D-Link®

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User Manual

Media Streaming Adapter

DAP-1560

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Package Contents

DAP-1560 Media Streaming Adapter

Ethernet Cable

Power Adapter

CD-ROM

Note: Using a power supply with a different voltage rating than the one included with the DAP-1560 will cause damage and void the warranty for this product.

System Requirements

Network Requirements	• An Ethernet-based Network • IEEE 802.11n/g wireless clients • IEEE 802.11a 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® 6.0 and higher • Mozilla Firefox 3.0 and higher • Google™ Chrome 2.0 and higher • Apple Safari 3.0 and higher **Windows® Users:** Make sure you have the latest version of Java installed. Visit www.java.com to download the latest version.
CD Installation Wizard Requirements	**Computer with the following:** • Windows® 7/Vista®/XP (Service Pack 3) • An installed Ethernet adapter • CD-ROM drive

Introduction

The D-Link Media Streaming Adapter (DAP-1560) enable you to easily upgrade any router to support streaming of High-Definition (HD) multimedia content over a wireless connection. This device lets you create a 'bridge' between two different physical media types. This versatile kit transforms your wired device into a wireless one without the added hassle of installing Ethernet cables.

The DAP-1560 is the first true 4x4 spatial streaming WLAN on the market, it uses all four of its antennas to send out multiple data streams simultaneously, boosting the data rate up to 600Mbps*.

Selectable Dual Band technology enables you to stream HD videos and enjoy lag free gaming with less interference on the 5GHz band or chat, email and surf the web on the 2.4GHz band.

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

Features

High-Definition Performance
The D-Link Media Streaming Adapter (DAP-1560) enables you to easily upgrade any router to support streaming of High-Definition (HD) multimedia content over a wireless connection. Connect any Ethernet-enabled devices in your entertainment center like your game consoles, Digital Video Recorder (DVR) or Digital Media Adapters (DMA) to the DAP-1560 to upgrade your network and enable dual-band wireless streaming.

Faster Speed and Performance
The DAP-1560 is the first true 4x4 spatial streaming WLAN on the market, it uses all four of its antennas to send out multiple data streams simultaneously, boosting the data rate up to 600Mbps*, providing you with faster speed and performance to enhance your gaming and HD video streaming experience. The DAP-1560 also uses Intelligent Antenna technology to transmit multiple streams of data by bouncing multiple wireless signals off of walls and ceilings to work around obstructions and help eliminate dead spots, enabling you to receive wireless signals in the farthest corners of your home.

Better Wireless Experience
Selectable dual band (2.4GHz or 5GHz) enables you to select the wireless signal that best fits your network usage. With speeds up to 600Mbps*, you can use the clearer 5GHz band to stream High-Definition movies and other media, and enjoy lag-free gaming, with less interference, giving you a better wireless experience with the fastest speeds possible.

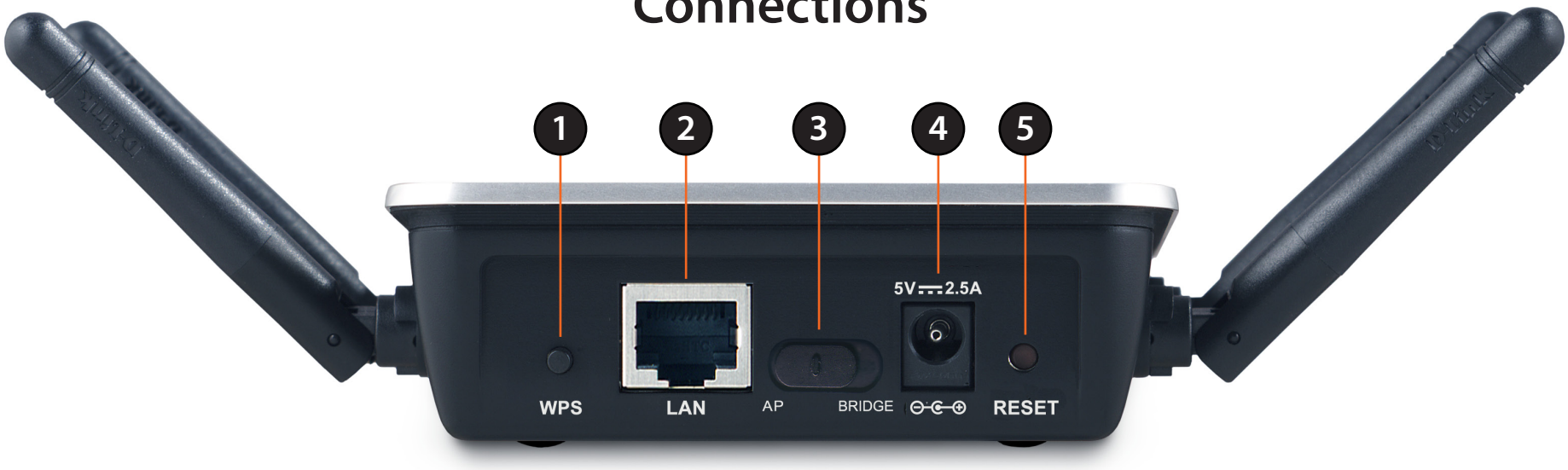
Quality of Service
The DAP-1560 is equipped with Quality of Service (QoS), which helps organize and prioritize the data streams in your network so your VoIP, HD Video streaming, and gaming runs smoother over your wireless network.

Green Ethernet Technology
The DAP-1560 is a D-Link Green product, which means it helps you conserve energy.

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

Hardware Overview

Connections



1	**WPS**	Press the WPS button to automatically connect to a WPS-enabled wireless client.
2	**LAN Port**	Connect 10/100/1000 Ethernet devices such as computers, switches, and hubs.
3	**Mode Selector**	Slide to the left for Access Point (AP) Mode or to the right for Bridge mode.
4	**Power Receptor**	Receptor for the supplied power adapter.
5	**Reset Button**	Hold the reset button for at least 6 seconds to reset the device back to the factory default settings. All the LEDs will turn on for 2 second and then begin the reboot process.

LEDs

1	**Power LED**	A solid green light indicates a proper connection to the power supply.
2	**Wireless LED**	A blinking green light indicates the wireless function is working. The light will blink fast during data transmission. The light will be off during device reboot or if the wireless radio is disabled.
3	**WPS LED**	A blinking light indicates that the DAP-1560 is performing the WPS function.

Installation

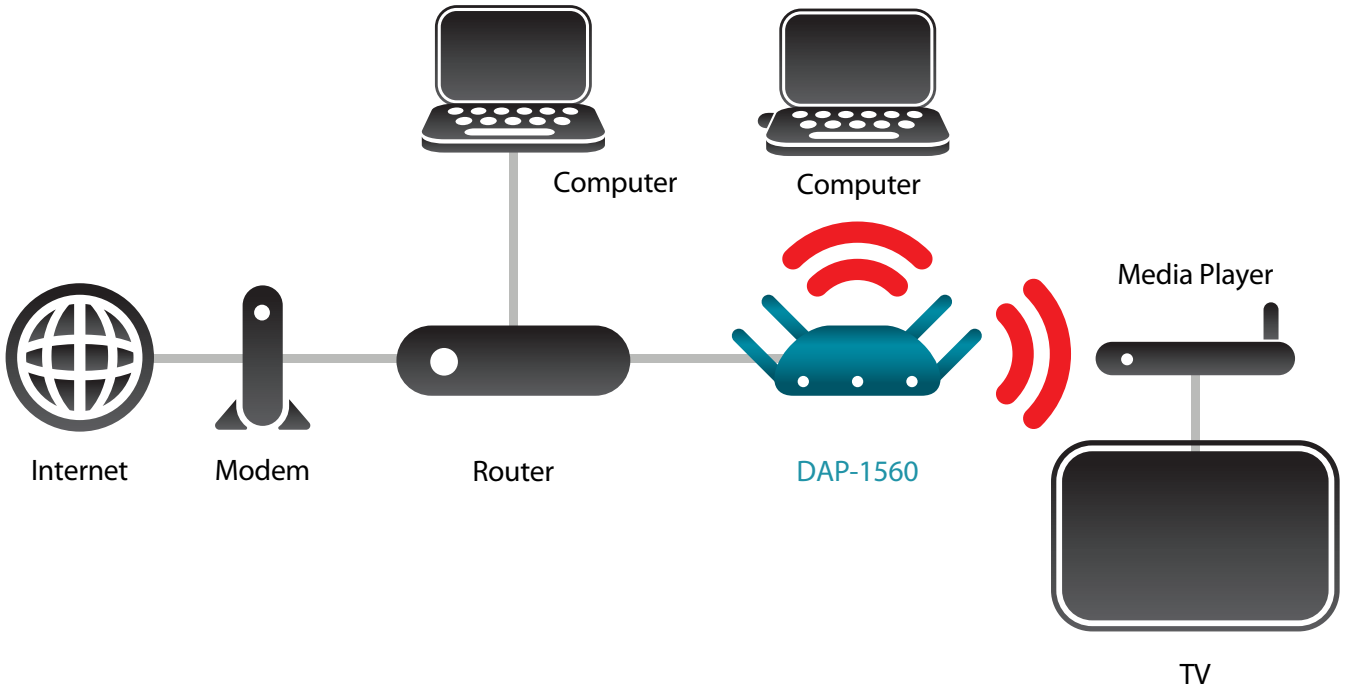
This section will walk you through the installation process. Placement of the DAP-1560 is very important. Do not place the DAP-1560 in an enclosed area such as a closet, cabinet, or in the attic or garage.

Wireless Modes

Depending on how you want to use your DAP-1560 will determine which mode you use. This section will help you figure out which setting works with your setup.

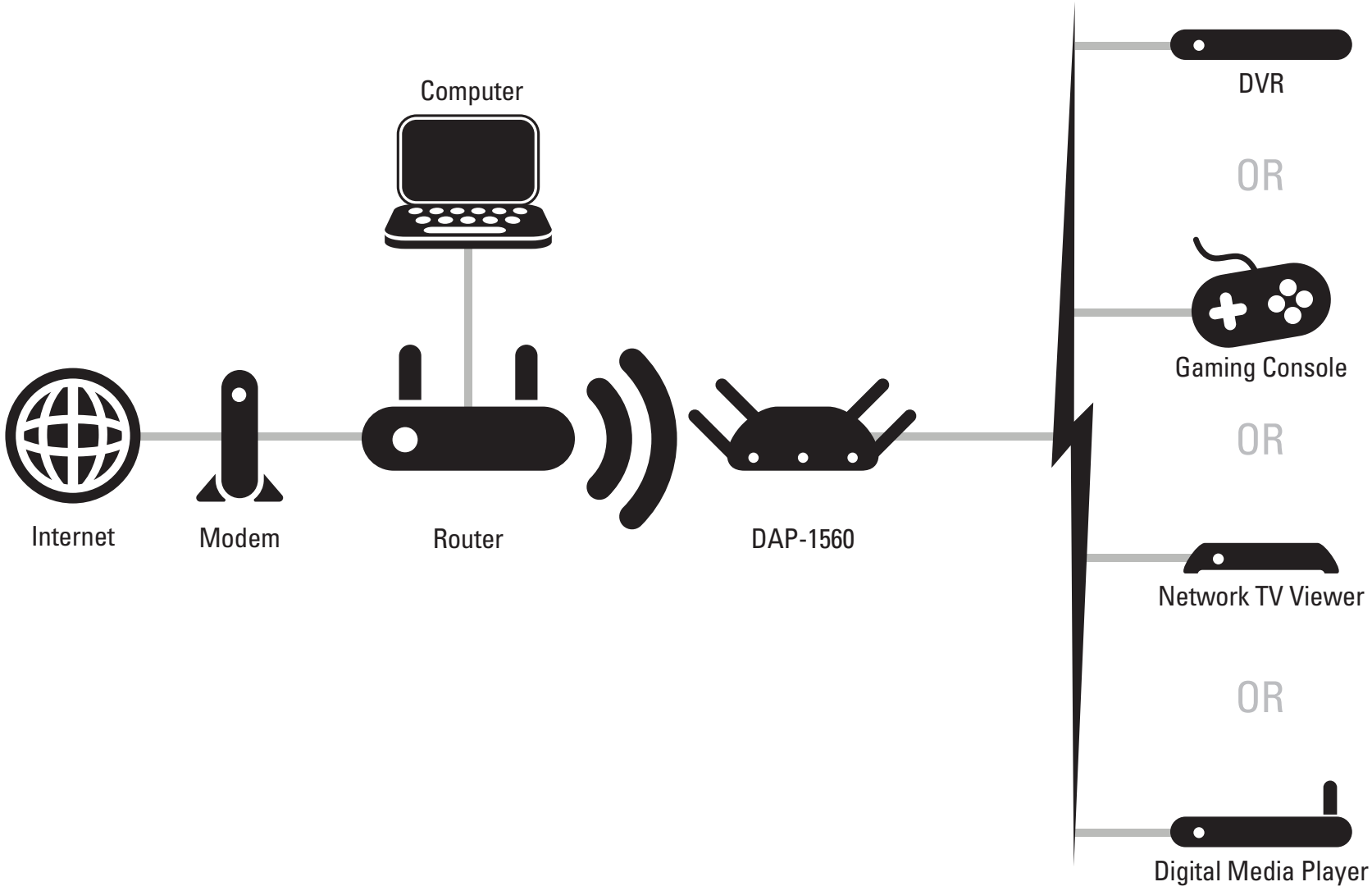
AP Mode

If you already have a wired or wireless router, and want to add a MediaBand (5GHz wireless), to your network, you will need to move the switch on the back panel of the DAP-1560 to **AP**. Refer to page 14 for configuration instructions.



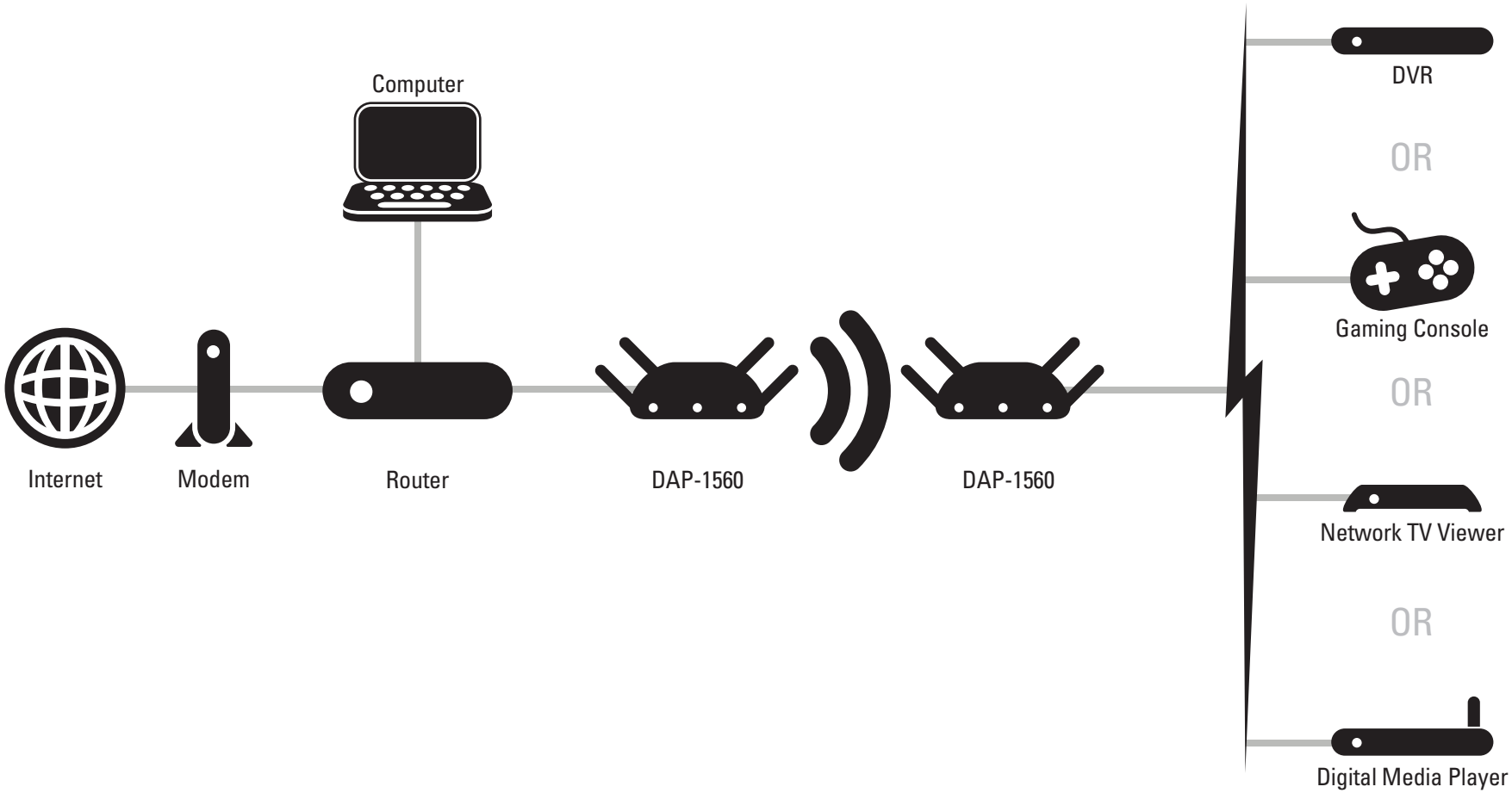
Bridge Mode

If you want to wirelessly connect an Ethernet-enabled device such as a game console, media player, or network attached storage device, you will need to move the switch on the back panel of the DAP-1560 to **Bridge**. Refer to page 36 for configuration instructions.



Create a Full MediaBand (5GHz wireless) Network

If you have two DAP-1560 devices and want to create a wireless network with full MediaBand technology you will need to connect one DAP-1560 to your router and move the switch on the back panel to **AP**. The second DAP-1560 will need to be placed next to your Ethernet-enabled device and you will need to move the switch on the back panel to **Bridge**.



Wireless Installation Considerations

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

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

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

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

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

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

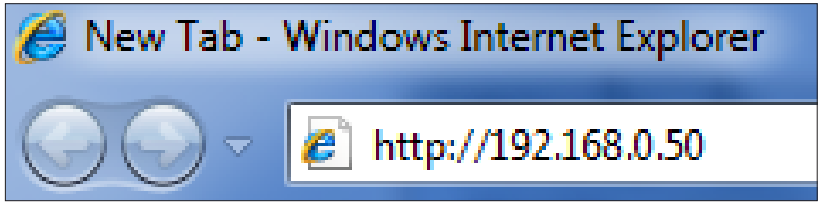
Configuration (AP Mode)

This section will show you how to configure your new D-Link wireless access point using the web-based configuration utility.

Web-based Configuration Utility

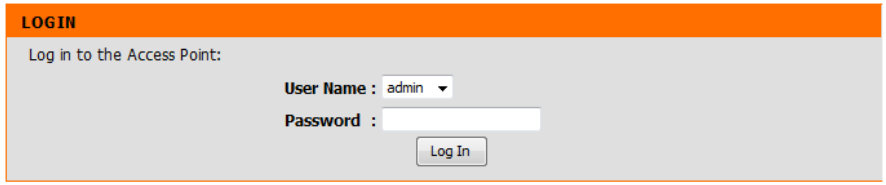
1. On the back of the DAP-1560, slide the mode selector to the left (AP Mode).

2. To access the configuration utility, open a web browser such as Internet Explorer and enter **http://dlinkap** or **http://192.168.0.50** in the address field.



