D-Link®

Version 2.1 | 09/27/2012

User Manual

Xtreme N® Duo Wireless Bridge/Access Point

DAP-1522

Preface

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

Manual Revisions

Revision	Date	Description
1.0	October 8, 2009	• Revision A1 with firmware version 1.0
1.1	March 24, 2010	• Updated with minor changes
2.0	May 11, 2011	• Updated to hardware revision B1
2.1	September 27, 2012	• Adding FCC doc and update minor changes

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Table of Contents

Preface 2
Manual Revisions 2
Trademarks 2

Product Overview 5
Package Contents 5
System Requirements 5
Introduction 6
Features 7
Hardware Overview 8
Connections 8
LEDs 9

Installation 10
Wireless Installation Considerations 11

AP/Bridge Mode 12
One Touch AP Configuration 14

Configuration for AP Mode 15
Web-based Configuration Utility 15
Setup Wizard 16
Wireless Setup Wizard 17
Manual Configuration 20
Wireless Settings 20
LAN Settings 22
Dynamic IP 22
Static IP 23
LAN Setup 24
Static IPv6 24
LAN Setup 25
IPv6 - Auto-Configuration 25
Advanced 26
MAC Address Filter 26
Advanced Wireless 27
Guest Zone 28
DHCP Server 29
DHCP Reservation 30
WLAN Partition 31
QoS 32
Traffic Manager 35
Add Traffic Manager Rule 36
Wi-Fi Protected Setup 37
User Limit 38
Maintenance 39
Admin 39
Time 40
System 41
Language Pack 42
Firmware 42
System Check 44
Schedule 45
Status 46
Device Info 46
Wireless 47
Logs 48

Statistics 49
IPv6 50
Help 51

Configuration for Bridge Mode 52
Web-based Configuration Utility 52
Setup Wizard 53
Wireless 60
LAN Settings 61
Static 61
Dynamic 62
Advanced 63
Advanced Network Settings 63
Maintenance 64
Admin 64
Time 65
System 66
Language Pack 67
Firmware 67
Schedule 69
Status 70
Device Info 70
Logs 71
Statistics 72
Help 73

Wireless Security 74
What is WPA? 74
Configure WPA/WPA2 75

Connect to a Wireless Network 76
Using Windows® 7 76
Using Windows Vista® 79
Configure Security 81
Using Windows® XP 82
Configure Security 83

Troubleshooting 85

Wireless Basics 87
What is Wireless? 88
Tips 90
Wireless Modes 91

Networking Basics 92
Check your IP address 92
Statically Assign an IP address 93

Technical Specifications 94

Package Contents

D-Link DAP-1522 Xtreme N® Duo Wireless Bridge/AP

Ethernet Cable

Power Adapter

CD-ROM with User Manual

Note: Using a power supply with a different voltage than the one included with the DAP-1522 will cause damage and void the warranty for this product.

System Requirements

- Computers with Windows®, Macintosh®, or Linux-based operating systems with an installed Ethernet adapter
- Internet Explorer Version 6.0 or higher, Firefox 3.0 or higher, Safari 3.0 or higher, or Chrome 2.0 or higher (for configuration)

Introduction

TOTAL PERFORMANCE

Combines award winning access point features and 802.11n wireless technology to provide the best wireless performance.

TOTAL SECURITY

The most complete set of security features including WPA2 and MAC Address Control to protect your network against outside intruders.

TOTAL COVERAGE

Provides greater wireless signal rates even at farther distances for best-in-class Whole Home Coverage.

ULTIMATE PERFORMANCE

The D-Link Xtreme N® Duo Wireless Bridge (DAP-1522) is a 802.11n compliant device that delivers real world performance of up to 13x faster than an 802.11g wireless connection (also faster than a 100Mbps wired Ethernet connection). Create a secure wireless network to share photos, files, music, video, printers, and network storage throughout your home. Connect the Xtreme N® Duo Wireless Bridge to router and share your high-speed Internet access with everyone on the network. In addition, this Wireless Bridge includes a Quality of Service (QoS) engine that keeps digital phone calls (VoIP) and online gaming smooth and responsive, providing a better Internet experience.

EXTENDED WHOLE HOME COVERAGE

Powered by Xtreme N® Duo technology, this high performance Wireless Bridge provides superior Whole Home Coverage while reducing dead spots. The Xtreme N® Duo Wireless Bridge is designed for use in bigger homes and for users who demand higher performance networking. Add an Xtreme N® Duo notebook or desktop adapter and stay connected to your network from virtually anywhere in your home.

TOTAL NETWORK SECURITY

The Xtreme N® Duo Wireless Bridge supports all of the latest wireless security features to prevent unauthorized access, be it from over the wireless network or from the Internet. Support for WPA and WEP standards ensure that you'll be able to use the best possible encryption method, regardless of your client devices.

* 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

- **Faster Wireless Networking -** The DAP-1522 provides up to 300Mbps* wireless connection with other 802.11n wireless clients. This capability allows users to participate in real-time activities online, such as video streaming, online gaming, and real-time audio. The performance of this 802.11n wireless access point gives you the freedom of wireless networking at speeds 13x faster than 802.11g.

- **Compatible with 802.11a and 802.11g Devices -** The DAP-1522 is still fully compatible with the IEEE 802.11a/g standard, so it can connect with existing 802.11a/g PCI, USB, and Cardbus adapters.

- **Advanced Firewall Features -** The Web-based user interface displays advanced network management features including Content Filtering, which allows easily applied content filtering based on MAC Address.

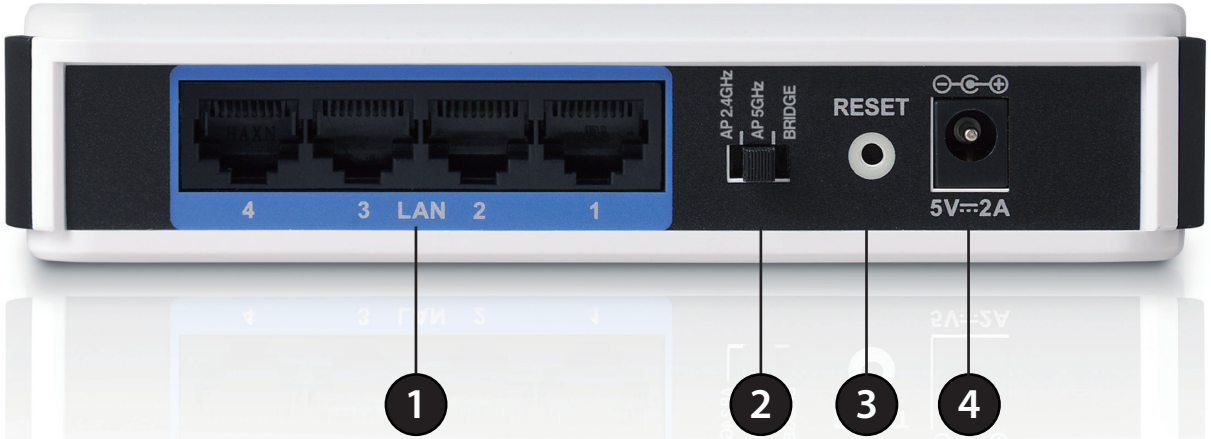
- **WPS PBC-** (Wi-Fi Protected Setup Push Button Configuration) Push Button Configuration is a button that can be pressed to add the device to an existing network or to create a new network. A virtual button can be used on the utility while a physical button is placed on the side of the device.

  This easy setup method allows you to form a secured wireless link between the DAP-1522 and another WPS enabled device. A PC is no longer needed to log into the Web-based interface.

- **WPS PIN -** (Wi-Fi Protected Setup Personal Identification Number) A PIN is a unique number that can be used to add the access point to an existing network or to create a new network. The default PIN may be printed on the bottom of the access point. For extra security, a new PIN can be generated. You can restore the default PIN at any time. Only the Administrator ("admin" account) can change or reset the PIN.

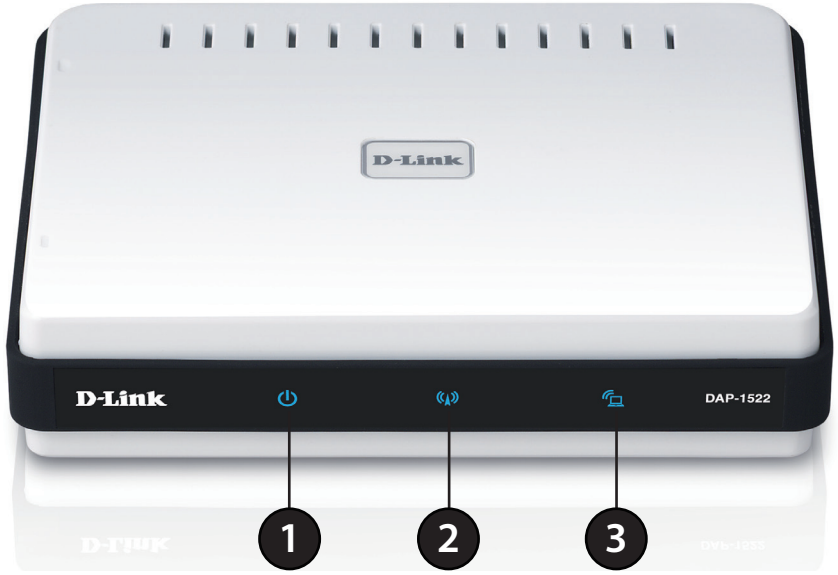
- **User-friendly Setup Wizard -** Through its easy-to-use Web-based user interface, the DAP-1522 lets you control what information is accessible to those on the wireless network, whether from the Internet or from your company's server. Configure your access point to your specific settings within minutes.

Hardware Overview
Connections



1	LAN Ports (1-4)	Connect 10/100/1000 Ethernet devices such as computers, switches, and hubs.
2	Mode Switch	Three-way switch used to select AP 2.4GHz, AP 5GHz or Bridge mode.
3	Reset Button	Pressing the Reset button restores the access point/bridge to its original factory default settings.
4	Power Receptor	Receptor for the supplied power adapter.

LEDs



1	Power LED	A solid blue light indicates a proper connection to the power supply.
2	AP LED	A solid light indicates that the DAP-1522 is in AP mode.
3	Bridge LED	A solid light indicates that the DAP-1522 is in bridge mode.
4	WPS LED	A solid light indicates a successful WPS connection. A blinking light indicates the device is trying to establish a connection.

Installation

This section will walk you through the installation process. Placement of the DAP-1522 is very important. Do not place the DAP-1522 in an enclosed area such as a closet, cabinet, or in the attic or garage.

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.

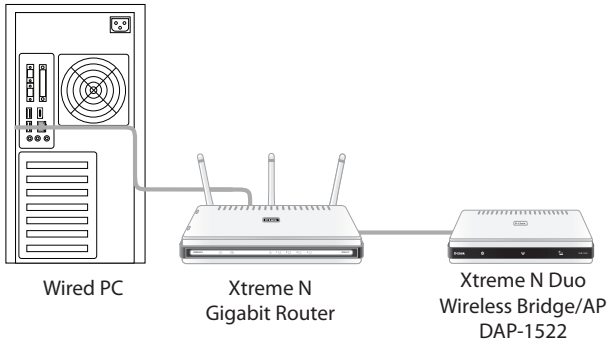
5. If you are using 2.4GHz cordless phones or X-10 (wireless products such as ceiling fans, lights, and home security systems), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4GHz phone base is as far away from your wireless devices as possible. The base transmits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

AP/Bridge Mode

Depending on how you want to use your DAP-1522 will determine which mode you use. This section will help you figure out which setting works with your setup.

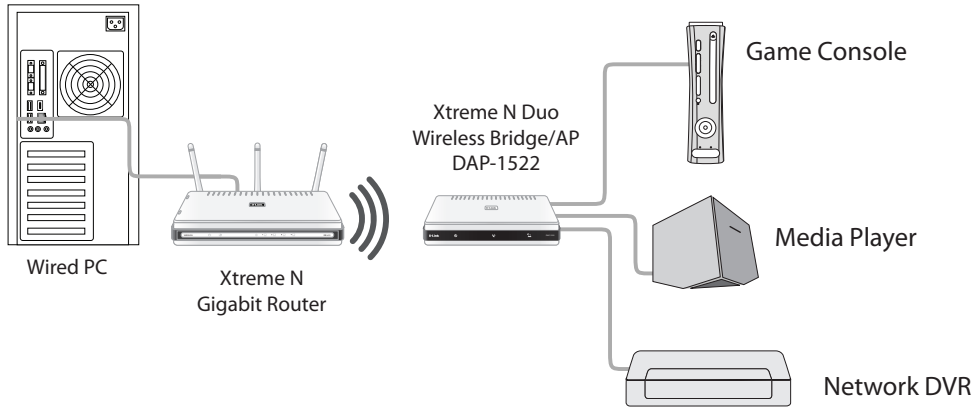
AP Mode

If you already have a wired or wireless router, and want to add an access point to connect your wireless clients to your network, you will need to move the switch on the back panel of the DAP-1522 to "AP2.4GHz" (for 2.4GHz) or "AP 5GHz" (for 5GHz).



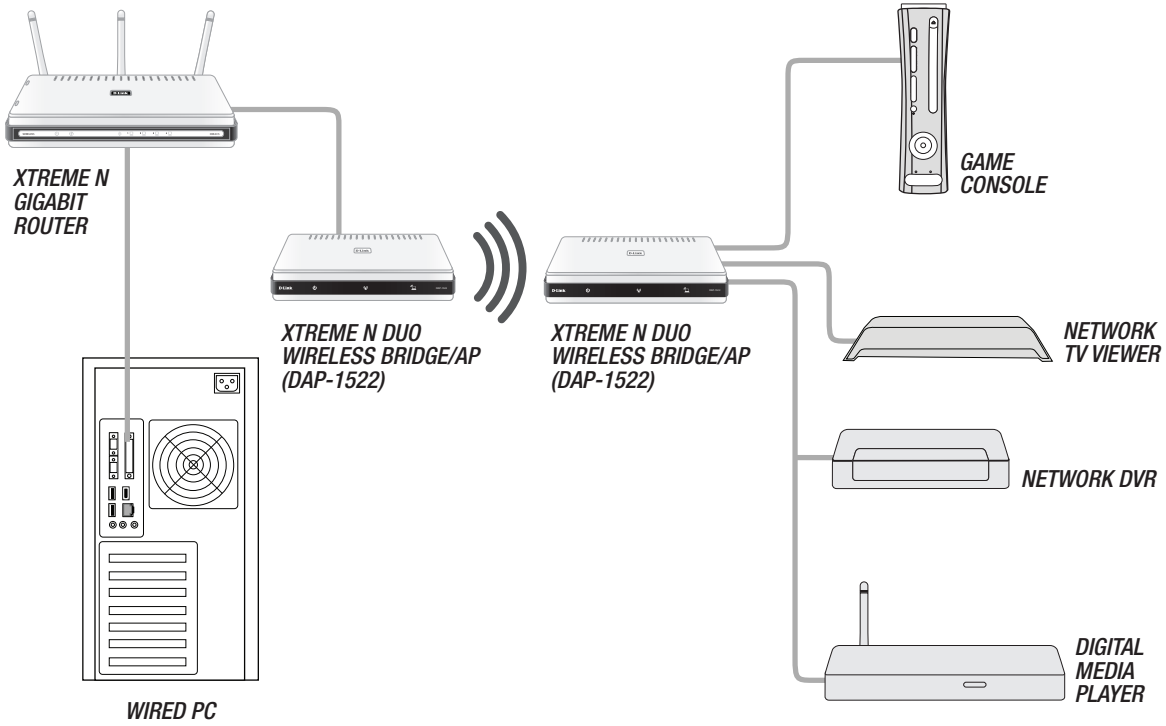
Bridge Mode

If you want to wirelessly connect multiple Ethernet enabled devices such as game consoles, media players, or network attached storage devices you will need to move the switch on the back panel of the DAP-1522 to "Bridge".



Create a Full MediaBand (5GHz wireless) Network

If you have two DAP-1522 devices and want to create a wireless network with full MediaBand technology you will need to connect one Wireless Bridge to your router and move the switch on the back panel to "AP 5GHz". The second Wireless Bridge will need to be placed next to your Ethernet-enabled devices and you will need to move the switch on the back panel to "Bridge".



One Touch AP Configuration

This feature makes the Wireless Access Point to have the ability to exchange/learn the wireless profile from another Wireless Router/Access Point.

1. Press the **WPS button** on your Router or Access Point. WPS LED will flash on and off.

2. Press **WPS Push Button** on the DAP-1522 and hold it for 5 seconds.

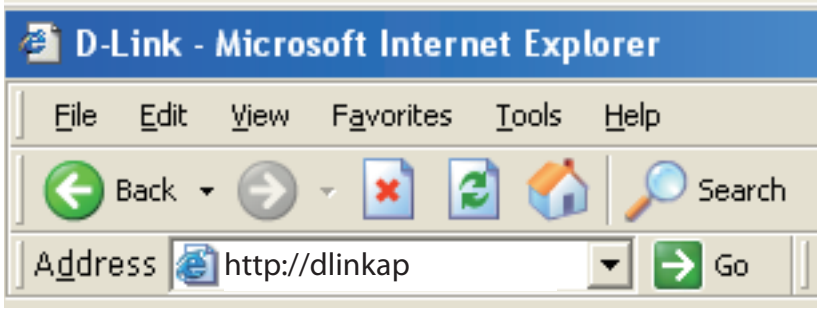
3. When One Click setup is complete, your DAP-1522 will have the same wireless settings as your existing Router or AP.

Configuration for AP Mode

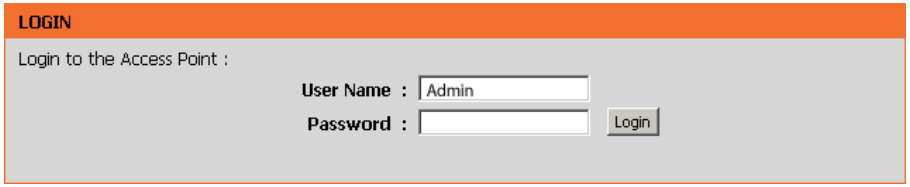
This section will show you how to configure your new D-Link wireless access point using the web-based configuration utility.

Web-based Configuration Utility

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.



Enter **Admin** for the user name and then enter your password. Leave the password blank by default.

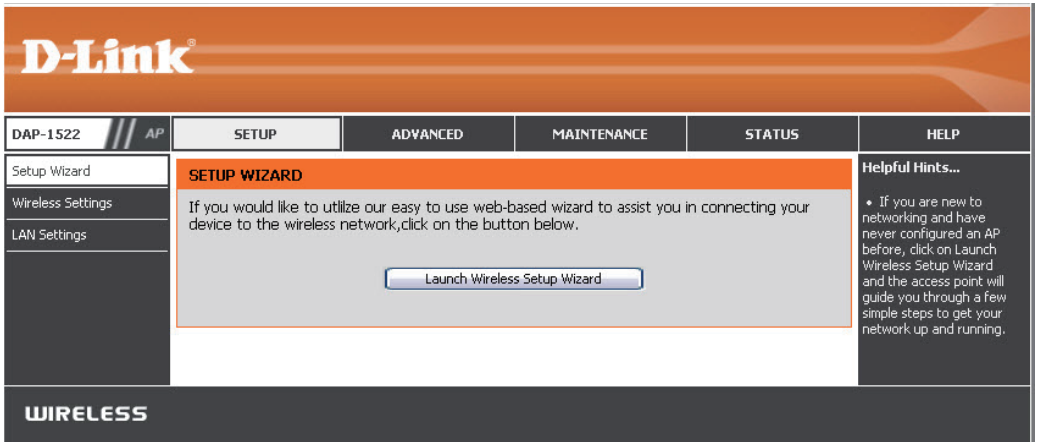


If you get a Page Cannot be Displayed error, please refer to the Troubleshooting section for assistance.

Setup Wizard

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

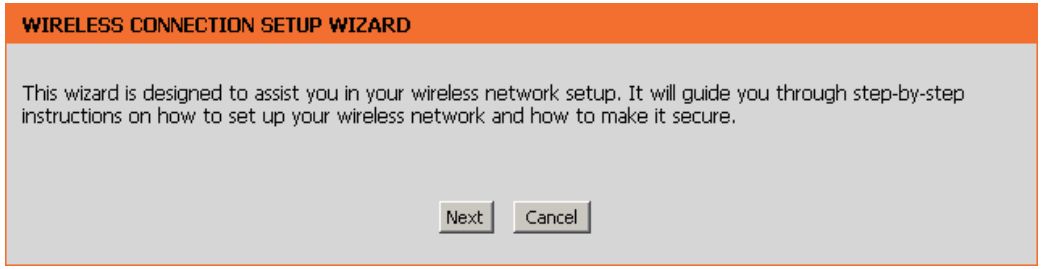
If you want to enter your settings without running the wizard, click **Wireless Settings** (on the left side) and skip to page 21.



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.

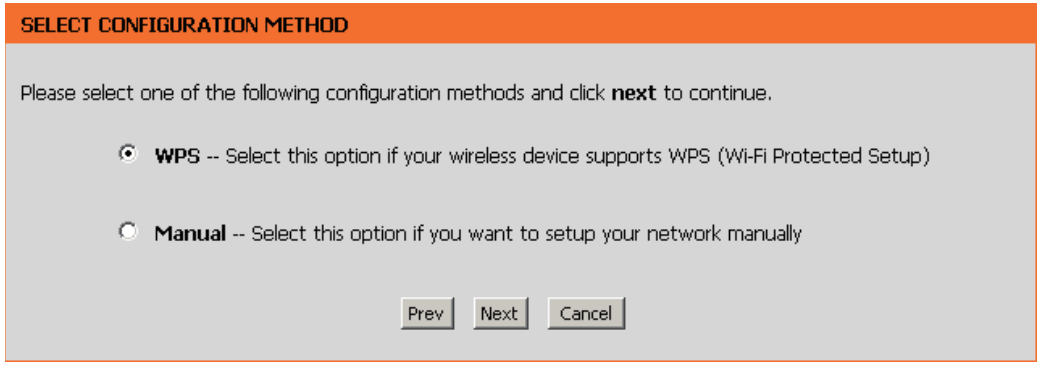
Click **Next** to continue.



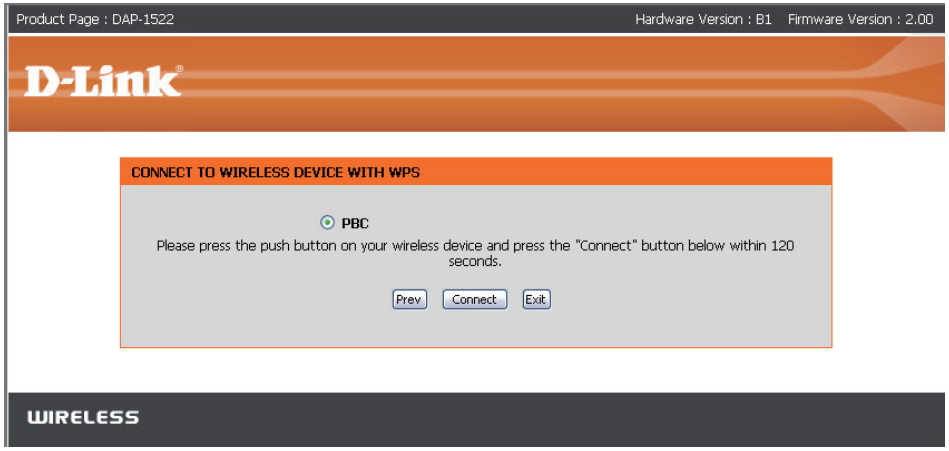
Select **WPS** as the configuration method only if your wireless device supports Wi-Fi Protected Setup.

Skip to page 19 for Manual configuration.

Click **Next** to continue.

