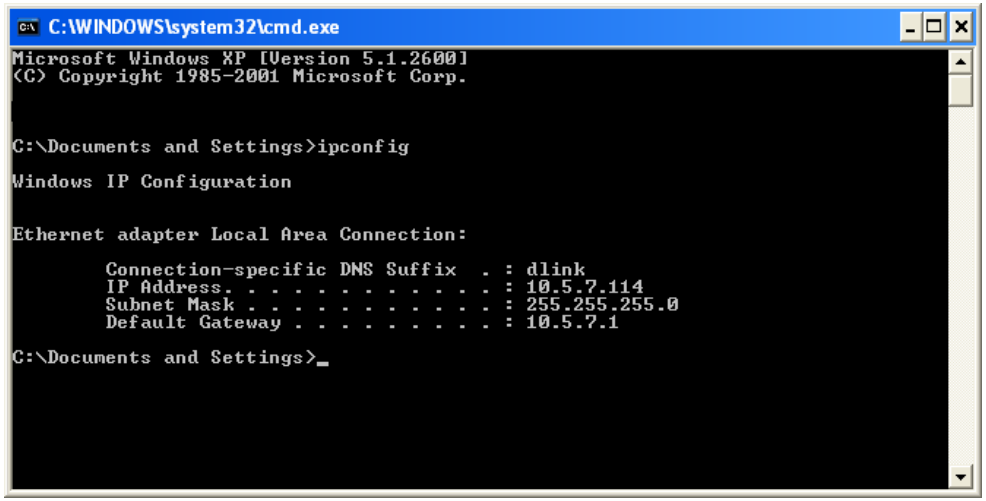
An Ad-hoc network contains only clients, such as laptops with wireless USB adapters. All the adapters must be in Ad-hoc mode to communicate.

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.

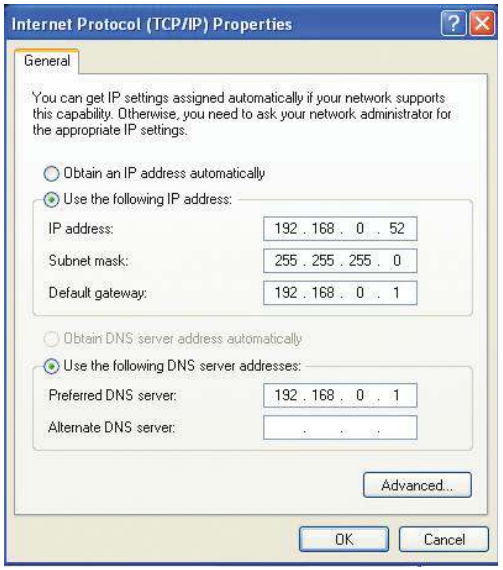
Statically Assign an IP address

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

Windows® 7	Start > Control Panel > Network and Internet > Network and Sharing Center
Windows Vista®	Start > Control Panel > Network and Internet > Network and Sharing Center > Manage Network Connections
Windows® XP	Start > Control Panel > Network Connections
Windows® 2000	From the desktop, right-click My Network Places > Properties

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

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



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.

5. Click **OK** twice to save your settings.

Wireless Security

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

- 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
- Wireless Interface (2.4 GHz): IEEE 802.11n/g/b
- Wireless Interface (5 GHz): IEEE 802.11 ac/n/a
- Four 10/100/1000 Mbps LAN ports
- One 10/100/1000 Mbps WAN port

Antenna Types
- Four external antennas

Standards
- IEEE 802.11ac[1,2,3]
- IEEE 802.11b
- IEEE 802.11n
- IEEE 802.11a
- IEEE 802.11g
- IEEE 802.3u
- IEEE 802.3ab
- IEEE 802.1p
- IEEE 802.1q

Security
- WPA/WPA2-Personal
- Wi-Fi Protected Setup (WPS)

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

Temperature
- Operating: 0 to 40 °C (32 to 104 °F)
- Storage: -20 to 65 °C (-4 to 149 °F)

Humidity
- Operating: 10% to 90% maximum, non-condensing
- Storage: 5% to 95% maximum, non-condensing

Certifications
- IC
- FCC
- CE

Dimensions
- L x W x H: 226 x 173 x 52 mm (8.9 x 6.8 x 2.0 in)

Weight
- 411 g (0.91 lbs)

[1] Maximum wireless signal rate derived from IEEE Standard 802.11a, 802.11g, 802.11n, and 802.11ac specifications. Actual data throughput will vary. Network conditions and environmental factors - including volume of network traffic, building materials and construction, and network overhead - lower actual data throughput rate. Environmental factors will adversely affect wireless signal range.
[2] Frequency Range varies depending on country's regulation.
[3] The router does not include 5.25-5.35 GHz & 5.47-5.725 GHz in some regions.

Federal Communication Commission Interference Statement

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.

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.

FCC Caution:

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Operations in the 5.15-5.25GHz band are restricted to indoor usage only.
This device meets all the other requirements specified in Part 15E, Section 15.407 of the FCC Rules.

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 28cm between the radiator & your body.
Note: The country code selection is for non-US model only and is not available to all US model. Per FCC regulation, all WiFi product marketed in US must fixed to US operation channels only.

Industry Canada statement

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s).
Operation is subject to the following two conditions:
1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

- This Class B digital apparatus complies with Canadian ICES-003.
- Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

- This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter, except tested built-in radios.
- Cet appareil et son antenne ne doivent pas être situés ou fonctionner en conjonction avec une autre antenne ou un autre émetteur, exception faites des radios intégrées qui ont été testées.

- The County Code Selection feature is disabled for products marketed in the US/ Canada.
- La fonction de sélection de l'indicatif du pays est désactivée pour les produits commercialisés aux États-Unis et au Canada.

Radiation Exposure Statement:
This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with greater than 34cm between the radiator & your body.

Déclaration d'exposition aux radiations:
Cet équipement est conforme aux limites d'exposition aux rayonnements ISED établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé à plus de 34cm entre le radiateur et votre corps.

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;
(iv) where applicable, antenna type(s), antenna models(s), and worst-case tilt angle(s) necessary to remain compliant with the e.i.r.p. elevation mask requirement set forth in section 6.2.2.3 shall be clearly indicated.

Avertissement:
Le guide d'utilisation des dispositifs pour réseaux locaux doit inclure des instructions précises sur les restrictions susmentionnées, notamment :
(i) les dispositifs fonctionnant dans la bande 5150-5250MHz 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;
(iv) lorsqu'il y a lieu, les types d'antennes (s'il y en a plusieurs), les numéros de modèle de l'antenne et les pires angles d'inclinaison nécessaires pour rester conforme à l'exigence de la p.i.r.e. applicable au masque d'élévation, énoncée à la section 6.2.2.3, doivent être clairement indiqués