3. Enter **Admin** and then enter your password. Leave the password blank by default.

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



Wireless Setup Wizard

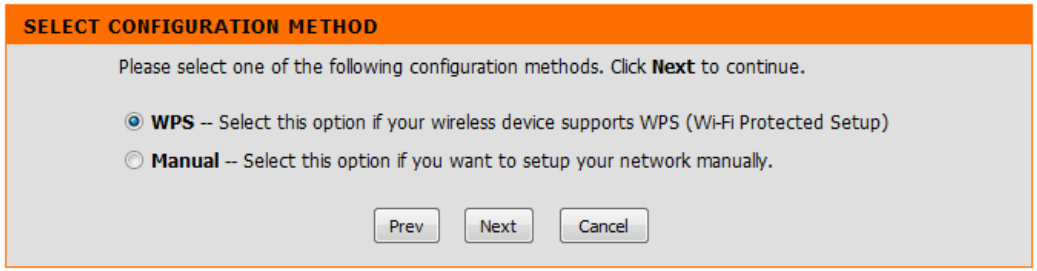
This Wizard is designed to assist you in connecting your wireless device to your access point. It will guide you through step-by-step instructions on how to get your wireless device connected.

Click **Launch Wireless Setup Wizard** to quickly configure your access point.

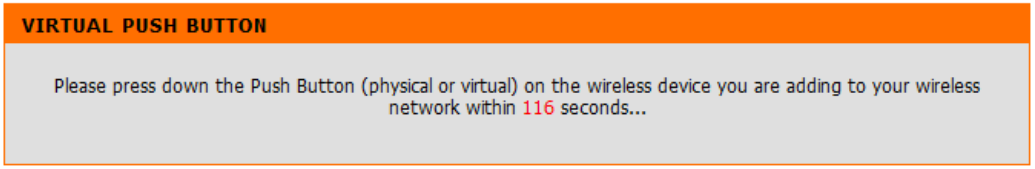
If you want to enter your settings without running the wizard, click **Manual Wireless Network Setup** and skip to page 18.

Click **Next** to continue.

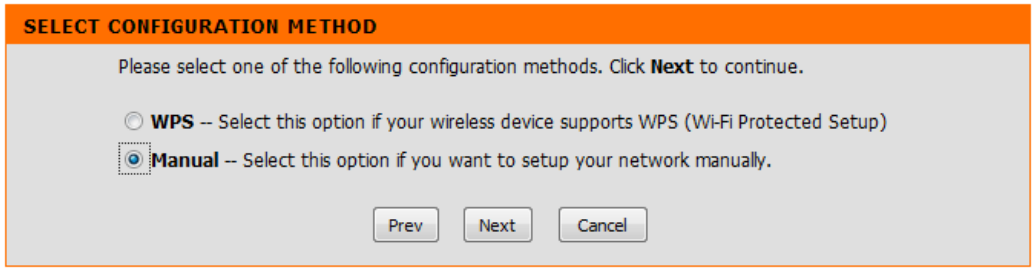
Select **WPS** to connect using WPS (Wi-Fi Protected Setup) and then click **Next**.



Press the WPS button on your wireless device you want to connect with. You will have a 2 minute (120 seconds) time limit.



Select **Manual** as the configuration method to set up your network manually. Click **Next** to continue.

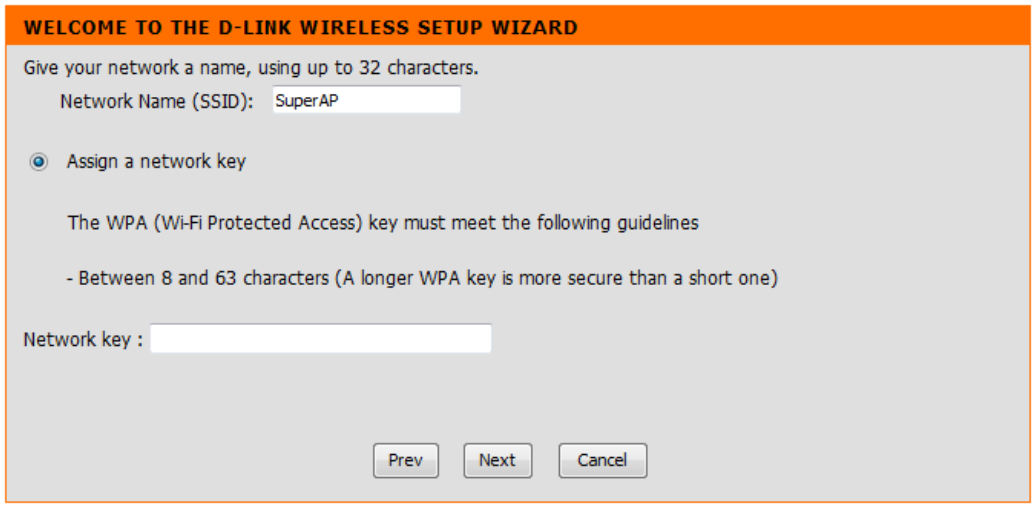


Enter the wireless network name (SSID). The SSID can be up to 32 characters and is case-sensitive.

Next, enter an encryption key (Network Key). The key can be between 8 and 63 characters and is case-sensitive.

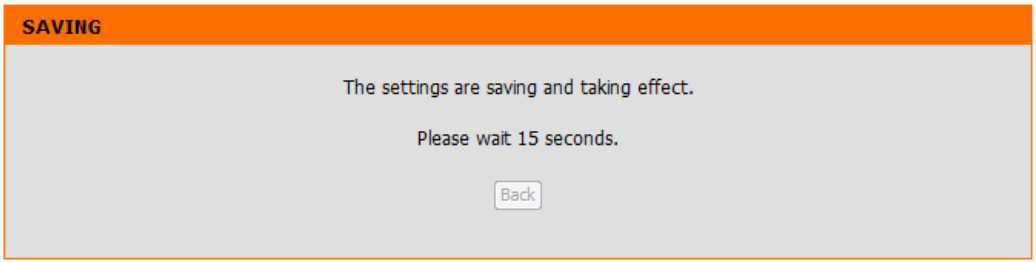
You must enter this key on any wireless device that will connect to the DAP-1560.

Click **Next** to continue.



Click **Save** to save your settings.

The DAP-1560 will reboot.



Manual Configuration

Wireless Settings

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

Wireless Network Name: When you are browsing for available wireless networks, this is the name that will appear in the list (unless Visibility Status is set to Invisible, see below). This name is also referred to as the SSID. For security purposes, it is highly recommended to change from the default network name.

Band: Operating frequency band. Choose 2.4GHz for visibility to legacy devices and for longer range. Choose 5GHz for least interference.

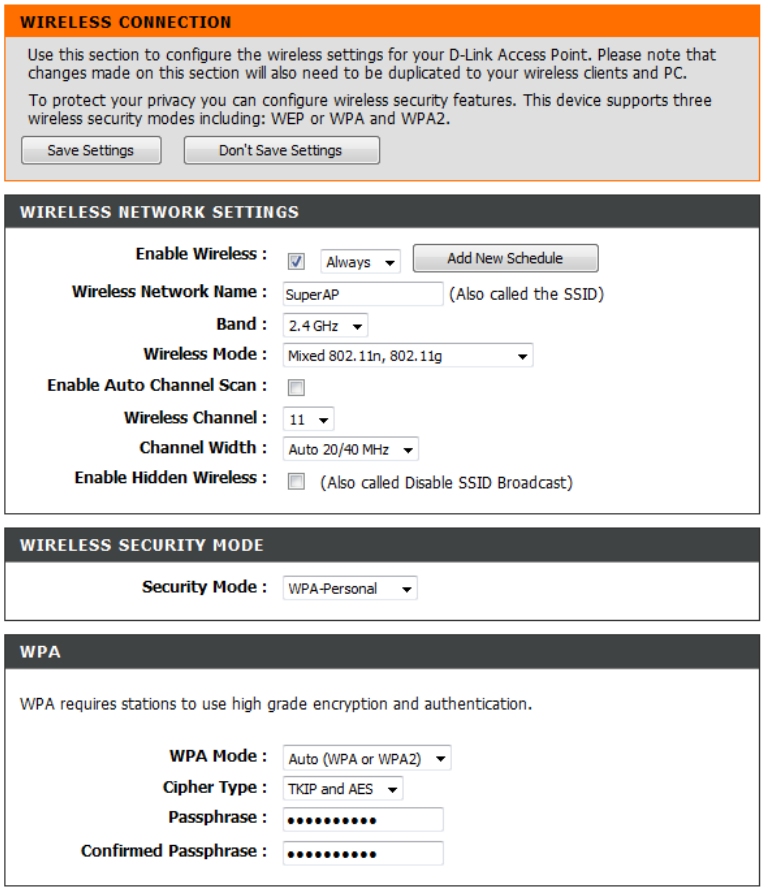
Wireless Mode: If you choose 2.4GHz band, then select one of the following:
802.11n Only - Select only if all of your wireless clients are 802.11n.
Mixed 802.11n and 802.11g - Select if you are using both 802.11n and 802.11g wireless clients.
Mixed 802.11n, 802.11g, and 802.11b - Select if you are using 802.11n, 802.11g, and 802.11b wireless clients.

If you choose 5GHz band, then select either **802.11n Only,** or **Mixed 802.11n and 802.11a.**

Enable Auto Channel Scan: The Auto Channel Scan setting can be selected to allow the DAP-1560 to choose the channel with the least amount of interference.

Wireless Channel: Indicates the channel setting for the DAP-1560. If you enable Auto Channel Scan, this option will be grayed out.

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



Enable Hidden Wireless: Check this box if you do not want the SSID of your wireless network to be broadcasted by the DAP-1560. If enabled, the SSID of the DAP-1560 will not be seen by Site Survey utilities so your wireless clients will have to know the SSID of your DAP-1560 in order to connect to it.

Security Mode: Refer to page 52 for more information regarding the wireless security.

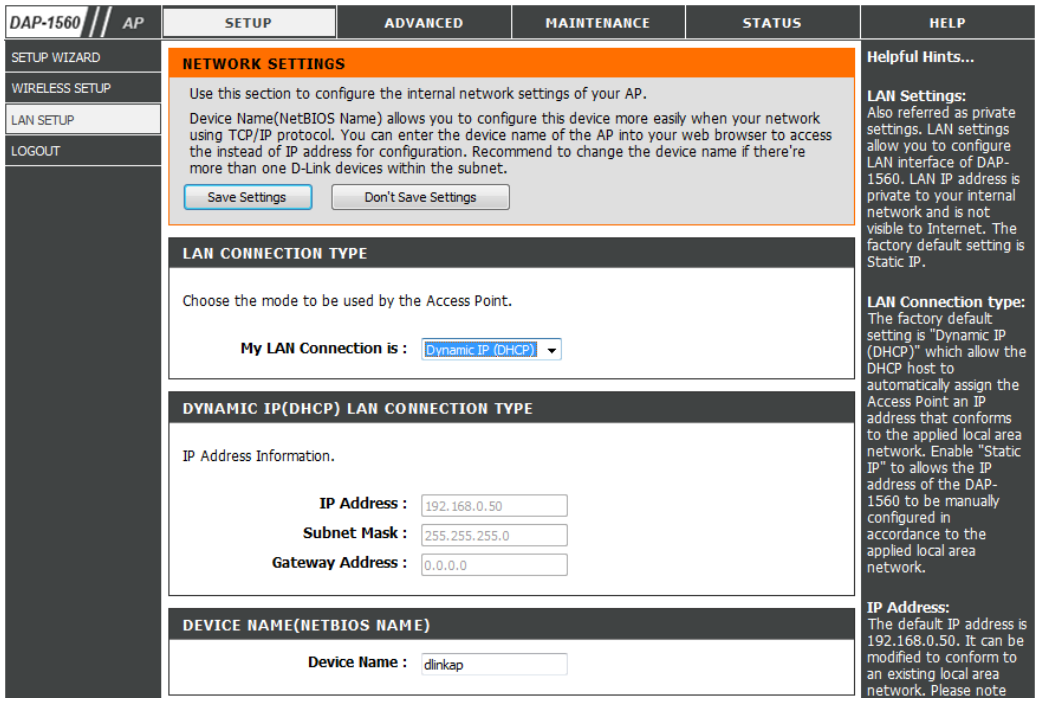
Network Settings

DHCP

DHCP stands for Dynamic Host Control Protocol. The DHCP Server (usually your router) will automatically assign an IP address to the DAP-1560 . When you turn your DAP-1560 on, it will automatically receive the proper TCP/IP settings provided by the DHCP Server.

My LAN Connection is: Use the drop-down menu to select Dynamic IP (DHCP) to automatically obtain an IP address on the LAN/private network.

Device Name: Enter the Device Name of the AP. It is recommended to change the Device Name if there is more than one D-Link device within the subnet.



Static IP

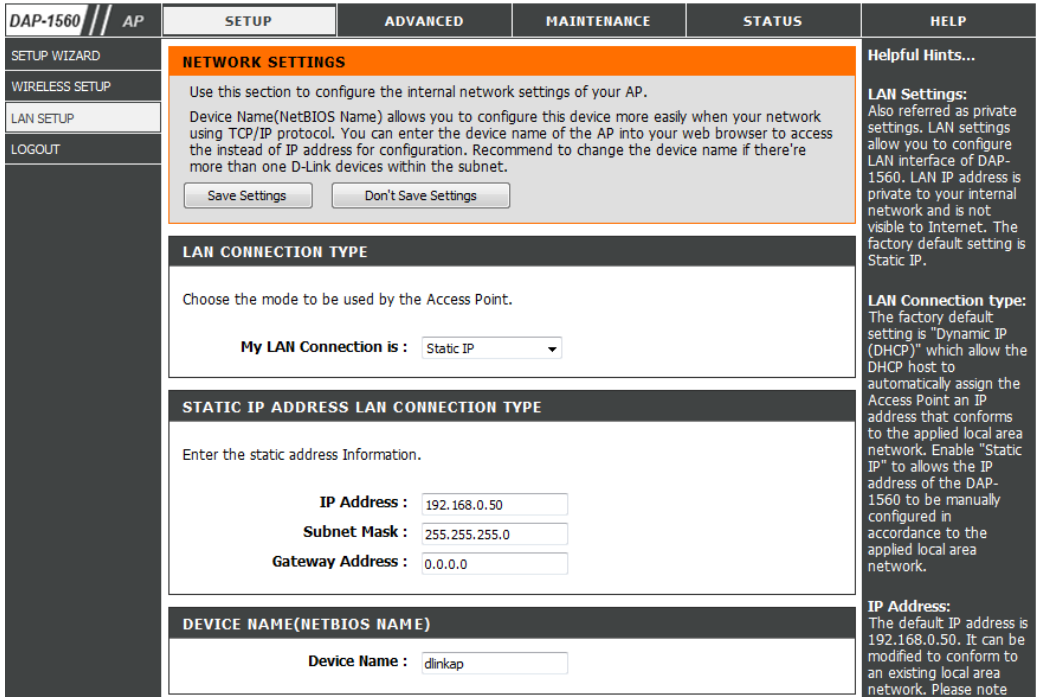
LAN Connection Type: Use the drop-down menu to select **Static IP**.

Access Point IP Address: Enter the IP address of the access point. The default IP address is 192.168.0.50. If you change the IP address, once you click **Apply**, you will need to enter the new IP address in your browser to get back into the configuration utility.

Subnet Mask: Enter the Subnet Mask of your network.

Default Gateway: Enter the Gateway of your network (usually the IP address of your router).

Device Name: Enter the Device Name of the AP. It is recommended to change the Device Name if there is more than one D-Link device within the subnet.

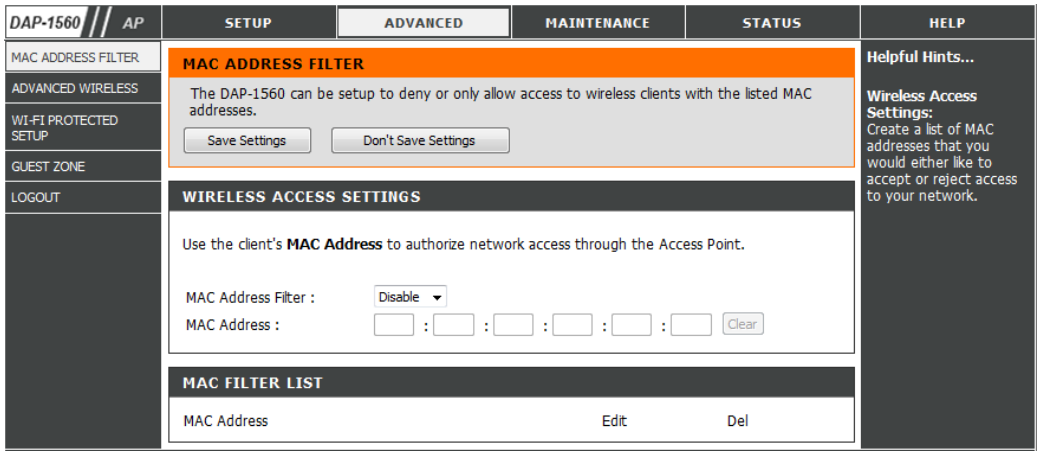


Advanced
MAC Address Filter

The MAC address filter section can be used to filter network access by machines based on the unique MAC addresses of their network adapter(s). It is most useful to prevent unauthorized wireless devices from connecting to your network. A MAC address is a unique ID assigned by the manufacturer of the network adapter.

MAC Address Filter: When **Disable** is selected, MAC addresses are not used to control network access. When **Accept** is selected, only computers with MAC addresses listed in the MAC Address List are granted network access. When **Reject** is selected, any computer with a MAC address listed in the MAC Address List is refused access to the network.

MAC Address: Enter the MAC address of the adapter (client) that you want to filter. Click **Save Settings** at the top to save the filter rule.



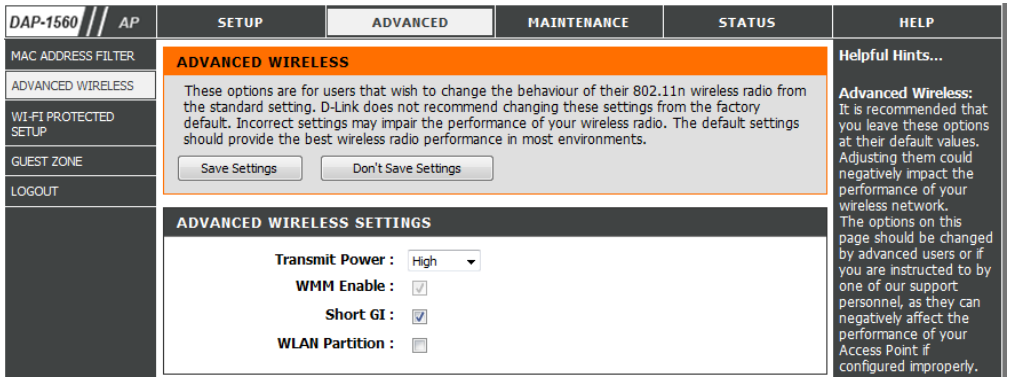
Advanced Wireless

Transmit Power: Sets the transmit power of the antennas (**Low**, **Medium**, or **High**).

WMM Enable: WMM is QoS for your wireless network. This will improve the quality of video and voice applications for your wireless clients.

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

WLAN Partition: Check to enable WLAN Partition.