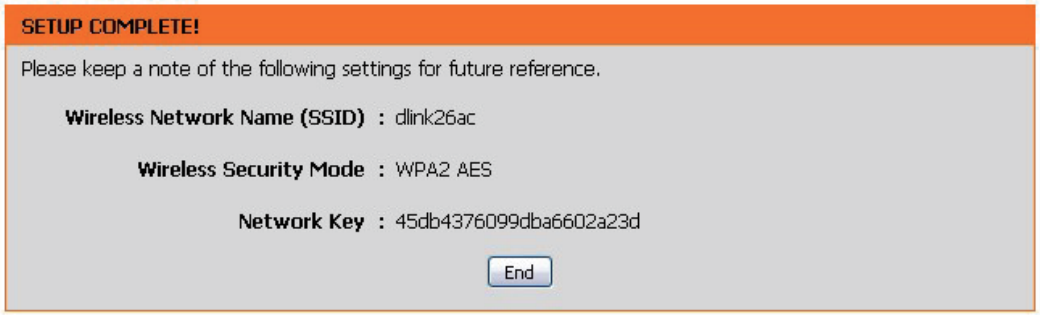


Click **Connect** to continue.



Click **Next** to continue.

Click **End** to complete the setup.



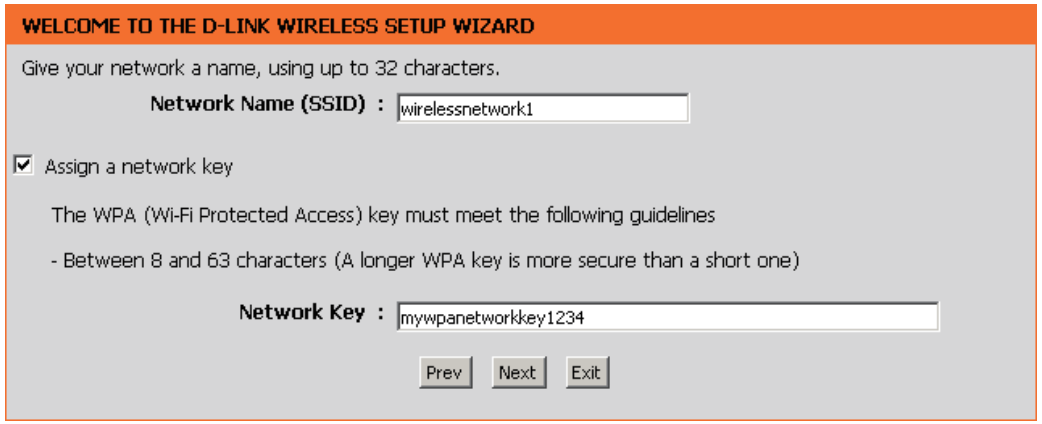
Select **Manual** as the configuration method to set up your network manually.

Click **Next** to continue.

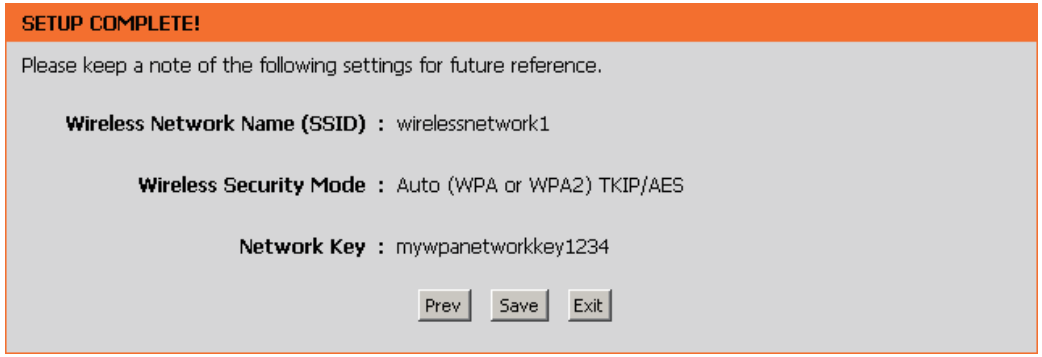
Enter a network name (SSID) and uncheck **Assign a network key** to automatically create a network key.

To Manually assign a network key, check **Assign a network key** and enter a key in the box.

Click **Next** to continue.



Click **Save** to save your network settings.



Manual Configuration
Wireless Settings

Wireless Band: Displays either 2.4GHz or 5.0GHz.

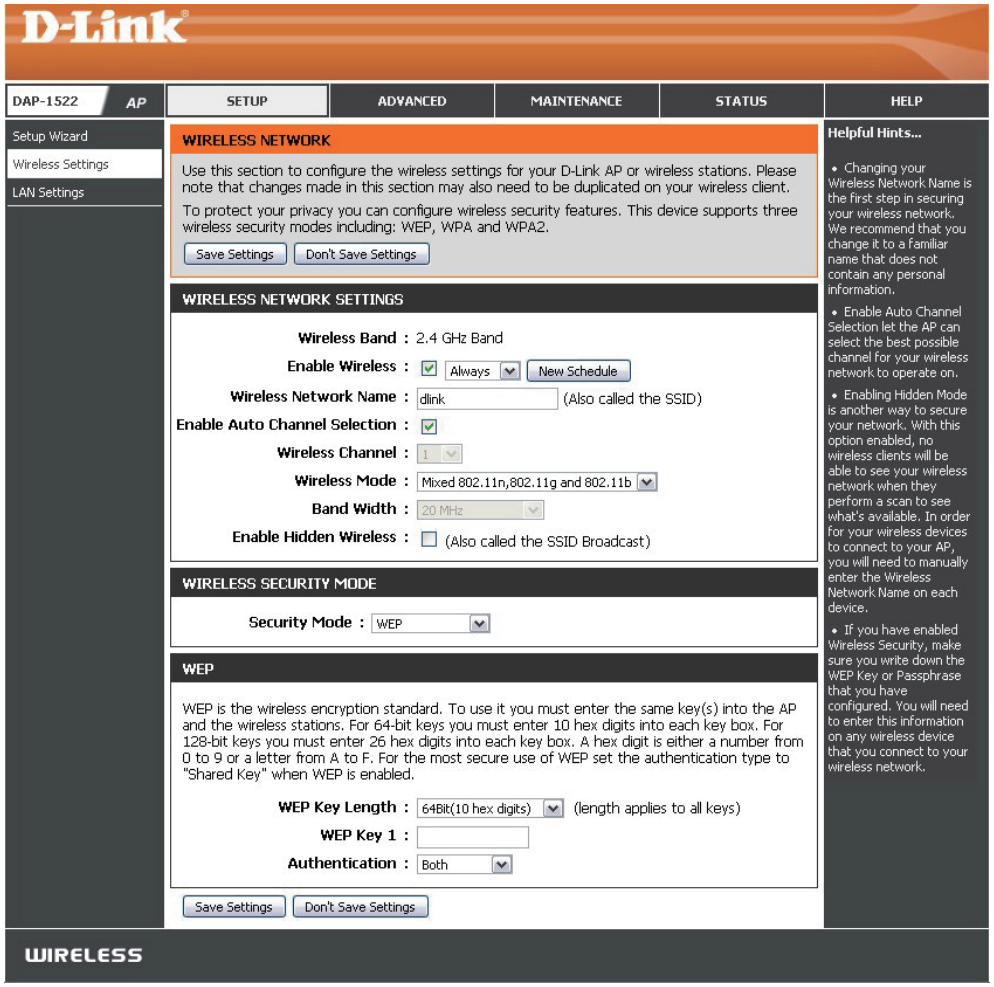
Enable Wireless: Check the box to enable the wireless function. If you do not want to use wireless, uncheck the box to disable all the wireless functions.

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 pre-configured network name.

Wireless Mode: Choose the wireless mode you would like to use.

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

802.11 Mode: If you choose 2.4GHz band, then select one of the following:
Mixed 802.11n, 802.11g and 802.11b - Select if you are using a mix of 802.11n, 11g, and 11b wireless clients.
802.11n Only - Select if you are only using 802.11n wireless clients.
Mixed 802.11g and 802.11b - Select if you are using a mix of 802.11g and 11b wireless clients.



If you selected 5GHz band, then select either **802.11a Only, 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-1522 to choose the channel with the least amount of interference.

Wireless Channel: Indicates the channel setting for the DAP-1522. The Channel can be changed to fit the channel setting for an existing wireless network or to customize the wireless network. If you enable Auto Channel Scan, this option will be grayed out.

Band Width: Select the Band 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: Enabling Hidden Mode is another way to secure your network. With this option enabled, no wireless clients will be able to see your wireless network . In order for your wireless devices to connect to your Access Point, you will need to manually enter the Wireless Network Name on each device.

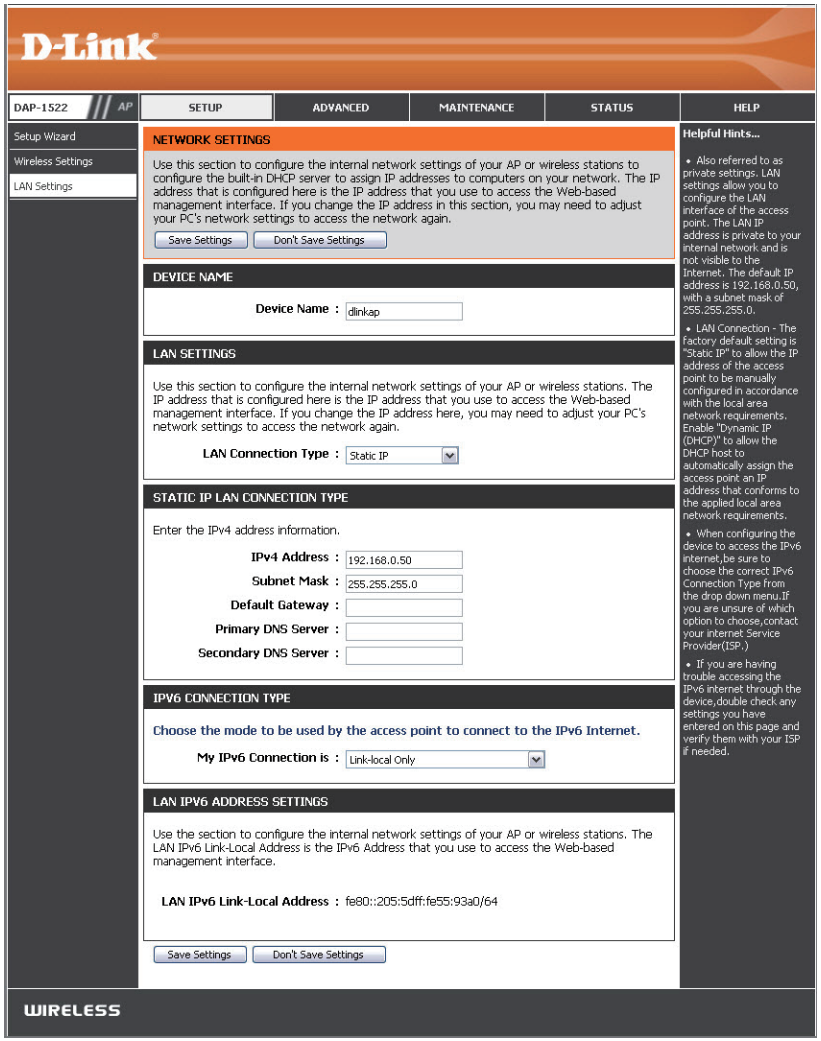
Security Mode: Refer to page 74 for more information regarding the wireless security.

LAN Settings
Dynamic IP

This section will allow you to change the local network settings of the access point and to configure the DHCP settings.

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.

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



Static IP

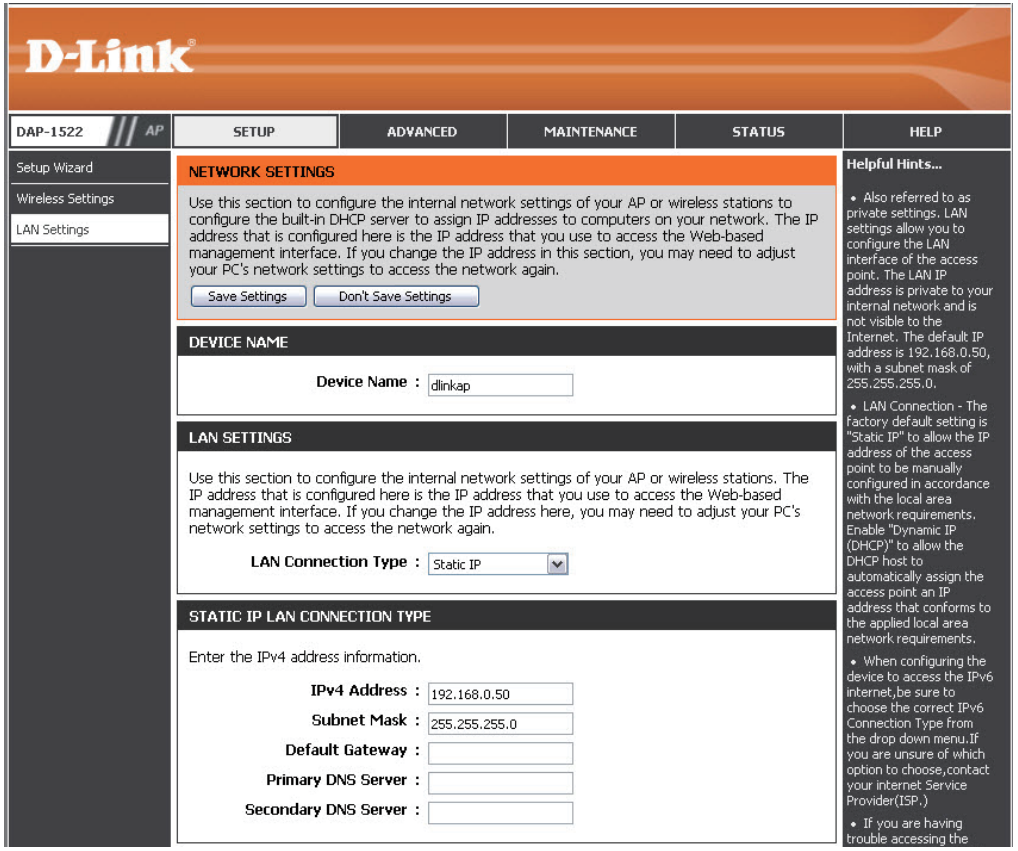
Device Name: Enter the Device Name of the AP. It is recommended to change the Device Name if there is more than one D-Link device within the subnet.

IPv4 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 **http://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 assigned by your ISP.

Default Gateway: Enter the Gateway assigned by your ISP.



LAN Setup
Static IPv6

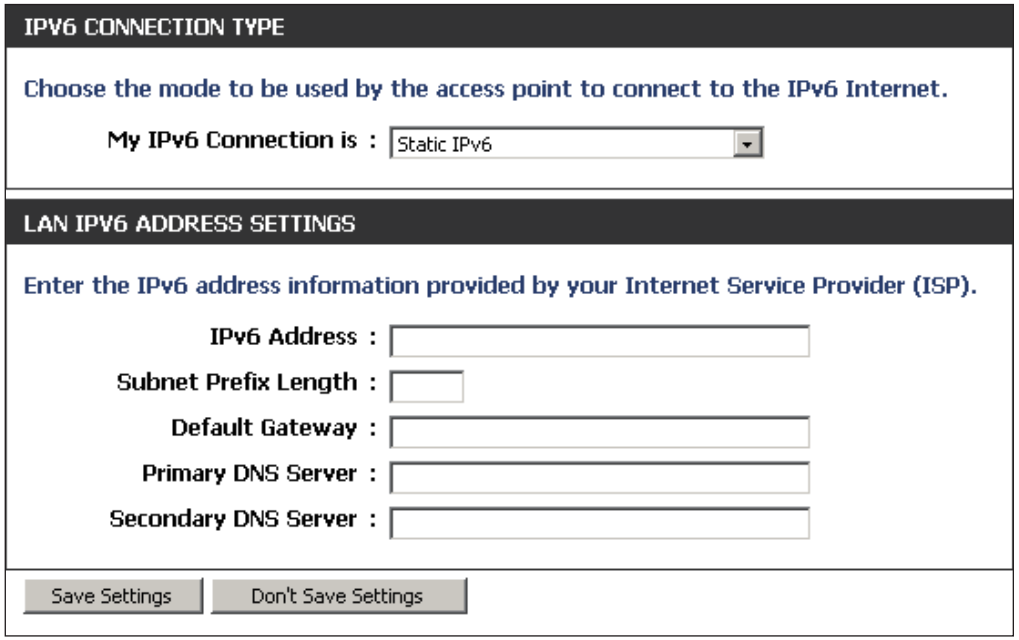
IPv6 Address: Enter the static IPv6 address provided by your Internet Service Provider.

Subnet Prefix Length: Enter the IPv6 subnet prefix length.

Default Gateway: Enter the default gateway IP address.

Primary DNS Server: Enter the primary DNS server IP address.

Secondary DNS Server: Enter the secondary DNS server IP address.



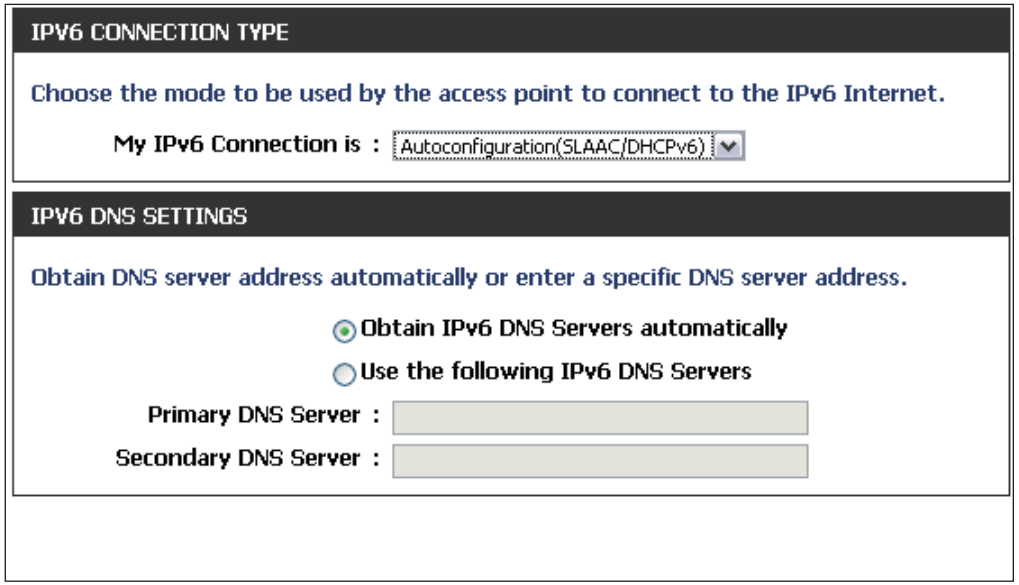
LAN Setup
IPv6 - Auto-Configuration

Obtain IPv6 DNS Servers automatically: Select to obtain IPv6 DNS Servers automatically.

Use the following IPv6 DNS Servers: Enter a specific DNS server address.

Primary DNS Server: Enter the primary DNS server IP address.

Secondary DNS Server: Enter the secondary DNS server IP address.

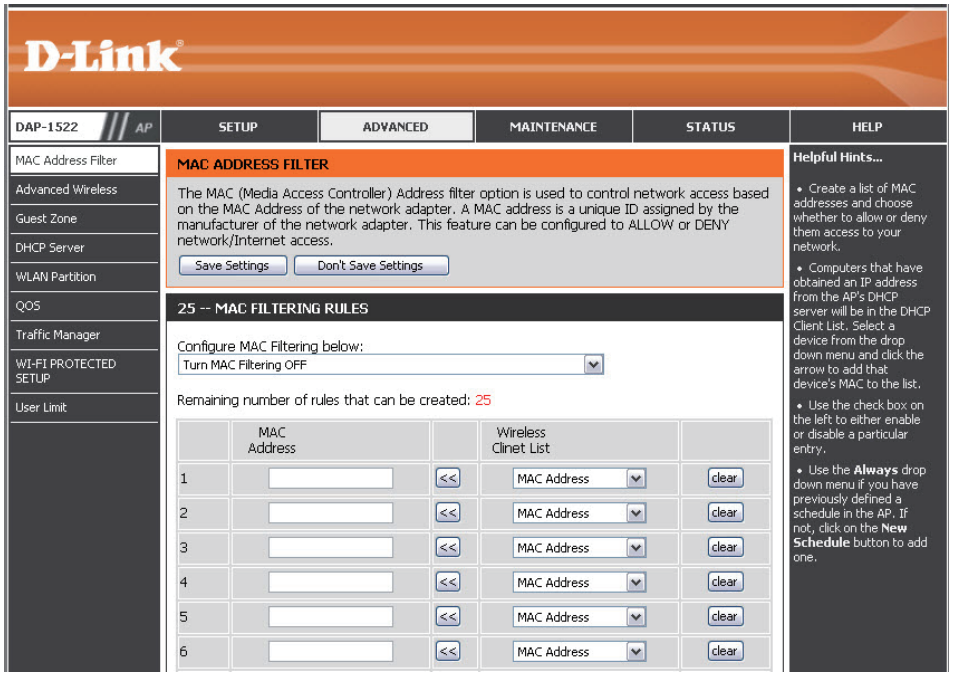


Advanced
MAC Address Filter

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.

Configure MAC Filtering: When **Turn MAC Filtering OFF** is selected, MAC addresses are not used to control network access. When **Turn MAC Filtering ON and ALLOW computers listed to access the network** is selected, only computers with MAC addresses listed in the MAC Address List are granted network access. When **Turn MAC Filtering ON and DENY computers listed to access the network** is selected, any computer with a MAC address listed in the MAC Address List is refused access to the network.

Add MAC Filtering Rule: This parameter allows you to manually add a MAC filtering rule. Click the **Add** button to add the new MAC filtering rule to the MAC Filtering Rules list at the bottom of this screen.



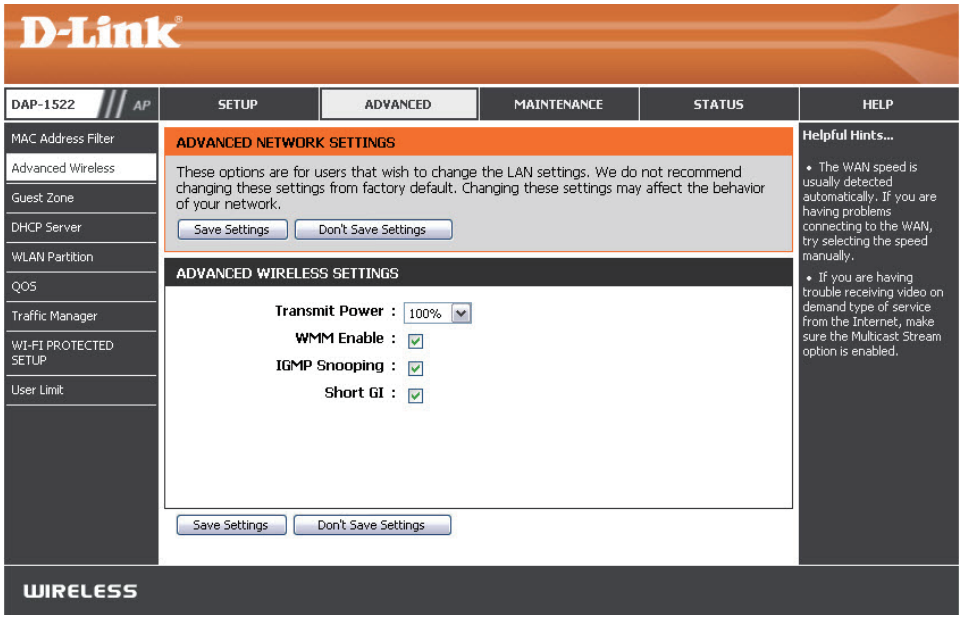
Advanced Wireless

Transmit Power: Sets the transmit power of the antennas.

