D-Link®

Version 1.0 | 09/20/2012

User Manual

Wireless N150 Cloud Access Point

DAP-1160L

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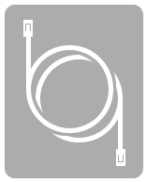
Package Contents

DAP-1160L Wireless N150 Cloud Access Point



Ethernet Cable

Power Adapter

Quick Installation Guide

Note: Using a power supply with a different voltage rating than the one included with the DAP-1160L will cause damage and void the warranty for this product.

System Requirements

Network Requirements	• An Ethernet-based Network • IEEE 802.11n/g wireless clients (AP Mode) • IEEE 802.11n/g wireless network (AP Mode) • 10/100 Ethernet
Web-based Configuration Utility Requirements	**Computer with the following:** • Windows®, Macintosh, or Linux-based operating system • An installed Ethernet adapter **Browser Requirements:** • Internet Explorer® 7 and higher • Mozilla Firefox 12.0 and higher • Google™ Chrome 20.0 and higher • Apple Safari 4 and higher **Windows® Users:** Make sure you have the latest version of Java installed. Visit www.java.com to download the latest version.

Introduction

D-Link, an industry leader in networking, introduces the new D-Link DAP-1160L Wireless N150 Cloud Access Point. With the ability to transfer files with a maximum wireless signal rate of up to 150 Mbps*, the DAP-1160L gives you high-speed wireless network access for your home or office.

The DAP-1160L is Wi-Fi IEEE 802.11n compliant, meaning that it can connect and interoperate with other 802.11n compatible wireless client devices. The DAP-1160L is also backwards compatible with 802.11b/g. With its Setup Wizard, the DAP-1160L ensures that you will be up and running on a wireless network in just a matter of minutes.

The DAP-1160L features Wi-Fi Protected Access (WPA-PSK/WPA2-PSK) to provide an enhanced level of security for wireless data communications. The DAP-1160L also includes additional security features to keep your wireless connection safe from unauthorized access.

The DAP-1160L supports WPS in AP operation mode and can be conveniently set up using the PIN method or Push Button.

• 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.

TOTAL PERFORMANCE
Provides extended wireless technology to provide the best wireless performance.

TOTAL SECURITY
The most complete set of security features including WPA/WPA2 encryption to protect your network against outside intruders.

ULTIMATE PERFORMANCE
The D-Link Wireless N150 Cloud Access Point (DAP-1160L) is an 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 DAP-1160L to a router and extend your high-speed wireless Internet signal within your home.

EXTENDED WHOLE HOME COVERAGE
This high performance Access Point provides extended coverage of wireless signal.

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

Features

- **Faster Wireless Networking -** The DAP-1160L provides up to 150 Mbps* wireless connection with other 802.11n wireless clients. This capability allows users to participate in real-time activities online, such as video streaming, online gaming, and real-time audio.

- **Compatible with IEEE802.11g Devices -** The DAP-1160L is still fully compatible with the 802.11g standards, so it can connect with existing 802.11g PCI, USB, and Cardbus adapters.

- **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-1160L 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-1160L 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 Port**	Connect 10/100 Ethernet devices such as computers, switches, and hubs.
2	**Reset Button**	Hold the reset button for at least 5 seconds to reset the device back to the factory default settings. All the LEDs will turn on for 2 second and then begin the reboot process.
3	**USB Port**	Connect USB drive to share files.
4	**Power Button**	Press the power button to turn on or turn off the device.
5	**Power Receptor**	Receptor for the supplied power adapter.
6	**WPS Button**	Press the WPS button to connect another device to the AP through Wi-Fi Protected Setup (WPS).

Hardware Overview

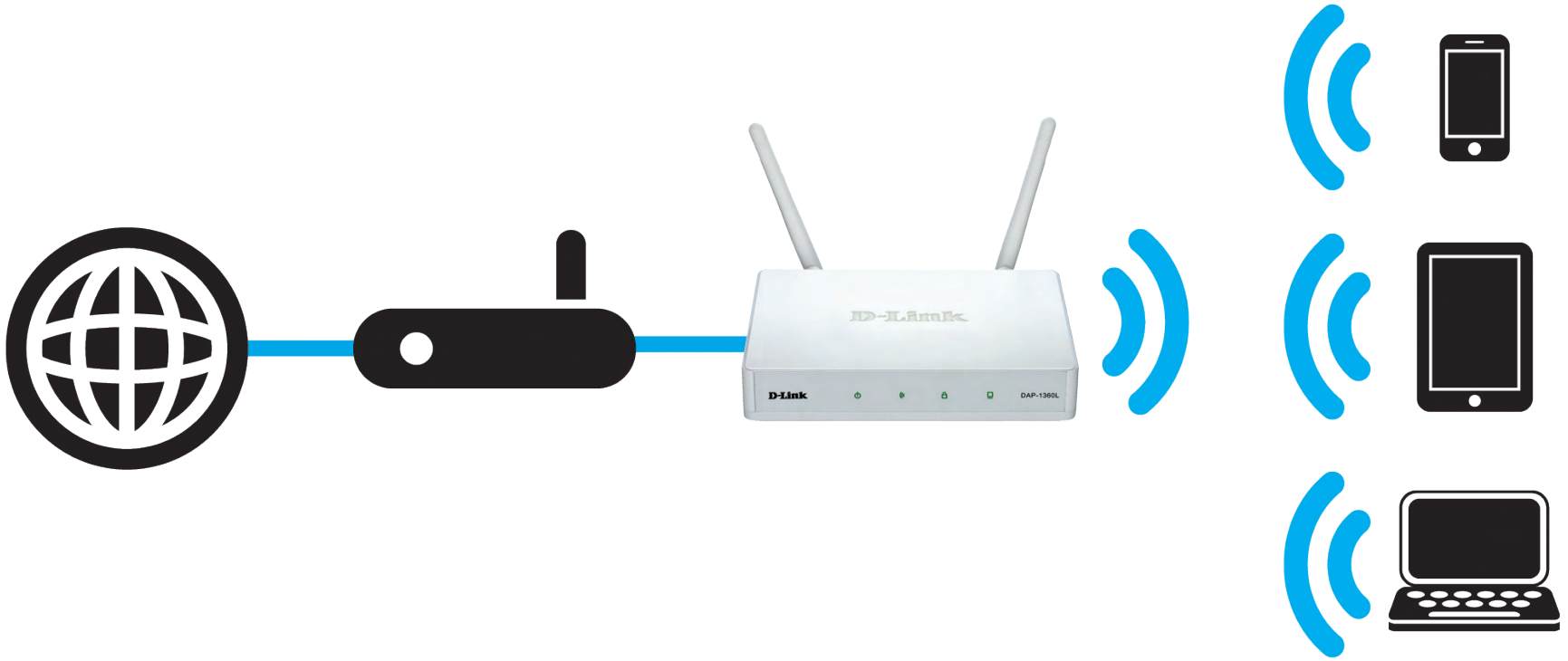
LEDs

1	**Power LED**	A solid green light indicates a proper connection to the power supply. A blinking green light indicates the device is trying to establish a connection through WPS. A solid orange light indicates the device is rebooting or being reset to factory default. A blinking orange light indicates the device is rebooting in recovery mode.
2	**LAN LED**	A solid green light indicates the LAN port connection is OK.

Installation

Please configure the DAP-1160L with a computer connected directly to the AP. The following page explains how to set up the DAP-1160L.

The DAP-1160L acts as a central connection point for any computer (client) that has a 802.11n or backward-compatible 802.11g wireless network interface and is within range of the AP. Clients must use the same SSID (wireless network name) and channel as the AP in order to connect. If wireless security is enabled on the AP, the client will need to enter a password to connect to the AP. In Access Point mode, multiple clients can connect to the AP at the same time.



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 2.4 Hz 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.

Quick Setup Wizard

If this is your first time installing the access point, open your web browser such as Internet Explorer and enter **http://dlinkap** or **http://dlinkap.local** in the address field.

Note: If you have multiple DAP-1160L devices on the network, you can access web-based configuration via **http://dlinkapwxyz** or **http://dlinkapwxyz.local** (**wxyz** represents the last four digits in the DAP-1160L's MAC address) in the address field.