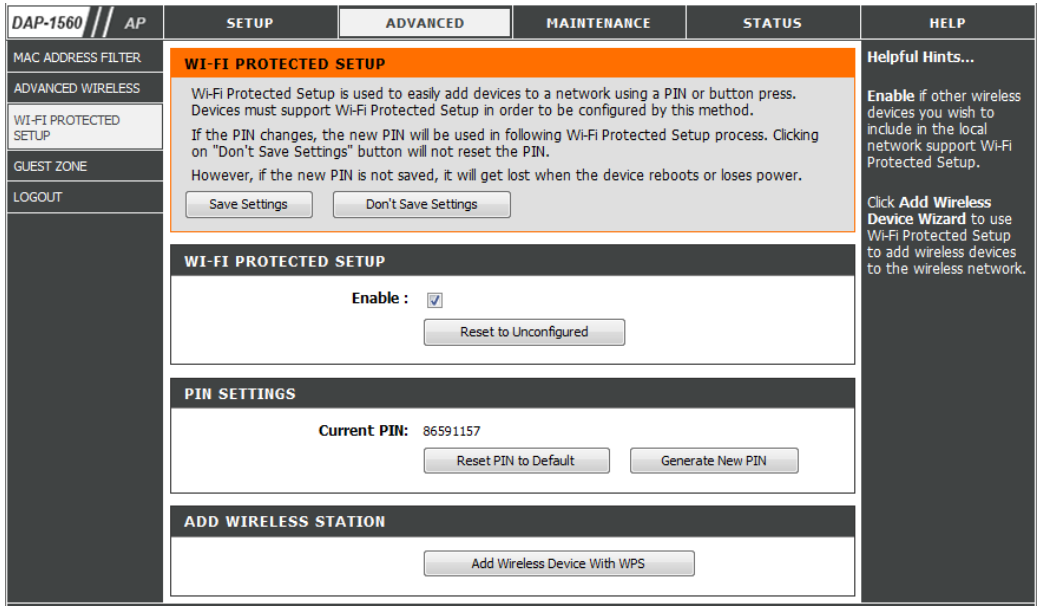
Wi-Fi Protected Setup

Enable: Enable the Wi-Fi Protected Setup feature.

Current Pin: Shows the current value of the access point's PIN.

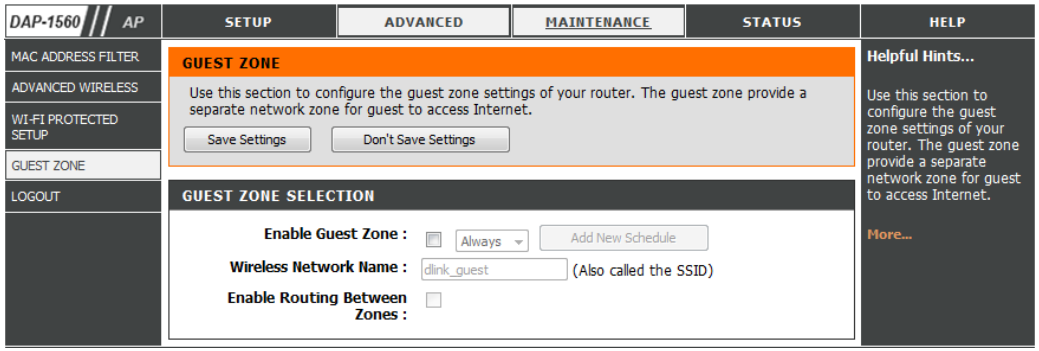
Reset to Unconfigured: Resets Wi-Fi Protected Status to Not Configured. Vista WPS icon will only be displayed when the Wi-Fi Protected Status is Not Configured.

Reset Pin to Default: Restores the default Pin of the access point.



Guest Zone

The Guest Zone feature will allow you to create temporary zones that can be used by guests to access the Internet. These zones will be separate from your main wireless network.



Enable Guest Zone: Check to enable the Guest Zone feature. Select the schedule of time when the Guest Zone will be active. The schedule may be set to Always, which will allow the particular service to always be enabled. You can create your own times in the **Tools** > **Schedules** section.

Wireless Network Name: Enter a wireless network name (SSID) that is different from your main wireless network.

Enable Routing Between Zones: Check to allow network connectivity between the different zones created.

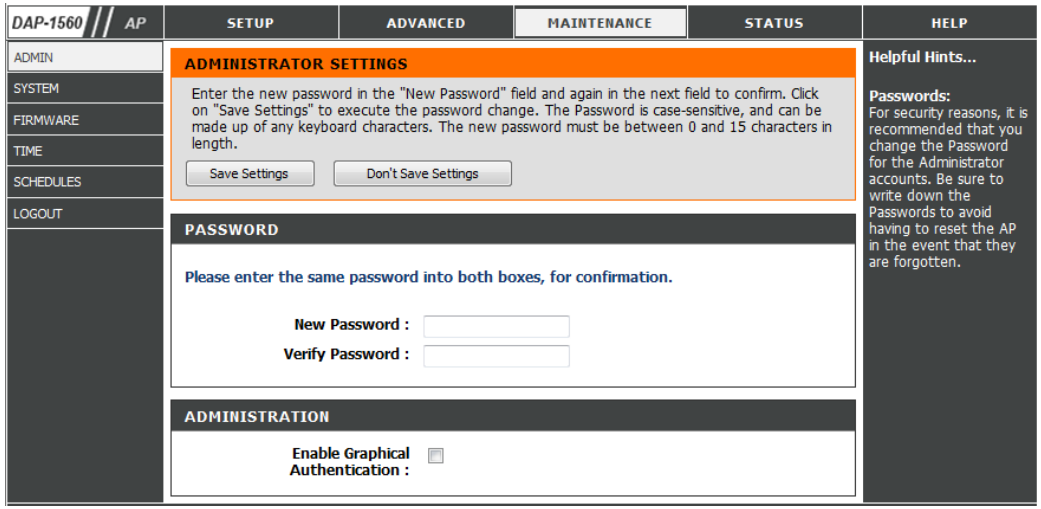
Maintenance
Admin

This page will allow you to change the Administrator password. The administrator password has read/write access.

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

Verify Password: Enter the same password that you entered in the previous textbox in order to confirm its accuracy.

Enable Graphical Authentication: Check this box to require users to type letters or numbers from a distorted image displayed on the login screen to prevent online hackers and unauthorized users from gaining access to your router's network settings.



System

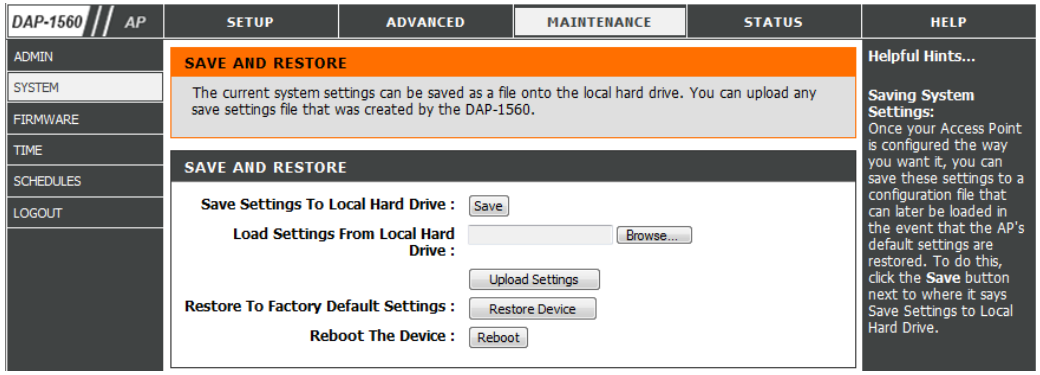
Save Settings to Local Hard Drive: Use this option to save the current access point configuration settings to a file on the hard disk of the computer you are using. First, click the **Save** button. You will then see a file dialog, where you can select a location and file name for the settings.

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

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

Note: Restoring the factory default settings will not reset the Wi-Fi Protected Status to Not Configured.

Reboot the Device: Click to reboot the access point.



Firmware

You can upgrade the firmware of the access point here. Make sure the firmware you want to use is on the local hard drive of the computer. Click on **Browse** to locate the firmware file to be used for the update. Please check the D-Link support website for firmware updates at http://support.dlink.com. You can download firmware upgrades to your hard drive from this site.

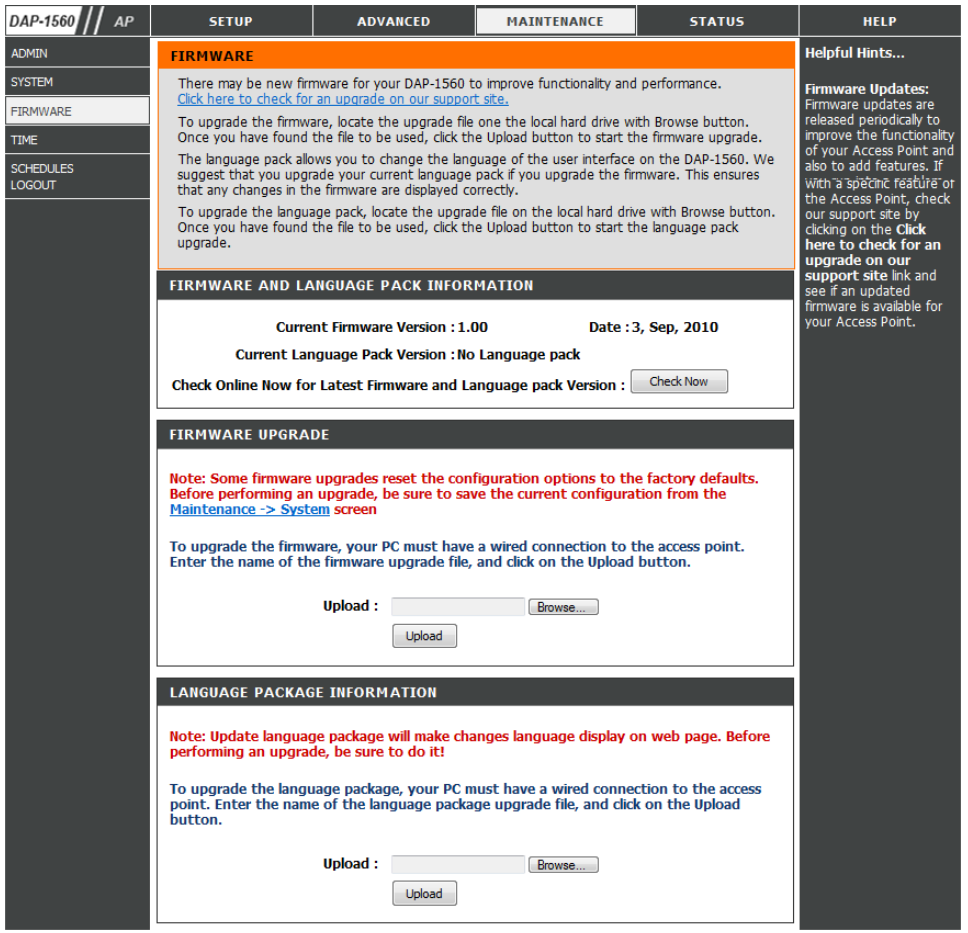
Browse: After you have downloaded the new firmware, click Browse to locate the firmware update on your hard drive. Click **Upload** to complete the firmware upgrade.

Upload: Once you have a firmware update on your computer, use this option to browse for the file and then upload the information into the access point.

Language Pack

You can change the language of the web UI by uploading available language packs.

Browse: After you have downloaded the new language pack, click **Browse** to locate the language pack file on your hard drive. Click **Upload** to complete the language pack upgrade.



Time

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

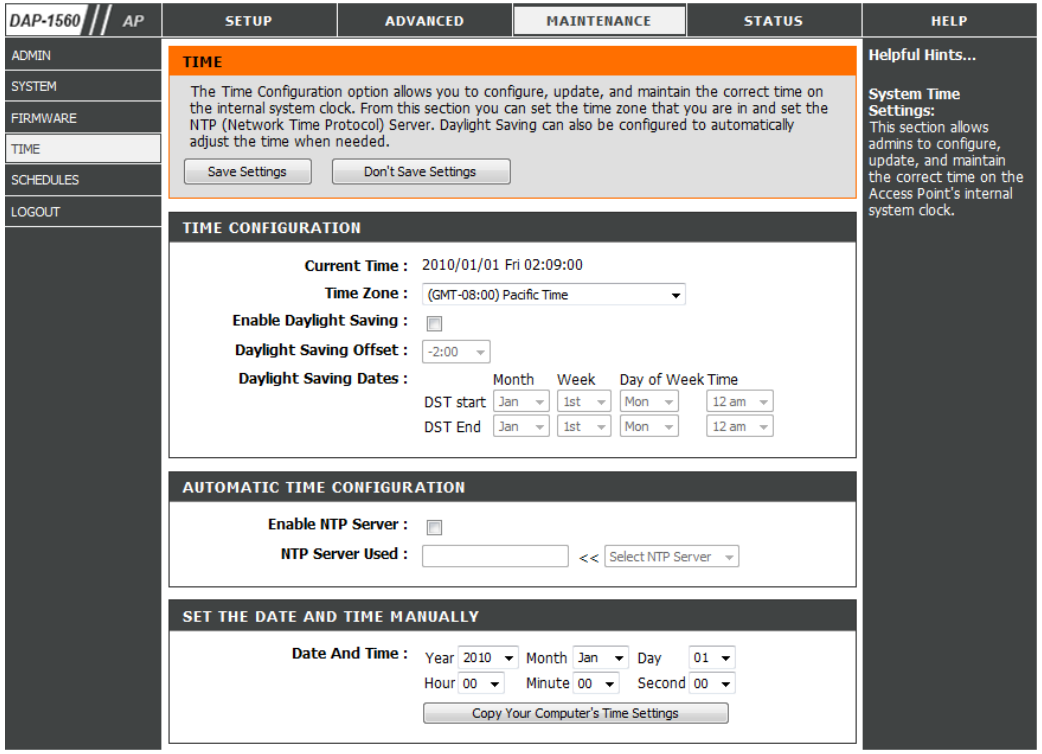
Time Zone: Select the Time Zone from the drop-down menu.

Daylight Saving: To select Daylight Saving time manually, click the **Enable Daylight Saving** box. Next, use the drop-down menu to select a Daylight Saving Offset and then enter a start date and an end date for daylight saving time.

Enable NTP Server: NTP is short for Network Time Protocol. NTP synchronizes computer clock times in a network of computers. Check this box to use a NTP server. This will only connect to a server on the Internet, not a local server.

NTP Server Used: Enter the NTP server or select one from the drop-down menu.

Manual: To manually input the time, enter the values in these fields for the Year, Month, Day, Hour, Minute, and Second and then click **Save Settings**. You can also click the **Copy Your Computer's Time Settings** button at the bottom of the screen.



Schedules

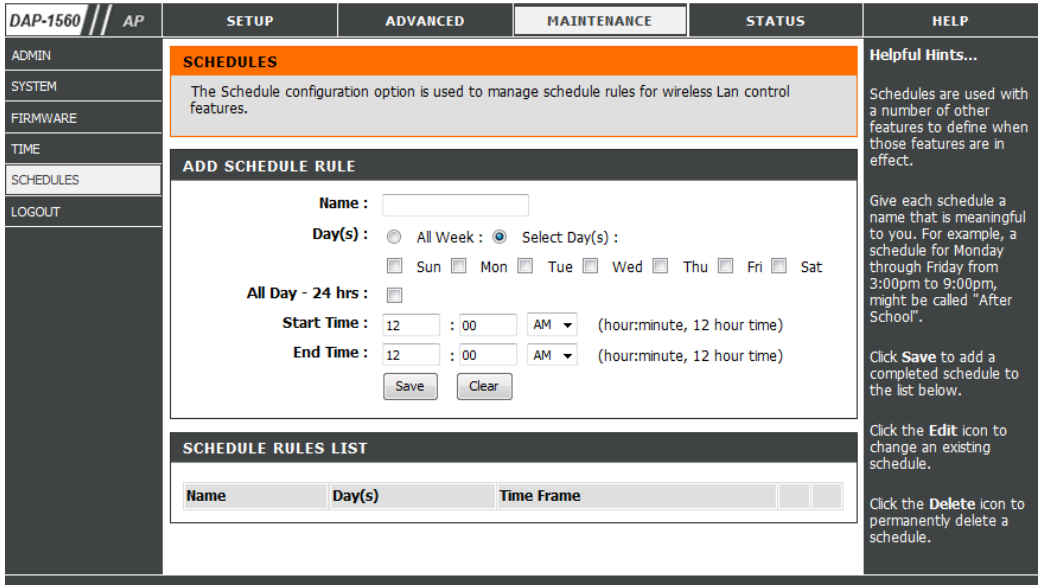
Name: Enter a name for your new schedule.

Days: Select a day, a range of days, or **All Week** to include every day.

Time: Check **All Day - 24hrs** or enter a start and end time for your schedule.

Save: Click **Save** to save your schedule. You must click **Save Settings** at the top for your schedules to go into effect.

Schedule Rules List: The list of schedules will be listed here. Click the **Edit** icon to make changes or click the **Delete** icon to remove the schedule.



Status

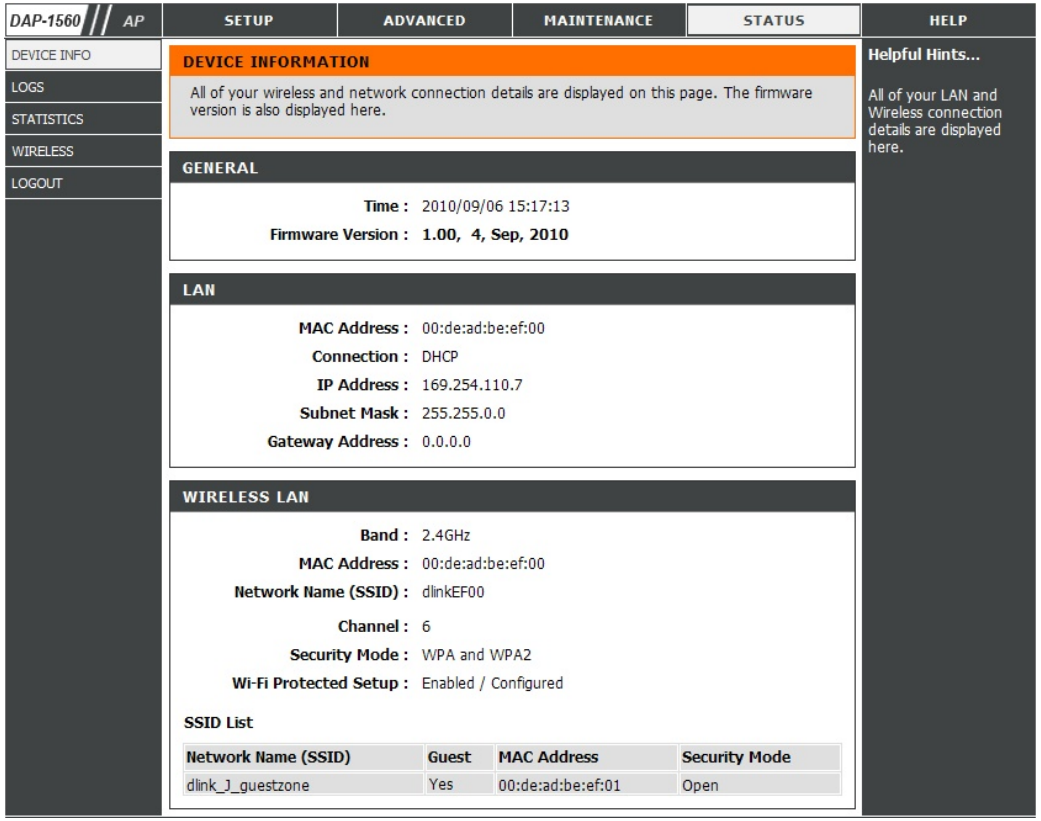
Device Info

This page displays the current information for the DAP-1560. It will display the LAN and wireless LAN information.