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

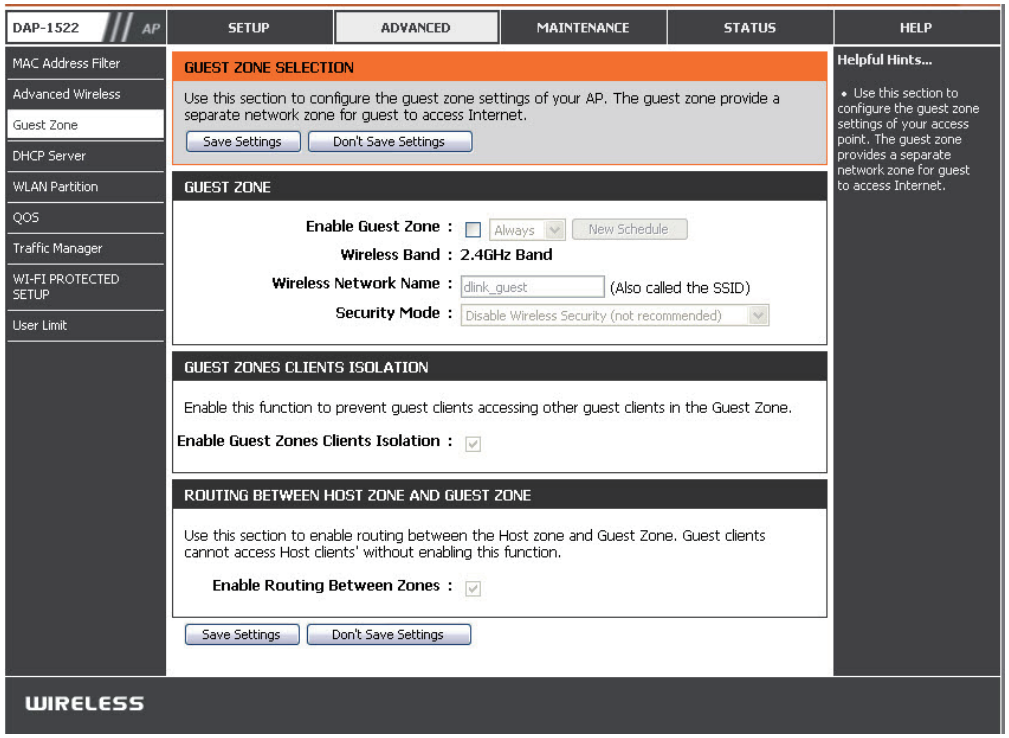
Short GI: Check this box to reduce the guard interval time therefore increasing the data capacity. However, it is less reliable and may create higher data loss.

IGMP Snooping: This enables IGMP snooping for the wireless connection. We recommend enabling this if you often use multicast services such as video conferencing and streaming audio/video.



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 **Maintenance** > **Schedules** section.

Wireless Band: Display the wireless band status.

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

Security Mode: Refer to Section 4 - Wireless Security for more information regarding wireless security.

Enable Guest Zones Clients Isolation: Tick the check box to prevent the guest clients from accessing other guests in the guest zone.

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

DHCP Server

DHCP stands for Dynamic Host Control Protocol. The DAP-1522 has a built-in DHCP server. The DHCP Server will automatically assign an IP address to the computers on the LAN/private network. Be sure to set your computers to be DHCP clients by setting their TCP/IP settings to "Obtain an IP Address Automatically." When you turn your computers on, they will automatically load the proper TCP/IP settings provided by the DAP-1522. The DHCP Server will automatically allocate an unused IP address from the IP address pool to the requesting computer.

Enable DHCP Server: Check to enable the DHCP Server on the access point.

DHCP IP Address Range: Enter the IP address range to assign to the clients on your network.

Default Subnet Mask: Enter the subnet mask.

Default Gateway: Enter the default gateway IP address.

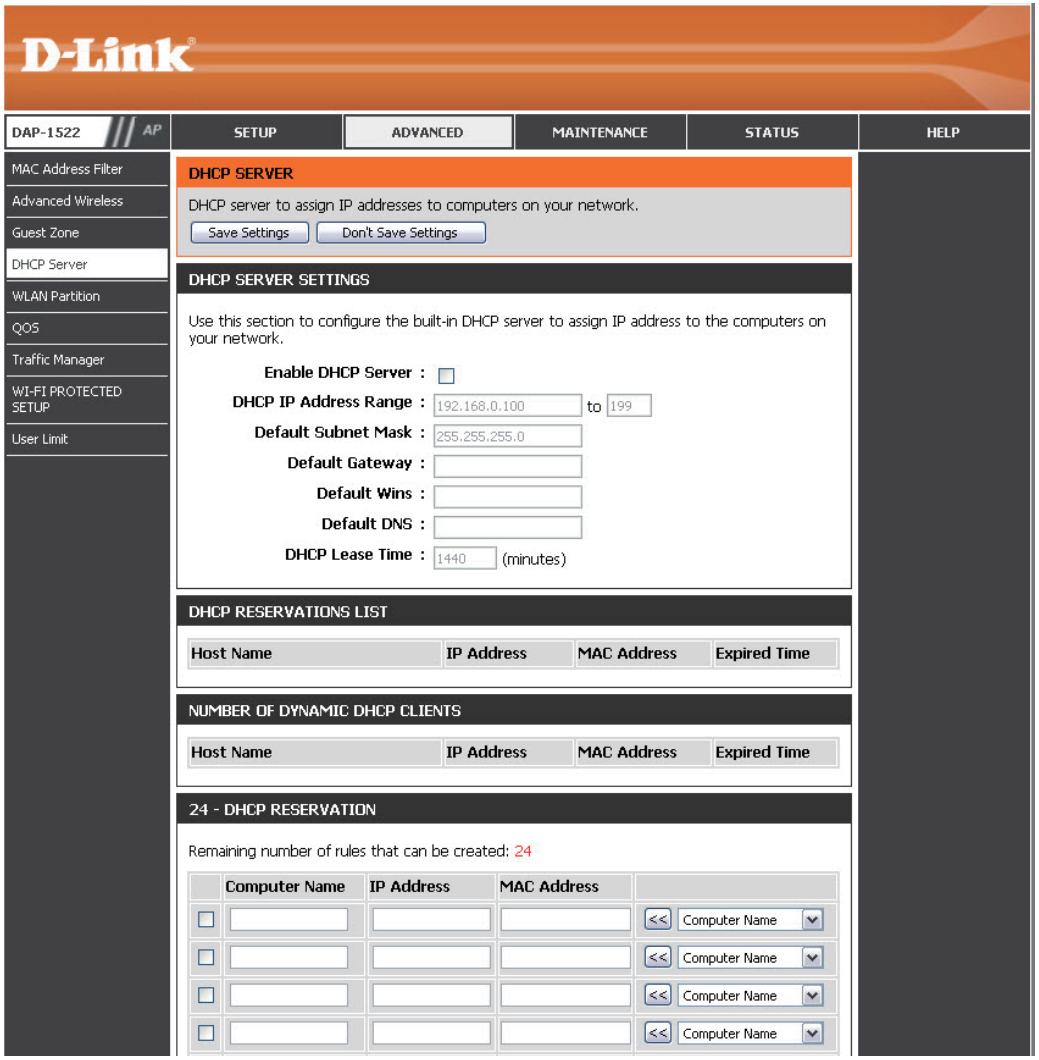
Default Wins: Enter the WINS server IP address.

Default DNS: Enter the DNS server IP address.

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

DHCP Lease Time: Enter the DHCP lease time (in minutes).

DHCP Client List: Clients on your network that are assigned IP addresses will be displayed here.



DHCP Reservation

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

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

Enable: Check this box to enable the reservation.

Computer Name: Enter the computer name or select from the drop-down menu.

IP Address: Enter the IP address you want to assign to the computer or device. This IP Address must be within the DHCP IP Address Range.

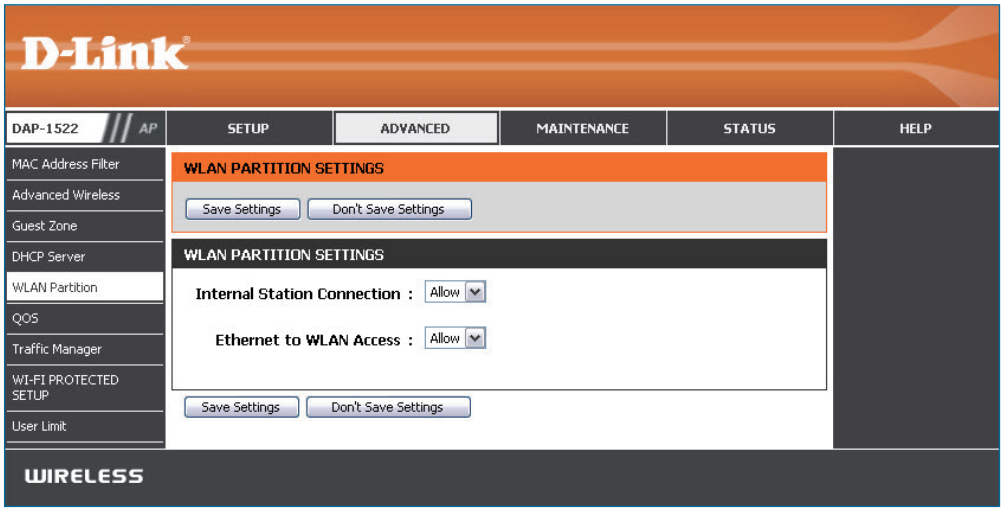
MAC Address: Enter the MAC address of the computer or device.

WLAN Partition

WLAN Partition allows you to segment your Wireless network by managing access to both the internal station and Ethernet access to your WLAN.

Internal Station Connection: Use the drop-down menu to either Allow or Deny internal station connection.

Ethernet to WLAN Access: Use the drop-down menu to either Allow or Deny Ethernet to Wireless LAN access.



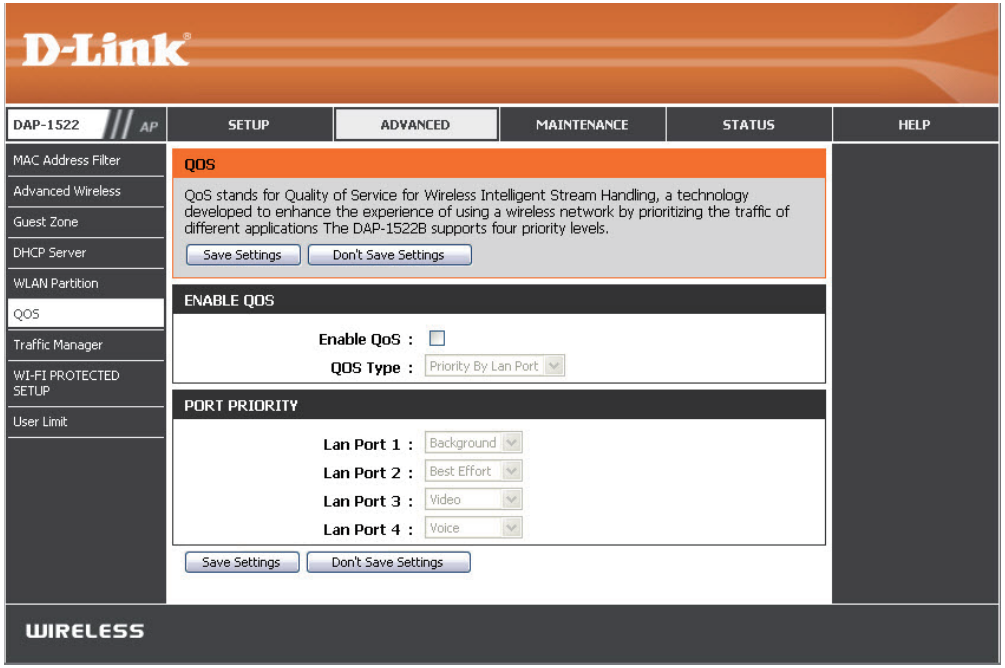
QoS

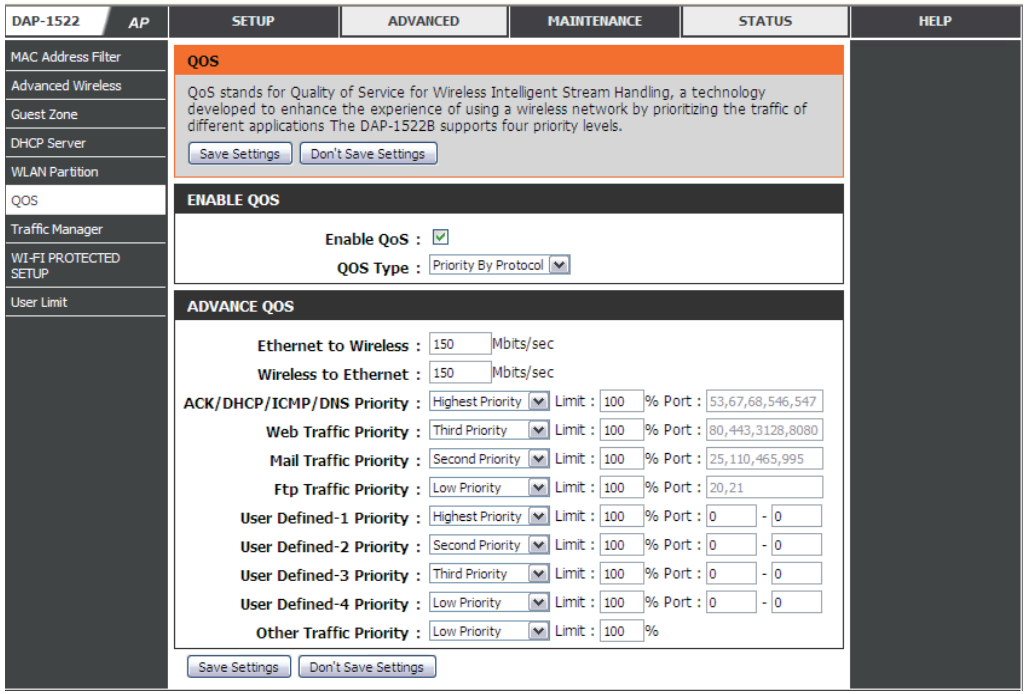
The Quality of Service (QoS) feature regulates the flow of data through the access point by assigning a priority to each packet. It enhances your experience of wireless network usage by prioritizing the traffic of different applications. Enabling this option allows the AP to prioritize traffic. There are two options available for the special application.

Enable QoS: Enable this option if you want QoS to prioritize your traffic.

QoS Type: There are two options available for your special application: (1) Priority by LAN Port, and (2) Priority by Protocol.

Priority by LAN Port: There are four priority levels for all LAN ports. The priority level values assigned are LAN Port 1 for Background, LAN Port 2 for Best Effort, LAN Port 3 for Video, and LAN Port 4 for Voice (Voice is the highest level and Background is the lowest level) at a normal priority.





Priority by Protocol: Users can set the priority and percentage of total bandwidth reserved for each of their four traffic categories. Please note that the combined percentage value of transmission limits does not have to be 100%. These percentages represent the maximum bandwidth designated for each traffic category.

Ethernet Wireless: The value entered here indicates the Ethernet to wireless speed required before the Advanced QoS function is enabled. Advanced QoS will be enabled once the total bandwidth reaches or surpasses the set value. The suggested range is 800 ~ 96000kbits/sec.

Wireless to Ethernet: The value entered here indicates the wireless to Ethernet speed required before the Advanced QoS function is enabled. Advanced QoS will be enabled once the total bandwidth reaches or surpasses the set value. The suggested range is 800 ~ 96000kbits/sec.

ACK/DHCP/ICMP/DNS Priority: Represents the priority value and bandwidth limit applied to ACK, DHCP, ICMP, and DNS for packet delivering.

Web Traffic Priority: Traffic generated by typical Web services (packets sent through ports 80,443, 3128 and 8080).

Mail Traffic Priority: Traffic generated by e-mail sending and receiving (ports 25, 110, 465 and 995).

Ftp Traffic Priority: Traffic generated by FTP Uploading and Downloading (ports 20, 21).

User Defined Priority: Defines the priority level for your device.

Other Traffic Priority: Other traffic generated that does not regard the aforementioned packet delivery.

Note: Normally the wireless connection transmits application data packets based on the wireless to Ethernet speed and Ethernet to wireless speed. Users can treat the two speeds as system transmission bandwidth, where all applications will share the whole system bandwidth based on assigned priorities. Note that the maximum amount of bandwidth that can be used is the same as the set value of both speeds.

Traffic Manager

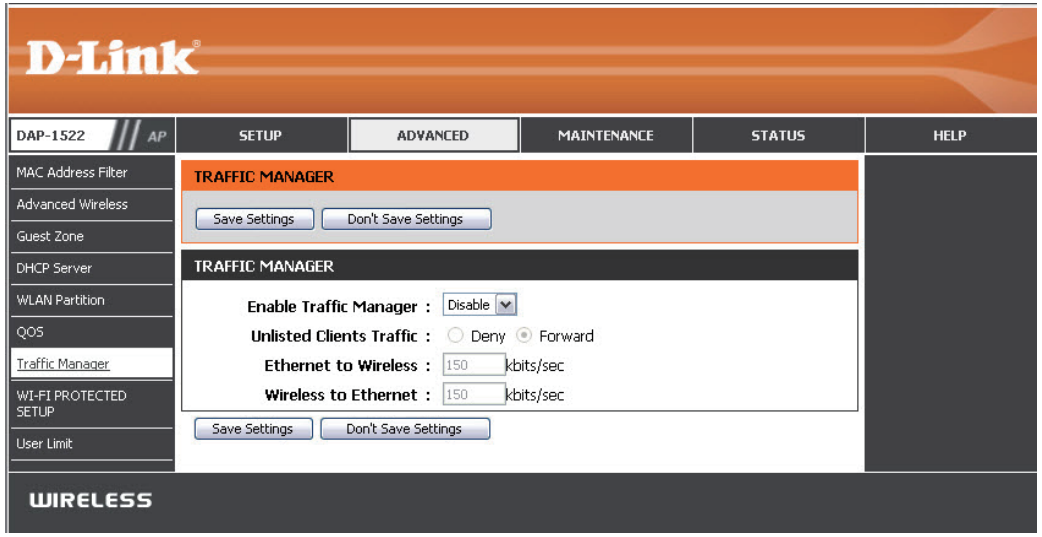
Traffic Manager assigns the device's entire bandwidth, which includes both the wireless to Ethernet speed and Ethernet to wireless speed. The user may add rules for data transmission performance between the access point device and the individual client. For unlisted client traffic, users can either choose to deny or forward packet transferred for such clients.

Enable Traffic Manager: Traffic Manager enables traffic control of the delivering and receiving of data packets.

Unlisted Clients Traffic: There are two options available for Unlisted Clients Traffic: (1) deny, and (2) forward.

Ethernet to Wireless: This section allows the user to indicate the device's maximum bandwidth from Ethernet to wireless.

Wireless to Ethernet: This section allows the user to indicate the device's maximum bandwidth from wireless to Ethernet.



Add Traffic Manager Rule

In Traffic Manager Rule enter settings for each user of your network, using adequate IP (Client IP) or MAC address (Client MAC). Set appropriate Ethernet to Wireless and Wireless to Ethernet speeds for the traffic you want to regulate.

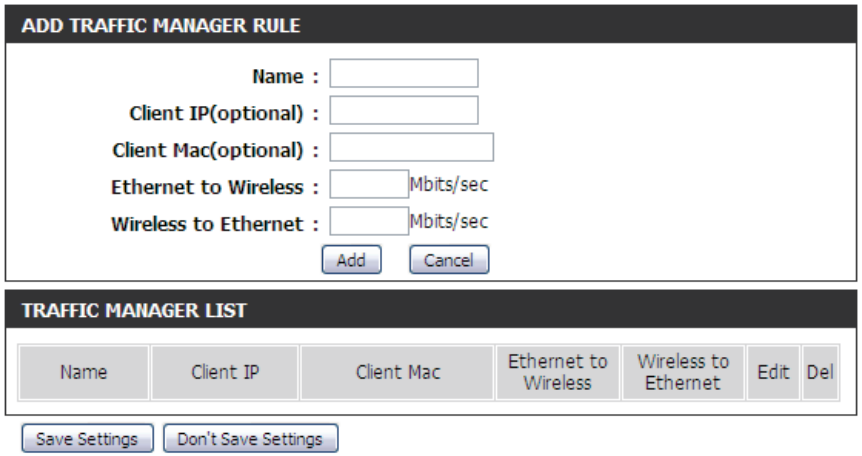
Name: Enter a name for your new rule.

Client IP (optional): The IP address assigned to the client.

Client MAC (optional) : By assigning MAC addresses to the set of traffic manager rules, specific rules can be defined for individual devices.

Ethernet to Wireless: Represents the available bandwidth for client data to be forwarded from Ethernet to wireless, the suggested range is 800 ~ 96000kbits/sec.

Wireless to Ethernet: Represents the available bandwidth for client data to be forwarded from wireless to Ethernet, the suggested range is 800 ~ 96000kbits/sec.



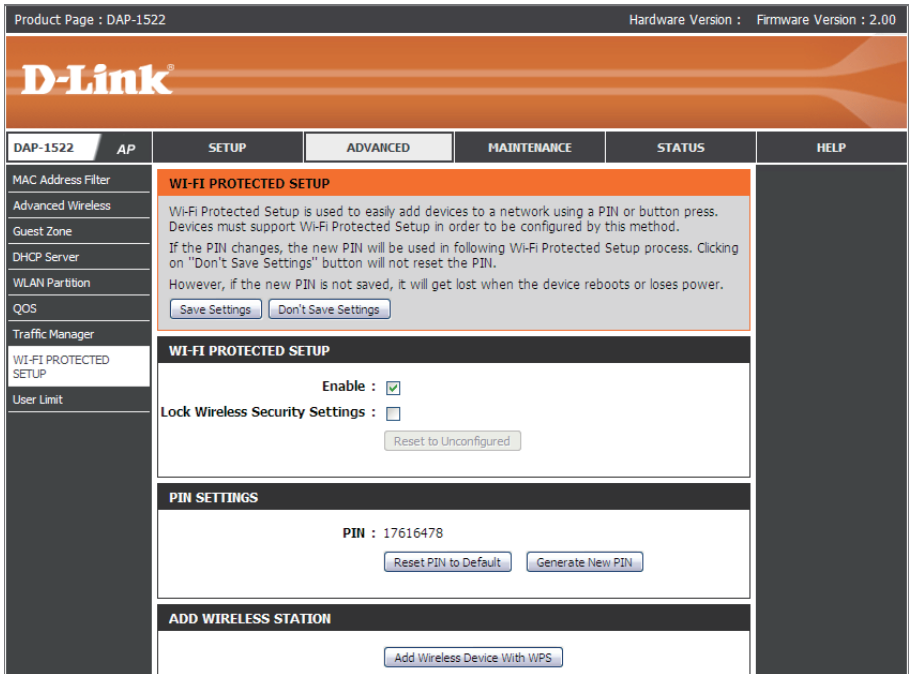
Note: Normally the wireless connection transmits application data packets based on the wireless to Ethernet speed and Ethernet to wireless speed. Users can treat the two speeds as system transmission bandwidth, where all applications will share the whole system bandwidth based on assigned priorities. Note that the maximum amount of bandwidth that can be used is the same as the set value of both speeds.

Wi-Fi Protected Setup

This feature allows you to add devices to your network using a PIN or Push Button. Your devices must support Wi-Fi Protected Setup in order to be configured by this method.

Enable: Select to Enable this feature and add devices to your network.

Lock Wireless Security Settings: Select to Enable this feature and Lock Wireless Security Settings.