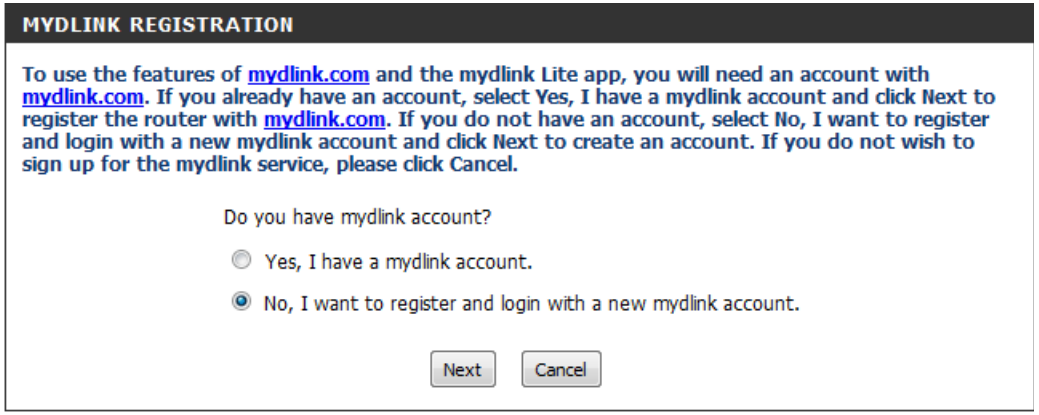
Note: If you have already configured your settings and you would like to access the configuration utility, please refer to page 17.

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

Click **Next** to continue. The next steps will ask you to enter the settings for your Wi-Fi network such as SSID and security password.

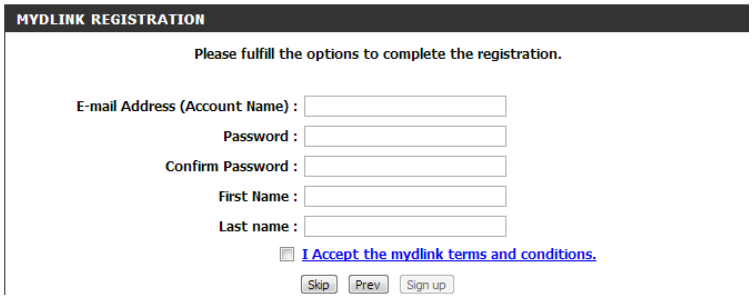
If you have selected AP mode, after you have confirmed your Wi-Fi network settings, the wizard will check for Internet connectivity and then display the mydlink registration screen. To use the mydlink service (mydlink.com or the mydlink Lite app), you must have an account. Select whether you do have a mydlink account or if you need to create one. Click **Next** to continue.

If you do not want to register at this time, click **Cancel**.

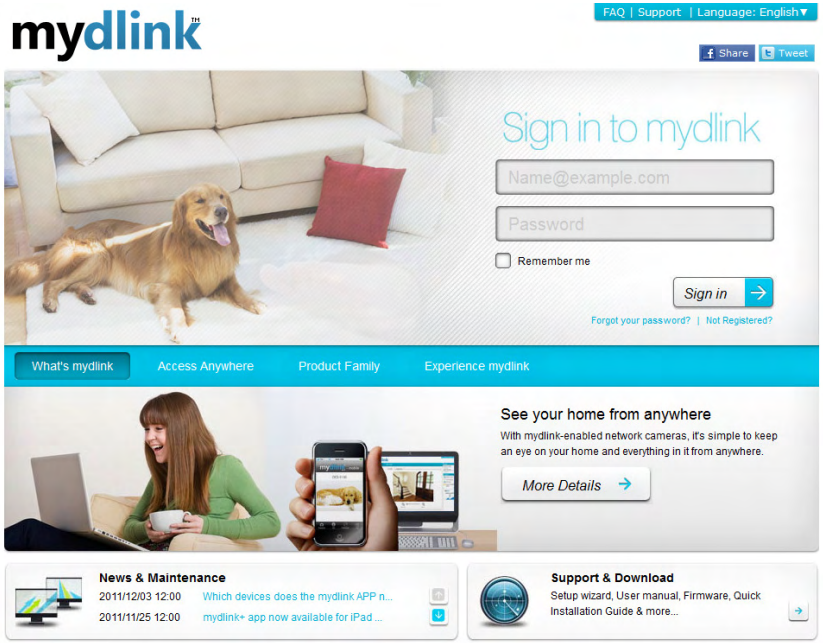


If you clicked **Yes** in the previous step, enter your mydlink account name (email address) and password. Click **Sign up** to register your router. You will then be taken to the mydlink website.

If you clicked **No** in the previous step, fill out the requested information and click **Sign up** to create your mydlink account. You will then be taken to the mydlink website.

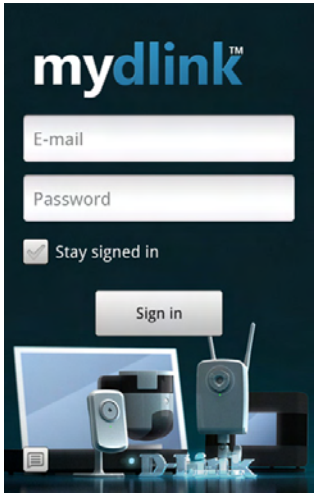


After you have signed up for your mydlink account, you can use the mydlink portal at **http://mydlink.com** whether you have a Mac or a PC. You can also use the mydlink App for your smartphone or tablet device.



The mydlink App will allow you to receive notices, browse network users, and configure your router from an iPhone/iPad/iPod Touch (iOS 3.0 or higher), Android device (1.6 or higher).

To download the mydlink lite App, visit the Apple Store, Google Play, or **http://mydlink.com/Lite**.



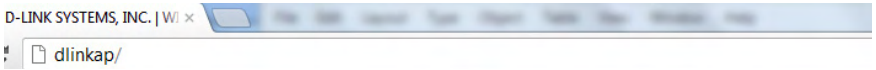
Configuration

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

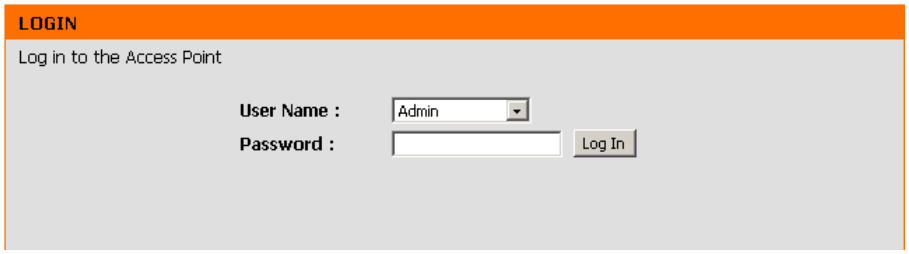
If you wish to change the default settings or optimize the performance of the DAP-1160L, you may use the web-based configuration utility.

To access the configuration utility, open a web browser such as Internet Explorer and enter **http://dlinkap**, **http://dlinkap.local**, **http://dlinkapwxyz**, or **http://dlinkapwxyz.local** (**wxyz** represents the last four digits in the DAP-1160L's MAC address) in the address field.



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

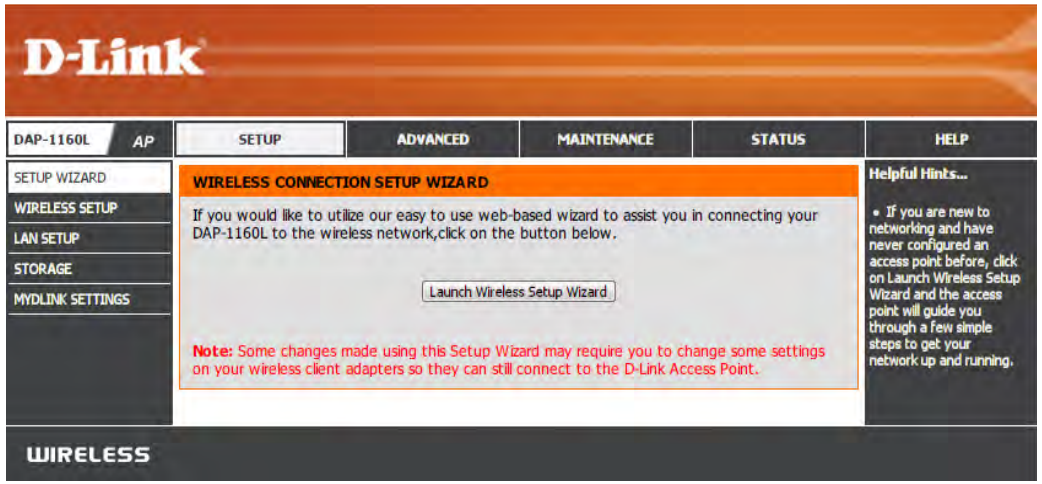
If you get a Page Cannot be Displayed error, please refer to the **Troubleshooting** section for assistance.