General: Displays the access point's time and firmware version.

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

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



Logs

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

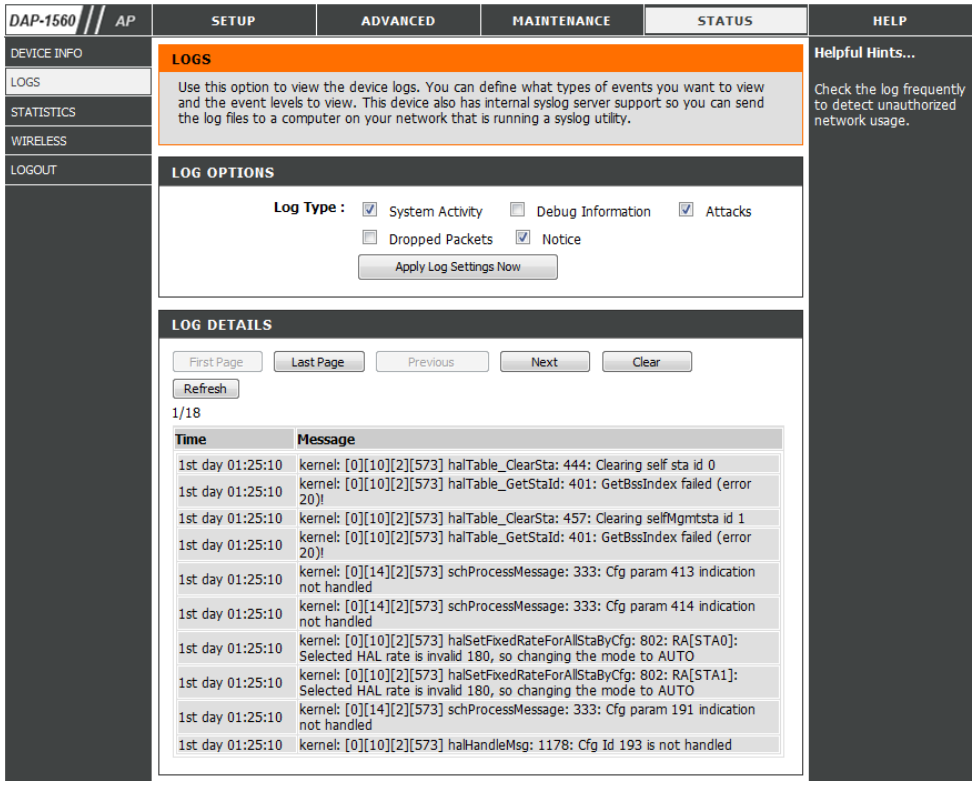
Log Type: There are five types of logs that can be viewed: **System Activity**, **Debug Information**, **Attacks**, **Dropped Packets**, and **Notice**. Click the corresponding check box for the type(s) that you want displayed in the log.

Apply Log Settings Now: Click this button to immediately filter the log results so that only the selected options appear in the Log Details section of this screen.

Refresh: Updates the log details on the screen so it displays any recent activity.

Clear: Clear all of the log contents.

Save Log: This option will save the access point to a log file on your computer.



Statistics

The Statistics page displays all of the LAN (Ethernet port) and Wireless packets transmit and receive statistics.

Sent: The total number of packets sent from the access point.

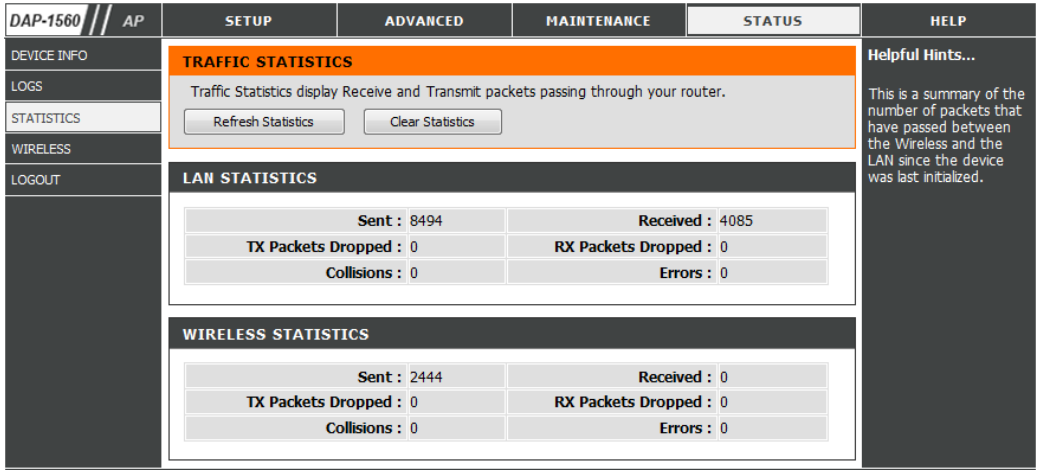
Received: The total number of packets received by the access point.

TX Packets Dropped: Displays the number of packets that were dropped while sending, due to errors, collisions, or access point resource limitations.

RX Packets Dropped: Displays the number of packets that were dropped while receiving, due to errors, collisions, or access point resource limitations.

Collisions: Displays the number of collisions.

Errors: Displays the number of errors.

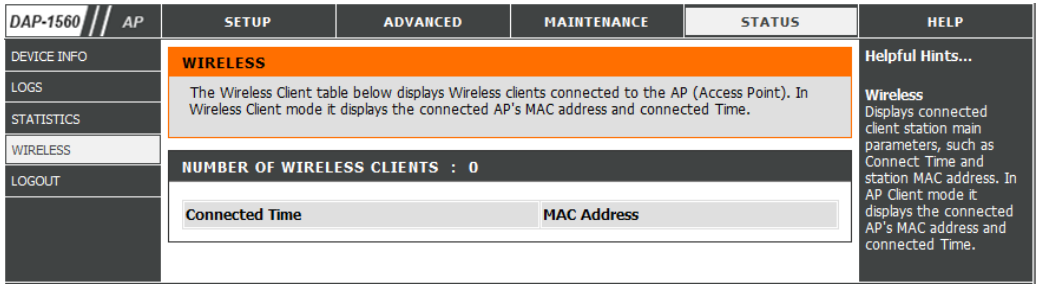


Wireless

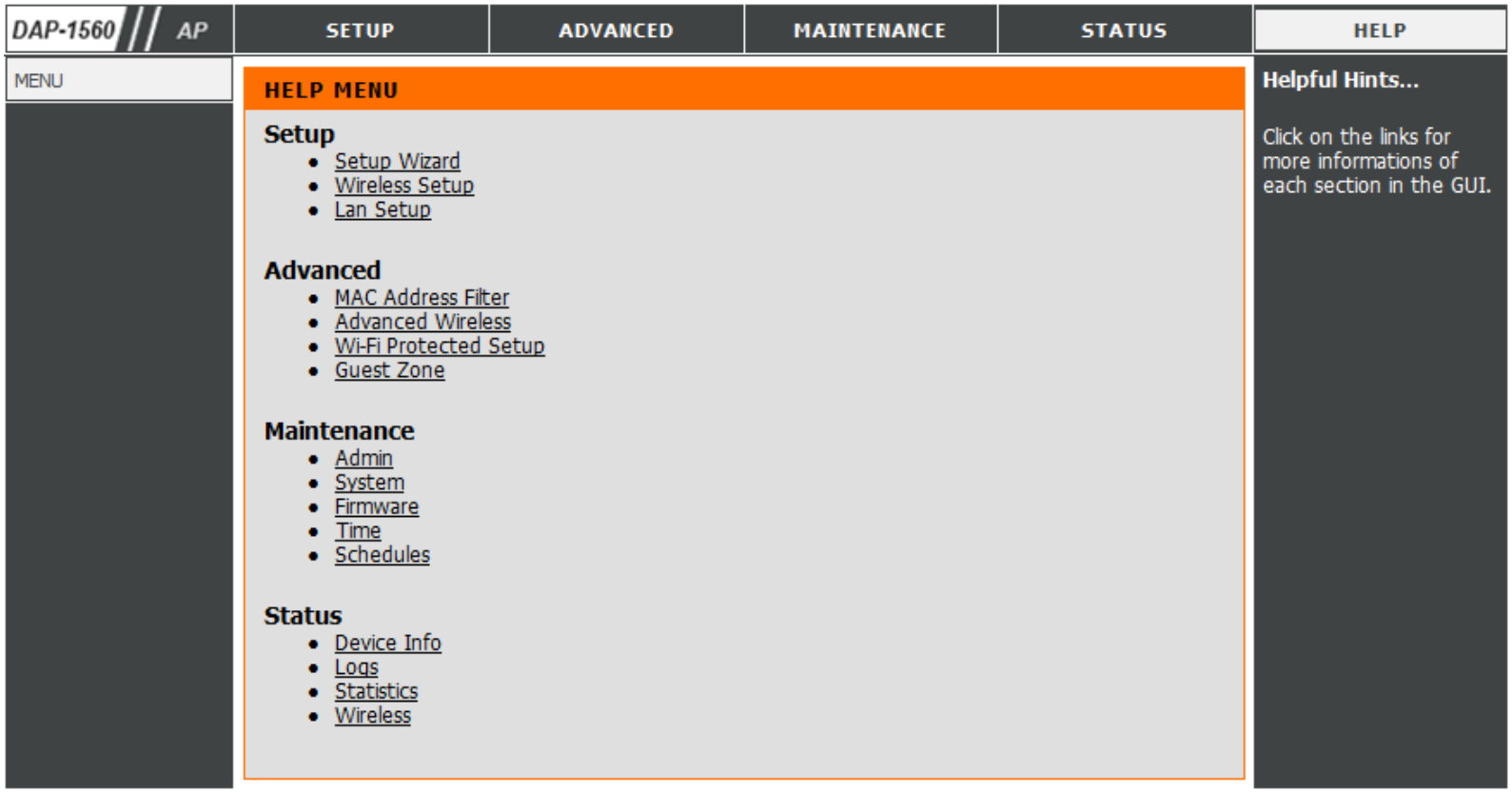
The wireless section allows you to view the wireless clients that are connected to your wireless access point.

Connection TIme: Displays the amount of time the wireless client has been connected to the access point.

MAC Address: Displays the MAC address of the wireless client.



Help


DAP-1560 // AP
SETUP
ADVANCED
MAINTENANCE
STATUS
HELP
MENU
HELP MENU
Setup
Setup Wizard
Wireless Setup
Lan Setup
Advanced
MAC Address Filter
Advanced Wireless
Wi-Fi Protected Setup
Guest Zone
Maintenance
Admin
System
Firmware
Time
Schedules
Status
Device Info
Logs
Statistics
Wireless
Helpful Hints...
Click on the links for more informations of each section in the GUI.

Configuration (Bridge Mode)

This section will show you how to configure your new D-Link wireless access point using the web-based configuration utility.

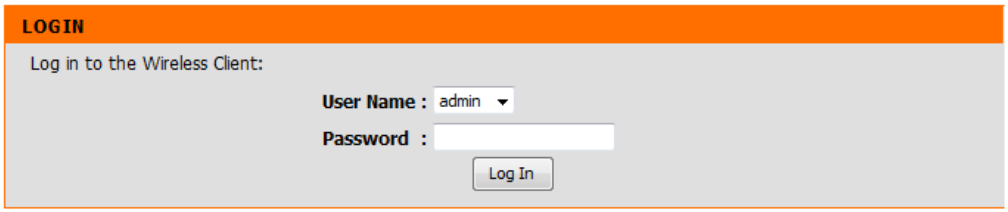
Web-based Configuration Utility

1. On the back of the DAP-1560, slide the mode selector to the right (Bridge Mode).

2. To access the configuration utility, open a web browser such as Internet Explorer and enter **192.168.0.50** in the address field.

3. Enter **Admin** and then enter your password. Leave the password blank by default.

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

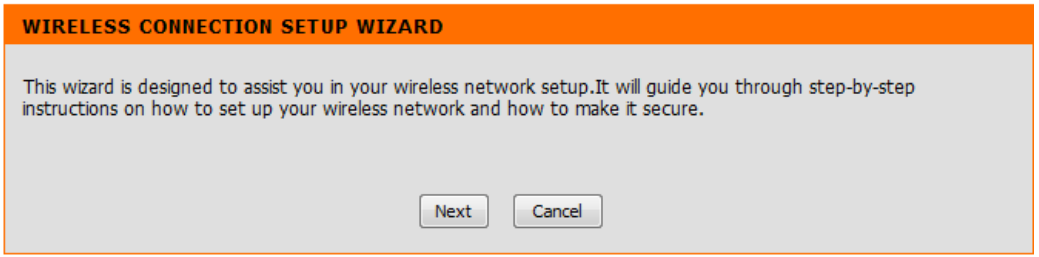


Setup Wizard

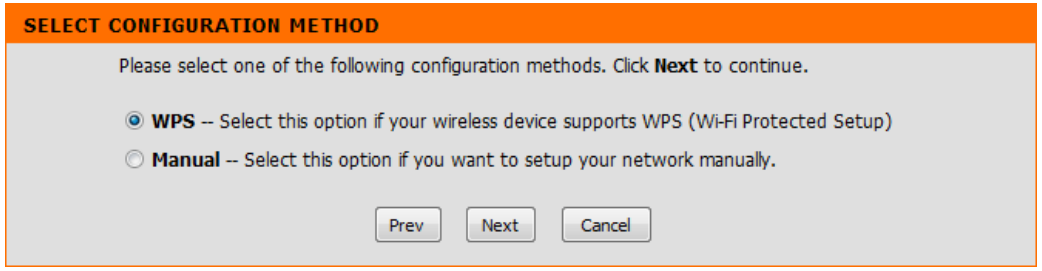
This wizard is designed to assist you in configuring the wireless settings for your bridge. It will guide you through step-by-step instructions on how to setup your wireless network.

Click **Launch Wireless Setup Wizard**

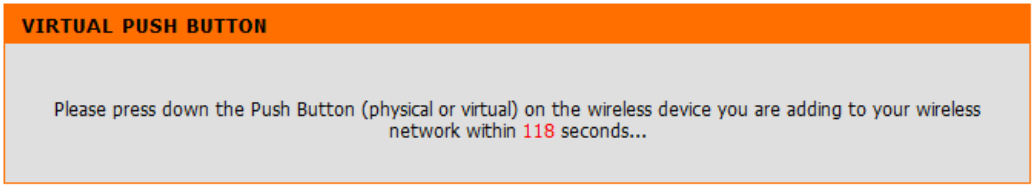
Click **Next** to continue.



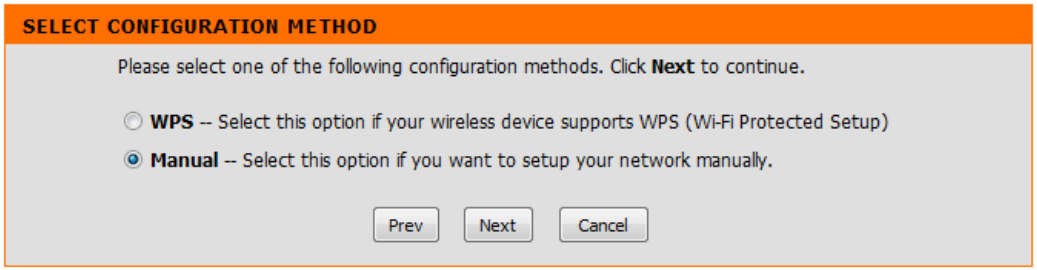
Select **WPS** to connect using WPS (Wi-Fi Protected Setup) and then click **Next**.



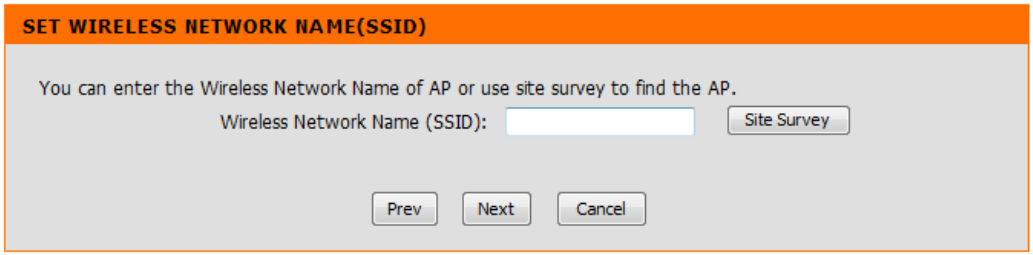
Press the WPS button on your wireless device you want to connect with. You will have a 2 minute (120 seconds) time limit.



Select **Manual** as the configuration method to set up your network manually. Click **Next** to continue.

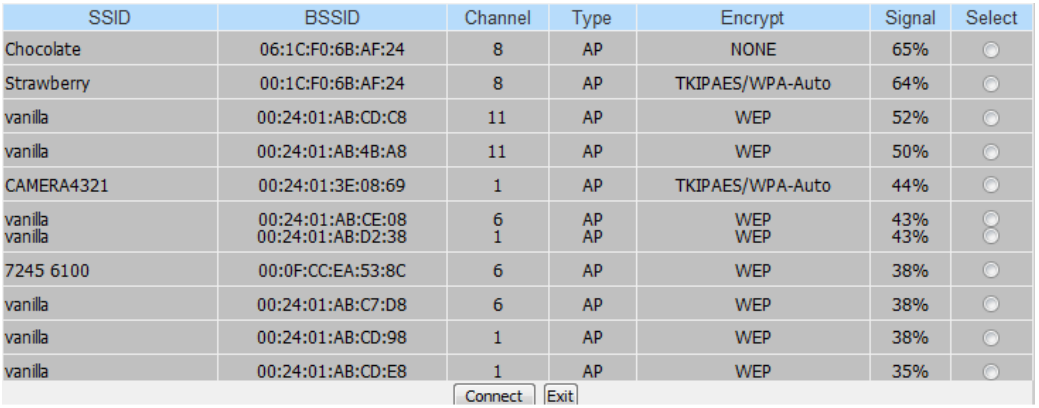


Enter the wireless network name (SSID) of the network you want to connect to. The SSID is case-sensitive. Click **Next** to continue.



If you clicked on **Site Survey**, the following screen will be displayed.

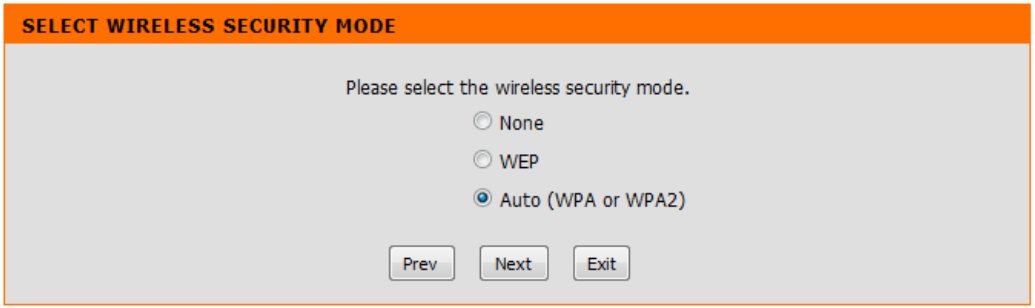
Find your wireless network from the list, click the Select radio button and click **Connect**.