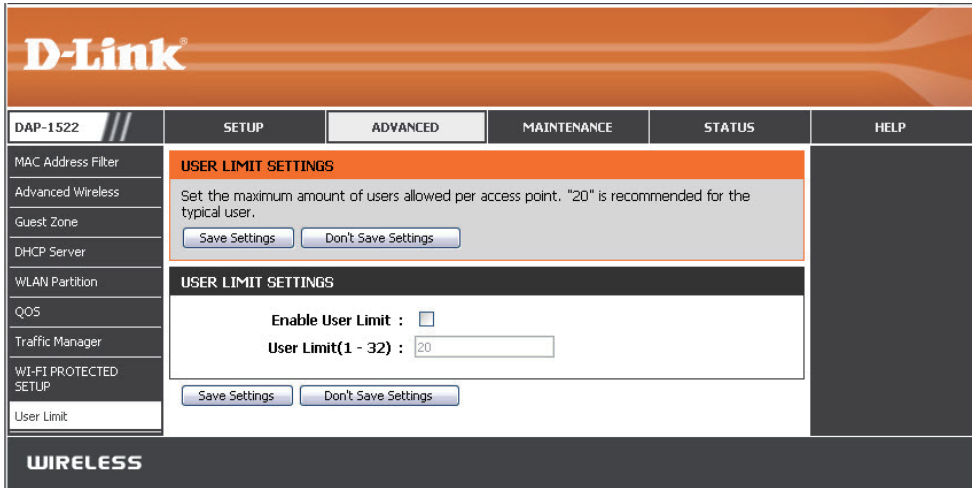


User Limit

The User Limit section allows you to set a maximum number of wireless clients that can connect to the access point.

Enable User Limit: Check the box to enable.

User Limit (1-32): Enter the maximum number of clients allowed to connect to the access point.

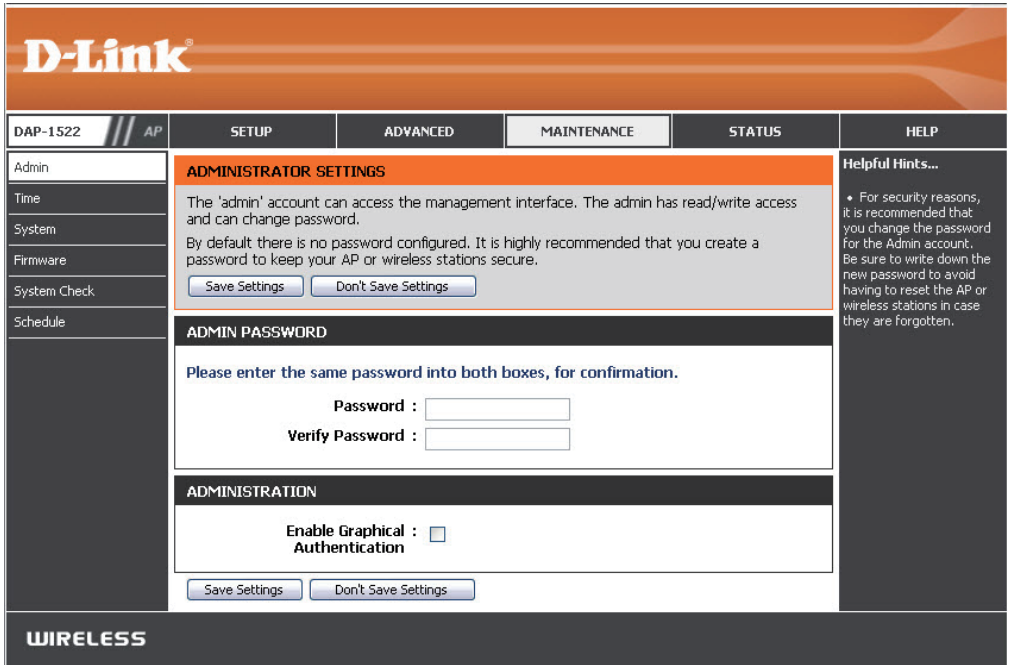


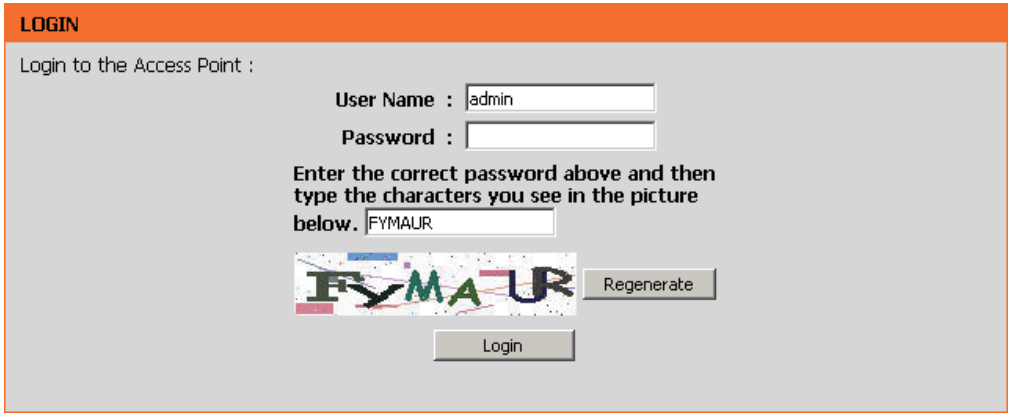
Maintenance
Admin

This page will allow you to change the Administrator password. The administrator password 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 text box in order to confirm its accuracy.





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.

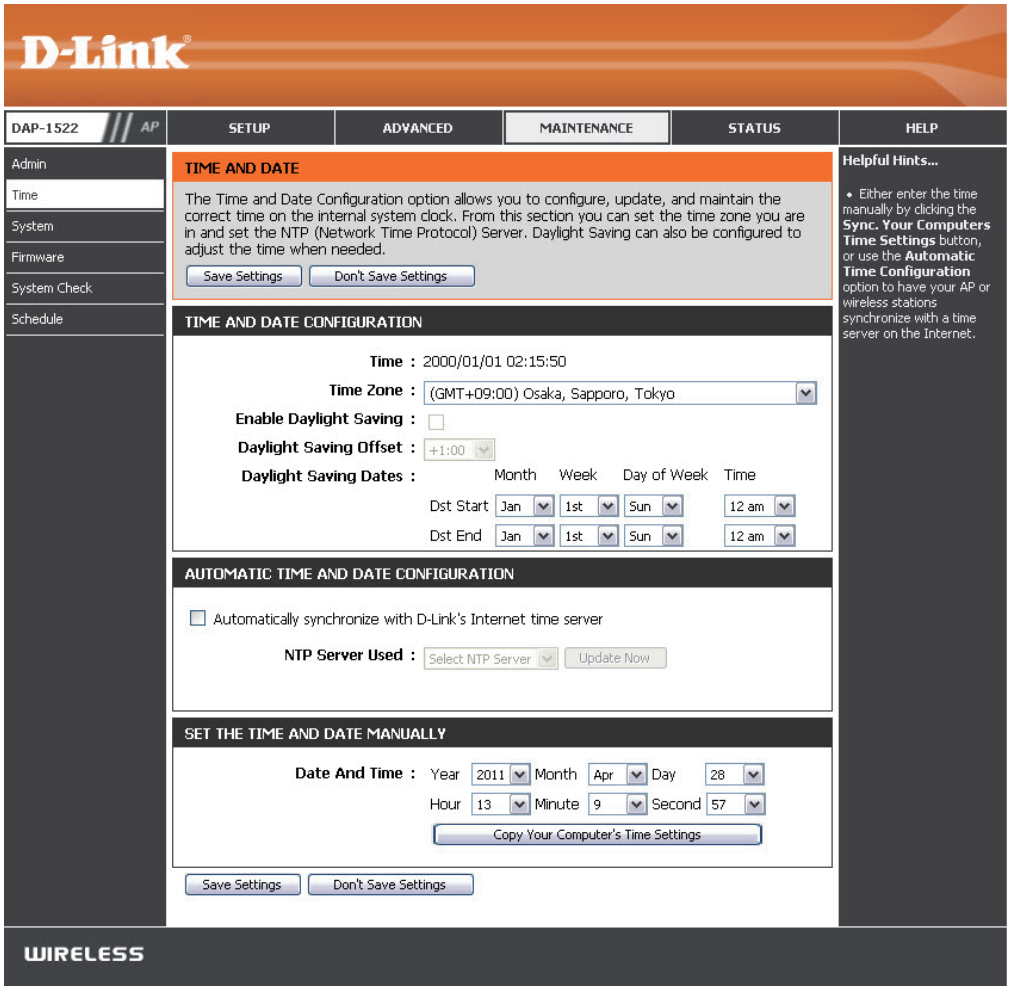
Time Zone: Select your Time Zone from the drop-down menu.

Daylight Saving: To select Daylight Saving time manually, click the **Enable Daylight Saving** check box.

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: Select the NTP server from the drop-down menu and then click **Update Now**.

Set the Time and Date Manually: 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.



System

Save 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.

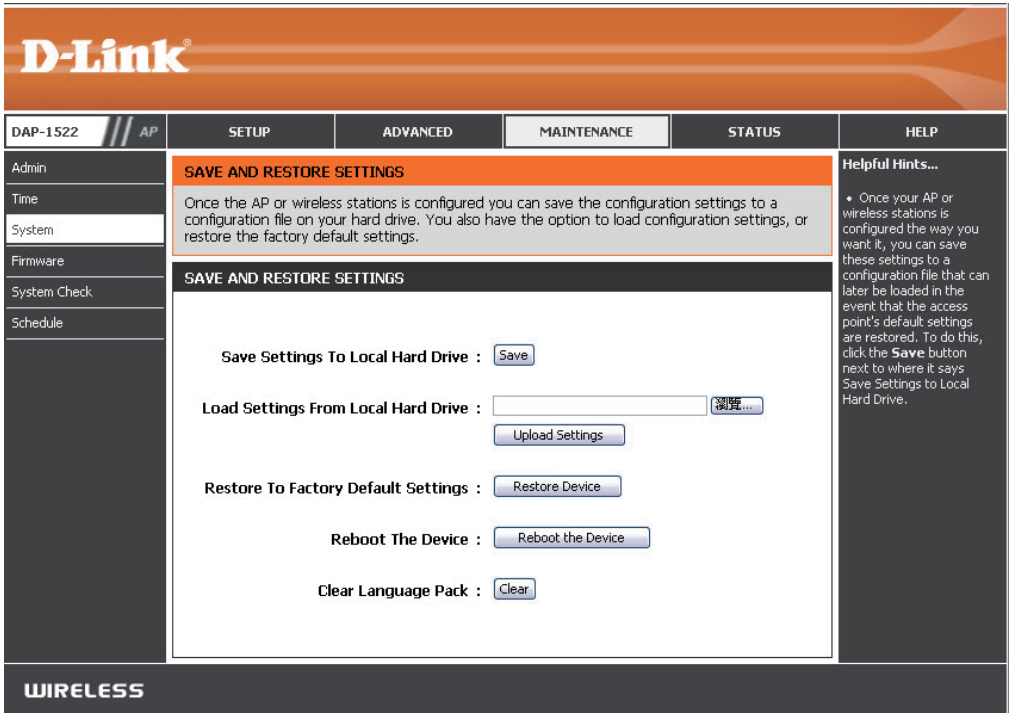
Load from Local Hard Drive: Use this option to load previously saved access point configuration settings. First, click **Browse** to find a previously save file of configuration settings. Then, click the **Load** button to transfer those settings to the access point.

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.

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.

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 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.

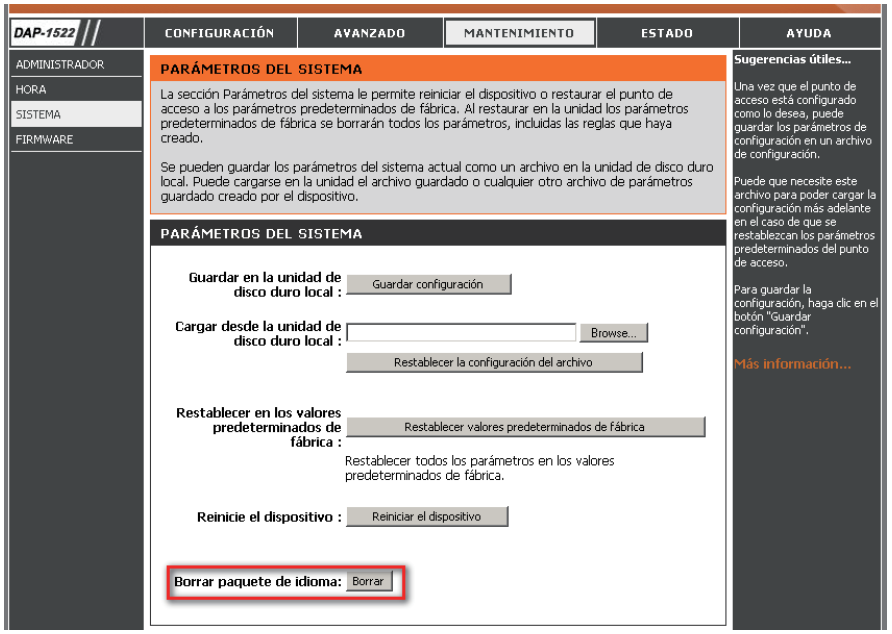
Upload: Once you have a firmware update on your computer, use this option to browse for the file and then upload the information into the access point.

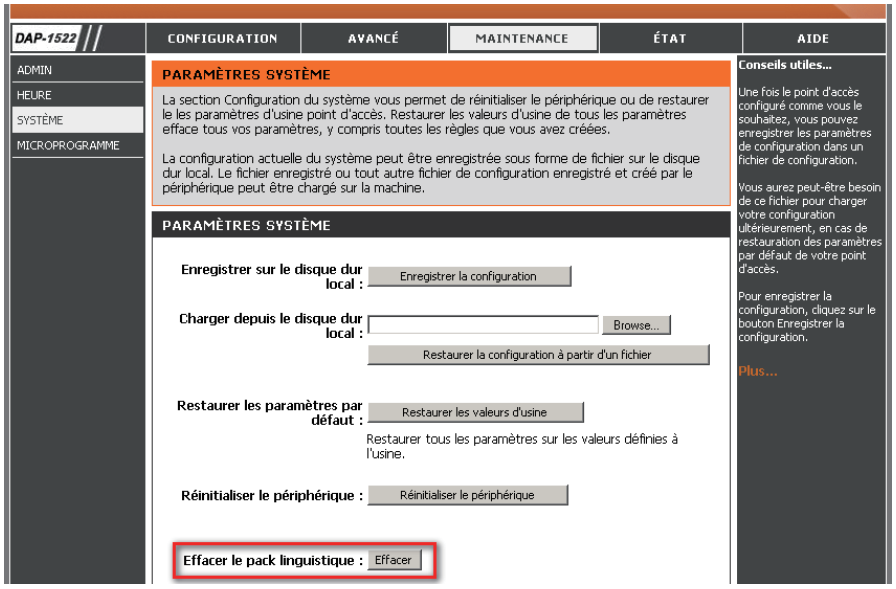
Language Pack

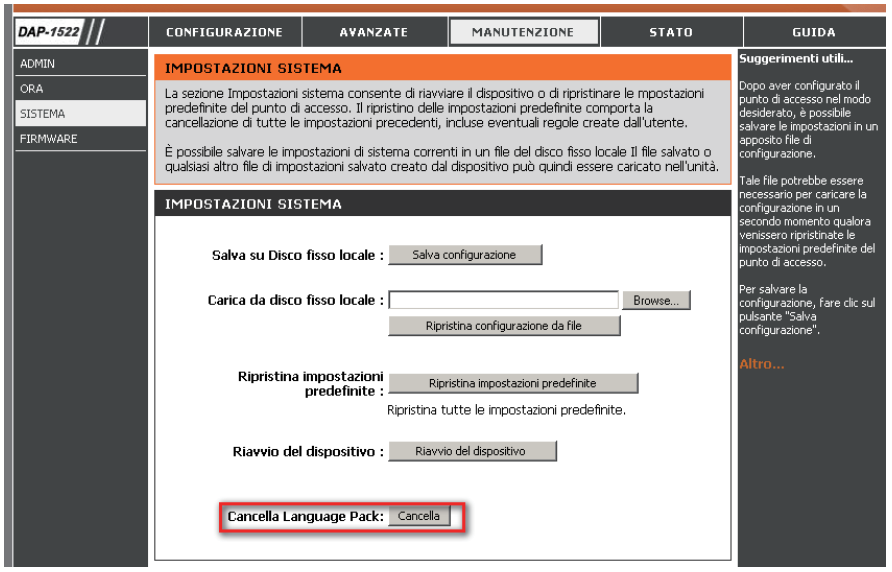
You can change the language of the web UI by uploading available language packs.

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.

If you load a language pack and would like to go back to English, click **Maintenance** > **System** and click on **Clear** next to **Clear Language Pack**.





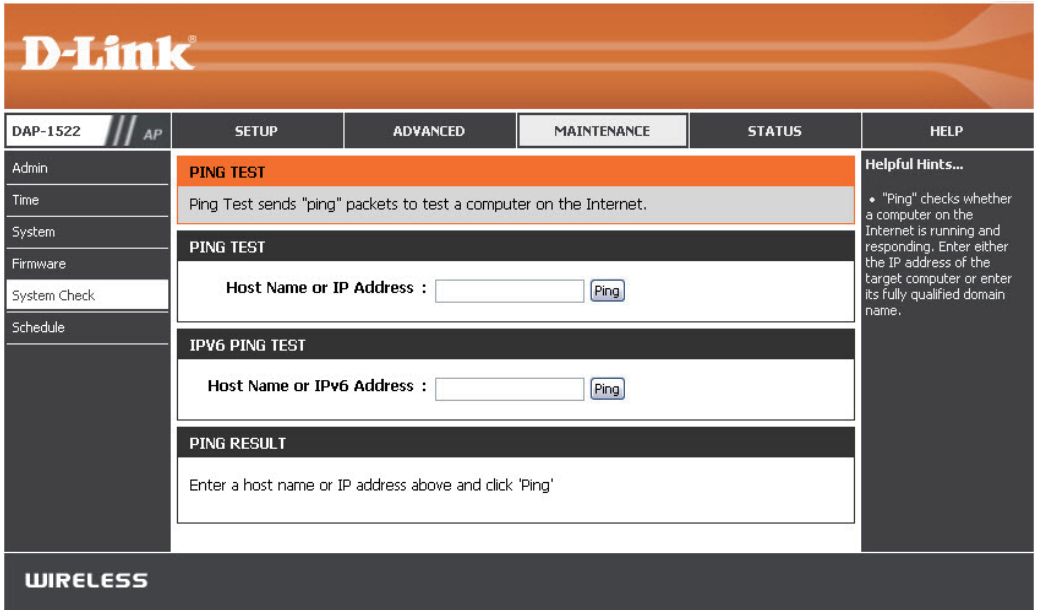


System Check

This section Ping Tests by sending ping packets to test if a computer on the internet is running and responding.

Ping Test / IPv6 Ping Test: The Ping Test / IPv6 Ping Test is used to send Ping packets to test if a computer is on the Internet. Enter the host name or IP/IPv6 address that you wish to Ping, and click **Ping**.

Ping Result: The results of your ping attempts will be displayed here.



Schedule

Name: Enter a name for your new schedule.

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

Time: Enter a start and end time for your schedule.

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

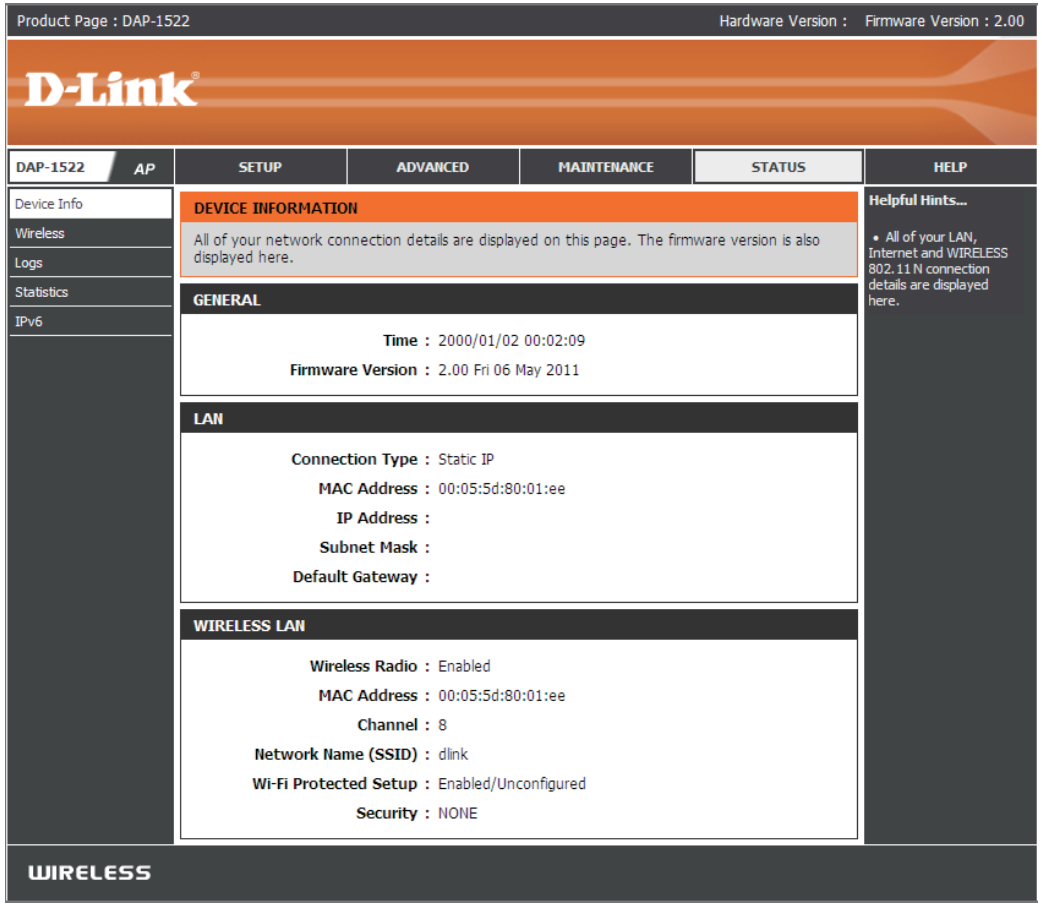
Device Info

This page displays the current information for the DAP-1522. 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.



Wireless

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

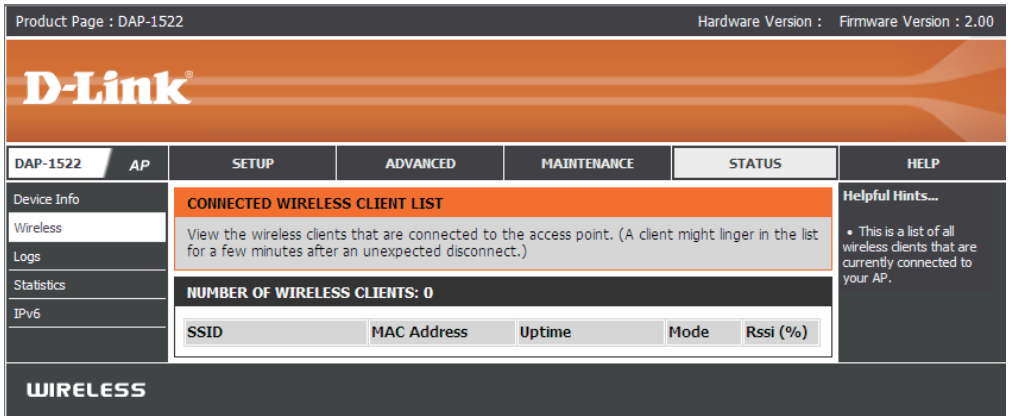
SSID: Displays the name of your network.

MAC Address: The Ethernet ID (MAC address) of the wireless client.

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

Mode: The transmission standard being used by the client. Values are 11a, 11b, 11g, 11ng or 11na for 802.11a, 802.11b, 802.11g or 802.11n respectively.

Signal: This is a relative measure of signal quality. The value is expressed as a percentage of theoretical best quality. Signal quality can be reduced by distance, by interference from other radio frequency sources (such as cordless telephones or neighboring wireless networks), and by obstacles between the access point and the wireless device.