Wireless Setup Wizard

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

If you want to enter your settings without running the wizard, skip to page 23.



Click **Next** to continue.

Access Point Mode

This Wizard is designed to assist you in configuring your DAP-1160L as an access point.

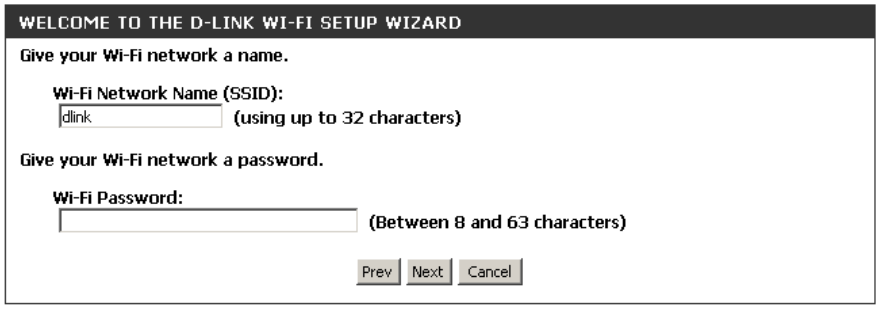
Select **Access Point** from the dropdown menu. Then, click **Next** to continue.

Click **Next** to continue.

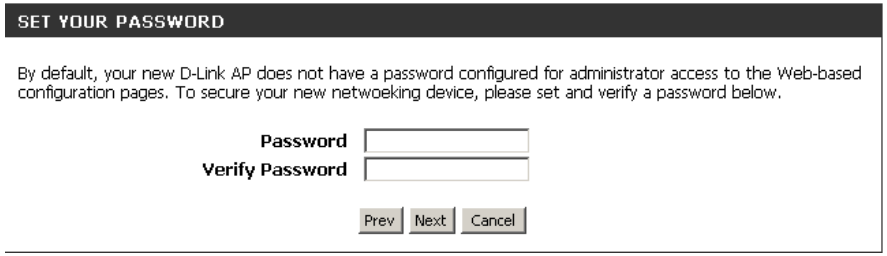
Enter a name for your wireless network (SSID).

Enter your network key. This key must be entered on your wireless clients.

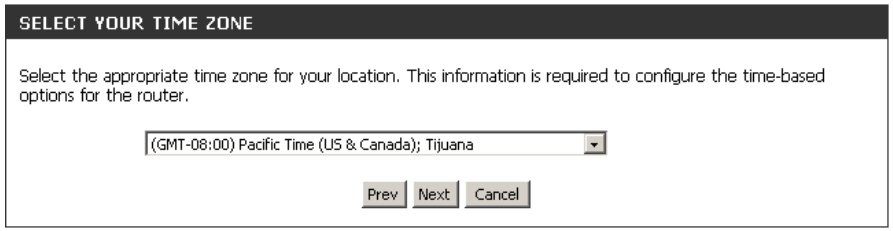
Click **Next** to continue.



Enter your password and click **Next**.



Select your time zone from the drop-down menu and click **Next.**



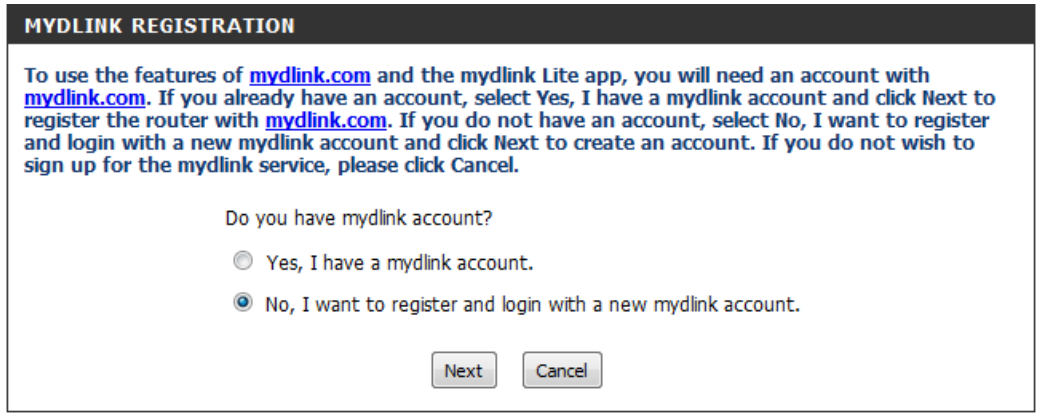
The following screen will show you your network name and password to enter on your wireless clients.

Click **Save** to finish the Setup Wizard.

After the wizard has detected Internet connectivity, the mydlink registration screen will appear. To use the mydlink service (mydlink.com or the mydlink Lite app), you must have an account. Select whether you have a mydlink account or if you need to create one. Click **Next** to continue.

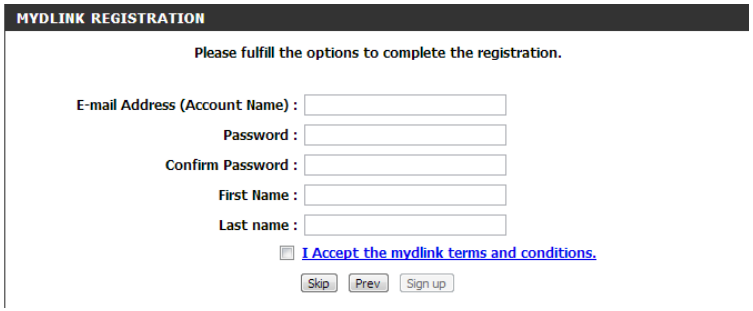
If you do not want to register at this time, click **Cancel**.

Note: mydlink registration is only available in AP mode.



If you clicked **Yes**, enter your mydlink account name (email address) and password. Click **Login** to register your router.

If you clicked **No**, fill out the requested information and click **Sign up** to create your mydlink account. You will then be taken to the mydlink website.



Manual Configuration
Wireless Setup

You may manually configure your DAP-1160L instead of running the setup wizard.

Access Point Mode

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. You may also set up a specific time range (schedule). Select a schedule from the drop-down menu or click **Add New** to create a new schedule.