SSID	BSSID	Channel	Type	Encrypt	Signal	Select
Chocolate	06:1C:F0:6B:AF:24	8	AP	NONE	65%	
Strawberry	00:1C:F0:6B:AF:24	8	AP	TKIPAES/WPA-Auto	64%	
vanilla	00:24:01:AB:CD:C8	11	AP	WEP	52%	
vanilla	00:24:01:AB:4B:A8	11	AP	WEP	50%	
CAMERA4321	00:24:01:3E:08:69	1	AP	TKIPAES/WPA-Auto	44%	
vanilla vanilla	00:24:01:AB:CE:08 00:24:01:AB:D2:38	6 1	AP AP	WEP WEP	43% 43%	
7245 6100	00:0F:CC:EA:53:8C	6	AP	WEP	38%	
vanilla	00:24:01:AB:C7:D8	6	AP	WEP	38%	
vanilla	00:24:01:AB:CD:98	1	AP	WEP	38%	
vanilla	00:24:01:AB:CD:E8	1	AP	WEP	35%	

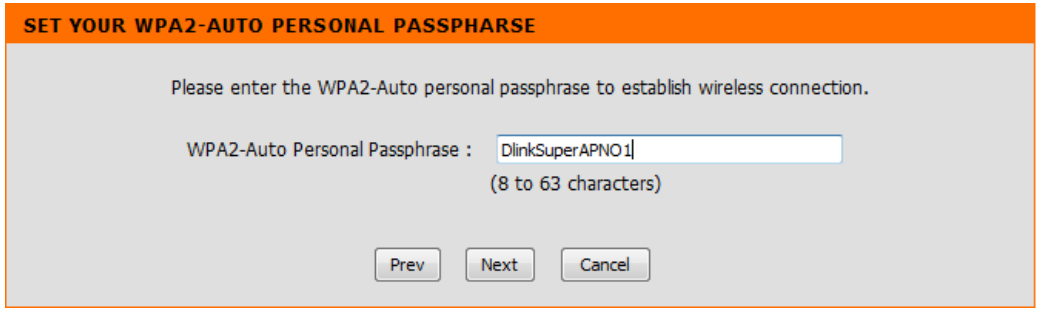
Connect Exit

Select the type of wireless security you would like to use and click **Connect** to continue.

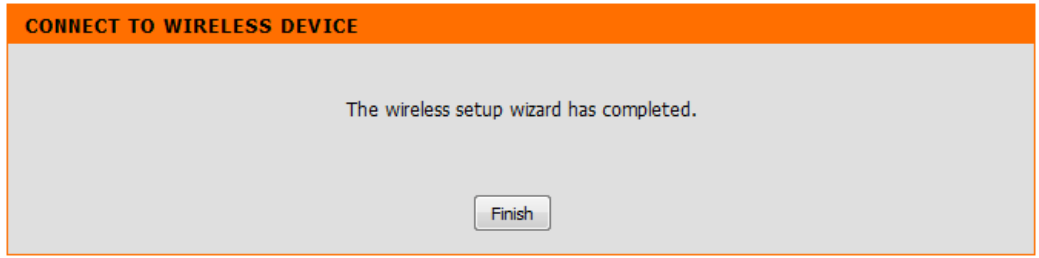


If you choose **WEP**, enter the wireless security password and click **Next** to complete the Setup Wizard.

If you choose **WPA** or **WPA2**, enter the Passphrase and click **Next** to complete the Setup Wizard.



Click **Finish** to complete the Setup Wizard.



Wireless

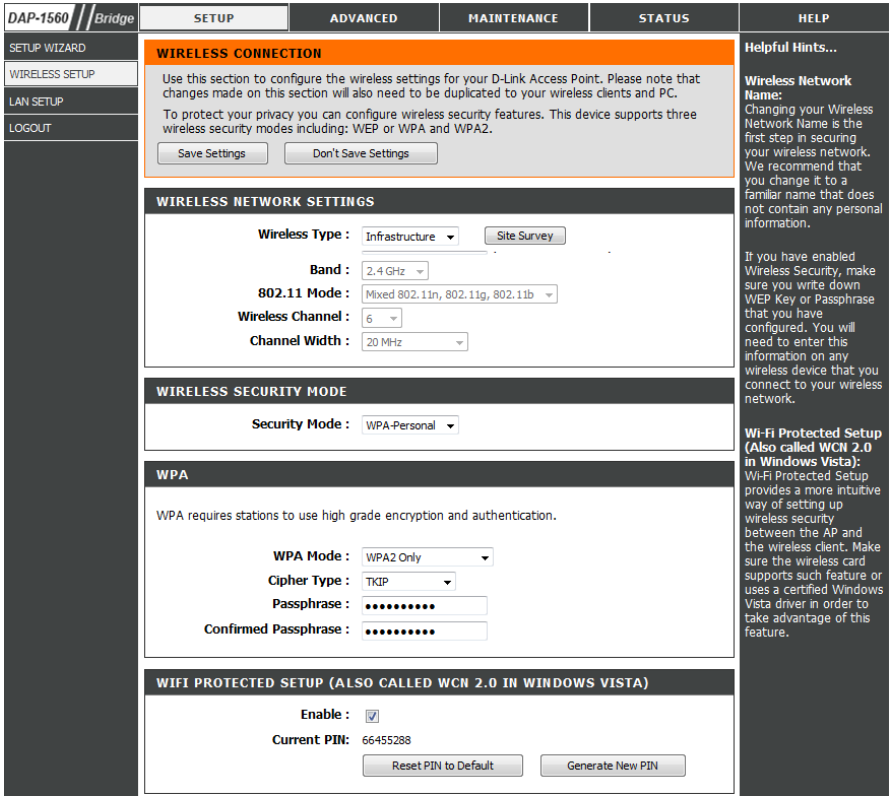
Wireless Type: Select **Infrastructure** if connecting to a wireless router or access point (most common) or **Ad-Hoc** if connecting directly to another wireless client in Ad-Hoc mode.

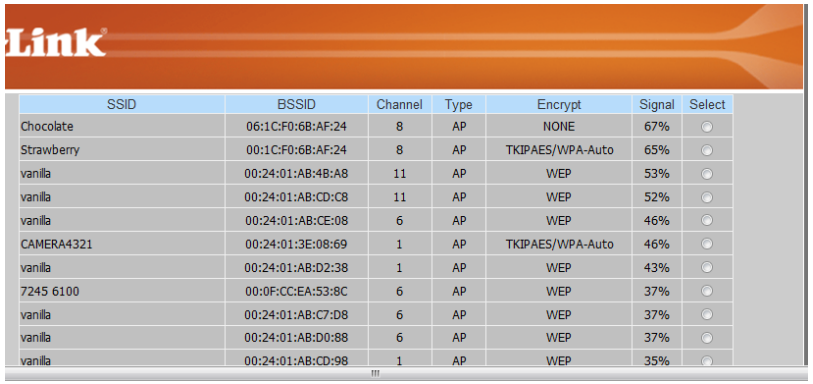
Site Survey: Click to display available wireless networks within range of the DAP-1560. Select the network you want to connect to and enter any security settings required.

Wireless Network Name: If you did not use the Site Survey option, enter the SSID or network name exactly as it is set on your wireless router or access point.

Security Mode: Refer to page 52 for more information regarding wireless security.

Enable: Enable the Wi-Fi Protected Setup feature.





Network Settings

Static

This section will allow you to change the local network settings of the bridge and to configure the Static settings.

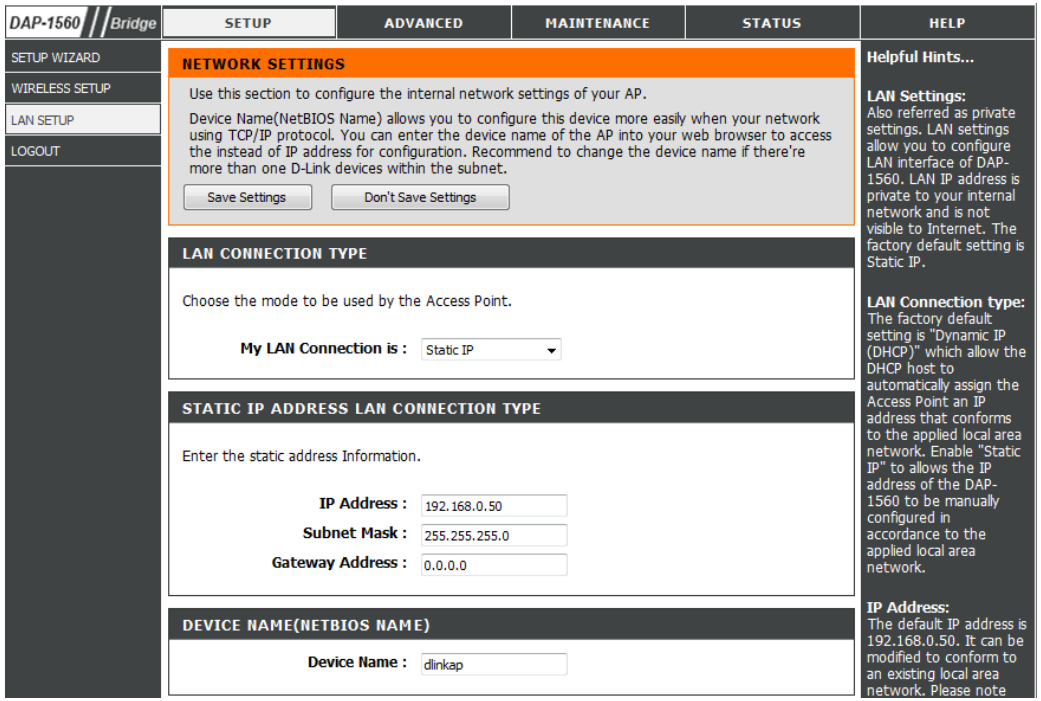
LAN Connection Type: Use the drop-down menu to select **Static IP** if you want to manually assign the IP address, subnet mask, and gateway addresses. Select **Dynamic IP (DHCP)** to automatically receive an IP address from your DHCP server or router.

Access Point IP Address: Enter the IP address you want to assign the bridge.

Subnet Mask: Enter the Subnet Mask you want to assign the bridge.

Gateway Address: Enter the Gateway you want to assign the bridge.

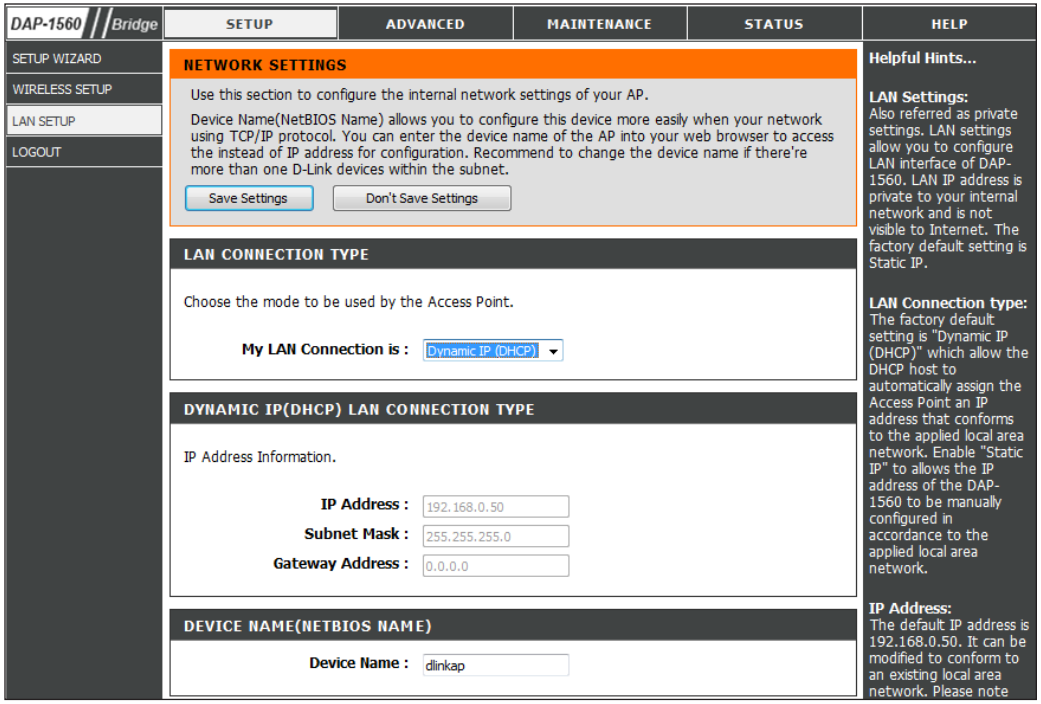
Device Name: Enter the Device Name of the AP and click **Next** to continue. It is recommended to change the Device Name if there is more than one D-Link device within the subnet.



DHCP

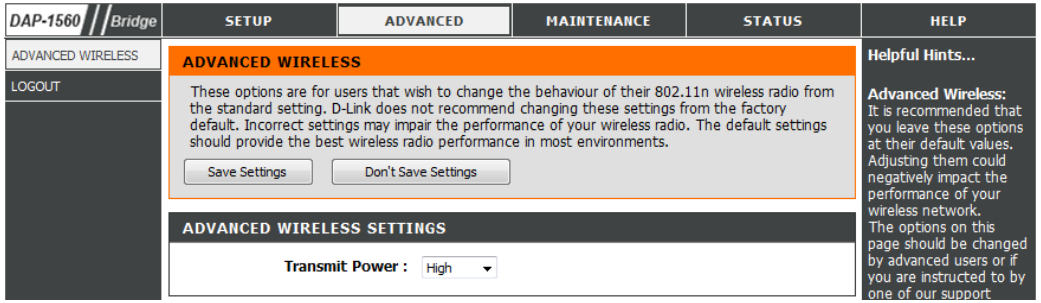
LAN Connection Type: Select DHCP to automatically obtain an IP address on the LAN/private network.

Device Name: Enter the Device Name of the AP and click **Next** to continue. It is recommended to change the Device Name if there is more than one D-Link device within the subnet.



Advanced
Advanced Wireless

Transmit Power: Set the transmit power of the antennas.



Maintenance

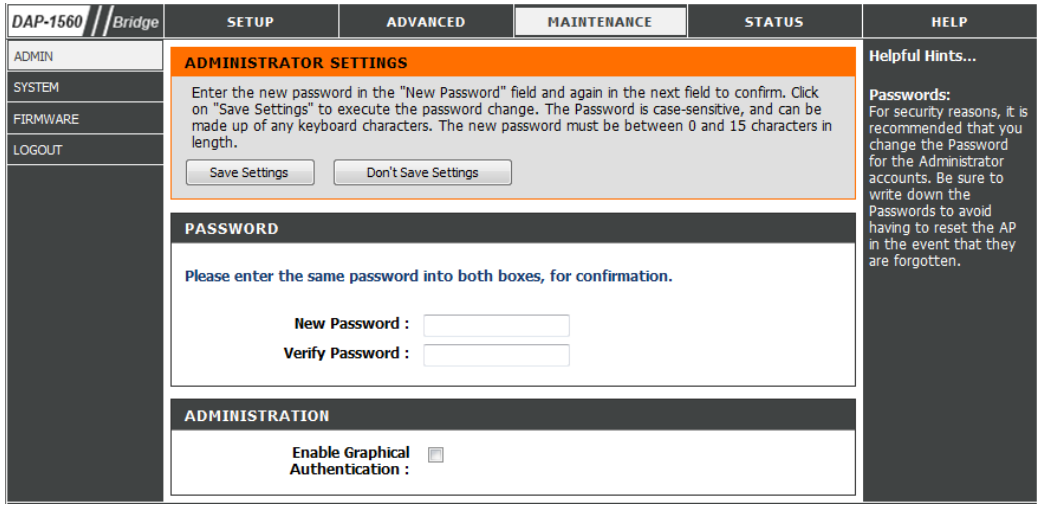
Admin

This page will allow you to change the Administrator password. Admin has read/write access.

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

Verify Password: Enter the same password that you entered in the previous textbox in order to confirm its accuracy.

Enable Graphical Authentication: Check this box to require users to type letters or numbers from a distorted image displayed on the login screen to prevent online hackers and unauthorized users from gaining access to your router's network settings.



System

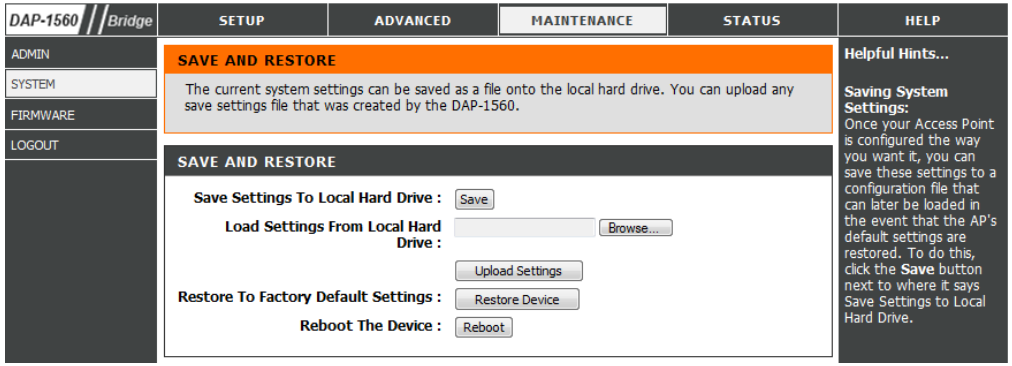
Save Settings To Local Hard Drive: Use this option to save the current access point configuration settings to a file on the hard disk of the computer you are using. First, click the **Save** button. You will then see a file dialog, where you can select a location and file name for the settings.

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

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

Reboot The Device: Click to reboot the bridge.

Clear Language Pack: Click to clear the language pack. This will put the web UI back to English.



Firmware

You can upgrade the firmware of the access point here. Make sure the firmware you want to use is on the local hard drive of the computer. Click on **Browse** to locate the firmware file to be used for the update. Please check the D-Link support site for firmware updates at http://support.dlink.com. You can download firmware upgrades to your hard drive from the D-Link support site.