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.

Log Type: There are two types of logs that can be viewed: **System Activity, Debug System, Attacks, Dropped Packets** and **Notice**.

First Page: Click to view the first page.

Last Page: Click to view the last page.

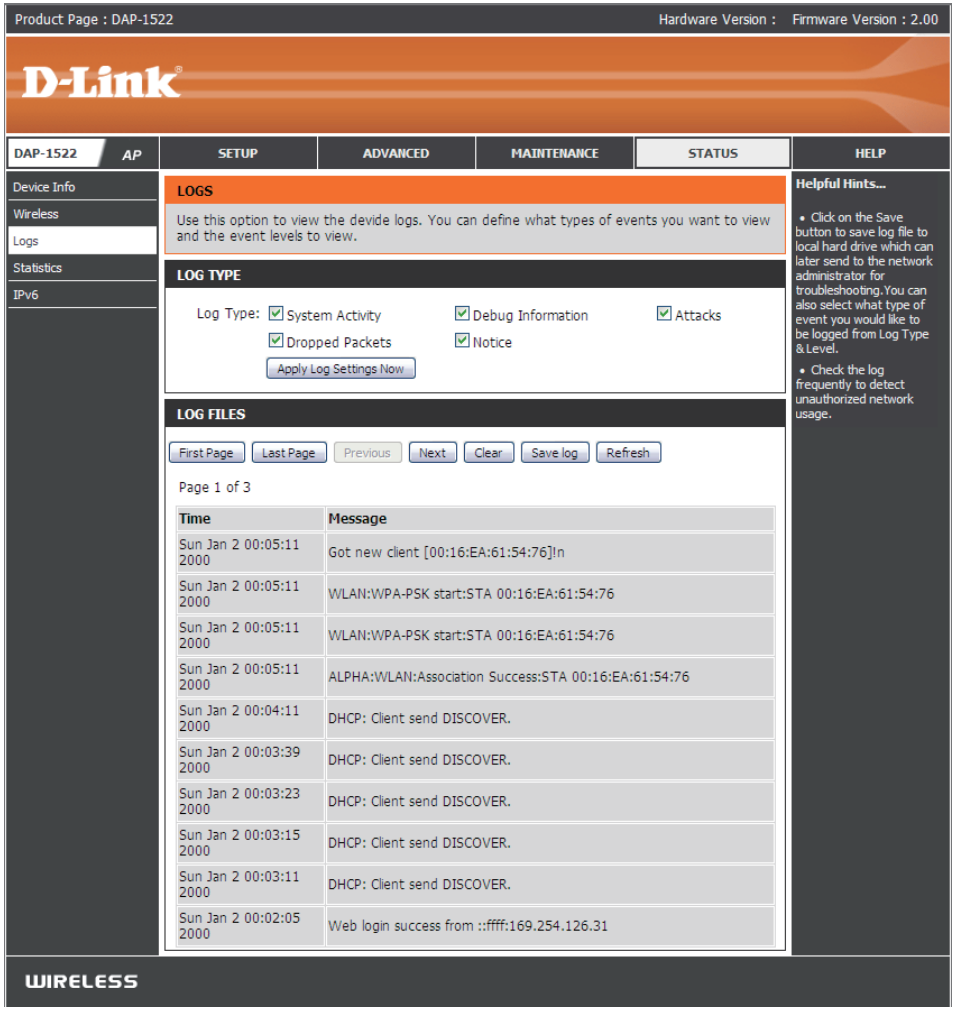
Previous: Click to view the previous page.

Next: Click to view the next page.

Clear: Delete all of the log content.

Save Log: Click the **Save** button to save the access point log file to your computer.

Refresh: Click to refresh the information on this page.



Statistics

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

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

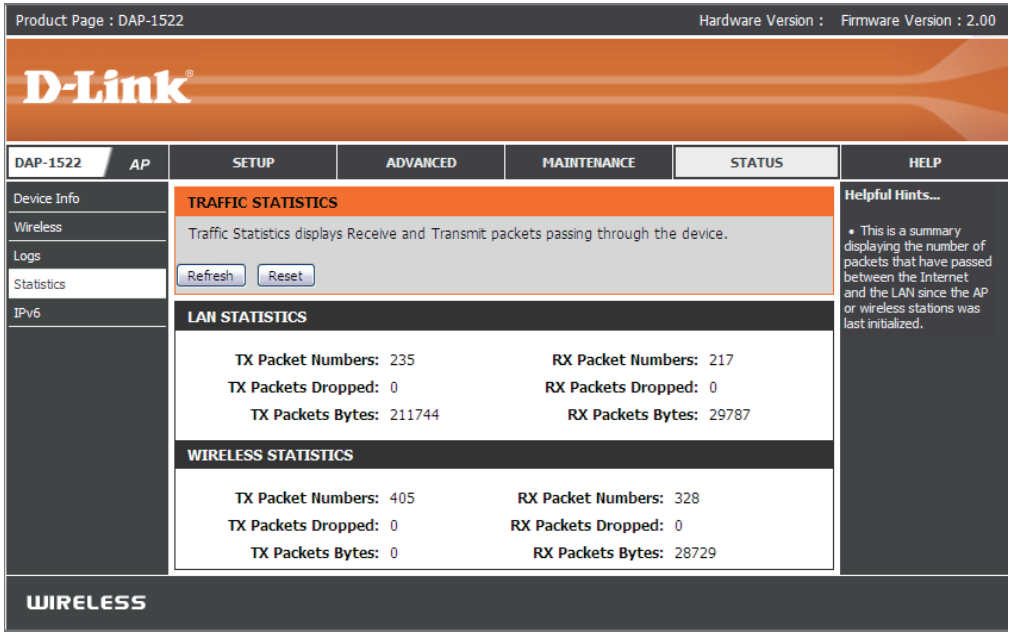
RX Packets: The total number of packets received by the access point.

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.

TX Bytes: Displays the number of bytes that were sent from the access point.

RX Bytes: Displays the number of bytes that were received by the access point.



IPv6

This page will display all your network connection details.

IPv6 Connection Type: Displays IPv6 connection mode.

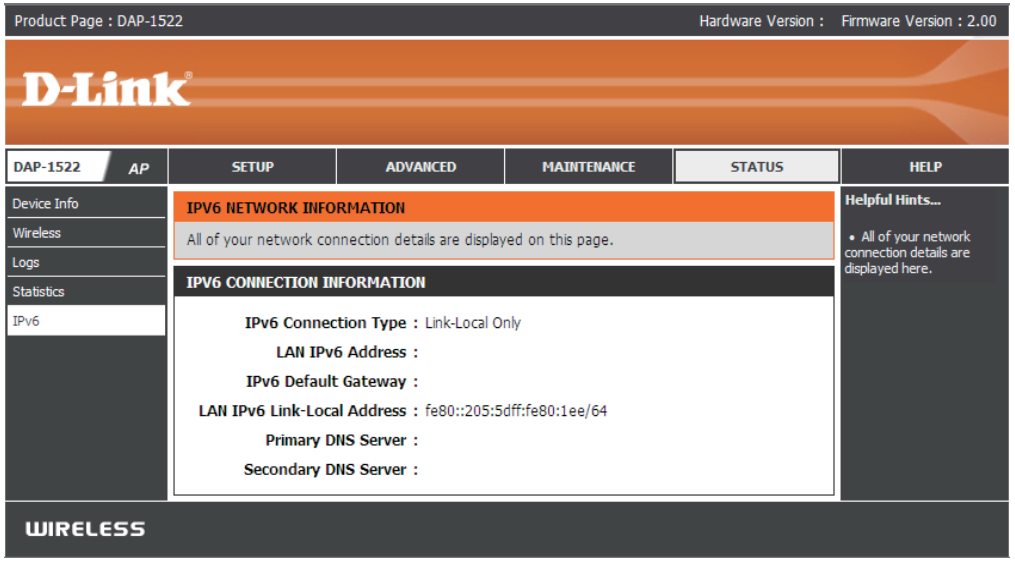
LAN IPv6 Address: Displays LAN IPv6 address.

IPv6 Default Gateway: Displays the IPv6 address of the default gateway.

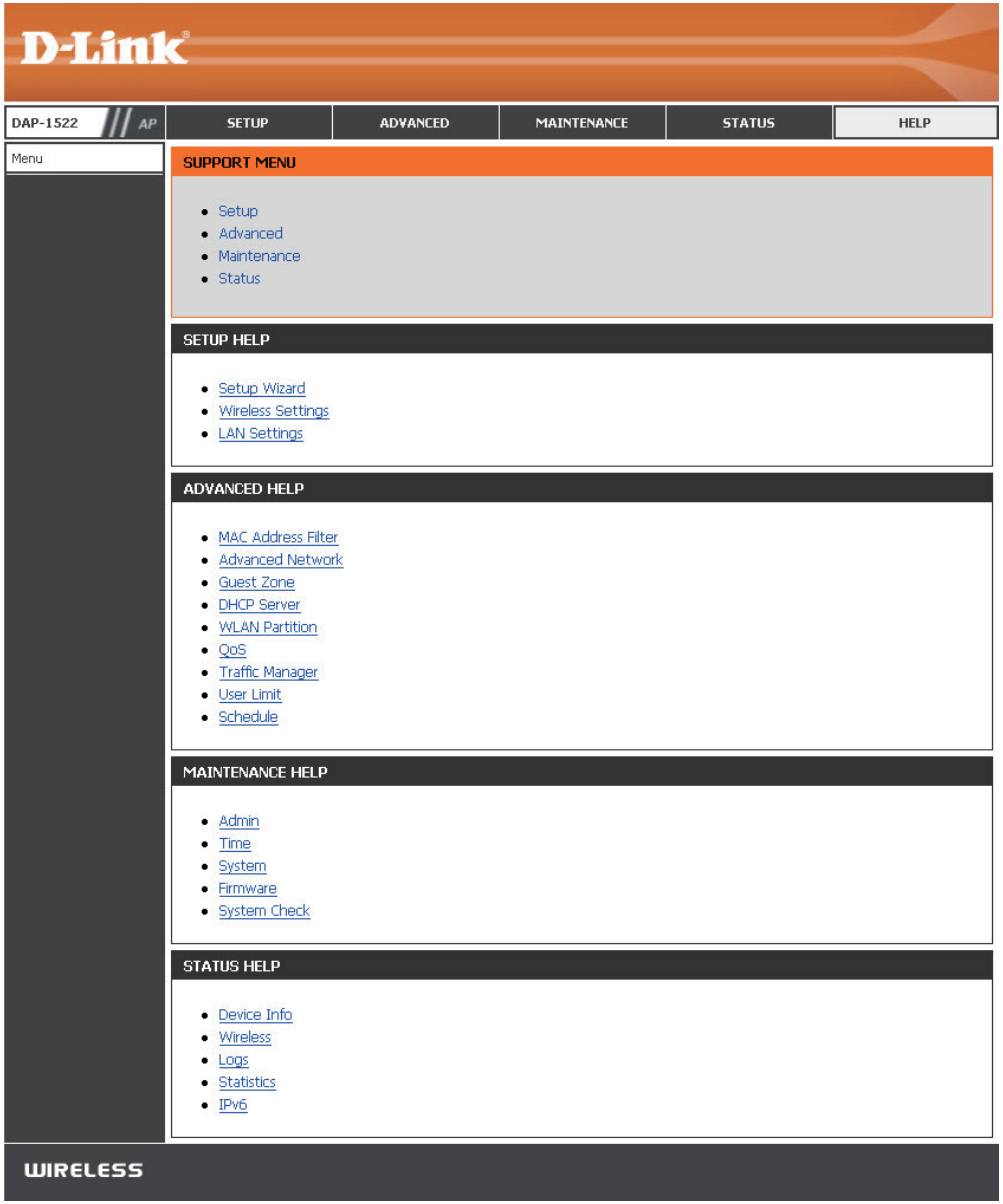
LAN IPv6 Link-Local Address: Displays the LAN IPv6 link-local address.

Primary DNS Server: Displays the IPv6 address of the primary DNS server.

Secondary DNS Server: Displays the IPv6 address of the secondary DNS server.



Help

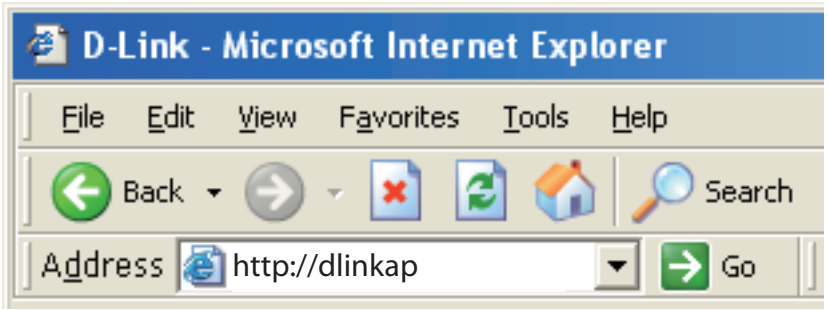

D-Link
DAP-1522
AP
SETUP
ADVANCED
MAINTENANCE
STATUS
HELP
Menu
SUPPORT MENU
Setup
Advanced
Maintenance
Status
SETUP HELP
Setup Wizard
Wireless Settings
LAN Settings
ADVANCED HELP
MAC Address Filter
Advanced Network
Guest Zone
DHCP Server
WLAN Partition
QoS
Traffic Manager
User Limit
Schedule
MAINTENANCE HELP
Admin
Time
System
Firmware
System Check
STATUS HELP
Device Info
Wireless
Logs
Statistics
IPv6
WIRELESS

Configuration for Bridge Mode

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

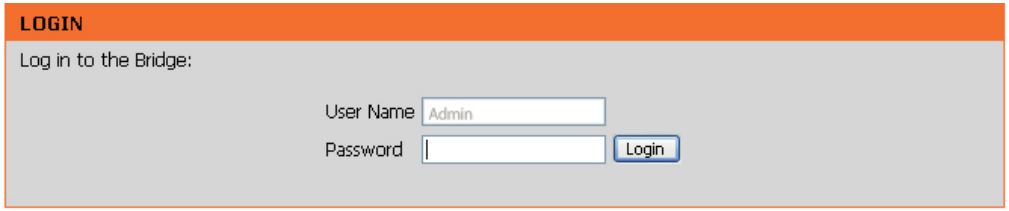
Web-based Configuration Utility

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



Select **Admin** from the drop-down menu 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.

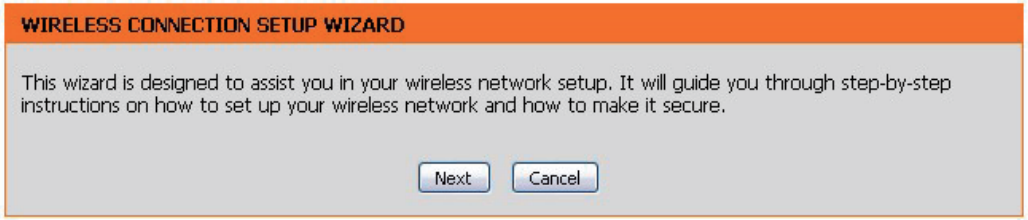


Setup Wizard

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**

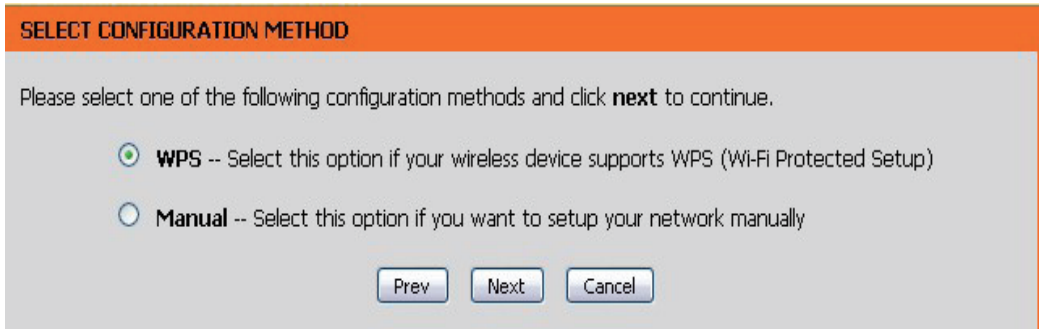
Click **Next** to continue with the wizard setup.



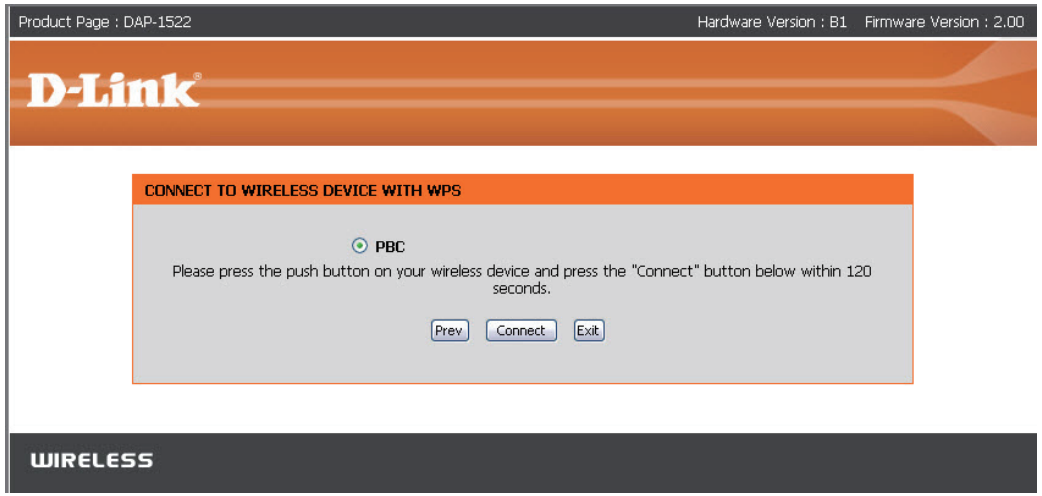
Select **WPS** configuration if you want to use Wi-Fi Protected Setup.

If you want to set up your network manually, skip to page 55.

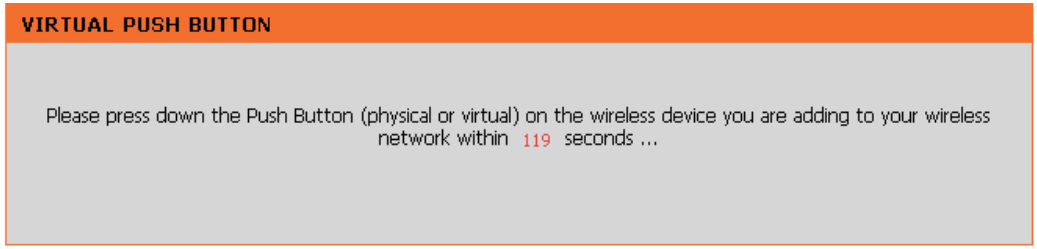
Click **Next** to continue.



Click **Connect** to continue.

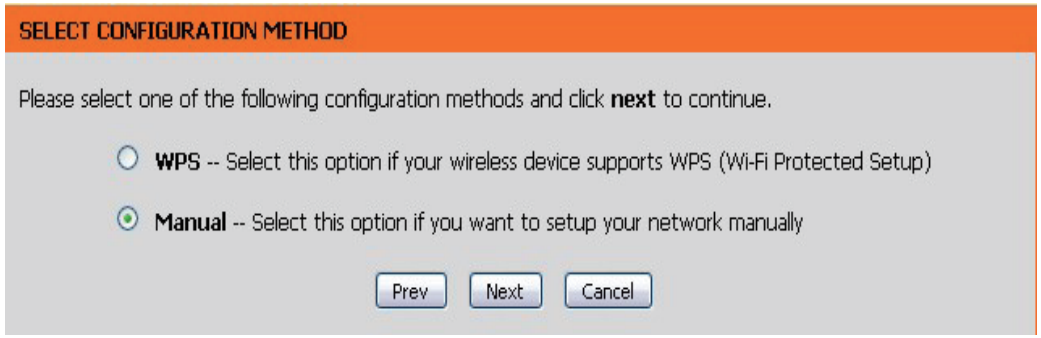


Press down the WPS Button on the wireless device you are adding to your network to complete the setup.



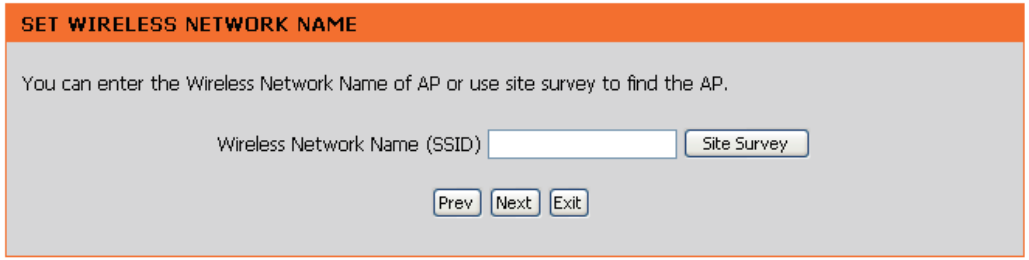
Select **Manual** configuration to set up your network manually.

Click **Next** to continue.



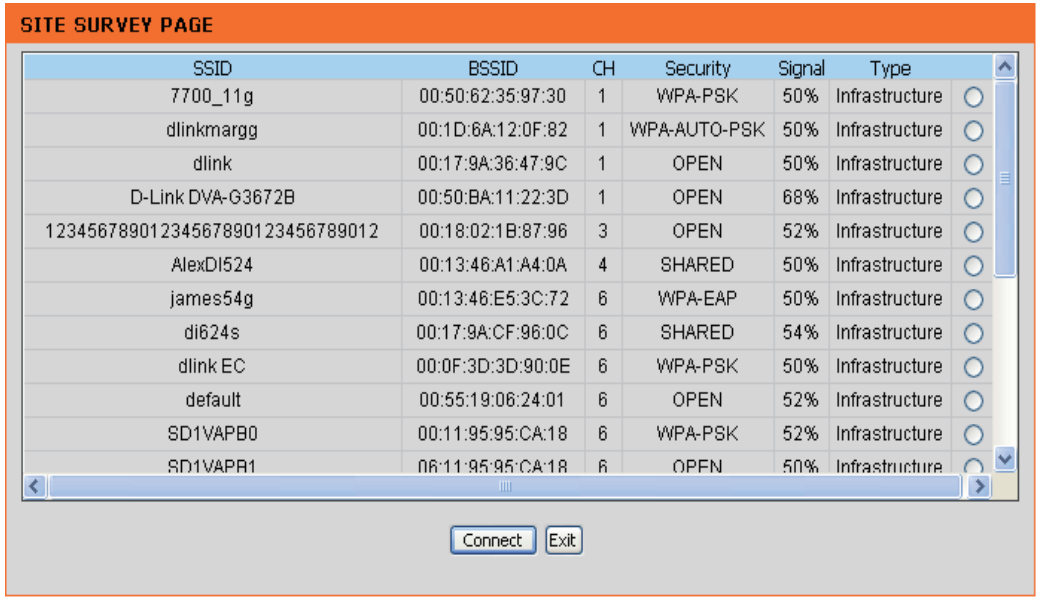
Enter the **Wireless Network Name** of the AP or click the Site Survey button to find the AP.

Click **Next** to continue on to page 57.