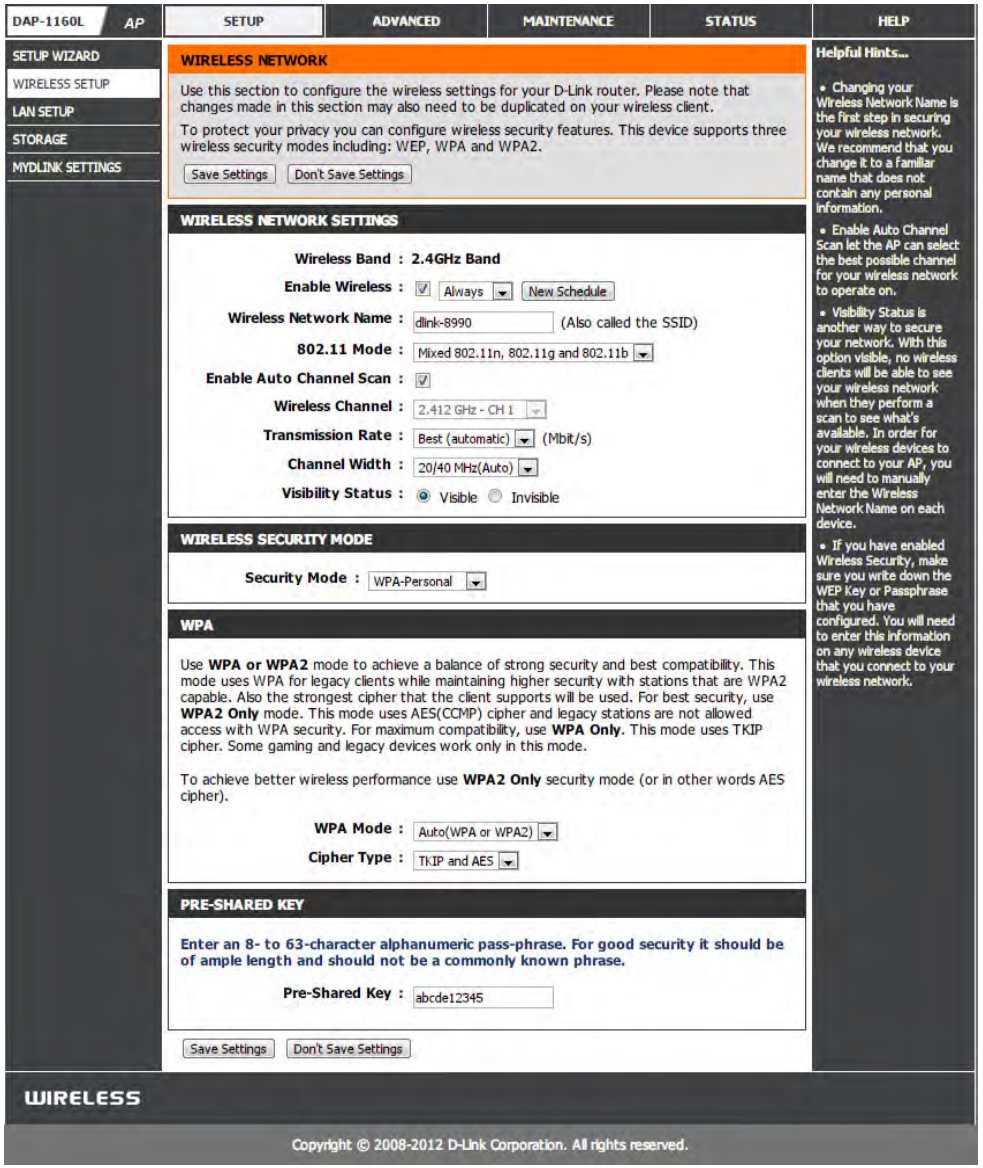
Wireless Network Name: When you are browsing for available wireless networks, this is the name that will appear in the list (unless Visibility Status is set to Invisible, see below). This name is also referred to as the SSID. For security purposes, it is highly recommended to change from the default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

802.11 Mode: Select one of the following:
802.11n Only - Select if you are only using 802.11n wireless clients.
Mixed 802.11n and 802.11g - Select if you are using a mix of 802.11n and 11g wireless clients.
Mixed 802.11n, 802.11g and 802.11b - Select if you are using a mix of 802.11n, 11g, and 11b wireless clients.

Enable Auto Channel Scan: The **Auto Channel Scan** setting can be selected to allow the DAP-1160L to choose the channel with the least amount of interference.

Wireless Channel: Indicates the channel setting for the DAP-1160L. 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.

Transmission Rate: Select the wireless transmission rate.



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

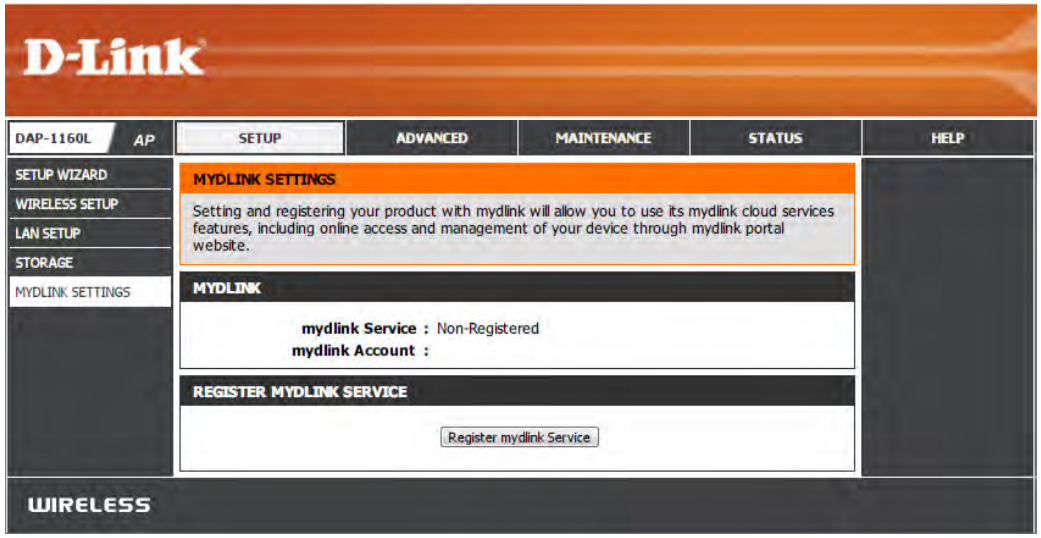
Visibility Status: Check the box if you do not want the SSID of your wireless network to be broadcasted by the DAP-1160L. If checked, the SSID of the DAP-1160L will not be seen by Site Survey utilities so your wireless clients will have to know the SSID of your DAP-1160L in order to connect to it.

Security Mode: Select a wireless security setting. Options are **None**, **WEP**, **WPA-Personal**, or **WPA-Enterprise**. Refer to the **Wireless Security** section of this manual for a detailed explanation of the wireless security options.

Mydlink Settings

This page allows you use its mydlink cloud services features including online access and management of your device through mydlink portal website. This feature is only available in AP mode.

Register mydlink service: Click to register for mydlink service.

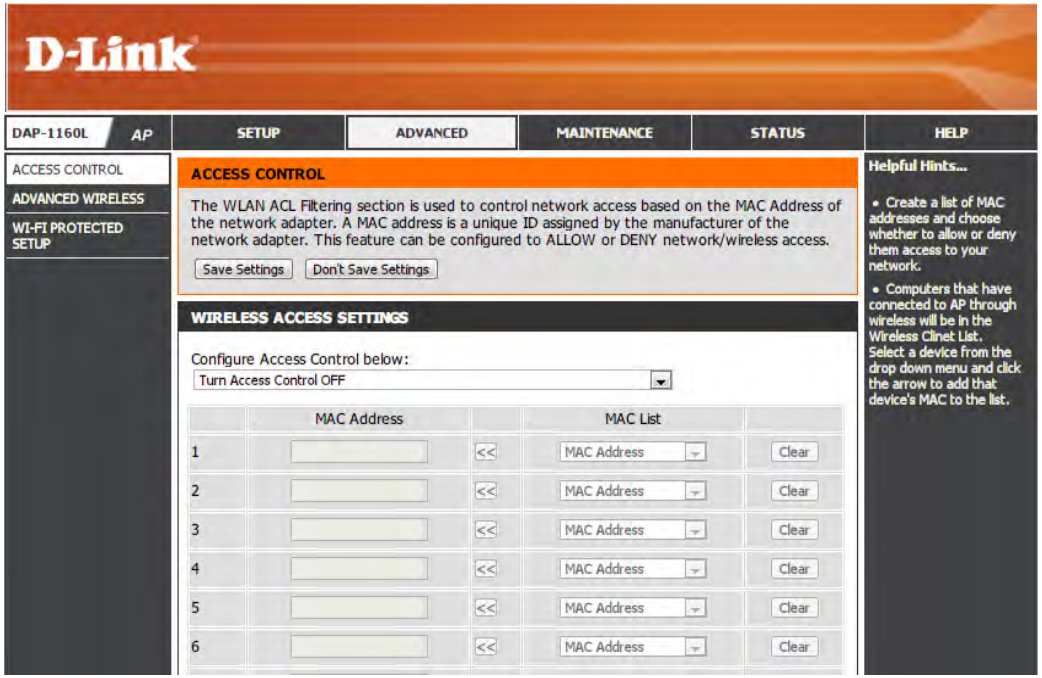


Advanced
Access Control

The Access Control 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.