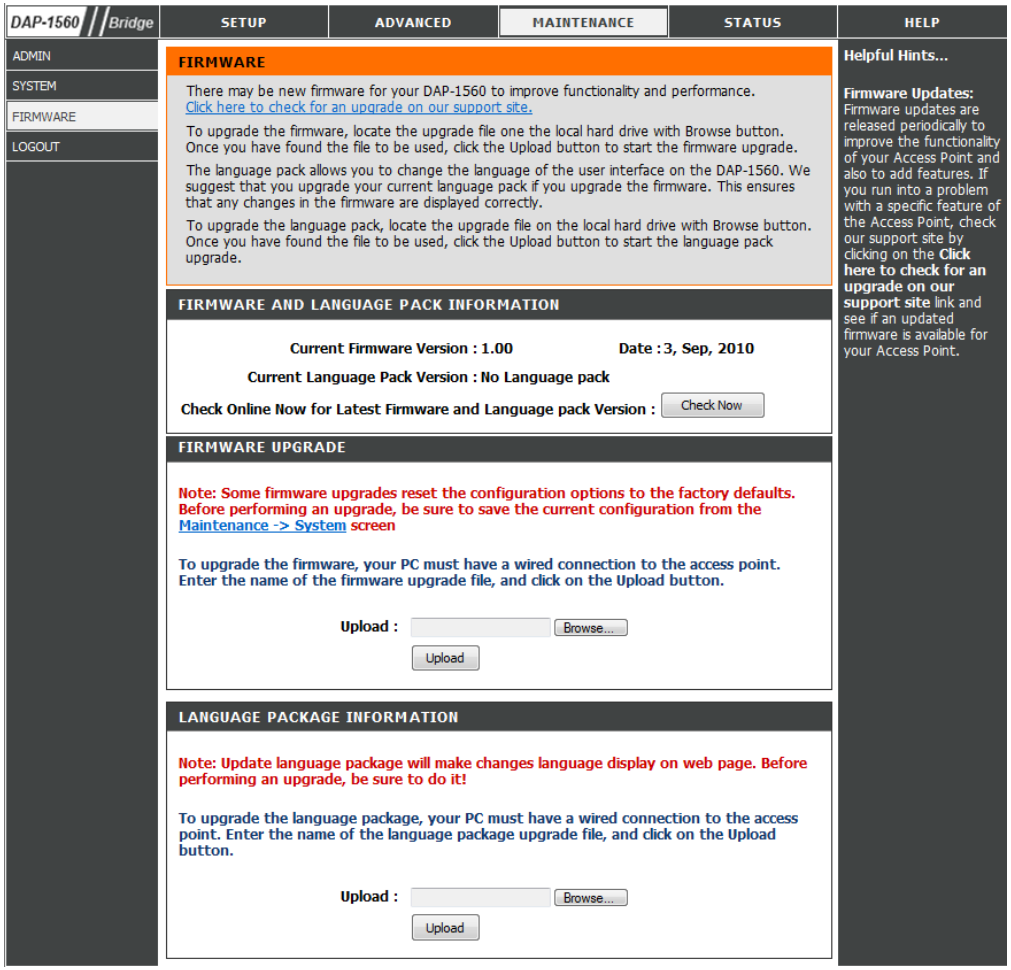
Browse: After you have downloaded the new firmware, click **Browse** to locate the firmware update on your hard drive. Click **Upload** to complete the firmware upgrade.

Upload: Once you have a firmware update on your computer, use this option to browse for the file and then upload the information into the bridge.

Language Pack

You can change the language of the web UI by uploading available language packs.

Browse: After you have downloaded the new language pack, click **Browse** to locate the language pack file on your hard drive. Click **Upload** to complete the language pack upgrade.



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Device Info

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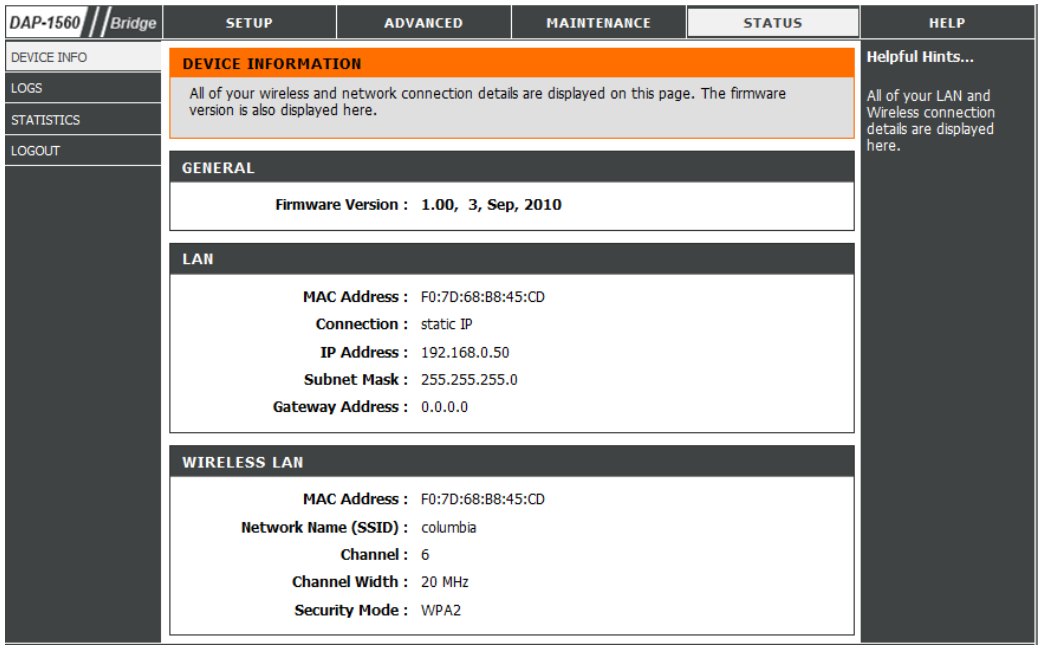

Logs

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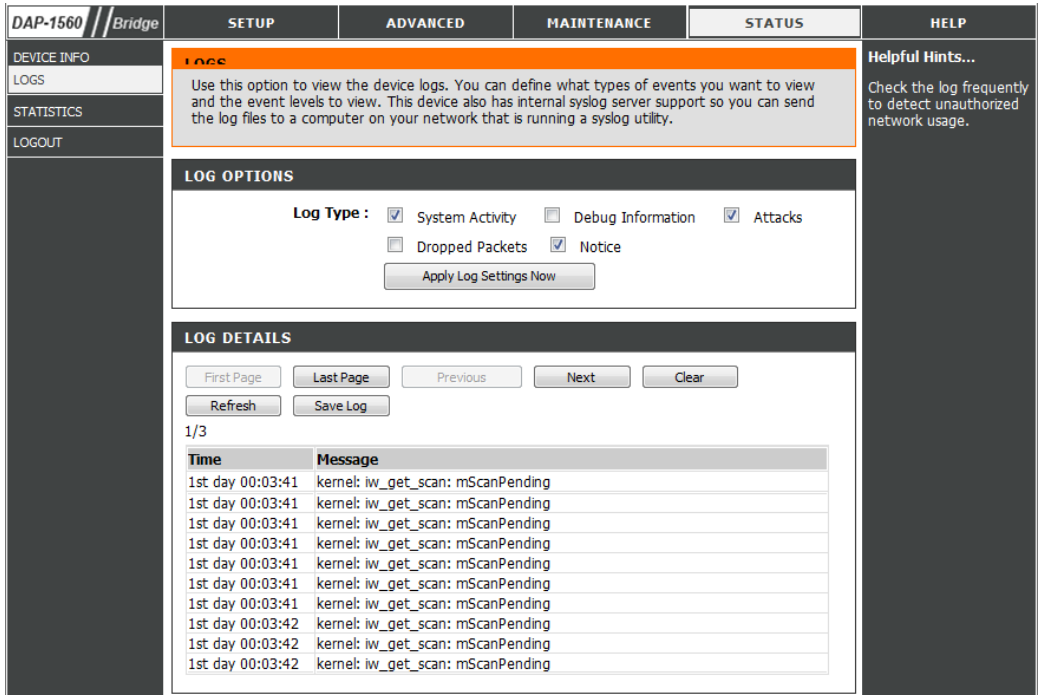
Log Type: There are five types of logs that can be viewed: **System Activity**, **Debug Information**, **Attacks**, **Dropped Packets**, and **Notice**. Click the corresponding check box for the type(s) that you want displayed in the log.

Apply Log Settings Now: Click this button to immediately filter the log results so that only the selected options appear in the Log Details section of this screen.

Refresh: Updates the log details on the screen so it displays any recent activity.

Clear: Clear all of the log contents.

Save Log: This option will save the access point to a log file on your computer.



Statistics

The Statistics page displays all of the LAN and Wireless packets transmit and receive statistics.

Sent: The total number of packets sent from the bridge.

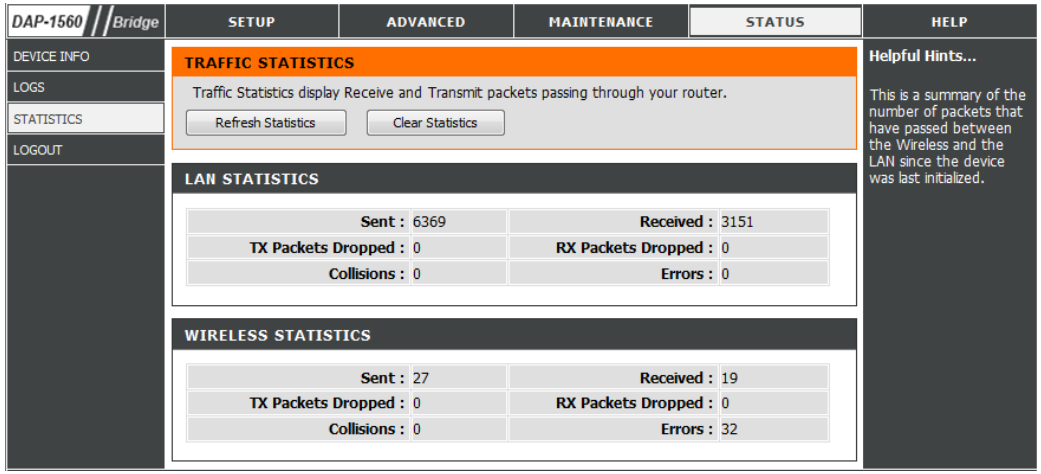
Received: The total number of packets received by the bridge.

TX Packets Dropped: Displays the number of packets that were dropped while sending, due to errors, collisions, or access point resource limitations.

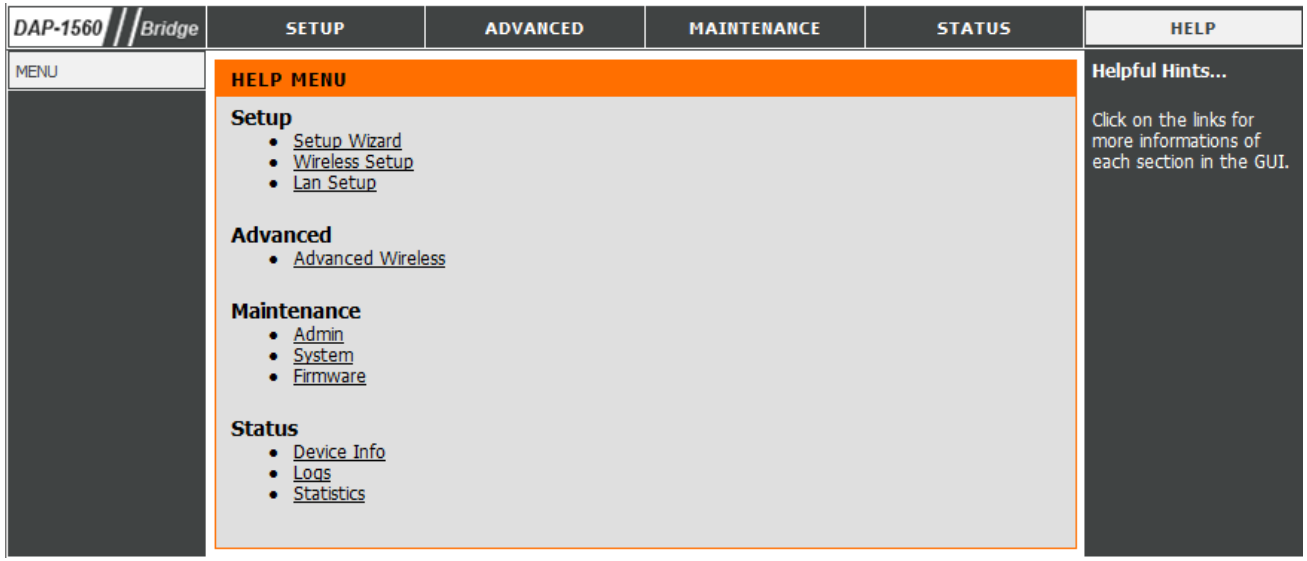
RX Packets Dropped: Displays the number of packets that were dropped while receiving, due to errors, collisions, or access point resource limitations.

Collisions: Displays the number of collisions.

Errors: Displays the number of errors.



Help


DAP-1560 Bridge
SETUP
ADVANCED
MAINTENANCE
STATUS
HELP
MENU
HELP MENU
Setup
Setup Wizard
Wireless Setup
Lan Setup
Advanced
Advanced Wireless
Maintenance
Admin
System
Firmware
Status
Device Info
Logs
Statistics
Helpful Hints...
Click on the links for more informations of each section in the GUI.

Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DAP-1560 offers the following types of security:

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

What is WPA/WPA2?

WPA, or Wi-Fi Protected Access, is a Wi-Fi standard that was designed to improve security features of your wireless 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 bridge or access point.

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

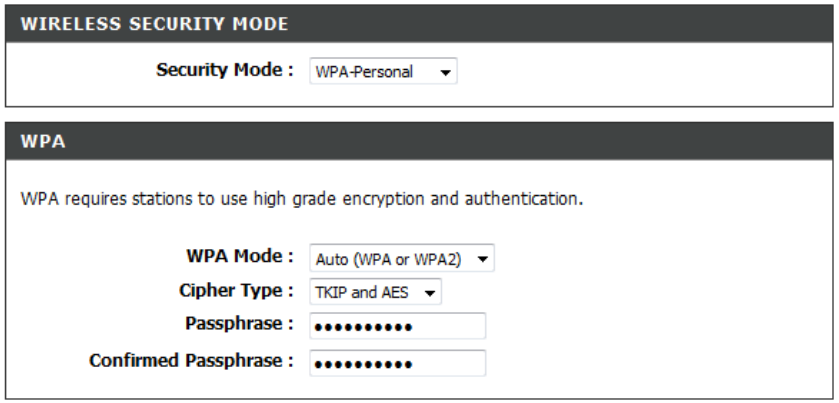
Configure WPA-Personal (AP Mode)

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

1. Log into the web-based configuration by opening a web browser and entering the IP address of the access point (192.168.0.50). Click on Setup and then click **Wireless Settings** on the left side.

2. Next to *Security Mode in the Wireless Security Mode section*, select **WPA-Personal.**

3. Next to *WPA Mode in the WPA section*, **select Auto (WPA or WPA2), WPA2 Only, or WPA Only. Use Auto if you have wireless clients using both WPA and WPA2.**



4. Next to Cipher Type, select **TKIP**, **AES**, or **TKIP and AES**.

5. Next to *Group Key Update Interval*, enter the amount of time before the group key used for broadcast and multicast data is changed.

6. Next to the *Pre-Shared Key* section, enter a key in the Passphrase field. The key is entered as a passphrase in ASCII format at both ends of the wireless connection. The passphrase must be between 8-63 characters.

7. Click **Save Settings** at the top of the window to save your settings. If you are configuring the access point with a wireless adapter, you will lose connectivity until you enable WPA-PSK on your adapter and enter the same passphrase as you did on the access point.

Configure WPA-Enterprise (AP Mode)

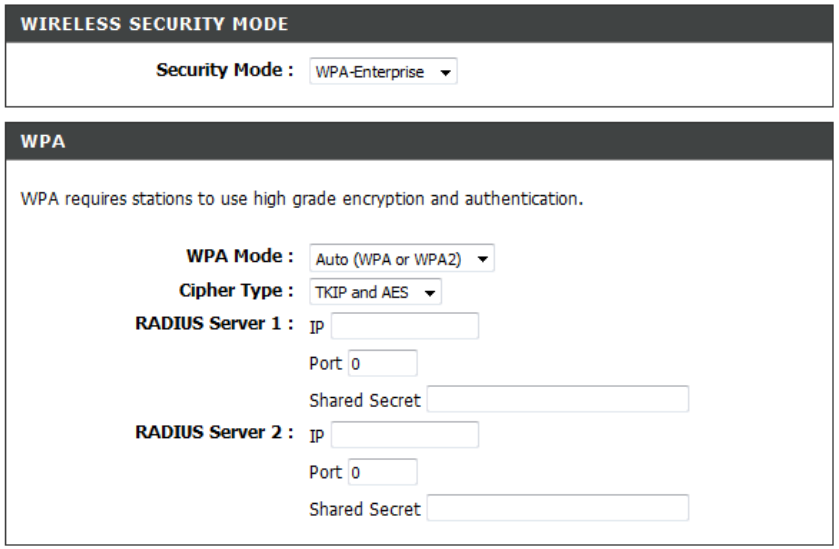
It is recommended to enable encryption on your wireless access point before your wireless network adapters. Please establish wireless connectivity before enabling encryption. Your wireless signal may degrade when enabling encryption due to the added overhead.

1. Log into the web-based configuration by opening a web browser and entering the IP address of the access point (192.168.0.50). Click on **Setup** and then click **Wireless Settings** on the left side.

2. Next to *Security Mode in the Wireless Security Mode section*, select **WPA-Enterprise.**

3. Next to *WPA Mode in the WPA section*, select **Auto (WPA or WPA2), WPA2 Only, or WPA** Only. Use Auto if you have wireless clients using both WPA and WPA2.

4. Next to Cipher Type, select **TKIP, AES, or TKIP** and **AES**.



5. Next to *Group Key Update Interval*, enter the amount of time before the group key used for broadcast and multicast data is changed.

6. Next to *RADIUS Server IP Address* in the EAP (802.1X) section, enter the IP Address of your RADIUS server.

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

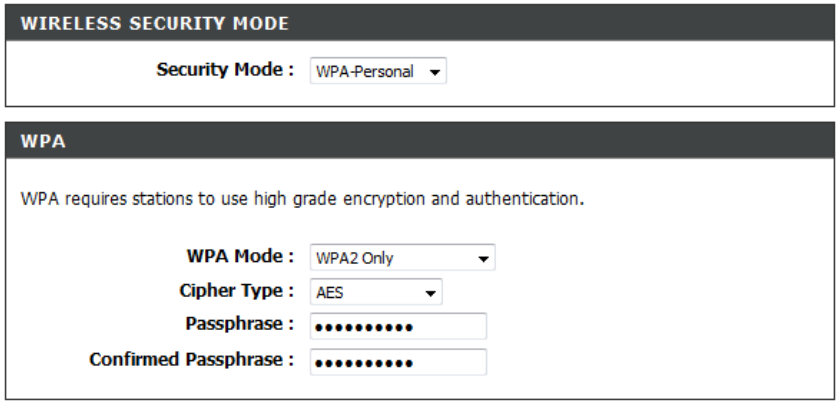
8. Next to *RADIUS Server Shared Secret*, enter the security key.

9. Click **Save Settings** at the top of the window to save your settings.

Configure WPA-Personal (Bridge Mode)

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

1. Log into the web-based configuration by opening a web browser and entering the IP address of the bridge (192.168.0.50). Click on **Setup** and then click **Wireless Settings** on the left side.



2. Next to *Security Mode in the Wireless Security Mode section*, select **WPA-Personal.**

3. Next to *WPA Mode in the WPA section*, select **Auto (WPA or WPA2), WPA2 Only, or WPA** Only. Use **Auto** if you have wireless clients using both WPA and WPA2.

4. Next to Cipher Type, select **TKIP, AES, or TKIP** and **AES**.

5. Next to *Group Key Update Interval*, enter the amount of time before the group key used for broadcast and multicast data is changed.

6. Next to the *Pre-Shared Key section*, enter a key in the Passphrase field. The key is entered as a passphrase in ASCII format at both ends of the wireless connection. The passphrase must be between 8-63 characters.