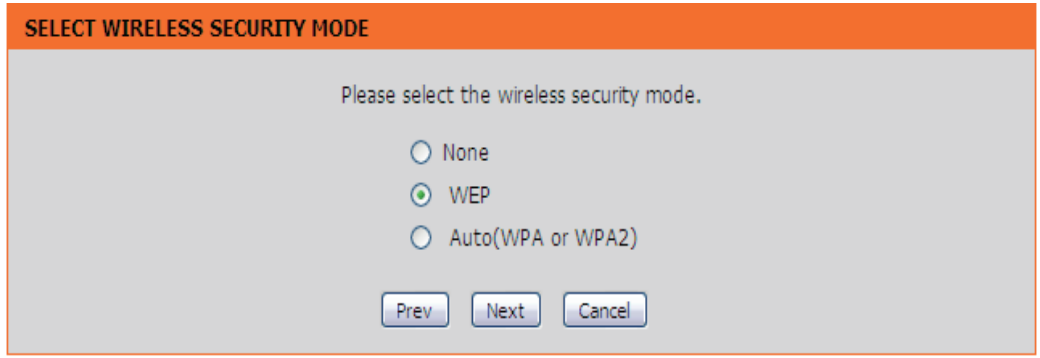


If you clicked on **Site Survey**, the following screen will be displayed.

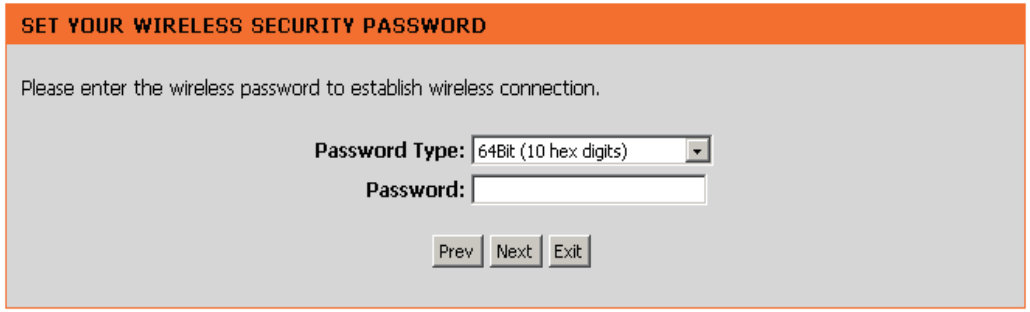
Find your access point from the list and click **Connect** to complete the Setup Wizard.



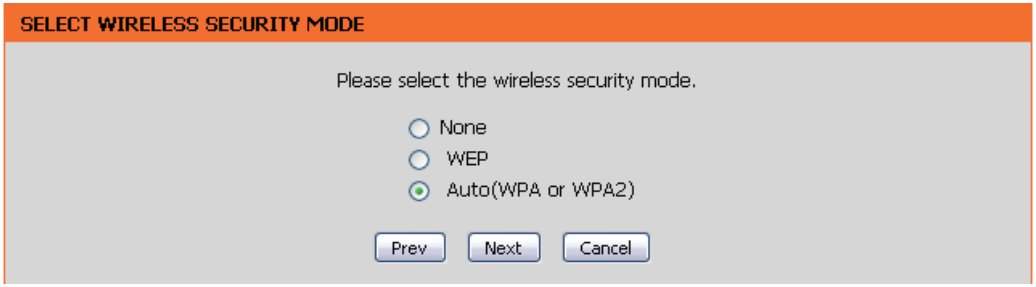
Choose which Security Mode you want to use and click **Next** to continue.



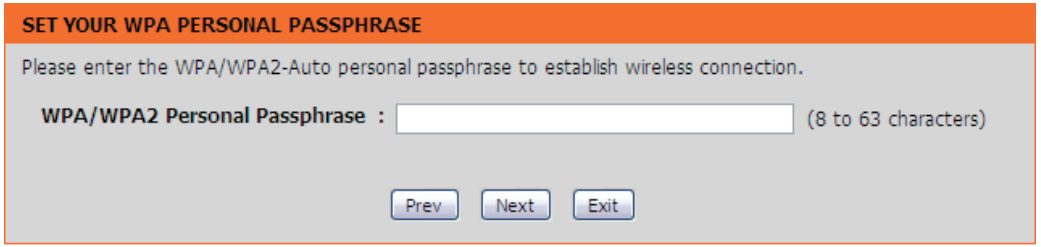
If you choose **WEP**, enter the wireless security password and click **Next** to complete the Setup Wizard.



Select **Auto (WPA or WPA2)** and click **Next** to continue.



Enter the **WPA/WPA2 Personal Passphrase** and click **Next** to establish wireless connection.



The following screen opens to indicate that you have successfully saved your new settings.

Wireless

Site Survey: A function that looks for available wireless networks.

Enable Wireless: Click the check 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: Service Set Identifier (SSID) is the name of your wireless network. Create a name using up to 32 characters. The SSID is case sensitive.

Band Width: Select the Band 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.

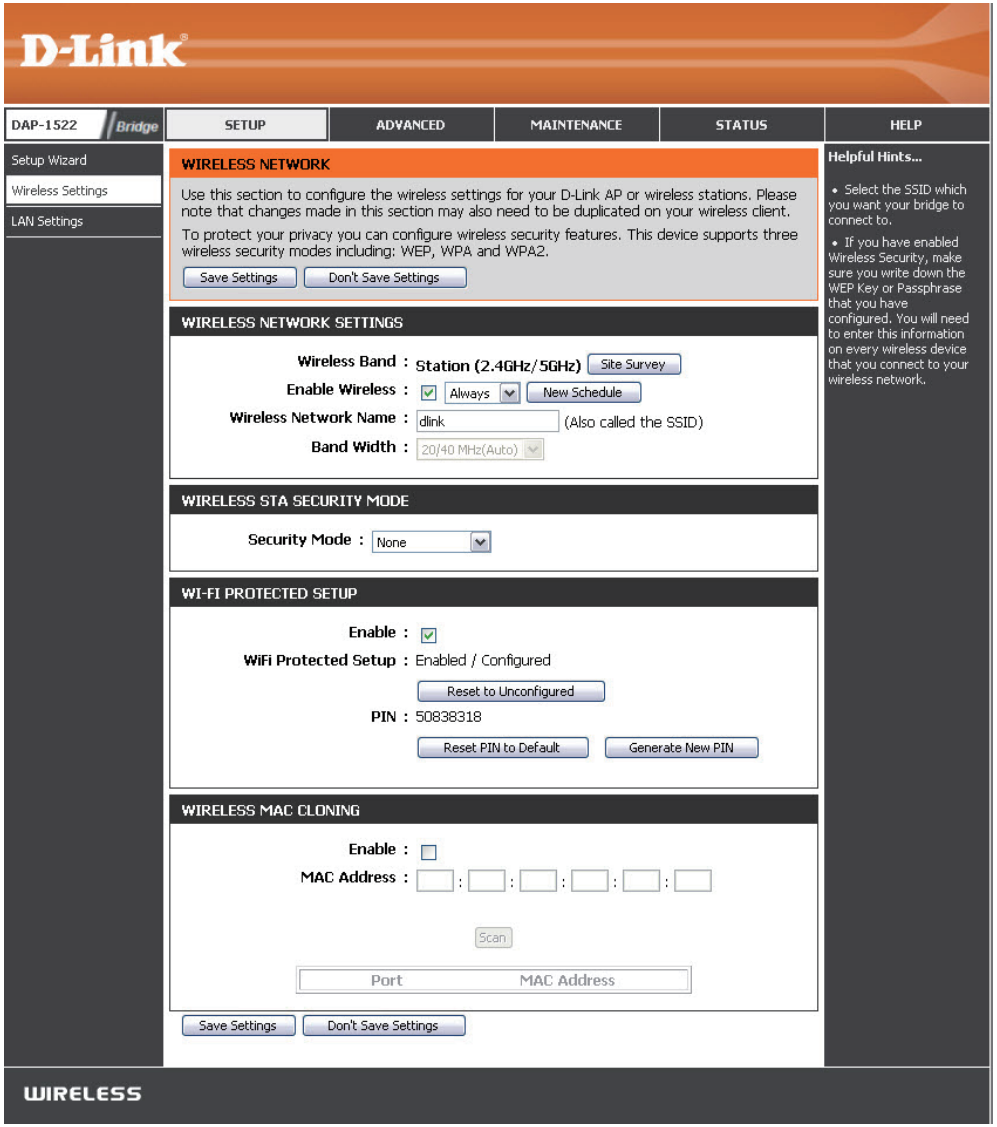
Security Mode: Refer to page 77 for more information regarding wireless security.

Enable: Enable the Wi-Fi Protected Setup feature.

Wireless MAC Cloning: Enabling this option allows the user to manually assign the source MAC address to packets forwarded by the bridge. If not manually assigned, the packet's source MAC address field will be automatically selected as the bridge's MAC address.

MAC Address: Enter the desired MAC address connected to your bridge to enable the clone function.

Scan: Click the **Scan** button to search for all available devices connected to your DAP-1522's Ethernet ports



LAN Settings
Static

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

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.

LAN Connection Type: Use the drop-down menu to select **Static IP** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses. Select **Dynamic IP (DHCP)** to automatically assign an IP address to the computers on the LAN/private network.

IPv4 Address: Enter the IPv4 address assigned by your ISP.

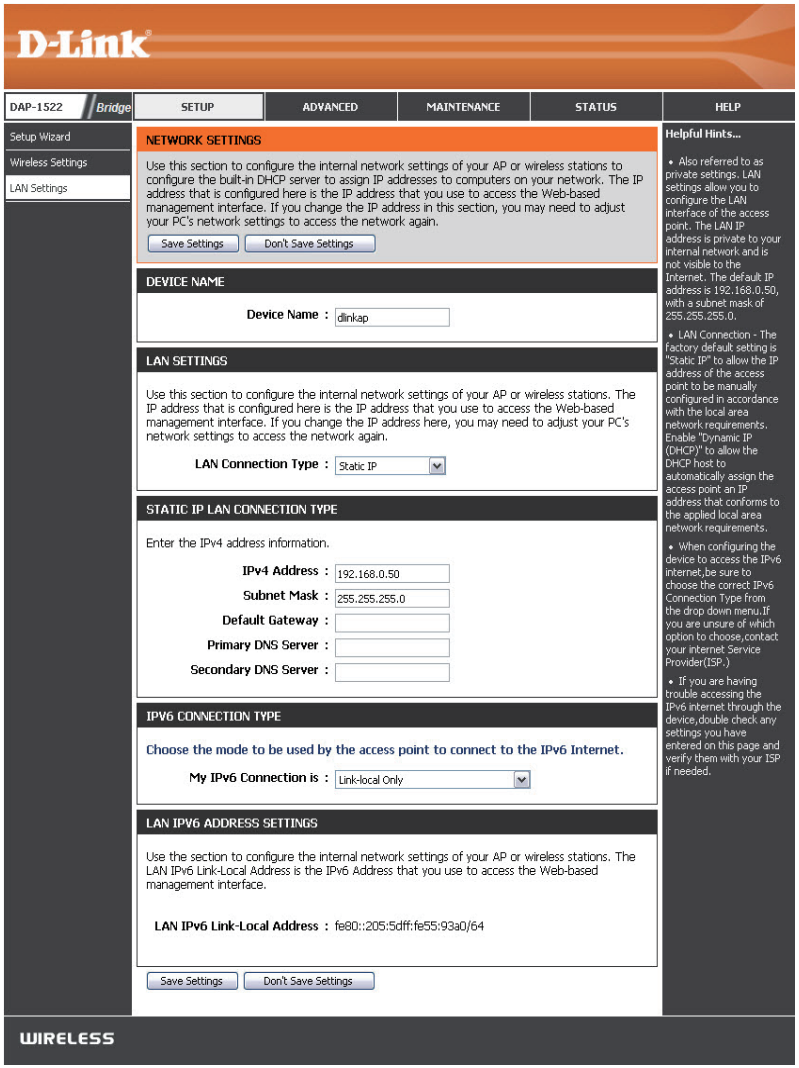
Subnet Mask: Enter the Subnet Mask assigned by your ISP.

Default Gateway: Enter the Gateway assigned by your ISP.

Primary DNS Server: Enter the primary DNS server IP address.

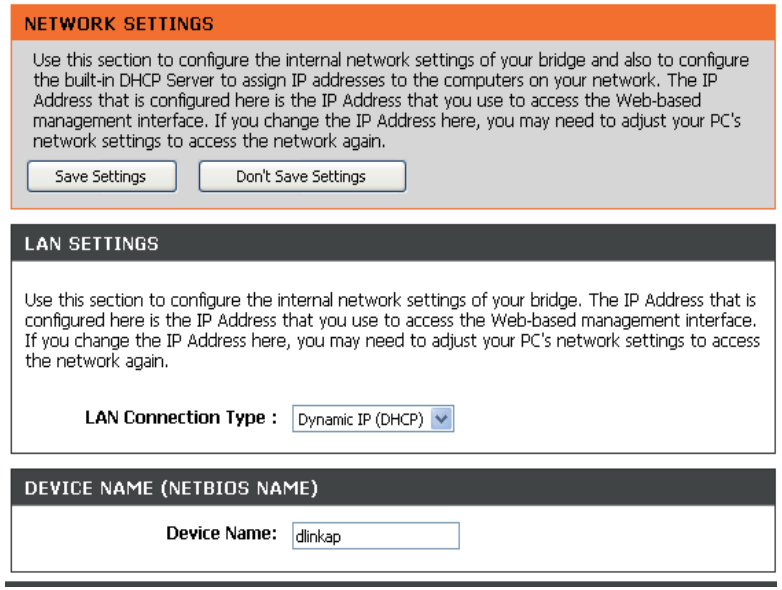
Secondary DNS Server: Enter the secondary DNS server IP address.

My IPv6 Connection: Select the mode you would like the router to use to connect to the IPv6 Internet from the drop-down menu.



Dynamic

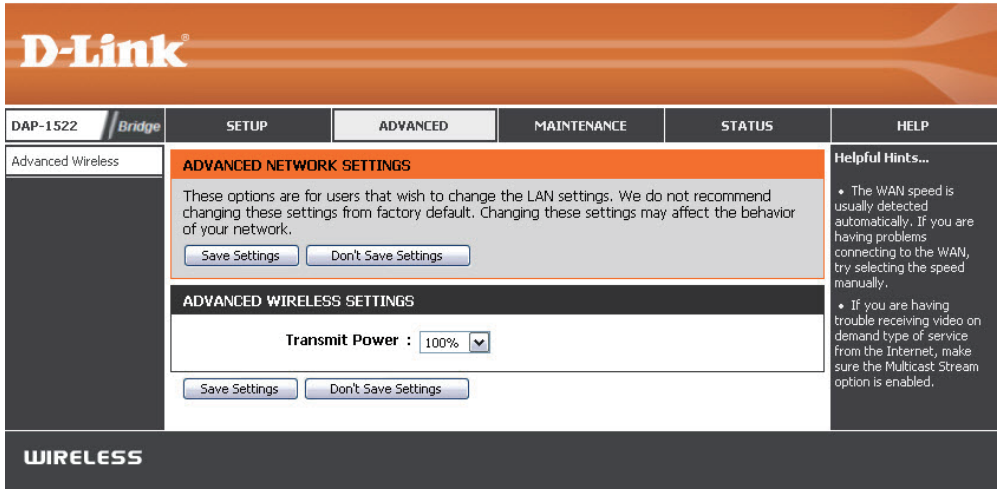
LAN Connection Type: Select DHCP to automatically obtain an IP address on the LAN/private network.



Advanced

Advanced Network Settings

This section allows uses to change the LAN Settings. We do not recommend changing these settings from factory default.



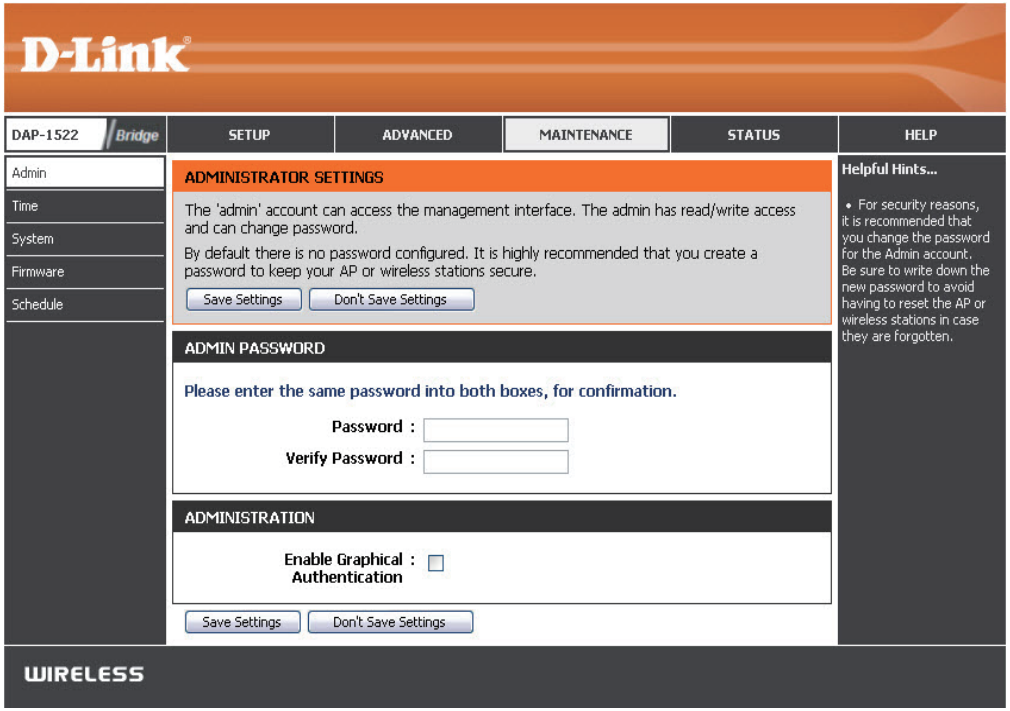
Maintenance

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.



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.

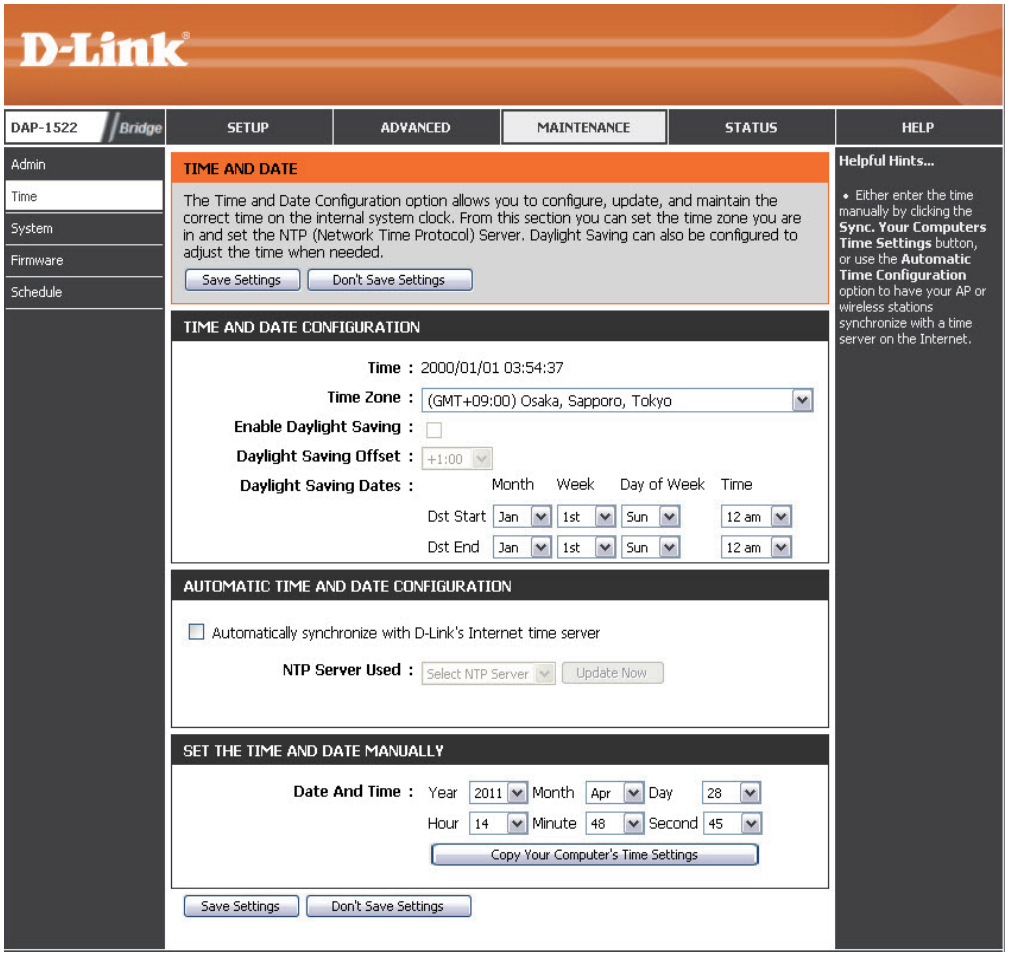
Time Zone: Select the Time Zone from the drop-down menu.

Enable Daylight Saving: To select Daylight Saving time manually, tick the Enable Daylight Saving check 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.

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

NTP Server Used: 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.

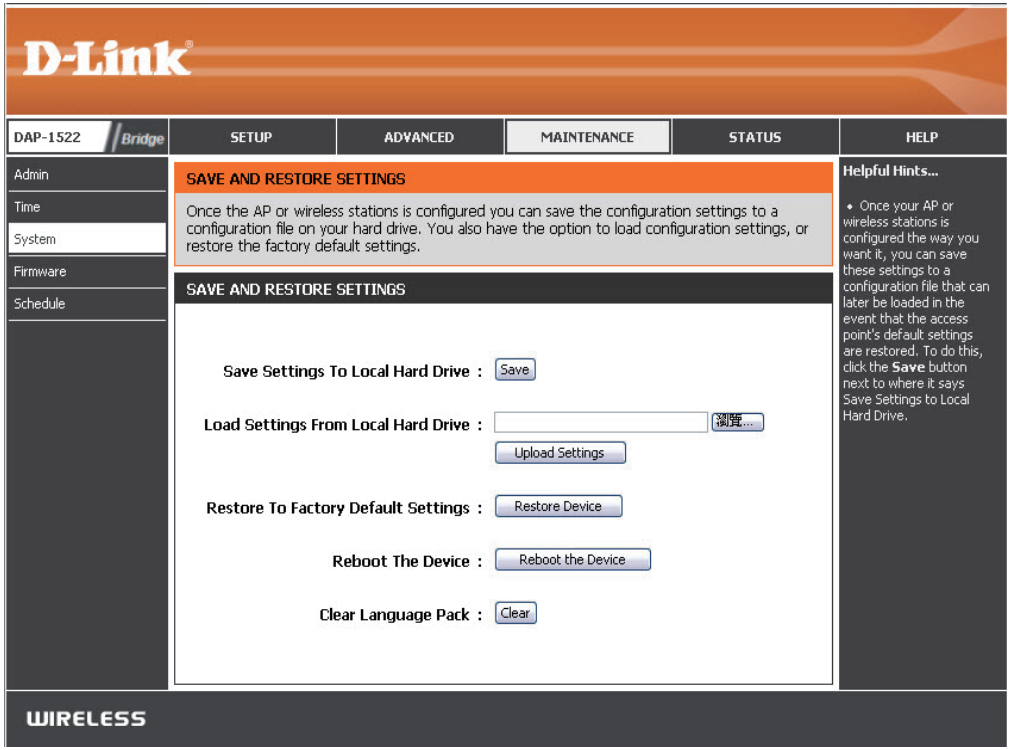


System

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 From Local Hard Drive: Use this option to load previously saved access point configuration settings. First, use the Browse control 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.