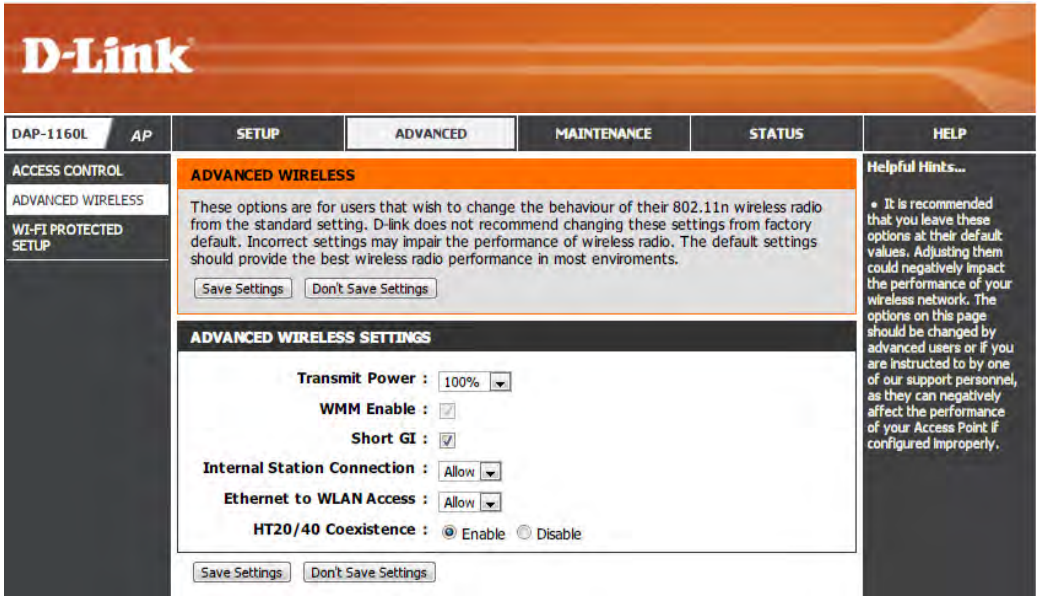
WMM Enable: WMM is QoS for your wireless network. This will improve the quality of video and voice applications for your wireless clients.

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

Internal Station Connection: This enables connection to an internal station.

Ethernet to WLAN Access: This feature enables Ethernet to WLAN access.

HT 20/40 Coexistance: Check to enable or disable this feature.



Wi-Fi Protected Setup

Wi-Fi Protected Setup (WPS) System is a simplified method for securing your wireless network during the "Initial setup" as well as the "Add New Device" processes. The Wi-Fi Alliance (WFA) has certified it across different products as well as manufactures. The process is just as easy, as depressing a button for the Push-Button Method or correctly entering the 8-digit code for the Pin-Code Method. The time reduction in setup and ease of use are quite beneficial, while the highest wireless Security setting of WPA2 is automatically used.

Enable: Check this box to enable the function

Lock Wireless Security Settings: Locking the wireless security settings prevents the settings from being changed by the Wi-Fi Protected Setup feature of the router. Devices can still be added to the network using Wi-Fi Protected Setup. However, the settings of the network will not change once this option is checked.

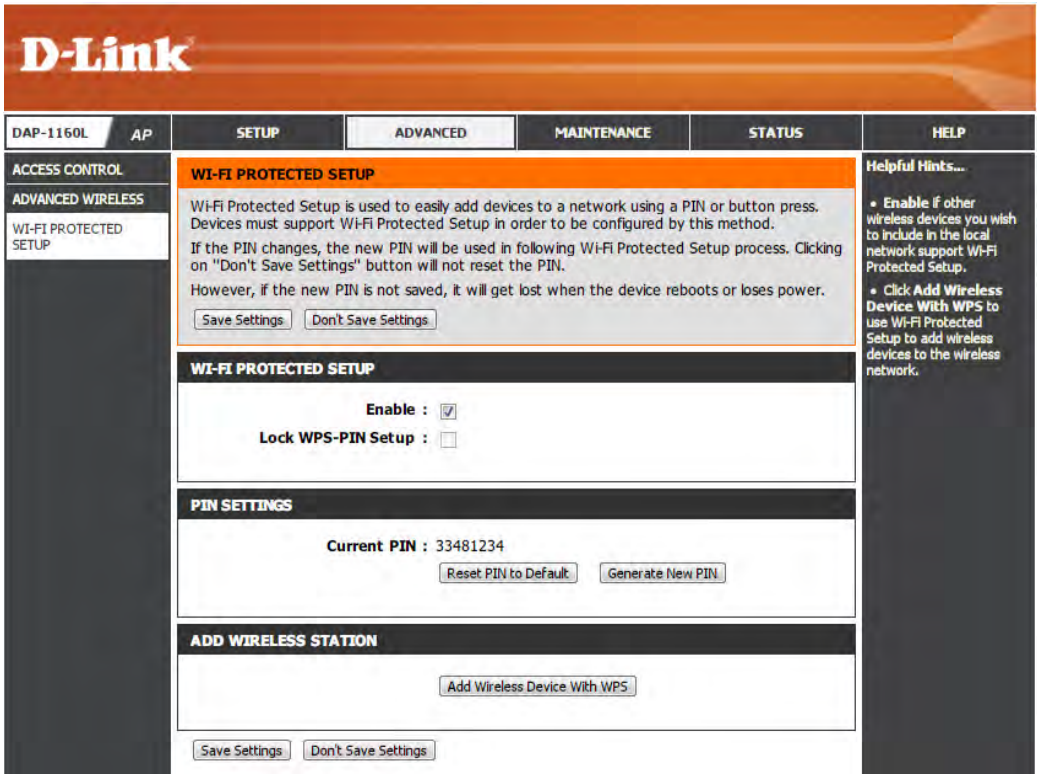
Pin Settings: Click the button to generate a new PIN or Reset to Default.

Current PIN: Shows the current value of the router's PIN.

Reset PIN to Default: Restore the default PIN of the access point.

Generate New PIN: Create a random number that is a valid PIN. This becomes the router's PIN. You can then copy this PIN to the user interface of the registrar.

Add Wireless Station: Click the button to start the wizard to set up the WPS.



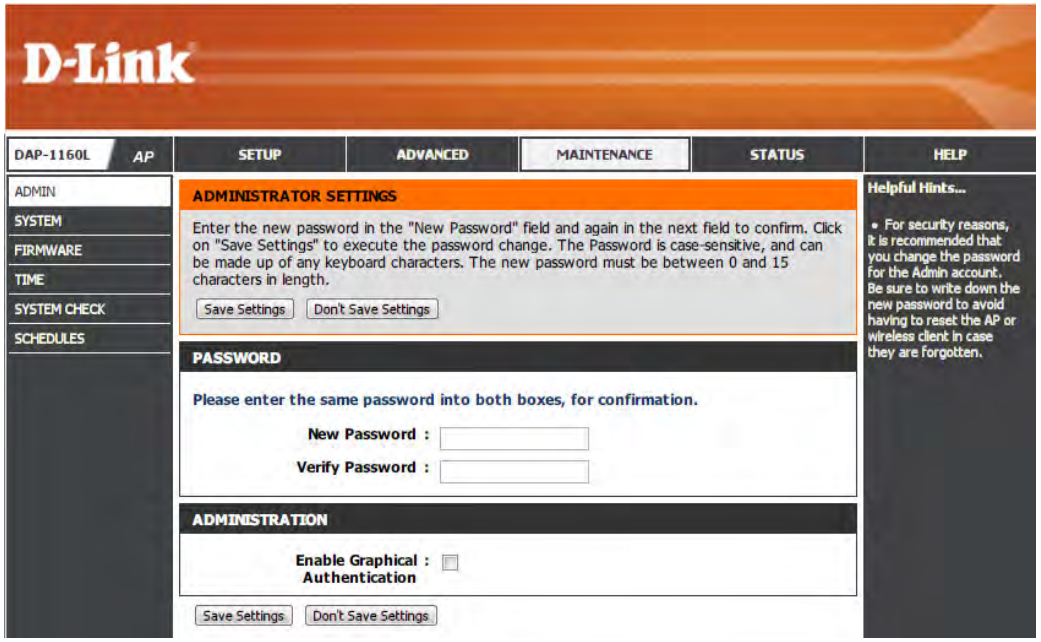
Maintenance
Admin

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.