7. Click **Save Settings** at the top of the window to save your settings. If you are configuring the access point with a wireless adapter, you will lose connectivity until you enable WPA-PSK on your adapter and enter the same passphrase as you did on the access point.

Connect to a Wireless Network Using Windows® 7

It is recommended to enable wireless security (WPA/WPA2) on your wireless router or access point before configuring your wireless adapter. If you are joining an existing network, you will need to know the security key or passphrase being used.

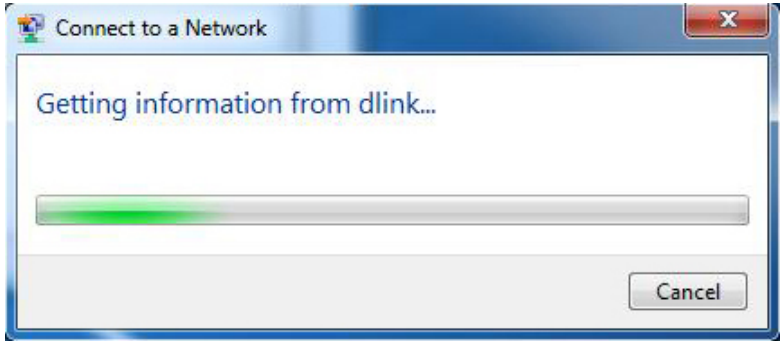
1. Click on the wireless icon in your system tray (lower-right corner).

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

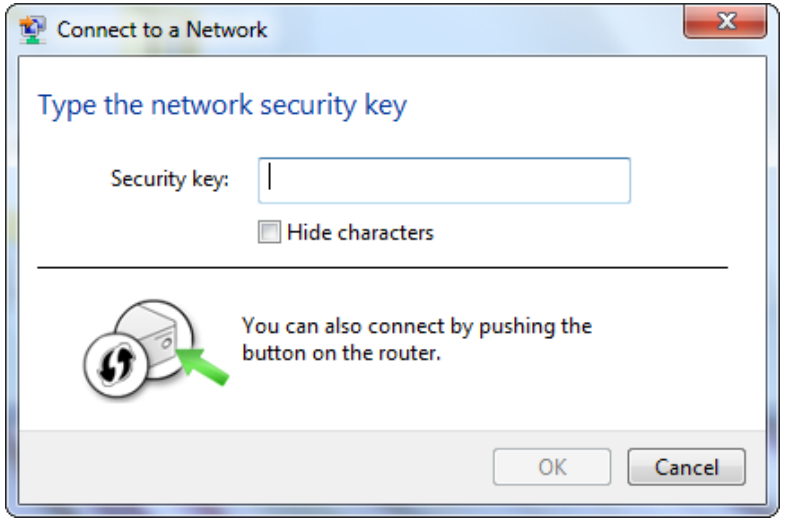
3. Highlight the wireless network (SSID) you would like to connect to and click the **Connect** button.

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

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



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

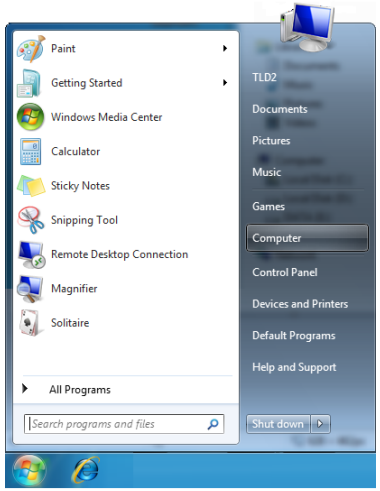


It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the security settings are correct. The key or passphrase must be exactly the same as on the wireless router.

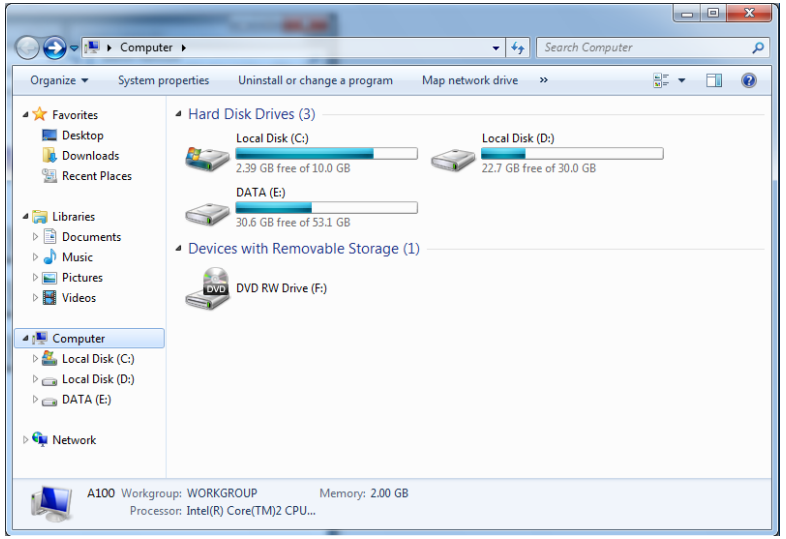
Configure WPS

The WPS feature of the DAP-1560 can be configured using Windows® 7. Carry out the following steps to use Windows® 7 to configure the WPS feature of the DAP-1560:

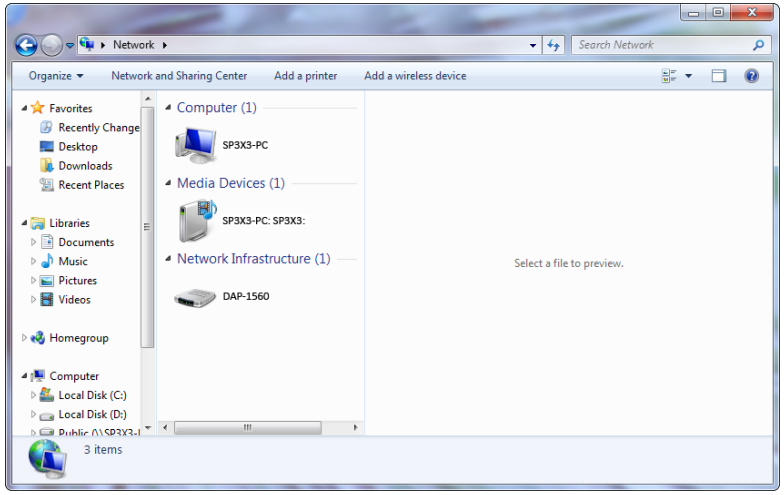
1. Click the **Start** button and select **Computer** from the Start menu.



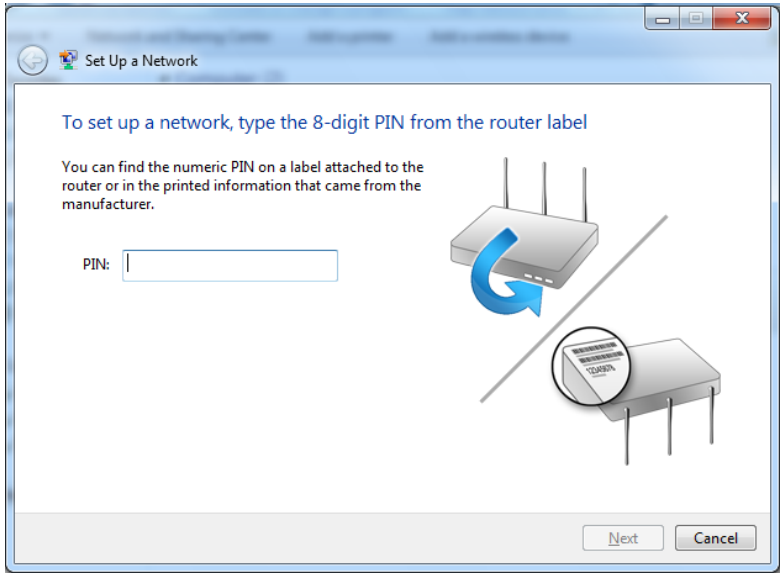
2. Click the **Network** option.



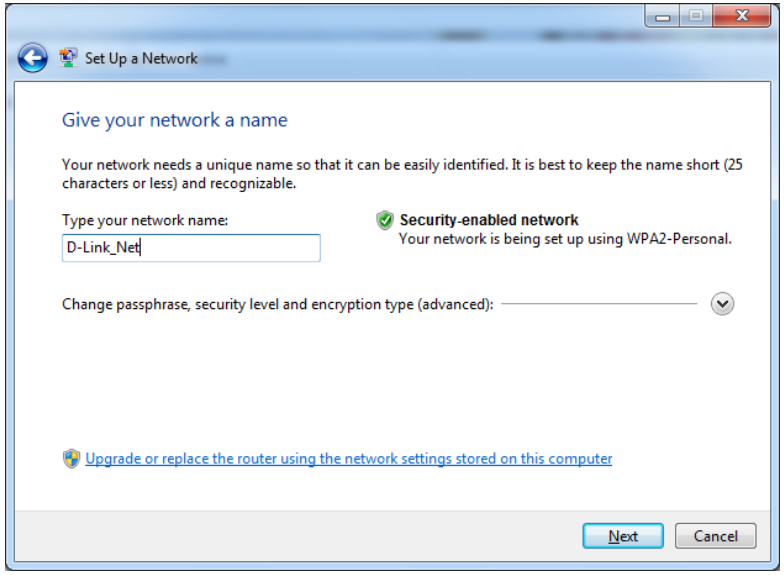
3. Double-click the DAP-1560.



4. Input the WPS PIN number (displayed in the WPS window on the Router's LCD screen or in the **Setup** > **Wireless Setup** menu in the Router's Web UI) and click **Next**.

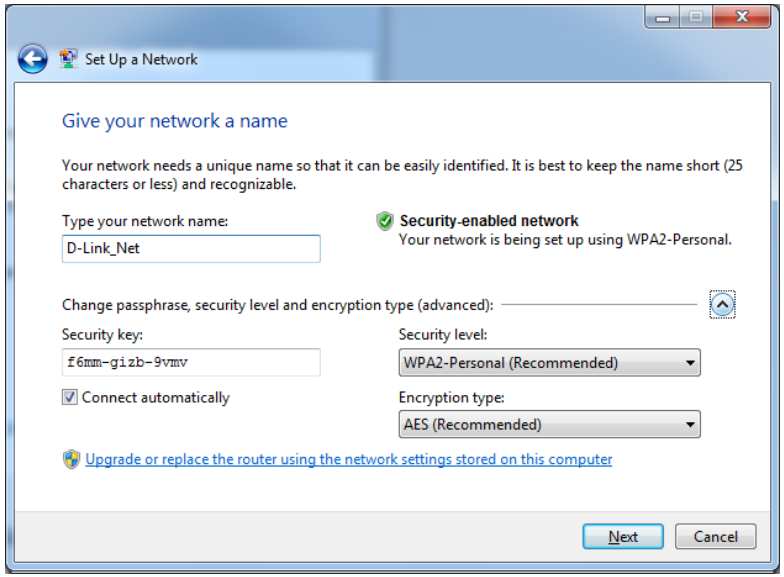


5. Type a name to identify the network.



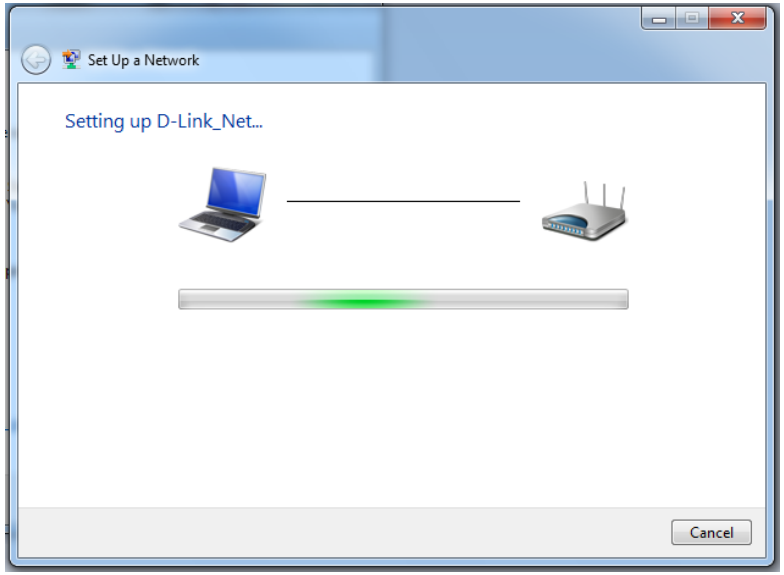
6. To configure advanced settings, click the icon.

Click **Next** to continue.



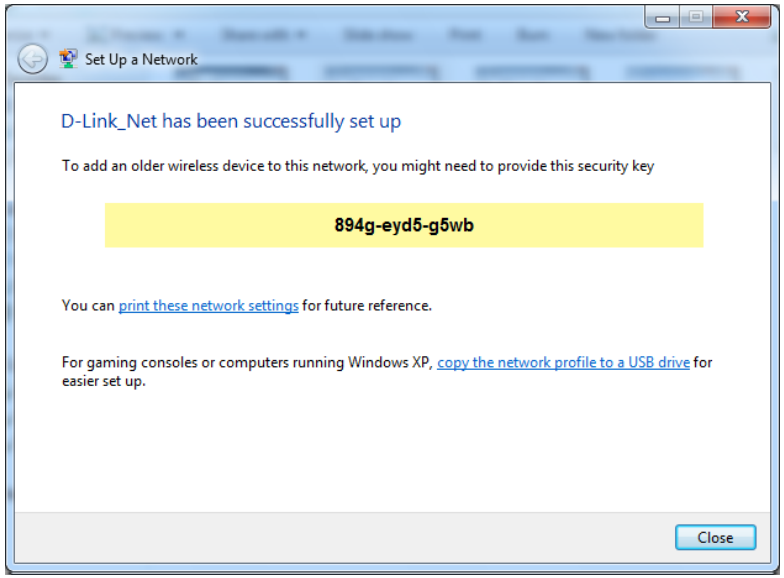
7. The following window appears while the Router is being configured.

   Wait for the configuration to complete.



8. The following window informs you that WPS on the DAP-1560 has been setup successfully.

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

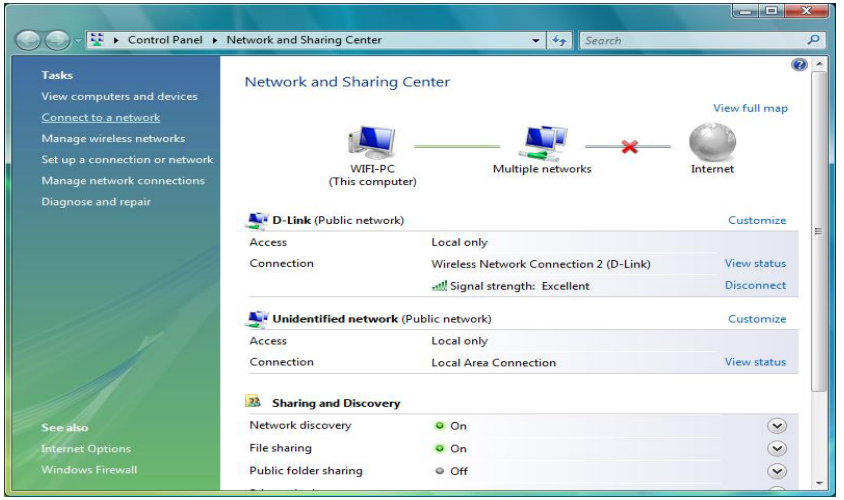


9. Click **Close** to complete WPS setup.

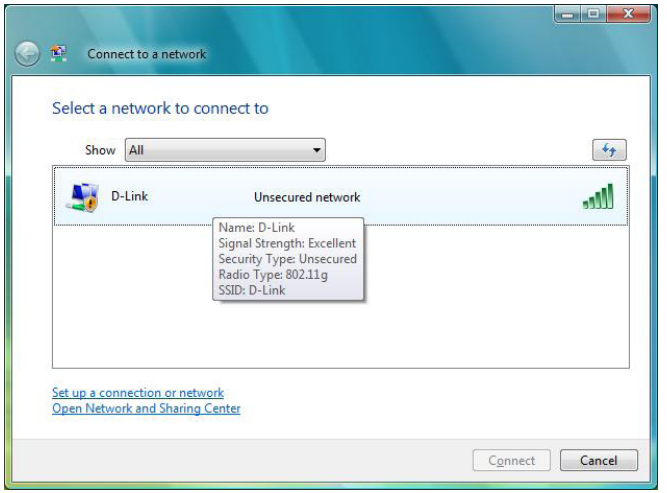
Using Windows Vista®

Windows Vista® users may use the convenient, built-in wireless utility. Follow these instructions:

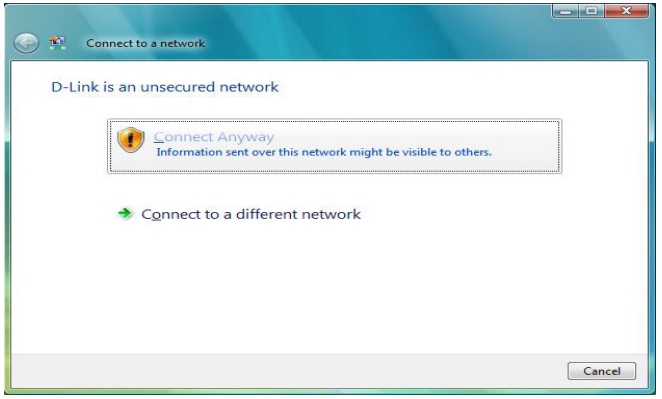
From the Start menu, go to Control Panel, and then click on **Network and Sharing Center**.



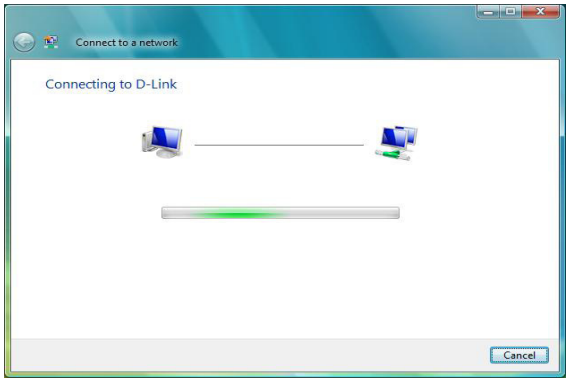
The utility will display any available wireless networks in your area. Click on a network (displayed using the SSID) under Select a network to connect to and then click the **Connect** button.



Click **Connect Anyway** to continue.

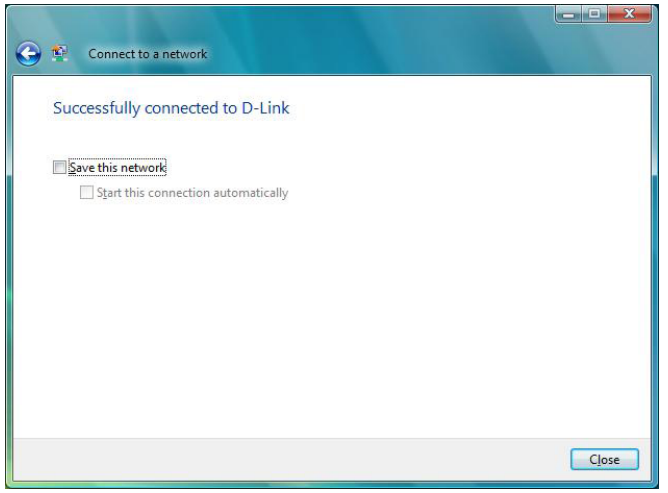


The utility will display the following window to indicate a connection is being made.