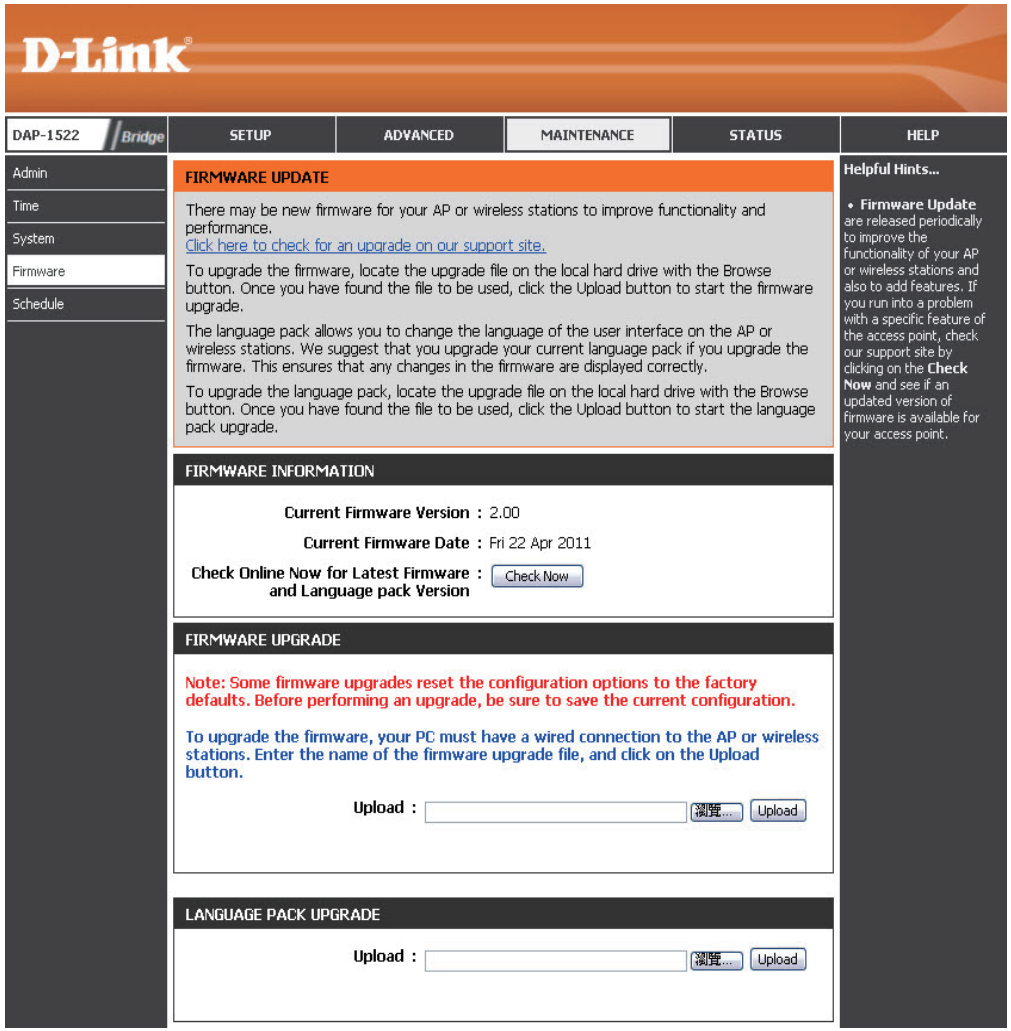
Browse: After you have downloaded the new firmware, click **Browse** to locate the firmware update on your hard drive. Click **Upload** to complete the firmware upgrade.

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.

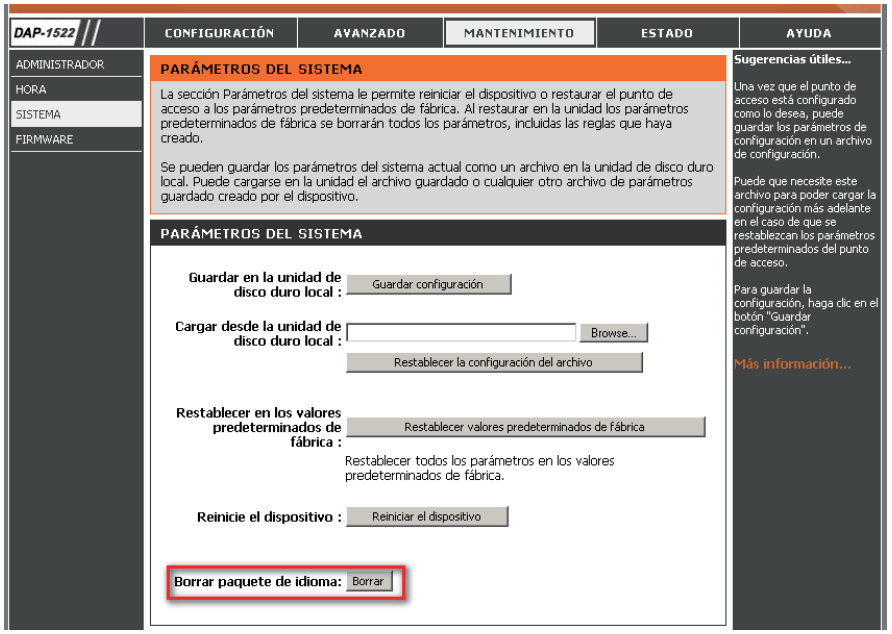
Language Pack

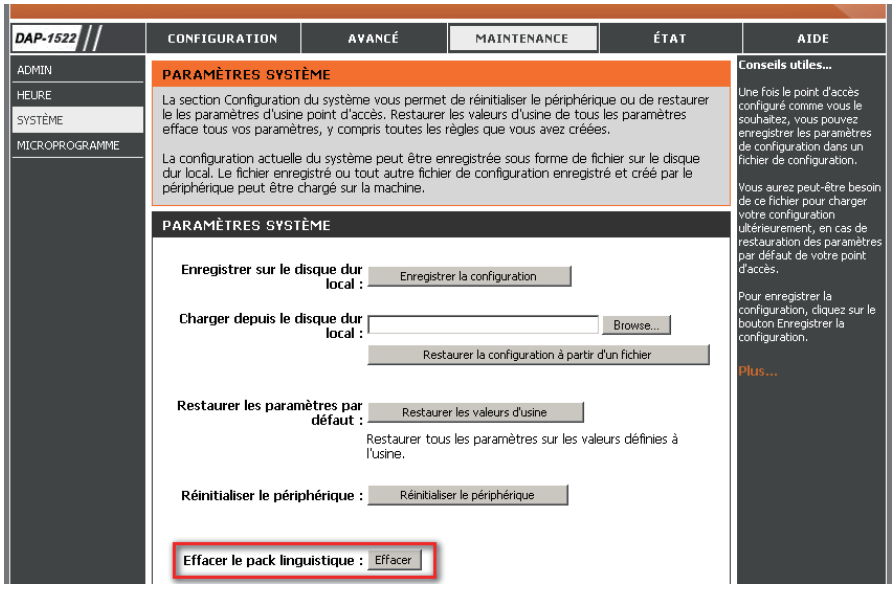
You can change the language of the web UI by uploading available language packs.

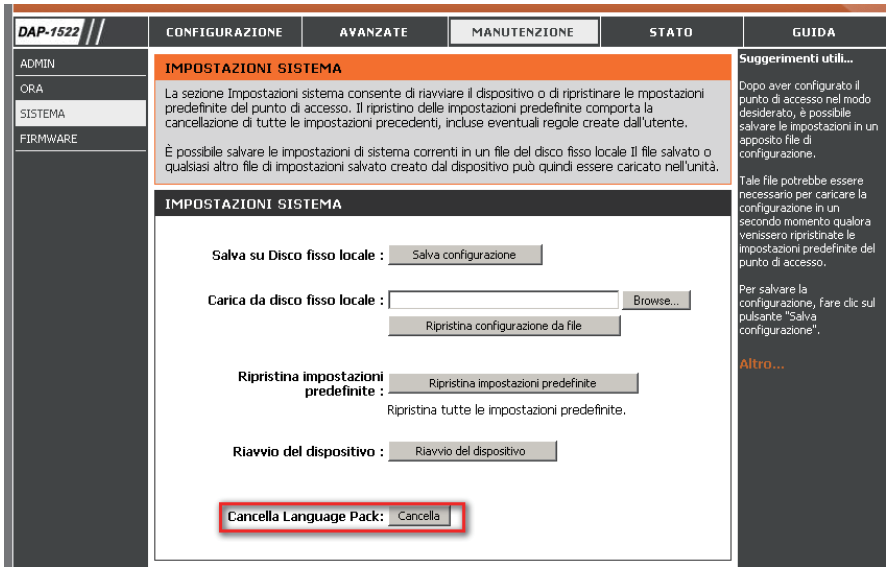
Browse: After you have downloaded the new language pack, click **Browse** to locate the language pack file on your hard drive. Click **Upload** to complete the language pack upgrade.



If you load a language pack and would like to go back to English, click **Maintenance** > **System** and click on **Clear** next to **Clear Language Pack**.







Schedule

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 Days** or enter a start and end time for your schedule.

Wireless: Select **On** or **Off** from the drop-down menu.

Add: Click **Add** 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

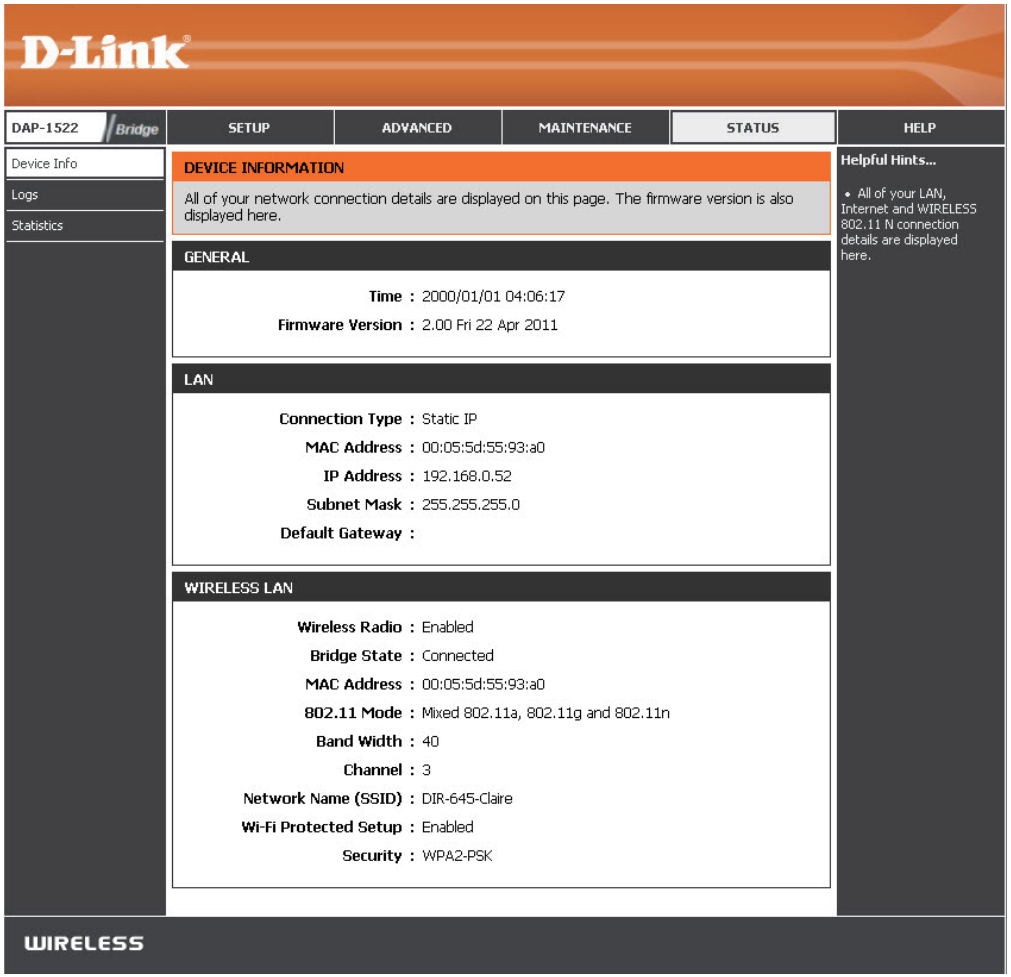
Device Info

This page displays the current information for the DAP-1522. 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.

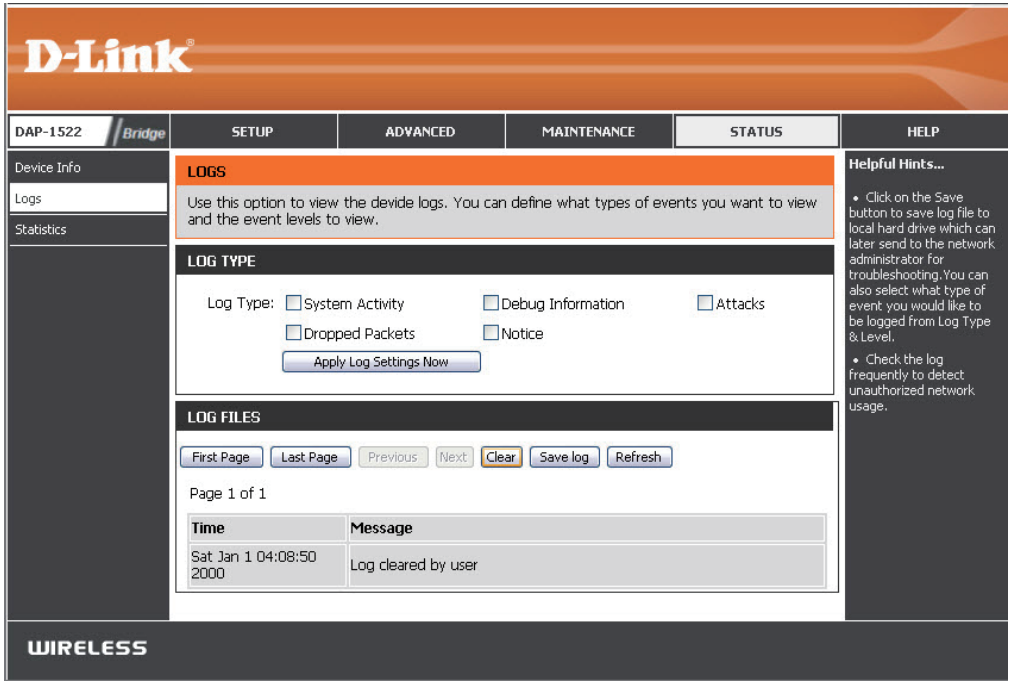
What to View: There are five types of logs that can be viewed: **System Activity**, **Wireless Activity**, **Attacks**, **Dropped Packets**, and **Notice**. Click on the corresponding check box for the type(s) that you want displayed in the log.

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: This option clears 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.

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

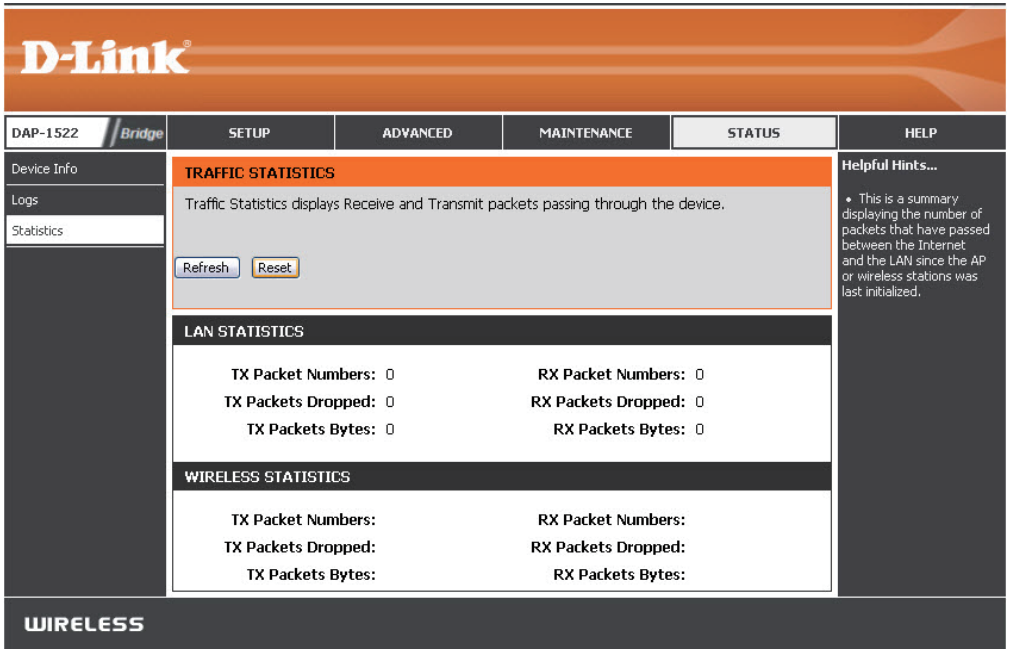
RX Packets: The total number of packets received by the access point.

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

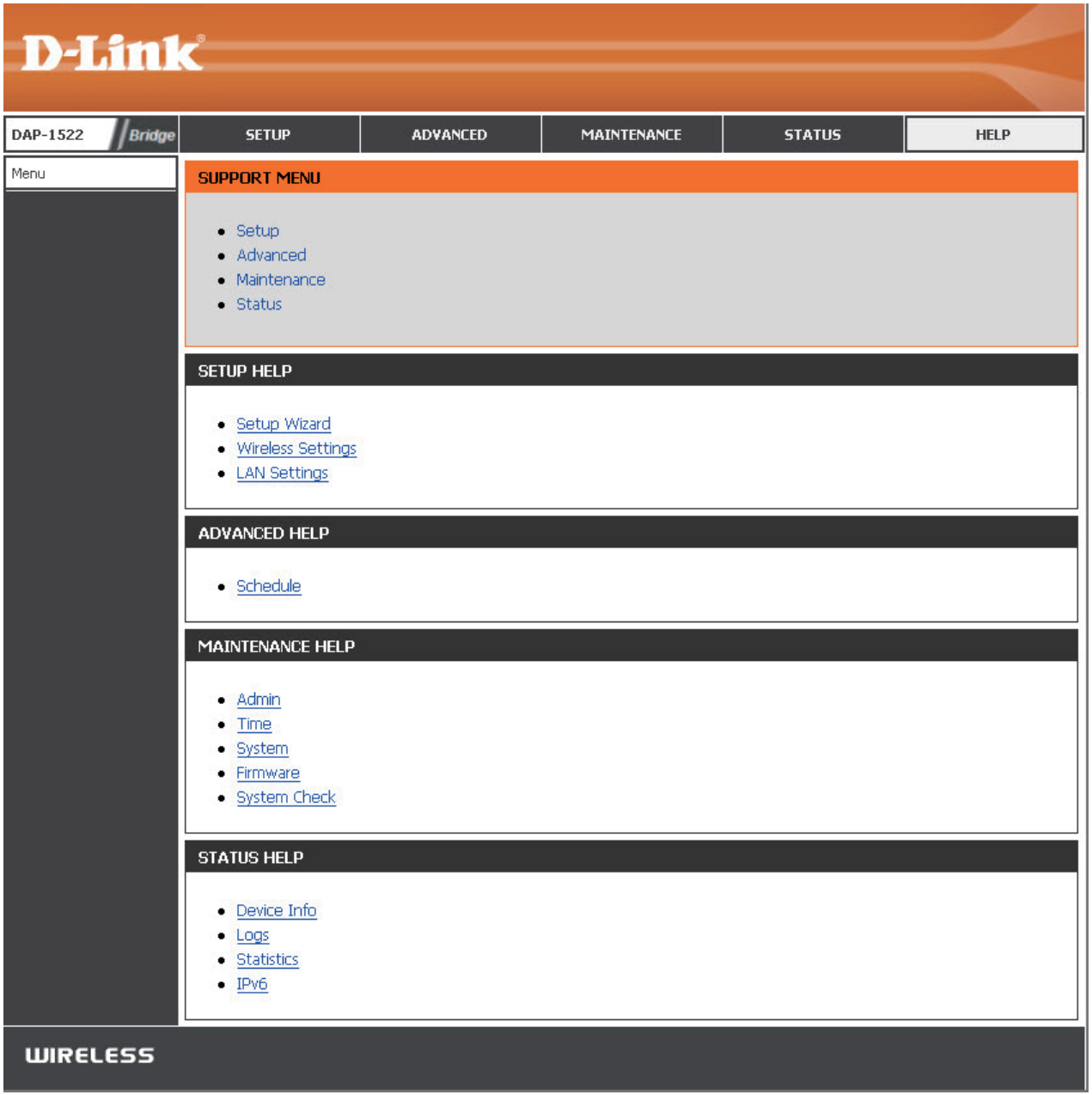
RX Packets Dropped: Displays the number of packets that were dropped while receiving, due to errors, collisions, or access point resource limitations.

TX Bytes: Displays the number of bytes that were sent from the access point.

RX Bytes: Displays the number of bytes that were received by the access point.



Help


D-Link
DAP-1522
Bridge
SETUP
ADVANCED
MAINTENANCE
STATUS
HELP
Menu
SUPPORT MENU
Setup
Advanced
Maintenance
Status
SETUP HELP
Setup Wizard
Wireless Settings
LAN Settings
ADVANCED HELP
Schedule
MAINTENANCE HELP
Admin
Time
System
Firmware
System Check
STATUS HELP
Device Info
Logs
Statistics
IPv6
WIRELESS

Wireless Security

This section will show you the different levels of security you can use to protect your data from intruders. The DAP-1522 offers the following types of security:

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

What is WPA?

WPA, or Wi-Fi Protected Access, is a Wi-Fi standard that was designed to improve the security features of WEP (Wired Equivalent Privacy).

The 2 major improvements over WEP:

- Improved data encryption through the Temporal Key Integrity Protocol (TKIP). TKIP scrambles the keys using a hashing algorithm and, by adding an integrity-checking feature, ensures that the keys haven't been tampered with. WPA2 is based on 802.11i and uses Advanced Encryption Standard (AES) instead of TKIP.

- User authentication, which is generally missing in WEP, through the extensible authentication protocol (EAP). WEP regulates access to a wireless network based on a computer's hardware-specific MAC address, which is relatively simple to be sniffed out and stolen. EAP is built on a more secure public-key encryption system to ensure that only authorized network users can access the network.

WPA-PSK/WPA2-PSK uses a passphrase or key to authenticate your wireless connection. The key is an alpha-numeric password between 8 and 63 characters long. The password can include symbols (!?*&_) and spaces. This key must be the exact same key entered on your wireless 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/WPA2

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.

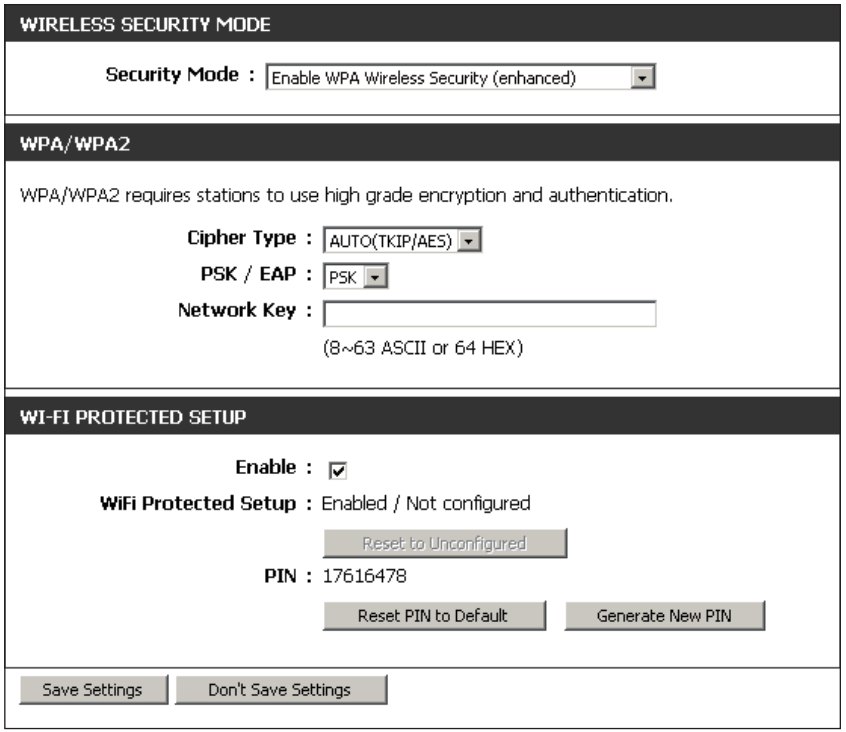
2. Next to *Security Mode* section, select **Enable WPA Wireless Security (enhanced)** from the drop-down menu.