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

Enable Graphical Authentication: Check to enable this feature.



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. Click the **Save** button. You will then see a file dialog where you can select a location and file name for the settings.

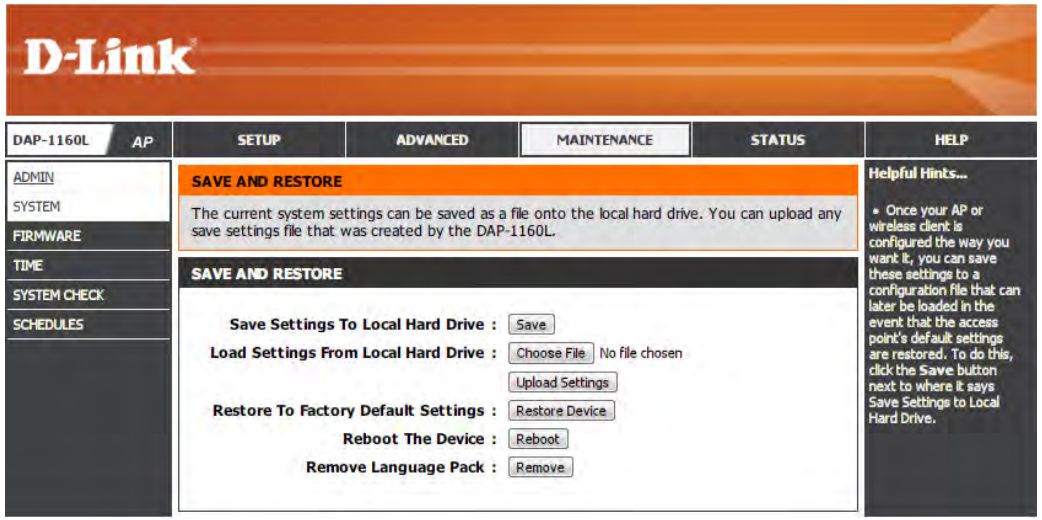
Upload from Local Hard Drive: Use this option to load previously saved access point configuration settings. Click **Browse** to find a previously saved configuration file. Then, click the **Upload Settings** button to transfer those settings to the access point.

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.

Remove Language Pack: Click to remove the language pack if installed.



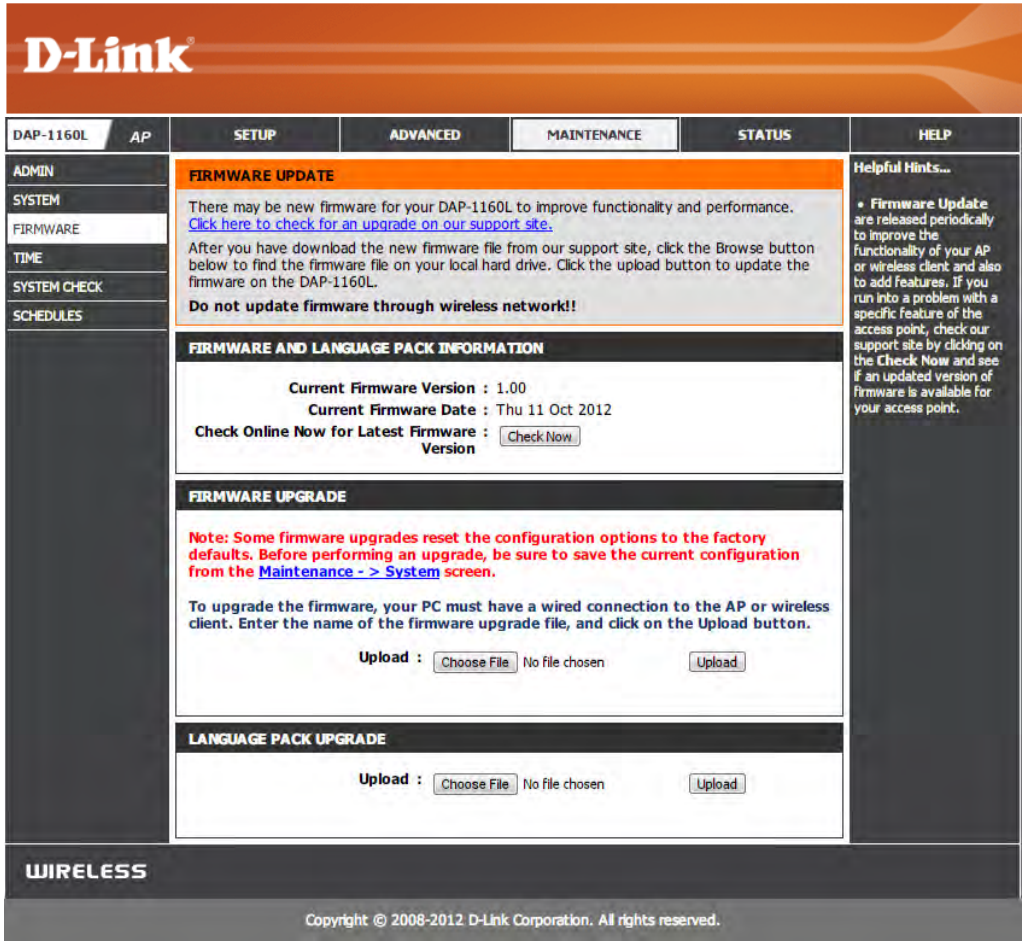
Firmware

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.

Firmware Upgrade: Click on **Check Now** to find out if there is updated firmware; if so, download the new firmware to your hard drive.

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

Time

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

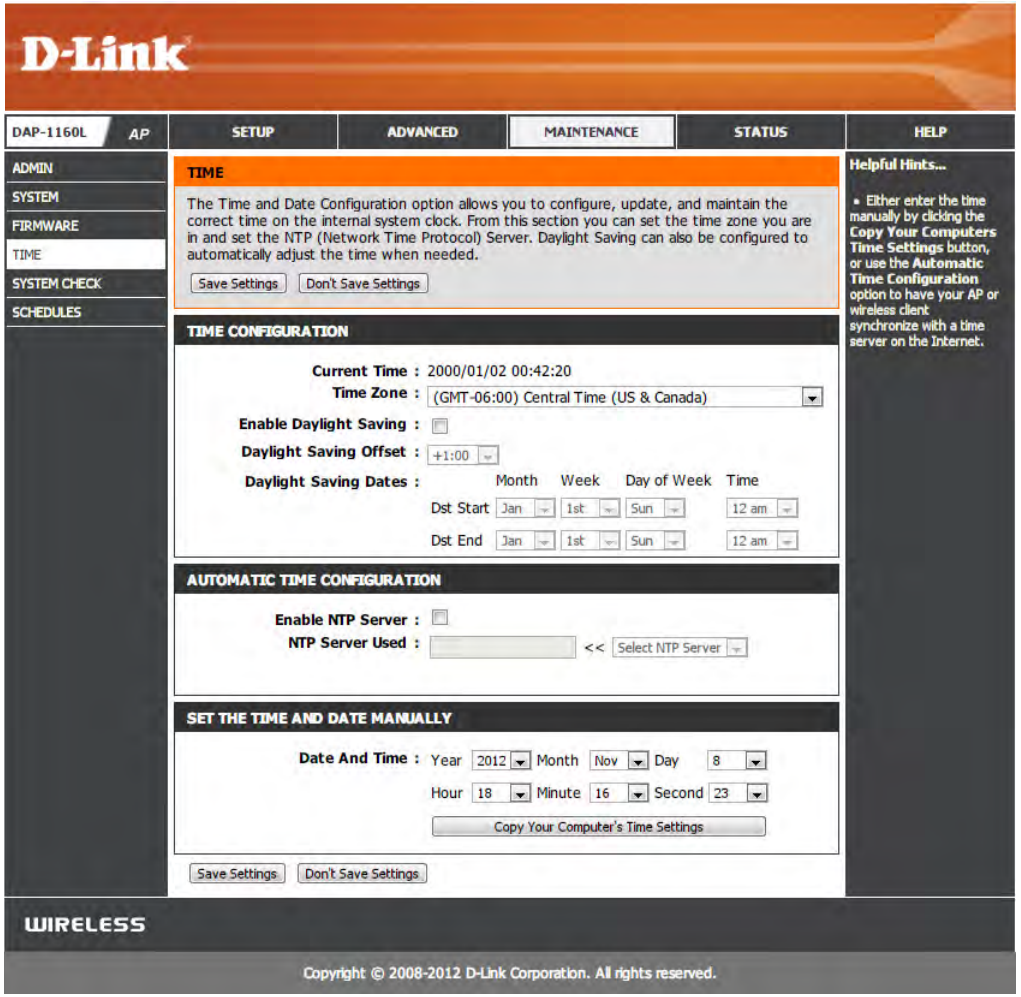
Time Zone: Select the Time Zone from the drop-down menu.