The final window indicates the establishment of a successful connection.

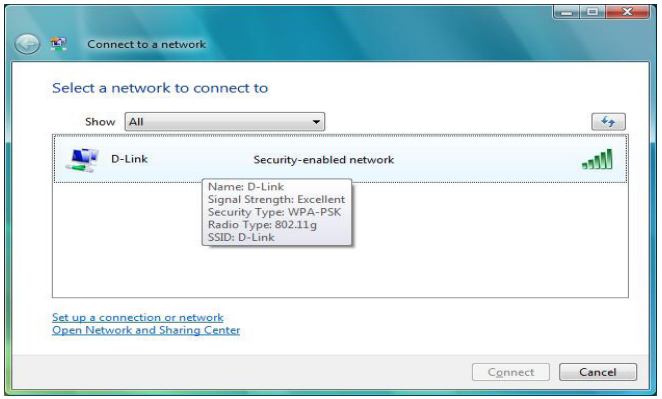
The next two pages display the windows used to connect to either a WEP or a WPA-PSK wireless network.



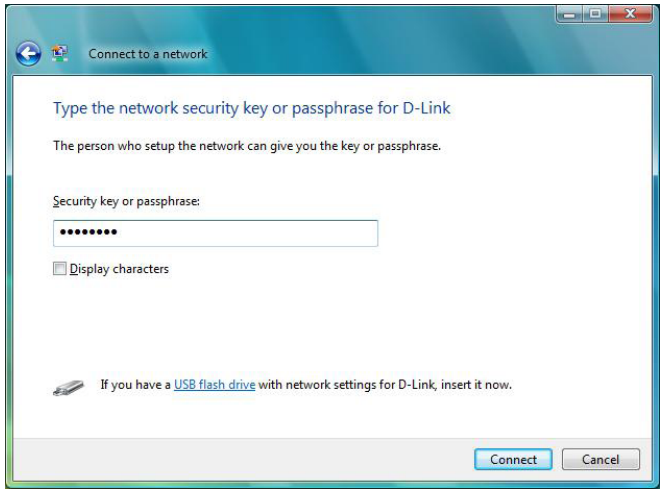
Configure WPA-PSK

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

Click on a network (displayed using the SSID) using WPA-PSK under Select a network to connect to and then click the **Connect** button.



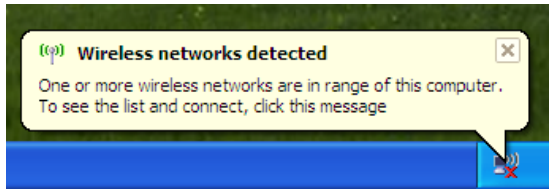
Enter the appropriate security key or passphrase in the field provided and then click the **Connect** button.



Using Windows® XP

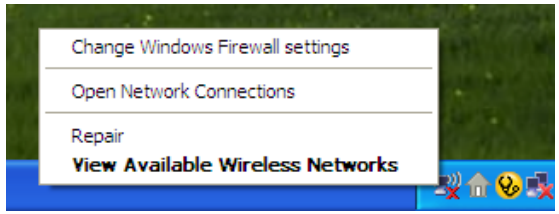
Windows® XP users may use the built-in wireless utility (Zero Configuration Utility). The following instructions are for Service Pack 2 users. If you are using another company's utility or Windows 2000, please refer to the user manual of your wireless adapter for help with connecting to a wireless network.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

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



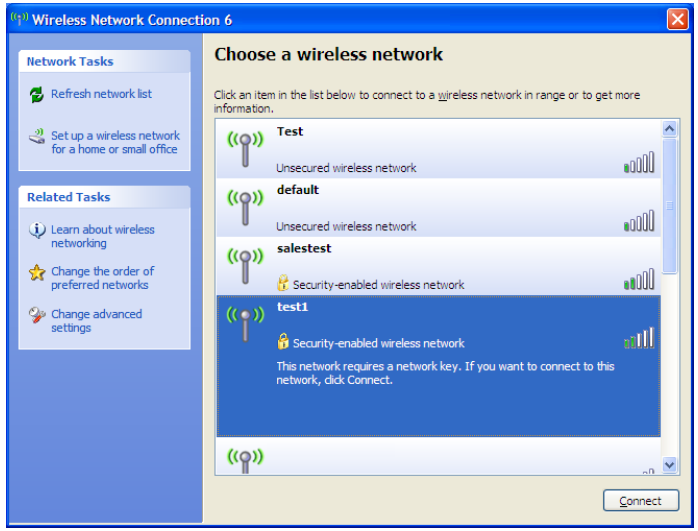
or

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



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

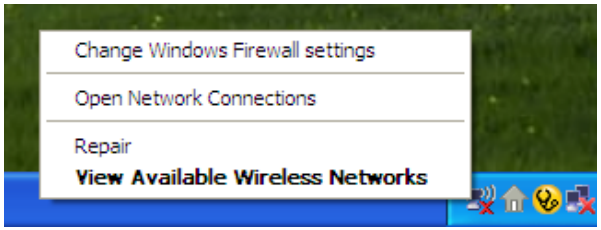
If you get a good signal, but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



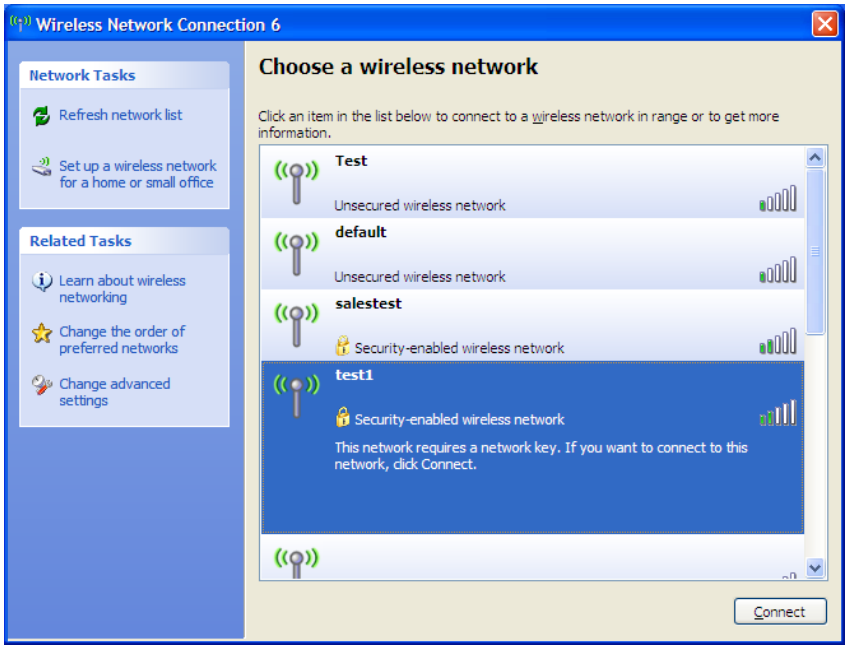
Configure WPA-PSK

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

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

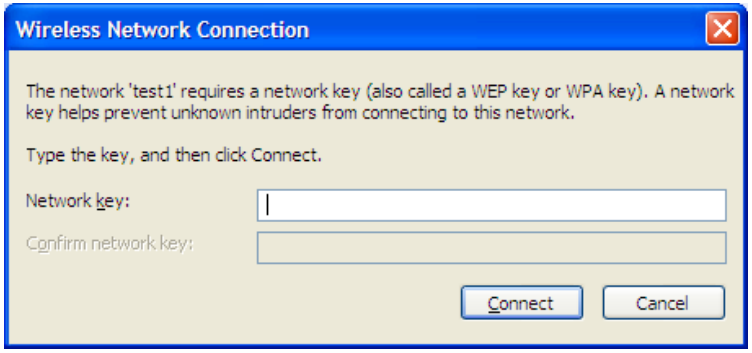


2. Highlight the wireless network (SSID) you would like to connect to and click **Connect.**



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

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



Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DAP-1560. Read the following descriptions if you are having problems. (The examples below are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.)

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

When entering the IP address of the D-Link access point (192.168.0.50 for example), you are not connecting to a website on the Internet or have to be connected to the Internet. The device has the utility built-in to a ROM chip in the device itself. Your computer must be on the same IP subnet to connect to the web-based utility.

- Make sure you have an updated Java-enabled web browser. We recommend the following:

  - Microsoft Internet Explorer® 6.0 and higher
  - Mozilla Firefox 3.0 and higher
  - Google Chrome 2.0 and higher
  - Apple Safari 3.0 and higher

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

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

- Configure your Internet settings:
    - Go to **Start > Settings > Control Panel**. Double-click the **Internet Options** Icon. From the Security tab, click the button to restore the settings to their defaults.
    - Click the Connection tab and set the dial-up option to Never Dial a Connection. Click the LAN Settings button. Make sure nothing is checked. Click OK.
    - Go to the Advanced tab and click the button to restore these settings to their defaults. Click OK three times.
    - Close your web browser (if open) and open it.
- Access the web management. Open your web browser and enter the IP address of your D-Link access point in the address bar. This should open the login page for your the web management.
- If you still cannot access the configuration, unplug the power to the access point 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 access point. Unfortunately this process will change all your settings back to the factory defaults.

To reset the access point, locate the reset button (hole) on the rear panel of the unit. With the access point powered on, use a paperclip to hold the button down for 10 seconds. Release the button and the access point will go through its reboot process. Wait about 30 seconds to access the access point. The default IP address is 192.168.0.50. When logging in, the username is admin and 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 securely access the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking delivers.

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

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

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

D-Link is the worldwide leader and award winning designer, developer, and manufacturer of networking products. D-Link delivers the performance you need at a price you can afford. D-Link has all the products you need to build your network.

How does wireless work?

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

Wireless Local Area Network (WLAN)

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

Wireless Personal Area Network (WPAN)

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

Compared to WLAN the speed and wireless operation range are both less than WLAN, but in return it doesn't use nearly as much power which makes it ideal for personal devices, such as mobile phones, PDAs, headphones, laptops, speakers, and other devices that operate on batteries.

Who uses wireless?

Wireless technology 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

- 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

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

Where is wireless used?

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

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

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

Tips

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

Centralize your access point or Access Point

Make sure you place the bridge/access point in a centralized location within your network for the best performance. Try to place the bridge/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, wireless speakers, and televisions as far away as possible from the bridge/access point. This would significantly reduce any interference that the appliances might cause since they operate on same frequency.

Security

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

Wireless Modes

There are basically two modes of networking:

- **Infrastructure –** All wireless clients will connect to an access point or wireless bridge.
- **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 Cardbus adapters.

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

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

Networking Basics

Check your IP address

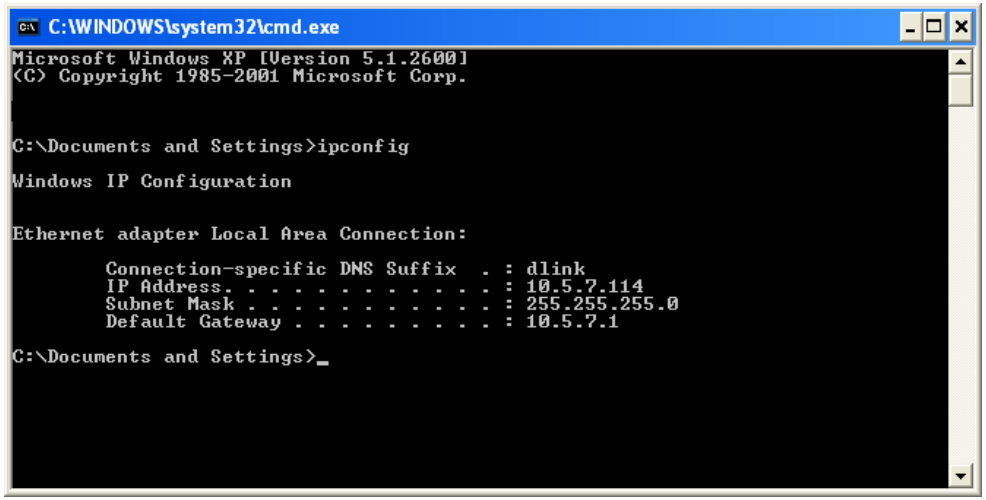
After you install your adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

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

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

Step 1

Windows® 7 - Click on **Start** > **Control Panel** > **Network and Internet** > **Network and Sharing Center** > **Change Adapter Setting.**

Windows Vista® - Click on **Start** > **Control Panel** > **Network and Internet** > **Network and Sharing Center** > **Manage Network Connections.**

Windows® XP - Click on **Start** > **Control Panel** > **Network Connections**.

Windows® 2000 - From the desktop, right-click **My Network Places** > **Properties**.

Step 2

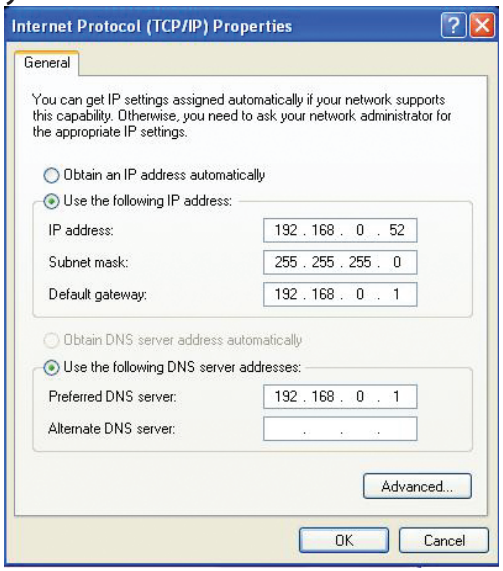
Right-click on the **Local Area Connection** which represents your network adapter and select **Properties**.

Step 3

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

Step 4

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



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

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

Step 5

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

Technical Specifications

Standards
- IEEE 802.11n
- IEEE 802.11a
- IEEE 802.11g
- IEEE 802.11b
- IEEE 802.3
- IEEE 802.3u
- IEEE 802.3ab
- IEEE 802.3x

Security
- WPA-Personal
- WPA2-Personal
- WPA-Enterprise
- WPA2-Enterprise
- WPS (WiFi Protected Setup) PIN/PBC

Antenna Type
- 4 External dipole antennas 2dBi @2.4GHz & 5GHz

Adapter Voltage
- 5V, 2.5A

Current Consumption
- 1800mA

Modulation
- 11b: DQPSK, DBPSK, DSSS, CCK
- 11a/g: BPSK, QPSK, 16QAM, 64QAM with OFDM
- 11n: BPSK, QPSK, 16QAM, 64QAM with OFDM, MCS

Frequency Range[1]
- 2.4GHz to 2.483GHz
- 5.15GHz~5.825GHz[2]

LEDs
- Power
- WPS
- Wireless LAN

Operating Temperature
- 32°F to 104°F (0°C to 40°C)

Operating Humidity
- 10% ~ 90% maximum (non-condensing)

Safety & Emissions
- FCC
- IC

[1] Range varies depending on country's regulation.

[2] The DAP-1560 does not include 5.25-5.35GHz & 5.47~5.725GHz.

Wireless Signal Rates[1]

802.11n

MCS	GI-800ns		GI=400ns	
	20MHz	40MHz	20MHz	40MHz
0	6.5	13.5	7.2	15.0
1	13.0	27.0	14.4	30.0
2	19.5	40.5	21.7	45.0
3	26.0	54.0	28.9	60.0
4	39.0	81.0	43.3	90.0
5	52.0	108.0	57.8	120.0
6	58.5	121.5	65.0	135.0
7	65.0	135.0	72.2	150.0
8	13.0	27.0	14.4	30.0
9	26.0	54.0	28.9	60.0
10	39.0	81.0	43.3	90.0
11	52.0	108.0	57.8	120.0
12	78.0	162.0	86.7	180.0
13	104.0	216.0	115.6	240.0
14	117.0	243.0	130.0	170.0
15	130.0	270.0	144.4	300.0
16	19.5	40.5	21.7	45.0
17	39.0	81.0	43.3	90.0
18	58.5	121.5	65.0	135.0
19	78.0	162.0	86.7	180.0
20	117.0	243.0	130.0	270.0
21	156.0	324.0	173.3	360.0
22	175.5	364.5	195.0	405.0
23	195.0	405.0	216.7	450.0
24	26.0	54.0	28.9	60.0
25	52.0	108.0	57.8	120.0
26	78.0	162.0	86.7	180.0
27	104.0	216.0	115.6	240.0
28	156.0	324.0	173.3	360.0
29	208.0	432.0	231.1	480.0
30	234.0	486.0	260.0	540.0
31	260.0	540.0	288.89	600.0

802.11a

- 6Mbps
- 9Mbps
- 12Mbps
- 18Mbps
- 24Mbps
- 36Mbps
- 48Mbps
- 54Mbps

802.11g

- 6Mbps
- 9Mbps
- 12Mbps
- 18Mbps
- 24Mbps
- 36Mbps
- 48Mbps
- 54Mbps

802.11b

- 1Mbps
- 2Mbps
- 5.5Mbps
- 11Mbps

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

Contacting Technical Support

U.S. and Canadian customers can contact D-Link technical support through our web site or by phone.

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

- Model number of the product (e.g. DAP-1560)
- Hardware Revision (located on the label on the bottom of the access point (e.g. rev A1))
- Serial Number (s/n number located on the label on the bottom of the access point).

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

For customers within the United States:

Phone Support:
(877) 453-5465

Internet Support:
http://support.dlink.com

For customers within Canada:

Phone Support:
(800) 361-5265

Internet Support:
http://support.dlink.ca

Warranty

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

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

Limited Warranty:

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

- Hardware: One (1) year

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

Limited Software Warranty:

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

Non-Applicability of Warranty:

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

Submitting A Claim:

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

USA Residents:

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

- The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-453-5465, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form and entering the assigned Case ID Number at https://rma.dlink.com/.

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

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

Canadian Residents:

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

- The customer must obtain a Case ID Number from D-Link Technical Support at 1-800-361-5265, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form and entering the assigned Case ID Number at https://rma.dlink.ca/.

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

- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will be rejected by D-Link. Products shall be fully insured by the customer and shipped to D-Link Networks, Inc., 2525 Meadowvale Boulevard Mississauga, Ontario, L5N 5S2 Canada. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via Purolator Canada or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in Canada, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer. D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

- RMA phone number: 1-800-361-5265 Hours of Operation: Monday-Friday, 9:00AM – 9:00PM EST

What Is Not Covered:

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

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

Disclaimer of Other Warranties:

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

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

Limitation of Liability:

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

Governing Law:

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

Trademarks:

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CE Mark Warning:

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

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

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

For operation within 5.15 ~ 5.25GHz frequency range, it is restricted to indoor environment.

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

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

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

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

Industry Canada Statement

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:
1) this device may not cause interference and
2) this device must accept any interference, including interference that may cause undesired operation of the device

This device has been designed to operate with an antenna having a maximum gain of 2dBi.
Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

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

Caution:
The device for the band 5150-5250 MHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems.

Because high power radars are allocated as primary users (meaning they have priority) in 5250-5350 MHz and 5650-5850 MHz, these radars could cause interference and/or damage to license exempt LAN devices.

IMPORTANT NOTE:
IC Radiation Exposure Statement:

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

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

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

Registration

Register your product online at www.onlineregister.com/dlink

Product registration is entirely voluntary and failure to complete or return this form will not diminish your warranty rights.

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