3. Next to *Cipher Type*, select **TKIP**, **AES**, or **Auto (TKIP/AES)**.

4. Next to *PSK/EAP*, select either **PSK** or **EAP**.

5. Next to *Network Key*, enter a key. 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.

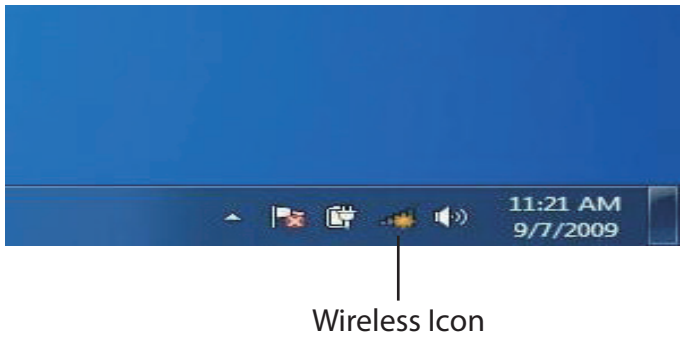
6. Click **Save Settings** at the top of the window to save your settings. If you are configuring the access point with a wireless adapter, you will lose connectivity until you enable WPA-PSK on your adapter and enter the same passphrase as you did on the access point.



Connect to a Wireless Network
Using Windows® 7

It is recommended to enable wireless security (WPA/WPA2) on your 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).

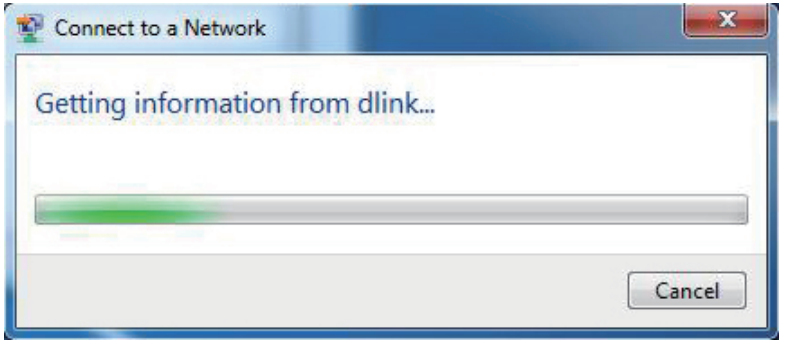


2. The utility will display any available wireless networks in your area.

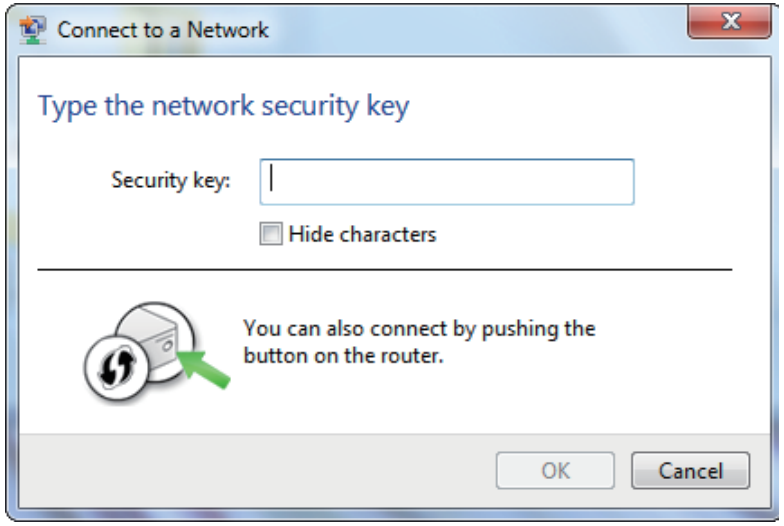
3. Highlight the wireless network (SSID) you would like to connect to and click the **Connect** button.

   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 access point and click **Connect**. You can also connect by pushing the WPS button on the router.

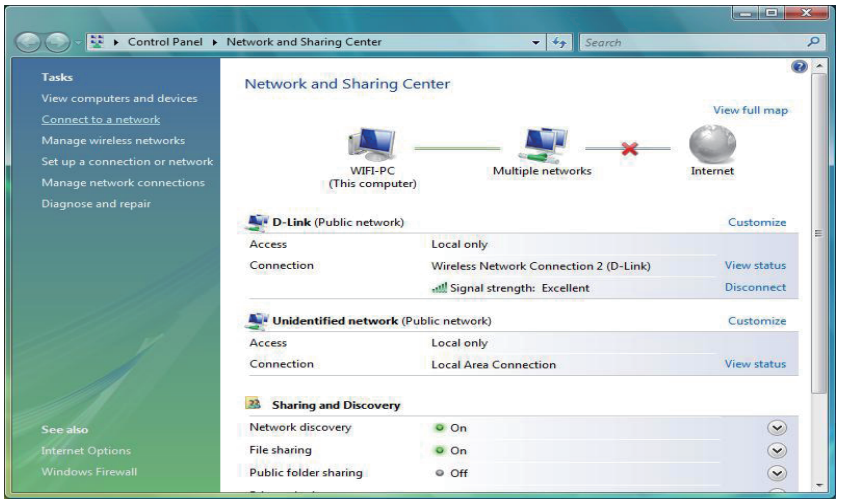


It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the security settings are correct. The key or passphrase must be exactly the same as on the wireless router.

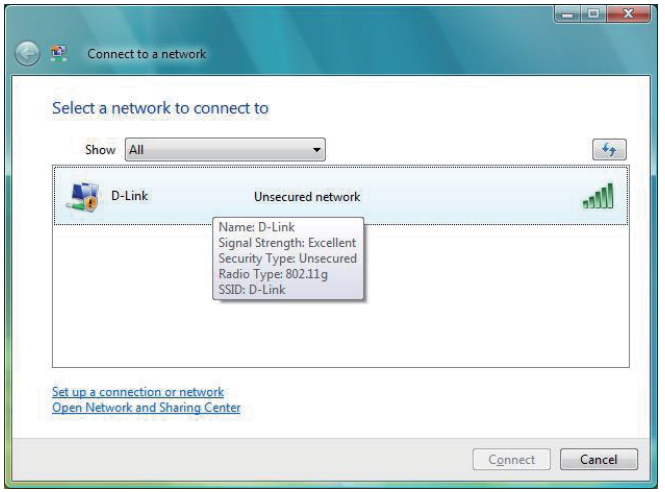
Connect to a Wireless Network
Using Windows Vista®

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

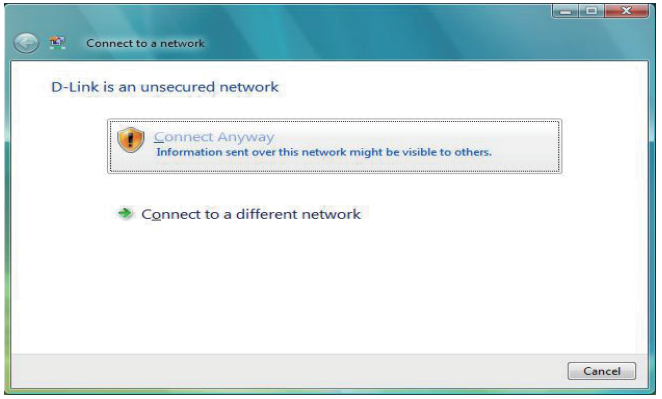
From the Start menu, go to Control Panel, and then click on **Network and Sharing Center**.



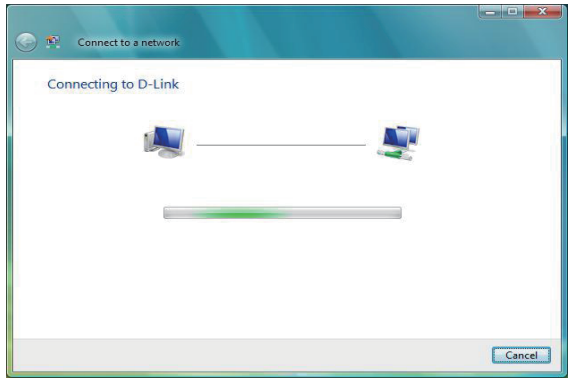
The utility will display any available wireless networks in your area. Click on a network (displayed using the SSID) under Select a network to connect to and then click the **Connect** button.



Click **Connect Anyway** to continue.

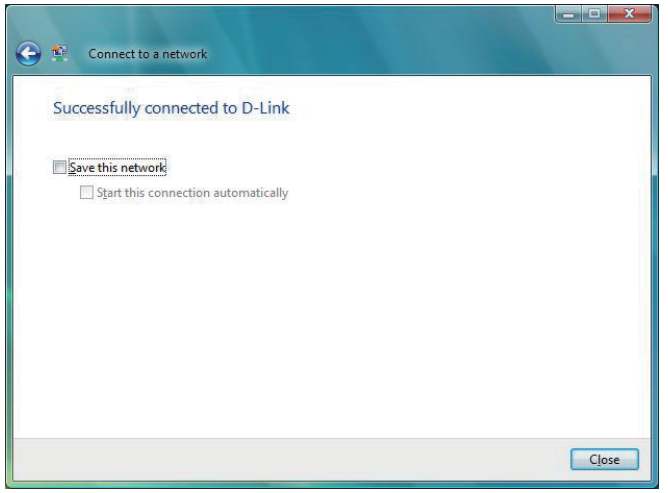


The utility will display the following window to indicate a connection is being made.



The final window indicates the establishment of a successful connection.

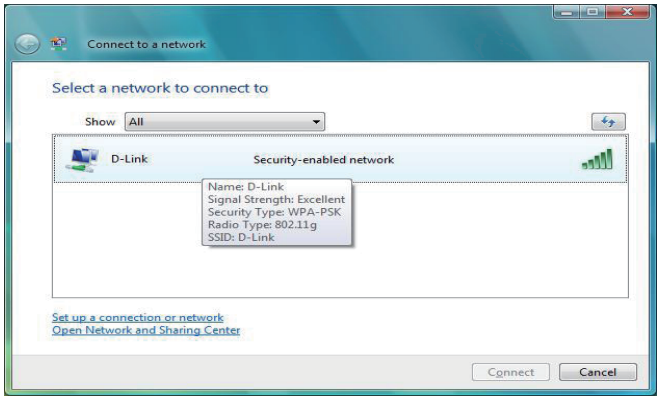
The next two pages display the windows used to connect to either a WEP or a WPA-PSK wireless network.



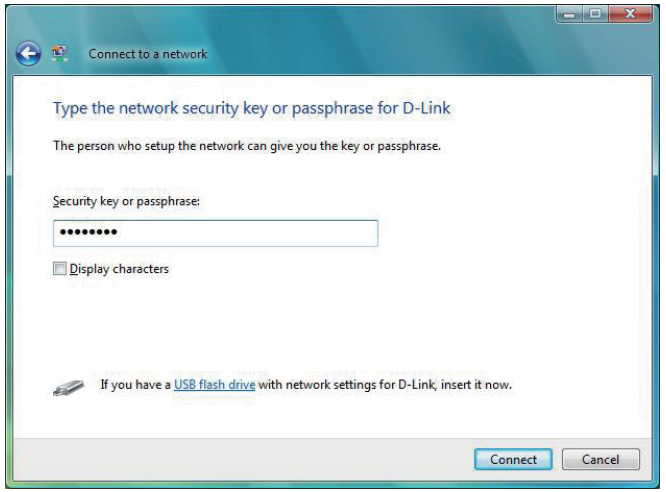
Configure Security

It is recommended to enable wireless encryption 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 security key being used.

Select a network to connect to and then click the **Connect** button.



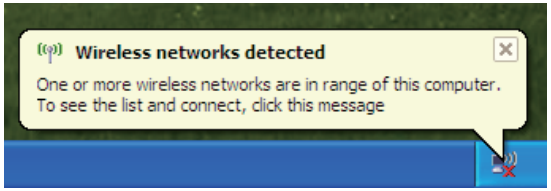
Enter the appropriate security key or passphrase in the field provided and then click the **Connect** button.



Connect to a Wireless Network
Using Windows® XP

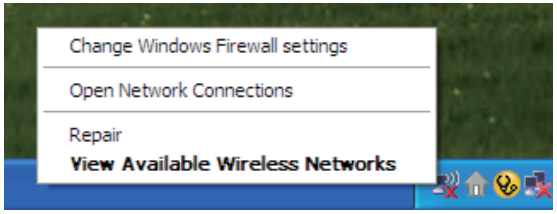
Windows XP users may use the built-in wireless utility (Zero Configuration Utility). The following instructions are for Service Pack 2 users. If you are using another company's utility, please refer to the user manual of your wireless adapter for help with connecting to a wireless network. Most utilities 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.



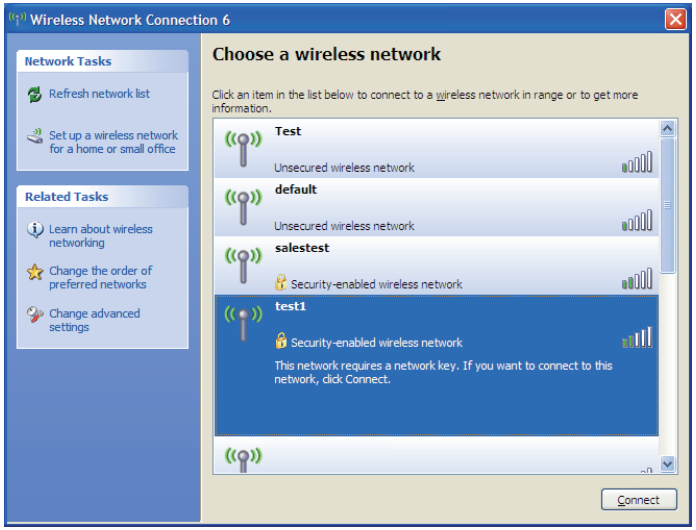
or

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.

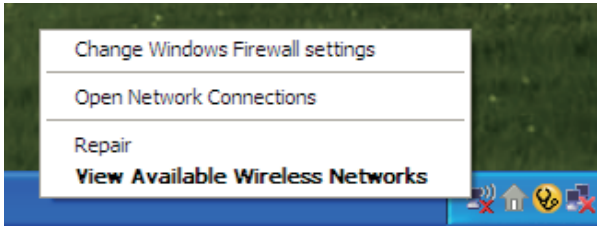
If you get a good signal, but cannot access the Internet, check you TCP/IP settings for your wireless adapter. Refer to the **Networking Basics** section in this manual for more information.



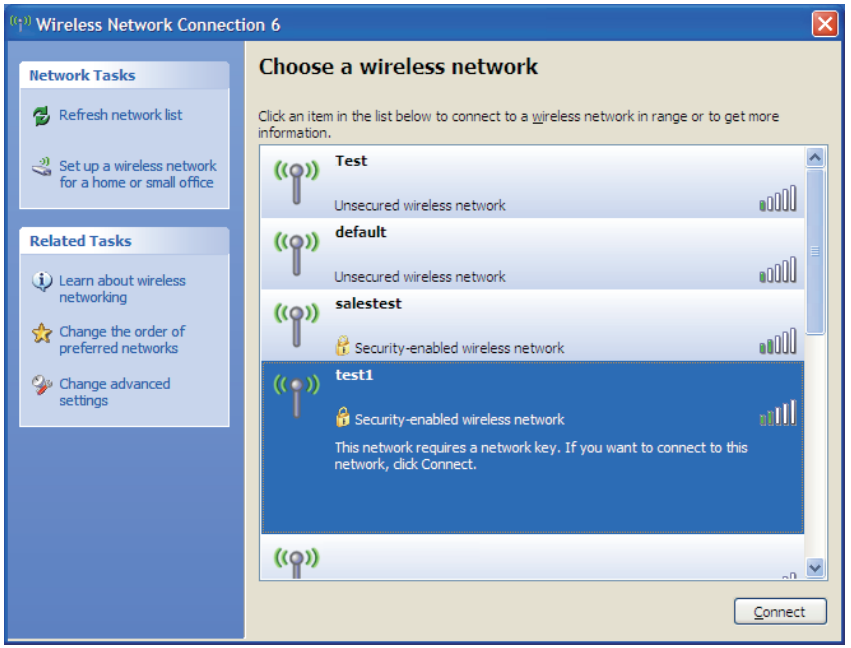
Configure Security

It is recommended to enable wireless security 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 security key being used.

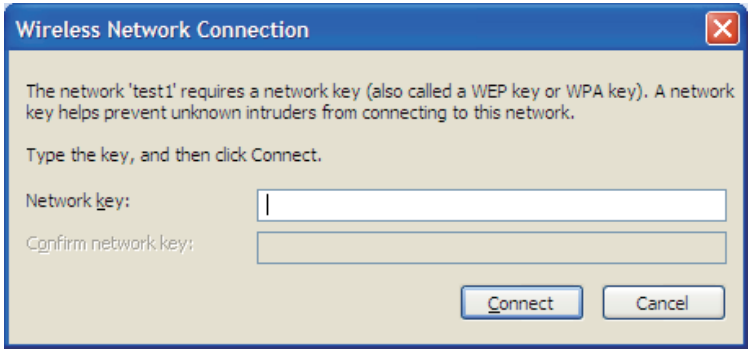
1. Open the Windows® XP Wireless Utility by right-clicking on the wireless computer icon in your system tray (lower-right corner of screen). Select **View Available Wireless Networks.**



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 security passphrase and click **Connect.**



It may take 20-30 seconds to connect to the wireless network. If the connection fails, please verify that the security settings are correct. The 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-1522. 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 new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

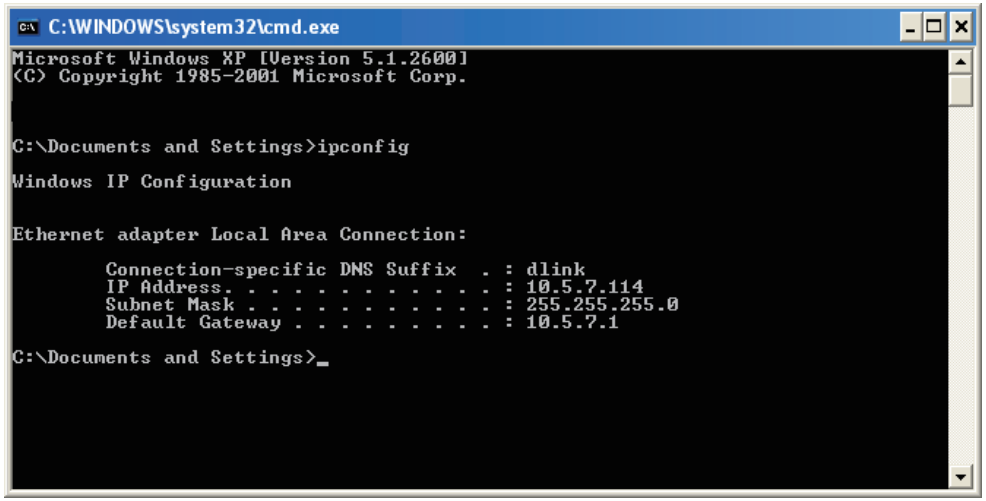
Click on **Start** > **Run**. In the run box type ***cmd*** and click **OK.** (Windows® 7/Vista® users type *cmd* in the **Start Search** box.)

At the prompt, type ***ipconfig*** and press **Enter.**

This will display the IP address, subnet mask, and the default gateway of your adapter.

If the address is 0.0.0.0, check your adapter installation, security settings, and the settings on your access point. Some firewall software programs may block a DHCP request on newly installed adapters.

If you are connecting to a wireless network at a hotspot (e.g. hotel, coffee shop, airport), please contact an employee or administrator to verify their wireless network settings.



Statically Assign an IP address

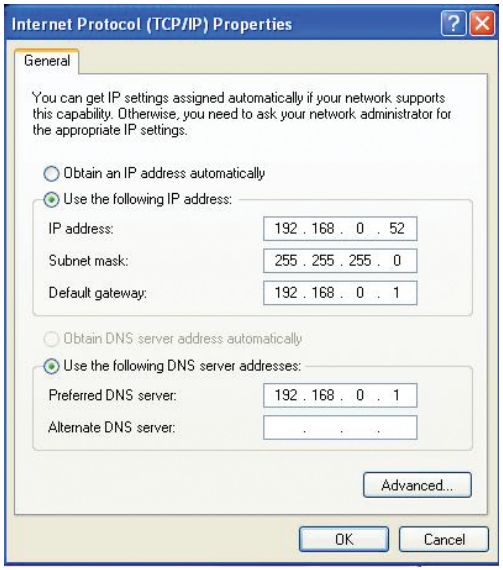
If you are not using a DHCP capable gateway/router, or you need to assign a static IP address, please follow the steps below:

Step 1
Windows® 7 - Click on **Start > Control Panel > Network and Internet > Network and Sharing Center**.
Windows Vista® - Click on **Start** > **Control Panel** > **Network and Internet** > **Network and Sharing Center** > **Manage Network Connections.**
Windows® XP - Click on **Start** > **Control Panel** > **Network Connections**.
Windows® 2000 - From the desktop, right-click **My Network Places** > **Properties**.

Step 2
Right-click on the **Local Area Connection** which represents your D-Link 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

Security

- WPA-Personal
- WPA2-Personal
- WPA-Enterprise
- WPA2-Enterprise
- 64/128-bit WEP

Wireless Signal Rates[1]

- 300Mbps
- 108Mbps
- 54Mbps
- 48Mbps
- 36Mbps
- 24Mbps
- 18Mbps
- 12Mbps
- 11Mbps
- 9Mbps
- 6Mbps
- 5.5Mbps
- 2Mbps
- 1Mbps

Modulation

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

Frequency Range[2]

- 2.4GHz to 2.483GHz
- 5.15GHz~5.825GHz[3]

LEDs

- Power
- Bridge
- AP

Operating Temperature

- 32°F to 104°F (0°C to 40°C)

Humidity

- 90% maximum (non-condensing)

Safety & Emissions

- FCC
- CE
- IC
- C-Tick

Dimensions

- L = 5.75 inches
- W = 4.5 inches
- H = 1.25 inches

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

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

[3]The DAP-1522 doesn't include 5.25-5.35GHz & 5.47~5.725GHz.

Federal Communication Commission Interference Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

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

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

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

For operation within 5.15 ~ 5.25GHz / 5.47 ~5.725GHz frequency range, it is restricted to indoor environment. The band from 5600-5650MHz will be disabled by the software during the manufacturing and cannot be changed by the end user. This device meets all the other requirements specified in Part 15E, Section 15.407 of the FCC Rules.

Radiation Exposure Statement:

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

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 harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Caution:

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

(ii) the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall comply with the e.i.r.p. limit; and

(iii) the maximum antenna gain permitted for devices in the band 5725-5825 MHz shall comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operation as appropriate.

(iv) Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

Radiation Exposure Statement:

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

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

Avertissement:

Le guide d'utilisation des dispositifs pour réseaux locaux doit inclure des instructions précises sur les restrictions susmentionnées, notamment :
(i) les dispositifs fonctionnant dans la bande 5 150-5 250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

(ii) le gain maximal d'antenne permis pour les dispositifs utilisant les bandes 5250-5350 MHz et 5470-5725 MHz doit se conformer à la limite de p.i.r.e.;

(iii) le gain maximal d'antenne permis (pour les dispositifs utilisant la bande 5 725-5 825 MHz) doit se conformer à la limite de p.i.r.e. spécifiée pour l'exploitation point à point et non point à point, selon le cas.

(iv) De plus, les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5250-5350 MHz et 5650-5850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

Déclaration d'exposition aux radiations:

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

以下警語適用台灣地區

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。
低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。
在5.25-5.35秭赫(GHz)頻帶內操作之無線資訊傳輸設備，限於室內使用。