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

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

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

Date and Time: 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.



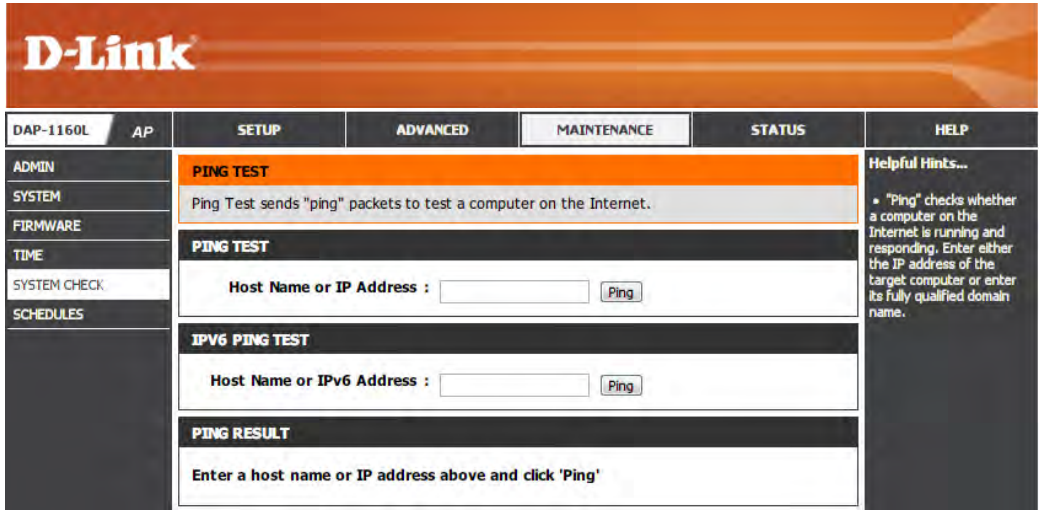
System Check

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

Ping Test: The 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**.

IPv6 Ping Test: The 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.



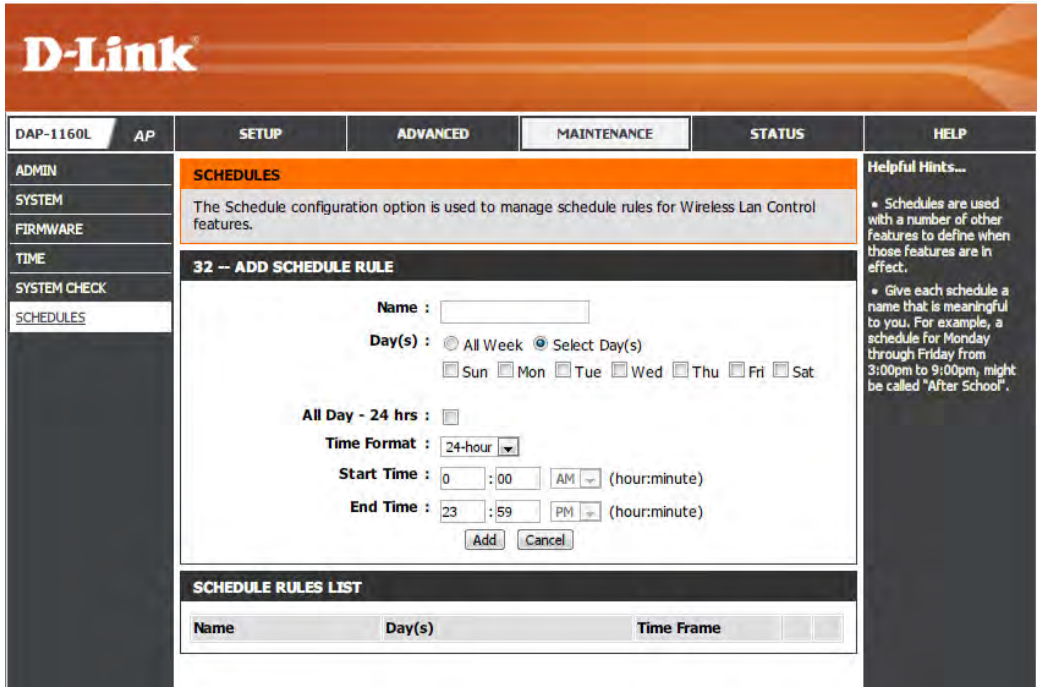
Schedules

Name: Enter a name for your new schedule.

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

Time: 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.



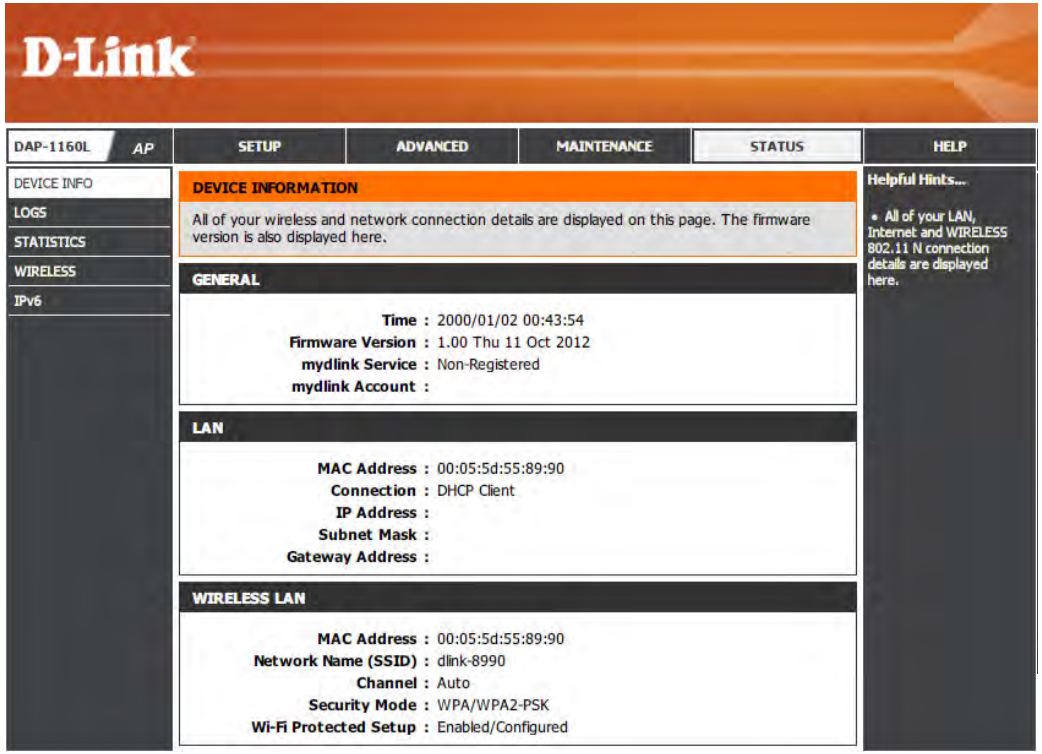
Status
Device Info

This page displays the current LAN and wireless LAN information for the DAP-1160L.

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 DAP-1160L keeps a running log of events and activities occurring on the AP. If the AP is rebooted, the logs are automatically cleared. You can save the log files under Log Setting.

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

First Page: This button directs you to the first page of the log.

Last Page: This button directs you to the last page of the log.

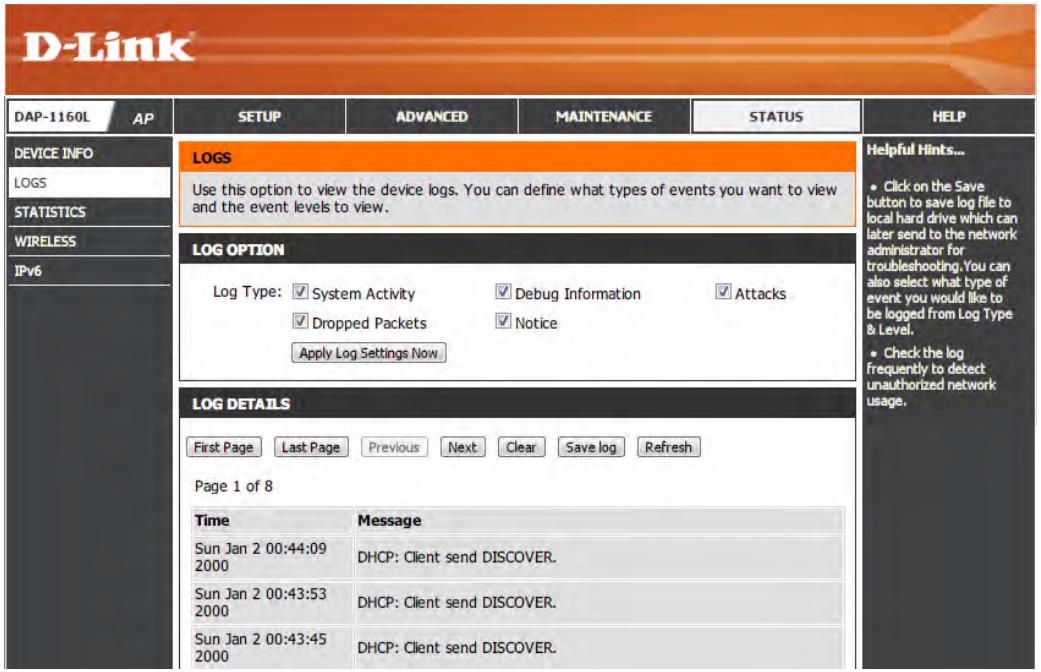
Previous Page: This button directs you to the previous page of the log.

Next Page: This button directs you to the next page of the log.

Clear Log: This button clears all current log content.

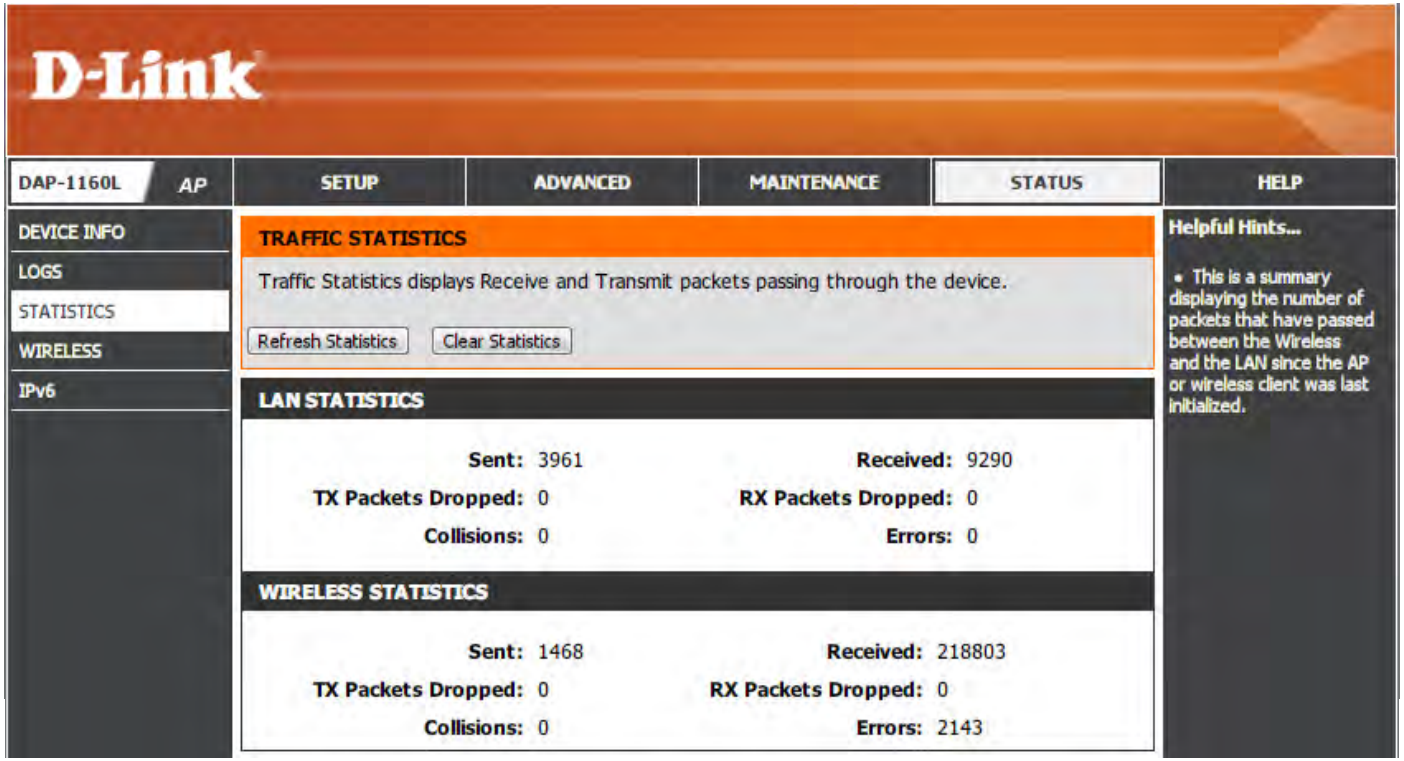
Log Settings: This button opens a new menu where you can configure the log settings.

Refresh: This button refreshes the log.



Statistics

The DAP-1160L keeps statistics of the traffic that passes through it. You can view the amount of packets that pass through the LAN and wireless portions of the network. The traffic counter will reset if the access point is rebooted.

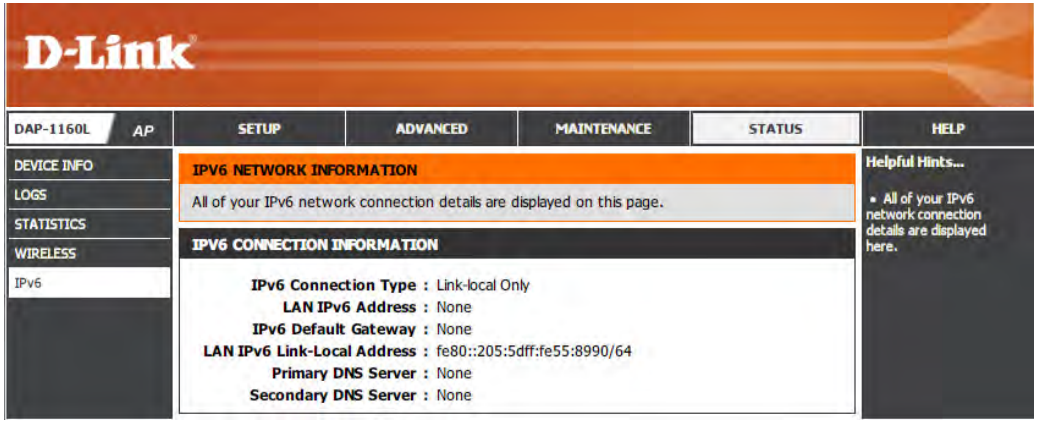


Wireless

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

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

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

IPv6

This page displays all your IPv6 Internet and network connection information. This feature is only available in AP mode.